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REMEDIAL INVESTIGATION REPORT SITE 21 BUILDINGS 1517/1506 VOLUMES I AND II

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TETRA TECH

Remedial Investigation Report
for
Site 21 – Buildings 1517/1506 Area

Volume I of II

Naval Station Great Lakes
Great Lakes, Illinois

Naval Facilities Engineering Command Midwest

Contract Number N62472-03-0057

Contract Task Order C064

July 2012

REMEDIAL INVESTIGATION REPORT
FOR
SITE 21 – BUILDINGS 1517/1506 AREA

NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

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ACRONYMS

ALM	Adult Lead Methodology
ATSDR	Agency for Toxic Substances and Disease Registry
BAP	benzo(a)pyrene
BAP Eq	benzo(a)pyrene equivalent
BEHP	bis(2-ehtylhexyl)phthalate
bgs	below ground surface
CLEAN	Comprehensive Long-Term Environmental Action Navy
CNS	Central Nervous System
COC	Chemical of concern
COPC	Contaminant of Potential Concern
c-PAH	Carcinogenic PAH
CSF	Cancer Slope Factor
CSM	Conceptual Site Model
CTE	Central Tendency Exposure
CTO	Contract Task Order
CVS	Cardiovascular system
DGPS	Differential global positioning system
DO	Dissolved oxygen
DPT	Direct push technology
EM	Electromagnetic
EPC	Exposure Point Concentration
EU	Exposure Unit
GPR	Ground penetrating radar
GPS	Global positioning system
GROs	Groundwater Remediation Objectives
HEAST	Health Effects Assessment Summary Tables
HHRA	Human Health Risk Assessment
HI	Hazard Index
HQ	Hazard Quotient
HSA	Hollow Stem Auger
IAC	Illinois Administrative Code
ID	Inside diameter
IDW	Investigation-derived waste
IEPA	Illinois Environmental Protection Agency
IEUBK	Integrated Exposure Uptake Biokinetic Model for Lead in Children

ILCR	Incremental Lifetime Cancer Risk
IP	In-phase
IRIS	Integrated Risk Information System
IRP	Installation Restoration Program
JULIE	Joint Utility Locating Information for Excavators
LUST	Leaking Underground Storage Tank
MCL	Maximum contaminant level
MS/MSD	Matrix Spike/Matrix Spike Duplicate
NAD	North American Datum
NAVD	North American Vertical Datum
NAVFAC MW	Naval Facilities Engineering Command Midwest
NCEA	National Center for Environmental Assessment
NS	Naval Station
OPPTS	Office of Prevention, Pesticides, and Toxic Substances
ORNL	Oak Ridge National Laboratory
ORP	Oxidation reduction potential
OSWER	Office of Solid Waste and Emergency Response
PAH	Polynuclear aromatic hydrocarbon
PCB	Polychlorinated biphenyl
PEF	Particulate emissions factor
PID	Photoionization detector
PPE	Personal protective equipment
PPRTVs	Provisional Peer Reviewed Toxicity Values
ppt	parts per thousand
psi	pounds per square inch
PVC	Polyvinyl chloride
QA	Quality Assurance
QC	Quality Control
QP	Quadrature-phase
RAIS	Risk Assessment Information System
RBC	Risk-Based Concentration
RfC	Reference Concentration
RfD	Reference Dose
RME	Reasonable Maximum Exposure
RSL	Residential Screening Level
SI	Site Inspection
SOP	Standard Operating Procedure

SROs	Soil Remediation Objectives
SSL	Soil Screening Level
SVOC	Semivolatile organic compound
TACO	Tiered Approach to Corrective Action Objectives
TAL	Target Analyte List
TCL	Target Compound List
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic equivalent
UCL	Upper Confidence Limit
UFP-SAP	Uniform Federal Policy – Sampling and Analysis Plan
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UST	Underground Storage Tank
VDEQ	Virginia Department of Environmental Quality
VOC	Volatile organic compound
XRF	X-Ray Fluorescence

EXECUTIVE SUMMARY

E.1 PURPOSE AND OBJECTIVE OF REPORT

This Remedial Investigation (RI) Report summarizes the field investigative activities and data, and the results of the geophysical survey and analytical activities for Site 21, Building 1517 Landfill, located within Naval Station Great Lakes (NS Great Lakes) in Great Lakes, Illinois The chemical data for Site 21 (groundwater and soil) were used to conduct a Human Health Risk Assessment (HHRA).

The RI was completed in two phases. A geophysical survey was completed prior to Phase I of the RI in an attempt to determine the edges of suspected disposal areas related to the former ravines; this information was used to guide the subsequent media sampling efforts. Phase I of the RI fieldwork was conducted in September 2009 and consisted of the drilling of soil borings, and the collection and laboratory analysis of soil samples. Phase II of the RI fieldwork was conducted in November 2009 and consisted of the installation of permanent groundwater monitoring wells, collection and laboratory analysis of groundwater samples, and surveying of the groundwater monitoring wells.

Site 21 has contractually been identified as “Site 21 – Building 1517 Landfill.” This identification of the site as a landfill was based on the presumption that drainage ravines were historically filled with soil and waste in the process of developing the site for use, similar to what occurred on the adjacent Site 9. However, investigation of the site has showed no evidence of landfilling. Therefore, in order to eliminate the misconception that waste has been placed at the site, its name will be changed to remove the term “landfill” and to more appropriately describe the project area. For the purpose of this report, Site 21 will be identified as “Site 21 – Buildings 1517/1506 Area.”

E.2 INVESTIGATION OBJECTIVES

Data collected during the RI were used to meet the following objectives:

- Determine the nature of fill material(s) that were used at Site 21, and identify human health risks that may be associated with this material.

- Determine if concentrations of volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), inorganics, pesticides/herbicides, polychlorinated biphenyls (PCBs), and dioxins/furans are present within soil and groundwater at Site 21, and if they exceed regulatory screening levels.

- Prepare a RI Report for submittal to the Illinois Environmental Protection Agency (Illinois EPA).

E.3 HISTORICAL INFORMATION

Site 21 is located in the northern portion of Naval Station Great Lakes, and is approximately 7 acres. Site 21 contains several buildings and parking lots, and is almost entirely covered with buildings and pavement. Building 1517, located on Site 21, is used for equipment storage, and was historically associated with the salvage operations at Naval Station Great Lakes. A storage building is located south of Building 1517 and is used by the paint, electrical, etc. shops. A temporary hazardous waste storage area is also located next to Building 1517 at the southwest corner. Building 1506, which sits in the northwestern portion of Site 21, was built in 1993, and houses offices along with the garage and fueling station for base support and government vehicles.

As a result of the historical practices at Naval Station Great Lakes, there may be soil and groundwater contamination at Site 21. The area north of Building 1517 may have been used to store waste or scrap material on concrete pads next to rail spurs from the 1930s to 1940s. These materials may have been hauled away by railcar, or the waste materials may have been sent to an incinerator, which was located in the northwest portion of the site until 1964. Prior to 1950 until the 1960s or 1970s, the site was used as a coal stockpile area, which covered most of Site 21 north of Building 1517. Two nearby sites may have affected Site 21: the underground-storage tank (UST) Site 5, northwest of Site 21, where Leaking Underground Storage Tanks (LUSTs) were present that were likely used for oil or fuel storage; and Site 5, the Transformer Storage Boneyard, south of Site 21, that was the primary storage area for out-of-service transformers from 1945 to 1985. Elevated concentrations of PCBs have been detected at Site 5.

Prior to this RI, no environmental sampling involving chemical data analysis had been conducted to specifically define environmental conditions at Site 21. Monitoring wells and soil borings were installed in the westernmost corner of the Site as part of an investigation of leaking storage tanks on an adjacent point of entry. Other types of subsurface investigations have provided information about the site. Soil borings drilled prior to the construction of Building 1506 over a large portion of the northern and western sections of Site 21 indicated the presence of thin zones of fill in that area of the site; however no buried waste or debris was found. In addition, a geophysical survey performed by Tetra Tech prior to this RI indicated that there could potentially be fill or waste and debris in the southeastern corner of the site, but none was encountered in the soil borings.

E.4 SITE-SPECIFIC GEOLOGY

The surface of Site 21 is covered primarily with buildings and pavement, except for the northwestern and southeastern corners where there are grassy areas, and the northeastern corner where there is a soil/gravel-covered area. With the exception of the southwestern portion of the site, most of the site has a

layer of fill material below the asphalt/grassy top to a depth of 1 to 5 feet below ground surface (bgs). There was no evidence of waste placement or "landfilling" encountered in the investigation of the site. Typically this fill is a sand, gravelly sand, and/or silty sand with areas of coal, ash, slag, brick fragments, etc. Below this fill material is a natural clay/silt unit that is common in the Great Lakes area, which was observed to 28 feet bgs during this RI.

Laboratory sieve analysis of one sample location at Site 21 and three sample locations at Site 9 (adjacent site) indicates that the Unified Soil Classification System description of the soil encountered during the investigation ranges from SP/SM (sandy silt) near the surface to SM (silty sand), SM/SC (silty, clayey sand), and ML/CL (silt clay mix) in the subsurface soil.

E.5 SITE-SPECIFIC HYDROGEOLOGY

The groundwater level measurements from the six wells installed onsite show that the top of the shallow aquifer ranges from approximately 1.35 to 6.25 feet bgs, and is composed primarily of a silty clay unit. The flow direction of groundwater onsite is typically in the southeast direction. Slug aquifer tests were completed on four wells at Site 21: NTC21-MW-01, NTC21-MW-02, NTC21-MW-05, and NTC21-MW-06. Hydraulic conductivity (K) values calculated for the wells ranged from 1.73 $x10^{-2}$ cm/sec to 8.75 x 10^{-4} cm/sec, and averaged 6.97 x 10^{-3} cm/sec.

E.6 RELATED REMEDIATION AND INVESTIGATION

In April 2010, TolTest, Inc. under subcontract to Naval Facilities Engineering Command (NAVFAC), completed closure of a former UST site located at Naval Station Great Lakes, Building 1600A. Building 1600A is located due west of Building 1506 across Spauling Street and the adjacent railroad tracks. It is approximately 200 feet west of the Site 21 western boundary. As part of the closure, TolTest removed tanks and soil, and installed, operated, and monitored a biosparge system to treat a groundwater plume. The groundwater plume was identified as extending east approximately 250 feet from the source and onto the northwest corner of Site 21. As part of closure activities, groundwater samples were collected from 8 existing monitoring wells in March 2008 and soil samples were collected from 11 locations in December 2008. Two of the well locations (MW-5 and MW-6) and three of the soil sampling locations (SB09, SB10, and SB11) were situated in the northwest portion of Site 21. All of the groundwater samples, including those collected from MW-5 and MW-6 in March 2008, were below the groundwater remediation objectives (GROs). Additionally, all of the soil samples collected met the soil remediation objectives (SROs) while taking into account the background values, with the exception of the sample from SB10.

E.7 RI FIELD ACTIVITIES

A geophysical survey was performed using an electromagnetic (EM) instrument, Geonics EM31-MK2. The objective of the geophysical survey work was to identify areas that may contain buried waste or other subsurface anomalies. This information was then used to guide subsequent media sampling efforts.

Twenty-two test borings were performed at Site 21 using direct push technology (DPT) drilling. Surface soil samples were collected at each of the test boring locations for laboratory analysis. Because most of the site surface is asphalt/pavement, soil samples were collected immediately below the pavement and taken directly from the acetate liner advanced by the DPT. One surface soil sample was collected for laboratory analysis from each DPT soil boring location at a depth of 0.5 to 1.0 foot bgs (the first 6 inches below asphalt).

Subsurface soil samples were collected at each of the 22 test boring locations for laboratory analysis. With the exception of soil borings in the northwest corner where the DPT rig hit shallow refusal, one subsurface soil sample was collected from each DPT soil boring for laboratory analyses. Surface and subsurface soil samples were screened with a photoionization detector (PID) or X-ray Fluorescence (XRF). Samples were collected in locations where staining or odors were observed, or where elevated PID or XRF readings occurred. If there were no elevated readings, and no staining or odors were observed, soil samples were collected from the interval directly above the groundwater table.

Permanent monitoring wells (NTC21-MW-01 through NTC21-MW-06) were installed in six locations at Site 21 to investigate the first water bearing (shallow groundwater) zone. Monitoring wells were installed to allow for the collection of groundwater samples for laboratory analysis to determine the presence of groundwater contamination, and to determine the depth to groundwater. After monitoring wells were installed and sampled, slug tests were conducted to determine groundwater aquifer characteristics.

E.8 RI RESULTS

Surface soil, subsurface soil, and groundwater analytical results were compared to screening criteria provided by the Illinois Tiered Approach to Corrective Action Objectives (TACO), Illinois Non-TACO, and United States Environmental Protection Agency (USEPA). Analytical results were compared against both the minimum screening values, which are primarily based on conservative residential exposure scenarios, and the applicable Illinois TACO Residential and Industrial criteria that address only ingestion and inhalation exposure routes. The results of the comparisons against the TACO Ingestion and Inhalation Remediation Objectives for Residential and Industrial recipients for surface soil, subsurface soil, and groundwater are summarized below and in detail in Section 4.0.

The minimum regulatory screening criteria in many cases are the "soil to groundwater" criteria provided by TACO or USEPA. However, when the soil results are compared to the TACO Residential and Industrial Ingestion and Inhalation screening criteria, there are only a handful of exceedances as described in Sections 4.4.1 and 4.4.2 and shown on Figure 4-17.

Surface Soil Results

The initial comparison of the soil results to the minimum regulatory screening criteria (Section 4.3) identified many exceedances. Exceedances of inorganics in surface soils were widespread throughout the site. However, most inorganics were detected at concentrations an order of magnitude or higher than the minimum regulatory screening values in surface soil samples collected slightly southwest of Building 1517.

Inorganics in the form of manganese and lead were detected at concentrations above TACO Ingestion Remediation Objectives (Residential only). Lead was detected above the TACO Soil Remediation Objective for Residential Properties (400 mg/kg) at two surface soil locations. Although the two detections (428 mg/kg at SB-10 and 407 mg/kg at SB-13) exceed the relevant TACO criterion, the average lead concentration in surface soil at the Site is below the TACO residential criterion. Manganese was also found in excess of the TACO Soil Remediation Objective for Residential Properties at two surface soil locations. As with lead, the average concentration of manganese across the Site is below the residential criterion.

PAHs in the form of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)flouranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene, were detected at concentrations above TACO Ingestion Remediation Objectives (Residential and/or Industrial) at numerous sampling locations throughout the site. The highest concentrations of these constituents were encountered at one sample location, NTC21-SB-21, where they exceeded 12 times the average concentration. Only benzo(a)pyrene's average concentration exceeded the TACO industrial criterion while all but benzo(k)flouranthene's average concentration exceeded the relevant TACO residential criterion.

Subsurface Soil Results

Arsenic, barium, cadmium, cobalt, copper, iron, lead, manganese, and mercury concentrations detected over minimum regulatory screening values were widespread in subsurface soils throughout the site. However, the highest concentration of inorganics were detected at the following four sample locations: NTC21-SB-04 (4 to 6 ft bgs) located in the northeast corner of the site, NTC21-SB-12 (2 to 4 ft bgs) located near the northeast corner of Building 1517, NTC21-SB-19 (2 to 4 ft bgs) located near the

southwest corner of Building 1517, and NTC21-SB-15 (2 to 4 ft bgs) located near the northwest corner of Building 1517.

PAHs in the form of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)flouranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene, were detected at concentrations above TACO Ingestion Remediation Objectives (Residential and/or Industrial) at numerous sampling locations throughout the site. The highest concentrations of these constituents were encountered at one sample location, NTC21-SB-03, where they exceeded 16 times the average concentration. Similar to the surface soil results, only benzo(a)pyrene's average concentration exceeded the TACO industrial criterion while all but benzo(k)flouranthene's average concentration exceeded the relevant TACO residential criterion. Manganese was detected at a concentration slightly above TACO Ingestion Remediation Objectives (Residential only) at one sampling location at the site. As noted for the surface sample data discussed above, the average concentration of manganese in the subsurface is below the residential criterion.

Groundwater Results

Pentachlorophenol and iron were each detected at concentrations above TACO Class I Groundwater criteria in one groundwater sample from monitoring wells located on the site. Manganese was detected at concentrations that exceed TACO Class I Groundwater criteria in groundwater samples from four of the six monitoring wells located at the site.

Summary of Impact to Media

Site 21 soils and groundwater have been impacted by industrial activities at the property. Although the RI noted a broad range of isolated detections of organic and inorganic contaminants above screening and health-based levels in soil and groundwater, it is the site-wide PAH and metals contamination in soils that is most significant. It is likely that impacts to media are primarily due to past activities at the site. Elevated PAHs and inorganic levels in both soils and groundwater could be related to the past use of the site for coal storage. Many of the samples collected and tested were described as consisting of black sand and gravel size material. This is consistent with material that could have remained at the site once the majority of the stockpiles were removed. Studies have shown that leachate from coal piles can contain concentration of PAHs and metals.

While the soil borings and distribution of contamination is indicative of historic impacts, there is also the possibility that some of the impacts are due to more recent site activities. The site is an active facility which is used by cars and trucks daily. A large portion of the site is paved with asphalt. The western portion of the site is occupied by vehicle refueling and maintenance facilities. As with any filling station or parking lot, environmental conditions have the potential to change due to everyday use. Workshops for

the trades working on the base including paint, electrical, plumbing, HVAC, etc. are located just south of Building 1517. There is the potential for historical releases from these areas. Additionally Building 1517 houses an active RCRA storage facility. Constituents encountered in the soil and groundwater are also consistent with the both the current and former industrial use of the site

Concentrations of PAHs in soil were relatively high at two sampling locations, NTC21-SB-03 and SB-21. Impacts to subsurface soil in SB-03, located the northwest portion of the site could be related to coal residuals, discharges from the leaking UST at Building 1600A (since remediated), on-site spills, or due to the former presence of an incinerator at that location. Impacts to surface soil in SB-21, located near the shop storage area south of Building 1517, could be related coal residuals or small spills associated with past and/or current operations at the adjacent workshops.

E.9 HUMAN HEALTH RISK ASSESSMENT

Four potential receptor groups were evaluated in the HHRA for Site 21. These included: occupational/maintenance workers, adolescent trespassers, adult and child residents, and construction workers. Non-carcinogenic and carcinogenic risks were evaluated for these receptors under RME and CTE exposure scenarios. Evaluations considered exposure to surface and subsurface soil, and groundwater.

Soil Contaminants

Based on the non-cancer and cancer evaluations, the following contaminants with non-cancer HQs greater than 1.0 or with cancer risks greater than $1x10^{-4}$ were identified as COCs:

- In surface soils, c-PAHs, arsenic, and iron for residential exposure and, manganese due to inhalation of construction workers.

- In subsurface soils, c-PAHs, arsenic, iron, and cobalt, and for residential exposure and, manganese due to inhalation of construction workers.

When the maximum concentrations of the inorganic compounds detected at Site 21 in soil were compared to background data established for use by the Illinois EPA, no inorganics were found to be below background, based on maximum concentrations. However, if the overall averages of detected inorganics were compared to the background data set, aluminum, antimony, barium, cobalt, and vanadium were below the background values. This indicates that it is possible that most of the inorganic compounds at Site 21 could be background constituents.

Although the average concentration of arsenic at the site was below background data, soils from borings NTC21-SB-14 and SB-15 had concentrations that were relatively high. Similarly, the average concentration of manganese was near background levels for the site. However, surface soil sample from several borings, most notably NTC21-SB-14 and SB-15, had concentrations that were relatively high. These two borings are located just north of Building 1517. The higher concentrations of arsenic and manganese encountered there could be related to residues from former coal piles in that area. On average, iron was found to be above background concentrations at the site. It was found in relatively high concentrations at various locations and may also be attributable in the former coal piles.

Carcinogenic risks were calculated using the highest concentrations of c-PAHs encountered at the site. These occurred for subsurface and surface soil at sampling locations NTC21-SB-03 and SB-21, respectively. Concentrations of c-PAHs at these two locations were relatively high compared to the results obtained from all of the other sampling location across Site 21. Therefore, theoretical excess lifetime cancer risks are likely overestimated given the application of the maximum detected soil concentration of BaP Equivalents as the EPC. Inclusion of such high outlier maximum concentrations also will yield the calculation of relatively high mean and 95 percent UCL of the mean concentrations, potentially resulting in an overestimation of risks for scenarios that use statistical values as EPCs.

Groundwater Contaminants

If the domestic use of groundwater is taken into consideration, based on the non-cancer and cancer evaluations, the following contaminants with non-cancer HQs greater than 1.0 or with cancer risks greater than 1 x 10-4 were identified as COCs for residential exposure to groundwater: arsenic cobalt, iron, manganese, and pentachlorophenol. However, direct exposure to groundwater at Site 21 is not expected to occur under current and/or future land uses because the facility and the area surrounding the facility are supplied by public water, the facility has a groundwater use restriction in place, and there are no drinking water wells located downgradient of the site.

E.10 RECOMMENDATIONS

Based on the results of the RI, it is recommended that a Focused Feasibility Study be performed for Site 21. Alternatives to be considered in order to mitigate risk should include:

- Use of LUCs to control access of construction activities to impacted soils and groundwater;
- Use of LUCs to limit future land use and restrict residential uses;
- Use of barriers to control access and exposure pathways of construction workers to impacted soils and groundwater; and,
- Revaluation of the site upon decommissioning and prior to any change in industrial or residential use.

Alternative solutions to mitigate risks may be identified and considered during preparation of the FFS.

1.0 INTRODUCTION AND PURPOSE

Tetra Tech was contracted by the Department of the Navy, Naval Facilities Engineering Command Midwest (NAVFAC MW) to perform a Remedial Investigation (RI), and associated reporting for Site 21, located within Naval Station Great Lakes (NS Great Lakes) in Great Lakes, Illinois. Figures 1-1 and 1-2 show the general location of Naval Station Great Lakes and the location of Site 21. This work was performed under Contract Task Order (CTO) No. C064 under the Comprehensive Long-term Environmental Action Navy (CLEAN) Contract No. N62472-03-0057. This RI report presents the results of investigative, sampling, and analytical activities conducted in accordance with the Uniform Federal Policy – Sampling and Analysis Plan (UFP-SAP) (Tetra Tech, 2009).

Site 21 has contractually been identified as "Site 21 – Building 1517 Landfill." This identification of the site as a landfill was based on the presumption that drainage ravines were historically filled with soil and waste in the process of developing the site for use, similar to what occurred on the adjacent Site 9. However, investigation of the site has showed no evidence of landfilling. Therefore, in order to eliminate the misconception that waste has been placed at this site, its name will be changed to remove the term "landfill" and to more appropriately describe the project area. For the purpose of this report, Site 21 will be identified as "Site 21 – Buildings 1517/1506 Area."

1.1 PROJECT OVERVIEW

A RI was conducted to determine the presence or absence of contaminated soil and groundwater, and to determine through a screening analysis whether any chemical concentrations found to be present are greater than acceptable risk-based human health screening levels. The RI was completed in two phases. Initially, a geophysical survey was completed in September 2008 to determine the edges of the suspected disposal area; this information was then used to guide the subsequent subsurface investigation and media sampling efforts. Phase I of the RI occurred in September 2009 and consisted of the drilling of soil borings, and collection and laboratory analysis of soil samples. Phase II of the RI took place in November 2009 and consisted of the installation of permanent groundwater monitoring wells, collection and laboratory analysis of groundwater samples, and land surveying of sample locations. The results from the geophysical survey and soil and groundwater investigation are provided in this report.

1.2 INVESTIGATION OBJECTIVES

Data collected during the RI were used to meet the following objectives:

- Determine the nature of fill material(s) that were used at Site 21, and identify human health risks that may be associated with this material.

- Determine if concentrations of volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), inorganics, pesticides/herbicides, polychlorinated biphenyls (PCBs), and dioxins/furans are present within soil and groundwater at Site 21, and if they exceed screening levels.

- Prepare a RI Report for submittal to the Illinois Environmental Protection Agency (Illinois EPA).

1.3 REPORT ORGANIZATION

The purpose of this RI report is to present the results of the RI activities that Tetra Tech conducted at Site 21 in September 2008 and September and November 2009.

Section 1.0 presents the purpose of this report. Section 2.0 summarizes background information and physical characteristics for Site 21. Section 3.0 presents the SI activities performed at Site 21. Section 4.0 presents the RI results. Section 5.0 presents the Human Health Risk Assessment. Section 6.0 presents the conclusions and recommendations. Appendices that support this report include the following:

- Appendix A – Historical Drawings and Photographs
- Appendix B – Field Forms
- Appendix C – Waste Profiles
- Appendix D – Data Validation Reports
- Appendix E – Survey Report
- Appendix F – Analytical Results
- Appendix G – Human Health Risk Assessment Supporting Data

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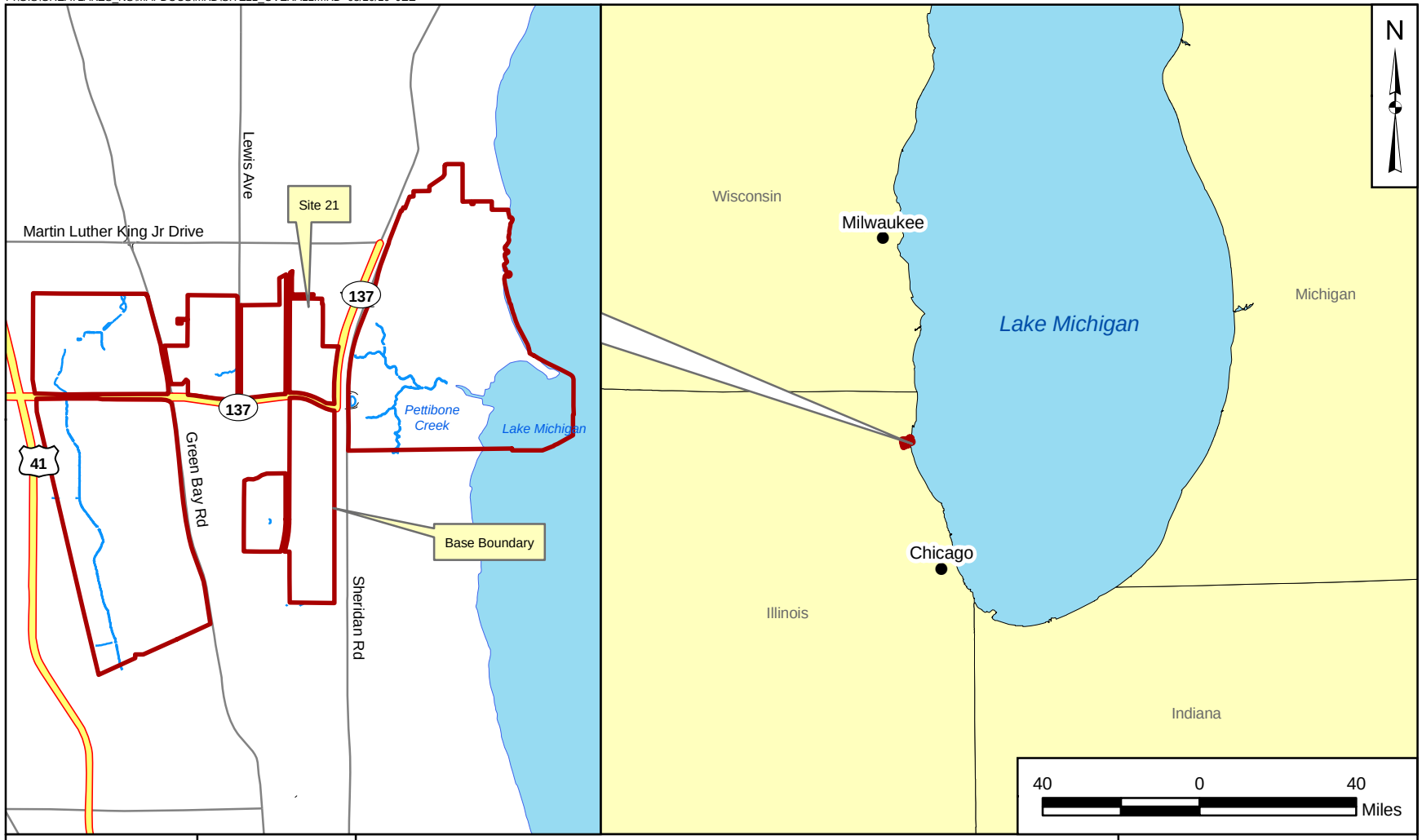

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S. HILL	03/26/10
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NAVFAC

GENERAL LOCATION MAP

SITE 21 - BUILDINGS 1517 / 1506 AREA

NAVAL STATION GREAT LAKES

GREAT LAKES, ILLINOIS

CONTRACT NUMBER	
CTO C064	
APPROVED BY	DATE
B. CUMMINGS	03/26/10
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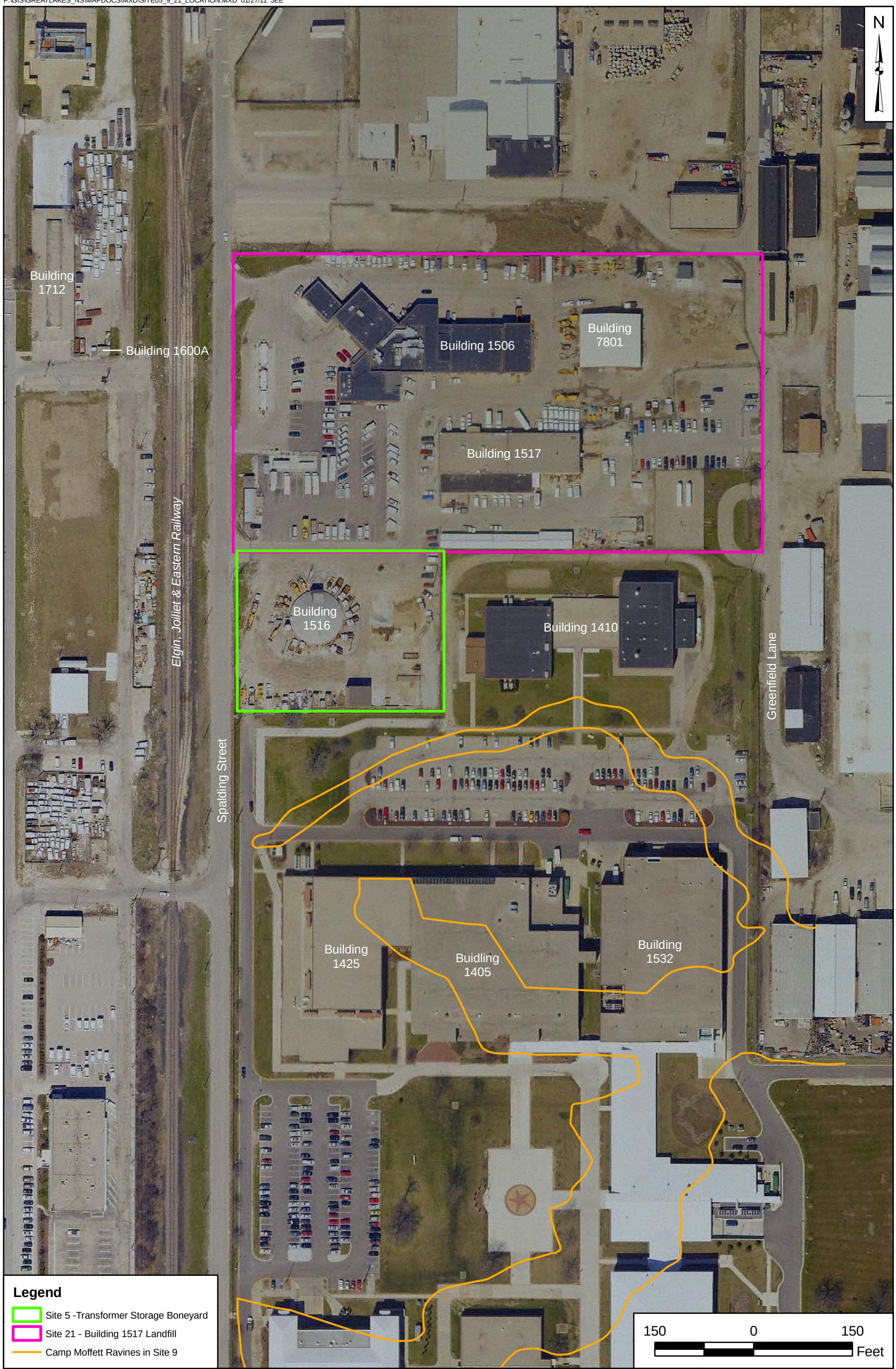

DRAWN BY K. MOORE — DATE 02/17/09	NAVFAC	SITE VICINITY MAP SITE 21, SITE 9, AND SITE 5 NAVAL STATION GREAT LAKES GREAT LAKES, ILLINOIS	CONTRACT NUMBER CTO 510
CHECKED BY N. ROCHNA — DATE 01/27/11			APPROVED BY RFD — DATE 11/23/10
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2.0 PROJECT BACKGROUND AND PHYSICAL SETTING

The following sections provide a brief description of the project background and physical setting along with a summary of previous relevant investigations completed at Site 21. Figures 1-1 and 1-2 show the general location of Naval Station Great Lakes and the location of Site 21. Figure 2-1 shows the layout of Site 21.

2.1 FACILITY LOCATION AND DESCRIPTION

Naval Station Great Lakes is located in Lake County, Illinois, along the shore of Lake Michigan. It is bounded on the north by the City of North Chicago, on the south by the Veterans Administration Hospital and Shore Acres Golf Course and Country Club, on the east by Lake Michigan, and on the west by U.S. Route 41 (Skokie Highway).

2.2 FACILITY ENVIRONMENTAL SETTING

Naval Station Great Lakes covers 1,202 acres of Lake County, Illinois. Lake County is located in northeastern Illinois, north of the City of Chicago, and comprises 24 miles of Lake Michigan shoreline. Lake County extends from the Wisconsin border south to Cook County, and from Lake Michigan west to McHenry County. Lake County is divided into 18 townships, 52 incorporated cities and villages, and 18 unincorporated cities and villages.

There are numerous lakeside communities in Lake County. The most recent 2000 United States Census Bureau data estimate the county's population at 617,975. During the 1950s and 1960s, population growth occurred primarily in the lakefront communities; but, by the 1980s and 1990s, population growth occurred north and west. Currently, most of Lake County's population lives in the 52 incorporated cities and villages.

Current land uses in Lake County include agricultural, industrial, and residential. Farmland and lake resorts characterize the western portions of the county; and industrial, urban, and suburban areas are situated along the 24 miles of Lake Michigan shoreline to the east. There are also three state parks in Lake County.

Naval Station Great Lakes administers base operations and provides facilities and related support to training activities (including the Navy's only boot camp) and a variety of other military commands located on base. The land surrounding Naval Station Great Lakes currently has a variety of uses. Along the northern boundary of the base are the most highly urbanized and industrial areas. Much of the land

beyond the northwestern site boundary comprises unincorporated lands of Lake County, and is vacant except for scattered retail and residential properties. Adjacent to the western boundary are primarily industrial properties, and along the southern boundary is a mixture of public open space and residential land (Tetra Tech, 2007).

2.2.1 Physiography and Topography

The gently rolling topography of Lake County, Illinois, is the result of glaciation. The most prominent topographic features are glacial moraines and other unconsolidated glacial deposits that cover most of Naval Station Great Lakes. The terrain of Naval Station Great Lakes consists of relatively flat glacial drift deposits bordered by steep lake-facing bluffs cut with vertical sloping ravines. The unconsolidated glacial material that comprises the bluff faces and ravine walls is under continual erosion.

The topography of Lake County creates poorly defined drainage patterns consisting of swales that enter depressions and marshes. Most of Naval Station Great Lakes is located on a plateau with elevations of 640 to 660 feet above mean sea level. Pettibone Creek, the eastern portion of Naval Station Great Lakes, and the Lake Michigan shoreline are at an elevation of approximately 600 feet above sea level.

Intensive development has replaced most of the oak, hickory, maple, and other hardwood forests that originally covered the area. Native woodlands occur primarily on the vertical sloped ravine of Pettibone Creek and on the bluffs facing Lake Michigan. The forested areas of Naval Station Great Lakes are vegetated with white and red oak, maple, European larch, white and Scotch pine trees, and shrubs including raspberry and blackberry bushes. The principal mammals in the Naval Station Great Lakes area include: groundhogs, raccoons, squirrels, opossum, rabbits, chipmunks, and deer (Tetra Tech, 2003).

2.2.2 Climate

The climate of Lake County, Illinois, is considered continental. Changes in temperature, humidity, cloudiness, and wind direction occur frequently. The summer season is warm with few prolonged hot periods. Although major droughts are infrequent, there are commonly long periods of dry weather during the growing season. The area receives approximately 34 inches of rain per year, with 63 percent occurring between April and September. The average seasonal snowfall range is 37.2 to 41.1 inches. The average temperature is 58 degrees Fahrenheit; the winter months normally have temperatures below freezing.

2.2.3 Soil

The soil of Lake County, Illinois, is classified into two groups: Morley-Beecher-Hennepin and Made Land soil. Morley-Beecher-Hennepin soil consists primarily of loams and silt loams and is located on level to very steep ravines. This soil is characterized as well- to poorly-drained, and has low to moderate permeability. Made Land soil includes areas of manmade cuts and fills covered by roads and buildings. This fill material includes a variety of soil and non-soil materials that have not been characterized. The soil types that form the plateau where Naval Station Great Lakes is located include: Morley, Aptakisic, Wauconda, Beecher, and silt loams (Tetra Tech, 2007).

2.2.4 Regional Geology

The geologic units encountered at Naval Station Great Lakes include aeolian and lacustrine deposits, and unconsolidated glacial till overlying bedrock. The aeolian material, the Richland Loess, covers the Wadsworth and Equality Formations and ranges from 16 to 20 inches in thickness. This aeolian material is much finer grained than the underlying Formation. These wind-blown materials of the Richland Loess make up the current soil profile of Naval Station Great Lakes.

Unconsolidated glacial tills blanket Lake County. Several glacial moraine systems are present within the county including the Valparaiso, Tinley, Zion City, and Lake Border systems. Naval Station Great Lakes falls within the Lake Border moraine system. The glacial moraine system is composed of the Wadsworth Formation, which constitutes the largest volume of surficial deposits overlying the bedrock and forms the Highland Park Moraine that generally runs parallel to the Lake Michigan shoreline. The Wadsworth Formation ranges from approximately 170 to 210 feet in thickness overlying the Silurian bedrock. This Formation is characterized as a till and is an unsorted mixture of sand, silt, and clay imbedded with pebbles, cobbles, and boulders. Interstices between the coarser-grained sediments are typically filled with fine, clay-sized particles resulting in low permeability. Generally, the Wadsworth till is clayey, with thin and irregular lenses of sand or silty sand occurring over limited areas. The till has been further subdivided into clayey and sandy phases according to the size of the dominant particles. Because clay comprises up to 70 percent of the till at Naval Station Great Lakes, the clayey phase dominates in the local area.

The Wadsworth Formation east of the Highland Park Moraine is generally covered by the Equality Formation, which includes deposits of silt, clay, and sand. Sediments of this formation were deposited in water trapped between the Highland Park Moraine and the former ice sheet.

Bedrock consists of Silurian Niagran and Alexandrian dolomite, the lowermost geologic unit encountered at Naval Station Great Lakes. The bedding is nearly horizontal to gently eastward, dipping in the vicinity

of Naval Station Great Lakes. These Silurian units thicken from west to east in Lake County. The interface between the bedrock surface and overlying till consists of 1 to 15 feet of broken bedrock (dolomite), gravel, sand, and coarser material. This material appears to be bedrock debris ground from the advancing glaciers of the Wisconsin Stage of glaciation during the Late Pleistocene epoch (Tetra Tech, 2007).

2.2.5 Regional Hydrology

Naval Station Great Lakes is located within both the North Branch Chicago River Drainage Basin and Lake Michigan North Drainage Basin. The divide between the basins is along Green Bay Road, which runs north to south through the center of the base. Overland flow from precipitation that does not infiltrate into the ground flows into the Skokie River (located south of Naval Station Great Lakes) or Pettibone Creek. The areas east of Green Bay Road drain into Lake Michigan through Pettibone Creek, and areas west of Green Bay Road drain into the Skokie River. Site 21 is located in the Pettibone Creek watershed.

Pettibone Creek is a small creek consisting of the North and South Branches, each with a minor tributary branch that flows through Naval Station Great Lakes and into Lake Michigan. Pettibone Creek flows through well-defined ravines within Naval Station Great Lakes, and is characterized by moderately steep stream bed gradients and banks with 30 to 60 percent slopes. The Pettibone Creek watershed, one of five Lake Michigan watersheds in Lake County, Illinois, drains an area of 4.2 square miles. The hydrology of the watershed is well established.

There is very little floodplain area along Pettibone Creek because of the steeply sloped creek banks. During precipitation events, runoff from overhead bridges and nearby streets adds to the volume of Pettibone Creek. The North Branch of the creek has a short time of concentration (T_C), or time it takes for a unit of water to run the watercourse. The T_C is short because the water source is primarily from an urban area that has low infiltration rates and fast runoff rates during storms. As a result, Pettibone Creek is susceptible to flash floods characterized by high channel velocities and great erosive potential.

The North Branch of Pettibone Creek, which ranges between 15 to 30 feet wide and several inches to 2 feet deep, is a perennial stream that originates from three storm sewers at 22nd Street, runs southeast from the North Chicago area, and merges with the South Branch of Pettibone Creek. The North Branch, on Naval Station Great Lakes property, measures approximately 3,600 feet long before it discharges to the Boat Basin. An unnamed tributary flows into North Branch approximately 910 feet downstream of the origin of North Branch.

Surface water in Pettibone Creek flows eastward into the Naval Station Great Lakes system, which discharges into Lake Michigan. The Illinois State Water Survey calculated the average flow of Pettibone

Creek as less than 10 cubic feet per second (cfs) or 4,488 gallons per minute. This can greatly increase during periods of precipitation (Tetra Tech, 2003).

2.2.6 Regional Hydrogeology

Naval Station Great Lakes is located within the Great Lakes Basin aquifer system for groundwater storage. There are three major regional aquifer systems within the state of Illinois: the surficial aquifer system which are aquifers of alluvial and glacial origin (found throughout the Great Lakes Basin); the Silurian-Devonian aquifers (found in Wisconsin, Michigan, Illinois, Indiana, and Ohio); and the Cambrian-Ordovician (found in Wisconsin, Illinois, and Indiana). The surficial aquifer system consists of unconsolidated glacial and alluvial deposits (mostly silt and pebbly clay) approximately 135 to 155 feet thick that overlie the limestone bedrock throughout much of the Great Lakes Basin. Unlike the surficial aquifer, the Silurian-Devonian and Cambrian-Ordovician aquifers are capable of yielding substantial quantities of water [United States Geological Survey (USGS), 2006].

The silt and pebbly clay in the surficial aquifer has insufficient permeability to allow free groundwater movement. Water-bearing sand stringers do exist in this aquifer; however, these deposits, which would characteristically be capable of transporting groundwater, are neither abundant nor extensive enough to be considered favorable sources of groundwater (Illinois State Geological Survey, 1950).

2.3 SITE HISTORY

Site 21 is located in the northern portion of Naval Station Great Lakes, and is approximately 7 acres. Site 21 contains several buildings and parking lots, and is almost entirely covered with buildings and pavement. Building 1517, located on Site 21, is used for equipment storage, and was historically associated with the salvage operations at Naval Station Great Lakes. A storage building is located south of Building 1517 and is used by the paint, electrical, etc. shops. A temporary hazardous waste storage area is also located next to Building 1517 at the southwest corner. Building 1506, which sits in the northwestern portion of Site 21, was built in 1993, and houses offices along with the garage and fueling station for base support and government vehicles.

As a result of the historical practices at Naval Station Great Lakes, there may be soil and groundwater contamination at Site 21. The area north of Building 1517 may have been used to store waste or scrap material on concrete pads next to rail spurs from the 1930s to 1940s. These materials may have been hauled away by railcar, or the waste materials may have been sent to an incinerator, which was located in the northwest portion of the site until 1964. Prior to 1950 until the 1960s or 1970s, the site was used as a coal stockpile area, which covered most of Site 21 north of Building 1517. Two nearby sites may also have affected Site 21: the underground-storage tank (UST) at Building 1600A, northwest of Site 21,

where Leaking Underground Storage Tanks (LUSTs) were present that were likely used for oil or fuel storage; and Site 5, the Transformer Storage Boneyard, south of Site 21, that was the primary storage area for out-of-service transformers from 1945 to 1985. Elevated levels of PCBs have been detected at Site 5. Historical drawings and photographs of Site 21 are included in Appendix A.

Prior to this RI, no environmental sampling involving chemical data analysis had been conducted to specifically define environmental conditions at Site 21. As discussed in Section 2.4, monitoring wells and soil borings were installed in the northwestern corner of site as part of an investigation of leaking storage tanks on an adjacent point of entry. Other types of subsurface investigations have provided geologic information about the site. Soil borings drilled prior to the construction of Building 1506 over a large portion of the northern and western sections of Site 21 indicated the presence of thin zones of fill in that area of the site; however, no buried waste or debris was found. In addition, a geophysical survey performed by Tetra Tech prior to the subsurface investigation indicated that there could potentially be fill or waste and debris in the southeastern corner of the site, but none was encountered in the soil borings.

2.4 RELATED REMEDIATION AND INVESTIGATION

In April 2010, TolTest, Inc. under subcontract to NAVFAC, completed closure of a former UST site located at Naval Station Great Lakes, Building 1600A. Building 1600A is located due west of Building 1506 across Spauling Street and the adjacent railroad tracks (Figure 1-2). It is approximately 200 feet west of the Site 21 western boundary. As part of the closure, TolTest removed tanks and soil, and installed, operated, and monitored a biosparge system to treat a groundwater plume. The groundwater plume was identified as extending east approximately 250 feet from the source and onto the northwest corner of Site 21. As part of closure activities, groundwater samples were collected from 8 existing monitoring wells in March 2008 and soil samples were collected from 11 locations in December 2008. Two of the well locations (MW-5 and MW-6) and three of the soil sampling locations (SB09, SB10, and SB11) were situated in the northwest portion of Site 21 (Figure 2-2). Although these soil borings and wells were located within Site 21, they were installed with the intended purpose of evaluating the Building 1600A release and remediation.

The cleanup objectives for groundwater for Building 1600A were per 35 Illinois Administrative Code (IAC) Part 742, Appendix B, Table E: Tier 1 Groundwater Remediation Objectives (GROs) for the Groundwater Component of the Groundwater Ingestion Route for Class I Groundwater. The cleanup objectives for soil were 35 IAC Part 742 Soil Remediation Objectives (SROs) for Residential Properties where the SROs are the lowest or most conservative values from within all the listed exposure pathways in the Illinois EPA Tiered Approach to Corrective Action Objectives (TACO) regulations, while taking into account the background values as provided in Table H of Appendix A of TACO for Residential Properties.

All of the groundwater samples, including those collected from MW-5 and MW-6 in March 2008, were below the GROs. Additionally, all of the soil samples collected met the SROs while taking into account the background values, with the exception of the sample from SB10. The soil sample from SB10 had five organic compounds that were above the SROs and background values for Residential Properties. Since the only impacted soil sample from the Building 1600A closure evaluation was collected from Site 21, the Navy requested that the sample data be addressed as part of the Site 21 Installation Restoration Program (IRP) investigation. Given the specifics of both these sites, and because the contamination identified at the SB10 boring location was only slightly above the SROs, Illinois EPA agreed with the request. Furthermore, incorporation of the SB10 data into Site 21 would allow for a clean closure of the UST site under the current TACO clean up objectives. However, because of the description of material encountered in SB11 as being as being black with hydrocarbon odors and another notes black fill material, coal, and slag within the boring, the State requested all relevant data, including that from SB11 and SB09, also be considered in the Site 21 evaluation.

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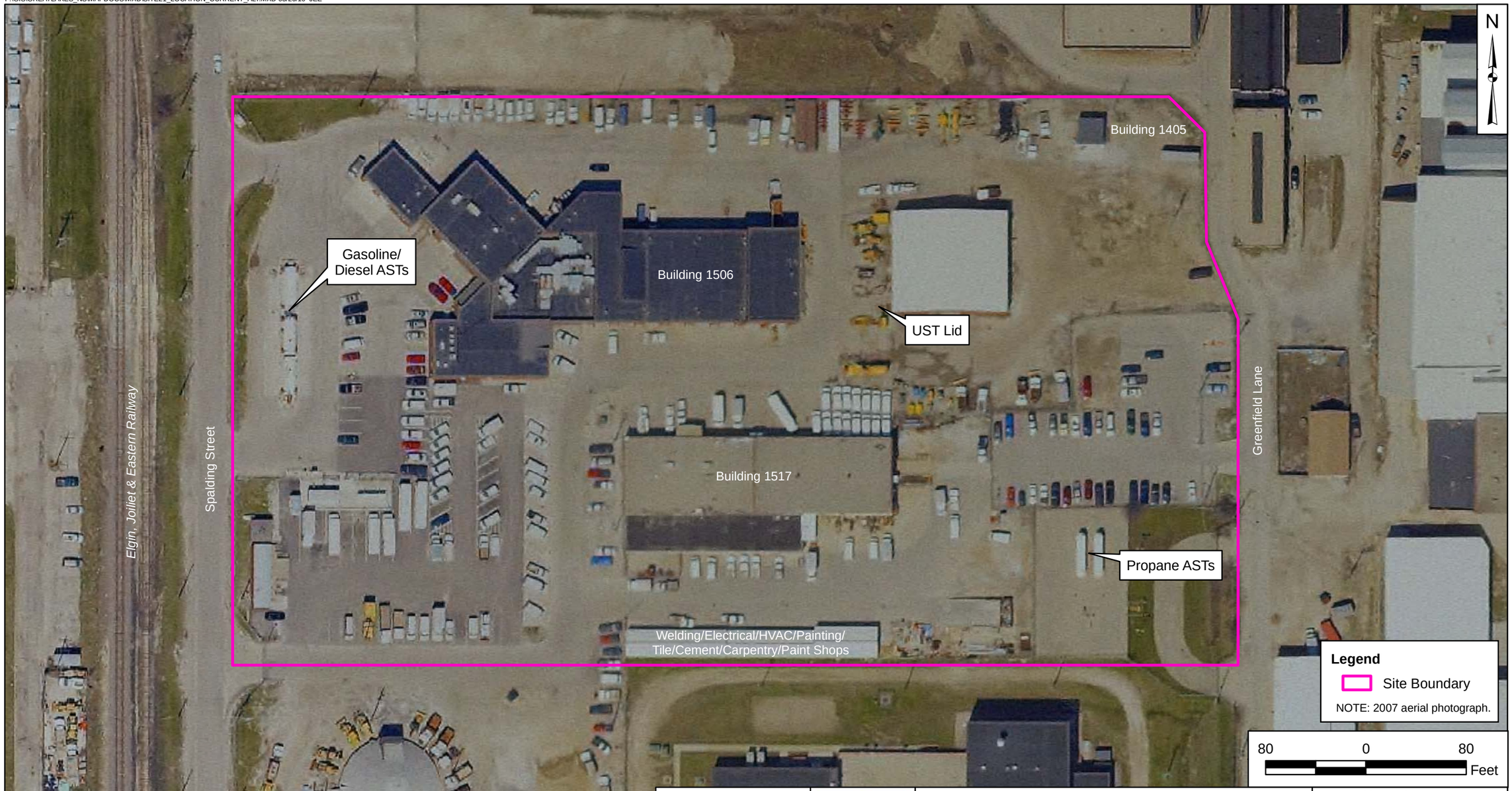


DRAWN BY J. ENGLISH	DATE 04/16/09	SITE LOCATION MAP SITE 21 - BUILDINGS 1517 / 1506 AREA NAVAL STATION GREAT LAKES GREAT LAKES, ILLINOIS	CONTRACT NUMBER CTO C064
CHECKED BY S. HILL	DATE 03/26/10		APPROVED BY B. CUMMINGS — DATE 03/26/09
COST/SCHED AREA			APPROVED BY — DATE —
SCALE AS NOTED			FIGURE NO. FIGURE 2-1 — REV 0

3.0 REMEDIAL INVESTIGATION ACTIVITIES

The following subsections provide a detailed discussion of field activities that were conducted during the course of the RI at Building 1517/1506 Area (Site 21) at Naval Station Great Lakes. Figures 1-1, 1-2, and 2-1 show the general location of Naval Station Great Lakes, the location of Site 21, and the layout of Site 21, respectively.

3.1 GENERAL DESCRIPTION AND INFORMATION

This RI was performed to determine the presence or absence of potentially contaminated soil and groundwater based on historic activities at Site 21. With exceptions as noted in Section 3.2, the work was performed in accordance with the Site 21 UFP-SAP which was prepared by Tetra Tech.

Data collected were used to meet the following objectives:

- Determine the nature of fill material(s) that were used at Site 21, and identify human health risks that may be associated with this material.

- Determine if concentrations of VOCs, SVOCs, inorganics, pesticides/herbicides, PCBs, and dioxins/furans are present within soil and groundwater at Site 21 Landfill, and if they exceed screening levels.

- Prepare a RI Report for submittal to the Illinois EPA.

A geophysical survey was performed prior to the SI to help determine soil boring locations. The RI consisted of advancing soil borings using Direct Push Technology (DPT), installing monitoring wells, a professional survey, and collecting and analyzing soil and groundwater samples. Laboratory analyses of soil and groundwater samples were obtained to confirm the presence or absence of contamination at Site 21. Table 3-1 describes the sampling rationale.

3.2 DEVIATIONS FROM THE WORK PLAN

There were two minor deviations from the project UFP-SAP (Tetra Tech, 2009) during the RI at Site 21:

- At sample location NTC21-SB-02, the DPT rig could not drill past 4 to 5 feet below ground surface (bgs) because of refusal. It was decided that the subsurface sample at this location would be

collected using a Hollow-Stem Auger (HSA) and split spoon sampler during the second phase of work. Soil sample NTC21-SB-02-0406 was collected on November 13, 2010.

- The groundwater monitoring wells were surveyed for horizontal location and vertical elevation by a registered surveyor. However, DPT soil borings were surveyed by global positioning system (GPS) only.

Field task modification request forms documenting these changes are in Appendix B-1.

3.3 GEOPHYSICAL SURVEY

The objective of the geophysical survey work was to identify areas that may contain buried waste. This information was then used to guide subsequent media sampling efforts. The geophysical survey was conducted on September 15, 2008.

3.3.1 Geophysical Survey Equipment

Tetra Tech performed the geophysical survey using a Geonics EM31-MK2. A ground penetrating radar (GPR) survey was also planned and attempted; however, it was aborted after testing the subsurface conditions and determining that the method could only be effective in surveying the top 2 feet bgs.

The Geonics EM31 is a frequency domain electromagnetic (EM) instrument. The EM31 generates a primary EM field, and secondary EM fields are measured as a function of frequency allowing stark differences in terrain conductivity to be differentiated. Two measurement components are typically recorded: quadrature-phase (QP) and in-phase (IP). The QP component, also referred to as apparent electrical conductivity, is sensitive to metal and non-metal components of the ground; and the IP component is predominantly sensitive to metal. The instrument can be operated in horizontal or vertical dipole mode, which nominally takes bulk earth measurements of 9 or 18 feet, respectively. The actual sampling depth depends on the conductivity of the subsurface, and the height of the instrument when taking the measurement. The potential waste could create metallic and non-metallic anomalies depending on the nature of the waste; however, if a relatively large quantity of soil fill is mixed with a small quantity of waste, the EM31 may not be able to detect anomalous values because the instrument measures a bulk response of the soil and its inclusions.

The EM31 was set to acquire data 4 times per second as the operator moved down the survey line, and was operated in the vertical dipole mode (nominal 18-foot bulk measurement mode) with the 13-foot long boom of the instrument oriented parallel to the survey line direction.

GPR is another electromagnetic method where EM pulses are propagated into the ground, and the reflections of this signal from materials with contrasting electrical properties are subsequently detected. The system can be used to detect both metallic and non-metallic items, although non-metallic items and deteriorated metallic items typically generate weaker or no reflections based on their electrical properties, thereby making them harder to detect or not detectable. Conductive media at the surface (such as standing water) and conductive subsurface media (such as clay) attenuate the GPR signal quickly, thereby limiting signal penetration and the effective depth of exploration with the instrument. The GPR system was used to trigger readings by survey wheel after it had been calibrated in the survey area. The GPR was set up with an approximate 8- to 12-foot depth window based on an assumed velocity for the GPR signal traveling through average soils. Actual GPR signal penetration (depth that the GPR signal penetrated the ground surface) was less, and is estimated to have been generally about 2 feet. Items deeper than the GPR signal penetration could not be detected; hence, the survey was discontinued after it was determined that the signal penetration would not be deep enough to accomplish geophysical objectives.

3.3.2 Geophysical Survey Activities

A survey grid (10-foot spaced marks) was established using tape measures in the survey areas (the multicolored areas in Figures 3-1 through 3-3) to serve as a guide for conducting the geophysical survey along 5-foot spaced parallel survey lines in one direction, where accessible. The selected 5-foot survey line spacing for the project provided thorough survey coverage for detecting potential waste areas, as well as for detecting individual targets that were the size of 55-gallon drums or larger.

The EM31 survey was performed with integrated differential global positioning system (DGPS) readings recorded every 1 second in the survey area using a Trimble Ag114 GPS unit. Prior to field acquisition, the equipment was set up according to manufacturer's recommendations. Calibrations, operational checks, and other pertinent survey information were recorded in a field logbook. EM31 data acquired every 0.25 seconds corresponded to measurements spaced about 1-foot apart, given the survey walking pace with the instrument.

3.3.3 Geophysical Survey Results

The EM31 survey data, and the EM31 interpretation are overlain on top of a site aerial photograph in Figure 3-3. Available subsurface utilities information from Navy inventory is also shown on this figure and annotated in the legend. The color contour bars included with each of the color contour maps provide an indication of the amplitude of the displayed color contours. The anomaly response from a particular object is not unique, in that the depth of burial and lateral distance away from the geophysical instrument (off-line distance) will affect the object's response values.

Figures 3-1 and 3-2 show the EM31 QP and IP data in color contour maps, respectively. Figure 3-3 is a comprehensive interpretation of these contour maps displayed overtop of the IP data to sum the geophysical survey results. EM31 data contouring was performed using Geosoft's Oasis montaj software (version 7.0).

Figure 3-1 shows the EM31 QP component data. This component measures response from nearby metal, although less so than the In-Phase component, and also measures the response from apparent electrical conductivity created by non-metallic items (e.g., food waste, soil, and fill). Apparent conductivity background readings appear to range from about 90 to 100 millisiemens per meter (mS/m), corresponding to green to light green color contours. Anomalies are evident in blue and yellow to pink color contours. Areas where the EM31 data were likely to be significantly interfered with by aboveground features are not included in the interpretation as apparent anomalous conductivity areas. Whether subsurface items of interest are present in these areas cannot be determined from the EM31 data. Subsurface anomalies judged to be significant by the QP data also correspond to anomalies in the IP data suggesting metal presence. These anomalies are consolidated and shown superimposed on the IP data on Figure 3-3.

Figure 3-2 shows the EM31 IP component data. This component measures the response from buried and surface metal located near the instrument. The contour map on this figure shows apparent background readings to be the light-green color contours corresponding to values of approximately 6 parts per thousand (ppt). Buried metal concentrations are evident in the blue, and orange to pink color contours. Two areas of possible buried metal that may represent waste areas are outlined from the EM31 IP data south of the building on Figure 3-3 using solid and dashed lines to delineate them. Dashed lines are used where the edge of the anomaly could not be clearly determined based on other interfering anomalies. Other anomalous responses in the IP data can be attributed to aboveground metallic features. Whether subsurface items of interest are present in these areas cannot be determined from the EM31 data. Three linear EM anomalies are interpreted as possible utilities on Figure 3-3, and are shown by dashed lines on the figure. These anomalies where investigated as part of the soil sampling program, however, no remarkable conditions were encountered.

3.4 SOIL SAMPLING

Historic information suggests that this site may have been used as a landfill. This identification of the site as a landfill was based on the presumption that drainage ravines were historically filled with soil and waste in the process of developing the site for use, similar to what occurred on the adjacent Site 9. Additionally, there were several coal stockpiles, an old rail spur, and an old incinerator previously located on the site; leaky storage tanks and reported PCB contamination at adjacent sites; and areas of

anomalies detected by the geophysical survey during the SI. Based on this information, it was determined that surface and subsurface soil samples would be collected at DPT soil boring locations as part of this SI as shown on Figure 3-4. Soil boring logs are presented in Appendix B-2.

Soil samples were collected from September 26 to 29, 2009. One additional subsurface soil sample was collected November 13, 2009. Prior to conducting drilling activities, TTL Associates, a licensed Illinois driller subcontracted and overseen by Tetra Tech, obtained a Dig Permit from Joint Utility Locating Information for Excavators (JULIE) One-Call after identifying the areas where the intrusive activities would occur. DPT drilling was conducted using a hydraulically-powered direct-push machine for lithologic characterization of soils, collection of surface and subsurface soil samples, and to determine the depth to the water table in and around Site 21. Each boring was logged continuously in an Electronic Data Collection Application (eData) by an on-site geologist as the boring was being drilled. eData is web-based software for the comprehensive planning, collection, management, and use of environmental data. Air quality was monitored in and near each borehole using a photoionization detector (PID) during drilling operations.

Both surface and subsurface samples were analyzed in the field using a calibrated X-ray Fluorescence (XRF) detector and a PID. Details of the PID and XRF screening and sampling methodology are discussed in Sections 3.4.1 and 3.4.2, respectively. VOC samples were collected directly from the acetate sleeve immediately after PID screening. The remainder of the sample interval was placed in a labeled plastic Ziplock (or equivalent) bag. Care was taken to not include any foreign matter (i.e., vegetation, rocks, debris) in the soil samples collected. In general, the samples were analyzed “as-is.” The samples were manipulated within the baggies to break up any larger soil fragments to produce a relatively homogenous sample. The XRF and PID readings for each sample were recorded on a field log. Each soil sample was then transferred into clean laboratory-supplied sample containers, immediately labeled, and placed on ice in an insulated cooler to await shipment to the laboratory for analytical testing.

The soil samples collected for laboratory analysis were analyzed for Target Compound List (TCL) VOCs, SVOCs, pesticides/herbicides, PCBs, and Target Analyte List (TAL) metals. Samples in which ash/cinder were observed were also analyzed for dioxins/furans. This is because an incinerator was once present in the northwestern corner of the site that could have produced ash and cinder, which has the potential to contain dioxins/furans. The ash and cinder from the incinerator may have been used as fill on the site. In addition, one grain size sample was collected from the interval directly above groundwater to assist in better understanding the subsurface soil.

Soil Sample Log Sheets are provided in Appendix B-3. The results of the soil sample analysis are presented in Section 4.

3.4.1 PID Screening

A PID was used to screen samples for the presence of VOCs. Upon sample retrieval, each soil core was screened with a PID. Additionally, before the sample was collected, a headspace screening of the sample was collected by sticking the tip of the PID into a small opening at the top of the plastic Ziplock bag (or equivalent) containing the sample The PID was calibrated daily to 100 parts per million isobutylene.

3.4.2 XRF Screening

XRF was used to field screen soil samples. This technique measures the fluorescence spectrum of x-rays emitted when metal atoms are excited by an x-ray source. The energy of emitted x-rays reveals the identity of the metals in the sample, and the intensity of emitted x-rays is related to their concentrations. Rapid, multi-element analysis can be performed by XRF. The target chemical of concern (COC) was lead. An Innov-X XT400 was used to field screen the soil samples. The XRF instrument was operated in accordance with the manufacturer's instructions.

Soil samples were collected as described in Section 3.4, and analyzed in the plastic Ziplock (or equivalent) bags. Each sample was scanned once to determine if lead was present at that interval. A summary of the XRF field screening results is presented with the boring logs in Appendix B-2.

3.4.3 Surface Soil Sample Collection

Surface soil samples were collected for laboratory analysis at 22 locations at Site 21. Figure 3-4 shows the locations of the surface soil samples. Table 3-2 is a summary of the surface soil samples collected.

Because most of the site surface is asphalt/pavement, soil samples were collected immediately below the pavement and taken directly from the acetate liner advanced by the DPT. One surface soil sample was collected for laboratory analysis from each DPT soil boring location at a depth of 0.5 to 1.0 foot bgs (the first 6 inches below asphalt).

3.4.4 Subsurface Soil Sample Collection

Subsurface soil samples were collected for laboratory analysis at 22 locations at Site 21. Table 3-2 contains a summary of the subsurface soil samples collected. With the exception of soil borings in the northwest corner where the DPT rig hit shallow refusal, one subsurface soil sample was collected from each DPT soil boring for laboratory analyses. Subsurface soil samples were collected in locations where staining or odors were observed, or where elevated PID or XRF readings occurred. If there were no

elevated readings, and no staining or odors were observed, soil samples were collected from the interval directly above the groundwater table.

Soil borings were kept open for at least a day to collect depth to groundwater measurements. Soil borings were then filled with bentonite chips to the original surface level (asphalt or grass). Soil Sample Log Sheets are provided in Appendix B-3. The results of the subsurface soil sample analysis are presented in Section 4.

3.5 MONITORING WELL INSTALLATION AND SAMPLING

Permanent monitoring wells (NTC21-MW-01 through NTC21-MW-06) were installed in six locations at Site 21 to investigate the first water bearing (shallow groundwater) zone. Monitoring wells were installed to allow for the collection of groundwater samples for laboratory analysis to determine the presence of groundwater contamination, and to determine the depth to groundwater. After monitoring wells were installed and sampled, slug tests were conducted to determine groundwater aquifer characteristics.

The following subsections discuss the permanent monitoring well drilling, installation, construction, and sample collection.

3.5.1 Monitoring Well Drilling and Installation

Six monitoring wells were installed at Site 21 during this RI as shown on Figure 3-5. Table 3-3 provides a summary of monitoring well construction information. The hollow-stem auger drilling technique was used for monitoring well drilling operations. The depths of the monitoring wells ranged from 13 to 20 feet bgs. Documentation of the soil lithology utilized information from the DPT subsurface soil sampling activities described in section 3.4.4. The nominal diameter of the well borings was approximately 8 inches. Each monitoring well was constructed of 2-inch inside diameter, Schedule 40 polyvinyl chloride (PVC), flush-joint riser pipe; 10-foot-long flush-joint, factory-slotted, PVC well screen; and an end cap. Each section of casing and screen was National Sanitation Foundation approved and met American Society for Testing and Materials Standard A312-86a. The well screens had a slot size of 0.01 inch (10 slot) and were supplied with a flush-joint bottom cap.

After the riser pipe and screens were in place, the annulus of the boring was backfilled with U.S. Standard Sieve size No. 10-20 clean silica sand from the bottom of the boring, to a minimum of 2 feet above the top of the well screen. Four and a quarter-inch inside diameter (ID) hollow stem augers were used to hold the borehole open as the clean silica sand was placed around the well screen. As the sand pack was installed, the augers were slowly retrieved to provide an adequate sand pack around the well. A

bentonite seal consisting of bentonite chips (minimum 2-foot thickness) was then installed above the sand pack and allowed to hydrate in accordance with the manufacturer's recommendations.

The depths of construction materials were constantly monitored during the installation of the monitoring wells by using a weighted, stainless steel or plastic tape to make sure that no bridging of the sand pack or bentonite seal occurred during the installation process.

After the bentonite was sufficiently hydrated, a flush-mounted protective steel casing equipped with a sealed, bolted down, and appropriately labeled cap was installed at the six permanent wells located at Site 21. Each flush-mount riser was secured with a locking J-plug. Flush-mounted covers were installed in accordance with the Illinois Department of Public Health Water Well Construction Code requirements. Each monitoring well was fitted with a 6-inch diameter by 10-inch long steel protective casing. The annulus between the flush-mounted cover and the ground was filled with concrete. The 8-inch diameter auger hole served as the outer form for the concrete. The soil cuttings from each monitoring well were collected in 55-gallon drums and labeled as investigation-derived waste (IDW). The composite sample collected from the direct-push technique borings was used to characterize this waste for appropriate disposal.

TTL Associates, a licensed Illinois driller, installed the six monitoring wells at the site from November 13 through November 14, 2009. A Tetra Tech geologist supervised the drilling and well installation activities, prepared the drilling logs and well completion logs, and reviewed the field documentation. A Tetra Tech licensed Professional Geologist reviewed the drilling logs, well completion logs, and field documentation. Boring logs and well construction diagrams are provided in Appendix B-2 and B-4, respectively.

3.5.2 Water Level Measurements

One round of synoptic water level measurements was collected from the monitoring wells at the site to determine static potentiometric water surface elevations for shallow groundwater. The synoptic measurements were collected within a 2-hour period of consistent weather conditions to minimize atmospheric/precipitation effects on groundwater levels.

Measurements were collected with an electrical water level indicator (M-scope or equivalent) using the top of the well casing (i.e., riser pipe) as the reference point for determining the depth to water. Water level measurements were collected from a notch made at the top of each casing so that subsequent rounds of synoptic measurements could be collected from a consistent point. Water level measurements were recorded electronically to the nearest 0.01 foot. A summary of the groundwater level measurements collected is provided in Section 4.2.2.

3.5.3 Hydraulic Conductivity Testing

Rising head hydraulic conductivity (K) tests otherwise known as slug tests were completed at Naval Station Great Lakes, Site 21 to further characterize the subsurface groundwater conditions. Each rising head test was performed by removing a quantity of water from each monitoring well and measuring the rate at which the water level in the well returned to the initial water level. A dedicated bailer was utilized to remove the groundwater at each well location. The rate of recovery of the groundwater in the well versus time was measured using a 30-pound per square inch (psi) Well Troll pressure transducer. Prior to initiating the slug test, the pressure transducer was installed in the well. The static water levels were measured at each respective well location. The pressure transducer was programmed to start data collection immediately following removal of the water from the well. Slug test data are provided in Appendix B-5. During preparation of the SAP, it was assumed that both rising and falling head hydraulic conductivity tests would be completed in the monitoring wells. However, the water levels in the monitoring wells were below the top of the screen. Performing a falling head test under this condition increases the rate of fall of the water level in the borehole beyond that caused by inflow into the aquifer and leads to an overestimation of K. Based on the standard test procedures (Bouwer and Rice, 1989) conducting falling head tests is not appropriate under such conditions. A field modification form was completed and is in Appendix B-1.

3.5.4 Groundwater Sampling

Groundwater sampling of wells at Site 21 occurred from November 15 through 17, 2009 to determine which chemical constituents may be present at the Site. Table 3-2 contains a summary of the groundwater samples collected.

The monitoring wells were purged and sampled using standard purging techniques (low flow) in accordance with the UFP-SAP (Tetra Tech, 2009). Using a peristaltic pump and disposable polyethylene tubing, one to three screen casing volumes were purged from the well. Prior to purging, the intake of the sampling pump was placed at the approximate midpoint of the well screen or the midpoint of the water column present in the well, and at least 2 feet from the bottom of the well.

To start purging, monitoring well pumping was conducted at a low flow rate to minimize drawdown. Water quality parameters [pH, temperature, specific conductance, turbidity, oxidation reduction potential (ORP) and dissolved oxygen (DO)] were measured and recorded at 5- to 10-minute intervals. Groundwater Sample Log Sheets which include these measurements are provided in Appendix B-6. Measurements were collected until the parameters stabilized for at least three consecutive readings and the minimum purge volume (one screen volume) was removed. Stabilization of the above parameters was defined as follows:

- pH ± 0.2 standard unit
- Temperature ± 10%
- Turbidity less than 10 nephelometric turbidity units
- ORP ± 10 %
- Specific conductance ± 10 %
- Dissolved oxygen ± 10%

If the turbidity remained greater than 10 nephelometric turbidity units, but the other field parameters stabilized, a filtered metal sample was collected in addition to the unfiltered metal sample (one sample required filtering for metal analysis during the RI). Purge water was containerized in 55-gallon drums and labeled IDW.

After the parameters stabilized and immediately prior to sampling, the temperature, pH, specific conductance, turbidity, ORP, and DO of the groundwater sample were measured and recorded on a Groundwater Sample Log Sheet in eData. The sample containers were filled by allowing the pump discharge to flow with minimal turbulence down the inside of the container. For the collection of filtered samples, an in-line 0.45-micron, disposable particulate filter was used.

The results of the groundwater sample analysis are presented in Section 4.

3.6 ANALYTICAL PARAMETERS AND METHODS

The following subsections discuss the analysis of soil, groundwater and Quality Assurance/Quality Control (QA/QC) samples that were collected for the project. Table 3-2 presents the analytical parameters. Samples collected for chemical analysis during the RI were analyzed for VOCs, SVOCs, inorganics, pesticides, herbicides, and PCBs by Empirical Laboratories of Nashville, Tennessee; and for dioxins/furans by SGS North America, Inc. (SGS) of Wilmington, North Carolina.

3.6.1 Soil Samples

The soil samples were collected as described in Section 3.4. Surface and subsurface soil samples collected for chemical analysis were analyzed for TAL metals, TCL VOCs, SVOCs, pesticides, PCBs, and herbicides. Although more subsurface samples analyzed for dioxins/furans were planned, ash/cinder was only observed in two surface and one subsurface soil sample; therefore, only those three samples were analyzed for dioxins/furans. One subsurface soil sample was analyzed for grain size.

3.6.2 Groundwater Samples

The groundwater samples were collected as described in Section 3.5.4. Groundwater samples collected for chemical analysis were analyzed for TAL metals, TCL VOCs, SVOCs, pesticides, PCBs, and herbicides. One sample (NTC21-MW-05) was analyzed for dioxins/furans.

3.6.3 IDW Samples

Following the investigation, composite soil and water samples were submitted for laboratory testing to characterize the IDW for appropriate disposal via Toxicity Characteristic Leaching Procedure (TCLP) analysis for VOCs, SVOCs, herbicides, pesticides, metals, reactivity, corrosivity, PCBs, and ignitability. The IDW was handled in accordance with the UFP-SAP (Tetra Tech, 2009). IDW Sample Log Sheets are provided in Appendix B-7. Completed Waste Profiles were signed and are provided in Appendix C.

3.7 FIELD QA/QC SAMPLE DESCRIPTION

Tetra Tech established a QC program to monitor and assess the quality of field work and laboratory work performed during the RI. This program included the collection of various types of QC samples as indicated below. The field quality control samples consisted of temperature blanks, field duplicates, matrix spike/matrix spike duplicate (MS/MSD) samples, trip blanks, equipment rinsate blanks, and source water blanks.

Temperature blanks were included in each cooler submitted to the laboratory to monitor sample storage conditions prior to arrival at the laboratory. Approximately one field duplicate sample was collected per ten samples. The purpose of the field duplicate sample was to examine the variability of the samples. One trip blank was collected per shipment of VOC samples. The purpose of the trip blank was to examine the potential for cross-contamination of samples during shipping.

One equipment rinsate blank was collected for each type of non-dedicated soil sampling equipment used. The purpose of the equipment rinsate blank was to examine the effectiveness of the decontamination procedures. One source water blank was collected per water source used for the purpose of evaluating contamination in water used for decontamination activities.

MS samples are investigative samples analyzed to provide information about the effect of the sample matrix on the digestion and measurement methodology. The MS samples for organics are analyzed in duplicate. MS and MSD samples were collected at a frequency of 1 per 20 samples.

Each type of field QC sample had the same preservation, analysis, and reporting procedures as the related environmental samples with the exception of the temperature blanks. The log sheets for the QA/QC samples are included in Appendix B-8.

Laboratory QC samples consisted of laboratory control samples, laboratory duplicates, internal standards, laboratory method blanks, MS, MSD, post digestion spikes, and surrogates. Empirical Laboratories and SGS conducted the laboratory analysis and QC in accordance with the UFP-SAP (Tetra Tech, 2009). Tetra Tech reviewed the laboratory quality control during the data validation, and noncompliances were noted in the data validation reports in Appendix D.

3.8 FIELD MEASUREMENTS

The following subsections present discussions pertaining to field measurements that were performed as part of the RI.

Field parameters measured during the course of the RI were:

- VOC screening of worker's breathing space and recovered soil samples.
- XRF analysis of soil samples.
- Water quality (pH, temperature, specific conductance, turbidity, DO, ORP).

VOC screening was conducted using a MiniRae 2000 PID. The PID readings were recorded on the boring logs (Appendix B-2). There were no positive PID readings above background. Water quality parameters were measured using a YSI water quality meter. XRF analysis was conducted using an Innov-X XT400.

Each instrument was calibrated prior to its delivery to the field, daily, or as needed. The project eData or the calibration log sheets were used to document the calibration of field testing equipment (Appendix B-9).

3.9 DECONTAMINATION PROCEDURES

Proper decontamination of field equipment is an integral part of the overall QC process. Decontamination liquids were placed in 55-gallon drums with the purge water and stored in a secure designated area until final disposition. The containers were supplied by TTL Associates, and were clearly identified and labeled as IDW.

To achieve proper decontamination prior to and after the completion of the sampling events, sampling equipment was:

- Washed in solution of tap water and Liquinox soap or equivalent.
- Rinsed with tap water.
- Double rinsed with deionized or distilled water, or steam-cleaned.
- Air dried, if feasible.

Tap water for decontamination was obtained from a faucet connected to the Naval Station Great Lakes public water supply.

Field measurement equipment that directly contacted environmental media (i.e., M-scope, flow-through cells, etc.) was rinsed with distilled/deionized water after each usage.

3.10 FIELD DOCUMENTATION

Field documentation and tracking of sample custody are integral to the overall QA/QC process for the RI. The field documentation system serves as a record of activities conducted in the field during sample collection and data generation, and provides the means to identify, track, and monitor each sample from the time of collection through final reporting of data.

3.10.1 Sample Identification

The sample identification scheme presented in the UFP-SAP (Tetra Tech, 2009) was used to identify and label the field samples collected, and the field QC blanks created during the RI. The sample identification procedure was used for the sample labels and chain-of-custody documents in order to maintain consistency in the labeling process, and to allow efficient handling of a large number of samples from different sources. Sample identification was identified and followed in accordance with the UFP-SAP (Tetra Tech, 2009).

3.10.2 Electronic Field Logbooks/Sample Log Sheets

The sampling coordinator maintained an electronic field notebook and data sheets containing pertinent information regarding the samples. The field logs are intended to provide sufficient data and observations to enable the field team and other interested parties to reconstruct events that occurred during field activities.

Boring logs and well construction diagrams were prepared for the soil borings and monitoring wells. The physical characteristics of these samples (e.g., color, lithology, general appearance, odor, etc.) were recorded on an electronic sample log sheet. Similarly, electronic sample logs were prepared for groundwater samples.

3.11 LAND SURVEYING

Land surveying was conducted by James Anderson Company to determine the horizontal location, vertical elevation of the ground surface, and top of casing of the monitoring wells. Locations were reported in Illinois State Plane Coordinate System North American Datum 1983 (NAD 83), and vertical elevations were reported in North American Vertical Datum 1988 (NAVD 88). Monitoring well locations are shown on Figure 3-5. The survey information is provided in Appendix E.

3.12 SAMPLE MANAGEMENT

The following chain-of-custody procedures documented sample possession from the time of sample collection until ultimate disposal of the sample. For the purposes of these procedures, a sample was considered to be in custody if it was:

- In one's actual possession.
- In view after being in one's possession.
- Secured (i.e., locked up) so that no one could tamper with it.
- In a secured area, available to authorized personnel only.

Strict chain-of-custody procedures were maintained throughout the duration of the investigation. These procedures included the following:

- A chain-of-custody record was completed in the field. The original accompanied the samples, and copies were maintained at intermediate steps.

- At the point where the responsibility for custody of the samples changed, the new custodian signed the chain-of-custody record and noted the date and time.

RI samples were packed in an ice-filled cooler and sent by overnight carrier (Federal Express) to the analytical laboratory for chemical analysis. Chain-of-custody forms are provided in Appendix B-10.

3.13 INVESTIGATION-DERIVED WASTE MANAGEMENT

The types of wastes generated as a result of the RI activities were drill cuttings (soil), disposable sampling equipment, personal protective equipment (PPE), development and purge water, and decontamination liquids. The solid and liquid IDW was collected and placed into 55-gallon drums supplied by TTL Associates. The waste containers were clearly identified and labeled. The generated IDW was temporarily stored at a location designated by Naval Station Great Lakes personnel.

One composite soil sample was collected from the drums containing solid IDW and one composite liquid sample was collected from the drums containing liquid IDW and submitted to the laboratory for chemical analysis. The solid and liquid IDW samples were analyzed for TCLP VOCs, TCLP SVOCs, TCLP herbicides, TCLP pesticides, TCLP metals, reactivity, corrosivity, PCBs, and ignitability. Analytical results were provided to Naval Station Great Lakes personnel who were responsible for manifesting, transporting, and disposing the IDW.

TABLE 3-1

SAMPLING RATIONALE
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Sample Location	Sampling Rationale
Surface Soil	
NTC21SB-01 to NTC21SB-22	One surface soil sample was collected from each soil boring at the 0.5 foot interval directly below the asphalt/subbase. Samples were collected for TAL metals, and TCL VOCs, SVOCs, pesticides, PCBs, and herbicides. Select locations were collected for dioxin/furans.
Subsurface Soil	
NTC21SB-01 to NTC21SB-22	Utilized the XRF and PID to determine high concentrations of lead and VOCs respectively. Samples were collected in two foot intervals above groundwater based on XRF, PID, and visual observations. Samples were collected for TAL metals, and TCL VOCs, SVOCs, pesticides, PCBs, and herbicides. Select locations were collected for dioxin/furans. One subsurface sample was collected per location.
Groundwater	
NTC21MW-01 to NTC21MW-06	Samples collected from these wells to determine if contamination is present in groundwater. Samples were collected for TAL metals, TCL VOCs, SVOCs, pesticides, PCBs, and herbicides. Select location was collected for dioxin/furans.

PCB = Polychlorinated biphenyl.
PID = Photoionization detector.
SVOC = Semivolatile organic compound.
TAL = Target Analyte List.
TCL = Target Compound List.
VOC = Volatile organic compound.
XRF = X-Ray Fluorescence.

TABLE 3-2

SAMPLING SUMMARY
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Sample Name	Depth (feet bgs)	XRF and PID	TCL VOCs	TCL SVOCs	TAL Metals	TCL Pesticides and Herbicides	TCL PCBs	Dioxin/ Furans	Grain Size	Field Parameters[1]
SURFACE (0.5-1) [2]										
NTC21SB-01 to NTC21SB-22										
NTC21SB-01-SO-0001	0.5-1	X	X	X	X	X	X			
NTC21SB-02-SO-0001	0.5-1	X	X	X	X	X	X			
NTC21SB-03-SO-0001	0.5-1	X	X	X	X	X	X			
NTC21SB-04-SO-0001	0.5-1	X	X	X	X	X	X			
NTC21SB-05-SO-0001	0.5-1	X	X	X	X	X	X			
NTC21SB-06-SO-0001	0.5-1	X	X	X	X	X	X			
NTC21SB-07-SO-0001	0.5-1	X	X	X	X	X	X			
NTC21SB-08-SO-0001	0.5-1	X	X	X	X	X	X			
NTC21SB-09-SO-0001	0.5-1	X	X	X	X	X	X	X		
NTC21SB-10-SO-0001	0.5-1	X	X	X	X	X	X			
NTC21SB-11-SO-0001	0.5-1	X	X	X	X	X	X			
NTC21SB-12-SO-0001	0.5-1	X	X	X	X	X	X			
NTC21SB-13-SO-0001	0.5-1	X	X	X	X	X	X			
NTC21SB-14-SO-0001	0.5-1	X	X	X	X	X	X			
NTC21SB-15-SO-0001	0.5-1	X	X	X	X	X	X			
NTC21SB-16-SO-0001	0.5-1	X	X	X	X	X	X			
NTC21SB-17-SO-0001	0.5-1	X	X	X	X	X	X	X		
NTC21SB-18-SO-0001	0.5-1	X	X	X	X	X	X			
NTC21SB-19-SO-0001	0.5-1	X	X	X	X	X	X			
NTC21SB-20-SO-0001	0.5-1	X	X	X	X	X	X			
NTC21SB-21-SO-0001	0.5-1	X	X	X	X	X	X			
NTC21SB-22-SO-0001	0.5-1	X	X	X	X	X	X			
SUBSURFACE										
NTC21SB-01 to NTC21SB-22										
NTC21SB-01-SO-0102	1-2	X	X	X	X	X	X			
NTC21SB-02-SO-0204	2-4	X	X	X	X	X	X	X		
NTC21SB-03-SO-0204	2-4	X	X	X	X	X	X			
NTC21SB-04-SO-0406	4-6	X	X	X	X	X	X			
NTC21SB-05-SO-0204	2-4	X	X	X	X	X	X			
NTC21SB-06-SO-0204	2-4	X	X	X	X	X	X			
NTC21SB-07-SO-0204	2-4	X	X	X	X	X	X			
NTC21SB-08-SO-0204	2-4	X	X	X	X	X	X		X	
NTC21SB-09-SO-0204	2-4	X	X	X	X	X	X			

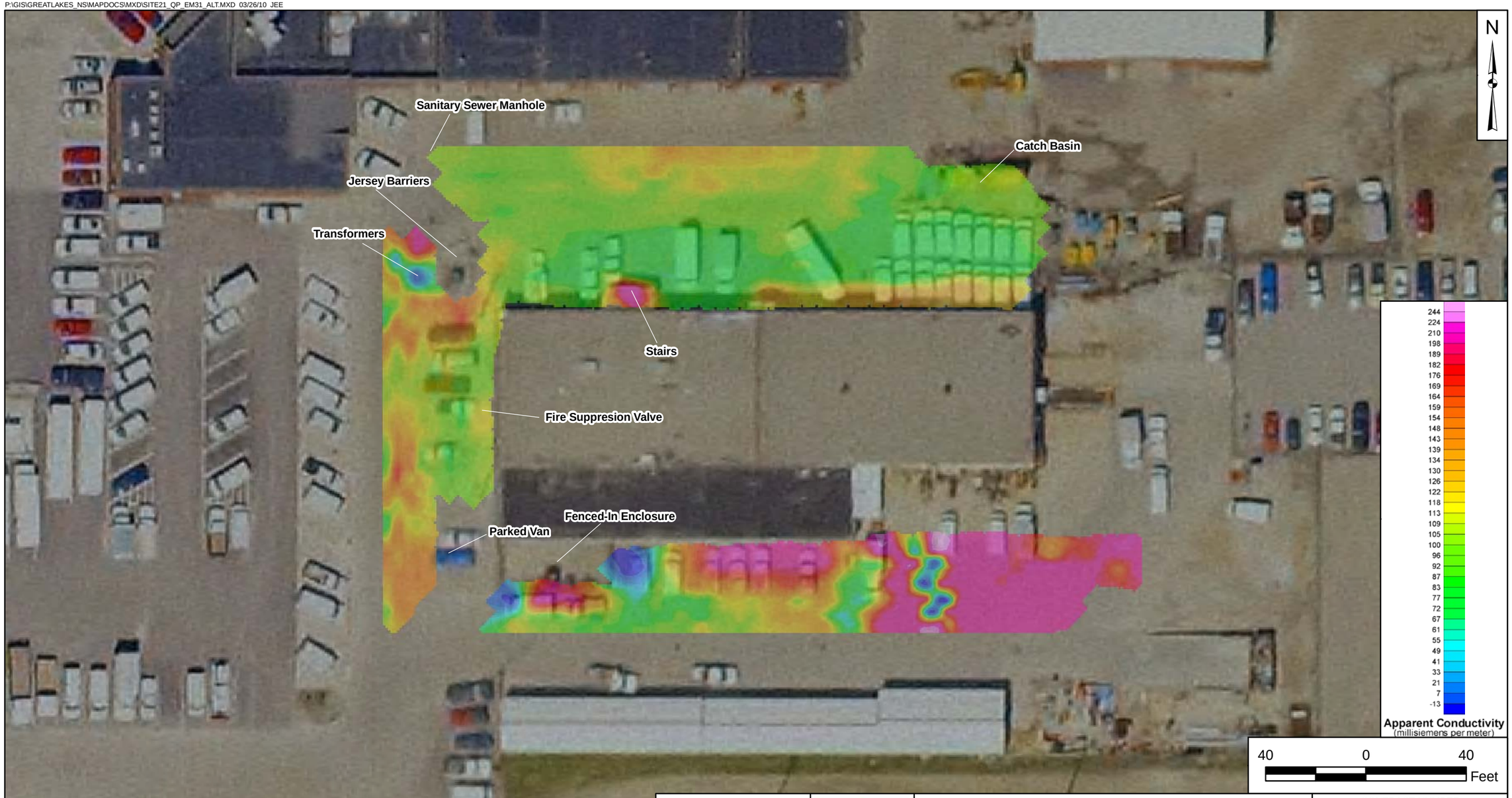
TABLE 3-2

SAMPLING SUMMARY
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Sample Name	Depth (feet bgs)	XRF and PID	TCL VOCs	TCL SVOCs	TAL Metals	TCL Pesticides and Herbicides	TCL PCBs	Dioxin/ Furans	Grain Size	Field Parameters(1)
SUBSURFACE (Continued)										
NTC21SB-10-SO-0406	4-6	X	X	X	X	X	X			
NTC21SB-11-SO-0204	2-4	X	X	X	X	X	X			
NTC21SB-12-SO-0204	2-4	X	X	X	X	X	X			
NTC21SB-13-SO-0204	2-4	X	X	X	X	X	X			
NTC21SB-14-SO-0204	2-4	X	X	X	X	X	X			
NTC21SB-15-SO-0204	2-4	X	X	X	X	X	X			
NTC21SB-16-SO-0204	2-4	X	X	X	X	X	X			
NTC21SB-17-SO-0507	5-7	X	X	X	X	X	X			
NTC21SB-18-SO-0507	5-7	X	X	X	X	X	X			
NTC21SB-19-SO-0204	2-4	X	X	X	X	X	X			
NTC21SB-20-SO-0406	4-6	X	X	X	X	X	X			
NTC21SB-21-SO-0608	6-8	X	X	X	X	X	X			
NTC21SB-22-SO-0204	2-4	X	X	X	X	X	X			
GROUNDWATER										
NTC21MW-01			X	X	X	X	X			X
NTC21MW-02			X	X	X	X	X			X
NTC21MW-03			X	X	X	X	X			X
NTC21MW-04			X	X	X	X	X			X
NTC21MW-05			X	X	X	X	X	X		X
NTC21MW-06			X	X	X	X	X			X

Notes:
bgs - below ground surface
PCB - polychlorinated biphenyls
PID - Photoionization detector
SVOCs - Polynuclear aromatic hydrocarbons
TAL - Target Analyte List
TCL - Target Compound List
VOCs - Volatile organic compounds
XRF - X-Ray Fluorescence Spectrometer
(1) Field parameters include temperature, pH, specific conductance, turbidity, oxidation-reduction potential, and dissolved oxygen.
(2) First interval below asphalt

P:\GIS\GREATLAKES_NS\MAPDOCS\MXD\SITE21_QP_EM31_ALT.MXD 03/26/10 JEE



NOTES:
1. EM31-MK2 quadrature-phase response shown. EM31 data collected along approximately 5-foot spaced survey lines.
2. 2007 aerial photo.

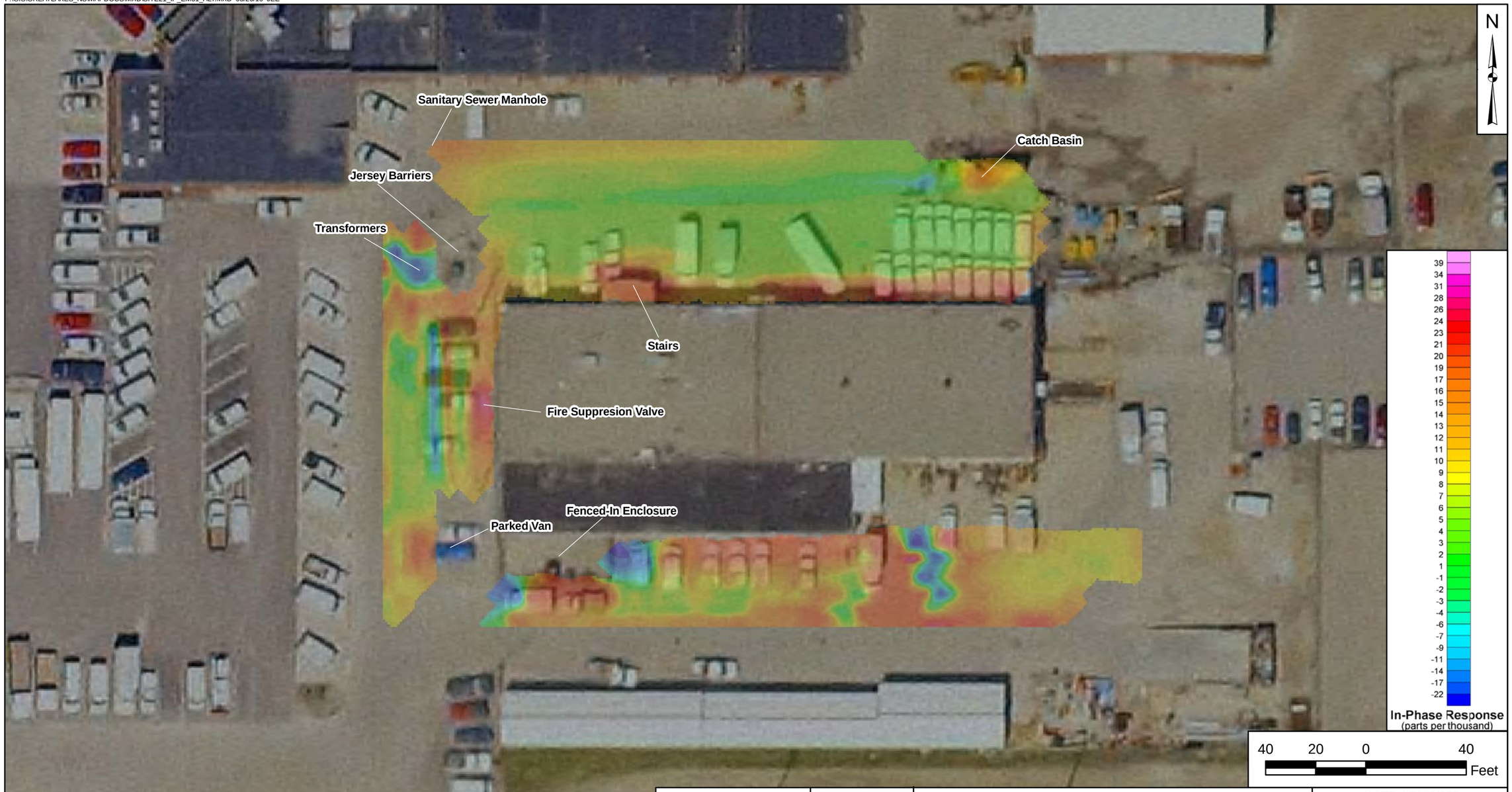
DRAWN BY	DATE
J. ENGLISH	11/04/08
CHECKED BY	DATE
J. COFFMAN	03/26/10
COST/SCHED AREA	
SCALE AS NOTED	

NAVFAC

EM31 COLOR CONTOUR MAP
(QUADRATURE PHASE)
SITE 21 - BUILDINGS 1517 / 1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

CONTRACT NUMBER CTO C064	
APPROVED BY B. CUMMINGS	DATE 03/26/10
APPROVED BY	DATE
FIGURE NO. FIGURE 3-1	REV 0

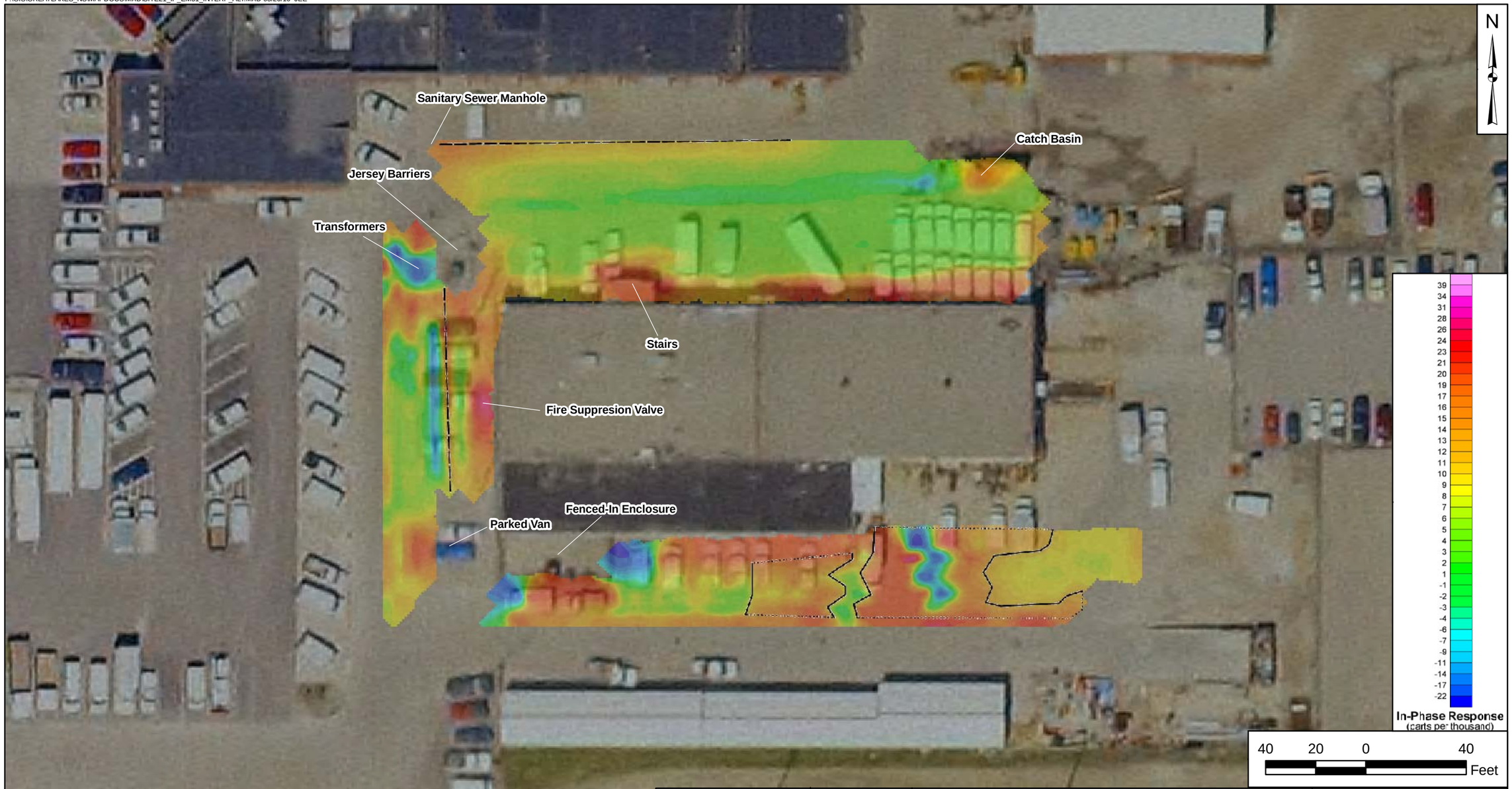
P:\GIS\GREATLAKES_NS\MAPDOCS\MXD\SITE21_IP_EM31_ALT.MXD 03/26/10 JEE



NOTES:
1. EM31-MK2 in-phase response shown. EM31 data collected along approximately 5-foot spaced survey lines.
2. 2007 aerial photo.

DRAWN BY J. ENGLISH	DATE 03/26/10	EM31 COLOR CONTOUR MAP (IN-PHASE) SITE 21 - BUILDINGD 1517 / 1506 AREA NAVAL STATION GREAT LAKES GREAT LAKES, ILLINOIS	CONTRACT NUMBER CTO C064
CHECKED BY J. COFFMAN	DATE 03/26/10		APPROVED BY B. CUMMINGS — DATE 03/26/10
COST/SCHED AREA			APPROVED BY — DATE
SCALE AS NOTED			FIGURE NO. FIGURE 3-2 — REV 0

P:\GIS\GREATLAKES_NS\MAPDOCS\MXD\SITE21_IP_EM31_INTERP_ALT.MXD 03/26/10 JEE



NOTES:
1. EM31-MK2 in-phase response shown. EM31 data collected along approximately 5-foot spaced survey lines.
2. 2007 aerial photo.

Legend
- Possible Utility
- Area of Possible Buried Metal

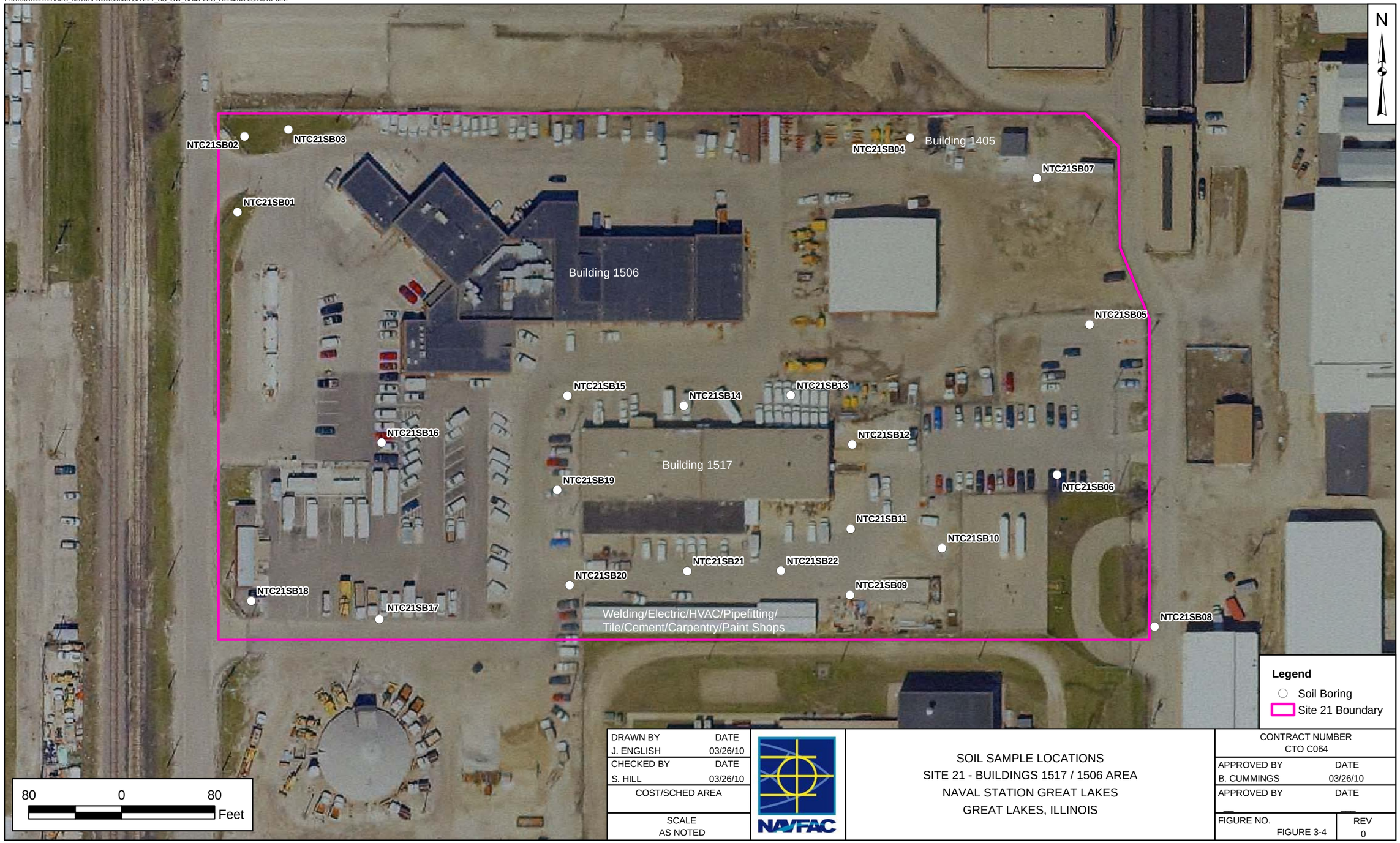
DRAWN BY J. ENGLISH	DATE 03/26/10
CHECKED BY J. COFFMAN	DATE 03/26/10
COST/SCHED AREA	
SCALE AS NOTED	

NAVFAC

EM31 COLOR CONTOUR INTERPRETATION MAP
(IN-PHASE)
SITE 21 - BUILDINGS 1517 / 1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

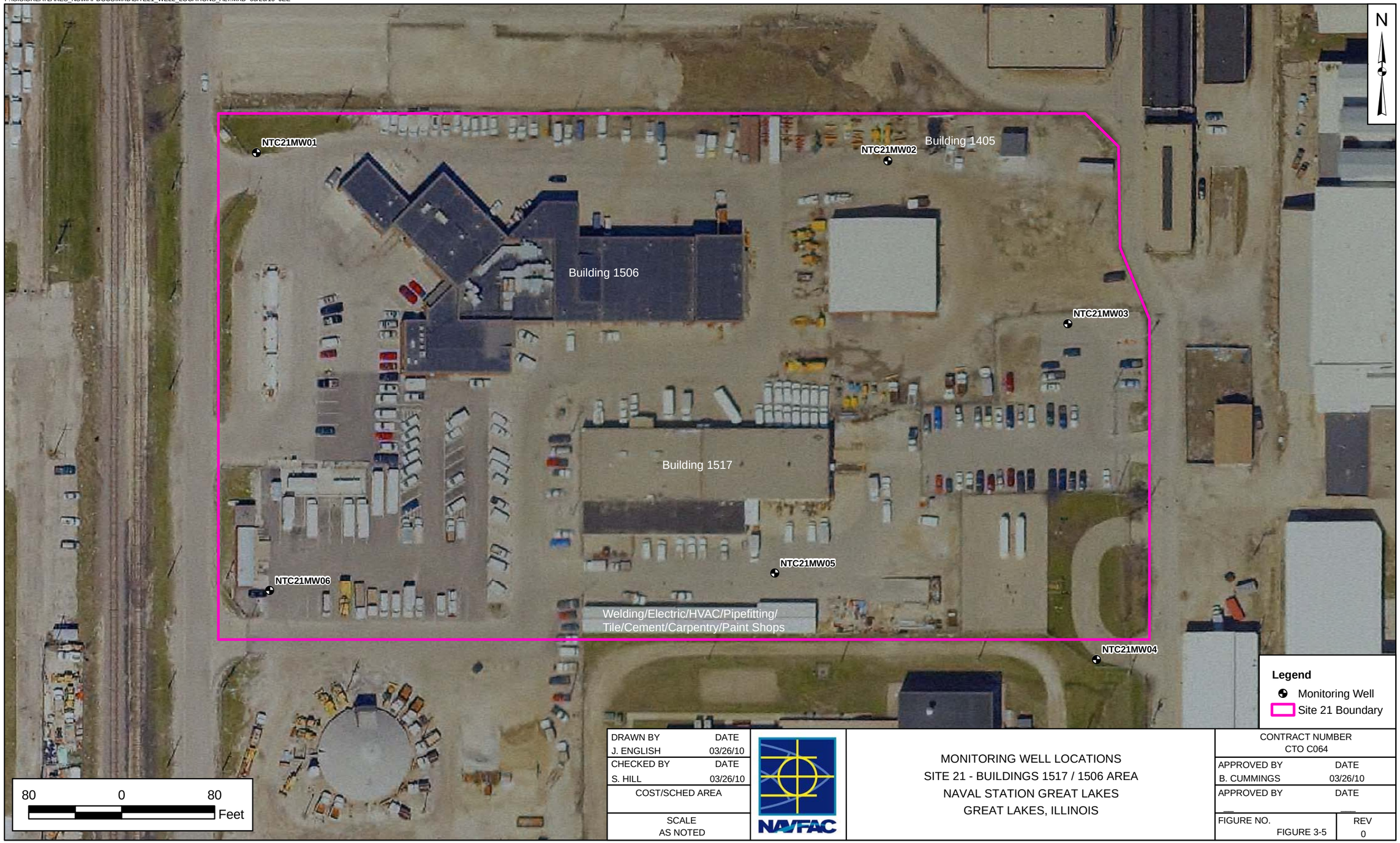
CONTRACT NUMBER CTO C064	
APPROVED BY B. CUMMINGS	DATE 03/26/10
APPROVED BY	DATE
FIGURE NO. FIGURE 3-3	REV 0

P:\GIS\GREATLAKES_NS\MAPDOCS\MXD\SITE21_SS_GW_SAMPLES_ALT.MXD 03/26/10 JEE



DRAWN BY J. ENGLISH	DATE 03/26/10	SOIL SAMPLE LOCATIONS SITE 21 - BUILDINGS 1517 / 1506 AREA NAVAL STATION GREAT LAKES GREAT LAKES, ILLINOIS	CONTRACT NUMBER CTO C064
CHECKED BY S. HILL	DATE 03/26/10		APPROVED BY B. CUMMINGS — DATE 03/26/10
COST/SCHED AREA			APPROVED BY — DATE —
SCALE AS NOTED			FIGURE NO. FIGURE 3-4 — REV 0

P:\GIS\GREATLAKES_NS\MAPDOCS\MXD\SITE21_WELL_LOCATIONS_ALT.MXD 03/26/10 JEE



DRAWN BY	DATE
J. ENGLISH	03/26/10
CHECKED BY	DATE
S. HILL	03/26/10
COST/SCHED AREA	
SCALE AS NOTED	

NAVFAC

MONITORING WELL LOCATIONS
SITE 21 - BUILDINGS 1517 / 1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

CONTRACT NUMBER CTO C064	
APPROVED BY B. CUMMINGS	DATE 03/26/10
APPROVED BY	DATE
FIGURE NO. FIGURE 3-5	REV 0

4.0 REMEDIAL INVESTIGATION RESULTS

The following subsections provide a detailed discussion of field data and analytical results that were generated during the course of the RI at Site 21 at Naval Station Great Lakes. Figures 1-1, 1-2, and 2-1 show the general location of Naval Station Great Lakes and the location of Buildings 1517/1506 Area.

The analytical data presented in this RI Report were subjected to a data validation process performed by Tetra Tech personnel for the integrity and defensibility of the data. Samples collected for chemical analysis during the RI were analyzed for TAL inorganics, and TCL VOCs, SVOCs, pesticides, herbicides, and PCBs by Empirical Laboratories of Nashville, Tennessee; and for dioxins/furans by SGS of Wilmington, North Carolina. Detected concentrations in surface soil, subsurface soil, and groundwater samples relative to minimum screening values are discussed in Sections 4.3.1, 4.3.2, and 4.3.3, respectively.

Detected concentrations in surface soil, subsurface soil, and groundwater samples relative to the Illinois TACO are discussed in Sections 4.4.1, 4.4.2, and 4.4.3, respectively.

4.1 SITE-SPECIFIC GEOLOGY

Geologic conditions at Site 21 were characterized as part of the RI. Surface and subsurface materials at Site 21 were characterized based on acetate liner samples collected during the drilling of soil and well borings during the Tetra Tech field investigation. The visual classifications were utilized to develop geologic cross-sections for the site. Figure 4-1 presents the locations of the geologic cross sections based on select borings across Site 21. Figures 4-2, 4-3, and 4-4 show cross-sectional transects A-A', B-B', and C-C', respectively, that were developed from the soil boring data.

The surface of Site 21 is covered primarily with buildings and pavement, except for the northwestern and southeastern corners where there are grassy areas, and the northeastern corner where there is a soil/gravel-covered area.

With the exception of the southwestern portion of the Site, most of the Site has a layer of fill material below the asphalt/grassy top to a depth of 1 to 5 feet bgs. Typically this fill is a sand, gravelly sand, and/or silty sand with areas of coal, ash, slag, brick fragments, etc. Below this fill material is a natural clay/silt unit that is common in the Great Lakes area, which was observed to 28 feet bgs during this RI. The soil borings and wells installed on Site 21 as part of the Building 1600A UST closure encountered similar subsurface conditions, with the exception of soil boring SB11. Soil boring SB11 reportedly

encountered fill to a depth of 12 feet. Because of the lack of material recovery (19 percent) over the last 8 feet of the boring, the total thickness of the fill at that location could not be confirmed.

Laboratory sieve analysis of one sample location at Site 21 (Table 4-1) and three sample locations at Site 9 (adjacent site) indicates that the Unified Soil Classification System description of the soil encountered during the investigation ranges from SP/SM (sandy silt) near the surface to SM (silty sand), SM/SC (silty, clayey sand), and ML/CL (silt clay mix) in the subsurface soil.

4.2 SITE-SPECIFIC HYDROGEOLOGY

The hydrogeologic conditions at Site 21 were interpreted from data collected during these subsurface investigation activities at the site: drilling, groundwater sampling, measuring groundwater levels, and aquifer testing.

4.2.1 Hydrogeologic Framework

The shallow water table aquifer was characterized at Site 21. A deeper (confined) aquifer is most likely present (based on previous studies at adjacent areas), but was not part of this investigation. The groundwater level measurements from the six wells installed onsite show that the top of the shallow aquifer ranges from approximately 1.35 to 6.25 feet bgs, and is composed primarily of a silty clay unit (see Figures 4-2, 4-3, and 4-4).

4.2.2 Groundwater Flow Directions

Groundwater flow direction for the shallow water table aquifer was determined based on the synoptic water-level measurements collected on November 17, 2009 (Table 4-2). Water-level measurements were collected from the wells within a 2-hour time frame. Groundwater elevations were determined based on the six depth-to-water measurements. The flow direction of groundwater onsite is generally in the southeast direction. Figure 4-5 presents the groundwater potentiometric surface for the shallow water table aquifer at the site.

4.2.3 Hydraulic Conductivity

Hydraulic conductivity (aquifer) test data were evaluated using the Bouwer and Rice Method (1989) for unconfined aquifers. This method permits measurement of hydraulic conductivity (K) of aquifer materials. The method consists of quickly lowering the water level in the well, and measuring the subsequent rise of water in the well. The method was developed to measure K of the aquifer around the screen or otherwise open portion of a full penetrating or partially penetrating well.

Hydraulic conductivity (aquifer) tests (described in Section 3.5.3) were completed at four wells at Site 21: NTC21-MW-01, NTC21-MW-02, NTC21-MW-05 and NTC21-MW-06. K values calculated for the wells ranged from 0.40 feet per day to 1.36 feet per day, and averaged 0.77 feet per day [2.73 centimers per second (cm/sec)]. Hydraulic conductivity (aquifer) test results are summarized in Table 4-3 and located in Appendix B-5.

4.2.4 Groundwater Migration Velocity

The hydraulic gradient for the shallow groundwater at the site was calculated graphically from groundwater elevations found on Figure 4-5. The average horizontal hydraulic gradient for the site is approximately 0.00074.

Using an average porosity of 0.35 for the gravelly clay/silty clay (Freeze and Cherry, 1979) and the site-wide geometric mean hydraulic conductivity of 0.77 feet per day, the groundwater velocity was approximated for the site. The groundwater velocity was determined to be 0.16 feet per day (5.8 feet per year).

Care must be taken when interpreting these results, however, because significant groundwater flow potential is likely limited to the sand and gravel lenses. There is no evidence from the boring logs (and Figures 4-2 to 4-4) that any of these lenses are laterally extensive. Large-scale, site-wide transport of potential contaminants in the shallow aquifer is not likely to be occurring.

4.3 SOIL AND GROUNDWATER RESULTS COMPARISON TO MINIMUM SCREENING VALUES

4.3.1 Surface Soil Sampling Results

Surface soil analytical results were compared to the Illinois TACO, Illinois Non-TACO, and United States Environmental Protection Agency (USEPA) screening criteria as shown in Table 4-4. Analytical results for surface soil samples collected at Site 21 are summarized in Tables 4-5 and 4-6. Surface soil sample locations are shown on Figure 3-4. Detailed surface soil analytical results are provided in Appendix F-1. The following sections provide summaries of the chemicals that exceeded minimum screening values (primarily residential) in surface soil.

VOCs

The table below presents a summary of data for VOC contaminants that were detected at concentrations exceeding the minimum screening values. The data presented include: frequency of contaminant

detection, maximum results, identity of the sample location having the maximum results, the screening value used, and the number of samples that exceeded the screening criteria.

VOC Exceedances in Surface Soils

Parameter	Frequency of Detection	Maximum Result (µg/kg)	Sample with Maximum Detection	Minimum Screening Values(1)	
				Value (µg/kg)	Exceedances
BENZENE	5/22	1.1	NTC21SB-01-SO-0102	0.21	5
TETRACHLOROETHENE	1/22	1.4	NTC21SB-19-SO-0001	0.049	1

(1) USEPA ORNL Risk-Based SSLs

Tetrachloroethene was detected at only one sample location (NTC21-SB-19) at a concentration of 1.4 J µg/kg, which exceeds the minimum screening value. NTC21-SB-19 is located along the west_side of Building 1517. Benzene was detected in five surface soil samples at concentrations ranging from 0.56 J to 1.1 J µg/kg, which exceeded minimum screening values. The maximum concentration of benzene was detected in surface soil sample NTC21SB-01-SO-0102 located slightly northwest of the fueling area.

SVOCs

The table below presents a summary of data for SVOC contaminants that were detected at concentrations exceeding the minimum screening values. The data presented include: frequency of contaminant detection, maximum results, identity of the sample location having the maximum results, the screening value used, and the number of samples that exceeded the screening criteria.

SVOC Exceedances in Surface Soils

Parameter	Frequency of Detection	Maximum Result (µg/kg)	Sample with Maximum Detection	Minimum Screening Values	
				Value (µg/kg)	Exceedances
2-METHYLNAPHTHALENE	22/22	900	NTC21SB-14-SO-0001	750 (1)	3
BENZO(A)ANTHRACENE	20/22	22,000	NTC21SB-21-SO-0001	10 (1)	20
BENZO(A)PYRENE	17/22	38,000	NTC21SB-21-SO-0001	3.5 (1)	17
BENZO(B)FLUORANTHENE	20/22	59,000	NTC21SB-21-SO-0001	35 (1)	20
BENZO(K)FLUORANTHENE	20/22	21,000	NTC21SB-21-SO-0001	350 (1)	11
BIS(2-ETHYLHEXYL)PHTHALATE	16/22	3,400	NTC21SB-21-SO-0001	1,100 (1)	1
CARBAZOLE	4/22	2,400	NTC21SB-21-SO-0001	600 (2)	3
CHRYSENE	20/22	31,000	NTC21SB-21-SO-0001	1,100 (1)	5
DIBENZO(A,H)ANTHRACENE	12/22	1,100	NTC21SB-01-SO-0102	11 (1)	12

Parameter	Frequency of Detection	Maximum Result (µg/kg)	Sample with Maximum Detection	Minimum Screening Values	
				Value (µg/kg)	Exceedances
2-METHYLNAPHTHALENE	22/22	900	NTC21SB-14-SO-0001	750 (1)	3
BENZO(A)ANTHRACENE	20/22	22,000	NTC21SB-21-SO-0001	10 (1)	20
BENZO(A)PYRENE	17/22	38,000	NTC21SB-21-SO-0001	3.5 (1)	17
INDENO(1,2,3-CD)PYRENE	16/22	36,000	NTC21SB-21-SO-0001	120 (1)	16
NAPHTHALENE	22/22	520	NTC21SB-01-SO-0102	0.47 (1)	22

(1) USEPA ORNL Risk-Based SSLs
(2) TACO Class 1 Soil to Groundwater

2-Methylnaphthalene was detected at concentrations exceeding minimum screening values in samples collected from NTC21-SB-07, NTC21-SB-13, and NTC21-SB-14. Surface soil sample NTC21-SB-21 contained a bis(2-ethylhexyl)phthalate concentration of 3,400 J µg/kg, which exceeds minimum screening values. Both carbozole and chrysene were detected at concentrations exceeding minimum screening values in surface soil samples collected from NTC21-SB-01, NTC21-SB-07, and NTC21-SB-21. Chrysene was also detected in surface soil samples collected from NTC21-SB-03 and NTC21-SB-11 at concentrations exceeding minimum screening values.

Concentrations of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, and naphthalene that exceeded minimum screening values were widespread throughout Site 21. However, higher concentrations of these contaminants were detected at the following five sample locations: NTC21-SB-01 and -03, located in the northwest corner of the site; NTC21-SB-07, located in the northeast corner of the site; NTC21-SB-11 and -21, located slightly south of Building 1517.

Pesticides/PCBs

The table below presents a summary of data for pesticides and PCB contaminants that were detected at concentrations exceeding the minimum screening values. The data presented include: frequency of contaminant detection, maximum results, identity of the sample location having the maximum results, the screening value used, and the number of samples that exceeded the screening criteria.

Pesticides/PCB Exceedances in Surface Soils

Parameter	Frequency of Detection	Maximum Result (µg/kg)	Sample with Maximum Detection	Minimum Screening Values	
				Value (µg/kg)	Exceedances
4,4'-DDD	22/22	520	NTC21SB-10-SO-0001	66 (1)	7
4,4'-DDE	22/22	350	NTC21SB-10-SO-0001	47 (1)	8
4,4'-DDT	22/22	740	NTC21SB-10-SO-0001	67 (1)	6
ALPHA-BHC	7/22	12	NTC21SB-05-SO-0001	0.062 (1)	7
ALPHA-CHLORDANE	12/22	27	NTC21SB-22-SO-0001	13 (1)	1
AROCLOR-1260	14/22	720	NTC21SB-10-SO-0001	24 (1)	13
BETA-BHC	3/22	1	NTC21SB-03-SO-0001	0.22(1)	3
DELTA-BHC	7/22	3.5	NTC21SB-10-SO-0001	0.062 (1)	7
DIELDRIN	15/22	15	NTC21SB-21-SO-0001	0.17 (1)	15
ENDRIN	8/22	224	NTC21SB-10-SO-0001	81 (2)	1
GAMMA-BHC (LINDANE)	9/22	20	NTC21SB-21-SO-0001	0.36 (1)	7
GAMMA-CHLORDANE	19/22	189	NTC21SB-10-SO-0001	13 (1)	3
HEPTACHLOR EPOXIDE	13/22	3	NTC21SB-06-SO-0001	0.15(1)	12

(1) USEPA ORNL Risk-Based SSLs
(2) USEPA ORNL MCL-Based SSLs

Alpha-chlordane and endrin were each detected in only one sample at concentrations exceeding minimum screening values. Concentrations of 4,4'-DDD, 4,4'-DDE, and/or 4,4'-DDT exceeded minimum screening values in the following eight locations which are located in the southern and eastern portions of the site: NTC21-SB-05, NTC21-SB-06, NTC21-SB-08, NTC21-SB-09, NTC21-SB-10, NTC21-SB-11, NTC21-SB-21, and NTC21-SB-22. Beta-BHC was detected at three sample locations (NTC21-SB-01, NTC21-SB-03, and NTC21-SB-07) at concentrations exceeding minimum screening values. Gamma-chlordane was also detected at three sample locations (NTC21-SB-04, NTC21-SB-10, and NTC21-SB-22) at concentrations exceeding minimum screening values.

Alpha-BHC, Aroclor-1260, delta-BHC, dieldrin, gamma-BHC, and heptachlor epoxide concentrations detected above minimum screening criteria were widespread throughout the site. However, higher concentrations of these contaminants were detected in the southeast portion of the site.

Herbicides

The table below presents a summary of data for herbicide contaminants that were detected at concentrations exceeding the minimum screening values. The data presented include: frequency of contaminant detection, maximum results, identity of the sample location having the maximum results, the screening value used, and the number of samples that exceeded the screening criteria.

Herbicide Exceedances in Surface Soils

Parameter	Frequency of Detection	Maximum Result (µg/kg)	Sample with Maximum Detection	Minimum Screening Values (1)	
				Value (µg/kg)	Exceedances
2,4-D	1/22	217	NTC21SB-13-SO-0001	18	1

(1) USEPA ORNL MCL-Based SSLs

A concentration of 2,4-D (217 µg/kg) exceeded the minimum screening value in surface soil sample collected from NTC21-SB-13, located slightly north of Building 1517.

Dioxins/Furans

The table below presents a summary of data for dioxin/furan contaminants that were detected at concentrations exceeding the minimum screening values. The data presented include: frequency of contaminant detection, maximum results, identity of the sample location having the maximum results, the screening value used, and the number of samples that exceeded the screening criteria.

Dioxin/Furan Exceedances in Surface Soils

Parameter	Frequency of Detection	Maximum Result (ng/kg)	Sample with Maximum Detection	Minimum Screening Values (1)	
				Value (ng/kg)	Exceedances
1,2,3,4,6,7,8,9-OCDD	2/2	1,310	NTC21SB-09-SO-0001	870	1
1,2,3,4,6,7,8-HPCDD	2/2	169	NTC21SB-09-SO-0001	26	1
1,2,3,4,6,7,8-HPCDF	2/2	82.4	NTC21SB-09-SO-0001	26	1
1,2,3,4,7,8-HXCDF	2/2	5.91	NTC21SB-09-SO-0001	2.6	1
1,2,3,6,7,8-HXCDD	2/2	7.9	NTC21SB-09-SO-0001	2.6	1
1,2,3,7,8,9-HXCDF	2/2	2.68	NTC21SB-09-SO-0001	2.6	1
1,2,3,7,8-PECDD	2/2	5.9	NTC21SB-09-SO-0001	0.26	2
2,3,4,6,7,8-HXCDF	2/2	26.2	NTC21SB-09-SO-0001	2.6	1
2,3,4,7,8-PECDF	2/2	57.5	NTC21SB-09-SO-0001	0.87	2
2,3,7,8-TCDD	2/2	0.816	NTC21SB-09-SO-0001	0.26	1
2,3,7,8-TCDF	1/2	3.17	NTC21SB-09-SO-0001	2.6	1

(1) USEPA ORNL Risk-Based SSLs

Dioxin/furan concentrations exceeding minimum screening values were detected in surface soil samples collected from NTC21-SB-09 and NTC21-SB-17. Sample location NTC21-SB-09 is located slightly southeast of Building 1517 and NTC21-SB-17 is located directly north of Building 1516.

Inorganics

The table below presents a summary of data for inorganic contaminants that were detected at concentrations exceeding the minimum screening values. The data presented include: frequency of contaminant detection, maximum results, identity of the sample location having the maximum results, the screening value used, and the number of samples that exceeded the screening criteria.

Inorganic Exceedances in Surface Soils

Parameter	Frequency of Detection	Maximum Result (mg/kg)	Sample with Maximum Detection	Minimum Screening Values	
				Value (mg/kg)	Exceedances
ANTIMONY	6/22	5.22	NTC21SB-10-SO-0001	0.27 (1)	6
ARSENIC	22/22	48.4	NTC21SB-14-SO-0001	0.0013 (2)	22
BARIUM	22/22	234 J	NTC21SB-14-SO-0001	82 (1)	7
BERYLLIUM	22/22	4.71 J	NTC21SB-14-SO-0001	3.2 (1)	2
CADMIUM	21/22	13	NTC21SB-10-SO-0001	0.38 (1)	19
CHROMIUM	22/22	163	NTC21SB-09-SO-0001	28(3)	2
COBALT	22/22	17.7	NTC21SB-13-SO-0001	0.49 (2)	22
COPPER	22/22	835	NTC21SB-10-SO-0001	46 (1)	9
IRON	22/22	69,500	NTC21SB-15-SO-0001	640(2)	22
LEAD	22/22	428	NTC21SB-10-SO-0001	14 (1)	22
MANGANESE	22/22	2,420	NTC21SB-14-SO-0001	57 (2)	22
MERCURY	22/22	8.98	NTC21SB-10-SO-0001	0.03 (2)	22
NICKEL	22/22	56.2	NTC21SB-09-SO-0001	48 (2)	2
ZINC	22/22	1,230	NTC21SB-10-SO-0001	680 (2)	3

(1) USEPA ORNL MCL-Based SSLs
(2) USEPA ORNL Risk-Based SSLs
(3) TACO Class 1 Soil to Groundwater

Exceedances of inorganics were widespread throughout the site. However, most inorganics were detected at concentrations an order of magnitude or higher than the minimum screening values in surface soil samples collected slightly southwest of Building 1517.

4.3.2 Subsurface Soil Sampling Results

Subsurface soil analytical results were compared to Illinois TACO, Illinois Non-TACO, and USEPA screening criteria as shown in Table 4-4. Analytical results for subsurface samples collected at Site 21 are summarized in Tables 4-7 and 4-8. Subsurface soil sample locations are shown on Figure 3-4. Detailed subsurface soil analytical results are provided in Appendix F-2. The following sections provide

summaries of the chemicals that exceeded minimum screening values (primarily residential) in subsurface soils.

VOCs

The table below presents a summary of data for VOC contaminants that were detected at concentrations exceeding the minimum screening values. The data presented include: frequency of contaminant detection, maximum results, identity of the sample location having the maximum results, the screening value used, and the number of samples that exceeded the screening criteria.

VOC Exceedances in Subsurface Soils

Parameter	Frequency of Detection	Maximum Result (µg/kg)	Sample with Maximum Detection	Minimum Screening Values(1)	
				Value (µg/kg)	Exceedances
BENZENE	10/22	4.8	NTC21SB-18-SO-0507	0.21	10
ETHYLBENZENE	4/22	1.9	NTC21SB-17-SO-0507	1.7	1
TETRACHLOROETHENE	2/22	18	NTC21SB-19-SO-0204	0.049	2

(1) USEPA ORNL Risk-Based SSLs

Ethylbenezene was detected in only one sample at a concentration (1.9 J µg/kg) exceeding the minimum screening value. The sample (NTC21SB-17-SO-0507) was collected slightly north of Building 1516 at a depth ranging from 5 to 7 ft bgs. Tetrachloroethene was detected at concentrations exceeding the minimum screening value in samples collected from NTC21-SB-02 and NTC21-SB-19, located in the northwest corner of the site and west of Building 1517. Benzene was detected in ten samples at concentrations ranging from 0.41 J to 4.8 µg/kg, all of which exceed minimum screening values. Higher concentrations of benzene (3 to 4.8 µg/kg) were detected in samples collected from the southeast corner of the site at depths ranging from 5 to 7 ft bgs.

SVOCs

The table below presents a summary of data for SVOC contaminants that were detected at concentrations exceeding the minimum screening values. The data presented include: frequency of contaminant detection, maximum results, identity of the sample location having the maximum results, the screening value used, and the number of samples that exceeded the screening criteria.

SVOC Exceedances in Subsurface Soils

Parameter	Frequency of Detection	Maximum Result (µg/kg)	Sample with Maximum Detection	Minimum Screening Values	
				Value (µg/kg)	Exceedances
2-METHYLNAPHTHALENE	16/22	2,100	NTC21SB-03-SO-0204	750 (1)	2
BENZO(A)ANTHRACENE	19/22	32,000	NTC21SB-03-SO-0204	10 (1)	17
BENZO(A)PYRENE	13/22	27,000	NTC21SB-03-SO-0204	3.5 (1)	13
BENZO(B)FLUORANTHENE	17/22	41,000	NTC21SB-03-SO-0204	35 (1)	14
BENZO(K)FLUORANTHENE	17/22	14,000	NTC21SB-03-SO-0204	350 (1)	6
CARBAZOLE	2/22	1,000	NTC21SB-07-SO-0204	1,100 (1)	1
CHRYSENE	21/22	34,000	NTC21SB-03-SO-0204	600 (2)	3
DIBENZO(A,H)ANTHRACENE	9/22	3,300	NTC21SB-03-SO-0204	1,100 (1)	8
INDENO(1,2,3-CD)PYRENE	13/22	16,000	NTC21SB-03-SO-0204	11 (1)	11
NAPHTHALENE	16/22	4,600	NTC21SB-22-SO-0204	120 (1)	16

(1) USEPA ORNL Risk-Based SSLs
(2) TACO Class 1 Soil to Groundwater

Concentrations of 2-methylnapthalene exceeded minimum screening values in samples collected from NTC21SB-02-SO-0204 and NTC21SB-03-SO-0204, which are located in the northwest corner of the site. Carbazole and chrysene were detected at concentrations exceeding minimum screening values in NTC21SB07-SO-0204 located in the northeast corner of the site. Chrysene was also detected elevated concentrations in subsurface soil samples NTC21SB-02-SO-0406 and NTC21SB-03-SO-0204.

Polynuclear aromatic hydrocarbon (PAH) concentrations (benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, dibenzo[a,h]anthracene, indeno[1,2,3-cd]pyrene, and naphthalene) that exceeded minimum screening values were widespread throughout Site 21. However, concentrations of these contaminants, an order of magnitude or higher than the minimum screening values, were detected at the following three sample locations: NTC21-SB-02 (4 to 6 ft bgs) and NTC21-SB-03 (2 to 4 ft bgs), located in the northwest corner of the site and NTC21-SB-07 (2 to 4 ft bgs), located in the northeast corner of the site.

Pesticides/PCBs

The table below presents a summary of data for pesticides and PCB contaminants that were detected at concentrations exceeding the minimum screening values. The data presented include: frequency of contaminant detection, maximum results, identity of the sample location having the maximum results, the screening value used, and the number of samples that exceeded the screening criteria.

Pesticides/PCB Exceedances in Subsurface Soils

Parameter	Frequency of Detection	Maximum Result (µg/kg)	Sample with Maximum Detection	Minimum Screening Values(1)	
				Value (µg/kg)	Exceedances
4,4'-DDD	9/22	480	NTC21SB-06-SO-0204	66	3
4,4'-DDE	10/22	300	NTC21SB-06-SO-0204	47	2
4,4'-DDT	10/22	240	NTC21SB-06-SO-0204	67	1
ALDRIN	1/22	0.83	NTC21SB-02-SO-0406	0.65	1
ALPHA-BHC	6/22	2.8	NTC21SB-02-SO-0204	0.062	6
ALPHA-CHLORDANE	7/22	26	NTC21SB-22-SO-0204	13	2
AROCLOR-1242	1/22	47	NTC21SB-02-SO-0406	5.3	1
AROCLOR-1260	8/22	440	NTC21SB-06-SO-0204	24	8
BETA-BHC	2/22	1.1	NTC21SB-10-SO-0406	0.22	2
DELTA-BHC	5/22	3	NTC21SB-06-SO-0204	0.062	5
DIELDRIN	8/22	5.6	NTC21SB-06-SO-0204	0.17	8
GAMMA-BHC (LINDANE)	4/22	2.3	NTC21SB-06-SO-0204	0.36	3
GAMMA-CHLORDANE	12/22	46	NTC21SB-22-SO-0204	13	2
HEPTACHLOR EPOXIDE	7/22	6.9	NTC21SB-22-SO-0204	0.15	7

(1) USEPA ORNL Risk-Based SSLs

4,4'-DDD, 4,4'-DDE, and/or 4,4'-DDT were detected at concentrations exceeding minimum screening values in NTC21SB-06-SO-0204, NTC21SB-11-SO-0204, and NTC21SB-22-SO-0204, which are located south and east of Building 1517. Aldrin and Aroclor-1242 were only detected in sample NTC21SB-02-SO-0406, located in the northwest corner of the site, at concentrations above minimum screening values. Alpha-chlordane and gamma-chlordane were detected at concentrations exceeding screening values at sample locations NTC21-SB-11 (2 to 4 ft bgs) and NTC21-SB-22 (2 to 4 ft bgs). Beta-BHC and gamma-BHC were detected in samples collected from NTC21-SB-06 and NTC21-SB-10 at concentrations exceeding minimum screening values. Gamma-BHC concentrations also exceeded the screening value in sample NTC21SB-02-SO-0406.

Concentrations of alpha-BHC, Aroclor-1260, delta-BHC, dieldrin, and heptachlor epoxide that exceeded minimum screening values were widespread. However, three or more of these contaminants were detected at concentrations at an order of magnitude or higher than screening values in subsurface soil samples NTC21SB-06-SO-0204 and NTC21SB-22-SO-0204, which are located in the southern and eastern portions of the site.

Herbicides

2,4-D and dicamba were detected at concentrations exceeding reporting limits. However, concentrations of these contaminants were below the minimum screening values.

Dioxins/Furans

The table below presents a summary of data for dioxin/furan contaminants that were detected at concentrations exceeding the minimum screening values. The data presented include: frequency of contaminant detection, maximum results, identity of the sample location having the maximum results, the screening value used, and the number of samples that exceeded the screening criteria.

Dioxin/Furan Exceedances in Subsurface Soils

Parameter	Frequency of Detection	Maximum Result (ng/kg)	Sample with Maximum Detection	Minimum Screening Values[1]	
				Value (ng/kg)	Exceedances
1,2,3,4,6,7,8,9-OCDD	1/1	1,950	NTC21SB-02-SO-0204	870	1
1,2,3,4,6,7,8-HPCDD	1/1	167	NTC21SB-02-SO-0204	26	1
1,2,3,6,7,8-HXCDD	1/1	3.62	NTC21SB-02-SO-0204	2.6	1
1,2,3,7,8-PECDD	1/1	0.579	NTC21SB-02-SO-0204	0.26	1
2,3,4,7,8-PECDF	1/1	2.75	NTC21SB-02-SO-0204	0.87	1
2,3,7,8-TCDD	1/1	0.279	NTC21SB-02-SO-0204	0.26	1

(1) USEPA ORNL Risk-Based SSLs

Dioxin/furan concentrations exceeding minimum screening values were detected in subsurface soil sample NTC21-SB-02 (2 to 4 ft bgs), which is located in the northwest corner of the site, and is the former location of an incinerator.

Inorganics

The table below presents a summary of data for inorganic contaminants that were detected at concentrations exceeding the minimum screening values. The data presented include: frequency of contaminant detection, maximum results, identity of the sample location having the maximum results, the screening value used, and the number of samples that exceeded the screening criteria.

Inorganic Exceedances in Subsurface Soils

Parameter	Frequency of Detection	Maximum Result (mg/kg)	Sample with Maximum Detection	Minimum Screening Values	
				Value (mg/kg)	Exceedances
ANTIMONY	1/22	0.643	NTC21SB-10-SO-0406	0.27 (1)	1
ARSENIC	22/22	85	NTC21SB-15-SO-0204	0.0013 (2)	22
BARIUM	22/22	157	NTC21SB-15-SO-0204	82 (1)	7
BERYLLIUM	22/22	4.05	NTC21SB-12-SO-0204	3.2 (1)	2
CADMIUM	20/22	9.62	NTC21SB-15-SO-0204	0.38 (1)	15
COBALT	22/22	23.8	NTC21SB-12-SO-0204	0.49 (2)	22
COPPER	22/22	124	NTC21SB-07-SO-0204	46 (1)	9
IRON	22/22	65,800	NTC21SB-15-SO-0204	640(2)	22
LEAD	22/22	228	NTC21SB-07-SO-0204	14 (1)	20
MANGANESE	22/22	1,690	NTC21SB-09-SO-0204	57 (2)	22
MERCURY	21/22	0.484	NTC21SB-12-SO-0204	0.03 (2)	17
SELENIUM	1/22	1.31	NTC21SB-15-SO-0204	0.26 (2)	1
ZINC	22/22	1,010	NTC21SB-04-SO-0406	680 (2)	1

(1) USEPA ORNL MCL-Based SSLs
(2) USEPA ORNL Risk-Based SSLs

Antimony, selenium, and zinc were each detected in one sample at concentrations exceeding minimum screening values. Beryllium was detected in NTC21SB-15-SO-0204 and NTC21SB-12-SO-0204 at concentrations exceeding minimum screening values.

Arsenic, barium, cadmium, cobalt, copper, iron, lead, manganese, and mercury concentrations detected over minimum screening values were widespread throughout the site. However, most inorganics were detected at elevated concentrations at the following sample locations: NTC21-SB-04 (4 to 6 ft bgs) located in the northeast corner of the site, NTC21-SB-12 (2 to 4 ft bgs) located near the northeast corner of Building 1517, NTC21-SB-19 (2 to 4 ft bgs) located near the southwest corner of Building 1517, and NTC21-SB-15 (2 to 4 ft bgs) located near the northwest corner of Building 1517.

4.3.3 Groundwater Sampling Results

Illinois TACO, Illinois Non-TACO, and USEPA screening criteria that groundwater analytical results were compared to are shown in Table 4-9. Analytical results for groundwater samples collected at Site 21 are summarized in Tables 4-10 and 4-11. Groundwater sample locations are shown on Figure 3-5. Contaminants exceeding minimum screening values (primarily USEPA Tapwater) in groundwater are shown on Figure 4-16 and summarized below. Detailed groundwater analytical results are provided in Appendix F-3.

VOCs

The table below presents a summary of data for VOC contaminants that were detected at concentrations exceeding the minimum screening criteria. The data presented include: frequency of contaminant detection, maximum results, identity of the sample location having the maximum results, the screening value used, and the number of samples that exceeded the screening criteria.

VOC Exceedances in Groundwater

Parameter	Frequency of Detection	Maximum Result (µg/L)	Location of Maximum Detection	Minimum Screening Values (1)	
				Value (µg/L)	Exceedances
BENZENE	1/6	0.96	NTC21-MW-01	0.41	1
TETRACHLOROETHENE	1/6	0.85	NTC21-MW-01	0.11	1

(1) USEPA Tapwater Criteria

Benzene and tetrachloroethene were detected in one groundwater sample collected from monitoring well NTC21-MW-01 at concentrations exceeding minimum screening values. Monitoring well NTC21-MW-01 is located in the northwest corner of the site, which is the former location of the incinerator.

SVOCs

The table below presents a summary of data for SVOC contaminants that were detected at concentrations exceeding the minimum screening values. The data presented include: frequency of contaminant detection, maximum results, identity of the sample location having the maximum results, the screening value used, and the number of samples that exceeded the screening criteria.

SVOC Exceedances in Groundwater

Parameter	Frequency of Detection	Maximum Result (µg/L)	Location of Maximum Detection	Minimum Screening Values (1)	
				Value (µg/L)	Exceedances
BENZO(A)ANTHRACENE	2/6	0.05	NTC21-MW-03	0.029	2
BENZO(A)PYRENE	2/6	0.03	NTC21-MW-03 and NTC21-MW-05	0.0029	2
BENZO(B)FLUORANTHENE	2/6	0.03	NTC21-MW-03 and NTC21-MW-05	0.029	2
PENTACHLOROPHENOL	1/6	7.8	NTC21-MW-01	0.56	1

(1) USEPA Tapwater Criteria.

Concentrations of benzo(a)anthracene, benzo(a)pyrene, and benzo(b)fluoranthene that exceeded minimum screening criteria were detected in samples collected from monitoring wells NTC21-MW-03 and NTC21-MW-05. Monitoring well NTC21-MW-03 is located on the east side of the site and monitoring well NTC21-MW-05 is located directly south of Building 1517. Pentachlorophenol was detected at a concentration of 7.8 J µg/L, which exceeds the minimum screening value of 0.56 µg/L, in monitoring well NTC21-MW-01. Monitoring well NTC21-MW-01 is located in the northwest corner of the site, which is the former location of the incinerator.

Pesticides/PCBs

The table below presents a summary of data for pesticide/PCB contaminants that were detected at concentrations exceeding the minimum screening values. The data presented include: frequency of contaminant detection, maximum results, identity of the sample location having the maximum results, the screening value used, and the number of samples that exceeded the screening criteria.

Pesticide/PCB Exceedances in Groundwater

Parameter	Frequency of Detection	Maximum Result (µg/L)	Location of Maximum Detection	Minimum Screening Values (1)	
				Value (µg/L)	Exceedances
DELTA-BHC	2/6	0.02	NTC21-MW-06	0.011	1

(1) USEPA Tapwater Criteria

Delta-BHC exceeded minimum screening criteria in NTC21-MW-06, located in the southwest corner of the site near Building 1505.

Herbicides

2,4,5-TP (silvex), 2,4-DB, dalapon, and dichloroprop were detected at concentrations exceeding reporting limits. However, concentrations of these contaminants were below the minimum screening values.

Dioxins/Furans

Dioxins/furans were not detected at concentrations exceeding reporting limits in groundwater.

Inorganics

The table below presents a summary of data for inorganic contaminants that were detected at concentrations exceeding the minimum screening values. The data presented include: frequency of

contaminant detection, maximum results, identity of the sample location having the maximum results, the screening value used, and the number of samples that exceeded the screening criteria.

Inorganic Exceedances in Groundwater

Parameter	Frequency of Detection	Maximum Result (µg/L)	Location of Maximum Detection	Minimum Screening Values (1)	
				Value (µg/L)	Exceedances
ARSENIC	5/6	7.26	NTC21-MW-02	0.045	5
COBALT	3/6	15.3	NTC21-MW-02	11	1
IRON	6/6	34,000	NTC21-MW-02	5,000	1
MANGANESE	6/6	5,400	NTC21-MW-05	150	4

(1) USEPA Tapwater Criteria

Concentrations of inorganics (arsenic, cadmium, cobalt, iron, and manganese) exceeding minimum screening values were widespread throughout the site. However, higher inorganic concentrations were detected in samples collected from NTC21-MW-02 and NTC21-MW-05. Monitoring well NTC21-MW-02 is located north of Building 7801, and NTC21-MW-05 is located directly south of Building 1517.

4.4 SOIL RESULTS COMPARISON TO TACO INGESTION AND INHALATION REMEDIATION OBJECTIVES (RESIDENTIAL AND INDUSTRIAL)

4.4.1 Surface Soil Results Comparison

Benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)flouranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene, were detected at concentrations above TACO Ingestion Remediation Objectives (Residential and/or Industrial). The highest concentrations of these constituents were encountered at one sampling point, NTC21-SB-21, where they exceeded 12 times the average concentration. Manganese and lead were detected at concentrations above TACO Ingestion Remediation Objectives (Residential only). These exceedances in surface soil are shown on Figure 4-17.

Benzo(a)anthracene

The following table presents benzo(a)anthracene concentrations detected at Site 21 that exceed TACO Ingestion Residential (900 µg/kg) and/or Industrial (8,000 µg/kg) Soil Remediation Objectives:

Sample Location	Depth (ft bgs)	Result (µg/kg)	Description of Sample Location
NTC21-SB-01	1 to 2	4,800	Located in the northwest corner of the site, which is the former location of the incinerator.
NTC21-SB-03	0 to 1	1,100	Located in the northwest corner of the site, which is the former location of the incinerator.
NTC21-SB-07	0 to 1	4,200	Located in the northeast corner of the site.
NTC21-SB-11	0 to 1	1,600	Located on the southeast corner of Building 1517.
NTC21-SB-21	0 to 1	22,000	Located slightly south of Building 1517.

Benzo(a)pyrene

The following table presents benzo(a)pyrene concentrations detected at Site 21 that exceed TACO Ingestion Residential (90 µg/kg) and/or Industrial (800 µg/kg) Soil Remediation Objectives.

Sample Location	Depth (ft bgs)	Result (µg/kg)	Description of Sample Location
NTC21-SB-01	1 to 2	4,200	Located in the northwest corner of the site, which is the former location of the incinerator.
NTC21-SB-02	0 to 1	360	Located in the northwest corner of the site, which is the former location of the incinerator.
NTC21-SB-03	0 to 1	2,400	Located in the northwest corner of the site, which is the former location of the incinerator.
NTC21-SB-05	0 to 1	390	Located on the east side of the site.
NTC21-SB-07	0 to 1	3,200	Located in the northeast corner of the site.
NTC21-SB-08	0 to 1	830	Located in the southeast corner of the site.
NTC21-SB-09	0 to 1	460	Located near the northeast corner of Building 1518.
NTC21-SB-10	0 to 1	690	Located in the southeast corner of the site.
NTC21-SB-11	0 to 1	2,900	Located in the southeast corner of Building 1517.
NTC21-SB-12	0 to 1	430	Located in the northeast corner of Building 1517.
NTC21-SB-14	0 to 1	860	Located directly north of Building 1517.
NTC21-SB-17	0 to 1	600	Located slightly north of Building 1516.
NTC21-SB-18	0 to 1	200	Located in the southwest corner of the site.
NTC21-SB-19	0 to 1	250	Located in the southwest corner of Building 1517.
NTC21-SB-20	0 to 1	560	Located slightly southwest of Building 1517.
NTC21-SB-21	0 to 1	38,000	Located slightly south of Building 1517.
NTC21-SB-22	0 to 1	340	Located slightly south of Building 1517.

Benzo(b)flouranthene

The following table presents benzo(b)flouranthene concentrations detected at Site 21 that exceed TACO Ingestion Residential (900 µg/kg) and/or Industrial (8,000 µg/kg) Soil Remediation Objectives.

Sample Location	Depth (ft bgs)	Result (µg/kg)	Description of Sample Location
NTC21-SB-01	1 to 2	6,600	Located in the northwest corner of the site, which is the former location of the incinerator.
NTC21-SB-03	0 to 1	3,500	Located in the northwest corner of the site, which is the former location of the incinerator.
NTC21-SB-07	0 to 1	3,200	Located in the northeast corner of the site.
NTC21-SB-08	0 to 1	830	Located in the southeast corner of the site.
NTC21-SB-10	0 to 1	970	Located in the southeast corner of the site.
NTC21-SB-11	0 to 1	4,100	Located on the southeast corner of Building 1517.
NTC21-SB-17	0 to 1	940	Located slightly north of Building1516.
NTC21-SB-21	0 to 1	59,000	Located slightly south of Building 1517.

Benzo(k)fluoranthene

Benzo(k)fluoranthene was detected at a concentration of 21,000 µg/kg (estimated) in soil sample NTC21-SB21-SO-0001, located slightly south of Building 1517. This concentration exceeded the TACO Residential Ingestion Soil Remediation Objective value of 9,000 µg/kg.

Dibenzo(a,h)anthracene

The following table presents dibenzo(a,h)anthracene concentrations detected at Site 21 that exceed TACO Ingestion Residential (90 µg/kg) and/or Industrial (800 µg/kg) Soil Remediation Objectives.

Sample Location	Depth (ft bgs)	Result (µg/kg)	Description of Sample Location
NTC21-SB-01	1 to 2	1,100	Located in the northwest corner of the site, which is the former location of the incinerator.
NTC21-SB-03	0 to 1	900	Located in the northwest corner of the site, which is the former location of the incinerator.
NTC21-SB-08	0 to 1	140	Located in the southeast corner of the site.
NTC21-SB-10	0 to 1	150	Located in the southeast corner of the site.
NTC21-SB-11	0 to 1	470	Located on the southeast corner of Building 1517.
NTC21-SB-17	0 to 1	100	Located slightly north of Building1516.
NTC21-SB-21	0 to 1	690	Located slightly south of Building 1517.

Lead

The following table presents lead concentrations detected at Site 21 that exceed TACO Residential Ingestion (400 mg/kg) Soil Remediation Objectives.

Sample Location	Depth (ft bgs)	Result (mg/kg)	Description of Sample Location
NTC21-SB-10	0 to 1	428	Located in the southeast corner of the site.
NTC21-SB-13	0 to 1	407	Located near the northeast corner of Building 1517.

Manganese

Manganese was detected at a concentration of 2,420 J mg/kg in soil sample NTC21SB-14-SO-0001, located directly north of Building 1517. This concentration exceeded the TACO Residential Ingestion Soil Remediation Objective value of 1,600 mg/kg.

Mercury

Mercury exceeded the Construction Worker Inhalation screening value of 0.1 mg/kg at seven locations at Site 21, as shown on the following table:

Sample Location	Depth (ft bgs)	Result (µg/kg)	Description of Sample Location
NTC21-SB-03	0 to 1	0.144J	Located in the northwest corner of the site, which is the former location of the incinerator.
NTC21-SB-09	0 to 1	0.495	Located near the northeast corner of Building 1518.
NTC21-SB-10	0 to 1	8.98	Located in the southeast corner of the site.
NTC21-SB-12	0 to 1	0.585	Located in the northeast corner of Building 1517.
NTC21-SB-13	0 to 1	0.106	Located on the northeast corner of Building 1517.
NTC21-SB-21	0 to 1	1.07	Located slightly south of Building 1517.
NTC21-SB-22	0 to 1	0.233J	Located south of Building 1517.

Surface Soil Summary

The highest levels of PAHs in the surface soils were encountered in sample NTC21-SB-21-SO-0001. The results were substantially higher in that sample than any other. Mercury and carbazole were also high in that sample. That sample was obtained from a location south of Building 1517 and just north of the building where several shops are located. The shops located there are used for welding, electrical, HVAC, pipefitting, tiling, cement, carpentry, and the painting. A RCRA hazard material storage facility is approximately 50 feet northwest of the sample location. Discharges from operations at any of the facilities could account for the high concentration in the sample there. For example, mercury is often used in HVAC control systems and carbazole is used as a pigment in paints. The sample itself was no different than many other samples observed at the site. It was predominately a black sandy material.

High concentrations of inorganics were encountered in many of the surface soil samples from the site. This could be related to the past use of the area for coal storage. Metals including arsenic, manganese, lead, and iron, among other are known to leach from coal stockpiles. In addition, asphalt pavement is present at this location.

4.4.2 Subsurface Soil Results Comparison

Benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)flouranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene, were detected at concentrations above TACO Ingestion Remediation Objectives (Residential and/or Industrial). The highest concentrations of these constituents were encountered at one sampling point, NTC21-SB-03, where they exceeded 16 times the average concentration. Manganese was detected at concentrations above TACO Ingestion Remediation Objectives (Residential only). These exceedances in subsurface soil are shown on Figure 4-17.

Benzo(a)anthracene

The following table presents benzo(a)anthracene concentrations detected at Site 21 that exceed TACO Ingestion Residential (900 µg/kg) and/or Industrial (8,000 µg/kg) Soil Remediation Objectives:

Sample Location	Depth (ft bgs)	Result (µg/kg)	Description of Sample Location
NTC21-SB-02	4 to 6	2,000	Located in the northwest corner of the site, which is the former location of the incinerator.
NTC21-SB-03	2 to 4	32,000	Located in the northwest corner of the site, which is the former location of the incinerator.
NTC21-SB-07	2 to 4	4,300	Located in the northeast corner of the site.

Benzo(a)pyrene

The following table presents benzo(a)pyrene concentrations detected at Site 21 that exceed TACO Ingestion Residential (90 µg/kg) and/or Industrial (800 µg/kg) Soil Remediation Objectives.

Sample Location	Depth (ft bgs)	Result (µg/kg)	Description of Sample Location
NTC21-SB-02	2 to 4	320	Located in the northwest corner of the site, which is the former location of the incinerator.
NTC21-SB-02	4 to 6	1,200	Located in the northwest corner of the site, which is the former location of the incinerator.
NTC21-SB-03	2 to 4	27,000	Located in the northwest corner of the site, which is the former location of the incinerator.
NTC21-SB-05	2 to 4	210	Located on the east side of the site.

Sample Location	Depth (ft bgs)	Result (µg/kg)	Description of Sample Location
NTC21-SB-06	2 to 4	520	Located on the east side of the site.
NTC21-SB-07	2 to 4	3,600	Located in the northeast corner of the site.
NTC21-SB-08	2 to 4	740	Located in the southeast corner of the site.
NTC21-SB-09	2 to 4	170	Located near the northeast corner of Building 1518.
NTC21-SB-11	2 to 4	220	Located on the southeast corner of Building 1517.
NTC21-SB-12	2 to 4	620	Located in the northeast corner of Building 1517.
NTC21-SB-22	2 to 4	480	Located slightly south of Building 1517.

Benzo(b)flouranthene

The following table presents benzo(b)flouranthene concentrations detected at Site 21 that exceed TACO Ingestion Residential (900 µg/kg) and/or Industrial (8,000 µg/kg) Soil Remediation Objectives.

Sample Location	Depth (ft bgs)	Result (µg/kg)	Description of Sample Location
NTC21-SB-02	4 to 6	1,600	Located in the northwest corner of the site, which is the former location of the incinerator.
NTC21-SB-03	2 to 4	41,000	Located in the northwest corner of the site, which is the former location of the incinerator.
NTC21-SB-07	2 to 4	4,300	Located in the northeast corner of the site.
NTC21-SB-08	2 to 4	1,200	Located in the southeast corner of the site.
NTC21-SB-12	2 to 4	1,200 J	Located in the northeast corner of Building 1517.

Benzo(k)fluoranthene

Benzo(k)fluoranthene was detected at a concentration of 14,000 µg/kg in soil sample NTC21SB-03-SO-0204, located in the northwest corner of the site, which is the former location of the incinerator. This concentration exceeded the TACO Residential Ingestion Soil Remediation Objective value of 9,000 µg/kg.

Dibenzo(a,h)anthracene

The following table presents dibenzo(a,h)anthracene concentrations detected at Site 21 that exceed TACO Ingestion Residential (90 µg/kg) and/or Industrial (800 µg/kg) Soil Remediation Objectives.

Sample Location	Depth (ft bgs)	Result (µg/kg)	Description of Sample Location
NTC21-SB-02	4 to 6	240	Located in the northwest corner of the site, which is the former location of the incinerator.
NTC21-SB-03	2 to 4	3,300	Located in the northwest corner of the site, which is the former location of the incinerator.
NTC21-SB-08	2 to 4	160	Located in the southeast corner of the site.
NTC21-SB-12	2 to 4	100	Located in the northeast corner of Building 1517.

Indeno(1,2,3-cd)pyrene

The following table presents indeno(1,2,3-cd)pyrene concentrations detected at Site 21 that exceed TACO Ingestion Residential (900 µg/kg) and/or Industrial (8,000 µg/kg) Soil Remediation Objectives:

Sample Location	Depth (ft bgs)	Result (µg/kg)	Description of Sample Location
NTC21-SB-03	2 to 4	16,000	Located in the northwest corner of the site, which is the former location of the incinerator.
NTC21-SB-07	2 to 4	2,500	Located in the northeast corner of the site.

Manganese

Manganese was detected at a concentration of 1,690 J mg/kg in soil sample NTC21SB09-SO-0204, located southeast of Building 1517. This concentration exceeded the TACO Residential Ingestion Soil Remediation Objective value of 1,600 mg/kg.

Subsurface Soil Summary

The highest levels of PAHs in the subsurface soils were encountered in sample NTC21-SB-03-SO-0204. The results were substantially higher in that sample than any other. That sample was obtained from the northwest corner of the site. A vehicle maintenance facility and fuel station for base vehicles is operated within 150 feet of that location. Additionally, Building 1600A, which was the site of a remediated leaking underground storage tank, was located due west of the sample location. Discharges from operations at any of the facilities could account for the high concentration in the sample there. The sample itself was no different than many other samples observed at the site. It was predominately a dark brown sandy material. This sandy material is not native to the site, but is consistent with residuals that might remain after use of the site for coal storage.

Similar to the surface soils, high concentrations of inorganics were encountered in many of the subsurface soil samples from the site. This could be related to the past use of the area for coal storage. In addition, asphalt pavement is present at this location.

4.5 GROUNDWATER RESULTS COMPARISON TO TACO INGESTION AND INHALATION REMEDIATION OBJECTIVES (RESIDENTIAL AND INDUSTRIAL)

Pentachlorophenol, iron, and manganese were detected at concentrations above TACO Class I Groundwater criteria. These exceedances in groundwater are shown on Figure 4-18.

Pentachlorophenol

Pentachlorophenol was detected in one sample collected from NTC21-MW-01 at a concentration [7.8 (estimated) µg/L] exceeding TACO Class I Groundwater criteria (1.0 µg/L). Monitoring well NTC21-MW-01 is located in the northwest corner of the site, which is the former location of the incinerator.

Iron

Iron was detected in only one sample exceeding TACO Class I Groundwater criteria (5,000 µg/L). That sample was collected from NTC21-MW-02. It had a concentration of 34,000 µg/L. Monitoring well NTC21-MW-02 is located north of Building 7801.

Manganese

The following table presents manganese concentrations detected at Site 21 that exceed TACO Class I Groundwater criteria (150 µg/L).

Sample Location	Result (µg/L)	Description of Sample Location
NTC21-MW-02	3,040	Located slightly north of Building 7801
NTC21-MW-03	2,150	Located on the east side of the site.
NTC21-MW-04	168	Located in the southeast corner of the site.
NTC21-MW-05	5,400	Located directly south of Building 1517.

4.6 BUILDING 1600A UST CLOSURE DATA

As discussed in Section 2.4, data were collected from sampling points located in the northwest corner of Site 21 that were installed as part of the closure of Building 1600A USTs. The sampling points situated in the northwest portion of Site 21 included two groundwater monitoring wells and three soil borings. Samples of groundwater and soil were collected and analyzed for concentrations of the following parameters: VOCs, which included benzene, ethylbenzene, m,p-xylene, methyl cyclohexane, o-xylene, toluene, and total xylenes; and SVOCs which included acenaphthene, acenaphthylene, anthracene,

benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene. For the closure assessment, groundwater data from the wells were compared against GROs for Class I Groundwater as supplied by 35 IAC Part 742. Soil data were compared against the lowest, or most conservative SROs for Residential Properties as supplied in 35 IAC Part 742, while taking into account the background values as provided in Table H of Appendix A of Illinois EPA TACO regulations.

Groundwater samples from both wells had concentrations that were less than the GROs and were generally less than the testing procedure detection limits. As indicated in the Building 1600A report, only one soil sample had detections of organic compounds which exceeded the SROs. This was the sample from soil boring SB10. The five compounds in exceedance were: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenzo(a,h)anthracene and Indeno(1,2,3-c,d)pyrene. SB10 was located approximately 95 feet east of soil boring NTC21-SB-01, which was installed as part of the Site 21 investigation. Samples from the two borings have similar levels of organic compounds.

No documentation could be found which confirmed that the data in the Building 1600A UST Closure Report were validated; therefore, they will not be used in this report other than for reference. Since NTC21-SB-01 is similar in both chemical results and location, it is believed to be representative of the conditions encountered in that portion of the site.

4.7 SUMMARY

The initial comparison of the soil results to the minimum regulatory screening criteria (Section 4.3) identified many exceedances. Exceedances of inorganics in surface soils were widespread throughout the site. However, most inorganics were detected at concentrations an order of magnitude or higher than the minimum regulatory screening values in surface soil samples collected slightly southwest of Building 1517.

Arsenic, barium, cadmium, cobalt, copper, iron, lead, manganese, and mercury concentrations detected over minimum regulatory screening values were widespread in subsurface soils throughout the site. However, the highest concentration of inorganics were detected at the following four sample locations: NTC21-SB-04 (4 to 6 ft bgs) located in the northeast corner of the site, NTC21-SB-12 (2 to 4 ft bgs) located near the northeast corner of Building 1517, NTC21-SB-19 (2 to 4 ft bgs) located near the southwest corner of Building 1517, and NTC21-SB-15 (2 to 4 ft bgs) located near the northwest corner of Building 1517.

The minimum regulatory screening criteria in many cases are the “soil to groundwater” criteria provided by TACO or USEPA. However, when the soil results are compared to the TACO Residential and Industrial Ingestion and Inhalation screening criteria, there are only a handful of exceedances as described in Sections 4.4.1 and 4.4.2 and shown on Figure 4-17.

The comparison of the groundwater results in Section 4.5 identified a handful of exceedances in the surficial aquifer. These included pentachlorophenol, iron, and manganese. Of the three, only iron and manganese were detected in the subsurface soil in excess of the screening criteria. Therefore, the majority of chemicals detected in the subsurface soil at concentrations exceeding the “soil to groundwater” criteria were not detected in groundwater samples at the site. Naval Station Great Lakes and the communities surrounding the base use a public water supply that obtains water from Lake Michigan. Naval Station Great Lakes also has an ordinance that does not allow the use of groundwater, and a Memorandum of Agreement with Illinois EPA that restricts the use of groundwater. The silt and pebbly clay in the surficial aquifer has insufficient permeability to allow free groundwater movement, and therefore is not considered to be a favorable source of groundwater (Illinois State Geological Survey, 1950).

Metals and PAH contamination in the soil throughout the site could be the result of leachate from the coal storage piles which use to occupy the site. PAHs could also be from the asphalt in the pavement at the site. The presence of high PAH concentrations in the two samples, NTC-21SB-21-SO-0001 and NTC21-SB-03-SO-0204, could be related to on-going activities at the site. Additionally, based on statistical evaluations, average concentrations of all inorganic chemicals including arsenic, were less than published Illinois background criteria as included in Appendix H

TABLE 4-1

SUMMARY OF SIEVE ANALYSIS RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Fraction	NTC21SB08-SO-0204	NTC09SB07-SO-1416	NTC09SB09-SO-1012	NTC09SB21-SO-0608
CLAY (%)	11	6	20	25
GRAVEL (%)	39	0	7	1
SAND (%)	29	45	37	11
SILT (%)	21	49	36	63
SIEVE 1" (% passing)	100	100	100	100
SIEVE 3/4" (% passing)	93	100	100	100
SIEVE 1/2" (% passing)	81	100	100	100
NO. 4 SIEVE (% passing)	61	100	93	99
NO. 10 SIEVE (% passing)	51	100	85	97
NO. 40 SIEVE (% passing)	43	85	72	95
NO. 100 SIEVE (% passing)	36	71	61	91
NO. 200 SIEVE (% passing)	32	55	56	88
Hydrometer - 0.026 mm (% passing)	22	26	48	60
Hydrometer - 0.01 mm (% passing)	15	14	31	41
Hydrometer - 0.007 mm (% passing)	12	10	26	33
Hydrometer - 0.00052 mm (% passing)	11	6	20	25
Hydrometer - 0.004 mm (% passing)	10	6	19	23
Hydrometer - 0.002 mm (% passing)	6	6	14	18
USCS SYMBOL	SP/SM	SM	SM/SC	ML/CL

TABLE 4-2

WATER LEVEL MEASUREMENTS
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Well ID	Ground Surface Elevation (feet above msl)	Top of Casing (feet above msl)	Bottom of Well (feet bgs)	Screened Interval		11/17/2009	
				Top (feet bgs)	Bottom (feet bgs)	Depth to Water (feet)	Water Level (feet above msl)
NTC21-MW-01	660.630	660.365	14.00	4.00	14.00	5.01	655.355
NTC21-MW-02	654.245	653.660	16.00	6.00	16.00	2.42	651.240
NTC21-MW-03	653.315	652.825	14.00	4.00	14.00	1.35	651.475
NTC21-MW-04	653.105	652.740	20.00	10.00	20.00	3.45	649.290
NTC21-MW-05	655.280	655.030	13.00	3.00	13.00	2.98	652.050
NTC21-MW-06	659.530	659.170	14.00	4.00	14.00	6.25	652.920

Wells were surveyed by a professional surveyor (James Anderson Company) using NAVD 88 US in feet.

TABLE 4-3

SLUG TEST RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Monitoring Well	Northing	Easting	Elevation Top of PVC (feet above msl)	Existing Ground Elevation (feet above msl)	Total Depth	Screen Depth	Screen Elevation	Sandpack Depth	Sandpack Elevation	Hydraulic Conductivity (ft/sec)	Hydraulic Conductivity (cm/sec)
NTC21-MW-01	2057880.83	1114691.88	660.37	660.63	14.00	4.00 - 14.00	656.37 - 646.37	3.00 - 14.00	657.37 - 646.37	1.36	4.79E-04
NTC21-MW-02	2057873.49	1115236.52	653.66	654.25	16.00	6.00 - 16.00	647.66 - 637.66	5.00 - 16.00	648.66 - 637.66	0.4	1.43E-04
NTC21-MW-03	2057733.70	1115391.71	652.83	653.32	14.00	4.00 - 14.00	648.83 - 638.83	3.00 - 14.00	649.83 - 638.83	Not Tested	Not Tested
NTC21-MW-04	2057444.47	1115416.45	652.74	653.11	13.00	10.00 - 20.00	642.74 - 632.74	8.00 - 20.00	644.74 - 632.74	Not Tested	Not Tested
NTC21-MW-05	2057518.81	1115138.92	655.03	655.28	13.00	3.00 - 13.00	652.03 - 642.03	2.00 - 13.00	653.03 - 642.03	0.81	2.87E-04
NTC21-MW-06	2057503.81	1114703.35	659.17	659.53	14.00	4.00 - 14.00	655.17 - 645.17	3.00 - 14.00	656.17 - 645.17	0.8	2.83E-04

1. Rising head slug tests completed in selected wells were analyzed by Bouwer and Rice Method (1989).
2. Elevations were obtained by James Anderson Company.
3. Northing and Easting Coordinates according to North American Datum 83.
4. Vertical Elevations according to North American Vertical Datum 88.

TABLE 4-4

SURFACE AND SUBSURFACE SOIL SCREENING VALUES
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Parameter	Illinois EPA															USEPA				
	Non-TACO Class 1 Soil to Groundwater	Non-TACO Ingestion Soil Remediation Objectives (Industrial)	Non-TACO Inhalation Soil Remediation Objectives (Industrial)	Non-TACO Ingestion Soil Remediation Objectives (Residential)	Non-TACO Inhalation Soil Remediation Objectives (Residential)	Non-TACO Ingestion Soil Remediation Objectives (Construction Worker)	Non-TACO Inhalation Soil Remediation Objectives (Construction Worker)	TACO Class 1 Soil to Groundwater [1]	TACO Ingestion Soil Remediation Objectives (Industrial)	TACO Inhalation Soil Remediation Objectives (Industrial)	TACO Ingestion Soil Remediation Objectives (Residential)	TACO Inhalation Soil Remediation Objectives (Residential)	TACO Ingestion Soil Remediation Objectives (Construction Worker)	TACO Inhalation Soil Remediation Objectives (Construction Worker)	TACO Background Criteria for Metro Counties	USEPA ORNL MCL-Based SSLs	USEPA Residential SSLs	USEPA ORNL Risk-Based SSLs	USEPA Industrial Inhalation SSLs	USEPA Residential Inhalations SSLs
Volatile Organics (ug/kg)																				
2-BUTANONE	17000	1000000000	25000000	47000000	25000000	NC	730000	NC	NC	NC	NC	NC	NC	NC	NC	NC	28000000	1500	24000000	24000000
ACETONE	NC	NC	NC	NC	NC	NC	NC	25000	NC	100000000	70000000	100000000	NC	100000000	NC	NC	61000000	4500	NC	NC
BENZENE	NC	NC	NC	NC	NC	NC	NC	30	100000	1600	12000	800	2300000	2200	NC	2.6	1100	0.21	1600	830
CARBON DISULFIDE	NC	NC	NC	NC	NC	NC	NC	32000	200000000	720000	7800000	720000	20000000	9000	NC	NC	820000	310	720000	720000
CHLOROMETHANE	NC	NC	180000	NC	110000	NC	5000	NC	NC	NC	NC	NC	NC	NC	NC	120000	49	3900	2100	2.10E+03
CIS-1,2-DICHLOROETHENE	NC	NC	NC	NC	NC	NC	NC	20000000	1200000	780000	1200000	21	20000000	1200000	NC	780000	110	NC	NC	NC
CYCLOHEXANE	NC	NC	280000	NC	280000	NC	280000	NC	NC	NC	NC	NC	NC	NC	NC	NC	7000000	13000	1.32E+13	8.51E+12
ETHYLBENZENE	NC	NC	NC	NC	NC	NC	NC	13000	200000000	400000	7800000	400000	20000000	58000	NC	780	5400	1.7	400000	400000
ISOPROPYLBENZENE	NC	200000000	800000	7800000	500000	NC	52000	NC	NC	NC	NC	NC	NC	NC	NC	NC	2100000	1100	850000	850000
METHYL CYCLOHEXANE	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	490000	490000
TETRACHLOROETHENE	NC	NC	NC	NC	NC	NC	NC	60	110000	20000	12000	11000	2400000	28000	NC	2.3	550	0.049	20000	10000
TOLUENE	NC	NC	NC	NC	NC	NC	NC	12000	410000000	650000	16000000	650000	410000000	42000	NC	690	5000000	1600	650000	650000
TRICHLOROFLUOROMETHANE	34000	610000000	1400000	23000000	870000	NC	13000	NC	NC	NC	NC	NC	NC	NC	NC	NC	790000	830	1600000	1100000
TOTAL XYLENES	NC	NC	NC	NC	NC	NC	NC	150000	410000000	320000	16000000	320000	41000000	5600	NC	9800	630000	200	1100000	700000
Semivolatile Organics (ug/kg)																				
1,1-BIPHENYL	150000	100000000	NC	3900000	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	3900000	19000	NC	NC
2-METHYLNAPHTHALENE	1900	8200000	NC	310000	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	140	NC	310000	750	NC	NC
4-METHYLPHENOL	3900	200000000	170000000	7800000	100000000	NC	3300000	NC	NC	NC	NC	NC	NC	NC	NC	NC	310000	150	NC	NC
ACENAPHTHENE	NC	NC	NC	NC	NC	NC	NC	570000	120000000	NC	4700000	NC	120000000	NC	130	NC	3400000	22000	NC	NC
ACENAPHTHYLENE	85000	61000000	NC	2300000	NC	61000000	NC	NC	NC	NC	NC	NC	NC	NC	70	NC	3400000	22000	NC	NC
ACETOPHENONE	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	7800000	1100	NC	NC
ANTHRACENE	NC	NC	NC	NC	NC	NC	NC	12000000	610000000	NC	23000000	NC	610000000	NC	400	NC	17000000	360000	NC	NC
BENZO(A)ANTHRACENE	NC	NC	NC	NC	NC	NC	NC	2000	8000	NC	900	NC	170000	NC	1800	NC	150	10	NC	NC
BENZO(A)PYRENE	NC	NC	NC	NC	NC	NC	NC	8000	800	NC	90	NC	17000	NC	2100	240	15	3.5	NC	NC
BENZO(B)FLUORANTHENE	NC	NC	NC	NC	NC	NC	NC	5000	8000	NC	900	NC	170000	NC	2100	NC	150	35	NC	NC
BENZO(G,H,I)PERYLENE	27000000	61000000	NC	2300000	NC	61000000	NC	NC	NC	NC	NC	NC	NC	NC	1700	NC	1700000	120000	NC	NC
BENZO(K)FLUORANTHENE	NC	NC	NC	NC	NC	NC	NC	49000	78000	NC	9000	NC	1700000	NC	1700	NC	1500	350	NC	NC
BIS(2-ETHYLHEXYL)PHTHALAT	NC	NC	NC	NC	NC	NC	NC	3600000	410000	31000000	46000	31000000	4100000	31000000	NC	1400	35000	1100	NC	NC
BUTYL BENZYL PHTHALATE	NC	NC	NC	NC	NC	NC	NC	930000	410000000	930000	16000000	930000	410000000	930000	NC	NC	260000	510	NC	NC
CARBAZOLE	NC	NC	NC	NC	NC	NC	NC	600	290000	NC	32000	NC	6200000	NC	NC	NC	NC	NC	NC	NC
CHRYSENE	NC	NC	NC	NC	NC	NC	NC	160000	780000	NC	88000	NC	17000000	NC	2700	NC	15000	1100	NC	NC
DI-N-BUTYL PHTHALATE	NC	NC	NC	NC	NC	NC	NC	2300000	200000000	2300000	7800000	2300000	200000000	2300000	NC	NC	6100000	9200	NC	NC
DIBENZO(A,H)ANTHRACENE	NC	NC	NC	NC	NC	NC	NC	2000	800	NC	90	NC	17000	NC	420	NC	15	11	NC	NC
DIBENZOFURAN	3000	2000000	NC	78000	NC	820000	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	78000	680	NC	NC
FLUORANTHENE	NC	NC	NC	NC	NC	NC	NC	4300000	82000000	NC	3100000	NC	82000000	NC	4100	NC	2300000	160000	NC	NC
FLUORENE	NC	NC	NC	NC	NC	NC	NC	560000	82000000	NC	3100000	NC	82000000	NC	180	NC	2300000	27000	NC	NC
INDENO(1,2,3-CD)PYRENE	NC	NC	NC	NC	NC	NC	NC	14000	8000	NC	900	NC	170000	NC	1600	NC	150	120	NC	NC
NAPHTHALENE	NC	NC	NC	NC	NC	NC	NC	12000	41000000	270000	1600000	170000	4100000	1800	200	NC	3600	0.47	270000	170000
PHENANTHRENE	210000	61000000	NC	2300000	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	2500	NC	1700000	120000	NC	NC
PYRENE	NC	NC	NC	NC	NC	NC	NC	4200000	61000000	NC	2300000	NC	61000000	NC	3000	NC	1700000	120000	NC	NC
Pesticides/PCBs (ug/kg)																				
4,4'-DDD	NC	NC	NC	NC	NC	NC	NC	16000	24000	NC	3000	NC	520000	NC	NC	NC	2000	66	NC	NC
4,4'-DDE	NC	NC	NC	NC	NC	NC	NC	54000	17000	NC	2000	NC	370000	NC	NC	NC	1400	47	NC	NC
4,4'-DDT	NC	NC	NC	NC	NC	NC	NC	32000	17000	1500000	2000	NC	100000	2100000	NC	NC	1700	67	1400000	750000
ALDRIN	NC	NC	NC	NC	NC	NC	NC	500	300	6600	40	3000	6100	9300	NC	NC	29	0.65	6300	3400
ALPHA-BHC	NC	NC	NC	NC	NC	NC	NC	0.5	900	1500	100	800	20000	2100	NC	NC	77	0.062	1400	750
ALPHA-CHLORDANE	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	140	1600	13	NC	72000
AROCLOR-1242	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	220	5.3	NC	NC
AROCLOR-1260	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	220	24	NC	NC
BETA-BHC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	270	0.22	11000	6000
DELTA-BHC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	77	0.062	NC	NC
DIELDRIN	NC	NC	NC	NC	NC	NC	NC	4	400	2200	40	1000	7800	3100	NC	NC	30	0.17	2100	1100
ENDOSULFAN I	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	370000	3000	NC	NC
ENDOSULFAN II	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	370000	3000	NC	NC
ENDOSULFAN SULFATE	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	370000	3000	NC	NC
ENDRIN	NC	NC	NC	NC	NC	NC	NC	1000	610000	NC	23000	NC	61000	NC	NC	81	18000	440	NC	NC
ENDRIN ALDEHYDE	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	81	18000	440	NC	NC
ENDRIN KETONE	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	81	18000	440	NC	NC
GAMMA-BHC (LINDANE)	NC	NC	NC	NC	NC	NC	NC	9	4000	NC	500	NC	96000	NC	NC	1.2	520	0.36	NC	NC
GAMMA-CHLORDANE	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	140	1600	13	120000	72000
HEPTACHLOR EPOXIDE	NC	NC	NC	NC	NC	NC	NC	700	600	9200	70	5000	2700	13000	NC	4.1	53	0.15	8800	4700
METHOXYCHLOR	NC	NC	NC	NC	NC	NC	NC	160000	10000000	NC	390000	NC	1000000	NC	NC	2200	310000	9900	NC	NC

TABLE 4-4

SURFACE AND SUBSURFACE SOIL SCREENING VALUES
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Parameter	Non-TACO Class 1 Soil to Groundwater	Non-TACO Ingestion Soil Remediation Objectives (Industrial)	Non-TACO Inhalation Soil Remediation Objectives (Industrial)	Non-TACO Ingestion Soil Remediation Objectives (Residential)	Non-TACO Inhalation Soil Remediation Objectives (Residential)	Non-TACO Ingestion Soil Remediation Objectives (Construction Worker)	Non-TACO Inhalation Soil Remediation Objectives (Construction Worker)	TACO Class 1 Soil to Groundwater [1]	TACO Ingestion Soil Remediation Objectives (Industrial)	TACO Inhalation Soil Remediation Objectives (Industrial)	TACO Ingestion Soil Remediation Objectives (Residential)	TACO Inhalation Soil Remediation Objectives (Residential)	TACO Ingestion Soil Remediation Objectives (Construction Worker)	TACO Inhalation Soil Remediation Objectives (Construction Worker)	TACO Background Criteria for Metro Counties	USEPA ORNL MCL-Based SSLs	USEPA Residential SSLs	USEPA ORNL Risk-Based SSLs	USEPA Industrial Inhalation SSLs	USEPA Residential Inhalations SSLs
Herbicides (ug/kg)																				
2,4-D	NC	NC	NC	NC	NC	NC	NC	1500	20000000	NC	780000	NC	2000000	NC	NC	**18**	690000	95	NC	NC
DICAMBA	860	61000000	NC	2300000	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	1800000	**280**	NC	NC
DINOSEB	NC	NC	NC	NC	NC	NC	NC	340	2000000	NC	78000	NC	200000	NC	NC	**62**	61000	320	NC	NC
Dioxins/Furans (ng/kg)																				
1,2,3,4,6,7,8,9-OCDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	15000	**870**	NC	NC
1,2,3,4,6,7,8,9-OCDF	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	15000	**870**	NC	NC
1,2,3,4,6,7,8-HPCDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	450	**26**	NC	NC
1,2,3,4,6,7,8-HPCDF	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	450	**26**	NC	NC
1,2,3,4,7,8,9-HPCDF	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	450	**26**	NC	NC
1,2,3,4,7,8-HXCDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	45	**2.6**	NC	NC
1,2,3,4,7,8-HXCDF	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	45	**2.6**	NC	NC
1,2,3,6,7,8-HXCDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	45	**2.6**	NC	NC
1,2,3,6,7,8-HXCDF	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	45	**2.6**	NC	NC
1,2,3,7,8,9-HXCDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	45	**2.6**	4750000	2540000
1,2,3,7,8,9-HXCDF	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	45	**2.6**	NC	NC
1,2,3,7,8-PECDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	4.5	**0.26**	NC	NC
1,2,3,7,8-PECDF	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	150	**8.7**	NC	NC
2,3,4,6,7,8-HXCDF	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	45	**2.6**	NC	NC
2,3,4,7,8-PECDF	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	15	**0.87**	NC	NC
2,3,7,8-TCDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	15	4.5	**0.26**	79	42
2,3,7,8-TCDF	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	45	**2.6**	NC	NC
Inorganics (mg/kg)																				
ALUMINUM	3.5	1000000	1000000	78000	1000000	200000	870000	NC	NC	NC	NC	NC	NC	NC	9500	NC	77000	**55000**	11000000	7090000
ANTIMONY	NC	NC	NC	NC	NC	NC	NC	5	820	NC	31	NC	82	NC	4	**0.27**	31	0.66	NC	NC
ARSENIC	NC	NC	NC	NC	NC	NC	NC	31	NC	1200	NC	750	61	25000	13	0.29	0.39	**0.0013**	1440	769
BARIUM	NC	NC	NC	NC	NC	NC	NC	2100	140000	910000	5500	690000	14000	870000	110	**82**	15000	300	1100000	709000
BERYLLIUM	NC	NC	NC	NC	NC	NC	NC	8000	4100	2100	160	1300	410	44000	0.59	**3.2**	160	58	2570	1380
CADMIUM	NC	NC	NC	NC	NC	NC	NC	430		2800	78	1800	200	59000	0.6	**0.38**	70	1.4	3430	1840
CALCIUM	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	9300	NC	NC	NC	NC	NC
CHROMIUM	NC	NC	NC	NC	NC	NC	NC	28	6100	420	230	270	4100	690	16.2	180000	NC	NC	515	276
COBALT	NC	NC	NC	NC	NC	NC	NC	NC	120000	NC	4700	NC	12000	NC	8.9	NC	23	**0.49**	2210	1180
COPPER	NC	NC	NC	NC	NC	NC	NC	330000	82000	NC	2900	NC	8200	NC	19.6	**46**	3100	51	NC	NC
IRON	NC	1000000	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	15900	NC	55000	**640**	NC	NC
LEAD	NC	NC	NC	NC	NC	NC	NC	107	800	NC	400	NC	700	NC	36	**14**	400	NC	NC	NC
MAGNESIUM	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	**325000**	NC	730000	NC	4820	NC	NC	NC	NC	NC
MANGANESE	NC	NC	NC	NC	NC	NC	NC	NC	41000	91000	1600	69000	4100	8700	636	NC	1800	**57**	110000	70900
MERCURY	NC	NC	NC	NC	NC	NC	NC	8	610	16	23	10	61	0.1	0.06	0.1	5.6	**0.03**	2.9	2.9
NICKEL	NC	NC	NC	NC	NC	NC	NC	3800	41000	21000	1600	13000	4100	440000	18	NC	1500	**48**	NC	NC
POTASSIUM	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	1268	NC	NC	NC	NC	NC
SELENIUM	NC	NC	NC	NC	NC	NC	NC	2.4	10000	NC	390	NC	1000	NC	0.48	**0.26**	390	0.95	NC	NC
SILVER	NC	NC	NC	NC	NC	NC	NC	110	10000	NC	390	NC	1000	NC	0.55	NC	390	**1.6**	NC	NC
SODIUM	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	130	NC	NC	NC	NC	NC
VANADIUM	NC	NC	NC	NC	NC	NC	NC	980	14000	NC	550	NC	1400	NC	25.2	NC	390	**180**	NC	NC
ZINC	NC	NC	NC	NC	NC	NC	NC	53000	610000	NC	23000	NC	61000	NC	95	NC	23000	**680**	NC	NC

ng/kg = Nanogram per kilogram.
ug/kg = Microgram per kilogram.
mg/kg = Milligram per kilogram.

NC = No criteria.
1 = Illinois Tiered Approach to Corrective Action Objectives; Soil Component of Groundwater Ingestion Class 1 (pH = 7.86; Obtained from IDW laboratory results).
Bolded cells represent the lowest screening value.

TABLE 4-5

OCCURRENCE AND DISTRIBUTION OF ORGANICS AND INORGANICS IN SURFACE SOIL
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Parameter	Frequency of Detection	Minimum Result	Maximum Result	Sample with Maximum Detection	Minimum Non-Detection	Maximum Non-Detection	Average Positive Result	Overall Average	Standard Deviation	Minimum Screening Value		Minimum Non-TACO Screening Value			Minimum TACO Screening Value			Minimum USEPA Screening Value		
										Value	Exceedances	Value	Exceedances	Source	Value	Exceedances	Source	Value	Exceedances	Source
Volatile Organics (ug/kg)																				
2-BUTANONE	1/22	30 J	30 J	NTC21-SB-05-SO-0001	4.3	7.8	3.00E+01	3.95E+00	5.84E+00	1500	0	NC	0	1 through 5	NC	0	6 through 10	1500	0	13
ACETONE	6/22	21	180 J	NTC21-SB-05-SO-0001	4.3	14	7.58E+01	2.28E+01	4.58E+01	4500	0	NC	0	1 through 5	25000	0	6	4500	0	13
BENZENE	5/22	**0.56 J**	**1.1 J**	NTC21-SB-01-SO-0102	4.3	7.8	7.70E-01	2.34E+00	9.78E-01	**0.21**	**5**	NC	0	1 through 5	30	0	6	**0.21**	**5**	**13**
CARBON DISULFIDE	14/22	1.6 J	16	NTC21-SB-17-SO-0001	4.4	6.6	4.91E+00	4.13E+00	3.09E+00	310	0	NC	0	1 through 5	32000	0	6	310	0	13
CYCLOHEXANE	12/22	0.71 J	2.9 J	NTC21-SB-10-SO-0001	4.3	7.8	1.36E+00	2.04E+00	9.79E-01	13000	0	280000	0	3 and 5	NC	0	6 through 10	13000	0	13
ETHYLBENZENE	1/22	0.9 J	0.9 J	NTC21-SB-11-SO-0001	4.3	7.8	9.00E-01	2.67E+00	6.20E-01	1.7	0	NC	0	1 through 5	13000	0	6	1.7	0	13
METHYL CYCLOHEXANE	18/22	0.43 J	3.7 J	NTC21-SB-12-SO-0001	4.3	6.6	1.77E+00	1.92E+00	1.03E+00	120000	0	120000	0	3 and 5	NC	0	6 through 10	490000	0	14 and 15
TETRACHLOROETHENE	1/22	**1.4 J**	**1.4 J**	NTC21-SB-19-SO-0001	4.3	7.8	1.40E+00	2.70E+00	5.50E-01	**0.049**	**1**	NC	0	1 through 5	60	0	6	**0.049**	**1**	**13**
TOLUENE	2/22	1.1 J	1.4 J	NTC21-SB-01-SO-0102	4.3	7.8	1.25E+00	2.66E+00	6.37E-01	690	0	NC	0	1 through 5	12000	0	6	690	0	11
TOTAL XYLENES	1/22	1.6 J	1.6 J	NTC21-SB-11-SO-0001	4.3	7.8	1.60E+00	2.70E+00	5.37E-01	200	0	NC	0	1 through 5	150000	0	6	200	0	13
Semivolatile Organics (ug/kg)																				
1,1-BIPHENYL	1/22	62 J	62 J	NTC21-SB-01-SO-0102	350	430	6.20E+01	1.83E+02	2.93E+01	19000	0	150000	0	1	NC	0	6 through 10	19000	0	13
2-METHYLNAPHTHALENE	22/22	27	**900**	NTC21-SB-14-SO-0001	---	---	4.16E+02	4.16E+02	2.59E+02	**750**	**3**	NC	0	1 through 5	NC	0	6 through 10	**750**	**3**	**13**
4-METHYLPHENOL	1/21	50 J	50 J	NTC21-SB-21-SO-0001	350	430	5.00E+01	1.84E+02	3.26E+01	150	0	200	0	1	NC	0	6 through 10	150	0	13
ACENAPHTHENE	17/22	13	2200	NTC21-SB-21-SO-0001	3.7	4.3	3.04E+02	2.36E+02	5.03E+02	22000	0	NC	0	1 through 5	570000	0	6	22000	0	13
ACENAPHTHYLENE	10/22	20	680	NTC21-SB-03-SO-0001	3.5	4.3	1.25E+02	5.78E+01	1.44E+02	22000	0	85000	0	1	NC	0	6 through 10	22000	0	13
ACETOPHENONE	1/22	48 J	48 J	NTC21-SB-08-SO-0001	350	430	4.80E+01	1.83E+02	3.23E+01	1100	0	NC	0	1 through 5	NC	0	6 through 10	1100	0	13
ANTHRACENE	14/22	37	7200	NTC21-SB-21-SO-0001	3.6	4.3	9.18E+02	5.85E+02	1.56E+03	360000	0	NC	0	1 through 5	12000000	0	6	360000	0	13
BENZO(A)ANTHRACENE	20/22	**110**	**22000 J**	NTC21-SB-21-SO-0001	4	4.3	1.89E+03	1.72E+03	4.70E+03	**10**	**20**	NC	0	1 through 5	**900**	**5**	**9**	**10**	**20**	**13**
BENZO(A)PYRENE	17/22	**200**	**38000 J**	NTC21-SB-21-SO-0001	3.6	4.3	3.33E+03	2.58E+03	8.00E+03	**3.5**	**17**	NC	0	1 through 5	**90**	**17**	**9**	**3.5**	**17**	**13**
BENZO(B)FLUORANTHENE	20/22	**290**	**59000 J**	NTC21-SB-21-SO-0001	4.1	4.3	4.38E+03	3.98E+03	1.24E+04	**35**	**20**	NC	0	1 through 5	**900**	**8**	**9**	**35**	**20**	**13**
BENZO(G,H,I)PERYLENE	18/22	150	24000 J	NTC21-SB-21-SO-0001	3.7	4.1	1.94E+03	1.59E+03	5.04E+03	120000	0	2300000	0	4	NC	0	6 through 10	120000	0	13
BENZO(K)FLUORANTHENE	20/22	110	**21000 J**	NTC21-SB-21-SO-0001	4.1	4.3	1.74E+03	1.58E+03	4.39E+03	**350**	**11**	NC	0	1 through 5	**9000**	**1**	**9**	**350**	**11**	**13**
BIS(2-ETHYLHEXYL)PHTHALA	16/22	51 J	**3400 J**	NTC21-SB-21-SO-0001	390	410	3.55E+02	3.12E+02	6.92E+02	**1100**	**1**	NC	0	1 through 5	46000	0	9	**1100**	**1**	**13**
BUTYL BENZYL PHTHALATE	1/22	97 J	97 J	NTC21-SB-08-SO-0001	350	430	9.70E+01	1.85E+02	2.28E+01	510	0	NC	0	1 through 5	930000	0	6, 8, and 10	510	0	13
CARBAZOLE	4/22	66 J	**2400**	NTC21-SB-21-SO-0001	700	860	1.09E+03	5.09E+02	4.61E+02	**600**	**3**	NC	0	1 through 5	**600**	**3**	**6**	NC	0	13
CHRYSENE	20/22	130 J	**31000 J**	NTC21-SB-21-SO-0001	4	4.3	2.49E+03	2.26E+03	6.59E+03	**1100**	**5**	NC	0	1 through 5	88000	0	9	**1100**	**5**	**13**
DI-N-BUTYL PHTHALATE	2/22	37 J	190 J	NTC21-SB-10-SO-0001	350	430	1.14E+02	1.83E+02	3.45E+01	9200	0	NC	0	1 through 5	2300000	0	6, 8, and 10	9200	0	13
DIBENZO(A,H)ANTHRACENE	12/22	**44**	**1100**	NTC21-SB-01-SO-0102	3.5	4.3	3.26E+02	1.79E+02	3.16E+02	**11**	**12**	NC	0	1 through 5	**90**	**7**	**9**	**11**	**12**	**13**
DIBENZOFURAN	22/22	39 J	640	NTC21SB21-SO-0001	---	---	2.22E+02	2.22E+02	1.76E+02	680	0	NC	0	1 through 5	NC	0	6 through 10	680	0	13
FLUORANTHENE	22/22	260	84000	NTC21-SB-21-SO-0001	---	---	6.08E+03	6.08E+03	1.78E+04	160000	0	NC	0	1 through 5	3100000	0	9	160000	0	13
FLUORENE	9/22	11	1600	NTC21-SB-21-SO-0001	3.6	4.3	4.62E+02	1.90E+02	4.16E+02	27000	0	NC	0	1 through 5	560000	0	6	27000	0	13
INDENO(1,2,3-CD)PYRENE	16/22	**150**	**36000 J**	NTC21-SB-21-SO-0001	3.5	4.3	3.04E+03	2.21E+03	7.60E+03	**120**	**16**	NC	0	1 through 5	**900**	**4**	**9**	**120**	**16**	**13**
NAPHTHALENE	22/22	**18**	**520**	NTC21-SB-01-SO-0102	---	---	2.37E+02	2.37E+02	1.35E+02	**0.47**	**22**	NC	0	1 through 5	12000	0	6	**0.47**	**22**	**13**
PHENANTHRENE	22/22	250	30000	NTC21-SB-21-SO-0001	---	---	3.10E+03	3.10E+03	6.48E+03	120000	0	200000	0	1	NC	0	6 through 10	120000	0	13
PYRENE	22/22	240	70000	NTC21-SB-21-SO-0001	---	---	5.05E+03	5.05E+03	1.48E+04	120000	0	NC	0	1 through 5	2300000	0	9	120000	0	13
Pesticides/PCBs (ug/kg)																				
4,4'-DDD	22/22	0.75 J	**520 J**	NTC21-SB-10-SO-0001	---	---	1.01E+02	1.01E+02	1.56E+02	**66**	**7**	NC	0	1 through 5	3000	0	9	**66**	**7**	**13**
4,4'-DDE	22/22	0.45 J	**350 J**	NTC21-SB-10-SO-0001	---	---	5.55E+01	5.55E+01	9.08E+01	**47**	**8**	NC	0	1 through 5	2000	0	9	**47**	**8**	**13**
4,4'-DDT	22/22	0.77 J	**740 J**	NTC21-SB-10-SO-0001	---	---	8.14E+01	8.14E+01	1.70E+02	**67**	**6**	NC	0	1 through 5	2000	0	9	**67**	**6**	**13**
ALDRIN	2/22	0.23 J	0.33 J	NTC21-SB-01-SO-0102	0.35	0.43	2.80E-01	1.97E-01	3.30E-02	0.65	0	NC	0	1 through 5	40	0	9	0.65	0	13
ALPHA-BHC	7/22	**0.28 J**	**12 J**	NTC21-SB-05-SO-0001	0.35	0.43	3.94E+00	1.38E+00	3.16E+00	**0.062**	**7**	NC	0	1 through 5	**0.5**	**3**	**6**	**0.062**	**7**	**13**
ALPHA-CHLORDANE	12/22	0.64 J	**27 J**	NTC21-SB-22-SO-0001	0.35	0.43	5.59E+00	3.14E+00	5.93E+00	**13**	**1**	NC	0	1 through 5	NC	0	6 through 10	**13**	**1**	**13**
AROCLOR-1260	14/22	21 J	**720 J**	NTC21-SB-10-SO-0001	18.1	20.8	2.30E+02	1.50E+02	1.85E+02	**24**	**13**	NC	0	1 through 5	NC	0	6 through 10	**24**	**13**	**13**
BETA-BHC	3/22	**0.27 J**	**1 J**	NTC21-SB-03-SO-0001	0.35	0.43	6.10E-01	2.46E-01	1.87E-01	**0.22**	**3**	NC	0	1 through 5	NC	0	6 through 10	**0.22**	**3**	**13**
DELTA-BHC	7/22	**0.42 J**	**3.5 J**	NTC21-SB-10-SO-0001	0.35	0.43	1.35E+00	5.55E-01	8.42E-01	**0.062**	**7**	NC	0	1 through 5	NC	0	6 through 10	**0.062**	**7**	**13**
DIELDRIN	15/22	**0.33 J**	**15 J**	NTC21-SB-21-SO-0001	0.75	0.82	4.84E+00	3.43E+00	4.37E+00	**0.17**	**15**	NC	0	1 through 5	**4**	**4**	**6**	**0.17**	**15**	**13**
ENDOSULFAN I	7/22	0.2 J	14 J	NTC21-SB-10-SO-0001	0.35	0.43	3.88E+00	1.36E+00	3.06E+00	3000	0	NC	0	1 through 5	NC	0	6 through 10	3000	0	13
ENDOSULFAN II	6/22	0.58 J	4.6 J	NTC21-SB-10-SO-0001	0.71	0.83	2.31E+00	9.10E-01	1.18E+00	3000	0	NC	0	1 through 5	NC	0	6 through 10	3000	0	13
ENDOSULFAN SULFATE	12/22	0.96 J	25 J	NTC21-SB-21-SO-0001	0.71	0.82	6.86E+00	3.91E+00	6.50E+00	3000	0	NC	0	1 through 5	NC	0	6 through 10	3000	0	13
ENDRIN	8/22	0.71 J	**224**	NTC21-SB-10-SO-0001	0.72	0.86	3.94E+01	1.46E+01	4.92E+01	**81**	**1**	NC	0	1 through 5	1000	0	6	**81**	**1**	**13**
ENDRIN ALDEHYDE	6/22	0.39 J	28 J	NTC21-SB-10-SO-0001	0.71	0.86	7.90E+00	2.43E+00	6.11E+00	81	0	NC	0	1 through 5	NC	0	6 through 10	81	0	13
ENDRIN KETONE	4/22	0.85 J	44 J	NTC21-SB-21-SO-0001	0.72	0.86	1.24E+01	2.57E+00	9.28E+00	81	0	NC	0	1 through 5	NC	0	6 through 10	81	0	13
GAMMA-BHC (LINDANE)	9/22	0.22 J	**20**	NTC21-SB-21-SO-0001	0.35	0.4	3.14E+00	1.40E+00	4.26E+00	**0.36**	**7**	NC	0	1 through 5	**9**	**1**	**6**	**0.36**	**7**	**13**
GAMMA-CHLORDANE	19/22	0.64 J	**189 J**	NTC21-SB-10-SO-0001	0.35	0.4	1.96E+01	1.69E+01	4.19E+01	**13**	**3**	NC	0	1 through 5	NC	0	6 through 10	**13**	**3**	**13**
HEPTACHLOR EPOXIDE	13/22	0.15 J	**3**	NTC21-SB-06-SO-0001	0.35	0.4	1.30E+00	8.44E-01	8.99E-01	**0.15**	**12**	NC	0	1 through 5	70	0	9	**0.15**	**12**	**13**
METHOXYCHLOR	15/22	0.35 J	37 J	NTC21-SB-04-SO-0001	0.35	0.4	8.50E+00	5.85E+00	8.90E+00	2200	0	NC	0	1 through 5	160000	0	6	2200	0	11
Herbicides (ug/kg)																				
2,4-D	1/22	**217 J**	**217 J**	NTC21-SB-13-SO-0001	52.7	61.8	2.17E+02	3.69E+01	4.03E+01	**18**	**1**	NC	0	1 through 5	1500	0	6	**18**	**1**	**11**
DICAMBA	7/22	4.86 J	9.99 J	NTC21-SB-14-SO-0001	5.31	6.18	7.22E+00	4.23E+00	2.31E+00	280	0	NC	0	1 through 5	NC	0	6 through 10	280	0	13
DINOSEB	1/22	17.2 J	17.2 J	NTC21-SB-14-SO-0001	26.3	32.2	1.72E+01	1.43E+01	1.04E+00	62	0	NC	0	1 through 5	340	0	6	62	0	11

TABLE 4-5

OCCURRENCE AND DISTRIBUTION OF ORGANICS AND INORGANICS IN SURFACE SOIL
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Parameter	Frequency of Detection	Minimum Result	Maximum Result	Sample with Maximum Detection	Minimum Non-Detection	Maximum Non-Detection	Average Positive Result	Overall Average	Standard Deviation	Minimum Screening Value		Minimum Non-TACO Screening Value			Minimum TACO Screening Value			Minimum USEPA Screening Value		
										Value	Exceedances	Value	Exceedances	Source	Value	Exceedances	Source	Value	Exceedances	Source
Dioxins/Furans (ng/kg)																				
1,2,3,4,6,7,8,9-OCDD	2/2	174	**1310**	NTC21-SB-09-SO-0001	---	---	7.42E+02	7.42E+02	8.03E+02	**870**	**1**	NC	0	1 through 5	NC	0	6 through 10	**870**	**1**	**13**
1,2,3,4,6,7,8,9-OCDF	2/2	19.8	141	NTC21-SB-09-SO-0001	---	---	8.04E+01	8.04E+01	8.57E+01	870	0	NC	0	1 through 5	NC	0	6 through 10	870	0	13
1,2,3,4,6,7,8-HPCDD	2/2	17.7	**169**	NTC21-SB-09-SO-0001	---	---	9.34E+01	9.34E+01	1.07E+02	**26**	**1**	NC	0	1 through 5	NC	0	6 through 10	**26**	**1**	**13**
1,2,3,4,6,7,8-HPCDF	2/2	9.64	**82.4**	NTC21-SB-09-SO-0001	---	---	4.60E+01	4.60E+01	5.14E+01	**26**	**1**	NC	0	1 through 5	NC	0	6 through 10	**26**	**1**	**13**
1,2,3,4,7,8,9-HPCDF	2/2	0.952 J	4.08 J	NTC21-SB-09-SO-0001	---	---	2.52E+00	2.52E+00	2.21E+00	26	0	NC	0	1 through 5	NC	0	6 through 10	26	0	13
1,2,3,4,7,8-HXCDD	1/2	1.9 J	1.9 J	NTC21-SB-09-SO-0001	5	5	1.90E+00	2.20E+00	4.24E-01	2.6	0	NC	0	1 through 5	NC	0	6 through 10	2.6	0	13
1,2,3,4,7,8-HXCDF	2/2	1.31 J	**5.91**	NTC21-SB-09-SO-0001	---	---	3.61E+00	3.61E+00	3.25E+00	**2.6**	**1**	NC	0	1 through 5	NC	0	6 through 10	**2.6**	**1**	**13**
1,2,3,6,7,8-HXCDD	2/2	1.14 J	**7.9**	NTC21-SB-09-SO-0001	---	---	4.52E+00	4.52E+00	4.78E+00	**2.6**	**1**	NC	0	1 through 5	NC	0	6 through 10	**2.6**	**1**	**13**
1,2,3,6,7,8-HXCDF	2/2	1.07 J	**11.6**	NTC21-SB-09-SO-0001	---	---	6.34E+00	6.34E+00	7.45E+00	**2.6**	**1**	NC	0	1 through 5	NC	0	6 through 10	**2.6**	**1**	**13**
1,2,3,7,8,9-HXCDD	2/2	0.81 J	**5.17**	NTC21-SB-09-SO-0001	---	---	2.99E+00	2.99E+00	3.08E+00	**2.6**	**1**	NC	0	1 through 5	NC	0	6 through 10	**2.6**	**1**	**13**
1,2,3,7,8,9-HXCDF	2/2	0.358 J	**2.68 J**	NTC21-SB-09-SO-0001	---	---	1.52E+00	1.52E+00	1.64E+00	**2.6**	**1**	NC	0	1 through 5	NC	0	6 through 10	**2.6**	**1**	**13**
1,2,3,7,8-PECDD	2/2	**0.76 J**	**5.9 J**	NTC21-SB-09-SO-0001	---	---	3.33E+00	3.33E+00	3.63E+00	**0.26**	**2**	NC	0	1 through 5	NC	0	6 through 10	**0.26**	**2**	**13**
1,2,3,7,8-PECDF	1/2	1.92 J	1.92 J	NTC21-SB-09-SO-0001	0.462	0.462	1.92E+00	1.08E+00	1.19E+00	8.7	0	NC	0	1 through 5	NC	0	6 through 10	8.7	0	13
2,3,4,6,7,8-HXCDF	2/2	1.84 J	**26.2**	NTC21-SB-09-SO-0001	---	---	1.40E+01	1.40E+01	1.72E+01	**2.6**	**1**	NC	0	1 through 5	NC	0	6 through 10	**2.6**	**1**	**13**
2,3,4,7,8-PECDF	2/2	**3.66 J**	**57.5**	NTC21-SB-09-SO-0001	---	---	3.06E+01	3.06E+01	3.81E+01	**0.87**	**2**	NC	0	1 through 5	NC	0	6 through 10	**0.87**	**2**	**13**
2,3,7,8-TCDD	2/2	0.198 J	**0.816 J**	NTC21-SB-09-SO-0001	---	---	5.07E-01	5.07E-01	4.37E-01	**0.26**	**1**	NC	0	1 through 5	NC	0	6 through 10	**0.26**	**1**	**13**
2,3,7,8-TCDF	1/2	**3.17**	**3.17**	NTC21-SB-09-SO-0001	0.728	0.728	3.17E+00	1.77E+00	1.98E+00	**2.6**	**1**	NC	0	1 through 5	NC	0	6 through 10	**2.6**	**1**	**13**
Inorganics (mg/kg)																				
ALUMINUM	22/22	2470	29500	NTC21-SB-14-SO-0001	---	---	7.62E+03	7.62E+03	6.23E+03	55000	0	78000	0	4	NC	0	6 through 10	55000	0	13
ANTIMONY	6/22	**0.627 J**	**5.22**	NTC21-SB-10-SO-0001	0.513	1.63	2.16E+00	9.55E-01	1.12E+00	**0.27**	**6**	NC	0	1 through 5	**5**	**0**	**6**	**0.27**	**6**	**11**
ARSENIC	22/22	**3.12**	**48.4 J**	NTC21-SB-14-SO-0001	---	---	1.25E+01	1.25E+01	1.22E+01	**0.0013**	**22**	NC	0	1 through 5	**31**	**0**	**6**	**0.0013**	**22**	**13**
BARIUM	22/22	29.3 J	**234 J**	NTC21-SB-14-SO-0001	---	---	7.64E+01	7.64E+01	5.01E+01	**82**	**7**	NC	0	1 through 5	2100	0	6	**82**	**7**	**11**
BERYLLIUM	22/22	0.254	**4.71 J**	NTC21-SB-14-SO-0001	---	---	1.03E+00	1.03E+00	1.13E+00	**3.2**	**2**	NC	0	1 through 5	160	0	9	**3.2**	**2**	**11**
CADMIUM	21/22	0.132	**13**	NTC21-SB-10-SO-0001	0.262	0.262	2.32E+00	2.22E+00	3.16E+00	**0.38**	**19**	NC	0	1 through 5	78	0	9	**0.38**	**19**	**11**
CALCIUM	22/22	2240 J	133000	NTC21-SB-20-SO-0001	---	---	7.16E+04	7.16E+04	3.84E+04	NC	0	NC	0	1 through 5	NC	0	6 through 10	NC	0	11 through 15
CHROMIUM	22/22	5.38 J	**163 J**	NTC21-SB-09-SO-0001	---	---	2.03E+01	2.03E+01	3.25E+01	**28**	**2**	NC	0	1 through 5	**28**	**2**	**6**	276	0	15
COBALT	22/22	**2.31**	**17.7**	NTC21-SB-13-SO-0001	---	---	6.59E+00	6.59E+00	3.64E+00	**0.49**	**22**	NC	0	1 through 5	4700	0	9	**0.49**	**22**	**14**
COPPER	22/22	12.9	**835**	NTC21-SB-10-SO-0001	---	---	9.36E+01	9.36E+01	1.77E+02	**46**	**9**	NC	0	1 through 5	2900	0	9	**46**	**9**	**11**
IRON	22/22	**6660 J**	**69500 J**	NTC21-SB-15-SO-0001	---	---	2.68E+04	2.68E+04	1.49E+04	**640**	**22**	**55000**	**1**	**4**	NC	0	6 through 10	**640**	**22**	**13**
LEAD	22/22	16.7	**428**	NTC21-SB-10-SO-0001	---	---	1.01E+02	1.01E+02	1.14E+02	**14**	**22**	NC	0	1 through 5	**400**	**2**	**9**	**14**	**22**	**11**
MAGNESIUM	22/22	1440	75800	NTC21-SB-19-SO-0001	---	---	3.48E+04	3.48E+04	2.29E+04	325000	0	NC	0	1 through 5	325000	0	9	NC	0	11 through 15
MANGANESE	22/22	**173**	**2420 J**	NTC21-SB-14-SO-0001	---	---	5.89E+02	5.89E+02	5.01E+02	**57**	**22**	NC	0	1 through 5	**1600**	**1**	**9**	**57**	**22**	**13**
MERCURY	22/22	**0.0332**	**8.98**	NTC21-SB-10-SO-0001	---	---	5.68E-01	5.68E-01	1.90E+00	**0.03**	**22**	NC	0	1 through 5	10	0	10	**0.03**	**22**	**13**
NICKEL	22/22	5.56	**56.2 J**	NTC21-SB-09-SO-0001	---	---	2.19E+01	2.19E+01	1.38E+01	**48**	**2**	NC	0	1 through 5	1600	9	6	**48**	**2**	**13**
POTASSIUM	22/22	428	1930	NTC21-SB-14-SO-0001	---	---	8.39E+02	8.39E+02	3.64E+02	NC	0	NC	0	1 through 5	NC	0	6 through 10	NC	0	11 through 15
SILVER	3/22	0.233	1.41	NTC21-SB-10-SO-0001	0.103	0.325	7.19E-01	1.83E-01	2.92E-01	1.6	0	NC	0	1 through 5	110	0	6	1.6	0	13
SODIUM	22/22	230	2080	NTC21-SB-17-SO-0001	---	---	9.27E+02	9.27E+02	4.62E+02	NC	0	NC	0	1 through 5	NC	0	6 through 10	NC	0	11 through 15
VANADIUM	22/22	8.94	25.7	NTC21-SB-09-SO-0001	---	---	1.67E+01	1.67E+01	5.09E+00	180	0	NC	0	1 through 5	550	0	9	180	0	13
ZINC	22/22	46.5	**1230**	NTC21-SB-10-SO-0001	---	---	2.47E+02	2.47E+02	3.05E+02	**680**	**3**	NC	0	1 through 5	23000	0	9	**680**	**3**	**13**

Shaded cells and boldface font indicate that the concentration is greater than the minimum screening value.
NTC21-SB-10-SO-0001 = Soil sample collected at soil boring 10 from 0 to 1 foot.

USEPA = United States Environmental Protection Agency.
TACO = Tiered Approach to Corrective Action Objectives.
J = Estimated value.
NC = No criteria.
ng/kg = Nanogram per kilogram.
ug/kg = Microgram per kilogram.
mg/kg = Milligram per kilogram.

1 = Non-TACO Class 1 Soil to Groundwater.
2 = Non-TACO Ingestion Soil Remediation Objectives (Industrial).
3 = Non-TACO Inhalation Soil Remediation Objectives (Industrial).
4 = Non-TACO Ingestion Soil Remediation Objectives (Residential).
5 = Non-TACO Inhalation Soil Remediation Objectives (Residential).
6 = TACO Class 1 Soil to Groundwater.
7 = TACO Ingestion Soil Remediation Objectives (Industrial).
8 = TACO Inhalation Soil Remediation Objectives (Industrial).
9 = TACO Ingestion Soil Remediation Objectives (Residential).
10 = TACO Inhalation Soil Remediation Objectives (Residential).

11 = USEPA ORNL MCL-Based SSLs.
12 = USEPA Residential SSLs.
13 = USEPA ORNL Risk-Based SSLs.
14 = USEPA Industrial Inhalation SSLs.
15 = USEPA Residential Inhalations SSLs.

TABLE 4-6

SUMMARY OF POSITIVE DETECTIONS IN SURFACE SOIL
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Parameter	Minimum Screening Criteria		NTC21-SB-01	NTC21-SB-02	NTC21-SB-03	NTC21-SB-04	NTC21-SB-05	NTC21-SB-06	NTC21-SB-07	NTC21-SB-08	NTC21-SB-09	NTC21-SB-10	NTC21-SB-11	NTC21-SB-12
			1 to 2 (ft bgs)	0 to 1 (ft bgs)	0 to 1 (ft bgs)	0 to 1 (ft bgs)	0 to 1 (ft bgs)	0 to 1 (ft bgs)	0 to 1 (ft bgs)	0 to 1 (ft bgs)	0 to 1 (ft bgs)	0 to 1 (ft bgs)	0 to 1 (ft bgs)	0 to 1 (ft bgs)
VOLATILES (UG/KG)														
2-BUTANONE	1500	USEPA [1]	4.3 U	4.8 U	5.3 U	5.2 UJ	30 J	4.3 UJ	6 U	5.4 UJ	4.4 UJ	5.3 UJ	5.2 UJ	5.6 UJ
ACETONE	4500	USEPA [1]	4.3 U	130	5.3 U	5.2 U	180 J	14 U	6 U	5.4 U	23 J	5.3 UJ	5.2 UJ	5.6 UJ
BENZENE	0.21	USEPA [1]	**1.1 J**	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	**0.82 J**	5.4 U	4.4 U	**0.56 J**	5.2 U	**0.63 J**
CARBON DISULFIDE	310	USEPA [1]	2.8 J	4.1 J	1.6 J	6.7	2.3 J	5	2.4 J	5.4 U	7	5.3 U	5.2 U	2.1 J
CYCLOHEXANE	13000	USEPA [1]	1.2 J	4.8 U	0.81 J	0.91 J	1.4 J	4.3 U	1.4 J	1.7 J	4.4 U	2.9 J	5.2 U	2.3 J
ETHYLBENZENE	1.7	USEPA [1]	4.3 U	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	6 U	5.4 U	4.4 U	5.3 U	0.9 J	5.6 U
METHYL CYCLOHEXANE	120000	TACO [5]	2.4 J	0.43 J	1.6 J	2.1 J	2.5 J	4.3 U	3.5 J	2.6 J	4.4 U	3.2 J	5.2 U	3.7 J
TETRACHLOROETHENE	0.049	USEPA [1]	4.3 U	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	6 U	5.4 U	4.4 U	5.3 U	5.2 U	5.6 U
TOLUENE	690	USEPA [2]	1.4 J	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	6 U	5.4 U	4.4 U	5.3 U	5.2 U	5.6 U
TOTAL XYLENES	200	USEPA [1]	4.3 U	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	6 U	5.4 U	4.4 U	5.3 U	1.6 J	5.6 U
SEMIVOLATILES (UG/KG)														
1,1-BIPHENYL	19000	USEPA [1]	62 J	370 U	350 U	360 U	360 U	400 U	360 U	360 U	360 U	370 U	360 U	390 U
2-METHYLNAPHTHALENE	750	USEPA [1]	180	450	330	700	400	640	**800**	230	340	280	320	450
4-METHYLPHENOL	150	USEPA [1]	400 U	370 U	350 U	360 U	360 U	400 U	360 U	360 U	360 U	370 UJ	360 U	390 U
ACENAPHTHENE	22000	USEPA [1]	880	3.7 U	54	87	81	65	840	42	67	57	290	49
ACENAPHTHYLENE	22000	USEPA [1]	20	56	680	3.6 U	3.6 U	4 U	130	110	3.6 U	35	25	3.9 U
ACETOPHENONE	1100	USEPA [1]	400 U	370 U	350 U	360 U	360 U	400 U	360 U	48 J	360 U	370 U	360 U	390 U
ANTHRACENE	360000	USEPA [1]	1700	59	350	3.6 U	180 J	4 U	**1700**	150	110	170	590	150
BENZO(A)ANTHRACENE	10	USEPA [1]	**4800**	**240**	**1100 J**	**380**	**250 J**	4 U	**4200**	**520 J**	**250 J**	**390**	**1600 J**	**400**
BENZO(A)PYRENE	3.5	USEPA [1]	**4200**	**360**	**2400 J**	3.6 U	**390 J**	4 U	**3200**	**830 J**	**460 J**	**690**	**2900 J**	**430**
BENZO(B)FLUORANTHENE	35	USEPA [1]	**6600**	**540**	**3500 J**	**870**	**480 J**	**720**	**4400**	**1200 J**	**670 J**	**970**	**4100 J**	**740**
BENZO(G,H,I)PERYLENE	120000	USEPA [1]	2200	340 J	1300 J	290	260 J	4 U	1400	460 J	350 J	480	2000 J	210
BENZO(K)FLUORANTHENE	350	USEPA [1]	**2500**	120	**2000**	**820**	300 J	**690**	**1700**	**560 J**	290 J	260	**1600 J**	220
BIS(2-ETHYLHEXYL)PHTHALATE	1100	USEPA [1]	400 UJ	200 J	240 J	110 J	240 J	150 J	150 J	190 J	130 J	130 J	280 J	390 UJ
BUTYL BENZYL PHTHALATE	510	USEPA [1]	400 UJ	370 UJ	350 UJ	360 UJ	360 UJ	400 U	360 U	97 J	360 UJ	370 UJ	360 UJ	390 UJ
CARBAZOLE	600	TACO [3]	**1000**	740 U	700 U	720 U	710 U	810 U	**880**	720 U	730 U	740 U	720 U	780 U
CHRYSENE	1100	USEPA [1]	**5900**	270	**1300 J**	340	280 J	4 U	**4600**	660 J	320 J	390	**1900 J**	470
DIBENZO(A,H)ANTHRACENE	11	USEPA [1]	**1100**	**89 J**	**900 J**	3.6 U	**78 J**	4 U	3.6 U	**140 J**	**81 J**	**150**	**470 J**	**66**
DIBENZOFURAN	680	USEPA [1]	540	97 J	110 J	250 J	130 J	200 J	620	76 J	110 J	90 J	180 J	240 J
DI-N-BUTYL PHTHALATE	9200	USEPA [1]	400 U	370 UJ	350 UJ	360 U	360 UJ	400 U	360 U	360 UJ	37 J	190 J	360 U	390 U
FLUORANTHENE	160000	USEPA [1]	14000	420	3300	1100	790	1000	12000	1200	860	1000	5700	1000
FLUORENE	27000	USEPA [1]	960	3.7 U	55	3.6 U	3.6 U	4 U	890	3.6 U	3.6 UJ	50	220	3.9 U
INDENO(1,2,3-CD)PYRENE	120	USEPA [1]	**3300**	**420 J**	3.5 UJ	3.6 U	**330 J**	4 U	**2100**	**630 J**	**400 J**	**630**	**2700 J**	**300**
NAPHTHALENE	0.47	USEPA [1]	**520**	**210**	**200**	**300**	**140**	**480**	**370**	**190**	**280**	**210**	**190**	**240**
PHENANTHRENE	120000	USEPA [1]	9500	620	960	1200	790	810	8400	560	760	650	3100	890
PYRENE	120000	USEPA [1]	11000	420	3000	890	660	870	9400	1100	760	920	4800	860
PESTICIDES/PCBS (UG/KG)														
4,4'-DDD	66	USEPA [1]	14 J	17 J	20 J	4.7 J	**130**	**290**	30	51 J	**480**	**520 J**	**230 J**	3.9 J
4,4'-DDE	47	USEPA [1]	10	5.3	9.4	7.9 J	**130**	**220**	16	**48**	**65 J**	**350 J**	**53 J**	7.2 J
4,4'-DDT	67	USEPA [1]	14 J	20 J	23 J	30 J	**160 J**	**110 J**	9.1 J	**72 J**	62 J	**740 J**	34 J	7.6 J
ALDRIN	0.65	USEPA [1]	0.33 J	0.37 UJ	0.23 J	0.36 UJ	0.35 UJ	0.4 UJ	0.36 UJ	0.36 UJ	0.36 UJ	0.37 UJ	0.36 UJ	0.39 UJ
ALPHA-BHC	0.062	USEPA [2]	0.39 U	**0.28 J**	**5.2 J**	0.36 U	**12 J**	**0.3 J**	0.36 U	**8.9 J**	0.36 U	0.37 U	0.36 U	0.39 U
ALPHA-CHLORDANE	13	USEPA [1]	7.4 J	0.64 J	1.1 J	0.36 UJ	0.35 UJ	5.1 J	1.3 J	3.2 J	7.3 J	7.5 J	4.3 J	0.39 UJ
AROCLOR-1260	24	USEPA [1]	20.2 UJ	**190 J**	**130 J**	**310 J**	**210 J**	**310 J**	21 J	**84 J**	**130 J**	**720 J**	**390 J**	20 UJ
BETA-BHC	0.22	USEPA [1]	**0.27 J**	0.37 U	**1 J**	0.36 U	0.35 U	0.4 U	**0.56 J**	0.36 U	0.36 UJ	0.37 UJ	0.36 UJ	0.39 UJ
DELTA-BHC	0.062	USEPA [1]	**0.51 J**	0.37 U	0.35 U	0.36 U	0.35 U	**1.4**	0.36 U	0.36 U	0.36 UJ	**3.5 J**	0.36 UJ	**0.56 J**
DIELDRIN	0.17	USEPA [1]	0.8 UJ	**2 J**	**1.9 J**	**13 J**	**2.8 J**	**3.5 J**	**3.7 J**	**3.5 J**	**2.5 J**	**12 J**	**6.8 J**	0.79 UJ
ENDOSULFAN I	3000	USEPA [1]	0.39 UJ	0.37 UJ	0.2 J	3.2 J	0.35 UJ	2.3 J	0.36 UJ	0.36 UJ	0.36 UJ	14 J	4.1 J	0.55 J
ENDOSULFAN II	3000	USEPA [1]	0.8 UJ	1.5 J	1.7 J	0.73 UJ	0.72 UJ	0.81 UJ	0.731 UJ	0.72 UJ	4 J	4.6 J	0.73 UJ	0.79 UJ
ENDOSULFAN SULFATE	3000	USEPA [1]	1.8 J	1.3 J	2.7 J	4.9 J	0.72 UJ	0.81 UJ	0.731 UJ	1.8 J	6.7 J	18 J	13 J	0.79 UJ
ENDRIN	81	USEPA [2]	0.71 J	0.75 UJ	1.1 J	72	0.72 UJ	6.7 J	0.731 U	0.72 UJ	7.3 J	**224**	0.73 U	0.79 UJ
ENDRIN ALDEHYDE	81	USEPA [2]	0.39 J	0.75 UJ	0.71 UJ	8.6 J	0.72 UJ	0.81 UJ	0.731 UJ	0.72 UJ	6.8 J	28 J	0.73 UJ	1.6 J
ENDRIN KETONE	81	USEPA [2]	0.85 J	0.75 UJ	1.5 J	0.73 UJ	0.72 UJ	0.81 UJ	0.731 UJ	0.72 UJ	0.74 UJ	0.75 UJ	0.73 UJ	0.79 UJ
GAMMA-BHC (LINDANE)	0.36	USEPA [1]	0.25 J	0.37 U	**0.49 J**	0.36 U	0.35 U	0.4 U	**0.44 J**	0.36 U	0.36 U	0.37 U	**4.7 J**	0.39 U

TABLE 4-6

SUMMARY OF POSITIVE DETECTIONS IN SURFACE SOIL
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Parameter	Minimum Screening Criteria		NTC21-SB-01	NTC21-SB-02	NTC21-SB-03	NTC21-SB-04	NTC21-SB-05	NTC21-SB-06	NTC21-SB-07	NTC21-SB-08	NTC21-SB-09	NTC21-SB-10	NTC21-SB-11	NTC21-SB-12
			1 to 2 (ft bgs)	0 to 1 (ft bgs)	0 to 1 (ft bgs)	0 to 1 (ft bgs)	0 to 1 (ft bgs)	0 to 1 (ft bgs)	0 to 1 (ft bgs)	0 to 1 (ft bgs)	0 to 1 (ft bgs)	0 to 1 (ft bgs)	0 to 1 (ft bgs)	0 to 1 (ft bgs)
PESTICIDES/PCBS (UG/KG)														
GAMMA-CHLORDANE	13	USEPA [1]	11 J	1.7 J	3.4 J	**71 J**	11 J	3.8 J	3.4 J	7 J	5.7 J	**189 J**	8.3 J	1.3 J
HEPTACHLOR EPOXIDE	0.15	USEPA [1]	**0.24 J**	0.37 UJ	**2 J**	0.36 U	**2.3 J**	**3**	**0.51 J**	**1 J**	0.36 UJ	**2.7 J**	0.36 UJ	**0.69 J**
METHOXYCHLOR	2200	USEPA [2]	3.1 J	3.3 J	17 J	37 J	4 J	7.5 J	3.9 J	9.4 J	0.36 UJ	0.37 UJ	0.36 UJ	6.6 J
HERBICIDES (UG/KG)														
2,4-D	18	USEPA [2]	59.4 U	55.8 U	52.7 U	54.3 UJ	53.4 U	60.6 UJ	54.6 UJ	53.9 U	54.9 U	55.8 U	54.3 U	58.9 U
DICAMBA	280	USEPA [1]	5.94 U	6.91 J	5.41 J	6.77 J	5.34 U	8.07 J	4.86 J	5.39 U	5.49 U	5.58 U	5.43 U	5.89 U
DINOSEB	62	USEPA [2]	29.7 U	27.9 U	26.3 U	27.1 U	26.7 U	30.3 U	27.3 U	27 U	27.4 U	27.9 U	27.2 U	29.5 U
DIOXINS/FURANS (UG/KG)														
1,2,3,4,6,7,8,9-OCDD	870	USEPA [1]	NA	NA	NA	NA	NA	NA	NA	NA	**1310**	NA	NA	NA
1,2,3,4,6,7,8,9-OCDF	870	USEPA [1]	NA	NA	NA	NA	NA	NA	NA	NA	141	NA	NA	NA
1,2,3,4,6,7,8-HPCDD	26	USEPA [1]	NA	NA	NA	NA	NA	NA	NA	NA	**169**	NA	NA	NA
1,2,3,4,6,7,8-HPCDF	26	USEPA [1]	NA	NA	NA	NA	NA	NA	NA	NA	**82.4**	NA	NA	NA
1,2,3,4,7,8,9-HPCDF	26	USEPA [1]	NA	NA	NA	NA	NA	NA	NA	NA	4.08 J	NA	NA	NA
1,2,3,4,7,8-HXCDD	2.6	USEPA [1]	NA	NA	NA	NA	NA	NA	NA	NA	1.9 J	NA	NA	NA
1,2,3,4,7,8-HXCDF	2.6	USEPA [1]	NA	NA	NA	NA	NA	NA	NA	NA	**5.91**	NA	NA	NA
1,2,3,6,7,8-HXCDD	2.6	USEPA [1]	NA	NA	NA	NA	NA	NA	NA	NA	**7.9**	NA	NA	NA
1,2,3,6,7,8-HXCDF	2.6	USEPA [1]	NA	NA	NA	NA	NA	NA	NA	NA	**11.6**	NA	NA	NA
1,2,3,7,8,9-HXCDD	2.6	USEPA [1]	NA	NA	NA	NA	NA	NA	NA	NA	**5.17**	NA	NA	NA
1,2,3,7,8,9-HXCDF	2.6	USEPA [1]	NA	NA	NA	NA	NA	NA	NA	NA	**2.68 J**	NA	NA	NA
1,2,3,7,8-PECDD	0.26	USEPA [1]	NA	NA	NA	NA	NA	NA	NA	NA	**5.9 J**	NA	NA	NA
1,2,3,7,8-PECDF	8.7	USEPA [1]	NA	NA	NA	NA	NA	NA	NA	NA	1.92 J	NA	NA	NA
2,3,4,6,7,8-HXCDF	2.6	USEPA [1]	NA	NA	NA	NA	NA	NA	NA	NA	**26.2**	NA	NA	NA
2,3,4,7,8-PECDF	0.87	USEPA [1]	NA	NA	NA	NA	NA	NA	NA	NA	**57.5**	NA	NA	NA
2,3,7,8-TCDD	0.26	USEPA [1]	NA	NA	NA	NA	NA	NA	NA	NA	**0.816 J**	NA	NA	NA
2,3,7,8-TCDF	2.6	USEPA [1]	NA	NA	NA	NA	NA	NA	NA	NA	**3.17**	NA	NA	NA
METALS (MG/KG)														
ALUMINUM	55000	USEPA [1]	9140	10400	8950	2470	5750	7130	5320	5200	4350	6720	2790	3280
ANTIMONY	0.27	USEPA [2]	0.585 UJ	0.566 UJ	**0.627 J**	1.38 UJ	0.513 UJ	0.586 UJ	1.36 UJ	**0.933**	**2.06**	**5.22**	1.37 U	1.51 U
ARSENIC	0.0013	USEPA [1]	**21.1**	**11.1**	**9.93**	**13.4 J**	**6.05**	**7.93 J**	**7.46 J**	**9.53**	**8.14**	**11.9**	**5.6**	**12.9**
BARIUM	82	USEPA [2]	52.9 J	**91.7 J**	68.3 J	34.8 J	44.9 J	43.1 J	42.3 J	55.6 J	**86.6 J**	**161 J**	**82.3 J**	49.6 J
BERYLLIUM	3.2	USEPA [2]	0.521	0.793	0.846	0.429 J	0.47	0.469 J	0.445 J	0.485	0.929	0.826	0.646	0.508
CADMIUM	0.38	USEPA [2]	**0.554**	**0.44**	**0.605**	0.338	**0.395**	0.132	**0.644**	**1.24**	**3.81**	**13**	**1.94**	**0.507**
CALCIUM	NC	N/A	54000	56300	57000	89000 J	62700	2240 J	98600 J	76300	32000 J	42200	62100	83300
CHROMIUM	28	TACO [4]	17.3	15.1	14.1	7.16 J	13.7 J	11.3 J	12.6 J	9.71	**163 J**	**36.9**	11.1	12.6
COBALT	0.49	USEPA [1]	**8.64**	**11**	**7.43**	**2.31**	**6.12**	**8.67**	**5.79**	**6.07**	**5.19**	**6.67**	**2.9**	**3.27**
COPPER	46	USEPA [2]	37.9 J	30.2 J	**49.4 J**	25.3 J	24.6 J	18.3 J	37.9 J	**47**	**129 J**	**835**	**104**	31.6
IRON	640	USEPA [1]	**48600 J**	**24100 J**	**23300 J**	**26000 J**	**18200 J**	**18500 J**	**18900 J**	**18400 J**	**23400 J**	**35000 J**	**15000 J**	**25800 J**
LEAD	14	USEPA [2]	**29.6 J**	**57.3 J**	**106 J**	**43 J**	**42.2 J**	**25.9 J**	**81.5 J**	**65.3**	**167 J**	**428**	**118**	**51.3**
MAGNESIUM	325000	TACO [4]	30600	36300	34500	47600	37900 J	1440	53800	38800	13800 J	13600	29100	39600
MANGANESE	57	USEPA [1]	**733**	**965**	**652**	**178 J**	**503**	**318 J**	**597 J**	**456**	**173**	**416**	**206**	**226**
MERCURY	0.03	USEPA [1]	**0.0548 J**	**0.092 J**	**0.144 J**	**0.0517**	**0.0693 J**	**0.0332**	**0.0854**	**0.0612 J**	**0.495**	**8.98**	**0.0648**	**0.585**
NICKEL	48	USEPA [1]	25.4	21.1	18.9	7.18 J	17.2 J	13.7 J	15.9 J	15.9	**56.2 J**	**52.3**	10.9	10.4
POTASSIUM	NC	N/A	1180 J	1240 J	1060 J	763	970 J	461	981	749	642	846	438	428
SILVER	1.6	USEPA [1]	0.117 U	0.113 U	0.105 U	0.277 U	0.103 U	0.117 U	0.271 U	0.108 U	0.515	1.41	0.274 U	0.302 U
SODIUM	NC	N/A	1010	833	1220	845	798	594	384	230	868	1000	986	378
VANADIUM	180	USEPA [1]	24.2	19.3	16.8	11.3	12.5	22	14.2	12.5 J	25.7	21.2	11.2	13.8
ZINC	680	USEPA [1]	114 J	151 J	252 J	53.1 J	87.8 J	80.9 J	119 J	172	190	**1230**	125	70.9

TABLE 4-6

SUMMARY OF POSITIVE DETECTIONS IN SURFACE SOIL
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Parameter	Minimum Screening Criteria		NTC21-SB-13	NTC21-SB-14	NTC21-SB-15	NTC21-SB-16	NTC21-SB-17	NTC21-SB-18	NTC21-SB-19	NTC21-SB-20	NTC21-SB-21	NTC21-SB-22
			0 to 1 (ft bgs)	0 to 1 (ft bgs)	0 to 1 (ft bgs)	0 to 1 (ft bgs)	0 to 1 (ft bgs)	0 to 1 (ft bgs)	0 to 1 (ft bgs)	0 to 1 (ft bgs)	0 to 1 (ft bgs)	0 to 1 (ft bgs)
VOLATILES (UG/KG)												
2-BUTANONE	1500	USEPA [1]	6.5 UJ	6.8 UJ	5.5 U	5.3 U	7.8 UJ	5.2 UJ	4.5 U	4.4 UJ	5.2 UJ	6.6 U
ACETONE	4500	USEPA [1]	54 J	6.8 U	5.5 U	5.3 U	47 J	5.2 UJ	4.5 U	4.4 U	5.2 U	21
BENZENE	0.21	USEPA [1]	6.5 UJ	6.8 UJ	5.5 U	5.3 U	7.8 U	5.2 U	4.5 U	**0.74 J**	5.2 U	6.6 U
CARBON DISULFIDE	310	USEPA [1]	6.5 UJ	6.4 J	5.6	5.3 U	16	5.2 U	2.6 J	4.4 U	4.2 J	6.6 U
CYCLOHEXANE	13000	USEPA [1]	6.5 UJ	6.8 U	5.5 U	5.3 U	7.8 U	0.71 J	1.3 J	0.75 J	0.94 J	6.6 U
ETHYLBENZENE	1.7	USEPA [1]	6.5 UJ	6.8 UJ	5.5 U	5.3 U	7.8 U	5.2 U	4.5 U	4.4 U	5.2 U	6.6 U
METHYL CYCLOHEXANE	120000	TACO [5]	0.88 J	0.56 J	0.86 J	0.72 J	0.78 J	1.2 J	2.6 J	1.1 J	1.2 J	6.6 U
TETRACHLOROETHENE	0.049	USEPA [1]	6.5 UJ	6.8 UJ	5.5 U	5.3 U	7.8 U	5.2 U	**1.4 J**	4.4 U	5.2 U	6.6 U
TOLUENE	690	USEPA [2]	6.5 UJ	6.8 UJ	5.5 U	5.3 U	7.8 U	5.2 U	4.5 U	1.1 J	5.2 U	6.6 U
TOTAL XYLENES	200	USEPA [1]	6.5 UJ	6.8 UJ	5.5 U	5.3 U	7.8 U	5.2 U	4.5 U	4.4 U	5.2 U	6.6 U
SEMIVOLATILES (UG/KG)												
1,1-BIPHENYL	19000	USEPA [1]	430 U	410 U	400 U	370 U	400 U	390 U	360 U	350 U	360 U	410 U
2-METHYLNAPHTHALENE	750	USEPA [1]	**840**	**900**	540	460	94	100	98	27	260	710
4-METHYLPHENOL	150	USEPA [1]	430 U	410 U	400 U	370 U	400 U	390 U	360 U	350 UR	50 J	410 U
ACENAPHTHENE	22000	USEPA [1]	4.3 U	4.1 U	4 U	3.7 U	280	13	24	53	2200	92
ACENAPHTHYLENE	22000	USEPA [1]	4.3 U	4.1 U	4 U	3.7 U	70	34	3.6 U	3.5 U	89	4.1 U
ACETOPHENONE	1100	USEPA [1]	430 U	410 U	400 U	370 U	400 U	390 U	360 U	350 U	360 U	410 U
ANTHRACENE	360000	USEPA [1]	4.3 U	4.1 U	4 U	3.7 U	300	37	3.6 U	150	7200	4.1 U
BENZO(A)ANTHRACENE	10	USEPA [1]	4.3 U	**280**	**200 J**	**110**	**350**	**140**	**150**	**200 J**	**22000 J**	**320**
BENZO(A)PYRENE	3.5	USEPA [1]	4.3 U	**860 J**	4 UJ	3.7 U	**600**	**200**	**250**	**560 J**	**38000 J**	**340**
BENZO(B)FLUORANTHENE	35	USEPA [1]	4.3 U	4.1 UJ	**550 J**	**290**	**940**	**310**	**440**	**620 J**	**59000 J**	**710**
BENZO(G,H,I)PERYLENE	120000	USEPA [1]	410	180 J	4 UJ	3.7 U	360	150	170	430 J	24000 J	4.1 U
BENZO(K)FLUORANTHENE	350	USEPA [1]	4.3 U	4.1 UJ	**540 J**	270	320	110	**430**	300 J	**21000 J**	**680**
BIS(2-ETHYLHEXYL)PHTHALATE	1100	USEPA [1]	78 J	51 J	400 UJ	77 J	400 U	390 U	110 J	140 J	**3400 J**	410 UJ
BUTYL BENZYL PHTHALATE	510	USEPA [1]	430 UJ	410 U	400 UJ	370 UJ	400 UJ	390 UJ	360 UJ	350 UJ	360 UJ	410 UJ
CARBAZOLE	600	TACO [3]	860 U	810 U	800 U	750 U	800 U	780 U	720 U	66 J	**2400**	820 U
CHRYSENE	1100	USEPA [1]	4.3 UJ	410 J	250 J	130 J	480	190	190 J	280 J	**31000 J**	460
DIBENZO(A,H)ANTHRACENE	11	USEPA [1]	4.3 U	4.1 UJ	4 UJ	3.7 U	**100**	**44**	3.6 U	3.5 UJ	**690 J**	4.1 U
DIBENZOFURAN	680	USEPA [1]	320 J	320 J	250 J	130 J	210 J	46 J	39 J	41 J	640	250 J
DI-N-BUTYL PHTHALATE	9200	USEPA [1]	430 U	410 UJ	400 U	370 U	400 U	390 U	360 U	350 U	360 U	410 U
FLUORANTHENE	160000	USEPA [1]	2000	810	670	260	1100	340	400	830	84000	970
FLUORENE	27000	USEPA [1]	4.3 U	4.1 U	4 U	3.7 U	320	11	3.6 U	52	1600	4.1 U
INDENO(1,2,3-CD)PYRENE	120	USEPA [1]	4.3 U	4.1 UJ	4 UJ	**150**	**510**	**200**	**250**	**350 J**	**36000 J**	**350**
NAPHTHALENE	0.47	USEPA [1]	**350**	**350**	**350**	**160**	**53**	**49**	**44**	**18**	**210**	**300**
PHENANTHRENE	120000	USEPA [1]	2900	1300	1100	1300	1100	290	250	720	30000	1100
PYRENE	120000	USEPA [1]	1700	740	570	240	960	290	360	650	70000	890
PESTICIDES/PCBS (UG/KG)												
4,4'-DDD	66	USEPA [1]	1.2 J	1.6 J	2.9 J	0.75 J	9.2 J	1.1 J	25	0.86 J	**150 J**	**230**
4,4'-DDE	47	USEPA [1]	1.4 J	1.9 J	3.5	0.61 J	1.9 J	0.45 J	12	5.5 J	**190**	**82**
4,4'-DDT	67	USEPA [1]	9.9 J	7.1 J	8.5 J	1.7 J	2.6 J	0.77 J	15 J	1.5 J	**390 J**	**71 J**
ALDRIN	0.65	USEPA [1]	0.43 UJ	0.4 UJ	0.4 UJ	0.37 U	0.4 UJ	0.39 UJ	0.36 UJ	0.35 UJ	0.35 UJ	0.41 UJ
ALPHA-BHC	0.062	USEPA [2]	0.43 U	0.4 U	0.4 U	**0.44**	0.4 U	0.39 U	0.36 U	0.35 U	0.35 U	**0.46 J**
ALPHA-CHLORDANE	13	USEPA [1]	0.43 UJ	0.4 UJ	0.4 UJ	0.37 U	0.4 UJ	0.39 UJ	0.95 J	1.3 J	0.35 UJ	**27 J**
AROCLOR-1260	24	USEPA [1]	**120 J**	20.8 UJ	20.4 UJ	19.1 U	20.5 UJ	19.8 UJ	**43 J**	18.1 UJ	**450 J**	**110 J**
BETA-BHC	0.22	USEPA [1]	0.43 U	0.4 U	0.4 U	0.37 U	0.4 UJ	0.39 UJ	0.36 U	0.35 UJ	0.35 UJ	0.41 U
DELTA-BHC	0.062	USEPA [1]	0.43 U	0.4 UJ	0.4 U	0.37 U	**0.65 J**	**2.4 J**	0.36 U	0.35 UJ	0.35 UJ	**0.42 J**
DIELDRIN	0.17	USEPA [1]	**3.1 J**	0.82 UJ	0.81 UJ	0.75 U	0.81 UJ	0.78 UJ	**0.68 J**	**0.33 J**	**15 J**	**1.8 J**
ENDOSULFAN I	3000	USEPA [1]	0.43 UJ	0.4 UJ	0.4 UJ	0.37 U	2.8 J	0.39 UJ	0.36 UJ	0.35 UJ	0.35 UJ	0.41 UJ
ENDOSULFAN II	3000	USEPA [1]	1.5 J	0.82 UJ	0.81 UJ	0.75 U	0.81 UJ	0.78 UJ	0.58 J	0.71 UJ	0.72 UJ	0.83 UJ
ENDOSULFAN SULFATE	3000	USEPA [1]	2.7 J	0.82 UJ	0.81 UJ	0.75 U	0.81 UJ	0.78 UJ	0.96 J	0.71 UJ	25 J	3.4 J
ENDRIN	81	USEPA [2]	0.86 U	0.82 U	0.81 U	0.75 UJ	0.81 UJ	0.78 UJ	0.73 U	1 J	0.72 UJ	2.2 J
ENDRIN ALDEHYDE	81	USEPA [2]	0.86 UJ	0.82 U	0.81 UJ	0.75 UJ	2	0.78 U	0.73 UJ	0.71 UJ	0.72 UJ	0.83 UJ
ENDRIN KETONE	81	USEPA [2]	0.86 UJ	0.82 UJ	0.81 UJ	0.75 U	0.81 UJ	0.78 UJ	0.73 UJ	3.2 J	44 J	0.83 UJ
GAMMA-BHC (LINDANE)	0.36	USEPA [1]	**0.96**	0.22 J	0.4 U	0.37 U	0.4 U	0.39 U	0.36 U	**0.7 J**	**20**	**0.53 J**

TABLE 4-6

SUMMARY OF POSITIVE DETECTIONS IN SURFACE SOIL
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Parameter	Minimum Screening Criteria		NTC21-SB-13	NTC21-SB-14	NTC21-SB-15	NTC21-SB-16	NTC21-SB-17	NTC21-SB-18	NTC21-SB-19	NTC21-SB-20	NTC21-SB-21	NTC21-SB-22
			0 to 1 (ft bgs)	0 to 1 (ft bgs)	0 to 1 (ft bgs)	0 to 1 (ft bgs)	0 to 1 (ft bgs)	0 to 1 (ft bgs)	0 to 1 (ft bgs)	0 to 1 (ft bgs)	0 to 1 (ft bgs)	0 to 1 (ft bgs)
PESTICIDES/PCBS (UG/KG)												
GAMMA-CHLORDANE	13	USEPA [1]	2.2 J	0.4 UJ	0.67 J	0.37 U	1.8 J	0.64 J	4.1 J	1.6 J	0.35 UJ	**44 J**
HEPTACHLOR EPOXIDE	0.15	USEPA [1]	**1.1 J**	0.4 UJ	0.15 J	0.37 U	0.4 UJ	0.39 UJ	**0.74**	**0.95 J**	0.35 UJ	**1.5 J**
METHOXYCHLOR	2200	USEPA [2]	17 J	0.4 UJ	0.4 UJ	0.35 J	15 J	2 J	0.62 J	0.35 UJ	0.35 UJ	0.71 J
HERBICIDES (UG/KG)												
2,4-D	18	USEPA [2]	**217 J**	61.1 UJ	60 U	56.1 U	60.4 U	58.3 U	54.3 U	53.1 U	53.7 U	61.8 U
DICAMBA	280	USEPA [1]	8.56 J	9.99 J	6 U	5.61 U	6.04 U	5.83 U	5.43 U	5.31 U	5.37 U	6.18 U
DINOSEB	62	USEPA [2]	32.2 U	17.2 J	30 U	28.1 U	30.2 UJ	29.1 UJ	27.1 U	26.6 UJ	26.9 UJ	30.9 U
DIOXINS/FURANS (UG/KG)												
1,2,3,4,6,7,8,9-OCDD	870	USEPA [1]	NA	NA	NA	NA	174	NA	NA	NA	NA	NA
1,2,3,4,6,7,8,9-OCDF	870	USEPA [1]	NA	NA	NA	NA	19.8	NA	NA	NA	NA	NA
1,2,3,4,6,7,8-HPCDD	26	USEPA [1]	NA	NA	NA	NA	17.7	NA	NA	NA	NA	NA
1,2,3,4,6,7,8-HPCDF	26	USEPA [1]	NA	NA	NA	NA	9.64	NA	NA	NA	NA	NA
1,2,3,4,7,8,9-HPCDF	26	USEPA [1]	NA	NA	NA	NA	0.952 J	NA	NA	NA	NA	NA
1,2,3,4,7,8-HXCDD	2.6	USEPA [1]	NA	NA	NA	NA	5 U	NA	NA	NA	NA	NA
1,2,3,4,7,8-HXCDF	2.6	USEPA [1]	NA	NA	NA	NA	1.31 J	NA	NA	NA	NA	NA
1,2,3,6,7,8-HXCDD	2.6	USEPA [1]	NA	NA	NA	NA	1.14 J	NA	NA	NA	NA	NA
1,2,3,6,7,8-HXCDF	2.6	USEPA [1]	NA	NA	NA	NA	1.07 J	NA	NA	NA	NA	NA
1,2,3,7,8,9-HXCDD	2.6	USEPA [1]	NA	NA	NA	NA	0.81 J	NA	NA	NA	NA	NA
1,2,3,7,8,9-HXCDF	2.6	USEPA [1]	NA	NA	NA	NA	0.358 J	NA	NA	NA	NA	NA
1,2,3,7,8-PECDD	0.26	USEPA [1]	NA	NA	NA	NA	**0.76 J**	NA	NA	NA	NA	NA
1,2,3,7,8-PECDF	8.7	USEPA [1]	NA	NA	NA	NA	0.462 U	NA	NA	NA	NA	NA
2,3,4,6,7,8-HXCDF	2.6	USEPA [1]	NA	NA	NA	NA	1.84 J	NA	NA	NA	NA	NA
2,3,4,7,8-PECDF	0.87	USEPA [1]	NA	NA	NA	NA	**3.66 J**	NA	NA	NA	NA	NA
2,3,7,8-TCDD	0.26	USEPA [1]	NA	NA	NA	NA	0.198 J	NA	NA	NA	NA	NA
2,3,7,8-TCDF	2.6	USEPA [1]	NA	NA	NA	NA	0.728 U	NA	NA	NA	NA	NA
METALS (MG/KG)												
ALUMINUM	55000	USEPA [1]	6210	29500	18400	5180	11400	11800	3030	3530	2590	4570
ANTIMONY	0.27	USEPA [2]	**2.51 J**	1.57 UJ	1.49 UJ	1.31 UJ	0.575 U	0.595 U	0.515 UJ	0.553 U	**1.6**	1.63 UJ
ARSENIC	0.0013	USEPA [1]	**10.7 J**	**48.4 J**	**48.3 J**	**4.86 J**	**8.23**	**7.73**	**5.95 J**	**3.12**	**4.87**	**6.96 J**
BARIUM	82	USEPA [2]	69.8 J	**234 J**	**164 J**	55.9 J	71.6 J	**97.7 J**	29.3 J	33 J	50.5 J	61.3 J
BERYLLIUM	3.2	USEPA [2]	2.44 J	**4.71 J**	**3.69 J**	1.04 J	0.836	0.774	0.29 J	0.254	0.332	0.878 J
CADMIUM	0.38	USEPA [2]	**8.45**	**2.63**	**4.18**	0.262 U	**0.845**	**0.621**	**1.25**	**0.678**	**5.25**	**1.13**
CALCIUM	NC	N/A	21100 J	85900 J	114000 J	113000 J	33600	10700	120000	133000	130000	97300 J
CHROMIUM	28	TACO [4]	14.8 J	17.7 J	10.8 J	8.17 J	17.4	17.1	5.38 J	6.46	9.75	13.6 J
COBALT	0.49	USEPA [1]	**17.7**	**5.29**	**9.12**	**5.51**	**8.5**	**11.5**	**3.55**	**2.51**	**3.4**	**3.84**
COPPER	46	USEPA [2]	**296 J**	**50.6 J**	45.8 J	17 J	26.4	27.8	16.8 J	12.9	**131**	**64.7 J**
IRON	640	USEPA [1]	**52200 J**	**47000 J**	**69500 J**	**17300 J**	**27200 J**	**23500 J**	**18500 J**	**6660 J**	**16400 J**	**15300 J**
LEAD	14	USEPA [2]	**407 J**	**67.2 J**	**31.7 J**	**29.2 J**	**29.2**	**27.2**	**60.3 J**	**16.7**	**124**	**215 J**
MAGNESIUM	325000	TACO [4]	8120	3940	21500	62900	20400	6180	75800	70700	75500	43900
MANGANESE	57	USEPA [1]	**494 J**	**2420 J**	**1250 J**	**321 J**	**464**	**1070**	**327 J**	**332**	**270**	**579 J**
MERCURY	0.03	USEPA [1]	**0.106**	**0.0618**	**0.0472**	**0.0702 J**	**0.0477**	**0.0641**	**0.0374 J**	**0.0359**	**1.07**	**0.233 J**
NICKEL	48	USEPA [1]	43.1 J	20.1 J	34.6 J	13.2 J	21.7	21.3	9.26 J	5.56	32	16.2 J
POTASSIUM	NC	N/A	435	1930	763	753	1270	1130	571	581	782	493
SILVER	1.6	USEPA [1]	0.308 U	0.313 U	0.297 U	0.262 U	0.115 U	0.119 U	0.103 U	0.111 U	0.233	0.325 U
SODIUM	NC	N/A	588	1590	1020	1260	2080	1100	1750	395	530	933
VANADIUM	180	USEPA [1]	22.3	15.8	15.1	11.5	23.8	21.8	8.94	10.8	14.2	18.1
ZINC	680	USEPA [1]	**884 J**	186 J	352 J	73.6 J	134	111	148 J	46.5	**746**	103 J

1 = United States Environmental Protection Agency (USEPA) Oakridge National Laboratory (ORNL) Risk-Based Soil Screening Level (SSL).
2 = USEPA Oakridge National Laboratory (ORNL) Maximum Contaminant Level (MCL) Based SSL.
3 = Illinois Tiered Approach to Corrective Action Objectives; Soil Component of Groundwater Ingestion Class 1 (pH = 7.86; Obtained from IDW laboratory results).
4 = Illinois Tiered Approach to Corrective Action Objectives (TACO); Soil Remediation Objectives Residential Ingestion.
5 = Illinois Tiered Approach to Corrective Action Objectives (Non-TACO); Soil Remediation Objectives Industrial/Commercial Construction Inhalation.
USEPA = United States Environmental Protection Agency.
TACO = Tiered Approach to Corrective Action Objectives.
Shaded cells and boldface font indicate that the concentration is greater than the minimum screening value.
J = Value is estimated.
U = Analyte not detected at the reporting limit left of the letter.
UJ = Numerical detection limit for the undetected result is estimated.
mg/kg = Milligram per kilogram.
ug/kg = Microgram per kilogram.
ng/kg = Nanogram per kilogram.
NA = Not analyzed.
NC = No criteria.

TABLE 4-7

OCCURRENCE AND DISTRIBUTION OF ORGANICS AND INORGANICS IN SUBSURFACE SOIL
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Parameter	Frequency of Detection	Minimum Result		Maximum Result		Sample with Maximum Detection	Minimum Non-Detection	Maximum Non-Detection	Average Positive Result	Overall Average	Standard Deviation	Minimum Screening Value		Minimum Non-TACO Screening Value			Minimum TACO Screening Value			Minimum USEPA Screening Value		
												Value	Exceedances	Value	Exceedances	Source	Value	Exceedances	Source	Value	Exceedances	Source
Volatile Organics (ug/kg)																						
ISOPROPYLBENZENE	1/22	0.97	J	0.97	J	NTC21-SB-09-SO-0204	1.3	7.7	9.70E-01	2.51E+00	7.38E-01	1100	0	NC	0	1 through 5	NC	0	6 through 10	1100	0	13
METHYL CYCLOHEXANE	18/22	1.2	J	11		NTC21-SB-18-SO-0507	4.9	6.7	3.94E+00	3.72E+00	2.58E+00	120000	0	120000	0	3 and 5	NC	0	6 through 10	490000	0	14 and 15
TETRACHLOROETHENE	2/22	**3.3**	**J**	**18**		NTC21-SB-19-SO-0204	3.8	7.7	1.07E+01	3.39E+00	3.30E+00	**0.049**	**2**	NC	0	1 through 5	60	0	6	**0.049**	**2**	**13**
TOLUENE	8/22	1.4	J	5.6		NTC21-SB-17-SO-0507	4.3	7.7	2.99E+00	2.87E+00	1.13E+00	690	0	NC	0	1 through 5	12000	0	6	690	0	11
TOTAL XYLENES	1/22	2.2	J	2.2	J	NTC21-SB-17-SO-0507	1	7.7	2.20E+00	2.58E+00	6.66E-01	200	0	NC	0	1 through 5	150000	0	6	200	0	13
TRICHLOROFLUOROMETHANE	3/22	1.4	J	2.8	J	NTC21-SB-02-SO-0204	3.8	7.7	2.33E+00	2.60E+00	5.63E-01	830	0	NC	0	1 through 5	NC	0	6 through 10	830	0	13
TRICHLOROFLUOROMETHANE	3/22	1.4	J	2.8	J	NTC21-SB-03-SO-0204	3.8	7.7	2.33E+00	2.60E+00	5.63E-01	830	0	NC	0	1 through 5	NC	0	6 through 10	830	0	13
2-BUTANONE	5/22	9	J	28	J	NTC21-SB-04-SO-0406	2	7.7	1.42E+01	5.18E+00	6.13E+00	1500	0	NC	0	1 through 5	NC	0	6 through 10	1500	0	13
ACETONE	5/22	25	J	87		NTC21-SB-19-SO-0204	3.8	7.7	5.68E+01	1.50E+01	2.60E+01	4500	0	NC	0	1 through 5	25000	0	6	4500	0	13
BENZENE	10/22	**0.41**	**J**	**4.8**		NTC21-SB-18-SO-0507	0.68	7.7	1.83E+00	2.27E+00	1.12E+00	**0.21**	**10**	NC	0	1 through 5	30	0	6	**0.21**	**10**	**13**
CARBON DISULFIDE	13/22	1.2	J	12		NTC21-SB-20-SO-0406	3.8	6.8	4.48E+00	3.73E+00	2.76E+00	310	0	NC	0	1 through 5	32000	0	6	310	0	13
CHLOROMETHANE	2/22	1	J	2.2	J	NTC21-SB-19-SO-0204	0.75	15	1.60E+00	4.77E+00	1.77E+00	49	0	110000	0	5	NC	0	6 through 10	49	0	13
CIS-1,2-DICHLOROETHENE	1/22	1.5	J	1.5	J	NTC21-SB-10-SO-0406	1.7	15	1.50E+00	4.94E+00	1.56E+00	21	0	NC	0	1 through 5	400	0	6	21	0	11
CYCLOHEXANE	17/22	0.62	J	9		NTC21-SB-18-SO-0507	0.78	6.7	2.41E+00	2.37E+00	1.86E+00	13000	0	280000	0	3 and 5	NC	0	6 through 10	13000	0	13
ETHYLBENZENE	4/22	0.7	J	**1.9**	**J**	NTC21-SB-17-SO-0507	1.1	7.7	1.23E+00	2.35E+00	8.42E-01	**1.7**	**1**	NC	0	1 through 5	13000	0	6	**1.7**	**1**	**13**
Semivolatile Organics (ug/kg)																						
1,1-BIPHENYL	1/22	96	J	96	J	NTC21-SB-07-SO-0204	33	580	9.60E+01	1.92E+02	5.12E+01	19000	0	150000	0	1	NC	0	6 through 10	19000	0	13
2-METHYLNAPHTHALENE	16/22	2.4	J	**2100**		NTC21-SB-03-SO-0204	3.7	7.5	3.49E+02	2.54E+02	4.83E+02	**750**	**2**	NC	0	1 through 5	NC	0	6 through 10	**750**	**2**	**13**
ACENAPHTHENE	12/22	12		880		NTC21-SB-07-SO-0204	3.7	5.8	1.66E+02	9.14E+01	2.06E+02	22000	0	NC	0	1 through 5	570000	0	6	22000	0	13
ACENAPHTHYLENE	11/22	2.8	J	2000		NTC21-SB-03-SO-0204	3.7	4.4	2.23E+02	1.12E+02	4.23E+02	22000	0	85000	0	1	NC	0	6 through 10	22000	0	13
ACETOPHENONE	1/22	230	J	230	J	NTC21-SB-02-SO-0204	46	580	2.30E+02	1.99E+02	4.57E+01	1100	0	NC	0	1 through 5	NC	0	6 through 10	1100	0	13
ANTHRACENE	11/22	2.9	J	5000		NTC21-SB-03-SO-0204	3.7	4.4	6.98E+02	3.50E+02	1.08E+03	360000	0	NC	0	1 through 5	12000000	0	6	360000	0	13
BENZALDEHYDE	1/13	220	J	220	J	NTC21-SB-02-SO-0204	62	450	2.20E+02	1.85E+02	4.88E+01	810	0	3300	0	1	NC	0	6 through 10	810	0	13
BENZO(A)ANTHRACENE	19/22	2.5	J	**32000**		NTC21-SB-03-SO-0204	3.7	4.4	2.14E+03	1.85E+03	6.80E+03	**10**	**17**	NC	0	1 through 5	**900**	**3**	**9**	**10**	**17**	**13**
BENZO(A)PYRENE	13/22	**12**		**27000**		NTC21-SB-03-SO-0204	3.7	5.8	2.70E+03	1.60E+03	5.73E+03	**3.5**	**13**	NC	0	1 through 5	**90**	**11**	**9**	**3.5**	**13**	**13**
BENZO(B)FLUORANTHENE	17/22	6.4		**41000**		NTC21-SB-03-SO-0204	3.7	4.4	3.09E+03	2.39E+03	8.68E+03	**35**	**14**	NC	0	1 through 5	**900**	**5**	**9**	**35**	**14**	**13**
BENZO(G,H,I)PERYLENE	16/22	4.1		11000		NTC21-SB-03-SO-0204	3.7	4.4	9.73E+02	7.08E+02	2.33E+03	120000	0	2300000	0	4	NC	0	6 through 10	120000	0	13
BENZO(K)FLUORANTHENE	17/22	7.2		**14000**		NTC21-SB-03-SO-0204	3.7	4.4	1.14E+03	8.78E+02	2.96E+03	**350**	**6**	NC	0	1 through 5	**9000**	**1**	**9**	**350**	**6**	**13**
BIS(2-ETHYLHEXYL)PHTHALATE	7/22	54		280		NTC21-SB-08-SO-0204 NTC21-SB-03-SO-0204	370	580	1.70E+02	1.96E+02	5.83E+01	1100	0	NC NC	0 0	1 through 5 1 through 5	46000	0	9	1100	0	13
BUTYL BENZYL PHTHALATE	1/22	110	J	110	J	NTC21-SB-02-SO-0406	360	580	1.10E+02	2.01E+02	3.08E+01	510	0	NC	0	1 through 5	930000	0	6, 8, and 10	510	0	13
CARBAZOLE	2/22	430	J	**1000**		NTC21-SB-07-SO-0204	720	1200	7.15E+02	4.40E+02	1.35E+02	**600**	**1**	NC	0	1 through 5	**600**	**1**	**6**	NC	0	11 through 15
CHRYSENE	21/22	3.4	J	**34000**		NTC21-SB-03-SO-0204	4.4	4.4	2.09E+03	2.00E+03	7.23E+03	**1100**	**3**	NC	0	1 through 5	88000	0	9	**1100**	**3**	**13**
DIBENZO(A,H)ANTHRACENE	9/22	2.4	J	**3300**		NTC21-SB-03-SO-0204	3.7	5.8	4.41E+02	1.82E+02	6.99E+02	**11**	**8**	NC	0	1 through 5	**90**	**4**	**9**	**11**	**8**	**13**
DIBENZOFURAN	12/22	34	J	670		NTC21-SB-07-SO-0204	370	580	2.10E+02	2.09E+02	1.48E+02	680	0	NC	0	1 through 5	NC	0	6 through 10	680	0	13
FLUORANTHENE	19/22	6.8		56000		NTC21-SB-03-SO-0204	1.9	3.7	4.25E+03	3.67E+03	1.20E+04	160000	0	NC	0	1 through 5	3100000	0	9	160000	0	13
FLUORENE	6/22	2.5	J	1200		NTC21-SB-07-SO-0204	3.7	90	2.54E+02	7.27E+01	2.55E+02	27000	0	NC	0	1 through 5	560000	0	6	27000	0	13
INDENO(1,2,3-CD)PYRENE	13/22	12		**16000**		NTC21-SB-03-SO-0204	3.7	5.8	1.71E+03	1.01E+03	3.39E+03	**120**	**11**	NC	0	1 through 5	**900**	**2**	**9**	**120**	**11**	**13**
NAPHTHALENE	16/22	**3.8**	**J**	**4600**		NTC21-SB-22-SO-0204	3.7	4.4	5.94E+02	4.32E+02	1.02E+03	**0.47**	**16**	NC	0	1 through 5	12000	0	6	**0.47**	**16**	**13**
PHENANTHRENE	21/22	1.8		11000		NTC21-SB-07-SO-0204 NTC21-SB-03-SO-0204	4.4	4.4	1.50E+03	1.43E+03	3.16E+03	120000	0	200000	0	1	NC	0	6 through 10	120000	0	13
PYRENE	19/22	6.9		52000		NTC21-SB-03-SO-0204	3.7	4.4	3.73E+03	3.22E+03	1.11E+04	120000	0	NC	0	1 through 5	2300000	0	9	120000	0	13
METHOXYCHLOR	10/22	0.8	J	34.2	J	NTC21-SB-02-SO-0406	0.37	0.571	7.04E+00	3.31E+00	7.49E+00	9900	0	NC	0	1 through 5	160000	0	6	2200	0	11
Pesticides/PCBs																						
4,4'-DDD	9/22	0.37	J	**480**		NTC21-SB-06-SO-0204	0.19	1.2	1.20E+02	4.94E+01	1.24E+02	**66**	**3**	NC	0	1 through 5	3000	0	9	**66**	**3**	**13**
4,4'-DDE	10/22	0.69	J	**300**		NTC21-SB-06-SO-0204	0.75	1.2	5.70E+01	2.61E+01	6.91E+01	**47**	**2**	NC	0	1 through 5	2000	0	9	**47**	**2**	**13**
4,4'-DDT	10/22	1.2	J	**240**	**J**	NTC21-SB-06-SO-0204	0.75	1.2	4.01E+01	1.84E+01	5.16E+01	**67**	**1**	NC	0	1 through 5	2000	0	9	**67**	**1**	**13**
ALDRIN	1/22	**0.83**	**J**	**0.83**	**J**	NTC21-SB-02-SO-0406	0.36	0.571	8.30E-01	2.32E-01	1.36E-01	**0.65**	**1**	NC	0	1 through 5	40	0	9	**0.65**	**1**	**13**
ALPHA-BHC	6/22	**0.27**	**J**	**2.8**	**J**	NTC21-SB-02-SO-0204	0.12	0.571	8.50E-01	3.75E-01	5.61E-01	**0.062**	**6**	NC	0	1 through 5	**0.5**	**3**	**6**	**0.062**	**6**	**13**
ALPHA-CHLORDANE	7/22	0.41	J	**26**	**J**	NTC21-SB-22-SO-0204	0.36	0.571	8.09E+00	2.71E+00	6.57E+00	**13**	**2**	NC	0	1 through 5	NC	0	6 through 10	**13**	**2**	**13**
AROCLOR-1242	1/22	47	J	**47**	**J**	NTC21-SB-02-SO-0406	18.4	29.4	4.70E+01	1.21E+01	7.87E+00	**5.3**	**1**	NC	0	1 through 5	NC	0	6 through 10	**5.3**	**1**	**13**
AROCLOR-1260	8/22	29	J	**440**	**J**	NTC21-SB-06-SO-0204	19	29.4	1.57E+02	6.37E+01	1.06E+02	**24**	**8**	NC	0	1 through 5	NC	0	6 through 10	**24**	**8**	**13**
BETA-BHC	2/22	**0.57**	**J**	**1.1**	**J**	NTC21-SB-10-SO-0406	0.12	0.571	8.35E-01	2.54E-01	2.09E-01	**0.22**	**2**	NC	0	1 through 5	NC	0	6 through 10	**0.22**	**2**	**13**
DELTA-BHC	5/22	**0.25**	**J**	**3**		NTC21-SB-06-SO-0204	0.36	0.571	1.12E+00	4.11E-01	6.41E-01	**0.062**	**5**	NC	0	1 through 5	NC	0	6 through 10	**0.062**	**5**	**13**
DIELDRIN	8/22	**0.87**	**J**	**5.6**	**J**	NTC21-SB-06-SO-0204	0.75	1.2	2.26E+00	1.09E+00	1.29E+00	**0.17**	**8**	NC	0	1 through 5	**4**	**1**	**6**	**0.17**	**8**	**13**
ENDOSULFAN I	4/22	0.29	J	3.22	J	NTC21-SB-02-SO-0406	0.36	0.571	1.44E+00	4.29E-01	6.82E-01	3000	0	NC	0	1 through 5	NC	0	6 through 10	3000	0	13
ENDOSULFAN II	6/22	0.19	J	1.26		NTC21-SB-02-SO-0406	0.75	1.2	8.32E-01	5.32E-01	2.83E-01	3000	0	NC	0	1 through 5	NC	0	6 through 10	3000	0	13
ENDOSULFAN SULFATE	8/22	0.65	J	8.7	J	NTC21-SB-06-SO-0204	0.75	1.2	3.11E+00	1.40E+00	2.15E+00	3000	0	NC	0	1 through 5	NC	0	6 through 10	3000	0	13
ENDRIN	5/22	0.82	J	3.2	J	NTC21-SB-11-SO-0204	0.73	1.2	1.73E+00	7.16E-01	6.89E-01	81	0	NC	0	1 through 5	1000	0	6	81	0	11
ENDRIN ALDEHYDE	2/22	1.1	J	4.9	J	NTC21-SB-10-SO-0406	0.19	1.2	3.00E+00	6.34E-01	9.68E-01	81	0	NC	0	1 through 5	NC	0	6 through 10	81	0	11

TABLE 4-7

OCCURRENCE AND DISTRIBUTION OF ORGANICS AND INORGANICS IN SUBSURFACE SOIL
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Parameter	Frequency of Detection	Minimum Result		Maximum Result		Sample with Maximum Detection	Minimum Non-Detection	Maximum Non-Detection	Average Positive Result	Overall Average	Standard Deviation	Minimum Screening Value		Minimum Non-TACO Screening Value			Minimum TACO Screening Value			Minimum USEPA Screening Value		
												Value	Exceedances	Value	Exceedances	Source	Value	Exceedances	Source	Value	Exceedances	Source
Pesticides/PCBs																						
ENDRIN KETONE	1/22	1.5	J	1.5	J	NTC21-SB-03-SO-0204	0.19	1.2	1.50E+00	4.51E-01	2.49E-01	81	0	NC	0	1 through 5	NC	0	6 through 10	81	0	11
GAMMA-BHC (LINDANE)	4/22	0.33	J	**2.3**	**J**	NTC21-SB-06-SO-0204	0.36	0.571	8.78E-01	3.27E-01	4.47E-01	**0.36**	**3**	NC	0	1 through 5	9	0	6	**0.36**	**3**	**13**
GAMMA-CHLORDANE	12/22	0.15	J	**46**	**J**	NTC21-SB-22-SO-0204	0.37	0.571	7.33E+00	4.09E+00	1.02E+01	**13**	**2**	NC	0	1 through 5	NC	0	6 through 10	**13**	**2**	**13**
HEPTACHLOR EPOXIDE	7/22	**0.26**	**J**	**6.9**	**J**	NTC21-SB-22-SO-0204	0.12	0.571	2.38E+00	8.92E-01	1.87E+00	**0.15**	**7**	NC	0	1 through 5	70	0	9	**0.15**	**7**	**13**
Herbicides (ug/kg)																						
2,4-D	1/22	**54.6**	**J**	**54.6**	**J**	NTC21-SB-06-SO-0204	28.1	86.6	5.46E+01	3.10E+01	7.21E+00	**18**	**1**	NC	0	1 through 5	1500	0	6	**18**	**1**	**11**
DICAMBA	5/22	6.13	J	29.2	J	NTC21-SB-16-SO-0204	2.81	8.66	1.15E+01	4.91E+00	5.68E+00	280	0	NC	0	1 through 5	NC	0	6 through 10	280	0	13
Dioxins (ng/kg)																						
1,2,3,4,6,7,8,9-OCDD	1/1	**1950**		**1950**		NTC21-SB-02-SO-0204	---	---	1.95E+03	1.95E+03	---	**870**	**1**	NC	0	1 through 5	NC	0	6 through 10	**870**	**1**	**13**
1,2,3,4,6,7,8,9-OCDF	1/1	44.8		44.8		NTC21-SB-02-SO-0204	---	---	4.48E+01	4.48E+01	---	870	0	NC	0	1 through 5	NC	0	6 through 10	870	0	13
1,2,3,4,6,7,8-HPCDD	1/1	**167**		**167**		NTC21-SB-02-SO-0204	---	---	1.67E+02	1.67E+02	---	**26**	**1**	NC	0	1 through 5	NC	0	6 through 10	**26**	**1**	**13**
1,2,3,4,6,7,8-HPCDF	1/1	18.1		18.1		NTC21-SB-02-SO-0204	---	---	1.81E+01	1.81E+01	---	26	0	NC	0	1 through 5	NC	0	6 through 10	26	0	13
1,2,3,4,7,8,9-HPCDF	1/1	1.74	J	1.74	J	NTC21-SB-02-SO-0204	---	---	1.74E+00	1.74E+00	---	26	0	NC	0	1 through 5	NC	0	6 through 10	26	0	13
1,2,3,4,7,8-HXCDD	1/1	1.04	J	1.04	J	NTC21-SB-02-SO-0204	---	---	1.04E+00	1.04E+00	---	2.6	0	NC	0	1 through 5	NC	0	6 through 10	2.6	0	13
1,2,3,4,7,8-HXCDF	1/1	2.56	J	2.56	J	NTC21-SB-02-SO-0204	---	---	2.56E+00	2.56E+00	---	2.6	0	NC	0	1 through 5	NC	0	6 through 10	2.6	0	13
1,2,3,6,7,8-HXCDD	1/1	**3.62**	**J**	**3.62**	**J**	NTC21-SB-02-SO-0204	---	---	3.62E+00	3.62E+00	---	**2.6**	**1**	NC	0	1 through 5	NC	0	6 through 10	**2.6**	**1**	**13**
1,2,3,6,7,8-HXCDF	1/1	1.39	J	1.39	J	NTC21-SB-02-SO-0204	---	---	1.39E+00	1.39E+00	---	2.6	0	NC	0	1 through 5	NC	0	6 through 10	2.6	0	13
1,2,3,7,8,9-HXCDD	1/1	2.42	J	2.42	J	NTC21-SB-02-SO-0204	---	---	2.42E+00	2.42E+00	---	2.6	0	NC	0	1 through 5	NC	0	6 through 10	2.6	0	13
1,2,3,7,8,9-HXCDF	1/1	0.682	J	0.682	J	NTC21-SB-02-SO-0204	---	---	6.82E-01	6.82E-01	---	2.6	0	NC	0	1 through 5	NC	0	6 through 10	2.6	0	13
1,2,3,7,8-PECDD	1/1	**0.579**	**J**	**0.579**	**J**	NTC21-SB-02-SO-0204	---	---	5.79E-01	5.79E-01	---	**0.26**	**1**	NC	0	1 through 5	NC	0	6 through 10	**0.26**	**1**	**13**
2,3,4,6,7,8-HXCDF	1/1	2.14	J	2.14	J	NTC21-SB-02-SO-0204	---	---	2.14E+00	2.14E+00	---	2.6	0	NC	0	1 through 5	NC	0	6 through 10	2.6	0	13
2,3,4,7,8-PECDF	1/1	**2.75**	**J**	**2.75**	**J**	NTC21-SB-02-SO-0204	---	---	2.75E+00	2.75E+00	---	**0.87**	**1**	NC	0	1 through 5	NC	0	6 through 10	**0.87**	**1**	**13**
2,3,7,8-TCDD	1/1	**0.279**	**J**	**0.279**	**J**	NTC21-SB-02-SO-0204	---	---	2.79E-01	2.79E-01	---	**0.26**	**1**	NC	0	1 through 5	NC	0	6 through 10	**0.26**	**1**	**13**
Inorganics (mg/kg)																						
ALUMINUM	22/22	3720		24300		NTC21-SB-15-SO-0204	---	---	9.34E+03	9.34E+03	5.75E+03	55000	0	78000	0	4	NC	0	6 through 10	55000	0	13
ANTIMONY	1/22	**0.643**		**0.643**		NTC21-SB-10-SO-0406	0.27	1.69	6.43E-01	4.40E-01	2.25E-01	**0.27**	**1**	NC	0	1 through 5	5	0	6	**0.27**	**1**	**11**
ARSENIC	22/22	**4.16**		**85**	**J**	NTC21-SB-15-SO-0204	---	---	1.21E+01	1.21E+01	1.65E+01	**0.0013**	**22**	NC	0	1 through 5	31	0	6	**0.0013**	**22**	**13**
BARIUM	22/22	12.4	J	**157**	**J**	NTC21-SB-15-SO-0204	---	---	6.93E+01	6.93E+01	4.01E+01	**82**	**7**	NC	0	1 through 5	2100	0	6	**82**	**7**	**11**
BERYLLIUM	22/22	0.225		**4.05**		NTC21-SB-12-SO-0204	---	---	1.04E+00	1.04E+00	1.01E+00	**3.2**	**2**	NC	0	1 through 5	160	0	9	**3.2**	**2**	**11**
CADMIUM	20/22	0.124		**9.62**		NTC21-SB-15-SO-0204	0.283	0.74	1.32E+00	1.22E+00	2.09E+00	**0.38**	**15**	NC	0	1 through 5	78	0	9	**0.38**	**15**	**11**
CALCIUM	22/22	4280	J	177000		NTC21-SB-02-SO-0406	---	---	5.49E+04	5.49E+04	4.36E+04	NC	0	NC	0	1 through 5	NC	0	6 through 10	NC	0	11 through 15
CHROMIUM	22/22	7.9		34.3	J	NTC21-SB-04-SO-0406	---	---	1.51E+01	1.51E+01	6.74E+00	28	0	NC	0	1 through 5	28	0	6	276	0	15
COBALT	22/22	**2.25**		**23.8**		NTC21-SB-12-SO-0204	---	---	8.90E+00	8.90E+00	5.57E+00	**0.49**	**22**	NC	0	1 through 5	4700	0	9	**0.49**	**22**	**13**
COPPER	22/22	9.91		**124**	**J**	NTC21-SB-07-SO-0204	---	---	4.76E+01	4.76E+01	2.96E+01	**46**	**9**	NC	0	1 through 5	2900	0	9	**46**	**9**	**11**
IRON	22/22	**6560**		**65800**	**J**	NTC21-SB-15-SO-0204	---	---	2.70E+04	2.70E+04	1.19E+04	**640**	**22**	**55000**	**1**	**4**	NC	0	6 through 10	**640**	**22**	**13**
LEAD	22/22	8.86		**228**	**J**	NTC21-SB-07-SO-0204	---	---	5.45E+01	5.45E+01	5.71E+01	**14**	**20**	NC	0	1 through 5	107	0	6	**14**	**20**	**11**
MAGNESIUM	22/22	3150		81500		NTC21-SB-02-SO-0406	---	---	2.69E+04	2.69E+04	2.21E+04	325000	0	NC	0	1 through 5	325000	0	9	NC	0	11 through 15
MANGANESE	22/22	**203**		**1690**		NTC21-SB-09-SO-0204	---	---	6.62E+02	6.62E+02	3.91E+02	**57**	**22**	NC	0	1 through 5	**1600**	**1**	**9**	**57**	**22**	**13**
MERCURY	21/22	0.0138		**0.484**		NTC21-SB-12-SO-0204	0.0151	0.0151	1.04E-01	9.95E-02	1.10E-01	**0.03**	**17**	NC	0	1 through 5	8	0	6	**0.03**	**17**	**13**
NICKEL	22/22	4.42		44.4	J	NTC21-SB-15-SO-0204	---	---	2.32E+01	2.32E+01	1.07E+01	48	0	NC	0	1 through 5	1600	0	9	48	0	13
POTASSIUM	22/22	558		1930		NTC21-SB-16-SO-0204	---	---	1.04E+03	1.04E+03	4.13E+02	NC	0	NC	0	1 through 5	NC	0	6 through 10	NC	0	11 through 15
SELENIUM	1/22	**1.31**	**J**	**1.31**	**J**	NTC21-SB-15-SO-0204	0.334	1.71	1.31E+00	4.73E-01	2.63E-01	**0.26**	**1**	NC	0	1 through 5	2.4	0	6	**0.26**	**1**	**11**
SODIUM	22/22	210		3370		NTC21-SB-16-SO-0204	---	---	1.04E+03	1.04E+03	8.03E+02	NC	0	NC	0	1 through 5	NC	0	6 through 10	NC	0	11 through 15
VANADIUM	22/22	10.5		33.5		NTC21-SB-04-SO-0406	---	---	1.90E+01	1.90E+01	6.21E+00	180	0	NC	0	1 through 5	550	0	9	180	0	13
ZINC	22/22	38.5		**1010**	**J**	NTC21-SB-04-SO-0406	---	---	1.84E+02	1.84E+02	2.01E+02	**680**	**1**	NC	0	1 through 5	23000	0	9	**680**	**1**	**13**

J = Estimated value.
ug/kg = Microgram per kilogram.
mg/kg = Milligram per kilogram.
ng/kg = Nanogram per kilogram.
USEPA = United States Environmental Protection Agency.
TACO = Tiered Approach to Corrective Action Objectives.
NC = No criteria.

1 = Non-TACO Class 1 Soil to Groundwater.
2 = Non-TACO Ingestion Soil Remediation Objectives (Industrial).
3 = Non-TACO Inhalation Soil Remediation Objectives (Industrial).
4 = Non-TACO Ingestion Soil Remediation Objectives (Residential).
5 = Non-TACO Inhalation Soil Remediation Objectives (Residential).
6 = TACO Class 1 Soil to Groundwater.
7 = TACO Ingestion Soil Remediation Objectives (Industrial).
8 = TACO Inhalation Soil Remediation Objectives (Industrial).
9 = TACO Ingestion Soil Remediation Objectives (Residential).
10 = TACO Inhalation Soil Remediation Objectives (Residential).

11 = USEPA ORNL MCL-Based SSLs.
12 = USEPA Residential SSLs.
13 = USEPA ORNL Risk-Based SSLs.
14 = USEPA Industrial Inhalation SSLs.
15 = USEPA Residential Inhalations SSLs.

Shaded cells and boldface font indicate that the concentration is greater than the minimum screening values.

TABLE 4-8

SUMMARY OF POSITIVE DETECTIONS IN SUBSURFACE SOIL
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Parameter	Minimum Screening		NTC21-SB-02		NTC21-SB-03	NTC21-SB-04	NTC21-SB-05	NTC21-SB-06	NTC21-SB-07	NTC21-SB-08	NTC21-SB-09	NTC21-SB-10	NTC21-SB-11	NTC21-SB-12	NTC21-SB-13
	Value	Source	2 to 4 (ft bgs)	4 to 6 (ft bgs)	2 to 4 (ft bgs)	4 to 6 (ft bgs)	2 to 4 (ft bgs)	2 to 4 (ft bgs)	2 to 4 (ft bgs)	2 to 4 (ft bgs)	2 to 4 (ft bgs)	4 to 6 (ft bgs)	2 to 4 (ft bgs)	2 to 4 (ft bgs)	2 to 4 (ft bgs)
VOLATILES (UG/KG)															
2-BUTANONE	1500	USEPA [1]	5.8 U	2 U	5.4 UJ	28 J	4.3 UJ	6.2 UJ	5.1 UJ	6.8 UJ	9 J	4.9 UJ	5.6 UJ	7.7 UJ	4.2 U
ACETONE	4500	USEPA [1]	5.8 U	35	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U	6.8 U	4.7 UJ	4.9 UJ	5.6 UJ	7.7 UJ	4.2 U
BENZENE	0.21	USEPA [1]	5.8 UJ	0.68 U	5.4 UJ	**1.2 J**	**0.41 J**	6.2 UJ	**0.71 J**	**2.6 J**	4.7 U	**1.2 J**	5.6 U	7.7 U	**1.6 J**
CARBON DISULFIDE	310	USEPA [1]	5.8 UJ	1.9 J	5.4 UJ	8.1	4.3 U	6.2 UJ	3.1 J	6.8 U	4.2 J	1.3 J	4.6 J	2 J	6.3
CHLOROMETHANE	49	USEPA [1]	12 U	0.75 U	11 UJ	13 U	8.6 U	12 UJ	10 U	14 U	9.4 U	9.8 U	11 U	15 U	8.4 U
CIS-1,2-DICHLOROETHENE	21	USEPA [3]	12 UJ	1.7 U	11 UJ	13 U	8.6 U	12 UJ	10 U	14 U	9.4 U	1.5 J	11 U	15 U	8.4 U
CYCLOHEXANE	13000	USEPA [1]	1.1 J	0.78 U	1 J	0.74 J	1.7 J	0.9 J	2.2 J	3.8 J	0.62 J	3 J	1 J	2.6 J	2.5 J
ETHYLBENZENE	1.7	USEPA [1]	5.8 UJ	1.1 U	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U	1.3 J	4.7 U	4.9 U	5.6 U	7.7 U	0.7 J
ISOPROPYLBENZENE	1100	USEPA [1]	5.8 UJ	1.3 U	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U	6.8 U	0.97 J	4.9 U	5.6 U	7.7 U	4.2 U
METHYL CYCLOHEXANE	120000	Non-TACO [5]	1.8 J	1.3 J	1.6 J	1.4 J	3.1 J	2.2 J	4.5 J	7.1	1.2 J	5	1.5 J	4.8 J	4.6
TETRACHLOROETHENE	0.049	USEPA [1]	5.8 UJ	**3.3 J**	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U	6.8 U	4.7 U	4.9 U	5.6 U	7.7 U	4.2 U
TOLUENE	690	USEPA [3]	5.8 UJ	1.5 J	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U	4.3 J	4.7 U	1.6 J	5.6 U	7.7 U	2.7 J
TOTAL XYLENES	200	USEPA [1]	5.8 UJ	1 U	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U	6.8 U	4.7 U	4.9 U	5.6 U	7.7 U	4.2 U
TRICHLOROFLUOROMETHANE	830	USEPA [1]	2.8 J	1.4 J	2.8 J	6.6 U	4.3 U	6.2 UJ	5.1 U	6.8 U	4.7 U	4.9 U	5.6 U	7.7 U	4.2 U
SEMIVOLATILES (UG/KG)															
1,1-BIPHENYL	19000	USEPA [1]	380 U	33 U	360 U	580 U	370 U	440 U	96 J	450 U	420 U	400 U	400 U	430 U	400 U
2-METHYLNAPHTHALENE	750	USEPA [1]	**1000 J**	30	**2100**	7.5 U	150	500	400	84	22	8.8	240	480	4 U
ACENAPHTHENE	22000	USEPA [1]	110	200	480	5.8 U	33	68	880	38	38	12	57	4.3 U	4 U
ACENAPHTHYLENE	22000	USEPA [1]	3.8 U	32	2000	25	19	4.4 U	69	88	16	2.8 J	19	170	4 U
ACETOPHENONE	1100	USEPA [1]	230 J	46 U	360 U	580 U	370 U	440 U	390 U	450 U	420 U	400 U	400 U	430 U	400 U
ANTHRACENE	360000	USEPA [1]	130	560	5000	8	3.7 U	4.4 U	1400	150	110	16	76	220	4 U
BENZALDEHYDE	810	USEPA [1]	220 J	62 U	360 U	580 UR	370 U	440 UR	390 UR	450 U	420 U	400 U	400 U	430 U	400 UR
BENZO(A)ANTHRACENE	10	USEPA [1]	**280**	**2000**	**32000**	**120**	**140 J**	**260**	**4300**	**430 J**	**81 J**	**16**	**150 J**	**420 J**	**14**
BENZO(A)PYRENE	3.5	USEPA [1]	**320**	**1200**	**27000**	5.8 U	**210 J**	**520**	**3600**	**740 J**	**170 J**	**33**	**220 J**	**620 J**	4 U
BENZO(B)FLUORANTHENE	35	USEPA [1]	**450**	**1600**	**41000**	**230**	**290 J**	**860**	**4300**	**1200 J**	**280 J**	**52**	**380 J**	**1200 J**	6.4
BENZO(G,H,I)PERYLENE	120000	USEPA [1]	250 J	730	11000	65	130 J	320	1600	470 J	100 J	23	120 J	330 J	4 U
BENZO(K)FLUORANTHENE	350	USEPA [1]	150	**620**	**14000**	220	120 J	**840**	**1700**	**460 J**	92 J	17	88 J	**380 J**	7.2
BIS(2-ETHYLHEXYL)PHTHALATE	1100	USEPA [1]	230 J	69 J	280 J	580 U	170 J	440 U	390 U	280 J	420 U	400 U	400 U	430 U	400 U
BUTYL BENZYL PHTHALATE	510	USEPA [1]	380 UJ	110 J	360 UJ	580 U	370 UJ	440 U	390 U	450 UJ	420 U	400 U	400 UJ	430 UJ	400 U
CARBAZOLE	600	TACO [2]	750 U	430 J	720 U	1200 U	740 U	870 U	**1000**	900 U	840 U	800 U	790 U	860 U	790 U
CHRYSENE	1100	USEPA [1]	290	**2100**	**34000**	100	170 J	360	**4900**	580 J	120 J	23	160 J	530 J	8
DIBENZO(A,H)ANTHRACENE	11	USEPA [1]	**66 J**	**240**	**3300**	5.8 U	**38 J**	4.4 U	3.9 U	**160 J**	**28 J**	4 UJ	**34 J**	**100 J**	4 U
DIBENZOFURAN	680	USEPA [1]	310 J	150 J	490	580 U	66 J	180 J	670	36 J	420 U	400 U	74 J	330 J	400 U
FLUORANTHENE	160000	USEPA [1]	650	4700	56000	200	360	930	13000	1100	450	78	520	1400	15
FLUORENE	27000	USEPA [1]	3.8 U	180	90 U	5.8 U	3.7 U	4.4 U	1200	57	68	16	4 U	4.3 U	4 U
INDENO(1,2,3-CD)PYRENE	120	USEPA [1]	**330 J**	**890**	**16000**	5.8 U	**200 J**	**420**	**2500**	**690 J**	**160 J**	28	**150 J**	**470 J**	4 U
NAPHTHALENE	0.47	USEPA [1]	**470**	**33**	**1100**	**10**	**58**	**230**	**550**	**43**	**180**	**8.9**	**1700**	**440**	4 U
PHENANTHRENE	120000	USEPA [1]	1100	2200	11000	34	380	970	11000	560	290	67	470	2100	19
PYRENE	120000	USEPA [1]	540	3200	52000	200	320	760	10000	950	340	63	420	1000	14
PESTICIDES/PCBS (UG/KG)															
4,4'-DDD	66	USEPA [1]	7.9 J	0.19 U	11 J	1.2 U	30 J	**480**	0.78 U	31 J	0.37 J	1.7 J	**190**	0.87 U	0.79 U
4,4'-DDE	47	USEPA [1]	8.2	17.3 J	15	1.2 U	22	**300**	0.78 U	20	0.84 UJ	0.69 J	35 J	1.7 J	0.79 U
4,4'-DDT	67	USEPA [1]	8 J	8.53 J	16 J	1.2 UJ	14 J	**240 J**	0.78 UJ	31 J	0.84 UJ	1.9 J	18 J	1.2 J	0.79 UJ
ALDRIN	0.65	USEPA [1]	0.37 UJ	**0.83 J**	0.36 UJ	0.571 U	0.36 UJ	0.43 UJ	0.38 U	0.45 UJ	0.42 UJ	0.4 UJ	0.39 UJ	0.43 UJ	0.39 U
ALPHA-BHC	0.062	USEPA [1]	**2.8 J**	0.12 UJ	**0.37 J**	0.571 U	0.36 U	**0.64 J**	0.38 U	0.45 U	0.42 U	**0.71 J**	0.39 U	0.43 U	0.39 U
ALPHA-CHLORDANE	13	USEPA [1]	0.37 UJ	0.41 J	0.36 UJ	0.571 U	0.62 J	9.9 J	0.38 U	2 J	0.42 UJ	0.73 J	**17 J**	0.43 UJ	0.39 U
AROCLOR-1242	5.3	USEPA [1]	19.2 U	**47 J**	18.4 U	29.4 U	18.7 U	22.2 U	19.8 U	23.1 U	21.4 U	20.5 U	20.2 U	22.1 U	20.2 U
AROCLOR-1260	24	USEPA [1]	**69 J**	**122 J**	**29 J**	29.4 U	**130 J**	**440 J**	19.8 U	**120 J**	21.4 UJ	20.5 UJ	**72 J**	22.1 UJ	20.2 U
BETA-BHC	0.22	USEPA [1]	0.37 UJ	0.12 U	0.36 U	0.571 U	0.36 U	**0.57 J**	0.38 U	0.45 U	0.42 UJ	**1.1 J**	0.39 UJ	0.43 UJ	0.39 U
DELTA-BHC	0.062	USEPA [1]	0.37 U	**1.48 J**	0.36 U	0.571 U	0.36 U	**3**	0.38 U	0.45 U	0.42 UJ	**0.52 J**	0.39 UJ	**0.34 J**	0.39 U
DIELDRIN	0.17	USEPA [1]	**0.87 J**	**2.89 J**	**1.1 J**	1.2 U	**1.6 J**	**5.6 J**	0.78 U	**1.1 J**	0.84 UJ	0.81 UJ	**1.7 J**	0.87 UJ	0.79 U
ENDOSULFAN I	3000	USEPA [1]	0.37 UJ	3.22 J	0.36 UJ	0.571 U	0.36 UJ	0.43 UJ	0.38 U	0.45 UJ	0.42 UJ	0.96 J	0.39 UJ	1.3 J	0.39 U
ENDOSULFAN II	3000	USEPA [1]	0.59 J	1.26	0.19 J	1.2 U	1.1 J	0.88 UJ	0.78 U	1.2 J	0.84 UJ	0.81 UJ	0.8 UJ	0.87 UJ	0.79 U
ENDOSULFAN SULFATE	3000	USEPA [1]	1.3 J	3.91	0.72 J	1.2 U	0.65 J	8.7 J	0.78 U	0.73 J	0.84 UJ	0.81 UJ	3.1 J	0.87 UJ	0.79 U
ENDRIN	81	USEPA [3]	0.82 J	1.84 J	0.73 UJ	1.2 UJ	1.5 J	0.88 U	0.78 UJ	1.3 J	0.84 U	0.81 U	3.2 J	0.87 UJ	0.79 UJ
ENDRIN ALDEHYDE	81	USEPA [3]	0.76 UJ	0.19 U	0.73 UJ	1.2 UJ	0.739 UJ	0.88 UJ	0.78 UJ	0.91 UJ	0.84 UJ	4.9 J	0.8 UJ	1.1 J	0.79 UJ
ENDRIN KETONE	81	USEPA [3]	0.76 UJ	0.19 U	1.5 J	1.2 U	0.739 UJ	0.88 UJ	0.78 U	0.91 UJ	0.84 UJ	0.81 UJ	0.8 UJ	0.87 UJ	0.79 U
GAMMA-BHC (LINDANE)	0.36	USEPA [1]	0.37 U	**0.46**	0.33 J	0.571 U	0.36 U	**2.3 J**	0.38 U	0.45 U	0.42 U	**0.42 J**	0.39 U	0.43 U	0.39 U
GAMMA-CHLORDANE	13	USEPA [1]	3.5 J	1.07 J	2.4 J	0.571 U	3.9 J	4.5 J	0.38 U	4.2 J	0.15 J	1.7 J	**19 J**	1.1 J	0.39 U
HEPTACHLOR EPOXIDE	0.15	USEPA [1]	**0.9 J**	0.12 U	**0.39 J**	0.571 U	**0.53 J**	**6.3**	0.38 U	**1.4 J**	0.42 UJ	0.4 UJ	0.39 UJ	0.43 UJ	0.39 U
METHOXYCHLOR	2200	USEPA [3]	1.2 J	34.2 J	4.3 J	0.571 UJ	2.8 J	11 J	2.7 J	3.7 J	0.8 J	0.4 UJ	0.39 UJ	8.9 J	0.39 UJ

TABLE 4-8

SUMMARY OF POSITIVE DETECTIONS IN SUBSURFACE SOIL
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Parameter	Minimum Screening		NTC21-SB-02		NTC21-SB-03	NTC21-SB-04	NTC21-SB-05	NTC21-SB-06	NTC21-SB-07	NTC21-SB-08	NTC21-SB-09	NTC21-SB-10	NTC21-SB-11	NTC21-SB-12	NTC21-SB-13
	Value	Source	2 to 4 (ft bgs)	4 to 6 (ft bgs)	2 to 4 (ft bgs)	4 to 6 (ft bgs)	2 to 4 (ft bgs)	2 to 4 (ft bgs)	2 to 4 (ft bgs)	2 to 4 (ft bgs)	2 to 4 (ft bgs)	4 to 6 (ft bgs)	2 to 4 (ft bgs)	2 to 4 (ft bgs)	2 to 4 (ft bgs)
HERBICIDES (UG/KG)															
2,4-D	18	USEPA [3]	56.3 U	28.1 U	54.2 U	86.6 UJ	55.1 U	54.6 J	58.1 UJ	67.8 U	62.9 U	60.4 U	59.4 U	64.9 U	59.3 UJ
DICAMBA	280	USEPA [1]	6.89 J	2.81 U	6.81 J	8.66 U	5.51 U	6.13 J	5.81 U	6.78 U	6.29 UJ	6.04 U	5.94 U	6.49 U	5.93 U
DIOXINS/FURANS (NG/KG)															
1,2,3,4,6,7,8,9-OCDD	870	USEPA [1]	1950	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,6,7,8,9-OCDF	870	USEPA [1]	44.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,6,7,8-HPCDD	26	USEPA [1]	167	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,6,7,8-HPCDF	26	USEPA [1]	18.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8,9-HPCDF	26	USEPA [1]	1.74 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-HXCDD	2.6	USEPA [1]	1.04 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-HXCDF	2.6	USEPA [1]	2.56 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-HXCDD	2.6	USEPA [1]	3.62 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-HXCDF	2.6	USEPA [1]	1.39 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-HXCDD	2.6	USEPA [1]	2.42 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-HXCDF	2.6	USEPA [1]	0.682 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8-PECDD	0.26	USEPA [1]	0.579 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,6,7,8-HXCDF	2.6	USEPA [1]	2.14 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,7,8-PECDF	0.87	USEPA [1]	2.75 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,7,8-TCDD	0.26	USEPA [1]	0.279 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METALS (MG/KG)															
ALUMINUM	55000	USEPA [1]	4590	5090	4830	13200	7820	4450	6830	9510	17400	9450	4900	12300	6440
ANTIMONY	0.27	USEPA [3]	1.42 UJ	0.27 U	1.36 UJ	0.892 UJ	0.54 U	1.62 U	0.556 UJ	0.671 U	0.645 U	0.643	1.46 U	1.69 U	0.546 UJ
ARSENIC	0.0013	USEPA [1]	8.57	4.16	10.4	14.6 J	7.32	6.39	8.88 J	12	7.34	9.71	6	7.09	8.73 J
BARIUM	82	USEPA [3]	42.6 J	48.8	44.6 J	115 J	48 J	55.3 J	44.9 J	61.7 J	140 J	60.9 J	81.2 J	103 J	28.1 J
BERYLLIUM	3.2	USEPA [3]	0.985	0.28	0.694	1.26 J	0.604	0.603	0.397 J	0.844	1.46	0.506	1.35	4.05	0.425 J
CADMIUM	0.38	USEPA [3]	0.283 U	0.74 U	0.395	2.49	0.449	1.51	0.606	0.898	0.653	0.414	0.979	4.15	0.909
CALCIUM	NC	N/A	86600 J	177000	109000 J	36100 J	50200	133000	24900 J	59000	26600	57800	10500	24200	30100 J
CHROMIUM	28	TACO [2]	10.1	7.97	10.8	34.3 J	14.2	16.5	10.9 J	16	19.3	16.2	10.7	12.1	12.7 J
COBALT	0.49	USEPA [1]	3.18	2.25	4.52	15.8	8.23	3.59	6.25	10.3	9.54	9.49	6.8	23.8	7.28
COPPER	46	USEPA [3]	23.8 J	9.91	34.4 J	72.6 J	31.7	77.1	124 J	46.5	37.8	66.6	69.9	59.8	24.5 J
IRON	640	USEPA [1]	15000 J	6560	18600 J	30500 J	20700 J	15100 J	26600 J	27600 J	25800 J	24900 J	40100 J	32900 J	22900 J
LEAD	14	USEPA [3]	35.6 J	10.8	63.2 J	184 J	37 J	100 J	228 J	66.5	29.1	38.4	94.3	41.3	18.3 J
MAGNESIUM	325000	TACO [4]	36700	81500	58300	15800	24100	57900	14600	38000	5180	29200	3150	10700	18400
MANGANESE	57	USEPA [1]	294	270	413	267 J	419	354	465 J	583	1690	650	203	760	744 J
MERCURY	0.03	USEPA [1]	0.0963 J	0.03	0.215 J	0.0897	0.0375 J	0.237	0.0778	0.047 J	0.0822	0.0742	0.0889	0.484	0.0545
NICKEL	48	USEPA [1]	10.2	4.42	13.4	34 J	22.5	13.1	14.6 J	28.4	23.2	25.9	19.2	42.7	22.5 J
POTASSIUM	NC	N/A	658 J	603	785 J	1320	956	746	558	1110	1780	1570	607	683	953
SELENIUM	0.26	USEPA [3]	0.849 UJ	1.65 U	0.818 UJ	0.535 UJ	0.54 UJ	1.29 UJ	0.334 UJ	1.01 UJ	0.387 U	0.924 U	0.878 U	1.01 U	0.82 U
SODIUM	NC	N/A	817	289	1590	1460	922	792	427	210	2920	483	885	601	521
VANADIUM	180	USEPA [1]	12.8	10.5	15.2	33.5	16.8 J	15.4 J	17.4	20.2 J	28	21.7	15.5	20.5	18.4
ZINC	680	USEPA [1]	110 J	38.5	115 J	1010 J	90.6 J	151 J	181 J	229	156	116	244	358	216 J

TABLE 4-8

SUMMARY OF POSITIVE DETECTIONS IN SUBSURFACE SOIL
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Parameter	NTC21-SB-14	NTC21-SB-15			NTC21-SB-16	NTC21-SB-17	NTC21-SB-18			NTC21-SB-19	NTC21-SB-20	NTC21-SB-21	NTC21-SB-22
	2 to 4 (ft bgs)	2 to 4 (ft bgs)	NTC21SB15-SO-0204-	NTC21SB15-SO-0204-	2 to 4 (ft bgs)	5 to 7 (ft bgs)	5 to 7 (ft bgs)	NTC21SB18-SO-0507-	NTC21SB18-SO-0507-	2 to 4 (ft bgs)	4 to 6 (ft bgs)	6 to 8 (ft bgs)	2 to 4 (ft bgs)
VOLATILES (UG/KG)													
2-BUTANONE	11	4.9 U	5.05 U	5.2 UJ	14	3.8 UJ	4.5 UJ	4.25 U	4 U	9.1	4 UJ	5.1 UJ	5.5 U
ACETONE	58	25 J	25 J	42 U	79	3.8 UJ	4.5 UJ	4.25 U	4 U	87	4 U	5.1 U	5.5 U
BENZENE	6.7 U	4.9 U	5.05 U	5.2 U	4.9 U	**3 J**	**4.8**	**3.45**	**2.1 J**	5 U	**1.2 J**	**1.6 J**	5.5 U
CARBON DISULFIDE	3.2 J	1.4 J	2.6	3.8 J	4.9 U	3.8 U	1.2 J	1.2 J	4 U	5 U	12	5.1 U	9
CHLOROMETHANE	13 U	9.9 U	9.95 U	10 U	1 J	7.6 U	8.9 U	8.45 U	8 U	2.2 J	8 U	10 U	11 U
CIS-1,2-DICHLOROETHENE	13 U	9.9 U	9.95 U	10 U	9.8 U	7.6 U	8.9 U	8.45 U	8 U	10 U	8 U	10 U	11 U
CYCLOHEXANE	6.7 U	4.9 U	5.05 U	5.2 U	4.9 U	4.4	9	6.2	3.4 J	5 U	2.5 J	3.2 J	0.75 J
ETHYLBENZENE	6.7 U	4.9 U	5.05 U	5.2 U	4.9 U	**1.9 J**	1 J	1 J	4 U	5 U	4 U	5.1 U	5.5 U
ISOPROPYLBENZENE	6.7 U	4.9 U	5.05 U	5.2 U	4.9 U	3.8 U	4.5 U	4.25 U	4 U	5 U	4 U	5.1 U	5.5 U
METHYL CYCLOHEXANE	6.7 U	4.9 U	5.05 U	5.2 U	4.9 U	8.7	11	8.2	5.4	5 U	5.4	4.4 J	1.4 J
TETRACHLOROETHENE	6.7 U	4.9 U	5.05 U	5.2 U	4.9 U	3.8 U	4.5 U	4.25 U	4 U	**18**	4 U	5.1 U	5.5 U
TOLUENE	6.7 U	4.9 U	5.05 U	5.2 U	4.9 U	5.6	5.4	4	2.6 J	5 U	1.4 J	1.4 J	5.5 U
TOTAL XYLENES	6.7 U	4.9 U	5.05 U	5.2 U	4.9 U	2.2 J	4.5 U	4.25 U	4 U	5 U	4 U	5.1 U	5.5 U
TRICHLOROFLUOROMETHANE	6.7 U	4.9 U	5.05 U	5.2 U	4.9 U	3.8 U	4.5 U	4.25 U	4 U	5 U	4 U	5.1 U	5.5 U
SEMIVOLATILES (UG/KG)													
1,1-BIPHENYL	440 U	430 U	435 U	440 U	430 U	370 U	370 U	365 U	360 U	400 U	380 U	370 U	410 U
2-METHYLNAPHTHALENE	4.4 U	99	104.5	110	17	3.7 U	3.7 U	3.65 U	3.6 U	33	2.4 J	3.7 U	410
ACENAPHTHENE	4.4 U	4.3 U	4.35 U	4.4 U	4.3 U	3.7 U	3.7 U	3.65 U	3.6 U	12	3.8 U	3.7 U	62
ACENAPHTHYLENE	4.4 U	12	11.5	11	4.3 U	3.7 U	3.7 U	3.65 U	3.6 U	4 U	3.8 U	3.7 U	4.1 U
ACETOPHENONE	440 U	430 U	435 U	440 U	430 U	370 U	370 U	365 U	360 U	400 U	380 U	370 U	410 U
ANTHRACENE	4.4 U	4.3 U	4.35 U	4.4 U	4.3 U	3.7 U	3.7 U	3.65 U	3.6 U	4 U	2.9 J	3.7 U	4.1 U
BENZALDEHYDE	440 UR	430 UR	440 U	440 U	430 UR	370 U	370 U	365 U	360 U	400 UR	380 U	370 U	410 UR
BENZO(A)ANTHRACENE	4.4 U	**47 J**	**34.5**	**22 J**	**16**	3.7 U	3.7 U	3.65 U	3.6 U	**150**	9.4	2.5 J	**230**
BENZO(A)PYRENE	4.4 U	4.3 UJ	**12.075**	**22 J**	4.3 U	3.7 U	3.7 U	3.65 U	3.6 U	4 U	**12**	3.7 U	**480**
BENZO(B)FLUORANTHENE	4.4 U	4.3 UJ	20.075	**38 J**	8.7	3.7 U	3.7 U	3.65 U	3.6 U	**260**	19	3.7 U	**400**
BENZO(G,H,I)PERYLENE	4.4 U	4.3 UJ	8.075	14 J	4.3 U	4.1	3.7 U	3.65 U	3.6 U	50	3.8 U	6.2	370
BENZO(K)FLUORANTHENE	4.4 U	4.3 UJ	6.075	10 J	7.4	3.7 U	3.7 U	3.65 U	3.6 U	250	8.5	3.7 U	350
BIS(2-ETHYLHEXYL)PHTHALATE	440 U	430 U	435 U	440 U	430 U	370 U	370 U	365 U	360 U	54 J	380 U	370 U	110 J
BUTYL BENZYL PHTHALATE	440 U	430 U	435 U	440 U	430 U	370 U	370 U	365 U	360 U	400 U	380 U	370 U	410 UJ
CARBAZOLE	880 U	860 U	870 U	880 U	860 U	740 U	750 U	735 U	720 U	800 U	770 U	740 U	830 U
CHRYSENE	4.4 U	35	33	31	7.2	3.4 J	3.4 J	2.6	1.8 J	140	14	8.3	360
DIBENZO(A,H)ANTHRACENE	4.4 U	4.3 U	4.35 U	4.4 U	4.3 U	3.7 U	3.7 U	3.65 U	3.6 U	4 U	2.4 J	3.7 U	4.1 U
DIBENZOFURAN	440 U	55 J	48.5	42 J	430 U	370 U	370 U	365 U	360 U	34 J	380 U	370 U	120 J
FLUORANTHENE	1.9 U	80	68.5	57	12	3.7 U	3.7 U	3.65 U	3.6 U	340	33	6.8	830
FLUORENE	4.4 U	4.3 U	4.35 U	4.4 U	4.3 U	3.7 U	3.7 U	3.65 U	3.6 U	4 U	2.5 J	3.7 U	4.1 U
INDENO(1,2,3-CD)PYRENE	4.4 U	4.3 UJ	10.075	18 J	4.3 U	3.7 U	3.7 U	3.65 U	3.6 U	4 U	12	3.7 U	**340**
NAPHTHALENE	4.4 U	**44**	**46.5**	**49**	4.3 U	3.7 U	3.7 U	3.65 U	3.6 U	**30**	**3.8 J**	3.7 U	**4600**
PHENANTHRENE	4.4 U	190	190	190	2.2 J	1.8 J	2.3 J	2.3 J	3.6 U	310	24	4.2	740
PYRENE	4.4 U	70	62.5	55	12	3.7 U	3.7 U	3.65 U	3.6 U	260	26	6.9	700
PESTICIDES/PCBS (UG/KG)													
4,4'-DDD	0.89 U	0.87 U	0.88 U	0.89 U	0.87 U	0.75 U	0.75 U	0.735 U	0.72 U	0.81 U	0.77 U	0.75 U	**330**
4,4'-DDE	0.89 U	0.87 U	0.88 U	0.89 U	0.87 U	0.75 UJ	0.75 UJ	0.735 U	0.72 UJ	0.81 U	0.77 UJ	0.75 UJ	**150**
4,4'-DDT	0.89 UJ	0.87 UJ	0.88 U	0.89 UJ	0.87 UJ	0.75 UJ	0.75 UJ	0.735 U	0.72 UJ	0.81 UJ	0.77 UJ	0.75 UJ	62 J
ALDRIN	0.44 U	0.43 U	0.435 U	0.44 U	0.43 U	0.37 UJ	0.37 UJ	0.365 U	0.36 UJ	0.4 U	0.38 UJ	0.37 UJ	0.41 UJ
ALPHA-BHC	0.44 U	0.43 U	0.435 U	0.44 U	0.43 U	0.37 U	0.37 U	0.365 U	0.36 U	**0.31 J**	0.38 U	0.37 U	**0.27 J**
ALPHA-CHLORDANE	0.44 U	0.43 U	0.435 U	0.44 U	0.43 U	0.37 UJ	0.37 UJ	0.365 U	0.36 UJ	0.4 U	0.38 UJ	0.37 UJ	**26 J**
AROCLOR-1242	22.6 U	22 U	22.25 U	22.5 U	22 U	19 U	19 U	18.7 U	18.4 U	20.5 U	19.6 U	19 U	21.1 U
AROCLOR-1260	22.6 U	22 U	22.25 U	22.5 U	22 U	19 UJ	19 UJ	18.7 U	18.4 UJ	20.5 U	19.6 UJ	19 UJ	**270 J**
BETA-BHC	0.44 U	0.43 U	0.435 U	0.44 U	0.43 U	0.37 UJ	0.37 UJ	0.365 U	0.36 UJ	0.4 U	0.38 UJ	0.37 UJ	0.41 U
DELTA-BHC	0.44 U	0.43 U	0.435 U	0.44 U	0.43 U	0.37 UJ	0.37 UJ	0.365 U	0.36 UJ	**0.25 J**	0.38 UJ	0.37 UJ	0.41 U
DIELDRIN	0.89 U	0.87 U	0.88 U	0.89 U	0.87 U	0.75 UJ	0.75 UJ	0.735 U	0.72 UJ	0.81 U	0.77 UJ	0.75 UJ	**3.2 J**
ENDOSULFAN I	0.44 U	0.43 U	0.435 U	0.44 U	0.43 U	0.37 UJ	0.37 UJ	0.365 U	0.36 UJ	0.29 J	0.38 UJ	0.37 UJ	0.41 UJ
ENDOSULFAN II	0.89 U	0.87 U	0.88 U	0.89 U	0.87 U	0.75 UJ	0.75 UJ	0.735 U	0.72 UJ	0.81 U	0.77 UJ	0.75 UJ	0.65 J
ENDOSULFAN SULFATE	0.89 U	0.87 U	0.88 U	0.89 U	0.87 U	0.75 UJ	0.75 UJ	0.735 U	0.72 UJ	0.81 U	0.77 UJ	0.75 UJ	5.8 J
ENDRIN	0.89 UJ	0.87 UJ	0.88 U	0.89 UJ	0.87 UJ	0.75 UJ	0.75 UJ	0.735 U	0.72 U	0.81 UJ	0.77 UJ	0.75 UJ	0.83 UJ
ENDRIN ALDEHYDE	0.89 UJ	0.87 UJ	0.88 U	0.89 UJ	0.87 UJ	0.75 U	0.75 U	0.735 U	0.72 UJ	0.81 UJ	0.77 UJ	0.75 UJ	0.83 UJ
ENDRIN KETONE	0.89 U	0.87 U	0.88 U	0.89 U	0.87 U	0.75 UJ	0.75 UJ	0.735 U	0.72 UJ	0.81 U	0.77 UJ	0.75 UJ	0.83 UJ
GAMMA-BHC (LINDANE)	0.44 U	0.43 U	0.435 U	0.44 U	0.43 U	0.37 U	0.37 U	0.365 U	0.36 U	0.4 U	0.38 U	0.37 U	0.41 U
GAMMA-CHLORDANE	0.44 U	0.43 U	0.435 U	0.44 U	0.43 U	0.37 UJ	0.37 UJ	0.365 U	0.36 UJ	0.47 J	0.38 UJ	0.37 UJ	**46 J**
HEPTACHLOR EPOXIDE	0.44 U	0.43 U	0.435 U	0.44 U	0.43 U	0.37 UJ	0.37 UJ	0.365 U	0.36 UJ	**0.26 J**	0.38 UJ	0.37 UJ	**6.9 J**
METHOXYCHLOR	0.44 UJ	0.43 UJ	0.435 U	0.44 UJ	0.43 UJ	0.37 UJ	0.37 UJ	0.365 U	0.36 UJ	0.84 J	0.38 UJ	0.37 UJ	0.41 UJ

TABLE 4-8

SUMMARY OF POSITIVE DETECTIONS IN SUBSURFACE SOIL
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Parameter	NTC21-SB-14	NTC21-SB-15			NTC21-SB-16	NTC21-SB-17	NTC21-SB-18			NTC21-SB-19	NTC21-SB-20	NTC21-SB-21	NTC21-SB-22
	2 to 4 (ft bgs)	2 to 4 (ft bgs)	NTC21SB15-SO-0204-	NTC21SB15-SO-0204-	2 to 4 (ft bgs)	5 to 7 (ft bgs)	5 to 7 (ft bgs)	NTC21SB18-SO-0507-	NTC21SB18-SO-0507-	2 to 4 (ft bgs)	4 to 6 (ft bgs)	6 to 8 (ft bgs)	2 to 4 (ft bgs)
HERBICIDES (UG/KG)													
2,4-D	66.4 UJ	64.8 U	65.5 U	66.2 U	64.6 U	55.8 U	56 U	55 U	54 U	60.2 U	57.7 U	55.8 U	62.2 U
DICAMBA	8.28 J	6.48 U	6.55 U	6.62 U	29.2 J	5.58 U	5.6 U	5.5 U	5.4 U	6.02 U	5.77 U	5.58 U	6.22 U
DIOXINS/FURANS (NG/KG)													
1,2,3,4,6,7,8,9-OCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,6,7,8,9-OCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,6,7,8-HPCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,6,7,8-HPCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8,9-HPCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-HXCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-HXCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-HXCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-HXCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-HXCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-HXCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8-PECDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,6,7,8-HXCDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,7,8-PECDF	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,7,8-TCDD	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METALS (MG/KG)													
ALUMINUM	16400	24300	22250	20200	18200	3720	4230	3860	3490	14500	8380	3770	5240
ANTIMONY	0.645 UJ	0.671 UJ	1.1705 U	1.67 UJ	0.595 U	0.534 U	0.569 U	0.543 U	0.517 U	0.602 UJ	0.577 U	0.581 U	1.64 UJ
ARSENIC	**9.51 J**	**85 J**	**104**	**123 J**	**9.1 J**	**12.5**	**8.65 J**	**15.925**	**23.2 J**	**9.59 J**	**8.39**	**5.7**	**5.69 J**
BARIUM	**119 J**	**157 J**	**177**	**197 J**	**99.5 J**	23.4 J	18.6 J	18.5	18.4 J	**105 J**	59.5 J	12.4 J	56.2 J
BERYLLIUM	1.16 J	**3.77 J**	**4.105**	**4.44 J**	1.27 J	0.244	0.266	0.2495	0.233	0.818 J	0.479	0.225	1.08 J
CADMIUM	**0.799**	**9.62**	**8.67**	**7.72**	**0.569**	0.175	0.153	0.2375	0.322	0.3	0.338	0.124	**0.809**
CALCIUM	6730 J	63600 J	91300	119000 J	4530 J	68400	79300	78900	78500	4280 J	55900	72300	26700 J
CHROMIUM	22.3 J	16.7 J	14.45	12.2 J	26.8 J	7.9	8.66	8.01	7.36	24 J	13.5	8.23	13 J
COBALT	**9.89**	**22 J**	**16.7**	**11.4 J**	**10.6**	**5.71**	**7.93**	**6.785**	**5.64**	**11.3**	**9.18**	**4.85**	**3.38**
COPPER	40.5 J	**110 J**	**97.15**	**84.3 J**	39.8 J	29.3	22.4	24.25	26.1	25.3 J	27.3	16	**57.2 J**
IRON	**34900 J**	**65800 J**	**88400**	**111000 J**	**34800 J**	**29400 J**	**21100 J**	**23450**	**25800 J**	**33200 J**	**21200 J**	**14300 J**	**31300 J**
LEAD	**21.4 J**	**19.9 J**	**18.85**	**17.8 J**	**21 J**	**19.6**	**14.6**	13.5	12.4	**16.6 J**	**28.6**	8.86	**102 J**
MAGNESIUM	4070	3860 J	7180	10500 J	4640	42600	48800	48800	48800	4910	36600	43300	9310
MANGANESE	**1200 J**	**1230 J**	**1125**	**1020 J**	**863 J**	**438**	**887**	**809.5**	**732**	**1190 J**	**803**	**568**	**263 J**
MERCURY	**0.0835**	0.0206	0.0236	0.0266	**0.0711 J**	0.0156	0.0151 U	0.012225	0.0169	**0.0627 J**	**0.0499**	0.0138	**0.251 J**
NICKEL	33 J	44.4 J	40.1	35.8 J	39.2 J	16.6	18.6	16.7	14.8	31.9 J	21.5	13.9	17.9 J
POTASSIUM	1430	1180	960	740	1930	864	936	813	690	1660	1010	834	600
SELENIUM	0.387 UJ	**1.31 J**	**1.495**	**1.68 J**	0.357 UJ	0.801 U	1.71 U	1.2425 U	0.775 U	0.902 UJ	0.866 U	1.16 U	0.982 UJ
SODIUM	801	1310	1220	1130	3370	984	347	348	349	1210	1470	241	1300
VANADIUM	28	21.4	19.8	18.2	26.9	11.5	12.9	13.4	13.9	25	19.5	11.2	15.8
ZINC	130 J	263 J	333.5	404 J	186 J	56.8	68	70.75	73.5	80.4 J	90.1	49.7	119 J

1 = United States Environmental Protection Agency (USEPA) Regions 3, 6, 9 Oakridge National Laboratory (ORNL) Risk-Based Soil Screening Level (SSL).
2 = Illinois Tiered Approach to Corrective Action Objectives (TACO); Soil Component of Groundwater Ingestion Class 1.
3 = USEPA Regions 3, 6, 9 ORNL Maximum Contaminant Level (MCL) Based SSL.
4 = Illinois Tiered Approach to Corrective Action Objectives (TACO); Soil Remediation Objectives Residential Ingestion.
5 = Illinois Tiered Approach to Corrective Action Objectives (Non-TACO); Soil Remediation Objectives Industrial/Commercial Construction Inhalation.

J = Value is estimated.
U = Analyte not detected at the reporting limit left of the letter.
UJ = Numerical detection limit for the undetected result is estimated.
mg/kg = Milligram per kilogram.
ug/kg = Microgram per kilogram.
ng/kg = Nanogram per kilogram.
NA = Not analyzed.
NC = No criteria.
Shaded cells and boldface font indicate that the concentration is greater than the minimum screening criterion.

TABLE 4-9

SURFACE AND SUBSURFACE SOIL SCREENING VALUES
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Parameter	Illinois		USEPA	
	TACO Class I Groundwater Criteria	Non-TACO Class I Groundwater Criteria	MCL Criteria	Tapwater Criteria
Volatile Organics (ug/L)				
ACETONE	**6300**	NC	NC	22000
BENZENE	5	NC	5	
CIS-1,2-DICHLOROETHENE	**70**	NC		370
METHYL TERT-BUTYL ETHER	70	NC	NC	
TETRACHLOROETHENE	5	NC	5	
TRICHLOROFLUOROMETHANE	NC	2100	NC	
Semivolatile Organics (ug/L)				
ACENAPHTHENE	**420**	NC	NC	2200
ANTHRACENE	**2100**	NC	NC	11000
BENZO(A)ANTHRACENE	0.13	NC	NC	
BENZO(A)PYRENE	0.2	NC	0.2	
BENZO(B)FLUORANTHENE	0.18	NC	NC	
BENZO(K)FLUORANTHENE	**0.17**	NC	NC	0.29
BIS(2-ETHYLHEXYL)PHTHALATE	6	NC	6	**4.8**
CHRYSENE	**1.5**	NC	NC	2.9
FLUORANTHENE	**280**	NC	NC	1500
FLUORENE	**280**	NC	NC	1500
PENTACHLOROPHENOL	1	NC	1	
PYRENE	**210**	NC	NC	1100
Pesticides/PCBs (ug/L)				
ALPHA-CHLORDANE	NC	NC	2	
DELTA-BHC	NC	NC	NC	
GAMMA-CHLORDANE	NC	NC	2	
Herbicides (ug/L)				
2,4,5-TP (SILVEX)	**50**	NC		290
2,4-DB	NC	NC	NC	
DALAPON	**200**	NC		1100
DICHLOROPROP	NC	NC	NC	NC
Metals (ug/L)				
ALUMINUM	NC	**3500**	NC	37000
ARSENIC	50	NC	10	
BARIUM	**2000**	NC		7300
CADMIUM	**5**	NC		18
CALCIUM	NC	NC	NC	NC
CHROMIUM	**100**	NC		NC
COBALT	1000	NC	NC	
COPPER	**650**	NC	1300	1500
IRON	**5000**	NC	NC	26000
LEAD	**7.5**	NC	15	NC
MAGNESIUM	NC	NC	NC	NC
MANGANESE	**150**	NC	NC	880
NICKEL	**100**	NC	NC	730
POTASSIUM	NC	NC	NC	NC
SELENIUM	**50**	NC	**50**	180
SILVER	**50**	NC	NC	180
SODIUM	NC	NC	NC	NC
VANADIUM	**49**	NC	NC	180
ZINC	**5000**	NC	NC	11000
Dissolved Metals (ug/L)				
ARSENIC	50	NC	10	**0.045**
BARIUM	**2000**	NC	**2000**	7300
CADMIUM	**5**	NC	**5**	18
CALCIUM	NC	NC	NC	NC
IRON	**5000**	NC	NC	26000
MAGNESIUM	NC	NC	NC	NC
MANGANESE	**150**	NC	NC	880
NICKEL	**100**	NC	NC	730
POTASSIUM	NC	NC	NC	NC
SODIUM	NC	NC	NC	NC
ZINC	**5000**	NC	NC	11000

mg/L= Milligram per liter.
ug/L = Microgram per liter.
NC = No criteria.
USEPA = United States Environmental Protection Agency.
TACO = Illinois Tiered Approach to Corrective Action Objectives.

TABLE 4-10

OCCURRENCE AND DISTRIBUTION OF ORGANICS AND INORGANICS IN GROUNDWATER
SITE 21 - BUILDINGS 1517/1506 AREA
GREAT LAKES NAVAL STATION
GREAT LAKES, ILLINOIS

Parameter	Frequency of Detection	Minimum Result	Maximum Result	Sample of Maximum Detection	Minimum Non-Detection	Maximum Non-Detection	Average Positive Result	Overall Average	Standard Deviation	Minimum Screening Value		Illinois				USEPA			
												TACO Class I Groundwater Criteria		Non-TACO Class I Groundwater Criteria		MCL Criteria		Tapwater Criteria	
										Criteria	Exceedances	Criteria	Exceedances	Criteria	Exceedances	Criteria	Exceedances	Criteria	Exceedances
Volatile Organics (ug/L)																			
ACETONE	5/6	1.8 J	4.6 J	NTC21-MW-02-01	0.84	0.84	3.12E+00	2.67E+00	1.49E+00	6300	0	6300	0	NC	0	NC	0	22000	0
BENZENE	1/6	**0.96 J**	**0.96 J**	NTC21-MW-01-01	0.11	0.11	9.60E-01	2.06E-01	3.69E-01	**0.41**	**1**	5	0	NC	0	5	0	**0.41**	**1**
CIS-1,2-DICHLOROETHENE	1/6	0.79 J	0.79 J	NTC21-MW-05-01	0.13	0.13	7.90E-01	1.86E-01	2.96E-01	70	0	70	0	NC	0	70	0	370	0
METHYL TERT-BUTYL ETHER	1/6	1.6	1.6	NTC21-MW-01-01	0.1	0.1	1.60E+00	3.08E-01	6.33E-01	12	0	70	0	NC	0	NC	0	12	0
TETRACHLOROETHENE	1/6	**0.85 J**	**0.85 J**	NTC21-MW-01-01	0.15	0.15	8.50E-01	2.04E-01	3.16E-01	**0.11**	**1**	5	0	NC	0	5	0	**0.11**	**1**
TRICHLOROFLUOROMETHANE	1/6	2.5	2.5	NTC21-MW-01-01	0.17	0.17	2.50E+00	4.88E-01	9.86E-01	1300	0	NC	0	NC	0	NC	0	1300	0
Semivolatile Organics (ug/L)																			
ACENAPHTHENE	2/6	0.02	0.02	NTC21-MW-05-01	0.01	0.1	2.00E-02	1.92E-02	1.63E-02	420	0	420	0	NC	0	NC	0	2200	0
				NTC21-MW-03-01	0.01	0.1	2.00E-02	1.92E-02	1.63E-02	420	0	420	0	NC	0	NC	0	2200	0
ANTHRACENE	2/6	0.03 J	0.04 J	NTC21-MW-03-01	0.01	0.03	3.50E-02	1.83E-02	1.37E-02	2100	0	2100	0	NC	0	NC	0	11000	0
BENZO(A)ANTHRACENE	2/6	**0.04 J**	**0.05 J**	NTC21-MW-03-01	0.01	0.05	4.50E-02	2.33E-02	1.83E-02	**0.029**	**2**	0.13	0	NC	0	NC	0	**0.029**	**2**
BENZO(A)PYRENE	2/6	**0.03 J**	**0.03 J**	NTC21-MW-05-01 NTC21-MW-03-01	0.01	0.03	3.00E-02	1.67E-02	1.08E-02	**0.0029**	**2**	0.2	0	NC	0	0.2	0	**0.0029**	**2**
BENZO(B)FLUORANTHENE	2/6	**0.03 J**	**0.03 J**	NTC21-MW-05-01 NTC21-MW-03-01	0.01	0.04	3.00E-02	1.75E-02	1.08E-02	**0.029**	**2**	0.18	0	NC	0	NC	0	**0.029**	**2**
BENZO(K)FLUORANTHENE	2/6	0.03 J	0.03 J	NTC21-MW-05-01 NTC21-MW-03-01	0.01	0.04	3.00E-02	1.75E-02	1.08E-02	0.17	0	0.17	0	NC	0	NC	0	0.29	0
BIS(2-ETHYLHEXYL)PHTHALATE	1/6	1.8 J	1.8 J	NTC21-MW-03-01	1.2	1.2	1.80E+00	8.00E-01	4.90E-01	4.8	0	6	0	NC	0	6	0	4.8	0
CHRYSENE	2/6	0.04 J	0.05 J	NTC21-MW-03-01	0.01	0.06	4.50E-02	2.42E-02	1.86E-02	1.5	0	1.5	0	NC	0	NC	0	2.9	0
FLUORANTHENE	3/6	0.03 J	0.06	NTC21-MW-05-01	0.01	0.13	4.33E-02	3.75E-02	2.25E-02	280	0	280	0	NC	0	NC	0	1500	0
FLUORENE	2/6	0.02 J	0.03 J	NTC21-MW-03-01	0.01	0.04	2.50E-02	1.58E-02	9.17E-03	280	0	280	0	NC	0	NC	0	1500	0
PENTACHLOROPHENOL	1/6	**7.8 J**	**7.8 J**	NTC21-MW-01-01	0.92	0.98	7.80E+00	1.70E+00	2.99E+00	**0.56**	**1**	**1**	**1**	NC	0	**1**	**1**	**0.56**	**1**
PYRENE	3/6	0.03 J	0.05 J	NTC21-MW-03-01 NTC21-MW-05-01	0.01	0.12	4.33E-02	3.75E-02	1.99E-02	210	0	210	0	NC	0	NC	0	1100	0
Pesticides/PCBs (ug/L)																			
ALPHA-CHLORDANE	1/6	0.00385 J	0.00385 J	NTC21-MW-05-01	0.00317	0.00324	3.85E-03	1.99E-03	9.13E-04	0.19	0	NC	0	NC	0	2	0	0.19	0
DELTA-BHC	2/6	0.00801 J	**0.02**	NTC21-MW-06-01	0.00317	0.00324	1.40E-02	5.74E-03	7.44E-03	**0.011**	**1**	NC	0	NC	0	NC	0	**0.011**	**1**
GAMMA-CHLORDANE	1/6	0.00311 J	0.00311 J	NTC21-MW-05-01	0.00317	0.00324	3.11E-03	1.86E-03	6.11E-04	0.19	0	NC	0	NC	0	2	0	0.19	0
Herbicides (ug/L)																			
2,4,5-TP (SILVEX)	1/6	0.03 J	0.03 J	NTC21-MW-01-01	0.02	0.02	3.00E-02	1.33E-02	8.16E-03	50	0	50	0	NC	0	50	0	290	0
2,4-DB	1/6	0.62 J	0.62 J	NTC21-MW-01-01	0.24	0.24	6.20E-01	2.03E-01	2.04E-01	290	0	NC	0	NC	0	NC	0	290	0
DALAPON	1/6	0.75 J	0.75 J	NTC21-MW-01-01	0.61	0.61	7.50E-01	3.79E-01	1.82E-01	200	0	200	0	NC	0	200	0	1100	0
DICHLOROPROP	3/6	0.34 J	0.78 J	NTC21-MW-05-01	0.24	0.24	5.40E-01	3.30E-01	2.70E-01	NC	0	NC	0	NC	0	NC	0	NC	0
Metals (ug/L)																			
ALUMINUM	5/6	122	668 J	NTC21-MW-02-01	25	25	2.98E+02	2.50E+02	2.29E+02	3500	0	NC	0	3500	0	NC	0	37000	0
ARSENIC	5/6	**0.88 J**	**7.26 J**	NTC21-MW-02-01	0.75	0.75	2.80E+00	2.40E+00	2.49E+00	**0.045**	**5**	50	0	NC	0	10	0	**0.045**	**5**
BARIUM	6/6	32.3	422	NTC21-MW-05-01	---	---	1.27E+02	1.27E+02	1.51E+02	2000	0	2000	0	NC	0	2000	0	7300	0
CADMIUM	6/6	0.69	3.45	NTC21-MW-05-01	---	---	1.34E+00	1.34E+00	1.06E+00	5	0	5	0	NC	0	5	0	18	0
CALCIUM	6/6	96600	671000	NTC21-MW-02-01	---	---	3.18E+05	3.18E+05	2.37E+05	NC	0	NC	0	NC	0	NC	0	NC	0
CHROMIUM	1/6	4.13	4.13	NTC21-MW-01-01	0.5	2.5	4.13E+00	1.08E+00	1.54E+00	100	0	100	0	NC	0	100	0	NC	0
COBALT	3/6	3.55	**15.3**	NTC21-MW-02-01	1.25	1.25	7.83E+00	4.23E+00	5.70E+00	**11**	**1**	1000	0	NC	0	NC	0	**11**	**1**
COPPER	1/6	4.25 J	4.25 J	NTC21-MW-01-01	1.25	1.25	4.25E+00	1.23E+00	1.48E+00	650	0	650	0	NC	0	1300	0	1500	0
IRON	6/6	22.3	**34000**	NTC21-MW-02-01	---	---	6.27E+03	6.27E+03	1.36E+04	**5000**	**1**	**5000**	**1**	**5000**	**1**	NC	0	**26000**	**1**
LEAD	1/6	0.83	0.83	NTC21-MW-06-01	0.75	9.38	8.30E-01	1.61E+00	1.59E+00	7.5	0	7.5	0	NC	0	15	0	NC	0
MAGNESIUM	6/6	608	125000	NTC21-MW-05-01	---	---	5.79E+04	5.79E+04	4.66E+04	NC	0	NC	0	NC	0	NC	0	NC	0
MANGANESE	6/6	0.89	**5400**	NTC21-MW-05-01	---	---	1.80E+03	1.80E+03	2.17E+03	**150**	**4**	**150**	**4**	NC	0	NC	0	**880**	**3**
NICKEL	5/6	0.75	11.3	NTC21-MW-02-01	0.75	0.75	3.26E+00	2.78E+00	4.21E+00	100	0	100	0	NC	0	NC	0	730	0
POTASSIUM	6/6	2980	40200 J	NTC21-MW-01-01	---	---	1.37E+04	1.37E+04	1.37E+04	NC	0	NC	0	NC	0	NC	0	NC	0
SELENIUM	1/6	1.63	1.63	NTC21-MW-01-01	0.75	7.5	1.63E+00	2.08E+00	1.45E+00	50	0	50	0	NC	0	50	0	180	0
SILVER	2/6	0.47 J	1.3	NTC21-MW-05-01	0.25	0.25	8.85E-01	3.78E-01	4.72E-01	50	0	50	0	NC	0	NC	0	180	0
SODIUM	6/6	55700	1040000	NTC21-MW-05-01	---	---	5.94E+05	5.94E+05	3.48E+05	NC	0	NC	0	NC	0	NC	0	NC	0
VANADIUM	1/6	4.36	4.36	NTC21-MW-01-01	1.25	1.25	4.36E+00	1.25E+00	1.52E+00	49	0	49	0	NC	0	NC	0	180	0
ZINC	2/6	1.5	2.83	NTC21-MW-06-01	1.25	31.2	2.17E+00	4.99E+00	5.54E+00	5000	0	5000	0	NC	0	NC	0	11000	0

TABLE 4-10

OCCURRENCE AND DISTRIBUTION OF ORGANICS AND INORGANICS IN GROUNDWATER
SITE 21 - BUILDINGS 1517/1506 AREA
GREAT LAKES NAVAL STATION
GREAT LAKES, ILLINOIS

Parameter	Frequency of Detection	Minimum Result	Maximum Result	Sample of Maximum Detection	Minimum Non-Detection	Maximum Non-Detection	Average Positive Result	Overall Average	Standard Deviation	Minimum Criteria Value		TACO Class I Groundwater Criteria		Non-TACO Class I Groundwater Criteria		USEPA MCL Criteria		USEPA Tapwater Criteria	
										Criteria	Exceedances	Criteria	Exceedances	Criteria	Exceedances	Criteria	Exceedances	Criteria	Exceedances
Dissolved Metals (ug/L)																			
ARSENIC	1/1	**1.16**	**1.16**	NTC21-MW-04-01	---	---	1.16E+00	1.16E+00	---	**0.045**	**1**	50	0	NC	0	10	0	**0.045**	**1**
BARIUM	1/1	32.4	32.4	NTC21-MW-04-01	---	---	3.24E+01	3.24E+01	---	2000	0	2000	0	NC	0	2000	0	7300	0
CADMIUM	1/1	0.68	0.68	NTC21-MW-04-01	---	---	6.80E-01	6.80E-01	---	5	0	5	0	NC	0	5	0	18	0
CALCIUM	1/1	122000	122000	NTC21-MW-04-01	---	---	1.22E+05	1.22E+05	---	NC	0	NC	0	NC	0	NC	0	NC	0
IRON	1/1	478	478	NTC21-MW-04-01	---	---	4.78E+02	4.78E+02	---	5000	0	5000	0	5000	0	NC	0	26000	0
MAGNESIUM	1/1	54200	54200	NTC21-MW-04-01	---	---	5.42E+04	5.42E+04	---	NC	0	NC	0	NC	0	NC	0	NC	0
MANGANESE	1/1	**161**	**161**	NTC21-MW-04-01	---	---	1.61E+02	1.61E+02	---	**150**	**1**	**150**	**1**	NC	0	NC	0	880	0
NICKEL	1/1	1.7	1.7	NTC21-MW-04-01	---	---	1.70E+00	1.70E+00	---	100	0	100	0	NC	0	NC	0	730	0
POTASSIUM	1/1	3360	3360	NTC21-MW-04-01	---	---	3.36E+03	3.36E+03	---	NC	0	NC	0	NC	0	NC	0	NC	0
SODIUM	1/1	57100	57100	NTC21-MW-04-01	---	---	5.71E+04	5.71E+04	---	NC	0	NC	0	NC	0	NC	0	NC	0
ZINC	1/1	1.32	1.32	NTC21-MW-04-01	---	---	1.32E+00	1.32E+00	---	5000	0	5000	0	NC	0	NC	0	11000	0

J = Estimated value.
ug/L = Microgram per liter.
NC = No criteria.
USEPA = United States Environmental Protection Agency.
TACO = Tiered Approach to Corrective Action Objectives.

Shaded cells and boldface font indicate that the concentration is greater than the minimum screening values.

TABLE 4-11

SUMMARY OF POSITIVE DETECTIONS IN GROUNDWATER
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Parameter	Minimum Screening Value		NTC21MW01	NTC21MW02	NTC21MW03	NTC21MW04	NTC21MW05	NTC21MW06
	Value	Source						
VOLATILES (UG/L)								
ACETONE	6300	TACO [3]	3.6 J	4.6 J	0.84 UJ	2.2 J	3.4 J	1.8 J
BENZENE	0.41	USEPA [1]	**0.96 J**	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
CIS-1,2-DICHLOROETHENE	70	USEPA [2]	0.13 U	0.13 U	0.13 U	0.13 U	0.79 J	0.13 U
METHYL TERT-BUTYL ETHER	12	USEPA [1]	1.6	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
TETRACHLOROETHENE	0.11	USEPA [1]	**0.85 J**	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
TRICHLOROFLUOROMETHANE	1300	USEPA [1]	2.5	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
SEMIVOLATILES (UG/L)								
ACENAPHTHENE	420	TACO [3]	0.1 U	0.01 U	0.02 J	0.02 U	0.02 J	0.02 U
ACENAPHTHYLENE	210	Non-TACO [4]	0.02 U	0.01 U	0.01 U	0.02 U	0.01 U	0.02 U
ANTHRACENE	2100	TACO [3]	0.02 U	0.01 U	0.04 J	0.02 U	0.03 J	0.03 U
BENZO(A)ANTHRACENE	0.029	USEPA [1]	0.02 U	0.01 U	**0.05 J**	0.02 U	**0.04 J**	0.05 U
BENZO(A)PYRENE	0.0029	USEPA [1]	0.02 U	0.01 U	**0.03 J**	0.02 U	**0.03 J**	0.03 U
BENZO(B)FLUORANTHENE	0.029	USEPA [1]	0.02 U	0.01 U	**0.03 J**	0.02 U	**0.03 J**	0.04 U
BENZO(K)FLUORANTHENE	0.17	TACO [3]	0.02 U	0.01 U	0.03 J	0.02 U	0.03 J	0.04 U
BIS(2-ETHYLHEXYL)PHTHALAT	4.8	USEPA [1]	1.2 U	1.2 U	1.8 J	1.2 U	1.2 U	1.2 U
CHRYSENE	1.5	TACO [3]	0.02 U	0.01 U	0.05 J	0.02 U	0.04 J	0.06 U
FLUORANTHENE	280	TACO [3]	0.13 U	0.01 U	0.04 J	0.03 J	0.06	0.05 U
FLUORENE	280	TACO [3]	0.04 U	0.01 U	0.03 J	0.02 U	0.02 J	0.02 U
PENTACHLOROPHENOL	0.56	USEPA [1]	**7.8 J**	0.92 U	0.96 U	0.98 U	0.92 U	0.98 U
PYRENE	210	TACO [3]	0.12 U	0.01 U	0.05 J	0.03 J	0.05	0.06 U
PESTICIDES/PCBS (UG/L)								
ALPHA-CHLORDANE	0.19	USEPA [1]	0.0032 U	0.0032 U	0.0032 U	0.0032 U	0.0039 J	0.003 U
DELTA-BHC	0.011	USEPA [1]	0.0032 U	0.0032 U	0.0032 U	0.0032 U	0.008 J	**0.02**
GAMMA-CHLORDANE	0.19	USEPA [1]	0.0032 U	0.0032 U	0.0032 U	0.0032 U	0.0031 J	0.003 U
HERBICIDES (UG/L)								
2,4,5-TP (SILVEX)	50	USEPA [2]	0.03 J	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
2,4-DB	290	USEPA [1]	0.62 J	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
DALAPON	200	USEPA [2]	0.75 J	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U
DICHLOROPROP	NC	N/A	0.24 U	0.5 J	0.34 J	0.24 U	0.78 J	0.24 U
METALS (UG/L)								
ALUMINUM	3500	Non-TACO [4]	252	668 J	303	122	145	25 U
ARSENIC	0.045	USEPA [1]	**1.88 J**	**7.26 J**	**0.88 J**	**1.6**	**2.39**	0.75 U
BARIUM	2000	USEPA [2]	123	34.5	33.1	32.3	422	118
CADMIUM	5	USEPA [2]	0.79	0.86	1.34	0.69	3.45	0.92
CALCIUM	NC	N/A	96600	671000	504000	121000	374000	1E+05
CHROMIUM	100	USEPA [2]	4.13	0.75 U	0.5 U	0.5 U	2.5 U	0.5 U
COBALT	11	USEPA [1]	1.25 U	**15.3**	3.55	1.25 U	4.65	1.25 U
COPPER	650	TACO [3]	4.25 J	1.25 U	1.25 U	1.25 U	1.25 U	1.25 U
IRON	5000	TACO [3]	22.3	**34000**	2610	752	173	38.3

TABLE 4-11

SUMMARY OF POSITIVE DETECTIONS IN GROUNDWATER
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Parameter	Minimum Screening Value		NTC21MW01	NTC21MW02	NTC21MW03	NTC21MW04	NTC21MW05	NTC21MW06
	Value	Source						
LEAD	7.5	TACO [3]	1.88 U	9.38 UJ	3.75 U	0.75 U	1.88 U	0.83
MAGNESIUM	NC	N/A	608	97600	20500	54000	125000	49400
MANGANESE	150	TACO [3]	0.89	**3040**	**2150**	**168**	**5400**	61.3
NICKEL	100	TACO [3]	0.75	11.3	0.89	1.52	1.84	0.75 U
POTASSIUM	NC	N/A	40200 J	13100 J	11100 J	3440	11600	2980
SELENIUM	50	USEPA [2]	1.63	6.25 U	7.5 U	1 U	6.25 U	0.75 U
SILVER	50	TACO [3]	0.25 U	0.47 J	0.25 U	0.25 U	1.3	0.25 U
SODIUM	NC	N/A	698000	772000	667000	55700	1E+06	3E+05
VANADIUM	49	TACO [3]	4.36	1.25 U	1.25 U	1.25 U	1.25 U	1.25 U
ZINC	5000	TACO [3]	1.25 U	31.2 U	12.5 U	1.5	6.25 U	2.83
DISSOLVED METALS (UG/L)								
ARSENIC	0.045	USEPA [1]	NA	NA	NA	**1.16**	NA	NA
BARIUM	2000	USEPA [2]	NA	NA	NA	32.4	NA	NA
CADMIUM	5	USEPA [2]	NA	NA	NA	0.68	NA	NA
CALCIUM	NC	N/A	NA	NA	NA	122000	NA	NA
IRON	5000	TACO [3]	NA	NA	NA	478	NA	NA
MAGNESIUM	NC	N/A	NA	NA	NA	54200	NA	NA
MANGANESE	150	TACO [3]	NA	NA	NA	**161**	NA	NA
NICKEL	100	TACO [3]	NA	NA	NA	1.7	NA	NA
POTASSIUM	NC	N/A	NA	NA	NA	3360	NA	NA
SODIUM	NC	N/A	NA	NA	NA	57100	NA	NA
ZINC	5000	TACO [3]	NA	NA	NA	1.32	NA	NA

1 = United States Envinronmental Protection Agency (USEPA) Regions 3, 6, 9 Oakridge National Laboratory (ORNL) Screening Level for Tap Water.
2 = USEPA Maximum Contaminant Level (MCL) Groundwater/Surface Water
3 = Illinois Tiered Approach to Corrective Action Objectives (TACO); Groundwater Remediation Objective Ingestion Class 1.
4 = Illinois Tiered Approach to Corrective Action Objectives (Non-TACO); Groundwater Remediation Objective Ingestion Class 1.
J = Value is estimated.
U = Analyte not detected at the reporting limit left of the letter.
UJ = Numerical detection limit for the undetected result is estimated.
mg/L= Milligram per liter.
ug/L = Microgram per liter.
NA = Not analyzed.
NC = No criteria.
Shaded cells and boldface font indicate that the concentration is greater than the minimum screening value.

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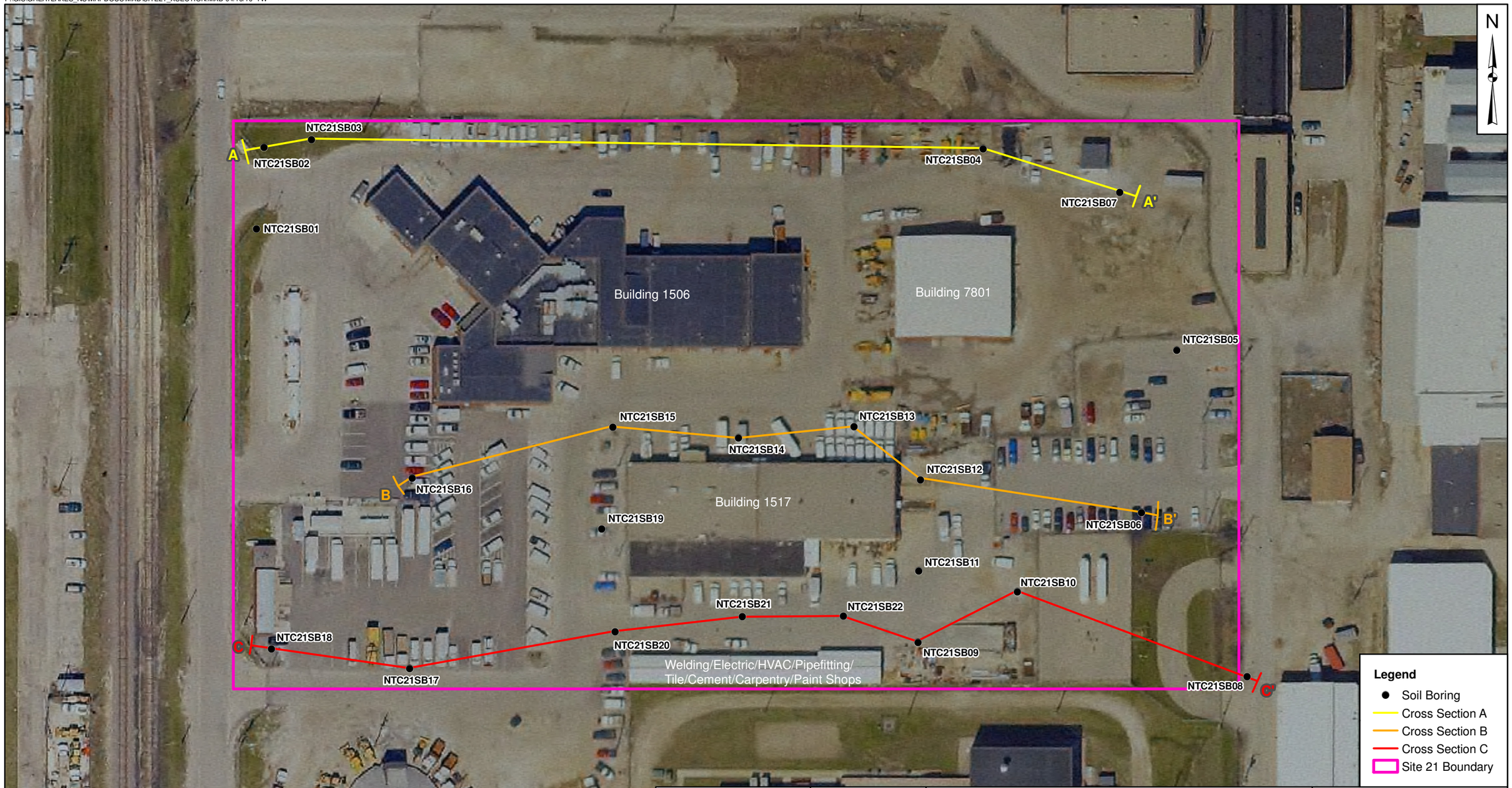


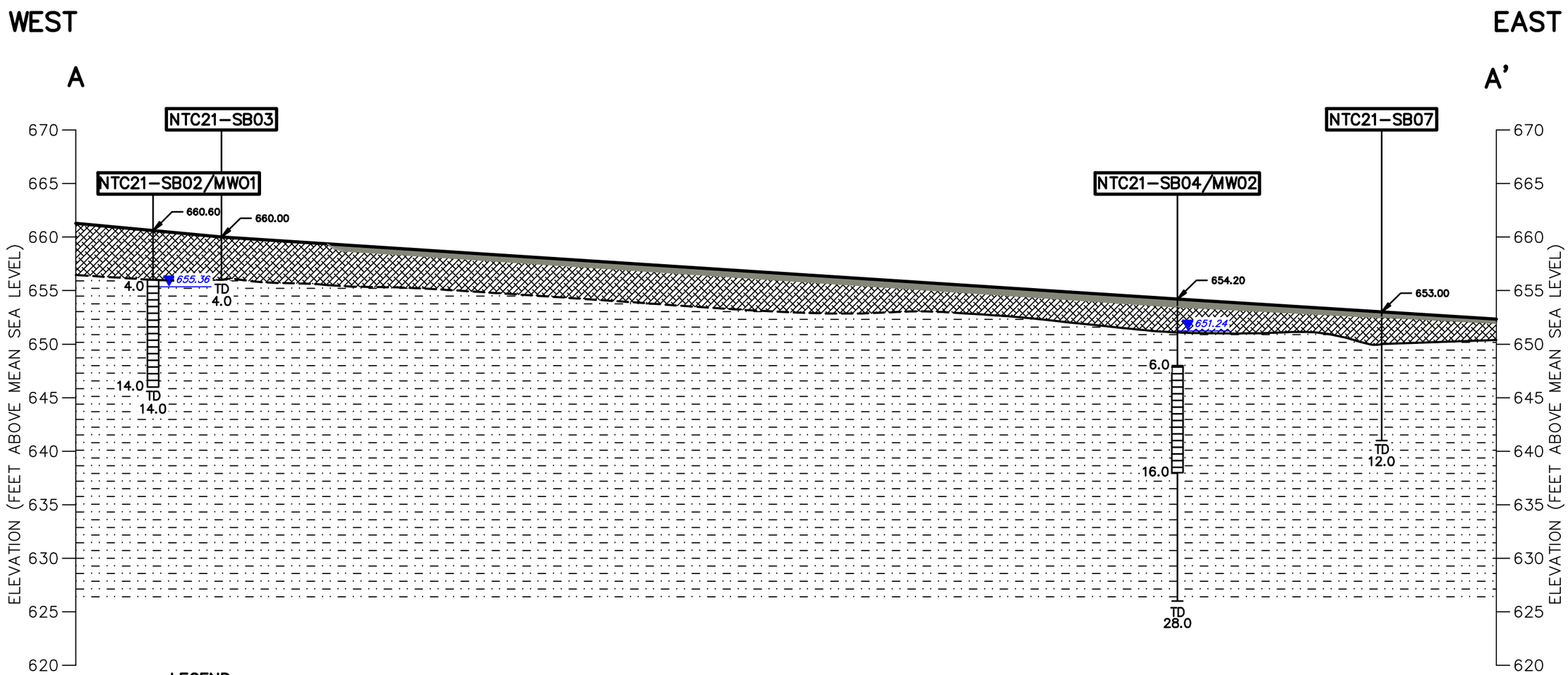
DRAWN BY	DATE
T. WHEATON	02/02/10
CHECKED BY	DATE
N. ROCHNA	04/16/10
COST/SCHED AREA	
SCALE AS NOTED	

NAVFAC

CROSS SECTION MAP
SITE 21 - BUILDING 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

CONTRACT NUMBER CTO C064	
APPROVED BY	DATE
APPROVED BY	DATE
FIGURE NO. FIGURE 4-1	REV 0

ACAD:1797CX01.dwg 03/29/10 CK PIT



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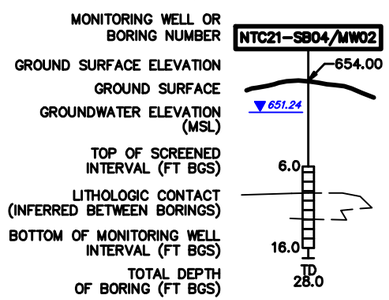

ASPHALT

FILL

CLAY/SILT WITH INTERBEDDED SAND

0 60 120
HORIZONTAL SCALE IN FEET

0 10 20
VERTICAL SCALE IN FEET

DRAWN BY CK	DATE 03/29/10	
CHECKED BY SH	DATE 03/29/10	
REVISED BY	DATE	
SCALE AS NOTED		

NAVFAC

CROSS SECTION A–A'
SITE 21–BUILDING 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

CONTRACT NO. CTO C064	
OWNER NO.	
APPROVED BY BC	DATE 03/29/10
DRAWING NO. FIGURE 4–2	REV. 0

FORM CADD NO. SDIV-BH.DWG - REV 2 - 6/19/06

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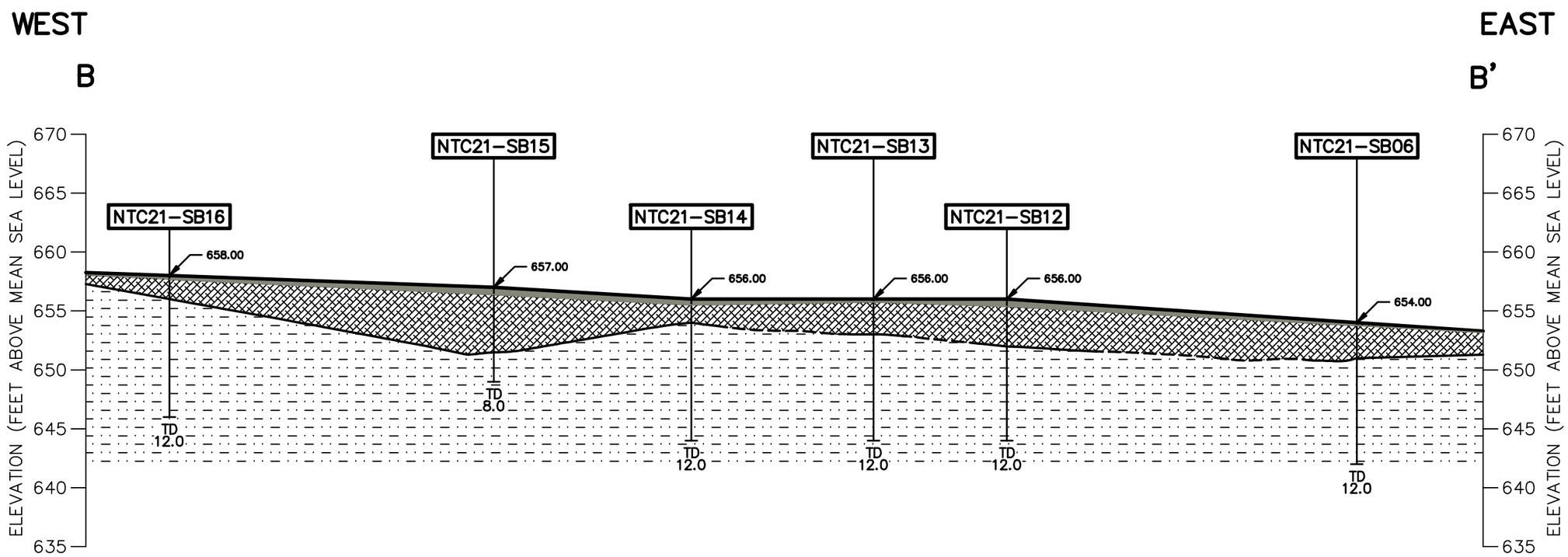

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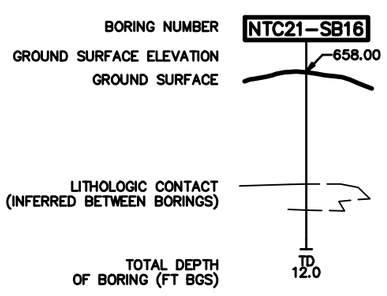


ASPHALT

FILL

CLAY/SILT WITH INTERBEDDED SAND

0 60 120
HORIZONTAL SCALE IN FEET

0 10 20
VERTICAL SCALE IN FEET

DRAWN BY CK	DATE 03/29/10	
CHECKED BY SH	DATE 03/29/10	
REVISED BY	DATE	
SCALE AS NOTED		

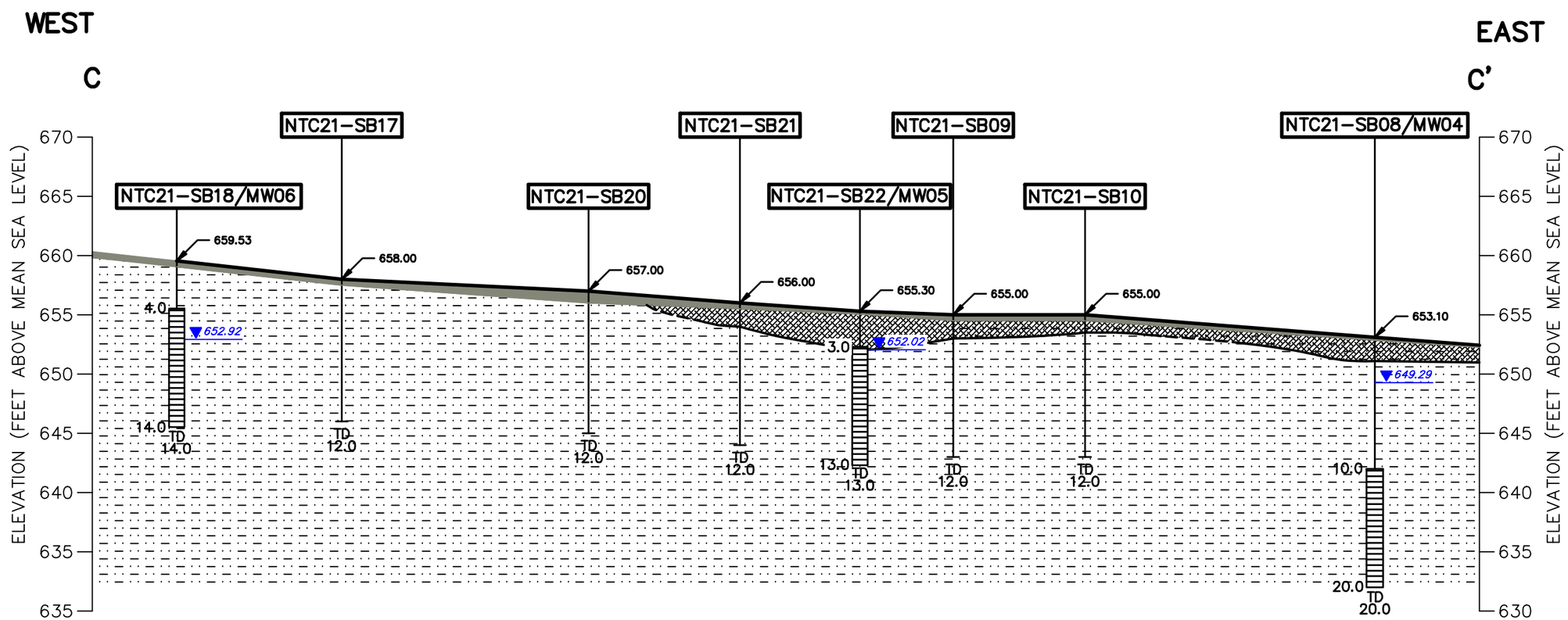
NAVFAC

CROSS SECTION B–B'
SITE 21–BUILDING 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

CONTRACT NO. CTO C064	
OWNER NO.	
APPROVED BY BC	DATE 03/29/10
DRAWING NO. FIGURE 4–3	REV. 0

FORM CADD NO. SDIV-BH.DWG - REV 2 - 6/19/06

ACAD:1797CX03.dwg 03/29/10 CK PIT



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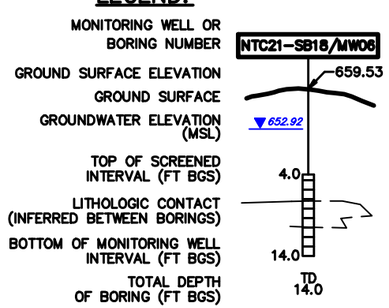

ASPHALT

FILL

CLAY/SILT WITH INTERBEDDED SAND

0 80 160
HORIZONTAL SCALE IN FEET

0 10 20
VERTICAL SCALE IN FEET

DRAWN BY CK DATE 03/29/10	NAVFAC	CROSS SECTION C–C' SITE 21 BUILDING 1517/1506 AREA NAVEL STATION GREAT LAKES GREAT LAKES, ILLINOIS	CONTRACT NO. CTO C064
CHECKED BY SH DATE 03/29/10			OWNER NO.
REVISED BY DATE			APPROVED BY BC DATE 03/29/10
SCALE AS NOTED			DRAWING NO. FIGURE 4–4 REV. 0

FORM CADD NO. SDIV-BH.DWG - REV 2 - 6/19/06

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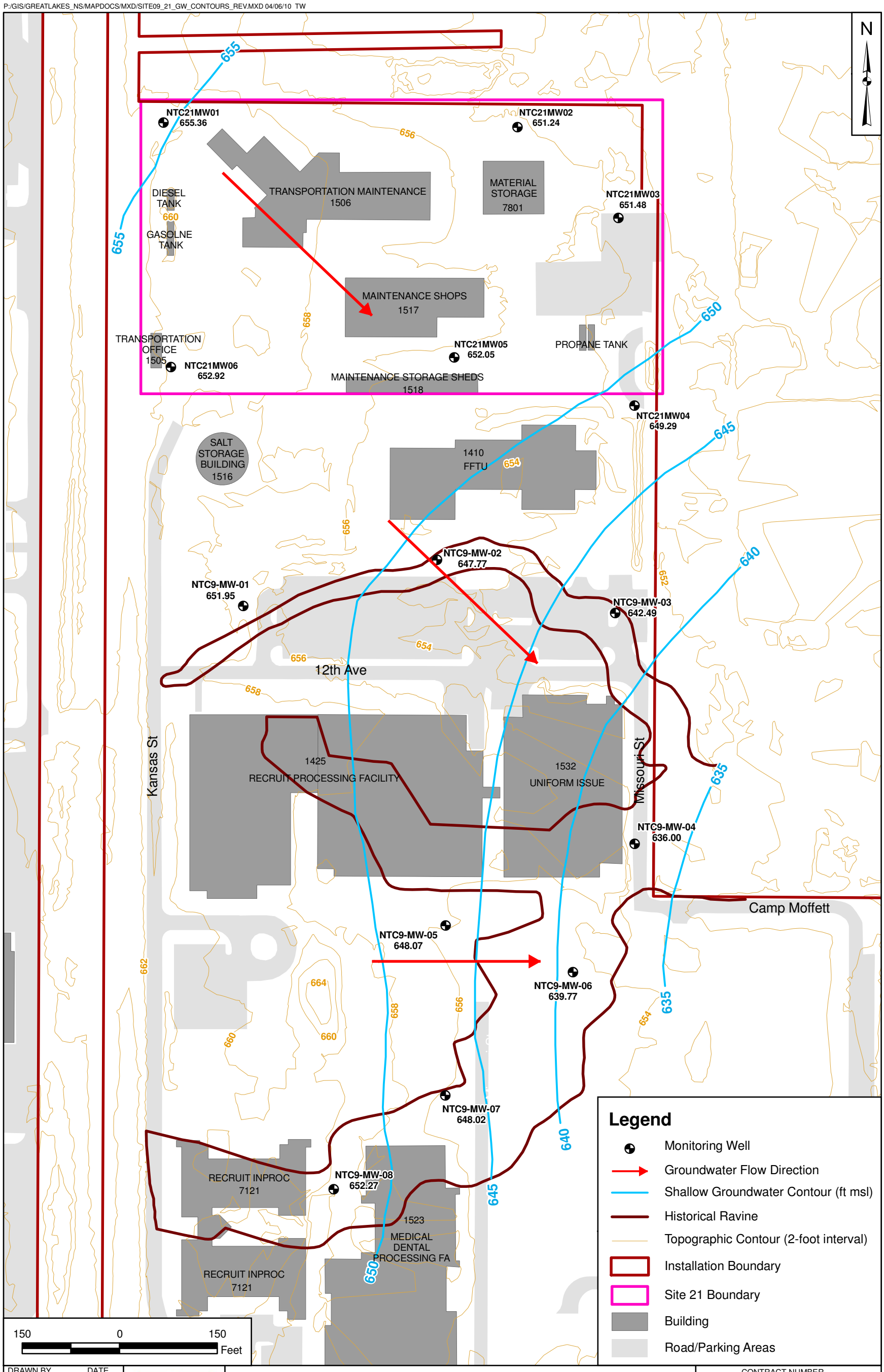

DRAWN BY	DATE
K. MOORE	01/29/09
CHECKED BY	DATE
S. HILL	04/06/10
REVISED BY	DATE
T. WHEATON	04/06/10
SCALE AS NOTED	

NAVFAC

SHALLOW GROUNDWATER CONTOURS
SITES 9 - CAMP MOFFET AND SITE 21 - BUILDING 1517 / 1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

CONTRACT NUMBER CTO C064	
APPROVED BY B. CUMMINGS	DATE 04/06/10
APPROVED BY ___	DATE ___
FIGURE NO. FIGURE 4-5	REV 0

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NOTES:
1. Results are expressed in micrograms per kilogram (ug/kg)
2. J = Estimated value
3. [0-1] = Depth interval ft-bgs that sample was collected from
4. Values shown exceed Minimum Screening Criteria. The Minimum Screening Criteria was derived from the following:
TACO - Residential Inhalation and Ingestion, Industrial Inhalation and Ingestion, and Class 1 Soil to Groundwater screening values
Non-TACO - Residential Inhalation and Ingestion, Industrial Inhalation and Ingestion, and Class 1 Soil to Groundwater screening values; and/or,
USEPA - Risk Based SSLs, Inhalation SSLs, and Residential Soil screening values.

DRAWN BY	DATE
K. MOORE	02/11/10
CHECKED BY	DATE
N. ROCHNA	01/27/11
COST/SCHED AREA	
SCALE AS NOTED	

NAVFAC

VOC CONCENTRATIONS EXCEEDING MINIMUM
REGULATORY SCREENING VALUES IN SURFACE SOIL
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

CONTRACT NUMBER CTO C064	
APPROVED BY B. CUMMINGS	DATE ___
APPROVED BY ___	DATE ___
FIGURE NO. FIGURE 4-6	REV 0

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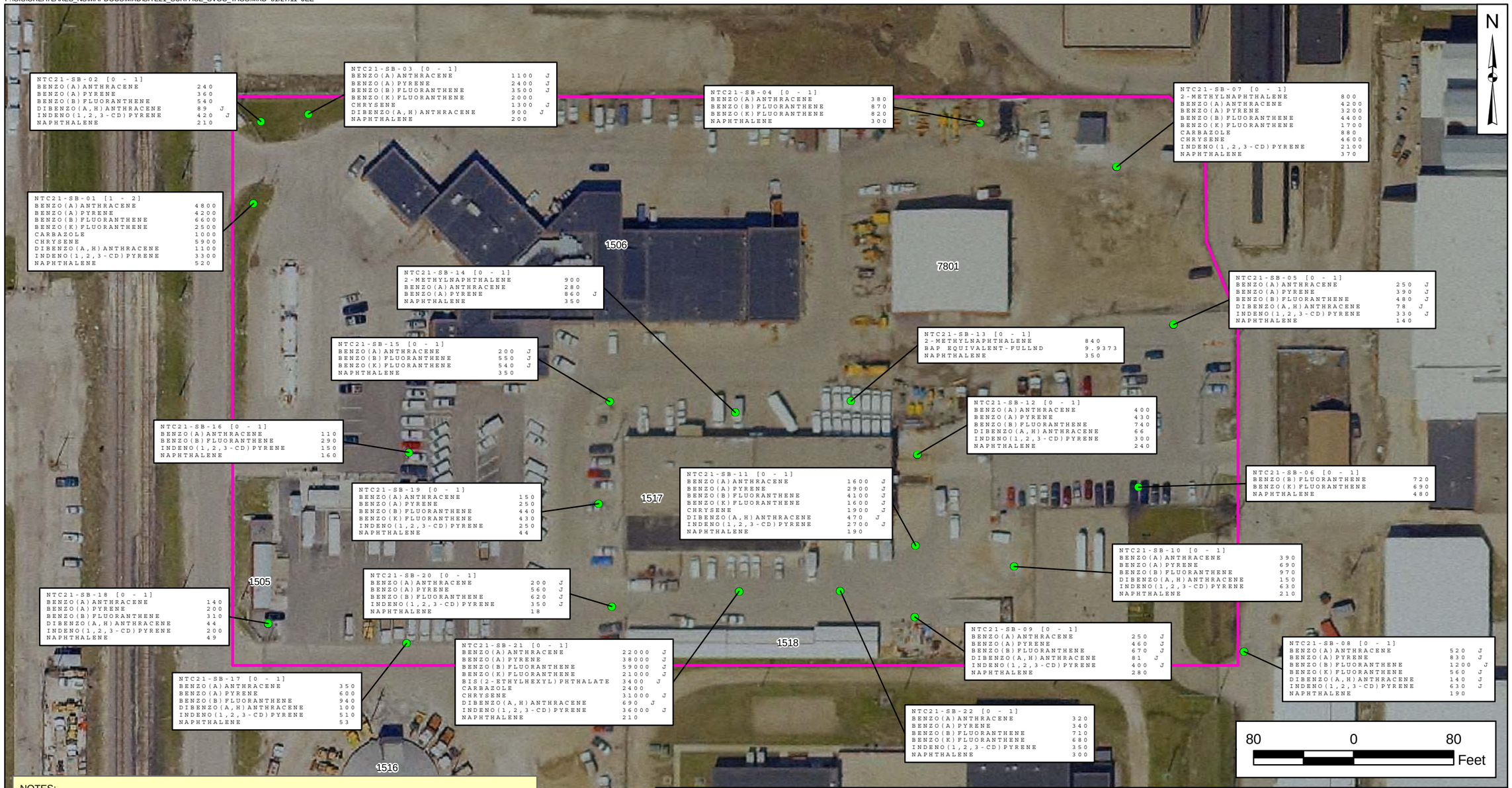


NTC21-SB-02 [0 - 1]

BENZO(A)ANTHRACENE	240	
BENZO(A)PYRENE	360	
BENZO(B)FLUORANTHENE	540	
DIBENZO(A,H)ANTHRACENE	89	J
INDENO(1,2,3-CD)PYRENE	420	J
NAPHTHALENE	210	

NTC21-SB-03 [0 - 1]

BENZO(A)ANTHRACENE	1100	J
BENZO(A)PYRENE	2400	J
BENZO(B)FLUORANTHENE	3500	J
BENZO(K)FLUORANTHENE	2000	
CHRYSENE	1300	J
DIBENZO(A,H)ANTHRACENE	900	J
NAPHTHALENE	200	

NTC21-SB-04 [0 - 1]

BENZO(A)ANTHRACENE	380	
BENZO(B)FLUORANTHENE	870	
BENZO(K)FLUORANTHENE	820	
NAPHTHALENE	300	

NTC21-SB-07 [0 - 1]

2-METHYLNAPHTHALENE	800	
BENZO(A)ANTHRACENE	4200	
BENZO(A)PYRENE	3200	
BENZO(B)FLUORANTHENE	4400	
BENZO(K)FLUORANTHENE	1700	
CARBAZOLE	880	
CHRYSENE	4600	
INDENO(1,2,3-CD)PYRENE	2100	
NAPHTHALENE	370	

NTC21-SB-01 [1 - 2]

BENZO(A)ANTHRACENE	4800	
BENZO(A)PYRENE	4200	
BENZO(B)FLUORANTHENE	6600	
BENZO(K)FLUORANTHENE	2500	
CARBAZOLE	1000	
CHRYSENE	5900	
DIBENZO(A,H)ANTHRACENE	1100	
INDENO(1,2,3-CD)PYRENE	3300	
NAPHTHALENE	520	

NTC21-SB-14 [0 - 1]

2-METHYLNAPHTHALENE	900	
BENZO(A)ANTHRACENE	280	
BENZO(A)PYRENE	860	J
NAPHTHALENE	350	

NTC21-SB-05 [0 - 1]

BENZO(A)ANTHRACENE	250	J
BENZO(A)PYRENE	390	J
BENZO(B)FLUORANTHENE	480	J
DIBENZO(A,H)ANTHRACENE	78	J
INDENO(1,2,3-CD)PYRENE	330	J
NAPHTHALENE	140	

NTC21-SB-15 [0 - 1]

BENZO(A)ANTHRACENE	200	J
BENZO(B)FLUORANTHENE	550	J
BENZO(K)FLUORANTHENE	540	J
NAPHTHALENE	350	

NTC21-SB-13 [0 - 1]

2-METHYLNAPHTHALENE	840	
BAP EQUIVALENT-FULLND	9.9373	
NAPHTHALENE	350	

NTC21-SB-12 [0 - 1]

BENZO(A)ANTHRACENE	400	
BENZO(A)PYRENE	430	
BENZO(B)FLUORANTHENE	740	
DIBENZO(A,H)ANTHRACENE	66	
INDENO(1,2,3-CD)PYRENE	300	
NAPHTHALENE	240	

NTC21-SB-16 [0 - 1]

BENZO(A)ANTHRACENE	110	
BENZO(B)FLUORANTHENE	290	
INDENO(1,2,3-CD)PYRENE	150	
NAPHTHALENE	160	

NTC21-SB-11 [0 - 1]

BENZO(A)ANTHRACENE	1600	J
BENZO(A)PYRENE	2900	J
BENZO(B)FLUORANTHENE	4100	J
BENZO(K)FLUORANTHENE	1600	J
CHRYSENE	1900	J
DIBENZO(A,H)ANTHRACENE	470	J
INDENO(1,2,3-CD)PYRENE	2700	J
NAPHTHALENE	190	

NTC21-SB-06 [0 - 1]

BENZO(B)FLUORANTHENE	720	
BENZO(K)FLUORANTHENE	690	
NAPHTHALENE	480	

NTC21-SB-19 [0 - 1]

BENZO(A)ANTHRACENE	150	
BENZO(A)PYRENE	250	
BENZO(B)FLUORANTHENE	440	
BENZO(K)FLUORANTHENE	430	
INDENO(1,2,3-CD)PYRENE	250	
NAPHTHALENE	44	

NTC21-SB-10 [0 - 1]

BENZO(A)ANTHRACENE	390	
BENZO(A)PYRENE	690	
BENZO(B)FLUORANTHENE	970	
DIBENZO(A,H)ANTHRACENE	150	
INDENO(1,2,3-CD)PYRENE	630	
NAPHTHALENE	210	

NTC21-SB-20 [0 - 1]

BENZO(A)ANTHRACENE	200	J
BENZO(A)PYRENE	560	J
BENZO(B)FLUORANTHENE	620	J
INDENO(1,2,3-CD)PYRENE	350	J
NAPHTHALENE	18	

NTC21-SB-18 [0 - 1]

BENZO(A)ANTHRACENE	140	
BENZO(A)PYRENE	200	
BENZO(B)FLUORANTHENE	310	
DIBENZO(A,H)ANTHRACENE	44	
INDENO(1,2,3-CD)PYRENE	200	
NAPHTHALENE	49	

NTC21-SB-09 [0 - 1]

BENZO(A)ANTHRACENE	250	J
BENZO(A)PYRENE	460	J
BENZO(B)FLUORANTHENE	670	J
DIBENZO(A,H)ANTHRACENE	81	J
INDENO(1,2,3-CD)PYRENE	400	J
NAPHTHALENE	280	

NTC21-SB-21 [0 - 1]

BENZO(A)ANTHRACENE	22000	J
BENZO(A)PYRENE	38000	J
BENZO(B)FLUORANTHENE	59000	J
BENZO(K)FLUORANTHENE	21000	J
BIS(2-ETHYLHEXYL)PHTHALATE	3400	J
CARBAZOLE	2400	
CHRYSENE	31000	J
DIBENZO(A,H)ANTHRACENE	690	J
INDENO(1,2,3-CD)PYRENE	36000	J
NAPHTHALENE	210	

NTC21-SB-08 [0 - 1]

BENZO(A)ANTHRACENE	520	J
BENZO(A)PYRENE	830	J
BENZO(B)FLUORANTHENE	1200	J
BENZO(K)FLUORANTHENE	560	J
DIBENZO(A,H)ANTHRACENE	140	J
INDENO(1,2,3-CD)PYRENE	630	J
NAPHTHALENE	190	

NTC21-SB-17 [0 - 1]

BENZO(A)ANTHRACENE	350	
BENZO(A)PYRENE	600	
BENZO(B)FLUORANTHENE	940	
DIBENZO(A,H)ANTHRACENE	100	
INDENO(1,2,3-CD)PYRENE	510	
NAPHTHALENE	53	

NTC21-SB-22 [0 - 1]

BENZO(A)ANTHRACENE	320	
BENZO(A)PYRENE	340	
BENZO(B)FLUORANTHENE	710	
BENZO(K)FLUORANTHENE	680	
INDENO(1,2,3-CD)PYRENE	350	
NAPHTHALENE	300	

NOTES:
1. Results are expressed in micrograms per kilogram (ug/kg)
2. J = Estimated value
3. [0-1] = Depth interval ft-bgs that sample was collected from
4. Values shown exceed Minimum Screening Criteria. The Minimum Screening Criteria was derived from the following:
TACO - Residential Inhalation and Ingestion, Industrial Inhalation and Ingestion, and Class 1 Soil to Groundwater screening values
Non-TACO - Residential Inhalation and Ingestion, Industrial Inhalation and Ingestion, and Class 1 Soil to Groundwater screening values; and/or,
USEPA - Risk Based SSLs, Inhalation SSLs, and Residential Soil screening values.

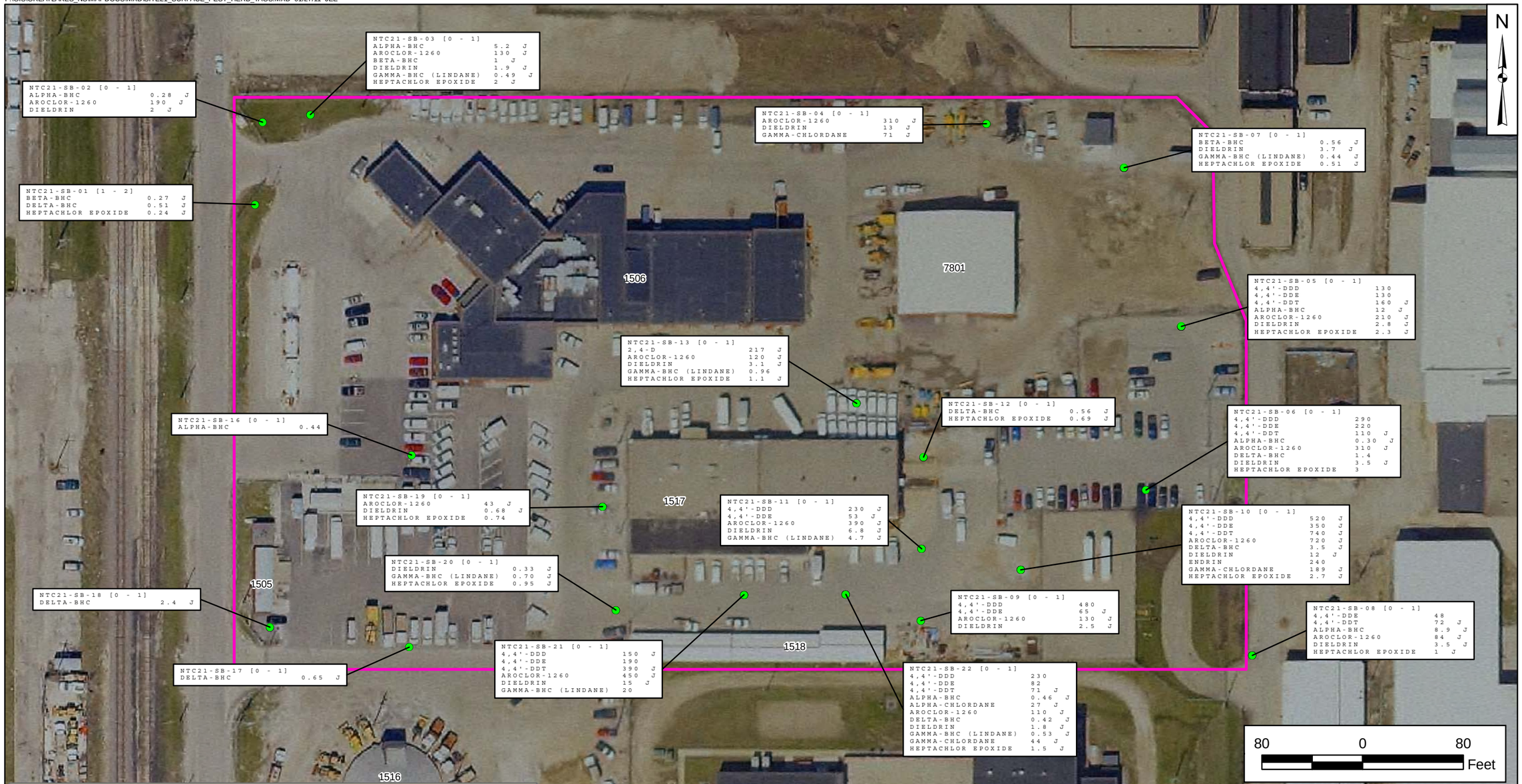
DRAWN BY	DATE
K. MOORE	02/11/10
CHECKED BY	DATE
N. ROCHNA	01/27/11
COST/SCHED AREA	
SCALE AS NOTED	

NAVFAC

SVOC CONCENTRATIONS EXCEEDING MINIMUM REGULATORY SCREENING VALUES IN SURFACE SOIL
SITE 21 - BUILDING 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

CONTRACT NUMBER CTO C064	
APPROVED BY B. CUMMINGS	DATE ___
APPROVED BY ___	DATE ___
FIGURE NO. FIGURE 4-7	REV 0

P:\GIS\GREATLAKES_NS\MAPDOCS\MXD\SITE21_SURFACE_PEST_HERB_TAGS.MXD 01/27/11 JEE



NOTES:
1. Results are expressed in micrograms per kilogram (ug/kg)
2. J = Estimated value
3. [0-1] = Depth interval ft-bgs that sample was collected from
4. Values shown exceed Minimum Screening Criteria. The Minimum Screening Criteria was derived from the following:
TACO - Residential Inhalation and Ingestion, Industrial Inhalation and Ingestion, and Class 1 Soil to Groundwater screening values
Non-TACO - Residential Inhalation and Ingestion, Industrial Inhalation and Ingestion, and Class 1 Soil to Groundwater screening values; and/or,
USEPA - Risk Based SSLs, Inhalation SSLs, and Residential Soil screening values.

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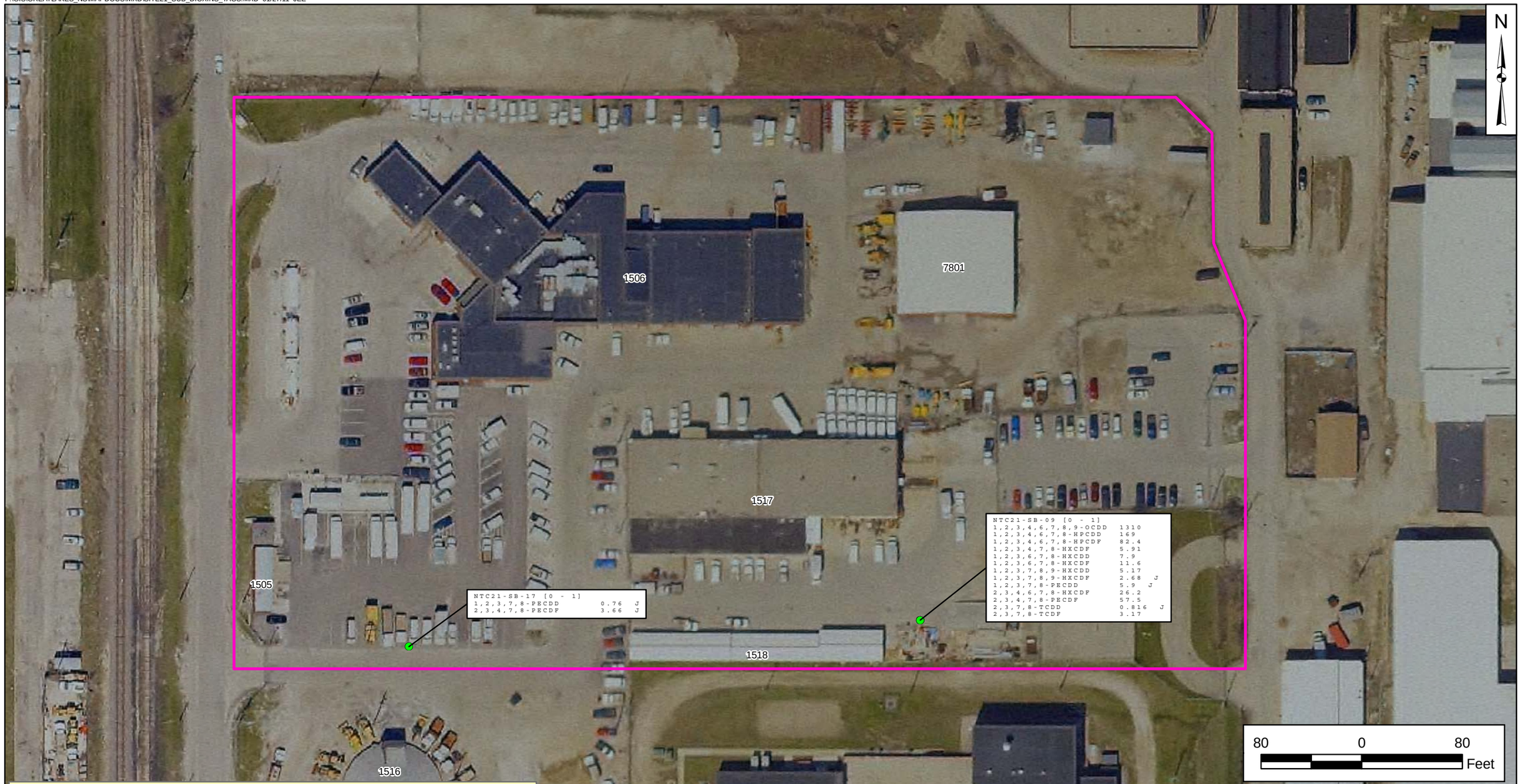
COST/SCHED AREA	
SCALE AS NOTED	

NAVFAC

PESTICIDE/HERBICIDE CONCENTRATIONS EXCEEDING MINIMUM REGULATORY SCREENING VALUES IN SURFACE SOIL
SITE 21 - BUILDING 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

CONTRACT NUMBER CTO C064	
APPROVED BY B. CUMMINGS	DATE ___
APPROVED BY ___	DATE ___
FIGURE NO. FIGURE 4-8	REV 0

P:\GIS\GREATLAKES_NS\MAPDOCS\MXD\SITE21_SUB_DIOXINS_TAGS.MXD 01/27/11 JEE



NOTES:
1. Results are expressed in nanograms per kilogram (ng/kg)
2. J = Estimated value
3. [0-1] = Depth interval ft-bgs that sample was collected from
4. Values shown exceed Minimum Screening Criteria. The Minimum Screening Criteria was derived from the following:
TACO - Residential Inhalation and Ingestion, Industrial Inhalation and Ingestion, and Class 1 Soil to Groundwater screening values
Non-TACO - Residential Inhalation and Ingestion, Industrial Inhalation and Ingestion, and Class 1 Soil to Groundwater screening values; and/or,
USEPA - Risk Based SSLs, Inhalation SSLs, and Residential Soil screening values.

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COST/SCHED AREA	
SCALE AS NOTED	

NAVFAC

DIOXIN/FURAN CONCENTRATIONS EXCEEDING MINIMUM REGULATORY SCREENING VALUES IN SURFACE SOIL
SITE 21 - BUILDING 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

CONTRACT NUMBER CTO C064	
APPROVED BY B. CUMMINGS	DATE ___
APPROVED BY ___	DATE ___
FIGURE NO. FIGURE 4-9	REV 0

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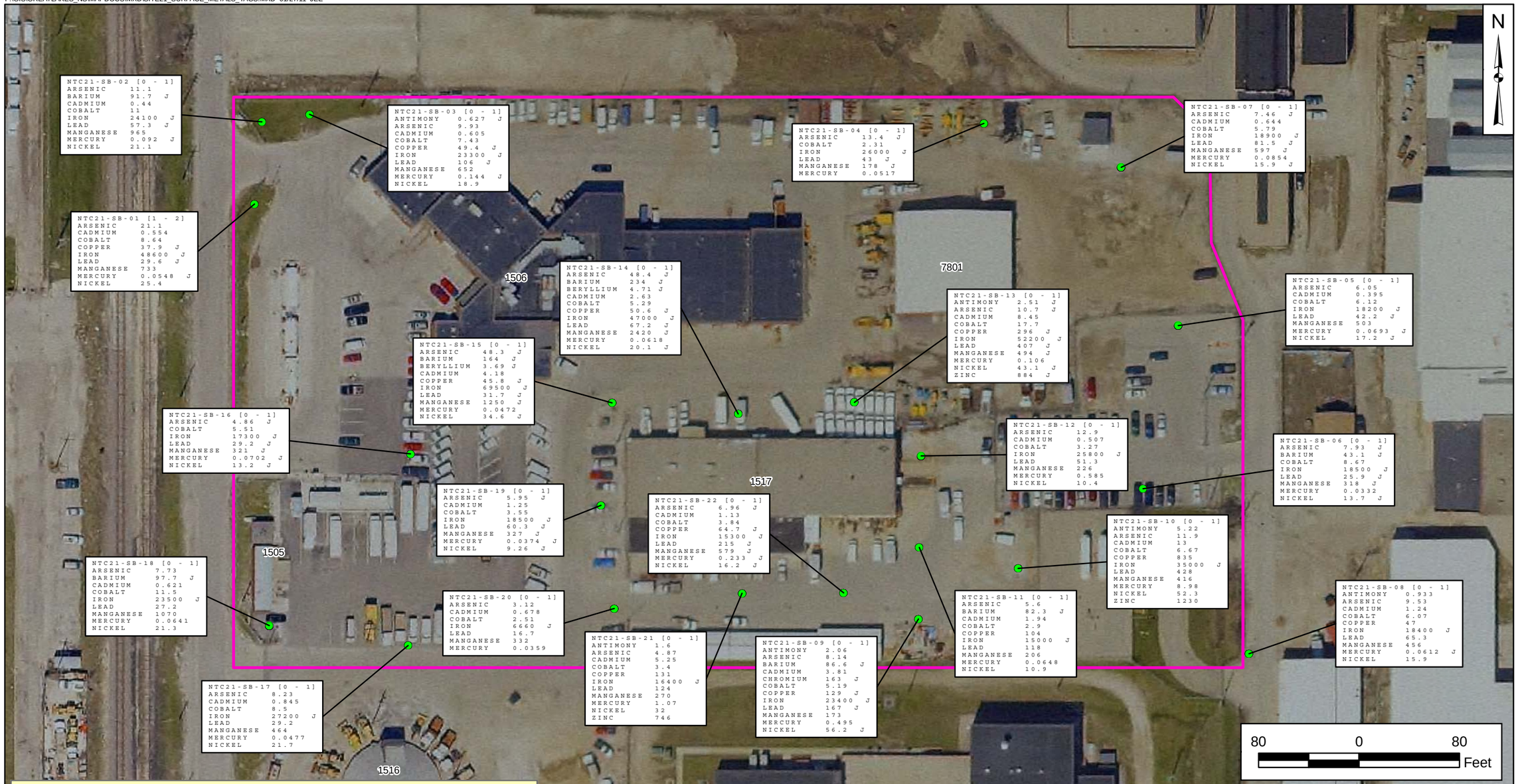

NOTES:
1. Results are expressed in milligrams per kilogram (mg/kg)
2. J = Estimated value
3. [0-1] = Depth interval ft-bgs that sample was collected from
4. Values shown exceed Minimum Screening Criteria. The Minimum Screening Criteria was derived from the following:
TACO - Residential Inhalation and Ingestion, Industrial Inhalation and Ingestion, and Class 1 Soil to Groundwater screening values
Non-TACO - Residential Inhalation and Ingestion, Industrial Inhalation and Ingestion, and Class 1 Soil to Groundwater screening values; and/or,
USEPA - Risk Based SSLs, Inhalation SSLs, and Residential Soil screening values.

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N. ROCHNA	01/27/11
COST/SCHED AREA	
SCALE AS NOTED	

NAVFAC

METAL CONCENTRATIONS EXCEEDING MINIMUM REGULATORY SCREENING VALUES IN SURFACE SOIL
SITE 21 - BUILDING 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

CONTRACT NUMBER CTO C064	
APPROVED BY B. CUMMINGS	DATE ___
APPROVED BY ___	DATE ___
FIGURE NO. FIGURE 4-10	REV 0

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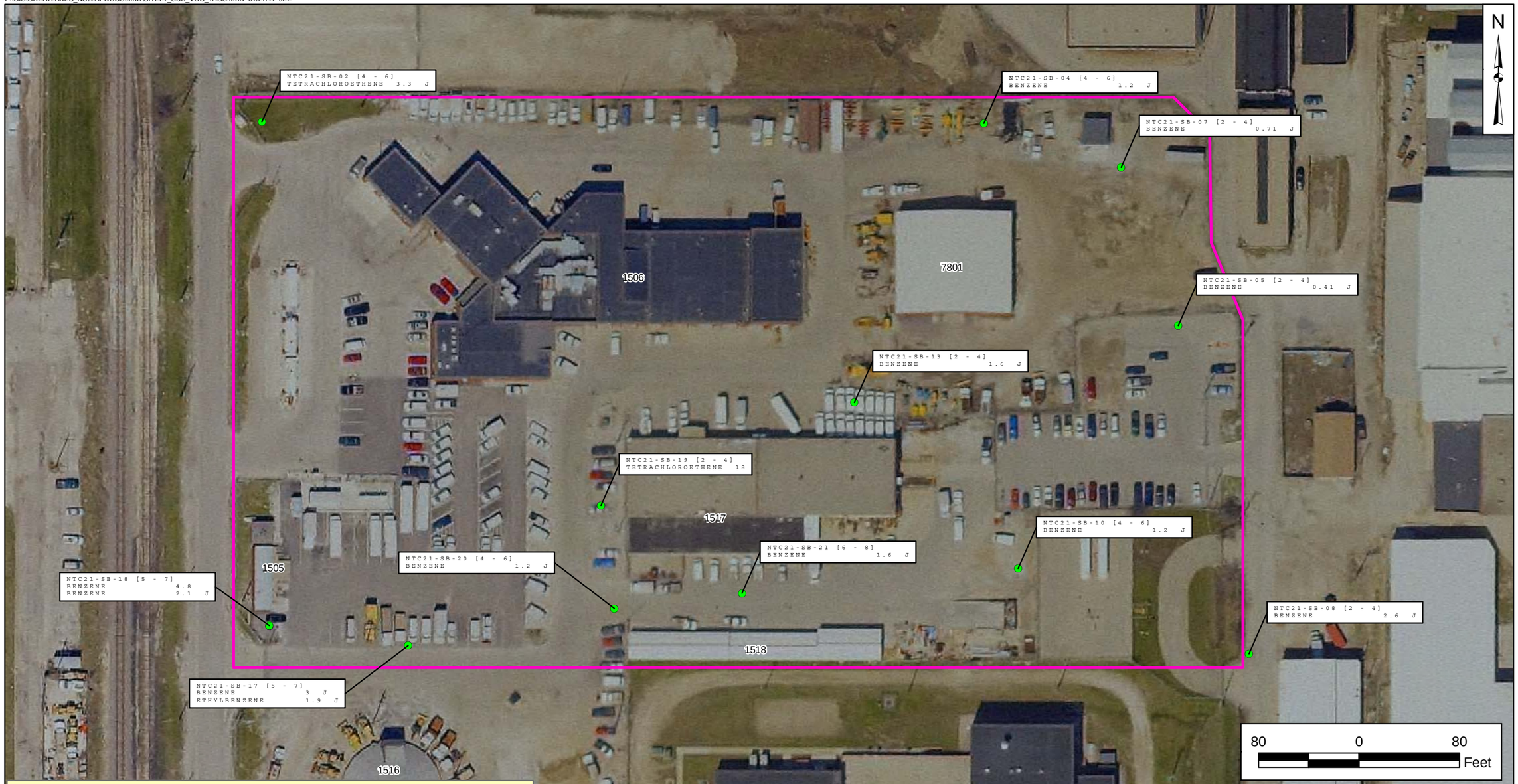

NOTES:
1. Results are expressed in micrograms per kilogram (ug/kg)
2. J = Estimated value
3. [0-1] = Depth interval ft-bgs that sample was collected from
4. Values shown exceed Minimum Screening Criteria. The Minimum Screening Criteria was derived from the following:
TACO - Residential Inhalation and Ingestion, Industrial Inhalation and Ingestion, and Class 1 Soil to Groundwater screening values
Non-TACO - Residential Inhalation and Ingestion, Industrial Inhalation and Ingestion, and Class 1 Soil to Groundwater screening values; and/or,
USEPA - Risk Based SSLs, Inhalation SSLs, and Residential Soil screening values.

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COST/SCHED AREA	
SCALE AS NOTED	

NAVFAC

VOC CONCENTRATIONS EXCEEDING MINIMUM REGULATORY SCREENING VALUES IN SUBSURFACE SOIL
SITE 21 - BUILDING 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

CONTRACT NUMBER CTO C064	
APPROVED BY B. CUMMINGS	DATE ___
APPROVED BY ___	DATE ___
FIGURE NO. FIGURE 4-11	REV 0

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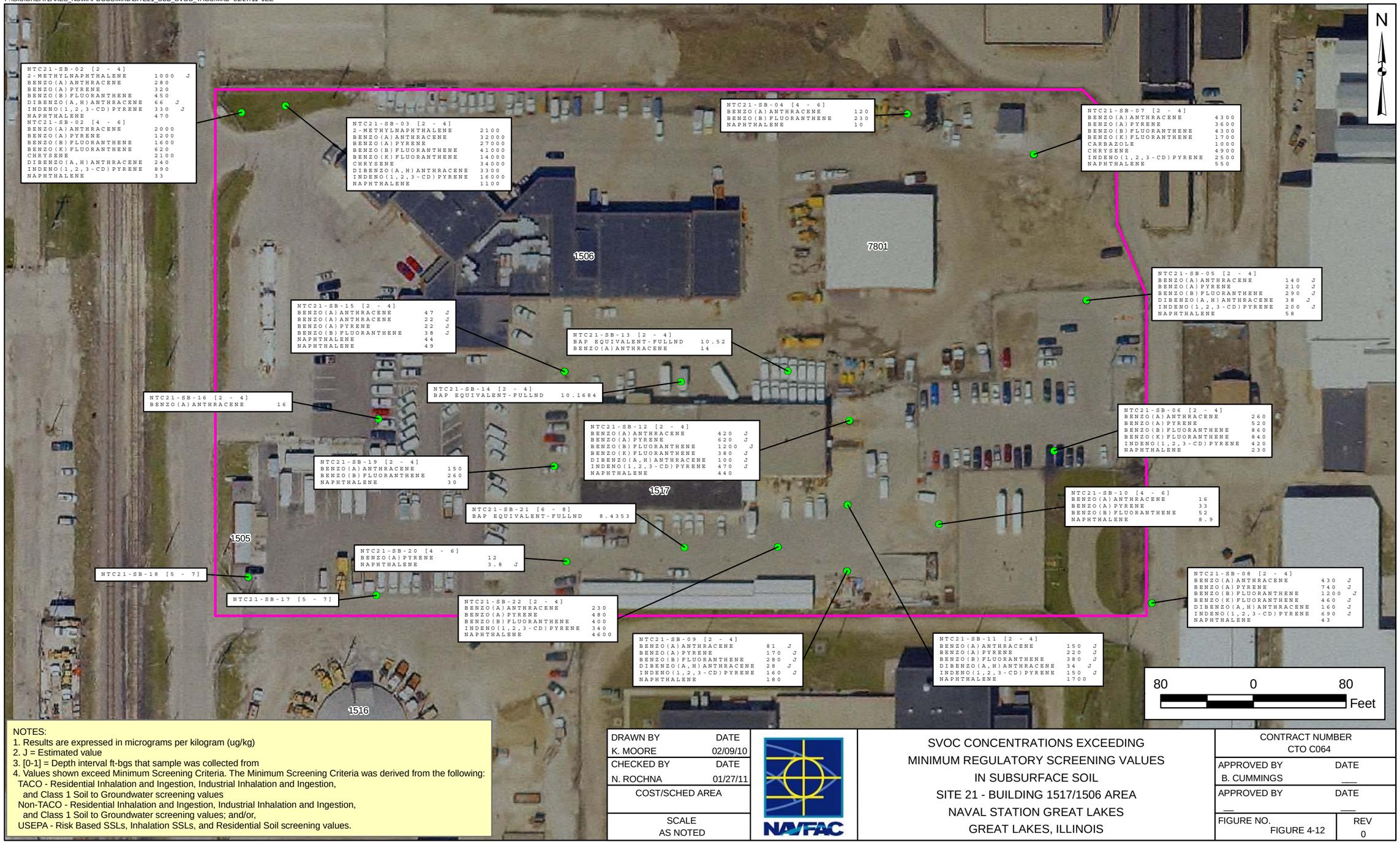

NOTES:
1. Results are expressed in micrograms per kilogram (ug/kg)
2. J = Estimated value
3. [0-1] = Depth interval ft-bgs that sample was collected from
4. Values shown exceed Minimum Screening Criteria. The Minimum Screening Criteria was derived from the following:
TACO - Residential Inhalation and Ingestion, Industrial Inhalation and Ingestion, and Class 1 Soil to Groundwater screening values
Non-TACO - Residential Inhalation and Ingestion, Industrial Inhalation and Ingestion, and Class 1 Soil to Groundwater screening values; and/or,
USEPA - Risk Based SSLs, Inhalation SSLs, and Residential Soil screening values.

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CHECKED BY N. ROCHNA	DATE 01/27/11
COST/SCHED AREA	
SCALE AS NOTED	

NAVFAC

SVOC CONCENTRATIONS EXCEEDING
MINIMUM REGULATORY SCREENING VALUES
IN SUBSURFACE SOIL
SITE 21 - BUILDING 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

CONTRACT NUMBER CTO C064	
APPROVED BY B. CUMMINGS	DATE ___
APPROVED BY ___	DATE ___
FIGURE NO. FIGURE 4-12	REV 0

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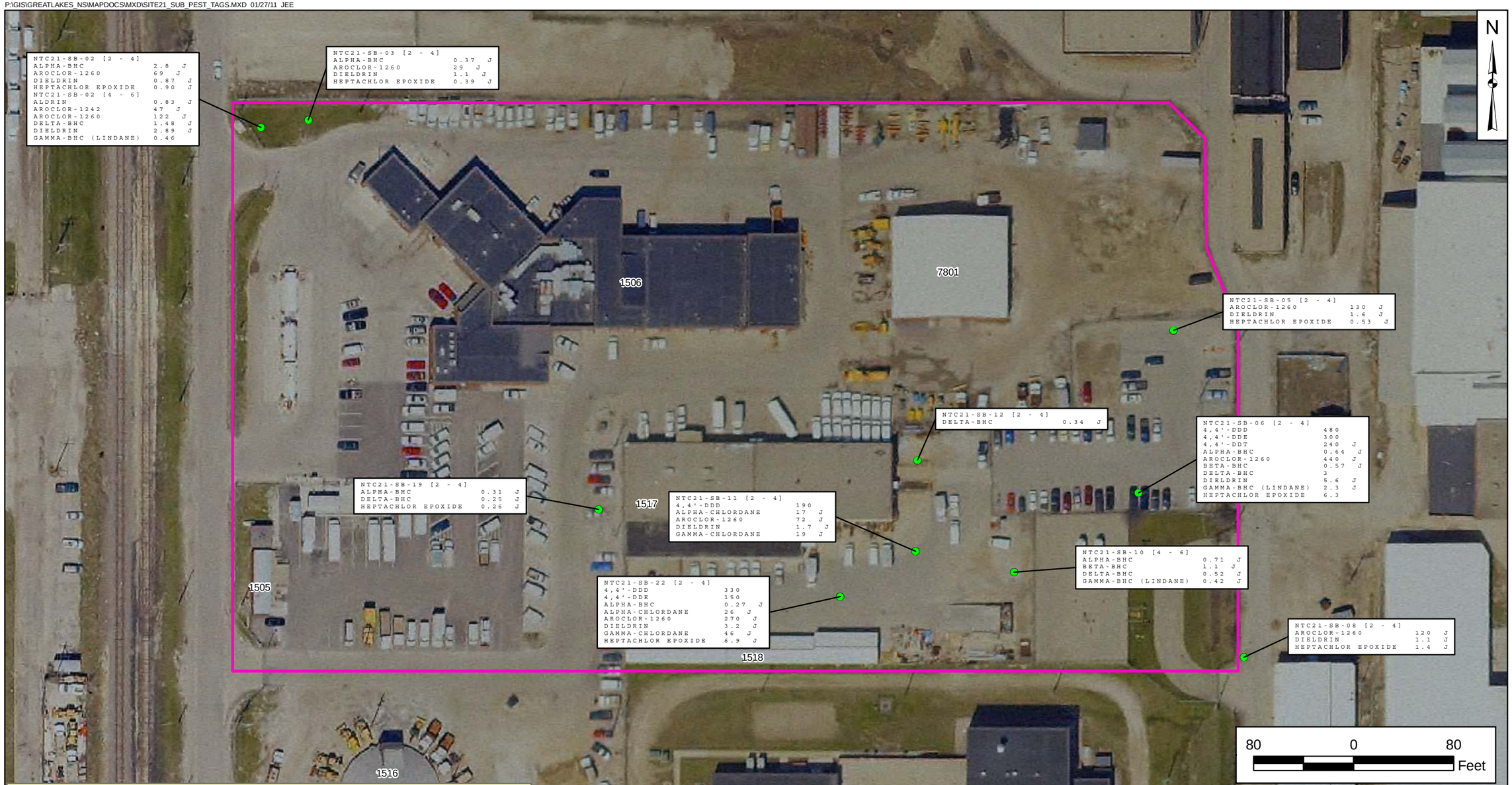

NOTES:
1. Results are expressed in micrograms per kilogram (ug/kg)
2. J = Estimated value
3. [0-1] = Depth interval ft-bgs that sample was collected from
4. Values shown exceed Minimum Screening Criteria. The Minimum Screening Criteria was derived from the following:
TACO - Residential Inhalation and Ingestion, Industrial Inhalation and Ingestion, and Class 1 Soil to Groundwater screening values
Non-TACO - Residential Inhalation and Ingestion, Industrial Inhalation and Ingestion, and Class 1 Soil to Groundwater screening values; and/or,
USEPA - Risk Based SSLs, Inhalation SSLs, and Residential Soil screening values.

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COST/SCHED AREA	
SCALE AS NOTED	

NAVFAC

PESTICIDE/PCB CONCENTRATIONS EXCEEDING MINIMUM REGULATORY SCREENING VALUES IN SUBSURFACE SOIL
SITE 21 - BUILDING 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

CONTRACT NUMBER CTO C064	
APPROVED BY B. CUMMINGS	DATE ___
APPROVED BY ___	DATE ___
FIGURE NO. FIGURE 4-13	REV 0

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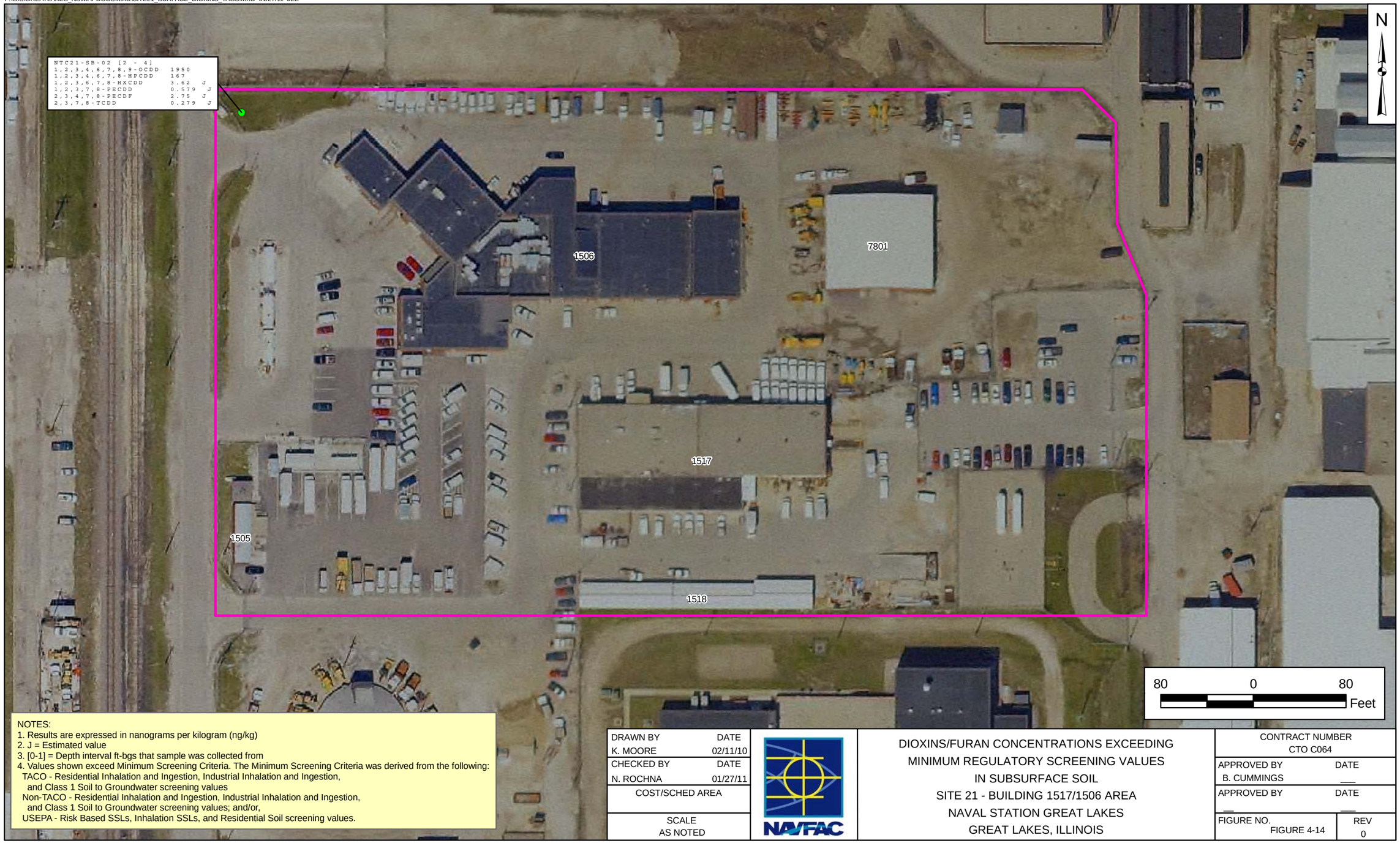

NOTES:
1. Results are expressed in nanograms per kilogram (ng/kg)
2. J = Estimated value
3. [0-1] = Depth interval ft-bgs that sample was collected from
4. Values shown exceed Minimum Screening Criteria. The Minimum Screening Criteria was derived from the following:
TACO - Residential Inhalation and Ingestion, Industrial Inhalation and Ingestion, and Class 1 Soil to Groundwater screening values
Non-TACO - Residential Inhalation and Ingestion, Industrial Inhalation and Ingestion, and Class 1 Soil to Groundwater screening values; and/or,
USEPA - Risk Based SSLs, Inhalation SSLs, and Residential Soil screening values.

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CHECKED BY N. ROCHNA	DATE 01/27/11
COST/SCHED AREA	
SCALE AS NOTED	

NAVFAC

DIOXINS/FURAN CONCENTRATIONS EXCEEDING MINIMUM REGULATORY SCREENING VALUES IN SUBSURFACE SOIL
SITE 21 - BUILDING 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

CONTRACT NUMBER CTO C064	
APPROVED BY B. CUMMINGS	DATE ___
APPROVED BY ___	DATE ___
FIGURE NO. FIGURE 4-14	REV 0

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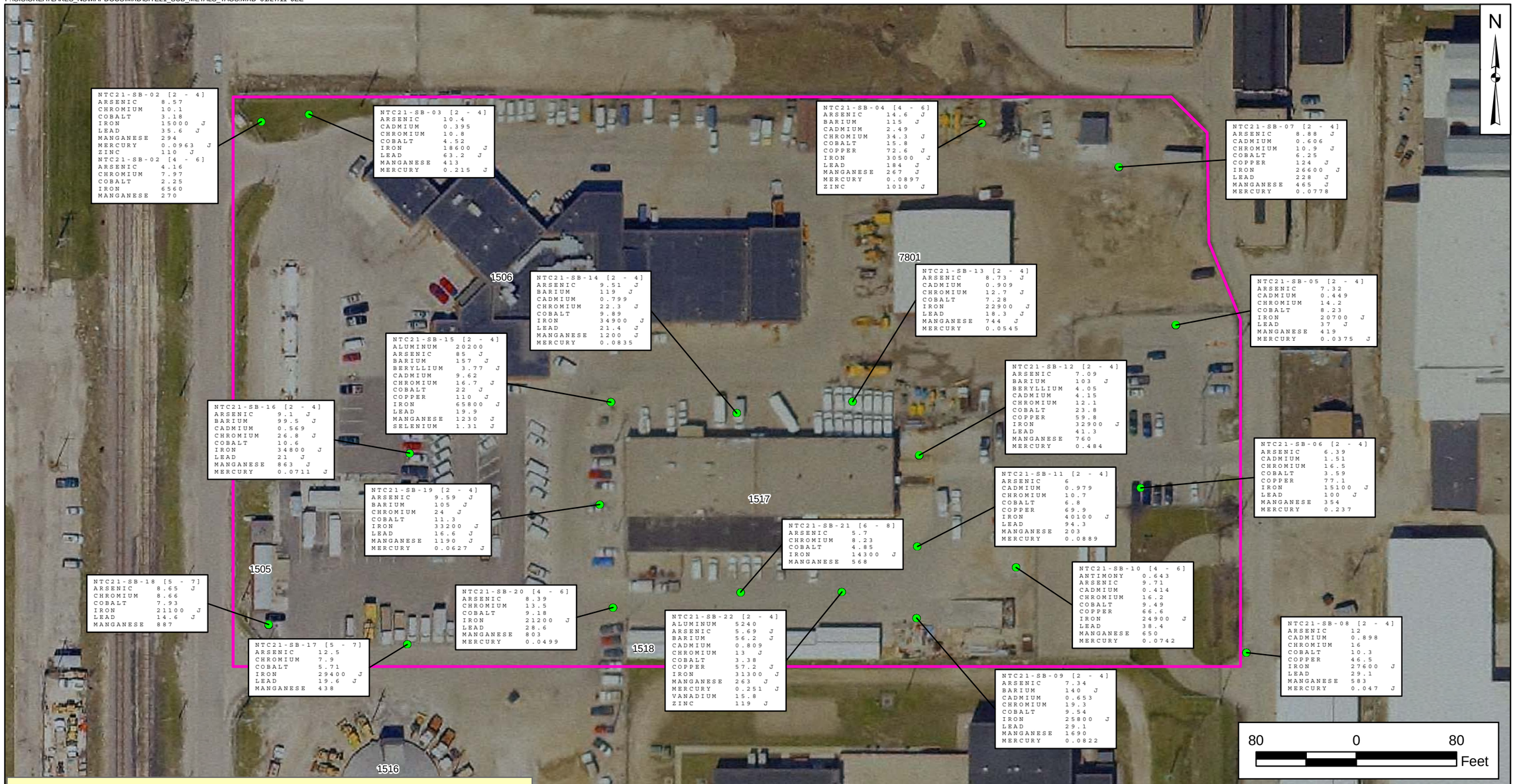

NOTES:
1. Results are expressed in milligrams per kilogram (mg/kg)
2. J = Estimated value
3. [0-1] = Depth interval ft-bgs that sample was collected from
4. Values shown exceed Minimum Screening Criteria. The Minimum Screening Criteria was derived from the following:
TACO - Residential Inhalation and Ingestion, Industrial Inhalation and Ingestion, and Class 1 Soil to Groundwater screening values
Non-TACO - Residential Inhalation and Ingestion, Industrial Inhalation and Ingestion, and Class 1 Soil to Groundwater screening values; and/or,
USEPA - Risk Based SSLs, Inhalation SSLs, and Residential Soil screening values.

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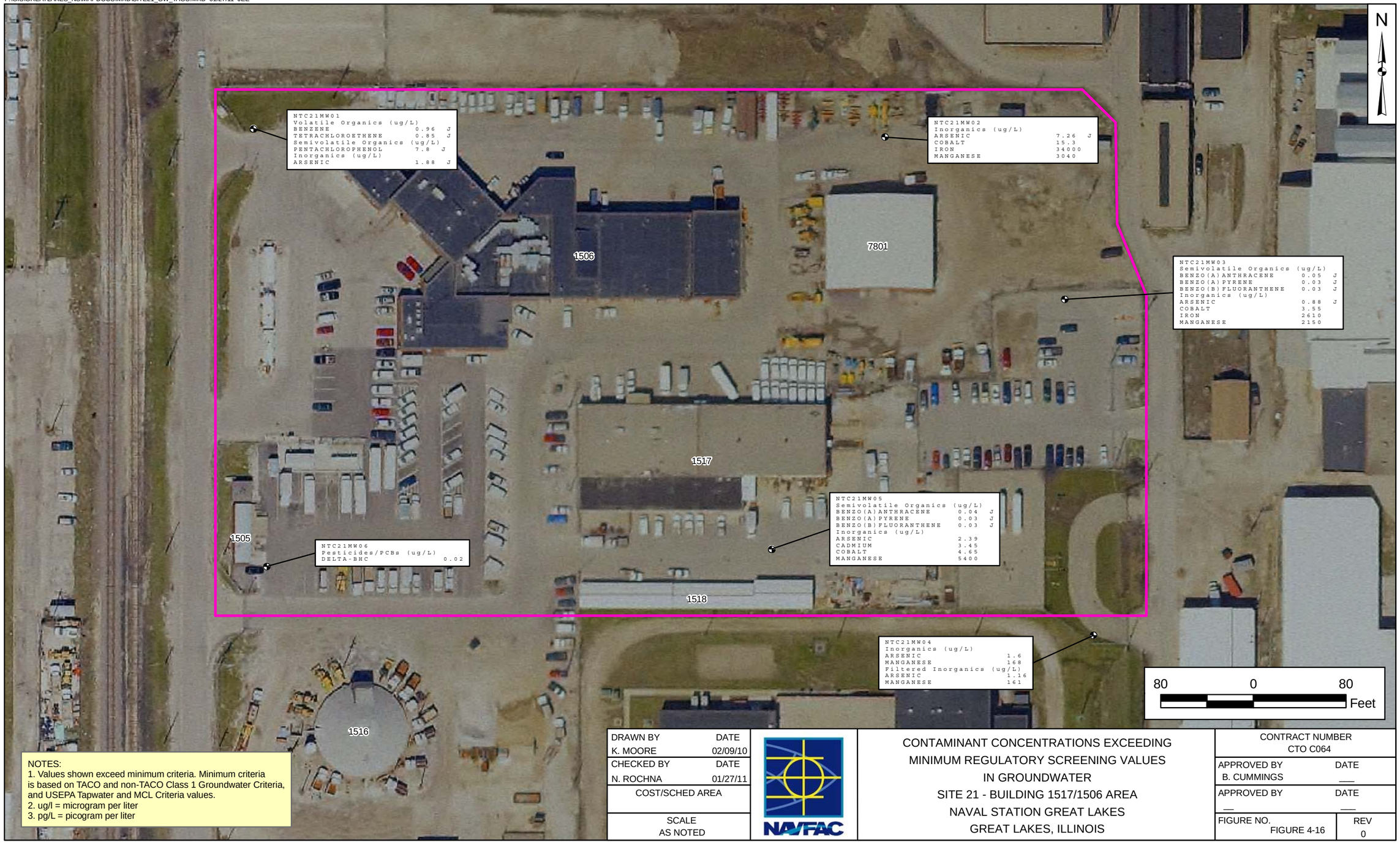
COST/SCHED AREA	
SCALE AS NOTED	

NAVFAC

METAL CONCENTRATIONS EXCEEDING
MINIMUM REGULATORY SCREENING VALUES
IN SUBSURFACE SOIL
SITE 21 - BUILDING 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

CONTRACT NUMBER CTO C064	
APPROVED BY B. CUMMINGS	DATE ___
APPROVED BY ___	DATE ___
FIGURE NO. FIGURE 4-15	REV 0

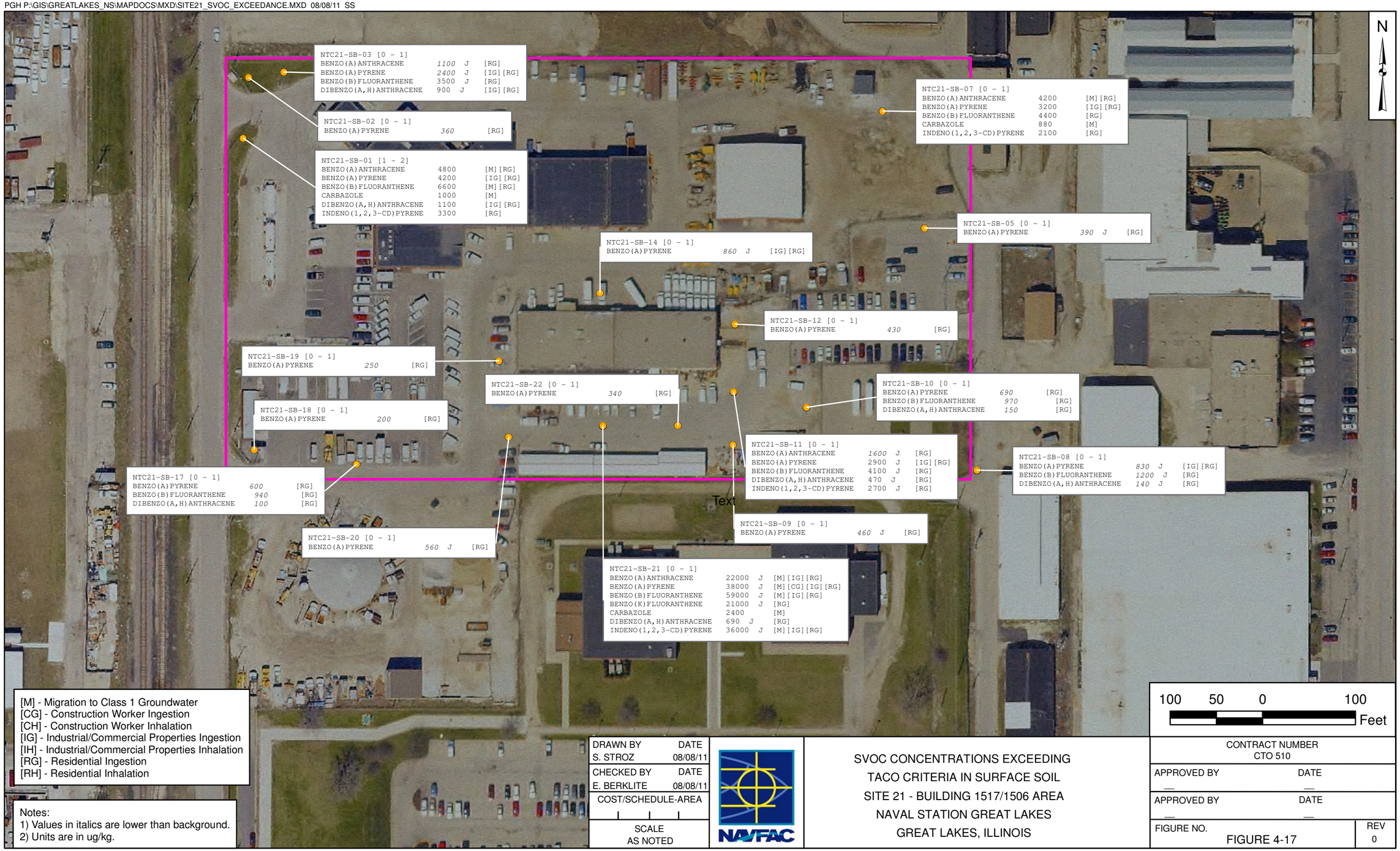
P:\GIS\GREATLAKES_NS\MAPDOCS\MXD\SITE21_GW_TAGS.MXD 01/27/11 JEE



NOTES:
1. Values shown exceed minimum criteria. Minimum criteria is based on TACO and non-TACO Class 1 Groundwater Criteria, and USEPA Tapwater and MCL Criteria values.
2. ug/l = microgram per liter
3. pg/L = picogram per liter

DRAWN BY K. MOORE	DATE 02/09/10	CONTAMINANT CONCENTRATIONS EXCEEDING MINIMUM REGULATORY SCREENING VALUES IN GROUNDWATER SITE 21 - BUILDING 1517/1506 AREA NAVAL STATION GREAT LAKES GREAT LAKES, ILLINOIS	CONTRACT NUMBER CTO C064
CHECKED BY N. ROCHNA	DATE 01/27/11		APPROVED BY B. CUMMINGS / DATE ___
COST/SCHED AREA			APPROVED BY ___ / DATE ___
SCALE AS NOTED			FIGURE NO. FIGURE 4-16 / REV 0

PGH P:\GIS\GREATLAKES_NS\MAPDOCS\MXD\SITE21_SVOC_EXCEEDANCE.MXD 08/08/11 SS



[M] - Migration to Class 1 Groundwater
[CG] - Construction Worker Ingestion
[CH] - Construction Worker Inhalation
[IG] - Industrial/Commercial Properties Ingestion
[IH] - Industrial/Commercial Properties Inhalation
[RG] - Residential Ingestion
[RH] - Residential Inhalation

Notes:
1) Values in italics are lower than background.
2) Units are in ug/kg.

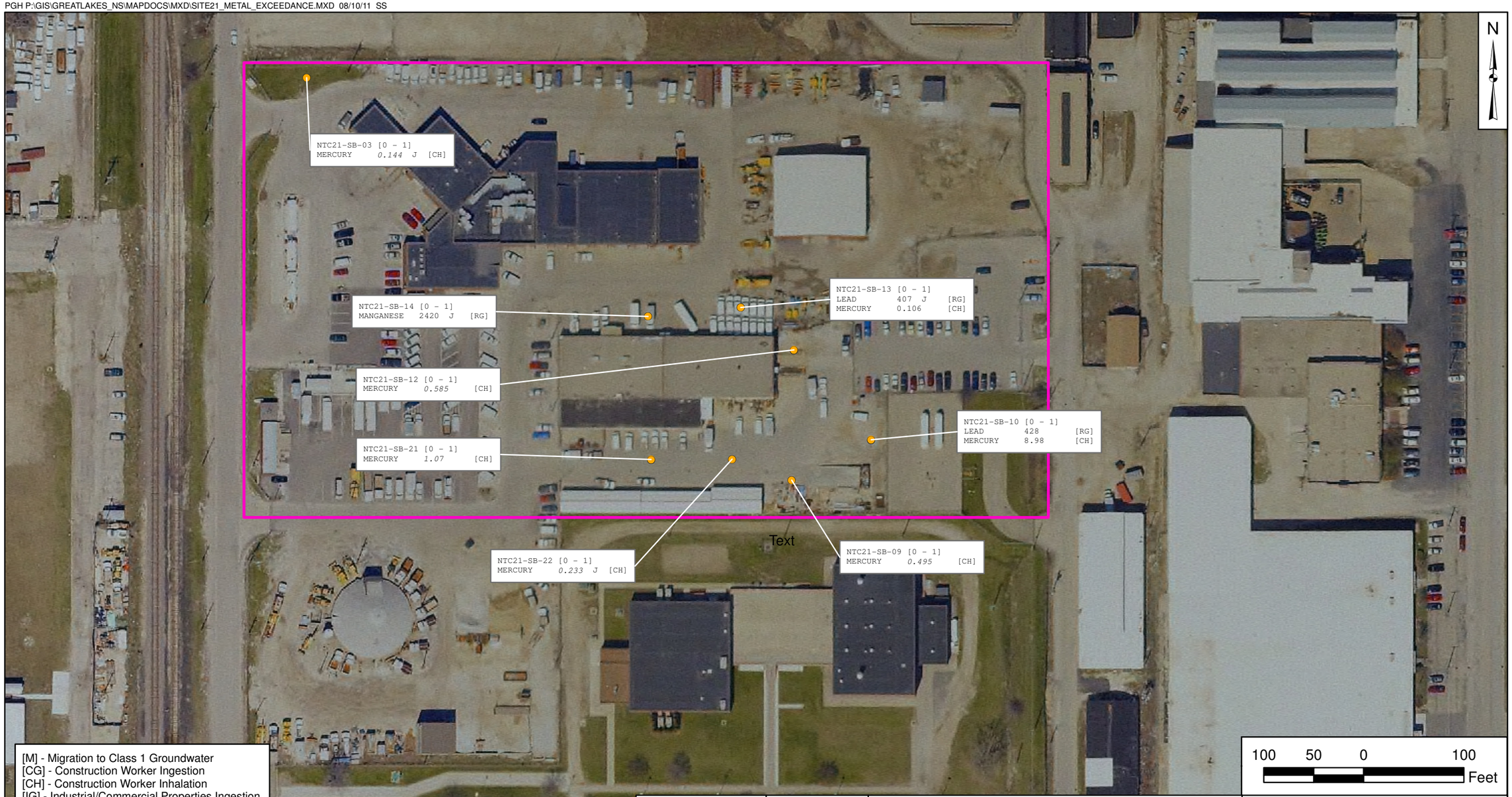
DRAWN BY	DATE
S. STROZ	08/08/11
CHECKED BY	DATE
E. BERKLITE	08/08/11
COST/SCHEDULE-AREA	
SCALE AS NOTED	

NAVFAC

SVOC CONCENTRATIONS EXCEEDING
TACO CRITERIA IN SURFACE SOIL
SITE 21 - BUILDING 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

CONTRACT NUMBER CTO 510	
APPROVED BY —	DATE —
APPROVED BY —	DATE —
FIGURE NO. FIGURE 4-17	REV 0

PGH P:\GIS\GREATLAKES_NS\MAPDOCS\MXD\SITE21_METAL_EXCEEDANCE.MXD 08/10/11 SS



[M] - Migration to Class 1 Groundwater
[CG] - Construction Worker Ingestion
[CH] - Construction Worker Inhalation
[IG] - Industrial/Commercial Properties Ingestion
[IH] - Industrial/Commercial Properties Inhalation
[RG] - Residential Ingestion
[RH] - Residential Inhalation

Notes:
1) Values in italics are lower than background.
2) Units are in mg/kg.

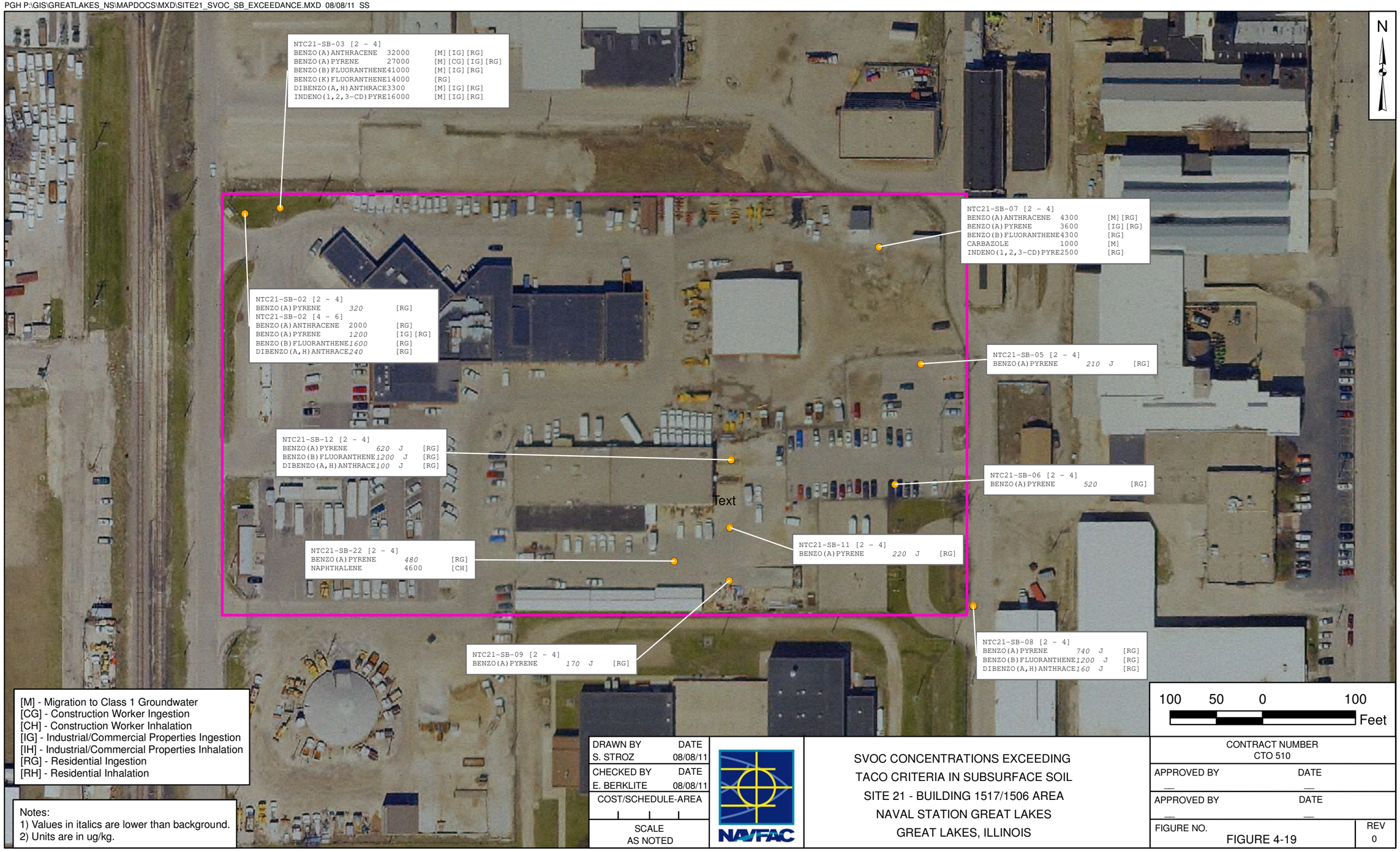
DRAWN BY	DATE
S. STROZ	08/08/11
CHECKED BY	DATE
E. BERKLITE	08/10/11
COST/SCHEDULE-AREA	
SCALE AS NOTED	

NAVFAC

METAL CONCENTRATIONS EXCEEDING
TACO CRITERIA IN SURFACE SOIL
SITE 21 - BUILDING 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

CONTRACT NUMBER CTO 510	
APPROVED BY —	DATE —
APPROVED BY —	DATE —
FIGURE NO. FIGURE 4-18	REV 0

PGH P:\GIS\GREATLAKES_NS\MAPDOCS\MXD\SITE21_SVOC_SB_EXCEEDANCE.MXD 08/08/11 SS



[M] - Migration to Class 1 Groundwater
[CG] - Construction Worker Ingestion
[CH] - Construction Worker Inhalation
[IG] - Industrial/Commercial Properties Ingestion
[IH] - Industrial/Commercial Properties Inhalation
[RG] - Residential Ingestion
[RH] - Residential Inhalation

Notes:
1) Values in italics are lower than background.
2) Units are in ug/kg.

DRAWN BY	DATE
S. STROZ	08/08/11
CHECKED BY	DATE
E. BERKLITE	08/08/11
COST/SCHEDULE-AREA	
SCALE AS NOTED	

NAVFAC

SVOC CONCENTRATIONS EXCEEDING
TACO CRITERIA IN SUBSURFACE SOIL
SITE 21 - BUILDING 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

CONTRACT NUMBER
CTO 510

APPROVED BY	DATE
—	—
APPROVED BY	DATE
—	—

FIGURE NO. FIGURE 4-19 REV 0

PGH P:\GIS\GREATLAKES_NS\MAPDOCS\MXD\SITE21_METAL_SB_EXCEEDANCE.MXD 08/09/11 SS

[M] - Migration to Class 1 Groundwater
[CG] - Construction Worker Ingestion
[CH] - Construction Worker Inhalation
[IG] - Industrial/Commercial Properties Ingestion
[IH] - Industrial/Commercial Properties Inhalation
[RG] - Residential Ingestion
[RH] - Residential Inhalation

Notes:
1) Values in italics are lower than background.
2) Units are in mg/kg.

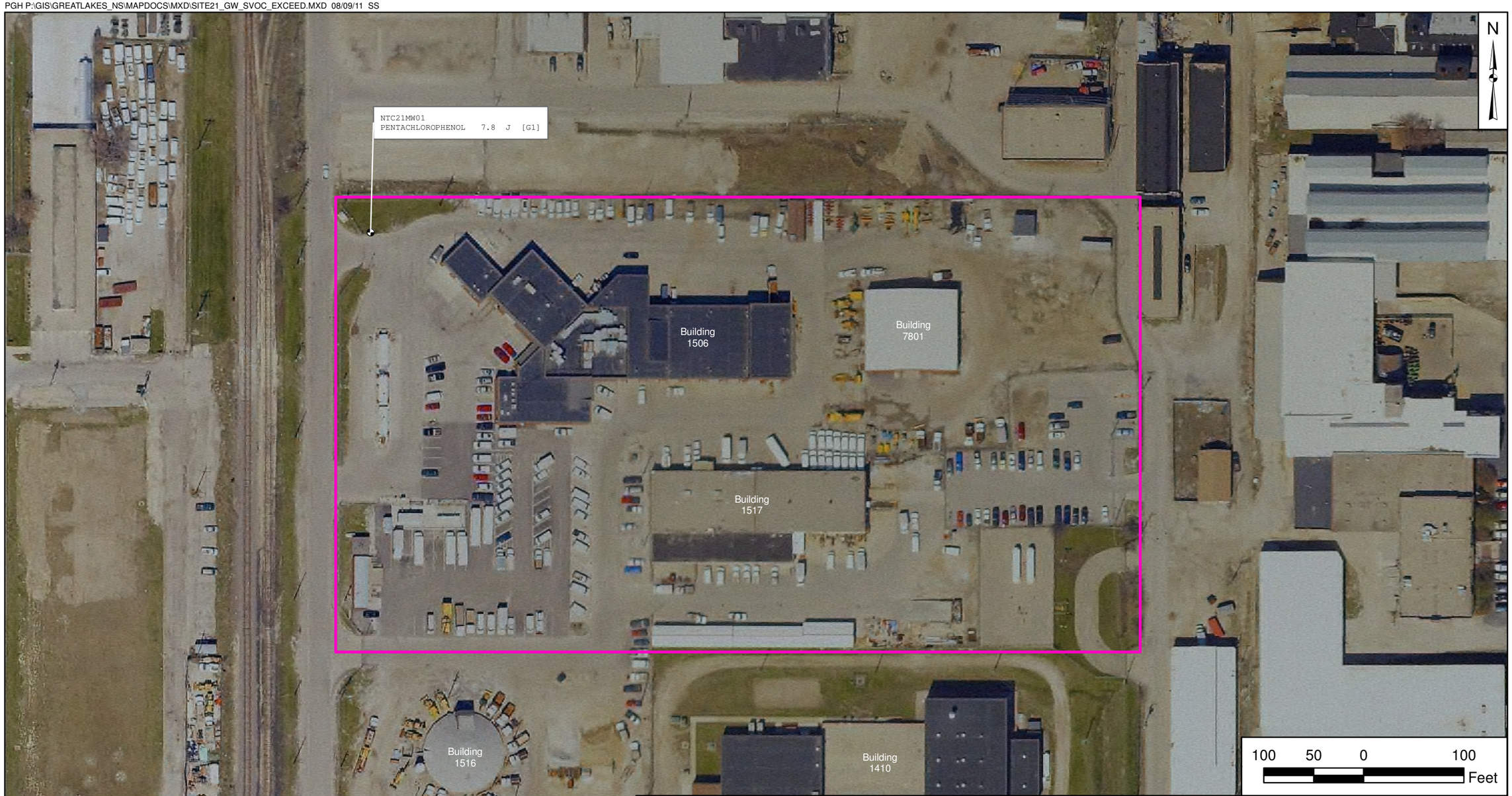
DRAWN BY S. STROZ	DATE 08/08/11
CHECKED BY E. BERKLITE	DATE 08/08/11
COST/SCHEDULE-AREA	
SCALE AS NOTED	

NAVFAC

METAL CONCENTRATIONS EXCEEDING
TACO CRITERIA IN SUBSURFACE SOIL
SITE 21 - BUILDING 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

CONTRACT NUMBER CTO 510	
APPROVED BY —	DATE —
APPROVED BY —	DATE —
FIGURE NO. FIGURE 4-20	REV 0

PGH P:\GIS\GREATLAKES_NS\MAPDOCS\MXD\SITE21_GW_SVOC_EXCEED.MXD 08/09/11 SS



NOTES:
1. Values shown exceed minimum criteria. Minimum criteria is based on TACO and non-TACO Class 1 Groundwater Criteria, and USEPA Tapwater and MCL Criteria values.
2. Units are in ug/l = microgram per liter.

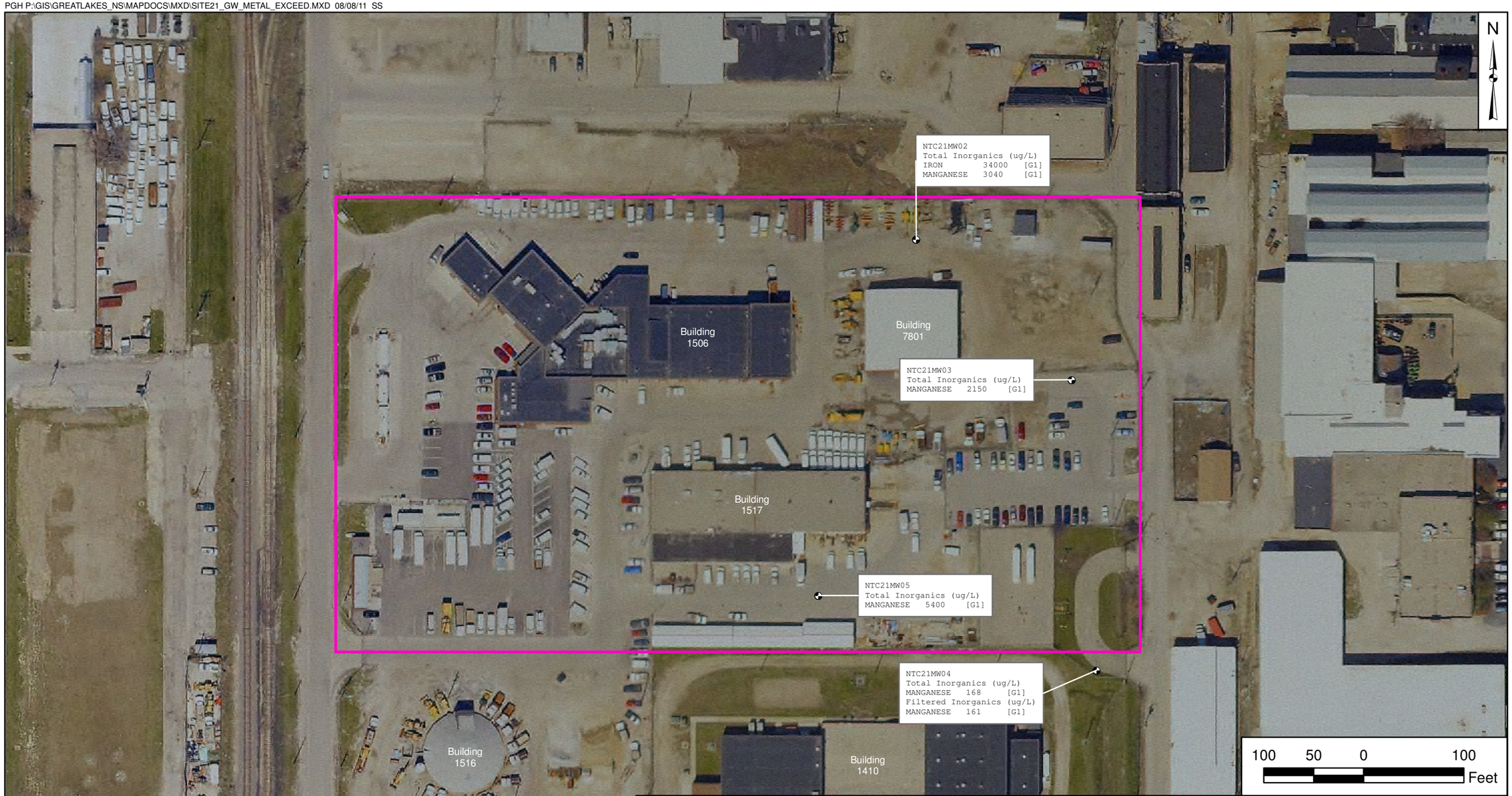
DRAWN BY S. STROZ	DATE 08/08/11
CHECKED BY E. BERKLITE	DATE 08/09/11
COST/SCHEDULE-AREA	
SCALE AS NOTED	

NAVFAC

SVOC CONCENTRATIONS EXCEEDING
TACO CRITERIA IN GROUNDWATER
SITE 21 - BUILDING 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

CONTRACT NUMBER CTO 510	
APPROVED BY —	DATE —
APPROVED BY —	DATE —
FIGURE NO. FIGURE 4-21	REV 0

PGH P:\GIS\GREATLAKES_NS\MAPDOCS\MXD\SITE21_GW_METAL_EXCEED.MXD 08/08/11 SS



NOTES:
1. Values shown exceed minimum criteria. Minimum criteria is based on TACO and non-TACO Class 1 Groundwater Criteria, and USEPA Tapwater and MCL Criteria values.
2. ug/l = microgram per liter
3. pg/L = picogram per liter

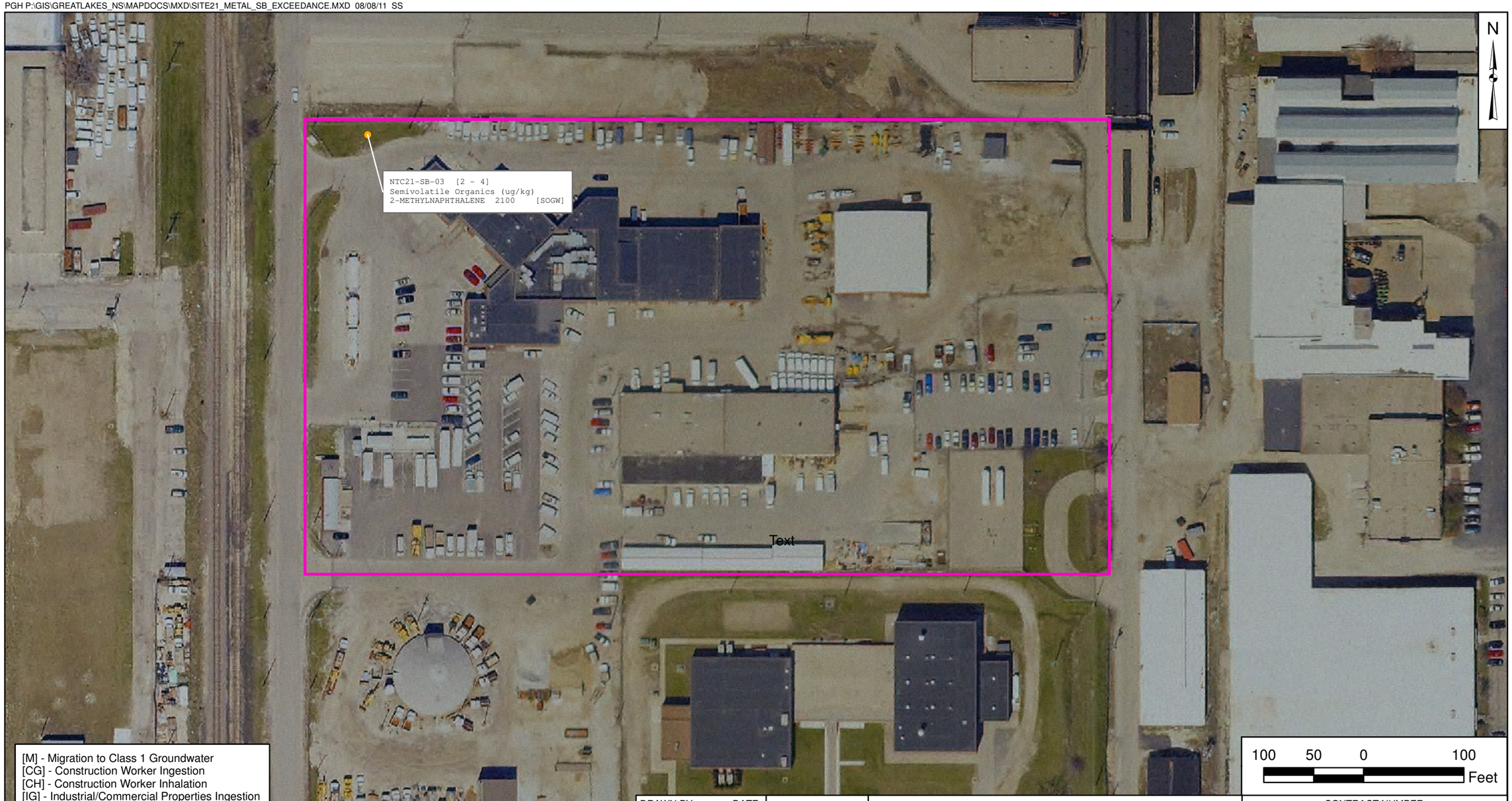
DRAWN BY	DATE
S. STROZ	08/08/11
CHECKED BY	DATE
E. BERKLITE	08/08/11
COST/SCHEDULE-AREA	
SCALE AS NOTED	

NAVFAC

METAL CONCENTRATIONS EXCEEDING
TACO CRITERIA IN GROUNDWATER
SITE 21 - BUILDING 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

CONTRACT NUMBER CTO 510	
APPROVED BY —	DATE —
APPROVED BY —	DATE —
FIGURE NO. FIGURE 4-22	REV 0

PGH P:\GIS\GREATLAKES_NS\MAPDOCS\MXD\SITE21_METAL_SB_EXCEEDANCE.MXD 08/08/11 SS



[M] - Migration to Class 1 Groundwater
[CG] - Construction Worker Ingestion
[CH] - Construction Worker Inhalation
[IG] - Industrial/Commercial Properties Ingestion
[IH] - Industrial/Commercial Properties Inhalation
[RG] - Residential Ingestion
[RH] - Residential Inhalation

Notes:
1) Values in italics are lower than background.
2) Units are in ug/kg.

DRAWN BY	DATE
S. STROZ	08/08/11
CHECKED BY	DATE
E. BERKLITE	08/08/11
COST/SCHEDULE-AREA	
SCALE AS NOTED	

NAVFAC

CONCENTRATIONS EXCEEDING
NON-TACO CRITERIA IN SUBSURFACE SOIL
SITE 21 - BUILDING 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

CONTRACT NUMBER CTO 510	
APPROVED BY —	DATE —
APPROVED BY —	DATE —
FIGURE NO. FIGURE 4-23	REV 0

5.0 HUMAN HEALTH RISK ASSESSMENT

This baseline Human Health Risk Assessment (HHRA) was performed to characterize and quantify potential health risks at Site 21 at Naval Station Great Lakes, Great Lakes, Illinois. The objective of the HHRA was to determine whether detected concentrations of chemicals within the study area pose a significant threat to potential human receptors under current and/or future land use. The HHRA for Site 21 is based on chemical data for surface soil, subsurface soil, and groundwater. The potential risks to human receptors are estimated based on the assumption that no actions will be taken to control contaminant releases.

Section 5.1 provides an overview of the HHRA process, and Sections 5.2 through 5.6 outline the methodology and results of the HHRA. Appendix G presents supporting materials for the HHRA. An analysis of the uncertainties is presented in Section 5.7. Section 5.8 summarizes the HHRA for Site 21. Tables documenting the HHRA were prepared following the standard format in accordance with USEPA risk assessment guidance for Superfund (USEPA, 2001), and are presented in Appendix G.

The HHRA conducted for this RI follows guidance documents from USEPA (1989, 1991, 1993, 1996, 1997, 2001, 2002a, 2002b, 2002c, 2004, and 2009), Navy (2001 and 2004) and State of Illinois (Illinois EPA, 2010a). The methodologies used in this HHRA complied with scientifically acceptable HHRA practices and USEPA guidance, including but not limited to the above referenced documents.

- USEPA, 1989. Risk Assessment Guidance for Superfund: Volume I, Human Health Evaluation Manual (Part A). EPA 540/1-89/002. Office of Emergency and Remedial Response, Washington, D.C.

- USEPA, 1991a. Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors. Office of Solid Waste and Emergency Response (OSWER) Directive 9285.6-03. Washington, D.C.

- USEPA, 1993c. Preliminary Review Draft: Superfund's Standard Default Exposure Factors for the Central Tendency and Reasonable Maximum Exposure. OSWER, Washington, D.C.

- USEPA, 1996. Soil Screening Guidance: Technical Background Document. EPA/540/R-95/128. OSWER. Washington, D.C.

- USEPA, 1997a. Exposure Factors Handbook. EPA/600/P-95/002Fa. OSWER, Washington, D.C.

- Navy, 2001b, Conducting Human Health Risk Assessments under the Environmental Restoration Program. Ser N453E/1U595168. Washington, D.C.

- USEPA, 2001. Risk Assessment Guidance for Superfund: Volume 1 - Human Health Evaluation Manual (Part D, Standardized Planning, Reporting, and Review of Superfund Risk Assessments).

- USEPA, December 2002b. Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites. OSWER 9355.4-24. Washington, D.C.

- USEPA, December 2002c. Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. OSWER 9285.6-10. Washington, D.C.

- USEPA, 2004b. Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment), Final Guidance.

- USEPA, 2009. Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual (Part F, Supplemental Guidance for Inhalation Risk Assessment), Final.

- Navy, 2004. Navy Final Policy on the Use of Background Chemical Levels.

- Illinois EPA, 2010a. TACO. Illinois Environmental Protection Agency, Bureau of Land, available online at http://www.epa.state.il.us/land/taco/.

The quantitative risk estimates are based on a number of assumptions about exposure and toxicity. Thus, the risk estimates may over- or underestimate the level of potential human health risks associated with a site.

5.1 OVERVIEW OF RISK ASSESSMENT PROCESS

A HHRA provides the framework for developing information necessary to determine the need for remediating and developing potential remedial alternatives for a site. A baseline HHRA consists of five major components, as follows:

- Data evaluation and identification of chemicals of potential concern (COPCs)
- Exposure assessment
- Toxicity assessment

- Risk characterization
- Characterization of uncertainty in the risk estimates

To assess potential public health risks, four major aspects of chemical contamination and exposure must be considered: contaminants with toxic characteristics must be found in environmental media; contaminants must be released by either natural processes or by human action; potential exposure points must exist either at the source or via migration pathways if exposure occurs at a remote location other than the source; and human receptors must be present at the point of exposure. Risk is a function of both toxicity and exposure. If any one of the requirements listed above is absent for a specific site, the exposure route is regarded as incomplete, and no potential risks are considered for human receptors.

The data evaluation component of the HHRA is primarily concerned with selecting COPCs and calculating exposure point concentrations (EPCs). Current study area data are considered in developing a list of COPCs. The chemical data are analyzed by medium and area in order to be representative of potential human health exposure, and COPCs are selected for each medium and exposure area. The EPCs provide the chemical input for each of the exposure pathways. A summary of the data evaluation process is contained in Section 5.2.

The selection of COPCs was based on chemical-specific concentrations, occurrence, distribution, and toxicity. COPCs were selected to represent site contamination and to provide the framework for the quantitative HHRA. A discussion of COPC selection is included in Section 5.3.

The exposure assessment identifies potential human exposure pathways. Exposure routes are identified by medium (i.e., surface soil, subsurface soil, and groundwater) based on information on study area chemical concentrations, chemical release mechanisms, human activity patterns, and other pertinent information, to develop a conceptual site model. A discussion of the exposure assessment is contained in Section 5.4.

The toxicity assessment presents the available human health criteria for the selected COPCs. This assessment is contained in Section 5.5. Quantitative toxicity indices are presented where they are available. A discussion of health effects and dose-response parameters such as Reference Doses (RfDs), Reference Concentrations (RfCs), Cancer Slope Factors (CSFs), and Unit Risks, is presented.

The risk characterization section (Section 5.6) describes how the estimated intakes are combined with the toxicity information to estimate risks. Uncertainties associated with the HHRA process are discussed qualitatively in Section 5.7. Section 5.8 summarizes the HHRA for Site 21.

5.2 DATA EVALUATION

Information associated with data usability for Site 21 is provided in this section. The HHRA presented in this report is based on the most recent analytical data collected at Site 21 during the most recent field activities.

Data utilized in this HHRA include validated analytical results of known and sufficient quality for use in quantitative risk calculations. The data used have been validated in accordance with USEPA Tier II or higher validation levels and determined to be of adequate quality for use in the HHRA. Fixed-base laboratory analytical results for target analytes from the field investigation were used in the quantitative risk evaluation. Unfiltered results for groundwater were used to assess risks associated with this medium. The Work Plan indicated that field measurements and data regarded as unreliable (i.e., qualified as "R" during the data validation process), would not be used in the quantitative HHRA. No data were qualified as unreliable. Analytical data qualified as estimated ("J", or "UJ") were used, even though the reported concentrations or sample-specific quantitation limits may be somewhat imprecise. The use of estimated data adds to the uncertainty associated with the HHRA; however, the associated uncertainty is expected to be negligible compared to the other uncertainties inherent in the risk evaluation process (i.e., uncertainties associated with land uses, exposure scenarios, toxicological criteria, etc.). Compounds that were detected above the laboratory detection limit at least once were included in the summary tables for that medium. Duplicate analytical results were not used for the EPC calculations. The duplicate results were used for sampling and analytical quality control purposes only. Data values less than sample-specific detection limits were reported as the detection limit, and the result designated as below detection limit by annotation.

Analytical results for samples used in this HHRA are presented in Appendix F. Section 3.0 of this RI Report discusses sample collection and fixed-based laboratory analysis by standard USEPA methods. Geologic soil boring and well construction logs from RI field activities are presented in Appendix B. Sample analytical results are presented in Section 4.0 of this report.

5.3 SELECTION OF CHEMICALS OF POTENTIAL CONCERN

The selection of COPCs is a qualitative screening process used to limit the number of chemicals and exposure routes quantitatively evaluated in the HHRA to those site-related constituents that dominate overall potential risks. Screening of site data against risk-based concentrations (RBCs) is used to focus the HHRA on meaningful chemicals and exposure routes.

In general, a chemical is selected as a COPC and retained for further quantitative risk evaluation in the HHRA if the maximum detection in a sampled medium exceeds a conservative screening value(s), as

described below. Chemicals eliminated from further evaluation at this time are assumed to present minimal risks to potential human receptors.

5.3.1 Derivation of Screening Criteria

Several screening criteria were used to identify COPCs for Site 21. Screening concentrations based on risk-based cleanup objectives developed by Illinois EPA (2010) and Regional Screening Levels (RSLs; USEPA, 2010) developed by Oak Ridge National Laboratory (ORNL) for USEPA were used, as well as other USEPA criteria. The risk-based screening concentrations correspond to a systemic hazard quotient (HQ) of 0.1 for non-carcinogens, or an incremental lifetime cancer risk (ILCR) of $1x10^{-6}$ for carcinogens. Note that the Illinois EPA and USEPA residential screening levels (RSLs) for non-carcinogens are based on a HQ of 1.0, but screening concentrations for this HHRA were based on a HQ of 0.1 so that additive non-carcinogenic risks do not exceed 1.0. The screening levels used for each medium in the HHRA are briefly discussed below.

Screening Levels for Soil

The following criteria were used to select COPCs for surface and subsurface soil:

- Illinois EPA Tier 1 SROs (Illinois EPA, 2010b). These include remediation objectives for the soil ingestion exposure route and the inhalation exposure route. The lowest Tier I objective of the receptors (i.e., residential, industrial/commercial, or construction worker) listed in the Tier 1 Tables was used for screening.

- SROs for Chemicals not listed in TACO (Illinois EPA Non-Taco, 2010b).

- ORNL RSLs online at http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/index.htm.

- USEPA Generic Residential and Industrial soil screening levels (SSLs) for Inhalation of Volatiles and Fugitive Dusts, online at http://www.epa.gov/superfund/health/conmedia/soil/pdfs/ssg_appa-c.pdf (USEPA, 2002a).

- USEPA Soil Screening Levels for the Construction Worker Scenario (USEPA, 2002a).

If the maximum concentration of a constituent exceeded any of these criteria, the chemical was selected as a COPC.

The comparison of site soil data to USEPA inhalation SSLs for transfers from soil to air was used as a screening means to identify whether a quantitative analysis of this exposure pathway was warranted. If the maximum soil concentration of a chemical exceeded the Inhalation SSL, a quantitative evaluation of potential risks from inhalation was performed. Otherwise, the risks associated with the inhalation pathway were considered insignificant, and the exposure pathway was eliminated from further evaluation.

To evaluate the potential for chemicals detected in soil to impact groundwater, maximum chemical concentrations were compared to SSLs for migration to groundwater. The comparisons are presented in separate tables (from the direct contact COPC tables) and were used to select COPCs for soil. Migration-to-Groundwater SSLs were not used to select COPCs for quantitative risk evaluation because quantitative HHRAs are typically based on direct contact with soil or inhalation of vapors for VOCs and particulates. There is no methodology available for quantitative risk evaluation of indirect exposure based on migration to groundwater; therefore, it is not appropriate to select COPCs for quantitative risk evaluation for direct exposure on the basis of the indirect soil-to-groundwater pathway. The soil-to-groundwater SSLs provide an indication of potential impacts of contamination in soil on groundwater quality, but are not indicators of quantitative risk.

The migration from soil-to-groundwater comparisons were made using the following criteria:

- Illinois EPA Tier 1 SROs for Residential Properties for the Soil Component of the Groundwater Ingestion Exposure Route for Class I Groundwater (Illinois EPA, 2010c).

- USEPA Generic SSLs for Migration from Soil to Groundwater calculated online at http://rais.ornl.gov/epa/ssl1.shtml (SSLs published online at http://rais.ornl.gov/epa/ssl1.shtml were used to screen for migration from soil to groundwater since these values are more recent than those published in the 1996 and 2002 SSL guidance documents. [USEPA, 1996, 2002a]).

Results of the soil-to-groundwater comparisons are qualitatively discussed later in this HHRA in Sections 5.3.4 and 5.7, and also presented in separate tables.

COPCs were identified for subsurface soil because of the different associated exposure scenarios for potential human receptors. Subsurface soil was defined as soil collected from depths greater than 1 foot bgs. Construction workers were assumed to be exposed to subsurface soil. Exposures to subsurface soil for future occupational workers and hypothetical future residents were evaluated to account for the possibility that subsurface soil may be brought to the surface in a future excavation project.

Screening Concentrations for Groundwater

Direct exposure to groundwater at Site 21 is not expected to occur under current and/or future land uses because the facility and surrounding area are supplied by public water, the facility has an ordinance for groundwater use prohibition in place, and there are no drinking water wells located immediately downgradient of the site. However, the residential groundwater scenario was evaluated based on the conservative assumption that groundwater at the site could be used as a source of domestic drinking water in the future, and industrial exposure to groundwater was evaluated to account for the possibility that future construction workers may come into dermal contact with groundwater during excavation or construction activities. Groundwater screening levels for the protection of indoor air through potential vapor intrusion were used to identify COPCs in groundwater for this pathway. If concentrations of a chemical(s) detected in groundwater exceeds the vapor intrusion screening levels, potential risks for the chemical(s) are quantitatively evaluated using the Johnson and Ettinger Vapor Intrusion Model (Johnson and Ettinger, 1991; USEPA, 1997a).

Although site groundwater is not a source of drinking water, the following criteria were conservatively used to select COPCs for groundwater per the HHRA Work Plan (Tetra Tech, 2008):

- Illinois EPA Tier 1 GROs for Class 1 Groundwater (Illinois EPA, online at http://www.ipcb.state.il.us/SLR/IPCBandIllinois EPAEnvironmentalRegulations-Title35.asp).
- GROs for Chemicals Not Listed in TACO (Illinois EPA, 2010d).
- ORNL Regional Screening Levels for Chemical Contaminants at Superfund Sites (USEPA, 2010).
- USEPA Maximum Contaminant Levels (MCLs) (USEPA, 2006).
- USEPA Groundwater Screening Levels for Evaluating the Vapor Intrusion to Indoor Air (USEPA, 2002b).

If the maximum concentration of a constituent exceeded any of these criteria, the chemical was selected as a COPC and carried through to the quantitative HHRA.

Surface Water and Sediment

There are no surface water features on Site 21; therefore, these are not exposure media associated with this site.

Essential Nutrients, Metals, and Chemicals Without Toxicity Criteria

The essential nutrients calcium, magnesium, potassium, and sodium were not selected as human health COPCs for Site 21. These inorganic chemicals are naturally abundant in environmental matrices and are only toxic at high doses. In addition, because of the lack of toxicity criteria, risk-based COPC screening levels are not available for some chemicals (e.g., benzo(g,h,i)perylene, etc.). Appropriate surrogates were selected for some of these chemicals based on similar chemical structures and are noted when used.

In addition, some inorganic metals (other than essential nutrients) are also abundant in environmental matrices. The inorganics are compared to the Illinois Inorganic Background levels, as discussed later in this HHRA.

Determination of Site-Related Chemicals - Background Evaluation

The procedures for the elimination of chemicals as COPCs on the basis of background concentrations followed current U.S. Navy policy (U.S. Navy, 2004). At the present time, facility background concentrations for naturally occurring or anthropogenic chemicals have not been determined for Naval Station Great Lakes. Therefore, maximum soil concentrations were compared to the concentrations of inorganic and PAH chemicals provided by Illinois EPA in Appendix A, Table G and Table H of TACO, respectively.

Navy policy as it applies to HHRAs requires the following:

1. A clear and concise understanding of chemicals released from a site, thus making sure the Navy is focusing on remediating the release.

2. The use of background data in the screening-level HHRA.

    a. The comparison of site chemical levels to risk-based screening criteria.
    b. The comparison of site chemical levels to background concentrations.
    c. The identification of site-related COPCs based on screening criteria comparisons and background comparisons. Site-related COPCs are those chemicals with concentrations exceeding risk-based screening criteria and background concentrations. To the extent possible, site-related COPCs are further evaluated quantitatively in the HHRA.

3. The consideration of background in the HHRA.

    a. The calculation of risk estimates for site-related COPCs only.
    b. The further evaluation of non-site-related COPCs in the risk characterization section (e.g., the evaluation of chemicals detected at concentrations exceeding screening criteria but less than background concentrations). The Navy considers this comparison to be consistent with USEPA's Role of Background in the CERCLA Cleanup Program (USEPA, 2002a).

4. The selection of site cleanup remedial goals at concentrations not less than background levels. Additionally, cleanup levels should not be developed for chemicals not identified as COCs. As defined in the Navy guidance, COCs are site-related COPCs found to be the risk drivers in the HHRA.

To determine whether inorganic and anthropogenic organic chemicals are present at concentrations greater than background, maximum detected concentrations of inorganic chemicals and PAHs in soil were compared to background levels provided by Illinois EPA, and the results are discussed in the Uncertainty Section. However, no chemicals were excluded from the initial COPC selection process based on background.

Screening Concentrations for Lead

Limited criteria are available to evaluate the potential risks associated with lead. There are no risk-based concentrations for this compound because the USEPA has not derived toxicity values for lead. However, recommended screening levels available for lead in soil are used to indicate the need for response activities. Guidance from both the Office of Prevention, Pesticides, and Toxic Substances (OPPTS) and OSWER recommend 400 mg/kg as the lowest screening level for lead-contaminated soil in a residential setting where children are frequently present (USEPA, 1994). OPPTS identifies 2,000 to 5,000 mg/kg as an appropriate range for areas where contact with soil by children in a residential setting is less frequent. While the Safe Drinking Water Act Action Level of lead is 15 µg/L (USEPA, 2006), the more conservative Illinois EPA groundwater standard of 7.5 µg/L was used as a screening level for lead in groundwater.

A discussion of the chemicals identified as COPCs and the rationale for their selection is provided in the following sections.

5.3.2 COPC Selection for Surface Soil

This section presents the results of the COPC selection process for surface soil. The COPC screening process for surface soil and the results of the screening are presented in Table 5-1 (RAGS Part D tables, Table 2s). As previously discussed and noted in Table 5-1, screening values for risk-based non-

carcinogenic compounds were reduced by a factor of 10 to correspond to a target hazard quotient of 0.1. The following chemicals were retained as COPCs for surface soil:

- SVOCs – carcinogenic PAHs (c-PAHs) in benzo(a)pyrene equivalents (BaP Eq), naphthalene.
- PCBs – Aroclor-1260.
- Dioxins – 2,3,7,8- toxic equivalents (TEQs).
- Inorganics – aluminum, antimony, arsenic, barium, cadmium, chromium, cobalt, copper, iron, manganese, mercury, and vanadium.

These constituents were identified as COPCs in surface soil because maximum concentrations exceeded USEPA ORNL RSLs or Illinois TACO risk-based screening levels (primarily for residential soil).

The maximum concentrations were also compared to USEPA Generic SSLs for migration from soil to air (inhalation), when available. The maximum concentrations of mercury exceeded the inhalation SSLs for industrial or residential scenarios; therefore, risks from inhalation of this chemical were quantitatively evaluated. The maximum concentrations of aluminum, arsenic, barium, cadmium, cobalt, manganese, mercury, and naphthalene exceeded the inhalation SSLs for the construction worker scenario; therefore, risks from inhalation of these constituents on dusts/particulates (and naphthalene also for inhalation of volatiles) were quantitatively evaluated conservatively for the receptors, as well.

The maximum concentrations of lead in subsurface soil, and groundwater are below the residential screening criteria for lead, and the maximum concentration of lead in surface soil is only slightly above the residential screening value (428 mg/kg vs. 400 mg/kg). However, the lead mean concentrations (which USEPA guidance utilizes for risk evaluations) in all media (surface soil, subsurface soil, and groundwater) are well below the residential screening value. Given that the averages are well below the screening levels, and that this would result in Integrated Exposure Uptake Biokinetic Model for Lead in Children (IEUBK) and Adult Lead Methodology (ALM) risk evaluations well below acceptable risk results, lead was not retained as a COPC for either soil or groundwater at Site 21. Therefore, it was determined that a quantitative evaluation was not required because the potential risks associated with this COPC were regarded as minimal, and no further evaluation was performed.

<u>Background Surface Soil Concentrations</u>

Maximum surface soil organic and PAH concentrations were compared to concentrations in the background data set established for use by the Illinois EPA. The background level for benzo(a)pyrene in metropolitan area soils (2.1 mg/kg) is lower than the maximum BaP Equivalents (BaP Eq) soil sample result (50.63 mg/kg). c-PAHs may have been associated with Site 21 waste disposal and therefore it is

reasonable to include them as COPCs in surface soil. Therefore, no chemicals detected in surface soil were excluded as COPCs based on background conditions.

When the maximum concentrations of the inorganic compounds detected at Site 21 in surface soil were compared to background data established for use by the Illinois EPA, no inorganics were found to be below background, based on maximum concentrations. However, if the overall averages of detected inorganics were compared to the background data set, aluminum, antimony, arsenic, barium, cobalt, iron, manganese, and vanadium were below the background values. This indicates that it is possible that these inorganic compounds at Site 21 could be background constituents.

5.3.3 COPC Selection for Subsurface Soil

This section presents the results of the COPC selection process for subsurface soil. The COPC screening process for subsurface soil and the results of the screening are presented in Table 5-2 (RAGS Part D tables, Table 2s). As previously discussed and noted in Table 5-2, screening values for risk-based non-carcinogenic compounds were reduced by a factor of 10 to correspond to a target hazard quotient of 0.1. The subsurface soil data set consists of samples collected from depths greater than 1 foot bgs. The following chemicals were retained as COPCs for subsurface soil:

- SVOCs – c-PAHs (BaP Eq), naphthalene.
- PCBs – Aroclor-1260.
- Dioxins – TEQs.
- Inorganics – aluminum, arsenic, cadmium, chromium, cobalt, iron, manganese, mercury, and vanadium.

These constituents were identified as COPCs in subsurface soil because maximum concentrations exceeded USEPA ORNL RSLs or Illinois TACO risk-based screening levels (primarily for residential soil).

The maximum concentrations were also compared to USEPA Generic SSLs for migration from soil to air (inhalation), when available. No COPCs exceeded the inhalation SSLs for industrial or residential scenarios; therefore, none of the COPCs were considered of significant risk from inhalation. The maximum concentrations of naphthalene, manganese, mercury, aluminum, arsenic, cadmium, and cobalt exceeded the inhalation SSLs for the construction worker scenario; therefore, risks from inhalation of these constituents on dusts/particulates (and naphthalene also for inhalation of volatiles) were quantitatively evaluated conservatively for the receptors, as well.

Background Subsurface Soil Concentrations

Maximum subsurface soil concentrations were also compared to concentrations in the background data set established for use by the Illinois EPA. Recognizing that the Illinois EPA dataset was for surface soil, this was done just for comparison purposes. The background level for benzo(a)pyrene in metropolitan area soils (2.1 mg/kg) is lower than the maximum BaP Eq soil sample result (39.37 mg/kg). PAHs may have been associated with Site 21 waste disposal and therefore it is reasonable to include them as COPCs in subsurface soil. Therefore, no chemicals detected in subsurface soil were excluded as COPCs based on background conditions.

When the maximum concentrations of the inorganic compounds detected at Site 21 in subsurface soil were also compared to Illinois EPA background data, also just for general comparison, no inorganics were found to be below background, based on maximum concentrations. However, if the overall averages of detected inorganics were compared to the background data set, aluminum, arsenic, chromium, cobalt, manganese, and vanadium were below the background values. This indicates that it is possible that these inorganic compounds at Site 21 could be background constituents.

5.3.4 Migration of Chemicals from Soil to Groundwater

A quantitative evaluation of the migration of chemicals from soil to groundwater was not included in this HHRA. However, soil data were compared to Illinois EPA Tier 1 TACO and Non-TACO SROs for Residential Properties for the Soil Component of the Groundwater Ingestion Exposure Route for Class I Groundwater, and USEPA Generic SSLs for migration from soil to groundwater (Table 5-17, a and b). The soil-to-groundwater SSLs were not used to select COPCs for quantitative risk evaluation, but to provide an evaluation of the potential impact of chemicals detected in soil or groundwater. Exceedances of the soil-to-groundwater SSLs, and a qualitative discussion of this pathway are included in the uncertainty section (Section 5.7, of this HHRA).

5.3.5 COPC Selection for Groundwater

A comparison of maximum detected groundwater concentrations to ORNL RSLs for ingestion of tap water, USEPA MCLs, and Illinois EPA GROs is presented in Table 5-3 (RAGS Part D tables, Table 2s). The following chemicals exceeded one or more of the groundwater screening criteria, therefore were retained as COPCs for groundwater:

- VOCs – benzene, tetrachloroethylene.
- SVOCs – c-PAHs (BAP equivalents), pentachlorophenol.
- Pesticides – delta-BHC.

- Dioxins – TEQs.
- Inorganics – arsenic, cadmium, cobalt, iron, and manganese.

These COPCs exceeded one or more of the groundwater screening criteria.

Vapor Intrusion Pathway from Groundwater to Soil

Vapor intrusion is the migration of volatile chemicals from the subsurface into overlying buildings. Volatile chemicals in buried wastes and/or contaminated groundwater can emit vapors that may migrate through subsurface soil and into indoor air spaces of overlying buildings (USEPA, 2002b). No COPCs in groundwater exceeded vapor intrusion screening levels; therefore, risks via vapor intrusion were not considered significant.

5.3.6 Summary

Table 5-4 summarizes the chemicals retained as COPCs for surface soil, subsurface soil, and groundwater at Site 21.

5.4 EXPOSURE ASSESSMENT

The exposure assessment estimates the extent of human contact with COPCs by characterizing potentially exposed populations of individuals (i.e., receptors), identifying actual or potential pathways of exposure that are appropriate for each potential receptor, and estimating the extent of human exposure.

An exposure pathway identifies the exposure routes for potentially complete pathways at the site and describes the mechanism by which human receptors may come into contact with site-related COPCs. Exposure pathways are dependent on both current and future land use. An exposure pathway is defined by the following four elements (USEPA, 2005a):

- A source material and mechanism of constituent release to the environment.
- An environmental migration or transport medium (e.g., soil) for the COPCs.
- A point of potential human contact with the medium of interest (e.g., potential exposure to the contaminated soil).
- An exposure route (e.g., ingestion, dermal contact) at the point of contact.

An exposure pathway is considered "complete" if all elements are present. If complete and deemed a significant risk, these pathways are quantitatively evaluated in the HHRA.

The potential for exposure at Site 21 is based on several factors including current and future land uses, human activity patterns, site access controls, chemical behavior in the environment, and the presence of human receptors. Based on these variables, exposure scenarios were developed that characterize the potential for human exposure under both current and future site conditions. The future scenario accounts for potential or anticipated changes in land use, and site characteristics that may alter exposure conditions at the site. The exposure assessment assumes that, in general, chemical compositions for environmental media are identical under current and future site conditions.

The exposure assessment presented in this section of the report describes the physical site setting and potential receptors of concern, identifies the potential contaminant migration and exposure pathways, defines the contaminant concentrations at the point of exposure, and presents the equations used to quantify exposure in terms of contaminant intake (dose). Appendix G presents summary calculations of the chemical-specific intakes for the receptors and exposure pathways, and also contains example calculations of the chemical intakes.

5.4.1 Site Background, Land Use, and Site Access

A detailed description of the Naval Station Great Lakes is included in Section 2.0 of this report. As mentioned previously, Naval Station Great Lakes administers base operations and provides facilities and related support to training activities (including the U.S. Navy's only boot camp), as well as a variety of other military commands located on base. There are a variety of land uses that currently surround Naval Station Great Lakes. Along the northern boundary of the base are the most highly urbanized and industrial areas. Much of the land beyond the northwestern site boundary comprises unincorporated lands of Lake County and is vacant except for scattered retail and residential properties. Adjacent to the western boundary are primarily industrial properties, and along the southern boundary is a mixture of public open space and residential land.

Site 21 is located in the northern portion of NS Great Lakes, and is approximately 7 acres in size. Site 21 contains several buildings, parking lots, and is almost entirely paved, with very little vegetation. Under current land use, access to and use of Site 21 is primarily limited to military personnel. However, to aid in risk management decisions, the site investigation also considers potential receptors, such as future residents, who might be exposed to contaminants persisting in site media or migrating from the site.

5.4.2 Conceptual Site Model

The development of a (Conceptual Site Model) CSM is an essential component of the exposure assessment. The CSM integrates information regarding the physical characteristics of the site, exposed populations, sources of contamination, and contaminant mobility (fate and transport) to identify potential

exposure routes and receptors to be evaluated in the HHRA. A well-developed CSM will allow a better understanding of the risks at a site and will aid risk managers in identifying the potential need for any additional environmental sampling and remediation. The site-specific CSM for Site 21 is presented in this section and illustrated on Figure 5-1. Table 5-5 presents a summary of the exposure pathways that were addressed quantitatively for each human receptor. The CSM depicts the relationships among the following elements:

- Site sources of contamination and potential COPCs
- Contaminant release mechanisms
- Transport pathways
- Exposure routes/pathways
- Potential receptors.

These elements of the CSM for Site 21 are discussed in the following sections.

5.4.2.1 Site Sources of Contamination

Building 1517, located on Site 21, is used for equipment storage, and was historically associated with the salvage operations at Naval Station Great Lakes. The area north of Building 1517 may have been used to store waste or scrap material on concrete pads next to rail spurs from the 1930s to 1940s. These materials may have been hauled away by railcar, or the waste materials may have been sent to an incinerator, which was located in the northwest portion of the site until 1964. Prior to 1950 until the 1960s or 1970s, the site was used as a coal stockpile area, which covered most of Site 21 north of Building 1517. Two nearby sites may also have affected Site 21. One of these sites is Building 1600A, which is located northwest of Site 21. Several leaks associated with USTs, which were likely used for oil or fuel storage, were identified there. A plume of contaminated groundwater was documented to extend from Building 1600A onto the northwest corner of Site 21. The groundwater plume was cleaned up to meet regulatory standards using biosparging techniques and the site was closed. However impacted soils from the Building 1600A release are considered to remain on Site 21. The other site, Site 5, otherwise known as the Transformer Storage Boneyard, was located south of Site 21. It was the primary storage area for out-of-service transformers from 1945 to 1985. Elevated levels of PCBs have been detected there.

5.4.2.2 Contaminant Release Mechanisms and Migration Pathways

Chemicals could be released from the source area by a variety of mechanisms including:

- Transport of chemicals deposited in surface and subsurface soil; and groundwater via infiltration, percolation, and migration within the shallow groundwater aquifer.

- Migration of fugitive dusts and VOCs from surface and subsurface soil to ambient air if construction/excavation activities occur in the future.

- Volatilization of VOCs from groundwater into the indoor air of current buildings or future residential and commercial buildings.

Receptors may be exposed either directly or indirectly to contaminants in environmental media via a variety of mechanisms. The exposure mechanisms considered included working outdoors, residential, etc. These exposure mechanisms generally act along one or more exposure routes such as ingestion, inhalation, or direct dermal contact.

Figure 5-1 shows the Site 21 CSM, which illustrates these potential contaminant migration pathways.

5.4.2.3 Exposure Mechanisms/Exposure Routes/Potential Receptors

The potential for exposure to contamination at Site 21 is based on several factors, including current and future land uses, human activity patterns, site access controls, and contaminant behavior in the environment. Based on these variables, different scenarios were developed to characterize the potential for human exposure under current and future site conditions. In addition to exposures that may result from current uses of the site, the future scenario also accounts for potential changes in land use and site characteristics that may alter the presence of COPCs in a given medium and exposure to them.

The exposure assessment is based on the assumption that, in general, chemical compositions for various environmental media are identical under current and future site conditions.

Naval Station Great Lakes is an active facility and will remain so for the foreseeable future. Under current land use, access to and use of Site 21 is primarily limited to military personnel and employees. However, to aid in risk management decisions, the risk assessment considered potential receptors, such as future residents, who might be exposed to contaminants persisting in site media or migrating from the site. The potential receptors have been identified by analyzing current land use practices, potential future land uses, and the identified areas of contamination in order to focus the risk assessment on potential site-related exposures. The general receptor classes include:

- **Construction Workers** - Potential receptors under future land uses. Construction workers are assumed to be civilian personnel who may be involved in a short-term, one-time construction project. Excavation and ground-intrusive activities may occur on the site in the future. If these excavation projects were to occur, construction workers could potentially be exposed to surface and subsurface

soil to an estimated depth of 10 feet bgs (conservative estimate based on available site information) by ingestion and dermal contact. They could also potentially directly contact groundwater (estimated depth to groundwater at the site ranges from 4 to 10 feet bgs) by dermal contact. Construction workers may also be exposed by the inhalation of soil or vapors emitted from groundwater during excavation.

- **Adolescent Trespassers** – Potential receptors under current land use. Adolescent trespassers were assumed to be exposed to surface soil by ingestion, dermal contact, and inhalation.

- **Maintenance/Occupational Workers** – Potential receptors under future and current land use. Current maintenance/occupational workers include personnel conducting daily paperwork, individuals re-stocking military equipment, and landscapers. Consideration of future maintenance/occupational workers accounts for the possibility that Naval Station Great Lakes might be developed for commercial/industrial uses at some future time. Maintenance/occupational workers were assumed to be exposed to surface soil by ingestion, dermal contact, and inhalation.

- **Future Civilian Residents (Adults/Children)** – Potential receptor under future land use. Hypothetical future residents are not potential receptors under current land use but were evaluated to aid in risk management decisions by providing an indication of potential risks if the facility were to close and be developed for residential use. Future onsite residents were assumed to be exposed to surface and subsurface soil by ingestion, dermal contact, and inhalation. Direct exposure to groundwater at Site 21 is not expected to occur under current and/or future land uses because the facility and the area surrounding the facility are supplied by public water, the facility has a groundwater use restriction in place, and there are no drinking water wells located immediately downgradient of the site. However, the residential groundwater scenario was evaluated based on the assumption that groundwater at the site, although very unlikely, could be used as a source of domestic drinking water in the future, and exposure could occur through dermal contact, ingestion, and inhalation of volatiles.

- **Future Military Residents (Adults/Children)** – Potential receptor under future land use. Military residents are not potential receptors under current land use because they do not live on the site. They were evaluated primarily for decision-making (risk management) purposes based on the assumption that the site could support military residential use in the future, and are assumed to be exposed via the same routes as future civilian residents. Risks to military residents will be evaluated qualitatively to future civilian residents because exposure duration of military residents would be lower than exposure duration of civilian residents.

5.4.3 Central Tendency Exposure versus Reasonable Maximum Exposure

Traditionally, exposures evaluated in the HHRA were based on the concept of a Reasonable Maximum Exposure (RME) only, which is defined as "the maximum exposure that is reasonably expected to occur at a site" (USEPA, 1989). However, more recent HHRA guidance (USEPA, 1993) indicates the value of addressing an average case or Central Tendency Exposure (CTE) as well as the RME.

To provide a full characterization of potential exposure, both RME and CTE were evaluated in the HHRA for Site 21. The available guidance (USEPA, 1993 concerning the evaluation of CTE is limited; therefore, professional judgment was used when defining CTE conditions for a particular receptor at the site. Exposure factors and assumptions for the CTE are presented and discussed in Section 5.4.5.

5.4.4 Exposure Point Concentrations

The following guidelines were used to calculate the EPCs:

- If a soil data set for an Exposure Unit (EU) contained fewer than 10 samples, the EPC for the RME and CTE cases was defined as the maximum detected concentration.

- If a soil data set for an EU contained 10 or more samples, the following receptor-specific EPCs were used:

  - Trespassers and maintenance/occupational workers were assumed to be exposed to the upper confidence limit (UCL) on the arithmetic mean, which was based on the distribution of the data set, for the RME cases. The EPCs were calculated following USEPA's Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites (USEPA, 2002c) using the USEPA's ProUCL software (USEPA, 2007a, version 4.00.05). They were assumed to be exposed to the mean for CTE cases.

  - Construction workers, and child and adult residents, were assumed to be exposed to the maximum detected concentration. The maximum detected concentration was used as the EPC for construction workers because of the possibility that construction workers might be exposed to a small highly concentrated area during the short exposure duration assumed for this receptor. They were assumed to be exposed to the mean for CTE cases.

  - For groundwater, Section 742.225a of TACO indicates that contaminant concentrations of discrete samples at each sample point should be evaluated. Based on this guidance, risks for

groundwater were characterized by assuming exposure to the well with the highest groundwater concentrations for both RME and CTE.

Duplicate analytical results were not used for the EPC calculations. The duplicate results were used for sampling and analytical quality control purposes only. Data values less than sample-specific detection limits were reported as the detection limit and the result designated as below detection by annotation.

The EPCs for the chemicals identified as COPCs in subsurface soil, surface soil, and groundwater at Site 21 are presented in Tables 5-6, 5-7, and 5-8, respectively (RAGS Part D tables, Table 3s).

5.4.5 Intake Estimation Methods and Exposure Parameters

To determine potential human health risks associated with Site 21, an estimate of chemical intake was made in accordance with current USEPA guidance. Exposure parameters and exposure concentrations were used to derive estimates of chemical intake for each exposure route, pathway, and receptor. The resulting chemical intakes were integrated with the toxicity factors discussed in Section 5.5 to develop quantitative risk estimates for potential receptors at the site. Intakes for the identified potential receptor groups were calculated using current EPA HHRA guidance (USEPA, 1989, 2004 and 2009) and presented in the HHRA spreadsheets (Appendix G). In accordance with current USEPA guidance, chemical intakes (and risks) were estimated for both the CTE and RME conditions. Values of exposure parameters used to quantify exposure for each receptor are presented in Tables 5-9 and 5-10 for the RME and CTE, respectively.

The following sections present the equations used to estimate chemical intakes for the exposure routes identified for quantitative evaluation. Example calculations are contained in Appendix G.

5.4.5.1 Exposure to COPCs in Soil

The HHRA assumed that construction workers, maintenance workers, adolescent trespassers, occupational workers, and potential future residents (military and civilian; child and adult) may come into contact with chemicals detected in soil at the site. Soil exposure routes evaluated were incidental ingestion, dermal contact, and inhalation. A description of the methods and assumptions used to quantify soil exposure follows.

Dermal Contact with Soil

Doses for dermal contact with soil were estimated using the following equation (USEPA, 20040:

$$DEX = \frac{C \times SA \times AF \times ABS \times EF \times ED \times CF}{BW \times AT}$$

where:	DEX	=	dermal dose (mg/kg-day)
	C	=	chemical concentration in soil (mg/kg)
	SA	=	skin surface area available for contact (cm^2/day)
	AF	=	soil-to-skin adherence factor (mg/cm^2)
	ABS	=	absorption factor (unitless)
	EF	=	exposure frequency (days/year)
	ED	=	exposure duration (years)
	CF	=	conversion factor (1×10^{-6} kg/mg)
	BW	=	body weight (kg)
	AT	=	averaging time (days)
			for non-carcinogens: 365 days/year x ED
			for carcinogens: 365 days/year x 70 years

Exposed skin surface areas available for dermal contact were determined for each receptor based on assumed human activities and clothing worn during exposure events. USEPA guidance (USEPA, 1997a and 2004 was used to develop the default assumptions concerning the amount of skin surface area available for contact for a receptor. The skin surface areas used in HHRA calculations and the rationale for the selection of the surface areas are as follows:

- Maintenance workers, occupational workers, and construction/excavation workers were assumed to be exposed on the head, hands, and forearms assuming that they wear a short-sleeved shirt, long pants, and shoes. As recommended in RAGS Part E (USEPA, 2004, this skin surface area is assumed to be 3,300 cm^2 for the RME and CTE scenarios. This value represents the average of the 50th percentile areas of males and females more than 18 years old.

- For future adult residents assumed to be exposed to soil, the exposed surface area available for contact was the value for the adult skin surface area for exposure to soil recommended in RAGS Part E (USEPA, 2004: 5,700 cm^2 for both RME and CTE. This skin area assumes that head, hands, forearms, and lower legs of the adult are available for contact. For child residents assumed to be exposed to soil, the exposed surface area available for contact was the value for child skin surface area for exposure to soil recommended in RAGS Part E (USEPA, 2004: 2,800 cm^2 for both RME and CTE. This skin area assumes that head, hands, forearms, lower legs, and feet of the child are available for contact.

Values of soil adherence factors and chemical-specific dermal absorption factors provided in RAGS Part E (USEPA, 2004 were used to evaluate risks from exposure to soil. The following soil adherence factors were used for the RME and CTE exposure scenarios:

- Maintenance/ Occupational Workers and Adolescent Trespassers – 0.2 mg/cm^2 for the RME and 0.02 mg/cm^2 for the CTE (Exhibit 3.5).
- Construction Workers – 0.3 mg/cm^2 for the RME and 0.1 mg/cm^2 for the CTE (Exhibit 3.3).
- Future Adult Residents – 0.07 mg/cm^2 for the RME and 0.01 mg/cm^2 for the CTE (Exhibit 3.5).
- Future Child Residents – 0.2 mg/cm^2 for the RME and 0.04 mg/cm^2 for the CTE (Exhibit 3.5).

For constituents identified as COPCs in soil, the following absorption factors were used (USEPA, 2004:

- Arsenic – 0.03
- Cadmium – 0.001
- PAHs – 0.13
- Dioxins/furans – 0.03
- Aroclor 1260 – 0.14
- Other semivolatiles – 0.1
- Other inorganics and volatile organics – not evaluated for dermal contact with soil

Exposure parameters for the dermal exposure route are summarized in Tables 5-9 and 5-10, for RME and CTE, respectively.

<u>Incidental Ingestion of Soil</u>

Intakes associated with soil ingestion were estimated using the following equation (USEPA, 1989):

$$\text{Intake} = \frac{C \times IR \times FI \times EF \times ED \times CF}{BW \times AT}$$

where:

Intake	=	ingestion intake
C	=	chemical concentration in soil (mg/kg)
IR	=	soil/sediment ingestion rate (mg/day)
FI	=	fraction ingested from contaminated source (unitless)
EF	=	exposure frequency (days/year)
ED	=	exposure duration (years)
CF	=	conversion factor (1×10^{-6} kg/mg)

BW	=	body weight (kg)
AT	=	averaging time (days)
		for non-carcinogens: 365 days/year x ED
		for carcinogens: 365 days/year x 70 years

Exposure frequencies and durations for the incidental ingestion of soil are summarized in Tables 5-9 and 5-10, for RME and CTE, respectively. A default value of 1.0 (USEPA, 1989) was used for the fraction ingested from the contaminated source for the RME and CTE scenarios. For the RME scenario, the ingestion rate was set at 330 mg/day for the construction worker (USEPA, 2002c), 200 mg/day for the future child resident, and 100 mg/day for the other potential receptors (the maintenance/occupational worker, adolescent trespasser, and future adult resident; USEPA, 1993). Ingestion rates for the CTE are assumed to be one-half of the RME values.

Exposure parameters for the soil ingestion route are summarized in Tables 5-9 and 5-10 for RME and CTE, respectively.

Inhalation of Air Containing Fugitive Dust/Volatiles Emitted from Soil

All receptors were evaluated for inhalation of fugitive dusts. The amount of a chemical that a receptor takes in as a result of respiration was determined using the concentration of the contaminant in air. Intakes of particulates were calculated using following equation (USEPA, 2009):

$$\text{Exposure Level}_{ai} = \frac{(C_{ai})(ET)(EF)(ED)}{(AT)}$$

where:	Exposure Level$_{ai}$	=	exposure "i" from air via inhalation (mg/m^3)
	C_{ai}	=	concentration of chemical "i" in air (mg/m^3)
	ET	=	exposure time
	EF	=	exposure frequency
	ED	=	exposure duration
	AT	=	averaging time (days);
			for non-carcinogens, AT = ED x 365 days/year x 24 hrs/day = 8,760 hrs
			for carcinogens, AT = 70 years x 365 days/year x 24 hrs/day = 613,200 hrs

(Please note that “inhalation rate” is not a factor in the inhalation exposure calculation. The risk characterization compares site air concentrations of COPCs to the respective acceptable reference

concentrations or inhalation unit risks, not calculated site inhalation exposure doses to reference doses and/or inhalation cancer slope factors.)

The concentrations of chemicals in air resulting from emissions from soil were developed following procedures presented in USEPA Soil Screening Guidance (USEPA, 1996 and 2002a). The chemical concentration in air was calculated as follows:

$$C_{air} = C_{soil} \times \left[\frac{1}{PEF} + \frac{1}{VF} \right]$$

where:

C_{air}	=	chemical concentration in air, mg/m^3
C_{soil}	=	chemical concentration in soil, mg/kg
PEF	=	particulate emission factor, m^3/kg
VF	=	volatilization factor, m^3/kg

The particulate emissions factor (PEF) relates the concentration of a chemical in soil with the concentration of dust particles in air. The PEF for construction workers (1.27×10^6 m^3/kg) was calculated using the equations presented in the supplemental SSL guidance document (USEPA, 2002a). The PEF for wind-generation of particulates from soil (1.3×10^{-9} m^3/kg) was calculated according to USEPA guidance (USEPA, 1996). A sample calculation of these PEFs is presented in Appendix G. The only volatile organic compound that was identified as a COPC in soil is naphthalene for the construction worker. The concentration of a VOCs in air released from soil is calculated using the methodology provided in the USEPA's Soil Screening Guidance (USEPA, 1996) and measured soil concentrations, site-specific information such as the fraction of organic carbon (f_{oc}), chemical-specific data, and model default values.

5.4.5.2 Exposure to Groundwater

<u>Dermal Contact with Groundwater</u>

Dermal contact with groundwater was evaluated by methods and equations provided in RAGS Part E (USEPA, 2004). Direct contact with groundwater at Site 21 is limited to exposure that would occur under hypothetical future residential and construction/excavation scenarios. Hypothetical future onsite residential receptors are assumed to use groundwater for domestic purposes (i.e., bathing, showering, and dish washing) that can result in dermal exposure. Short-term dermal exposure was assumed to occur for the construction worker during excavation activities. Groundwater at Site 21 is not currently used as a source of potable water and is not expected to be used for this purpose in the future. The applicable groundwater exposure frequencies, exposure durations, and body weights for the receptors were identical to those previously identified for soil contact

The following equation was used to assess exposures resulting from dermal contact with water (USEPA, 2004):

$$DADwi = [(DAevent)(EV)(ED)(EF)(A)] / [(BW)(AT)]$$

where:

DAD_{wi}	=	dermally absorbed dose of chemical "i" from water (mg/kg/day)
DA_{event}	=	absorbed dose per event (mg/cm^2-event)
EV	=	event frequency (events/day)
ED	=	exposure duration (year)
EF	=	exposure frequency (days/year)
A	=	skin surface area available for contact (cm^2)
BW	=	body weight (kg)
AT	=	averaging time (days);
		for non-carcinogens, AT = ED x 365 days/year;
		for carcinogens, AT = 70 yrs x 365 days/year

The exposed surface area of construction workers is based on assumed activities and on the assumptions outlined for dermal contact with soil. Current guidance (USEPA, 2004) was used to develop the following default assumptions concerning the amount of skin surface area available for contact for a receptor:

- For construction workers assumed exposed to groundwater, the surface area for RME and CTE was assumed to be 3,300 cm^2, the value recommended for soil contact in USEPA's dermal guidance (USEPA, 2004).

- Dermal intakes for residents were assumed total body exposure, 6,600 cm^2 for children (0 to 6 years of age) and 18,000 cm^2 for adults (USEPA, 2004).

The absorbed dose per event (DA_{event}) was estimated using a nonsteady-state approach for organic compounds and a traditional steady-state approach for inorganics. For organics, the following equations apply:

$$\text{If } t_{event} < t^{*}, \text{ then: } DA_{event} = (2FA)(Kp)(C_{gw})(CF)\left(\sqrt{\frac{6\,\tau\, t_{event}}{\pi}}\right)$$

$$\text{If } t_{event} > t^{*}, \text{ then: } DA_{event} = (FA)(K_p)(C_{gw})(CF)\left(\frac{t_{event}}{1+B} + 2T\left(\frac{1+3B+3B^2}{(1+B)^2}\right)\right)$$

where:

t_{event}	=	duration of event (hours/event)
t^*	=	time it takes to reach steady-state conditions (hours)
FA	=	fraction absorbed (dimensionless)
K_p	=	permeability coefficient from groundwater through skin (cm/ hours)
C_{gw}	=	concentration of chemical "i" in groundwater (mg/L)
T	=	lag time (hours)
π	=	constant (dimensionless; equal to 3.1416)
CF	=	conversion factor ($1x10^{-3}$ L/cm^3)
B	=	partitioning constant derived by Bunge Model (dimensionless)

The estimated length of time for a shower or bath is 10 minutes for CTE and 15 minutes for RME. Receptors are assumed to spend an additional 5 minutes in the bathroom following their shower or bath. Construction/excavation workers were assumed to be exposed to shallow groundwater in a trench 4 hours per day for the RME and 2 hours per day for CTE. An event frequency of one per day is assumed for CTE and RME (i.e., residents were assumed to take one shower or bath per day).

Values for the chemical-specific parameters (t^*, K_p, T, and B) were obtained from the USEPA dermal guidance (USEPA, 2004).

The following steady-state equation was used to estimate DA_{event} for inorganics:

$$DA_{event} = (K_p)\,(C_{gw})\,(t_{event})$$

The recommended default value of $1x10^{-3}$ was used for the dermal permeability of inorganic constituents, unless a chemical-specific value was provided in USEPA guidance. For most metals, dermal absorption is not a significant pathway because penetration through the skin is minimal.

Ingestion of Groundwater

Residents may be exposed to groundwater via direct ingestion, and intakes associated with ingestion of groundwater were evaluated using the following equation (USEPA, 1989):

$$Intake_{wi} = \frac{(C_{wi})(IR_w)(EF)(ED)}{(BW)(AT)}$$

where:

$Intake_{wi}$	=	intake of chemical "i" from water (mg/kg/day)
C_{wi}	=	concentration of chemical "i" in water (mg/L)
IR_w	=	ingestion rate for ground water (L/day)
EF	=	exposure frequency (days/year)
ED	=	exposure duration (year)
BW	=	body weight (kg)
AT	=	averaging time (days);
		for non-carcinogens, AT = ED x 365 days/year;
		for carcinogens, AT = 70 years x 365 days/year

Water ingestion rates for the adult resident were specified as 2.0 liters per day (RME) and 1.4 liters per day (CTE). For the child resident, water ingestion rates were 1.5 liters per day (RME) and 0.66 liters per day (CTE). The same exposure frequencies and durations used to assess dermal exposure to water were used to estimate intakes for ingestion of water.

Exposure parameters for exposure to groundwater are summarized in Tables 5-9 and 5-10, for RME and CTE, respectively.

Inhalation of Volatiles through Hypothetical Domestic Groundwater Use

Groundwater exposure may also result in inhalation of volatiles, typically for residential receptors who may be exposed while showering, bathing, washing dishes, etc. Inhalation exposures were estimated using a mass transfer model developed specifically for this exposure route in combination with an air intake estimation model. The mass transfer model accounts for inhalation that occurs during a shower and after a shower while the receptor remains in the closed bathroom. The method used was as follows (Foster and Chrostowski, 1987):

$$Intake_{si} = (S)(IR_{sh})(K)(EF)(ED)/(BW)(AT)(R_a)(CF)$$

$$K = D_s + \frac{\exp(-R_a \times D_t)}{R_a} - \frac{\exp R_a \times (D_s - D_t)}{R_a}$$

where: $Intake_{wi}$ = intake of chemical "i" from water via inhalation (mg/kg/day)

S = volatile chemical generation rate (µg/m^3-min - shower)

IR_{sh} = inhalation rate (L/min)

K = mass transfer coefficient (min)

EF = exposure frequency (showers/yr)

ED = exposure duration (yr)

BW = body weight (kg)

AT = averaging time or period of exposure (days)

R_a = air exchange rate (min^{-1})

CF = conversion factor (1 x 10^6 µg-L/mg-m^3)

D_s = shower duration (min)

D_t = total time in bathroom (min)

The estimated volatile chemical generation rate is based on two-phase film theory. The model uses contaminant-specific mass transfer coefficients, Henry's Law constants, droplet diameter, drop time, viscosity, and temperature. Shower inhalation rates are set at 10 L/min for adult and child residents (USEPA, 1989). The shower model calculations are presented in an Appendix G to the risk assessment.

Inhalation of Volatiles via Vapor Intrusion into Indoor Air

Volatilization of chemicals from groundwater into indoor air may occur, thereby exposing individuals inside buildings or dwellings. However, since no VOCs were above the vapor intrusion screening criteria, no VOCs were retained as COPCs for vapor intrusion at this site. Therefore, it was determined that a quantitative evaluation was not required because the potential risks associated with this pathway were regarded as minimal, and no further evaluation was performed.

Exposure of Workers to Volatiles in a Construction/Utility Trench

There are no well-established models available for estimating migration of volatiles from groundwater into a construction/utility trench. This risk assessment used an approach suggested by the Virginia Department of Environmental Quality (VDEQ, accessed online at http://www.deq.state.va.us/vrprisk/raguide.html, 2007) that is based on a combination of a vadose zone model to estimate volatilization of gases from contaminated groundwater into a trench, and a box model

to estimate dispersion of the contaminants from the air inside the trench into the above-ground atmosphere to estimate the EPC for air in a construction trench.

The airborne concentration of a contaminant in a trench was estimated using the following equation:

$$C_{trench} = C_{GW} \times VF$$

where: C_{trench} = air concentration of contaminant in the trench (µg/m^3)
C_{GW} = concentration of contaminant in groundwater (µg/L)
VF = volatilization factor (L/m^3)

The model used in this risk assessment assumes that a construction project could result in an excavation to 15 feet bgs or less. If the depth to groundwater at a site is less than 15 feet, the VDEQ model assumes that a worker would encounter groundwater when digging an excavation or a trench. The worker would then have direct exposure to the groundwater. The worker would also be exposed to contaminants in the air inside the trench that would result from volatilization from the groundwater pooling at the bottom of the trench.

The following equation was used to calculate VF for a trench less than 15 feet deep:

$$VF = (K_i \times A \times F \times 10^{-3} \times 10^{4} \times 3{,}600) / (ACH \times V)$$

where: K_i = overall mass transfer coefficient of contaminant (cm/s)
A = area of the trench (m^2)
F = fraction of floor through which contaminant can enter (unitless)
ACH = air changes per hour = 2 h^{-1}
V = volume of trench (m^3)
10^{-3} = conversion factor (L/cm^3)
10^{4} = conversion factor (cm^2/m^2)
3,600 = conversion factor (seconds/hr)

Studies of urban canyons suggest that if the ratio of trench width to trench depth, relative to wind direction, is less than or equal to 1, a circulation cell or cells will be set up within the trench that limits the degree of gas exchange with the atmosphere, and the ACH is assumed to be 2/hr based on measured ventilation rates of buildings. If the ratio of trench width to trench depth is greater than 1, air exchange between the trench and above-ground atmosphere is not restricted, and ACH is assumed to be 360/hr

based upon the ratio of trench depth to the average wind speed. The risk assessment assumed that the trench width to depth ratio is less than 1 and the ACH is assumed to be 2 hr^{-1}.

The overall mass transfer coefficient (K_i) was calculated as follows:

$$K_i = 1 / \{(1/k_iL) + [(RT) / (H_i\ k_iG)]\}$$

where:	k_iL	=	liquid-phase mass transfer coefficient of i cm/s
	R	=	ideal gas constant (atm-m^3/mole-°K) = 8.2×10^{-5}
	T	=	average system absolute temperature (°K) (Default = 298°K)
	H_i	=	Henry's Law constant of i (atm-m^3/mol)
	k_iG	=	gas-phase mass transfer coefficient of i (cm/s)

where:	k_iL	=	$(MWO_2/MWi)^{0.5} \times (T/298) \times kL,O_2$
	k_iL	=	liquid-phase mass transfer coefficient of component i (cm/s)
	MWO_2	=	molecular weight of O_2 (g/mol)
	MW_i	=	molecular weight of component i (g/mol)
	kL,O_2	=	liquid-phase mass transfer coefficient of oxygen at 25°C (cm/s)

The value of kL, O_2 is 0.002 cm/s.

$$k_iG = (MWH_2O/MW_i)^{0.335} \times (T/298)^{1.005} \times kG,\ H_2O$$

where:	kiG =	gas-phase mass transfer coefficient of component i (cm/s)
	MWH_2O =	molecular weight of water (g/mol)
	kG,H_2O =	gas-phase mass transfer coefficient of water vapor at 25°C (cm/s)

The value of kG, H_2O is 0.833 cm/s

Exposures for construction workers associated with the inhalation route were estimated in the following manner (USEPA, 1989):

$$\text{Intake}_{\text{trenchi}} = \frac{(C_{\text{trenchi}})(IR_a)(ET)(EF)(ED)}{(BW)(AT)}$$

where:	$Intake_{trenchi}$	=	intake of chemical "i" from air via inhalation (mg/kg/day)
	$C_{trenchi}$	=	concentration of chemical "i" in air (mg/m^3)
	IR_a	=	inhalation rate (m^3/hr) = 2.5 m^3/hr (USEPA, 2002c)
	ET	=	exposure time (hours/day)
	EF	=	exposure frequency (days/yr)
	ED	=	exposure duration (yr)
	BW	=	body weight (kg)
	AT	=	averaging time (days)
			for noncarcinogens, AT = ED x 365 days/yr
			for carcinogens, AT = 70 yr x 365 days/yr

Input assumptions for the volatilization from groundwater to outdoor air model are presented in Appendix G. Site-specific values were used whenever possible. Model default values were used when they are believed to be representative of site conditions. Chemical properties were obtained primarily from the Soil Screening Guidance (USEPA, 2002a).

5.5 TOXICITY ASSESSMENT

Oral and inhalation RfDs and CSFs used in the HHRA for Site 21 were obtained from the following primary literature sources (USEPA, 2003):

- Integrated Risk Information System (IRIS) (online at http://www.epa.gov/iris/subst/index.html).

- USEPA Provisional Peer Reviewed Toxicity Values (PPRTVs) – The Office of Research and Development/National Center for Environmental Assessment (NCEA) Superfund Health Risk Technical Support Center develops PPRTVs on a chemical-specific basis when requested by the USEPA's Superfund program.

- Annual Health Effects Assessment Summary Tables (HEAST) (USEPA, 1997b for chronic and subchronic toxicity values.

- Other Toxicity Values – These sources include but are not limited to California Environmental Protection Agency (Cal EPA) and the Agency for Toxic Substances and Disease Registry (ATSDR) toxicity values.

- The Risk Assessment Information System (RAIS) (online at http://rais.ornl.gov/tox/toxvals.shtml) for subchronic toxicity values.

Although RfDs and CSFs can be found in several toxicological sources, USEPA's IRIS online database is the preferred source for toxicity values. ORNL RSLs and the Annual Health Effects Summary Tables (HEAST, 1997b), as well as the PPRTVs, were used as sources of toxicity criteria, and guidance provided in RAGS-Part C (USEPA, 1991b) was used when evaluating subchronic risks for the construction worker.1

RfDs and CSFs for the constituents selected as COPCs for Site 21 are presented in Tables 5-11 through 5-14 (i.e., RAGS Part D tables; Table 5s and 6s).

5.5.1 Toxicity Criteria for Dermal Exposure

RfDs and CSFs found in literature are typically expressed as administered doses; therefore, these values are considered inappropriate for estimating the risks associated with dermal routes of exposure. Oral dose-response parameters based on administered doses must be adjusted to absorbed doses before the evaluation of estimated dermal exposure intakes is made.

The adjustment from administered to absorbed dose was made using chemical-specific absorption efficiencies published in available guidance [i.e., USEPA, 2004 (the primary reference), IRIS, Agency for Toxic Substances and Disease Registry (ATSDR) toxicological profiles, etc.] and the following equations:

$$RfD_{dermal} = (RfD_{oral})(ABS_{GI})$$

$$CSF_{dermal} = (CSF_{oral}) \ / \ (ABS_{GI})$$

where: ABS_{GI} = absorption efficiency in the gastrointestinal tract

Absorption efficiencies used in the Site 21 HHRA reflect USEPA's current dermal assessment guidance (USEPA, 2004).

5.5.2 Toxicity Criteria for Chromium

Toxicity criteria are available for two different forms of chromium, the trivalent state and the hexavalent state, of which the latter is considered to be more toxic. The screening of chromium was conducted

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1 Please note that in its comments on the Site 21 risk assessment (IEPA, 2011), IEPA provided recommendations for some additional toxicity criteria (primarily additional subchronic oral RfD values). These recommended toxicity criteria would have minimal impact on the overall risk characterization and remedial decision-making for the Site. Therefore, these comments are addressed in the Uncertainty Section (Section 5.7.4.2) of the Site 21 risk assessment.

assuming that 100 percent of the reported total chromium concentration is hexavalent. This is likely a conservative assumption, and the uncertainty associated with the assumption that all chromium is hexavalent chromium will be discussed in the uncertainty section of the HHRA.

5.5.3 Toxicity Criteria for Carcinogenic Effects of PAHs

Limited toxicity values are available to evaluate the carcinogenic effects from exposure to PAHs. The most extensively studied PAH is BaP, which is classified by USEPA as a probable human carcinogen. Although CSFs are available for BaP, insufficient data are available to calculate CSFs for other carcinogenic PAHs. Toxic effects for these chemicals were evaluated using the concept of estimated orders of potential potency, which relate the potency of the other potentially carcinogenic PAHs to the potency of BaP, as presented in current USEPA guidance (USEPA, 1993). The equivalent oral and inhalation CSFs for these chemicals were derived by multiplying the CSFs for BaP by the orders of potential potency. Inhalation unit risk values for non-BaP carcinogenic PAHs were obtained from the California EPA.

USEPA currently incorporates the use of age-dependent adjustment factors for carcinogens that act via a mutagenic mode of action. Carcinogenic PAHs were evaluated following USEPA's Guidelines for Carcinogen Risk Assessment (USEPA, 2005b) and Supplemental Guidance for Assessing Susceptibility from Early-Life Exposure to Carcinogens (USEPA, 2005a).

5.6 RISK CHARACTERIZATION

The baseline HHRA evaluated potential health risks associated with human exposure to chemicals present at Site 21. Quantitative risk estimates are based on the conservative assumption that an individual is exposed to multiple COPCs by multiple exposure pathways. In accordance with USEPA guidance, chemical- and pathway-specific risks were summed to provide estimates of total risk for a given receptor. Risk estimates were developed by integrating chemical intake levels with chemical-specific toxicity factors. Calculating risks for surface and subsurface soil separately would double the exposure that is assumed; therefore, the risks and HIs between surface and subsurface soil are averaged, then added to the total risk calculated for groundwater to achieve the overall risk summaries. Risk example calculations are provided in Appendix G.

ILCR estimates were generated for each COPC using estimated exposure intakes and published CSFs, as follows:

$$\text{ILCR} = \text{Estimated Exposure Intake} \times \text{CSF}$$

An ILCR of $1x10^{-6}$ indicates that the exposed receptor has a one-in-one-million chance of developing cancer from exposure to site COPCs under the defined exposure scenario. Alternatively, such a risk may be interpreted as representing one additional case of cancer in an exposed population of one million people.

Non-carcinogenic risks are assessed using the concept of HQs and hazards indices (HIs). The HQ for a COPC is the ratio of the estimated intake to the RfD, as follows:

$$HQ = (\text{Estimated Exposure Intake})/(\text{RfD})$$

An HI for a given exposure route is generated by summing the individual HQs for the COPCs. The HI is not a mathematical prediction of the severity of toxic effects and is therefore not a true risk. It is simply a numerical indicator of the possibility of the occurrence of non-carcinogenic (threshold) effects.

5.6.1 Comparison of Quantitative Risk Estimates to Benchmarks

To interpret the quantitative risks and to aid risk managers in determining the need for remediation at a site, quantitative risk estimates were compared to typical benchmarks. USEPA has defined the range of $1x10^{-4}$ to $1x10^{-6}$ as the ILCR target range for hazardous waste facilities addressed under CERCLA. The Illinois EPA goal for carcinogenic risks, as specified in TACO Tier 1 and 2, is $1x10^{-6}$, and for TACO Tier 3 (i.e., site-specific risk assessment) it is the range of $1x10^{-4}$ to $1x10^{-6}$ (with stipulations that the specific requirements of 35 IAC 742.915 (i) be met).

An HI exceeding unity (1.0) indicates that there may be potential non-carcinogenic health risks associated with exposure. If an HI exceeds unity, target organ effects associated with exposure to COPCs are segregated (and the HI is calculated on a target organ/target effect basis). Only those chemicals that affect the same target organ(s) or exhibit similar critical effect(s) are regarded as truly additive. Consequently, it may be possible for a cumulative HI to exceed 1.0, but no adverse health effects are anticipated if the COPCs do not affect the same target organ or exhibit the same critical effect. Individual target organ HIs for the receptors are presented in Appendix G.

5.6.2 Risk Assessment Results

The baseline HHRA conducted for Site 21 evaluated the risks potentially incurred by site maintenance/occupational workers, adolescent trespassers, construction workers, and hypothetical future residents. Both RME and CTE scenarios were evaluated. Tables 5-15 and 5-16 contain a summary of the estimated risks, with and without groundwater included, for Site 21 for the RME and CTE, respectively

(RAGS Part D tables; Table 9s). Calculations of the detailed chemical-specific risks for Site 21 are included in Appendix G. The following sections discuss the results of the risk characterization.

5.6.2.1 Carcinogenic Risks - RME

Quantitative estimates of carcinogenic effects are presented in the form of ILCRs. The target risk range for carcinogenic effects, as defined by the USEPA and Illinois TACO Tier 3, is between $1x10^{-4}$ and $1x10^{-6}$. The Illinois EPA goal for carcinogenic risks, as specified in TACO Tier 1 and 2, is $1x10^{-6}$. Estimated ILCRs for Site 21 are discussed in the following subsections. The carcinogenic risks calculated for the RME case are in Table 5-15 (RAGS Part D tables; Table 9s).

Carcinogenic Risks for Exposure to Surface Soil - RME

The ILCR for construction workers ($4x10^{-6}$) was within the USEPA and Illinois EPA TACO Tier 3 target risk range for carcinogenic effects of $1x10^{-4}$ and $1x10^{-6}$ but greater than the Illinois EPA TACO Tier 1 and 2 goal of $1x10^{-6}$ under the defined RME conditions. The elevated risk in the construction worker receptor is due to c-PAHs in surface soil.

The ILCR for maintenance/occupational workers ($8x10^{-5}$) was within the USEPA and Illinois EPA TACO Tier 3 target risk range for carcinogenic effects of $1x10^{-4}$ and $1x10^{-6}$, but greater than the Illinois EPA TACO Tier 1 and 2 goal of $1x10^{-6}$. The elevated risk in the occupational/maintenance worker receptor is predominantly attributed to arsenic and c-PAHs in surface soil.

The ILCR for adolescent trespassers ($1x10^{-5}$) was within the USEPA and Illinois EPA TACO Tier 3 target risk range for carcinogenic effects of $1x10^{-4}$ and $1x10^{-6}$, but greater than the Illinois EPA TACO Tier 1 and 2 goal of $1x10^{-6}$. The elevated risk in the adolescent trespasser receptor is predominantly attributed to c-PAHs in surface soil. However, it should be noted that this is a hypothetical receptor, since under current conditions the surface soils of Site 21 are covered by buildings and pavement.

The total ILCR for hypothetical future residents (adult + child) exposure to surface soil was $4x10^{-3}$, which is greater than the USEPA and Illinois EPA TACO Tier 3 target risk range for carcinogenic effects of $1x10^{-4}$ and $1x10^{-6}$, and the Illinois EPA TACO Tier 1 and 2 goal of $1x10^{-6}$. The residential risk is primarily attributed to exposure to carcinogenic c-PAHs and arsenic in surface soil.

Carcinogenic Risks for Exposure to Subsurface Soil - RME

The ILCR for construction workers ($3x10^{-6}$) was within the USEPA and Illinois EPA TACO Tier 3 target risk range for carcinogenic effects of $1x10^{-4}$ and $1x10^{-6}$, but greater than the Illinois EPA TACO Tier 1 and

2 goal of $1x10^{-6}$ under the defined RME conditions. The elevated risk in the construction worker receptor is attributed to c-PAHs in subsurface soil.

The total ILCR for hypothetical future residents (adult + child) exposure to subsurface soil was $3x10^{-3}$, which is greater than the USEPA and Illinois EPA TACO Tier 3 target risk range for carcinogenic effects of $1x10^{-4}$ and $1x10^{-6}$, and the Illinois EPA TACO Tier 1 and 2 goal of $1x10^{-6}$. The residential risk is primarily attributed to exposure to c-PAHs and arsenic in subsurface soil.

Carcinogenic Risks for Exposure to Groundwater - RME

The ILCR for construction workers ($8x10^{-9}$) was less than the target risk goal of $1x10^{-6}$.

Domestic use of groundwater at Site 21 is not expected to occur under current and/or future land uses because the facility and surrounding area are supplied by public water, the facility has a groundwater use restriction in place, and there are no drinking water wells located immediately downgradient of the site. However, the residential groundwater scenario was evaluated based on the assumption that groundwater at the site will be used as a source of domestic drinking water in the future for risk management purposes. The total ILCR ($3x10^{-4}$) for hypothetical future residents (adult + child) for groundwater use is greater than the USEPA target risk range and Illinois EPA goal for carcinogenic effects. The residential risk is primarily attributed to exposure to c-PAHs, arsenic, and dioxins by ingestion of groundwater.

5.6.2.2 Non-Carcinogenic Effects - RME

Quantitative estimates of non-carcinogenic (toxic) effects are presented in the form of HQs and HIs. As discussed above, the risk benchmark for HQs and HIs (calculated on a target organ-specific basis) is 1 (USEPA, 1989). Estimated HQs and HIs for Site 21 are discussed below and summarized in Table 5-15.

Non-Carcinogenic Risks for Exposure to Surface Soil - RME

The cumulative HIs for adolescent trespassers (HI = 0.05), maintenance/occupational workers (HI = 0.3), and future adult residents (HI = 0.9) were less than unity (1.0), indicating that adverse non-carcinogenic health effects are not anticipated for these receptors under the defined RME conditions.

The cumulative HI for the future child resident (HI = 8) exceeded unity. The major contributor to the child resident HI was arsenic and iron by ingestion (HQ = 8).

The cumulative HI for construction workers (HI = 13) exceeded unity. The major contributor to the construction worker HI was manganese by inhalation of particulates (HQ = 12). It should be noted that

the soil EPCs for the construction worker are conservatively assumed to be the maximum detected concentrations of COPCs. In addition, for manganese in surface soil the maximum detection is 2,420 mg/kg in a data set with a mean of 590 mg/kg and 95 percent UCL of 770 mg/kg. This possible outline may represent a hot spot.

Non-Carcinogenic Risks for Exposure to Subsurface Soil - RME

The cumulative HI for construction workers (HI = 10) exceeded unity. The major contributor to the construction worker HI was manganese by inhalation of particulates (HQ = 9).

The cumulative HI for the future child resident (HI = 8) exceeded unity. The major contributor to the child resident HI was arsenic, cobalt, and iron by ingestion (HQ = 7).

Non-Carcinogenic Risks for Exposure to Groundwater - RME

The cumulative groundwater HI for construction workers (HI = 0.4) was less than unity, indicating that adverse non-carcinogenic health effects are not anticipated for this receptor under the defined RME condition.

The cumulative HIs for adult and child residents (23 and 7) exceeded unity. However, the groundwater risks were based on assumed exposure to maximum detected concentrations, and exposure to groundwater at Site 21 is not expected to occur under current and/or future land uses.

5.6.2.3 Carcinogenic Risks - CTE

As discussed previously, an evaluation of the potential risks associated with the CTE scenario is included to provide a measure of the central, or average, case exposure. Estimated HQs and HIs for the CTE scenario for Site 21 are discussed below and summarized in Table 5-16.

Carcinogenic Risks for Exposure to Surface Soil - CTE

The ILCRs for construction workers ($2x10^{-7}$) and adolescent trespassers ($8x10^{-7}$) were less than the target risk goal of $1x10^{-6}$.

The ILCR for maintenance/occupational workers was $3x10^{-6}$, within the USEPA and Illinois EPA TACO Tier 3 target risk range for carcinogenic effects, but greater than the Illinois EPA TACO Tier 1 and 2 goal of $1x10^{-6}$.

The total ILCR for hypothetical future residents (adult + child) was $9x10^{-6}$, within the USEPA and Illinois EPA TACO Tier 3 target risk range for carcinogenic effects, but greater than the Illinois EPA TACO Tier 1 and 2 goal of $1x10^{-6}$.

Carcinogenic Risks for Exposure to Subsurface Soil - CTE

The ILCR for construction workers ($1x10^{-7}$) was less than the target risk goal of $1x10^{-6}$.

The total ILCR for hypothetical future residents (adult + child) was $7x10^{-6}$, within the USEPA and Illinois EPA TACO Tier 3 target risk range for carcinogenic effects, but greater than the Illinois EPA TACO Tier 1 and 2 goal of $1x10^{-6}$.

Carcinogenic Risks for Exposure to Groundwater - CTE

The ILCR for construction workers ($5x10^{-9}$) was less than the target risk goal of $1x10^{-6}$.

The total residential ILCR ($4x10^{-5}$) was within the USEPA and Illinois EPA TACO Tier 3 target risk range for carcinogenic effects of $1x10^{-4}$ and $1x10^{-6}$, but greater than the Illinois EPA goal of $1x10^{-6}$.

5.6.2.4 Non-Carcinogenic Effects - CTE

Non-Carcinogenic Risks for Exposure to Surface Soil - CTE

The cumulative HIs for maintenance/occupational workers (HI = 0.08), adolescent trespassers (HI = 0.008), future child residents (HI = 0.8) and future adult residents (HI = 0.08) were less than unity (1.0), indicating that adverse non-carcinogenic health effects are not anticipated for these receptors under the defined CTE conditions.

The cumulative HI for construction workers (HI = 2) exceeded unity. The major contributor to the construction worker HI was manganese by inhalation of particulates.

Non-Carcinogenic Risks for Exposure to Subsurface Soil - CTE

The cumulative HIs for future child residents (HI = 0.6) and future adult residents (HI = 0.07) were less than unity (1.0), indicating that adverse non-carcinogenic health effects are not anticipated for these receptors under the defined CTE conditions.

The cumulative HI for construction workers (HI = 2) exceeded unity. The major contributor to the construction worker HI was manganese by inhalation of particulates.

Non-Carcinogenic Risks for Exposure to Groundwater - CTE

The cumulative HI for construction workers (HI = 0.4) was less than unity (1.0), indicating that adverse non-carcinogenic health effects are not anticipated for these receptors under the defined CTE conditions.

The cumulative HIs for child and adult residents (HI = 10 and 5, respectively) exceeded unity. The major contributor was manganese by ingestion of groundwater for the adult, and manganese, cobalt and iron for the child. However, the groundwater risks were based on the assumed exposure to maximum detected concentrations, and exposure to groundwater at Site 21 is not expected to occur under current and/or future land use.

5.7 UNCERTAINTY ANALYSIS

The baseline HHRA for Site 21 was performed in accordance with current USEPA and Illinois EPA guidance. However, there are varying degrees of uncertainty associated with the baseline HHRA. This section presents a brief summary of uncertainties inherent in the HHRA and includes a discussion of how they may affect the quantitative risk estimates and conclusions of the risk analysis.

5.7.1 General Uncertainty in Risk Assessment

Uncertainty in the selection of COPCs is related to the current status of the predictive databases, grouping of samples, and procedures used to include or exclude constituents as COPCs. Uncertainty associated with the exposure assessment includes the values used as input variables for a given intake route or scenario, assumptions made to determine EPCs, and predictions regarding future land use and population characteristics. Uncertainty in the toxicity assessment includes the quality of the existing toxicity data needed to support dose-response relationships, and weight of evidence used to determine the carcinogenicity of COPCs. Uncertainty in risk characterization includes that associated with exposure to multiple chemicals, and the cumulative uncertainty from combining conservative assumptions made in earlier steps of the HHRA process.

Whereas there are various sources of uncertainty, the direction of uncertainty can be influenced by the assumptions made throughout the HHRA, including selection of COPCs and selection of values for dose-response relationships. To account for uncertainties in the development of a HHRA, conservative estimates must be made to make sure that the particular assumptions made are protective of sensitive subpopulations and maximum exposed individuals. Therefore, throughout the entire HHRA, assumptions that consider safety factors are made so that the final calculated risks are overestimated, and consequentially, very conservative.

The major sources of uncertainty associated with this HHRA are discussed below.

5.7.2 Uncertainty in Selection of COPCs

A minor amount of uncertainty is associated with the selection of COPCs that may affect the numerical risk estimates presented in the HHRA. The most significant issues related to uncertainty in COPC selection are the existing database (i.e., the use of validated or unvalidated sample results), the biased selection of sampling locations, inclusion of chemicals potentially attributable to background, screening levels used, and absence of screening levels for a few chemicals detected in the site media. A brief discussion of each of these issues is provided in the remainder of this section.

5.7.2.1 Existing Databases

The data used in the HHRA were based on the most recent analytical data collected at Site 21 during SI field activities. No historical data were used for HHRA purposes. The analytical data were validated according to the methodologies specified in the Site 21 RI/SI Work Plan (Tetra Tech, 2010). The qualification of data during the formal data validation process is not expected to compromise the results of the HHRA. Analytical data qualified as estimated were utilized, even though the reported concentrations or sample-specific quantitation limits may be somewhat imprecise. The use of estimated data adds to the uncertainty associated with the HHRA. However, the associated uncertainty is expected to be negligible compared to the other uncertainties inherent in the risk evaluation process (i.e., uncertainties with land uses, exposure scenarios, toxicological criteria, etc.). When determining exposure concentrations via statistical procedures, chemicals not detected were conservatively assumed to be present at concentrations equal to the sample-specific detection limits. Analytical results for chemicals qualified “R," rejected, were not used in the risk assessment.

5.7.2.2 Biased Selection of Sampling Locations

Soil boring and sample locations were selected to assist in detecting soil and groundwater contamination throughout the intended study area and used to conduct this risk assessment. Sample locations were biased toward areas where waste may have been placed in the past. The biased data collection strategy was designed to prevent overlooking a potential unacceptable human health risk. However, this most likely also overestimates the risks to potential receptors.

5.7.2.3 Chemicals Potentially Attributable to Background

No chemicals in soil and groundwater were eliminated as COPCs on the basis of comparisons to background concentrations.

5.7.2.4 COPC Screening Levels

The use of risk-based screening levels for soil and groundwater based on conservative residential land use scenarios corresponding to ILCRs of $1x10^{-6}$ and HIs of 0.1 should make certain that the significant contributors to risk from a site are evaluated. The elimination of chemicals that are present at concentrations that correspond to ILCRs less than $1x10^{-6}$ and HIs less than 0.1 should not affect the final conclusions of the HHRA, because these chemicals are not expected to cause a potential health concern at the concentrations detected.

5.7.2.5 Absence of COPC Screening Levels

Because of the lack of toxicity criteria, risk-based screening levels are currently not available for a few constituents detected at Site 21 (e.g., benzo(g,h,i)perylene, etc.). Therefore, screening levels available for surrogate chemicals were used as screening levels for these constituents. The use of these surrogates may increase the uncertainty in the HHRA. The direction of bias cannot be determined.

5.7.3 Uncertainty in the Exposure Assessment

Uncertainty in the exposure assessment can arise because of the methods used to calculate EPCs, determination of land use conditions, and selection of exposure parameters. Each of these is discussed below.

5.7.3.1 Exposure Point Concentrations

Uncertainty is associated with the use of the 95-percent UCL on the mean concentration as the EPC, as was done in the evaluation of the soil data. As a result of using the 95-percent UCL, the estimations of potential risk are most likely to be overestimated because this is a representation of the upper limit to which potential receptors would be exposed over the entire exposure period. The maximum concentration is also used when the UCL is greater than the maximum concentration: in the soil data evaluation for construction workers and residents for the RME scenario, and in the groundwater data evaluation for the RME scenario. The use of the maximum concentration as the EPC tends to overestimate potential risks because receptors are assumed to be exposed continuously to the maximum concentration for the entire exposure period, which is very unlikely. Moreover, many of the maximum results of COPCs are not representative of the entire soil dataset for a specific COPC, but are rather high outliers. For example, the maximum detected concentration of benzo(a)pyrene equivalents in subsurface soil (39.4 mg/kg) is nearly an order of magnitude greater than the next highest concentration (4.7 mg/kg) and 50 times higher than 19 of 22 subsurface soil samples. Therefore, theoretical excess lifetime cancer risks for construction workers and residents are likely overestimated given the application of the maximum

detected subsurface soil concentration of BaP Equivalents as the EPC. Inclusion of such high outlier maximum concentrations also will yield the calculation of relatively high mean and 95 percent UCL of the mean concentrations, potentially resulting in an overestimation of risks for scenarios that use statistical values as EPCs. For example, the maximum detected concentration of manganese in surface soil samples (2,420 mg/kg) is two times greater than the next three highest sample concentrations (1250, 1070, 965 mg/kg), and is an outlier for the dataset at the 10 percent, 5 percent, and 1 percent significance levels (ProUCL, 2010). The 95 percent UCL with the inclusion of the maximum detection is 769 mg/kg, while the 95 percent UCL of the dataset without the maximum (high outlier) is 626 mg/kg.

Uncertainty is also introduced when non-detected results are assigned a value of the quantitation limit when calculating the EPC. This most likely also overestimates the risks to potential receptors because most of these values would be lower than the detection limit.

5.7.3.2 Land Use

Uncertainty and conservatism may be introduced into the HHRA when estimated risks are not based on current land use patterns. The risks calculated in this HHRA are based on current and potential projected future land use at Site 21. However, a large source of conservatism in this HHRA is related to groundwater usage, especially in the future residential scenarios. This HHRA assumes that groundwater is used as a source of future domestic drinking water. However, groundwater is not currently used for this purpose, and it is unlikely that groundwater at the site would ever be used as a source of potable water in the future. Because of this, the inclusion of this pathway most likely overestimates the risks to potential residential receptors.

Therefore, in this HHRA, total risk estimates for the residential scenarios were calculated both with and without the groundwater pathway included, for comparison and risk management purposes. A discussion of the difference in these risk calculations is included in the Summary section (Section 5.8).

5.7.3.3 Exposure Parameters

Each exposure factor selected for use in the HHRA contains some associated uncertainty. Generally, exposure factors are based on surveys of physiological and lifestyle profiles across the United States. The attributes and activities studied in these surveys generally have a broad distribution. To avoid underestimation of exposure, USEPA guidelines (e.g., USEPA, 1991b) for the RME receptor were used, if applicable, which generally specify the use of the 95th percentile for most parameters. Therefore, the selected exposure factors for the RME receptor represent the upper bound of the observed or expected practices that are characteristic of the majority of the population. Because USEPA does not provide values for exposure factors for some receptors/pathways, professional judgment was used to determine

some values. When using professional judgment, an effort was made to be reasonably conservative. However, the use of professional judgment adds uncertainty to the HHRA.

Generally, uncertainty can be assessed for many assumptions made in determining factors for calculating exposures and intakes. Many of these parameters were determined from the statistical analyses of human population characteristics. Often, the database used to summarize a particular exposure parameter (i.e., body weight) is quite large. Consequently, the values chosen for such variables in the RME scenario have low uncertainty. For many parameters for which limited information exists (e.g., dermal absorption), greater uncertainty exists. For example, current USEPA guidance (USEPA, 2004) does not provide dermal absorption factors for exposure to most metals (except arsenic and cadmium) and VOCs in soil. Therefore, risks for dermal contact with soil were not evaluated for metals other than arsenic and cadmium, or for VOCs. Consequently, risks from exposure to soil may be underestimated by omitting metals and VOCs from the dermal HHRA.

5.7.4 Migration of Soil to Groundwater Pathway

Maximum subsurface and surface soil concentrations were compared to the USEPA Generic soil-to-groundwater SSLs and Illinois EPA TACO and Non-TACO Migration to Groundwater Class I screening criteria. These results are summarized in Table 5-17 (a and b) for surface and subsurface soil, respectively.

The comparison shown in Table 5-17a indicates that two VOCs (benzene and tetrachloroethylene), two SVOCs (carbazole and bis(2-ethylhexyl)phthalate,), some PAHs (benzo(a)anthracene BaP, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, chrysene, 2-methylnaphthalene, and naphthalene), some pesticides (4,4-DDD, 4,4-DDE, 4,4-DDT, alpha-BHC, alpha-chlordane, beta-BHC, delta-BHC, dieldrin, gamma-chlordane, lindane, endrin, and heptachlor epoxide), one PCB (Aroclor-1260), some dioxins/furans (1,2,3,4,6,7,8,9-OCDD; 1,2,3,4,6,7,8-HPCDF; 1,2,3,4,6,7,8-HPCDD; 1,2,3,4,7,8-HXCDF; 1,2,3,6,7,8-HXCDD; 1,2,3,6,7,8-HXCDF; 1,2,3,7,8,9-HXCDD; 1,2,3,7,8,9-HXCDF; 1,2,3,7,8-PECDD; 2,3,4,6,7,8-HXCDF; 2,3,4,7,8-PECDF; 2,3,7,8-TCDF; and 2,3,7,8-TCDD), one herbicide (2,4-D), and several metals (aluminum, antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, iron, lead, manganese, mercury, nickel, silver, vanadium, and zinc) were detected in surface soil at concentrations that exceeded one or more of the screening criteria.

The comparison shown in Table 5-17b indicates that four VOCs (benzene, chloromethane, ethylbenzene, and tetrachloroethylene), SVOC carbazole, some PAHs (benzo(a)anthracene BaP, benzo(b)fluoranthene, benzo(k)fluoranthene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, chrysene, 2-methylnaphthalene, and naphthalene), some pesticides (4,4-DDD, 4,4-DDE, 4,4-DDT, aldrin, alpha-BHC, alpha-chlordane,

beta-BHC, delta-BHC, dieldrin, gamma-chlordane, lindane, and heptachlor epoxide), two PCBs (Aroclor-1260 and Aroclor-1242), some dioxins/furans (1,2,3,4,6,7,8,9-OCDD; 1,2,3,4,6,7,8-HPCDD; 1,2,3,6,7,8-HXCDD; 1,2,3,7,8-PECDD; 2,3,4,7,8-PECDF; and 2,3,7,8-TCDD), one herbicide (2,4-D), and metals (aluminum, antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, iron, lead, manganese, mercury, nickel, selenium, vanadium, and zinc) were detected in subsurface soil at concentrations that exceeded one or more of the screening criteria.

These exceedances of SSLs may indicate the potential for chemicals to leach to groundwater and impact water quality. However, the majority of the chemicals detected in soil at concentrations exceeding SSLs for migration from soil to groundwater were not detected in groundwater samples collected at the site (two of the VOCs, all the SVOCs, all the dioxins/furans, all the herbicides, all but three of the pesticides, and about two-thirds of the metals).

Based on the above discussion and knowledge of site history, the potential exists for chemicals detected in soil to adversely impact environmental media downgradient of Site 21; however, it is unlikely that the concentrations of constituents in soil would adversely impact groundwater quality. In addition, exposure to groundwater at Site 21 is not expected to occur under current and/or future land uses because the facility and the area surrounding the facility are supplied by public water, the facility has a groundwater use restriction in place, and there are no drinking water wells located immediately downgradient of the site.

5.7.5 Uncertainty in the Toxicological Evaluation

Uncertainties associated with the toxicity assessment (determination of RfDs and CSFs and use of available criteria) are presented in this section.

5.7.5.1 Derivation of Toxicity Criteria

Uncertainty associated with the toxicity assessment is associated with hazard assessment and dose-response evaluations for the COPCs. The hazard assessment deals with characterizing the nature and strength of the evidence of causation or the likelihood that a chemical that induces adverse effects in animals will also induce adverse effects in humans. Hazard assessment of carcinogenicity is evaluated as a weight-of-evidence determination using USEPA methods. Positive animal cancer test data suggest that humans contain tissue(s) that may manifest a carcinogenic response; however, the animal data cannot necessarily be used to predict the target tissue in humans. In the hazard assessment of non-cancer effects, however, positive animal data often suggest the nature of the effects (i.e., the target tissues and type of effects) anticipated in humans.

Uncertainty in hazard assessment arises from the nature and quality of the animal and human data. Uncertainty is reduced when similar effects are observed across species, strain, sex, and exposure route; when the magnitude of the response is clearly dose related; when pharmacokinetic data indicate a similar fate in humans and animals; when postulated mechanisms of toxicity are similar for humans and animals; and when the COC is structurally similar to other chemicals for which the toxicity is more completely characterized.

Uncertainty in the dose-response evaluation includes determination of a CSF for the carcinogenic assessment and derivation of an RfD or RfC for the non-carcinogenic assessment. Uncertainty is introduced from interspecies (animal-to-human) extrapolation which, in the absence of quantitative pharmacokinetic or mechanistic data, is usually based on consideration of interspecies differences in basal metabolic rate. Uncertainty also results from intraspecies variation. Most toxicity experiments are performed with animals that are very similar in age and genotype, so intragroup biological variation is minimal, but the human population of concern may reflect a great deal of heterogeneity including unusual sensitivity or tolerance to the COPC. Even toxicity data from human occupational exposures reflect a bias because only those individuals sufficiently healthy to attend work regularly (the "healthy worker effect") and those not unusually sensitive to the chemical are likely to be occupationally exposed. Finally, uncertainty arises from the quality of the key study from which the quantitative estimate is derived and the database. For cancer effects, the uncertainty associated with dose-response factors is mitigated by assuming the 95-percent upper bound for the CSF. Another source of uncertainty in carcinogenic assessment is the method by which data from high doses in animal studies are extrapolated to the dose range expected for environmentally exposed humans. The linearized multistage model, which is used in nearly all quantitative estimations of human risk from animal data, is based on a non-threshold assumption of carcinogenesis. Evidence suggests, however, that epigenetic carcinogens, as well as many genotoxic carcinogens, have a threshold below which they are non-carcinogenic. Therefore, the use of the linearized multistage model is conservative for chemicals that exhibit a threshold for carcinogenicity.

For non-cancer effects, additional uncertainty factors may be applied in the derivation of the RfD or RfC to mitigate poor quality of the key study or gaps in the database. Additional uncertainty for non-cancer effects arises from the use of an effect level in the estimation of an RfD or RfC because this estimation is predicated on the assumption of a threshold below which adverse effects are not expected. Therefore, an uncertainty factor is usually applied to estimate a no-effect level. Additional uncertainty arises in estimation of an RfD or RfC for chronic exposure from subchronic data. Unless empirical data indicate that effects do not worsen with increasing duration of exposure, an additional uncertainty factor is applied to the no-effect level in the subchronic study. Uncertainty in the derivation of RfDs is mitigated by the use

of uncertainty and modifying factors that normally range between 3 and 10. The resulting combination of uncertainty and modifying factors may reach 1,000 or more.

The derivation of dermal RfDs and CSFs from oral values introduces uncertainty. This is particularly the case when chemical-specific gastrointestinal absorption rates are not available in the literature or when only qualitative statements regarding absorption are available.

5.7.5.2 Impact on Risk Characterization if IEPA Additional Toxicity Criteria Were Applied

During its review of the draft of this human health risk assessment (IEPA, 2011), IEPA proposed a number of toxicity criteria, primarily subchronic RfD from Tier 3 toxicity resources (per USEPA, 2003). The IEPA comments and the NAVY's responses to comments are provided in Appendix G. Summarized below is a comparison between the toxicity criteria that have been applied in the risk assessment and those additional toxicity values proposed by IEPA. This analysis is presented in its entirety in Appendix G. As indicated by this evaluation, there would not be substantive changes in the overall risk characterization nor risk decision-making if the alternative IEPA values are used.

For the following COPCs, IEPA's proposed subchronic oral reference doses are the same as the chronic RfD that were used in the Site 21 risk assessment: antimony, barium, and iron. Therefore there is no change in the risk assessment result for subchronic scenarios (i.e., the construction scenario) for these COPCs.

For a number of other COPCs, IEPA's recommended Tier 3 subchronic toxicity values are higher than those used in the Site 21 risk assessment (e.g., naphthalene, 2,3,7,8-TCDD, Aroclor 1260, benzene, tetrachloroethylene, chromium VI, and cobalt). Therefore, the risks calculated for the construction worker are more conservative in the Site 21 risk assessment than if these subchronic RfD are applied.

Likewise, for a number of other COPCs, the proposed Tier 3 subchronic RfC are higher than those used in the Site 21 risk assessment (e.g., benzene, chromium VI, cobalt, and vanadium). Therefore, the risks calculated for the construction worker are more conservative in the Site 21 risk assessment than if these subchronic RfC are applied.

Finally, a few of IEPA's proposed toxicity values are more conservative than those used in the Site 21 risk assessment. These include the chronic oral RfD for manganese (0.023 mg/kg-day rather than the value of 0.047 mg/kg-day used in the Site 21 risk assessment) and the subchronic oral RfD for aluminum (1 mg/kg-day vs. 2 mg/kg-day used in the risk assessment). Neither of these COPCs for the oral ingestion pathway were risk-drivers; therefore, changing the oral toxicity values of manganese and aluminum would not change the overall risk summary.

In summary, the summed HIs for ingestion and dermal for the construction worker are the same or very similar when the IEPA toxicity values are applied compared to the summed HIs in the Site 21 risk assessment. See the last section of Appendix G for this analysis.

5.7.5.3 Uncertainty Associated with Evaluation of the Dermal Exposure Pathway

According to RAGS Part E (USEPA, 2004), risks from dermal absorption from soil are to be quantitatively evaluated for arsenic, cadmium, chlordane, 2,4-dichlorophenoxyacetic acid, DDT, TCDD (and other dioxins), PAHs, PCBs, pentachlorophenol, and SVOCs because of the limited guidance available to estimate dermal absorption factors for other constituents. Of these, arsenic, cadmium, TCDD, PAHs, and PCBs are COPCs in soil. Therefore, the dermal route of exposure was evaluated quantitatively for these chemicals only. Risks for dermal exposure to metals (other than arsenic and cadmium) and VOCs identified as COPCs for soil were not quantified in the HHRA; consequently, potential risks may be underestimated by excluding these constituents from the dermal HHRA calculations.

Aqueous risks were calculated using a USEPA model presented in RAGS Part E (USEPA, 2004), which, according to the guidance, tends to overestimate intakes and risks for dermal contact for some chemicals (e.g., PAHs, PCBs). Because of the large uncertainties associated with dermal contact with water, risks from dermal absorption of PAHs, dioxins, and pentachlorophenol from groundwater were not evaluated in this HHRA. This may underestimate the risk estimates for groundwater. Appendices A and B of RAGS Part E discuss the uncertainties in the permeability coefficients for these chemicals and limitations of the dermal absorption model when evaluating chemicals.

5.7.5.4 Uncertainty Associated with Evaluation of Arsenic

In addition, human health HHRAs do not take into account the unique aspects of evaluating exposures to arsenic in soil. For example, risks from ingestion of arsenic in soil are often based on toxicity factors derived from studies of arsenic (soluble arsenate or arsenite) in drinking water. However, the toxicity of arsenic in drinking water cannot be directly extrapolated to toxicity of arsenic in soil because of differences in chemical form, bioavailability, and excretion kinetics. Because of the differences between soil arsenic and water arsenic, risks from arsenic in soil are likely to be lower than what would be calculated using default toxicity values for arsenic in drinking water (Valberg, 1997).

5.7.6 Uncertainty in the Risk Characterization

5.7.6.1 Uncertainty Associated with the Additivity of Effects

Uncertainty in risk characterization results primarily from assumptions made regarding additivity of effects from exposure to multiple COPCs from various exposure routes. High uncertainty exists when summing cancer risks for several substances across different exposure pathways. This assumes that each substance has a similar effect and/or mode of action. Often compounds affect different organs, have different mechanisms of action, and differ in their fate in the body, so additivity may not be an appropriate assumption. However, the assumption of additivity is made to provide a conservative estimate of risk. This may overestimate the risk.

5.7.6.2 Uncertainty Associated with the Risk Characterization of Surface and Subsurface Soil

Calculating risks for surface and subsurface soil separately doubles the exposure that is assumed because the dose calculations for both media apply the full default exposure factors. As this is an unrealistic scenario, the risks and HIs between surface and subsurface soil are averaged, then added to the total risk calculated for groundwater to achieve the overall risk summaries. This may either underestimate or overestimate risk.

5.7.6.3 Uncertainty Associated with Antagonistic or Synergistic Effects

Finally, the risk characterization does not consider antagonistic or synergistic effects. Little or no information is available to determine the potential for antagonism or synergism for the COPCs. Therefore, the uncertainty regarding antagonistic or synergistic effects is ambiguous because potential human health risks may either be underestimated or overestimated.

5.8 SUMMARY OF HUMAN HEALTH RISK ASSESSMENT

This section and Tables 5-15 and 5-16 present a summary of the HHRA findings for Site 21. Four potential receptor groups were evaluated: occupational/maintenance workers, adolescent trespassers, adult and child residents, and construction workers.

5.8.1 Non-Carcinogenic Risks

Pathway-specific RME and CTE HIs were less than or equal to 1.0 for occupational/maintenance workers and adolescent trespassers in the study area. For this reason, adverse non-carcinogenic health effects are not anticipated for these receptors at Site 21.

RME and CTE total HIs (12 and 2, respectively) are greater than 1.0 for the future construction workers in the study area. For future construction workers, the organ-specific HIs for the central nervous system (CNS) associated with inhalation of manganese on particulates/dusts from surface and subsurface soil accounted predominantly for the non-carcinogenic risk for the RME scenario. Cardiovascular system effects were 1.8, attributable to arsenic in soil. In the CTE scenario, the organ-specific HI for the CNS associated with inhalation of manganese on particulates/dusts from surface and subsurface soil accounted for most of the non-carcinogenic risk. Groundwater HIs for the construction worker scenario for both RME and CTE were below 1.0. RAGS Part D Table 9s are included in Appendix G and summarize organ-specific HIs for both RME and CTE.

5.8.1.1 Hypothetical Residential Scenario - No Domestic Use of Groundwater (Groundwater Ordinance in place)

In addition, if the domestic use of groundwater pathways are not included, RME and CTE HIs for future adult residents were less than 1.0. For this reason, with the groundwater ordinance in place, adverse non-carcinogenic health effects are also not anticipated for these receptors.

RME HIs are greater than 1.0 for future child residents in the study area. However, the CTE HIs for the future child resident are less than or equal to 1.0.

For future child residents, ingestion of subsurface and surface soil are the primary pathways of concern in the RME scenario. Arsenic, iron, and cobalt are COPCs in soil with HQs that each exceed 1.0. It should be noted that the future residential scenario with soil conservatively uses the maximum detected concentrations of COPCs as EPCs. RAGS Part D Table 9s are included in Appendix G and summarize organ-specific HIs for both RME and CTE.

Tables 5-15 and 5-16 summarize the hypothetical non-domestic use of groundwater scenario.

5.8.1.2 Hypothetical Residential Scenario with Domestic Use of Groundwater Pathways

Direct exposure to groundwater at Site 21 is not expected to occur under current and/or future land uses. However, the residential groundwater scenario was also evaluated based on the assumption that groundwater at the site, although very unlikely, could be used as a source of domestic drinking water in the future.

Pathway-specific RME and CTE HIs were greater than 1.0 for child and adult residents in the study area under this scenario.

For future child residents, ingestion of subsurface and surface soil and ingestion of groundwater are the primary pathways of concern in the RME scenario. Further examination of these results reveals that the organ-specific HIs for many target organs are greater than 1.0. These include HIs for potential toxic effects to blood, cardiovascular system (CVS), CNS, and the gastrointestinal system, with multiple COPCs contributing to these estimates.

For future adult residents, ingestion of groundwater would be the primary pathway of concern in this RME scenario. COPCs cobalt, iron, and manganese in groundwater, if it were used for drinking water, are associated with target organ-specific HIs that are greater than 1.0. These target organ-specific HIs are for the blood, GI system, and CNS, respectively.

The exceedances of 1.0 by organ-specific HIs and individual contaminants indicate that adverse non-carcinogenic health effects are possible in this scenario, for future child and adult residents, especially in the highly unlikely event that groundwater were used for drinking water.

Tables 5-15 and 5-16 summarize this hypothetical domestic use groundwater scenario.

5.8.2 Carcinogenic Risks

RME and CTE cancer risk estimates for construction workers, adolescent trespassers, and occupational/maintenance workers for Site 21 do not exceed the target USEPA. While RME cancer risk estimates for these receptors exceed the Illinois EPA risk goal ($1x10^{-6}$) for TACO Tier 1 and 2, the baseline risk assessment provided in this report is consistent with a Tier 3 Evaluation. With a Tier 3 Evaluation, the risk range of $1x10^{-4}$ to $1x10^{-6}$ may be acceptable if the specific requirements of 35 IAC 742.915 (i) are also met.

5.8.2.1 Hypothetical Residential Scenario - No Domestic Use of Groundwater (Groundwater Ordinance in place)

The total site (excluding the domestic use of groundwater) RME cancer risk estimates for total future residents (adult and child) exceed the target USEPA and Illinois EPA TACO Tier 3 cancer risk range ($1x10^{-4}$ to $1x10^{-6}$) and the Illinois EPA TACO Tier 1 and 2 risk goal ($1x10^{-6}$). The CTE risk estimate is within the target USEPA and Illinois EPA TACO Tier 3 cancer risk range, but exceeds the Illinois EPA TACO Tier 1 and 2 risk goal.

The major contributors to cancer risk at Site 21 under this scenario are primarily arsenic and c-PAHs, and to a lesser degree Aroclor-1260 and dioxins, in surface and subsurface soil.

Tables 5-15 and 5-16 summarize the hypothetical non-domestic use of groundwater scenario.

5.8.2.2 Hypothetical Residential Scenario with Domestic Use of Groundwater Pathways

The total site (soil and groundwater) RME cancer risk estimate for total future residents (adult and child) exceeds the target USEPA and Illinois EPA TACO Tier 3 cancer risk range ($1x10^{-4}$ to $1x10^{-6}$) and the Illinois EPA TACO Tier 1 and 2 risk goal ($1x10^{-6}$). The CTE risk estimate is within the target USEPA cancer risk range, but exceeds the Illinois EPA TACO Tier 1 and 2 risk goal.

The major contributors to cancer risk at Site 21 under this scenario are arsenic and c-PAHs in subsurface and surface soil, and to a lesser degree dioxins and Arochlor-1260 in surface soil; and pentachlorophenol, arsenic, c-PAHs, tetrachloroethylene, dioxins, Aroclor-1260, and delta-BHC in groundwater.

5.8.3 <u>Human Health Risk Assessment Contaminants of Concern</u>

Based on the non-cancer and cancer evaluations, the following contaminants with non-cancer HQs greater than 1.0 or with cancer risks greater than $1x10^{-4}$ were identified as COCs: c-PAHs, arsenic, and iron for residential exposure to surface soil; arsenic, iron, cobalt, and c-PAHs for residential exposure to subsurface soil; and inhalation of manganese in subsurface and surface soil by construction workers.

If the domestic use of groundwater is taken into consideration, based on the non-cancer and cancer evaluations, the following contaminants with non-cancer HQs greater than 1.0 or with cancer risks greater than $1x10^{-4}$ were identified as additional COCs: arsenic, cobalt, iron, manganese, pentachlorophenol, and dioxins for residential exposure to groundwater. However, direct exposure to groundwater at Site 21 is not expected to occur under current and/or future land uses because the facility and the area surrounding the facility are supplied by public water, the facility has a groundwater use restriction in place, and there are no drinking water wells located downgradient of the site.

TABLE 5-1

HUMAN HEALTH SURFACE SOIL SCREENING ASSESSMENT
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Parameter	CAS No.	Minimum Result	Maximum Result	Average Positive Result	Overall Average	TACO - Residential Soil Inhalation[8]	NON-TACO - Residential Soil Inhalation[9]	TACO - Residential Soil Ingestion[8]	NON-TACO - Residential Soil Ingestion[9]	TACO - Industrial - Commercial Soil Inhalation[8]	NON-TACO - Industrial/ Commercial Soil Inhalation[9]	TACO - Industrial - Commercial Soil Ingestion[8]	NON-TACO - Industrial Commercial Soil Ingestion[10]
Volatile Organics (ug/kg)													
2-BUTANONE (METHYL ETHYL KETONE)	78-93-3	14	14	14	5	NC	NC	NC	NC	NC	NC	NC	NC
ACETONE	67-64-1	21	180 J	76	23	100000000	NC	7000000 N	NC	100000000	NC	NC	NC
BENZENE	71-43-2	0.56 J	1.1 J	1	2	800 C	NC	12000 C	NC	1600 C	NC	100000 C	NC
CARBON DISULFIDE	75-15-0	1.6 J	16	5	4	720000	NC	780000 N	NC	720000	NC	20000000 N	NC
CYCLOHEXANE	110-82-7	0.71 J	2.9 J	1	2	NC	280000	NC	NC	NC	280000	NC	NC
ETHYLBENZENE	100-41-4	0.9 J	0.9 J	1	3	400000	NC	780000 N	NC	400000	NC	20000000 N	NC
METHYL CYCLOHEXANE	108-87-2	0.43 J	3.7 J	2	2	NC	120000	NC	NC	NC	120000	NC	NC
TETRACHLOROETHENE	127-18-4	1.4 J	1.4 J	1	3	11000 C	NC	12000 C	NC	20000 C	NC	110000 C	NC
TOLUENE	108-88-3	1.1 J	1.4 J	1	3	650000	NC	1600000 N	NC	650000	NC	41000000 N	NC
TOTAL XYLENES	1330-20-7	1.6 J	1.6 J	2	3	320000	NC	1600000 N	NC	320000	NC	41000000 N	NC
Semivolatile Organics (ug/kg)													
1,1-BIPHENYL	92-52-4	62 J	62 J	62	183	NC	NC	NC	390000 N	NC	NC	NC	10000000 N
2-METHYLNAPHTHALENE	91-57-6	27	900	416	416	NC	NC	NC	NC	NC	NC	NC	NC
4-METHYLPHENOL	106-44-5	50 J	50 J	50	184	NC	NC	NC	39000 N	NC	NC	NC	1000000 N
ACENAPHTHENE	83-32-9	13	2200	304	236	NC	NC	470000 N	NC	NC	NC	12000000 N	NC
ACENAPHTHYLENE	208-96-8	20	680	125	58	NC	NC	NC	230000 N	NC	NC	NC	6100000 N
ACETOPHENONE	98-86-2	48 J	48 J	48	183	NC	NC	NC	NC	NC	NC	NC	NC
ANTHRACENE	120-12-7	37	7200	918	585	NC	NC	2300000 N	NC	NC	NC	61000000 N	NC
BAP EQUIVALENT-FULLND	NA	9.9373	50631	3566	3566	NC	NC	NC	NC	NC	NC	NC	NC
BENZO(A)ANTHRACENE	56-55-3	110	22000 J	1894	1722	NC	NC	**900 C**	NC	NC	NC	**8000 C**	NC
BENZO(A)PYRENE	50-32-8	200	38000 J	3334	2576	NC	NC	**90 C**	NC	NC	NC	**800 C**	NC
BENZO(B)FLUORANTHENE	205-99-2	290	59000 J	4383	3984	NC	NC	**900 C**	NC	NC	NC	**8000 C**	NC
BENZO(G,H,I)PERYLENE	191-24-2	150	24000 J	1944	1591	NC	NC	NC	230000 N	NC	NC	NC	6100000 N
BENZO(K)FLUORANTHENE	207-08-9	110	21000 J	1736	1578	NC	NC	**9000 C**	NC	NC	NC	78000 C	NC
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	51 J	3400 J	355	312	31000000	NC	46000 C	NC	31000000	NC	410000 C	NC
BUTYL BENZYL PHTHALATE	85-68-7	97 J	97 J	97	185	930000	NC	1600000 N	NC	930000	NC	41000000 N	NC
CARBAZOLE	86-74-8	66 J	2400	1087	509	NC	NC	32000 C	NC	NC	NC	290000 C	NC
CHRYSENE	218-01-9	130 J	31000 J	2491	2265	NC	NC	88000 C	NC	NC	NC	780000 C	NC
DI-N-BUTYL PHTHALATE	84-74-2	37 J	190 J	114	183	230000 N	NC	780000 N	NC	2300000	NC	20000000 N	NC
DIBENZO(A,H)ANTHRACENE	53-70-3	44	1100	326	179	NC	NC	**90 C**	NC	NC	NC	**800 C**	NC
DIBENZOFURAN	132-64-9	39 J	640	222	222	NC	NC	NC	NC	NC	NC	NC	NC
FLUORANTHENE	206-44-0	260	84000	6080	6080	NC	NC	310000 N	NC	NC	NC	8200000 N	NC
FLUORENE	86-73-7	11	1600	462	190	NC	NC	310000 N	NC	NC	NC	8200000 N	NC
INDENO(1,2,3-CD)PYRENE	193-39-5	150	36000 J	3039	2211	NC	NC	**900 C**	NC	NC	NC	**8000 C**	NC
NAPHTHALENE*	91-20-3	18	520	237	237	17000 N	NC	160000 N	NC	27000 N	NC	4100000 N	NC
PHENANTHRENE	85-01-8	250	30000	3105	3105	NC	NC	NC	230000 N	NC	NC	NC	6100000 N
PYRENE	129-00-0	240	70000	5049	5049	NC	NC	230000 N	NC	NC	NC	6100000 N	NC
TOTAL PAHS-FULLND	NA	2508	427249	32066	32066	NC	NC	NC	NC	NC	NC	NC	NC
Pesticides/PCBs (ug/kg)													
4,4'-DDD	72-54-8	0.75 J	520 J	101	101	NC	NC	3000 C	NC	NC	NC	24000 C	NC
4,4'-DDE	72-55-9	0.45 J	350 J	56	56	NC	NC	2000 C	NC	NC	NC	17000 C	NC
4,4'-DDT	50-29-3	0.77 J	740 J	81	81	NC	NC	2000 C	NC	1500000 C	NC	17000 C	NC
ALDRIN	309-00-2	0.23 J	0.33 J	0	0	3000 C	NC	40 C	NC	6600 C	NC	300 C	NC
ALPHA-BHC (ALPHA-HEXACHLOROCYCLOHEXANE)	319-84-6	0.28 J	12 J	4	1	800 C	NC	100 C	NC	1500 C	NC	900 C	NC
ALPHA-CHLORDANE	5103-71-9	0.64 J	27 J	6	3	NC	NC	NC	NC	NC	NC	NC	NC
AROCLOR-1260	11096-82-5	21 J	720 J	230	150	NC	NC	NC	NC	NC	NC	NC	NC
BETA-BHC (BETA-HEXACHLOROCYCLOHEXANE)	319-85-7	0.27 J	1 J	1	0	NC	NC	NC	NC	NC	NC	NC	NC
DELTA-BHC (DELTA-HEXACHLOROCYCLOHEXANE)	319-86-8	0.42 J	3.5 J	1	1	NC	NC	NC	NC	NC	NC	NC	NC
DIELDRIN	60-57-1	0.33 J	15 J	5	3	1000 C	NC	40 C	NC	2200 C	NC	400 C	NC
ENDOSULFAN I	959-98-8	0.2 J	14 J	4	1	NC	NC	NC	NC	NC	NC	NC	NC
ENDOSULFAN II	33213-65-9	0.58 J	4.6 J	2	1	NC	NC	NC	NC	NC	NC	NC	NC
ENDOSULFAN SULFATE	1031-07-8	0.96 J	25 J	7	4	NC	NC	NC	NC	NC	NC	NC	NC

TABLE 5-1

HUMAN HEALTH SURFACE SOIL SCREENING ASSESSMENT
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Parameter	TACO - Construction Worker Soil Ingestion[8]	NON-TACO - Construction Worker Soil Ingestion[10]	TACO - Construction Worker Soil Inhalation[8]	NON-TACO - Construction Worker Soil Inhalation[9]	ORNL Residential Soil Criteria[5]	ORNL Industrial Soil Criteria[5]	USEPA Residential Inhalation SSLs[7]	USEPA Industrial SSLs for Inhalation[7]	USEPA Construction Worker Direct Contact SSLs[6]	USEPA Construction Worker Inhalation SSLs[6]	COPC Flag[17]	Rationale for Contaminant Deletion or Selection
Volatile Organics (ug/kg)												
2-BUTANONE (METHYL ETHYL KETONE)	NC	NC	NC	NC	2800000 N	20000000 N	24000000 sat	24000000 SAT	19000000 N	2000000 N	NO	BSL
ACETONE	NC	NC	100000000	NC	6100000 N	63000000 N	NC	NC	28000000 N	110000 SAT	NO	BSL
BENZENE	2300000 C	NC	2200 C	NC	1100 C	5400 C	830 C	1600 C	390000 C	10000 C	NO	BSL
CARBON DISULFIDE	2000000 N	NC	900 N	NC	82000 N	370000 N	720000 sat	720000 sat	3100000 N	26000 N	NO	BSL
CYCLOHEXANE	NC	NC	NC	11000 N	700000 N	2900000 N	851000000000 N	1320000000000 N	NC	120000 SAT	NO	BSL
ETHYLBENZENE	2000000 N	NC	5800 N	NC	5400 C	27000 C	400000 sat	400000 sat	2000000 C	52000 C	NO	BSL
METHYL CYCLOHEXANE	NC	NC	NC	4600 N	NC	NC	490000 sat	490000 sat	NC	NC	NO	BSL
TETRACHLOROETHENE	2400000 C	NC	28000 C	NC	550 C	2600 C	10000 C	20000 C	40000 C	9100 C	NO	BSL
TOLUENE	41000000 N	NC	4200 N	NC	500000 N	4500000 N	650000 sat	650000 sat	2500000 N	820000 SAT	NO	BSL
TOTAL XYLENES	4100000 N	NC	560 N	NC	63000 N	270000 N	70000 N	110000 N	6200000 N	19000 N	NO	BSL
Semivolatile Organics (ug/kg)												
1,1-BIPHENYL	NC	1000000 N	NC	NC	390000 N	5100000 N	NC	NC	1500000 N	NC	NO	BSL
2-METHYLNAPHTHALENE	NC	NC	NC	NC	31000 N	410000 N	NC	NC	NC	NC	NO	BSL
4-METHYLPHENOL	NC	100000 N	NC	NC	31000 N	310000 N	NC	NC	NC	NC	NO	BSL
ACENAPHTHENE	12000000 N	NC	NC	NC	340000 N	3300000 N	NC	NC	1300000 N	NC	NO	BSL
ACENAPHTHYLENE	NC	6100000 N	NC	NC	340000 N	3300000 N	NC	NC	NC	NC	NO	BSL
ACETOPHENONE	NC	NC	NC	NC	780000 N	10000000 N	NC	NC	3100000 N	NC	NO	BSL
ANTHRACENE	61000000 N	NC	NC	NC	1700000 N	17000000 N	NC	NC	6700000 N	NC	NO	BSL
BAP EQUIVALENT-FULLND	17000 C	NC	NC	NC	**15 C**	NC	NC	NC	**2100 C**	230000 C	YES	ASL
BENZO(A)ANTHRACENE	170000 C	NC	NC	NC	**150 C**	**2100 C**	NC	NC	**21000 C**	2300000 C	YES	ASL
BENZO(A)PYRENE	17000 C	NC	NC	NC	**15 C**	**210 C**	NC	NC	**2100 C**	230000 C	YES	ASL
BENZO(B)FLUORANTHENE	170000 C	NC	NC	NC	**150 C**	**2100 C**	NC	NC	**21000 C**	NC	YES	ASL
BENZO(G,H,I)PERYLENE	NC	6100000 N	NC	NC	170000 N	1700000 N	NC	NC	NC	NC	NO	BSL
BENZO(K)FLUORANTHENE	1700000 C	NC	NC	NC	**1500 C**	21000 C	NC	NC	210000 C	2300000 C	YES	ASL
BIS(2-ETHYLHEXYL)PHTHALATE	410000 N	NC	31000000	NC	35000 C	120000 C	NC	NC	1200000 C	100000000 C	NO	BSL
BUTYL BENZYL PHTHALATE	41000000 N	NC	930000	NC	260000 C	910000 C	NC	NC	8800000 C	NC	NO	BSL
CARBAZOLE	6200000 C	NC	NC	NC	NC	NC	NC	NC	NC	NC	NO	BSL
CHRYSENE	17000000 C	NC	NC	NC	**15000 C**	210000 C	NC	NC	2100000 C	23000000 C	YES	ASL
DI-N-BUTYL PHTHALATE	20000000 N	NC	2300000	NC	610000 N	6200000 N	NC	NC	2400000 N	NC	NO	BSL
DIBENZO(A,H)ANTHRACENE	17000 C	NC	NC	NC	**15 C**	**210 C**	NC	NC	2100 C	210000 C	YES	ASL
DIBENZOFURAN	NC	82000 N	NC	NC	7800 N	100000 N	NC	NC	31000 N	NC	NO	BSL
FLUORANTHENE	8200000 N	NC	NC	NC	230000 N	2200000 N	NC	NC	890000 N	NC	NO	BSL
FLUORENE	8200000 N	NC	NC	NC	230000 N	2200000 N	NC	NC	890000 N	NC	NO	BSL
INDENO(1,2,3-CD)PYRENE	170000 C	NC	NC	NC	**150 C**	**2100 C**	NC	NC	**21000 C**	2300000 C	YES	ASL
NAPHTHALENE*	410000 N	NC	180	NC	3600 C	18000 C	17000 N	27000 N	450000 N	31000 C	NO	BSL
PHENANTHRENE	NC	6100000 N	NC	NC	170000 N	1700000 N	NC	NC	NC	NC	NO	BSL
PYRENE	6100000 N	NC	NC	NC	170000 N	1700000 N	NC	NC	670000 N	NC	NO	BSL
TOTAL PAHS-FULLND	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NO	BSL
Pesticides/PCBs (ug/kg)												
4,4'-DDD	520000 C	NC	NC	NC	2000 C	7200 C	NC	NC	69000 C	3600000 C	NO	BSL
4,4'-DDE	370000 C	NC	NC	NC	1400 C	5100 C	NC	NC	49000 C	2600000 C	NO	BSL
4,4'-DDT	10000 N	NC	2100000 C	NC	1700 C	7000 C	750000 C	1400000 C	58000 C	2600000 C	NO	BSL
ALDRIN	610 N	NC	9300 C	NC	29 C	100 C	3400 C	6300 C	980 C	51000 C	NO	BSL
ALPHA-BHC (ALPHA-HEXACHLOROCYCLOHEXANE)	20000 C	NC	2100 C	NC	77 C	270 C	750 C	1400 C	2600 C	140000 C	NO	BSL
ALPHA-CHLORDANE	NC	NC	NC	NC	1600 C	6500 C	72000 C	130000 C	55000 C	2500000 C	NO	BSL
AROCLOR-1260	NC	NC	NC	NC	**220 C**	740 C	NC	NC	7600 C	440000 C	YES	ASL
BETA-BHC (BETA-HEXACHLOROCYCLOHEXANE)	NC	NC	NC	NC	270 C	960 C	6000 C	11000 C	9300 C	470000 C	NO	BSL
DELTA-BHC (DELTA-HEXACHLOROCYCLOHEXANE)	NC	NC	NC	NC	77 C	270 C	NC	NC	NC	NC	NO	BSL
DIELDRIN	7800 C	NC	3100 C	NC	30 C	110 C	1100 C	2100 C	1000 C	54000 C	NO	BSL
ENDOSULFAN I	NC	NC	NC	NC	37000 N	370000 N	NC	NC	NC	NC	NO	BSL
ENDOSULFAN II	NC	NC	NC	NC	37000 N	370000 N	NC	NC	NC	NC	NO	BSL
ENDOSULFAN SULFATE	NC	NC	NC	NC	37000 N	370000 N	NC	NC	NC	NC	NO	BSL

TABLE 5-1

HUMAN HEALTH SURFACE SOIL SCREENING ASSESSMENT
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Parameter	CAS No.	Minimum Result	Maximum Result	Average Positive Result	Overall Average	TACO - Residential Soil Inhalation[8]	NON-TACO - Residential Soil Inhalation[9]	TACO - Residential Soil Ingestion[8]	NON-TACO - Residential Soil Ingestion[9]	TACO - Industrial - Commercial Soil Inhalation[8]	NON-TACO - Industrial/ Commercial Soil Inhalation[9]	TACO - Industrial - Commercial Soil Ingestion[8]	NON-TACO - Industrial Commercial Soil Ingestion[10]
Pesticides/PCBs (ug/kg)													
ENDRIN	72-20-8	0.71 J	224	39	15	NC	NC	2300 N	NC	NC	NC	61000 N	NC
ENDRIN ALDEHYDE	7421-93-4	0.39 J	28 J	8	2	NC	NC	NC	NC	NC	NC	NC	NC
ENDRIN + ENDRIN ALDEHYDE	NA	1.1 J	252 J	47	17	NC	NC	2300 N	NC	NC	NC	61000 N	NC
ENDRIN KETONE	53494-70-5	0.85 J	44 J	12	3	NC	NC	NC	NC	NC	NC	NC	NC
GAMMA-BHC (LINDANE; GAMMA-HEXACHLOROCYCLOHEXANE)	58-89-9	0.22 J	20	3	1	NC	NC	500 C	NC	NC	NC	4000 C	NC
GAMMA-CHLORDANE	5103-74-2	0.64 J	189 J	20	17	NC	NC	NC	NC	NC	NC	NC	NC
ALPHA + GAMMA CHLORDANE	NA	1.28 J	216 J	25	20	72000 C	NC	1800 C	NC	140000 C	NC	16000 C	NC
HEPTACHLOR EPOXIDE	1024-57-3	0.15 J	3	1	1	5000 C	NC	70 C	NC	9200 C	NC	600 C	NC
METHOXYCHLOR	72-43-5	0.35 J	37 J	8	6	NC	NC	39000 N	NC	NC	NC	1000000 N	NC
Dioxins/Furans (ng/kg)													
1,2,3,4,6,7,8,9-OCDD	3268-87-9	174	1310	742	742	NC	NC	NC	NC	NC	NC	NC	NC
1,2,3,4,6,7,8,9-OCDF	39001-02-0	19.8	141	80	80	NC	NC	NC	NC	NC	NC	NC	NC
1,2,3,4,6,7,8-HPCDD	35822-46-9	17.7	169	93	93	NC	NC	NC	NC	NC	NC	NC	NC
1,2,3,4,6,7,8-HPCDF	67562-39-4	9.64	82.4	46	46	NC	NC	NC	NC	NC	NC	NC	NC
1,2,3,4,7,8,9-HPCDF	55673-89-7	0.952 J	4.08 J	3	3	NC	NC	NC	NC	NC	NC	NC	NC
1,2,3,4,7,8-HXCDD	39227-28-6	1.9 J	1.9 J	2	2	NC	NC	NC	NC	NC	NC	NC	NC
1,2,3,4,7,8-HXCDF	70648-26-9	1.31 J	5.91	4	4	NC	NC	NC	NC	NC	NC	NC	NC
1,2,3,6,7,8-HXCDD	57653-85-7	1.14 J	7.9	5	5	NC	NC	NC	NC	NC	NC	NC	NC
1,2,3,6,7,8-HXCDF	57117-44-9	1.07 J	11.6	6	6	NC	NC	NC	NC	NC	NC	NC	NC
1,2,3,7,8,9-HXCDD	19408-74-3	0.81 J	5.17	3	3	NC	NC	NC	NC	NC	NC	NC	NC
1,2,3,7,8,9-HXCDF	72918-21-9	0.358 J	2.68 J	2	2	NC	NC	NC	NC	NC	NC	NC	NC
1,2,3,7,8-PECDD	40321-76-4	0.76 J	5.9 J	3	3	NC	NC	NC	NC	NC	NC	NC	NC
1,2,3,7,8-PECDF	57117-41-6	1.92 J	1.92 J	2	1	NC	NC	NC	NC	NC	NC	NC	NC
2,3,4,6,7,8-HXCDF	60851-34-5	1.84 J	26.2	14	14	NC	NC	NC	NC	NC	NC	NC	NC
2,3,4,7,8-PECDF	57117-31-4	3.66 J	57.5	31	31	NC	NC	NC	NC	NC	NC	NC	NC
2,3,7,8-TCDD	1746-01-6	0.198 J	0.816 J	1	1	NC	NC	NC	NC	NC	NC	NC	NC
2,3,7,8-TCDF	51207-31-9	3.17	3.17	3	2	NC	NC	NC	NC	NC	NC	NC	NC
TEQ FULLND	NA	3.63652	33.4667	19	19	NC	NC	NC	NC	NC	NC	NC	NC
TOTAL HPCDD	37871-00-4	33.9	326	180	180	NC	NC	NC	NC	NC	NC	NC	NC
TOTAL HPCDF	38998-75-3	25.2	202	114	114	NC	NC	NC	NC	NC	NC	NC	NC
TOTAL HXCDD	34465-46-8	10.6	67	39	39	NC	NC	NC	NC	NC	NC	NC	NC
TOTAL HXCDF	55684-94-1	29.8 J	393 J	211	211	NC	NC	NC	NC	NC	NC	NC	NC
TOTAL PECDD	36088-22-9	4.01 J	19.4 J	12	12	NC	NC	NC	NC	NC	NC	NC	NC
TOTAL PECDF	30402-15-4	40.9	712 J	376	376	NC	NC	NC	NC	NC	NC	NC	NC
TOTAL TCDD	41903-57-5	1.57	10.8	6	6	NC	NC	NC	NC	NC	NC	NC	NC
TOTAL TCDF	55722-27-5	16.2	215 J	116	116	NC	NC	NC	NC	NC	NC	NC	NC
Herbicides (ug/kg)													
2,4-D	94-75-7	217 J	217 J	217	37	NC	NC	78000 N	NC	NC	NC	2000000 N	NC
DICAMBA	1918-00-9	4.86 J	9.99 J	7	4	NC	NC	NC	NC	NC	NC	NC	NC
DINOSEB	88-85-7	17.2 J	17.2 J	17	14	NC	NC	7800 N	NC	NC	NC	200000 N	NC
Inorganics (mg/kg)													
ALUMINUM	7429-90-5	2470	29500	7623	7623	NC	100000 N	NC	**7800 N**	NC	100000 N	NC	100000 N
ANTIMONY	7440-36-0	0.627 J	5.22	2	1	NC	NC	**3.1 N**	NC	NC	NC	82 N	NC
ARSENIC	7440-38-2	3.12	48.4 J	12	12	750 C	NC	NC	NC	1200 C	NC	NC	NC
BARIUM*#	7440-39-3	29.3 J	234 J	76	76	69000 N	NC	550 N	NC	91000 N	NC	14000 N	NC
BERYLLIUM	7440-41-7	0.254	4.71 J	1	1	1300 C	NC	16 N	NC	2100 C	NC	410 N	NC
CADMIUM	7440-43-9	0.132	13	2	2	1800 C	NC	**7.8 N**	NC	2800 C	NC	200 N	NC
CALCIUM	7440-70-2	2240 J	133000	71561	71561	NC	NC	NC	NC	NC	NC	NC	NC
CHROMIUM	7440-47-3	5.38 J	163 J	20	20	270 C	NC	**23 N**	NC	420 C	NC	610 N	NC
COBALT	7440-48-4	2.31	17.7	7	7	NC	NC	470 N	NC	NC	NC	12000 N	NC
COPPER	7440-50-8	12.9	835	94	94	NC	NC	**290 N**	NC	NC	NC	8200 N	NC
IRON	7439-89-6	6660 J	69500 J	26762	26762	NC	NC	NC	**5500 N**	NC	NC	NC	100000 N

TABLE 5-1

HUMAN HEALTH SURFACE SOIL SCREENING ASSESSMENT
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Parameter	TACO - Construction Worker Soil Ingestion[8]	NON-TACO - Construction Worker Soil Ingestion[10]	TACO - Construction Worker Soil Inhalation[8]	NON-TACO - Construction Worker Soil Inhalation[9]	ORNL Residential Soil Criteria[5]	ORNL Industrial Soil Criteria[5]	USEPA Residential Inhalation SSLs[7]	USEPA Industrial SSLs for Inhalation[7]	USEPA Construction Worker Direct Contact SSLs[6]	USEPA Construction Worker Inhalation SSLs[6]	COPC Flag[17]	Rationale for Contaminant Deletion or Selection
Pesticides/PCBs (ug/kg)												
ENDRIN	6100 N	NC	NC	NC	1800 N	18000 N	NC	NC	7100 N	NC	NO	BSL
ENDRIN ALDEHYDE	NC	NC	NC	NC	1800 N	18000 N	NC	NC	NC	NC	NO	BSL
ENDRIN + ENDRIN ALDEHYDE	6100 N	NC	NC	NC	NC	NC	NC	NC	NC	NC	NO	BSL
ENDRIN KETONE	NC	NC	NC	NC	1800 N	18000 N	NC	NC	NC	NC	NO	BSL
GAMMA-BHC (LINDANE; GAMMA-HEXACHLOROCYCLOHEXANE)	96000 C	NC	NC	NC	520 C	2100 C	NC	NC	18000 C	NC	NO	BSL
GAMMA-CHLORDANE	NC	NC	NC	NC	1600 C	6500 C	72000 C	130000 C	55000 C	2500000 C	NO	BSL
ALPHA + GAMMA CHLORDANE	100000 C	NC	22000 C	NC	NC	NC	NC	NC	NC	NC	NO	BSL
HEPTACHLOR EPOXIDE	270 N	NC	13000 C	NC	53 C	190 C	4700 C	8800 C	1800 C	96000 C	NO	BSL
METHOXYCHLOR	100000 N	NC	NC	NC	31000 N	310000 N	NC	NC	120000 N	NC	NO	BSL
Dioxins/Furans (ng/kg)												
1,2,3,4,6,7,8,9-OCDD	NC	NC	NC	NC	15000 C	60000 C	NC	NC	NC	NC	NO	BSL
1,2,3,4,6,7,8,9-OCDF	NC	NC	NC	NC	15000 C	60000 C	NC	NC	NC	NC	NO	BSL
1,2,3,4,6,7,8-HPCDD	NC	NC	NC	NC	450 C	1800 C	NC	NC	NC	NC	NO	BSL
1,2,3,4,6,7,8-HPCDF	NC	NC	NC	NC	450 C	1800 C	NC	NC	NC	NC	NO	BSL
1,2,3,4,7,8,9-HPCDF	NC	NC	NC	NC	450 C	1800 C	NC	NC	NC	NC	NO	BSL
1,2,3,4,7,8-HXCDD	NC	NC	NC	NC	45 C	180 C	NC	NC	NC	NC	NO	BSL
1,2,3,4,7,8-HXCDF	NC	NC	NC	NC	45 C	180 C	NC	NC	NC	NC	NO	BSL
1,2,3,6,7,8-HXCDD	NC	NC	NC	NC	45 C	180 C	NC	NC	NC	NC	NO	BSL
1,2,3,6,7,8-HXCDF	NC	NC	NC	NC	45 C	180 C	NC	NC	NC	NC	NO	BSL
1,2,3,7,8,9-HXCDD	NC	NC	NC	NC	94 C	390 C	2540000 C	4750000 C	3200 C	190000 C	NO	BSL
1,2,3,7,8,9-HXCDF	NC	NC	NC	NC	45 C	180 C	NC	NC	NC	NC	NO	BSL
1,2,3,7,8-PECDD	NC	NC	NC	NC	**4.5 C**	18 C	NC	NC	NC	NC	YES	ASL
1,2,3,7,8-PECDF	NC	NC	NC	NC	150 C	600 C	NC	NC	NC	NC	NO	BSL
2,3,4,6,7,8-HXCDF	NC	NC	NC	NC	45 C	180 C	NC	NC	NC	NC	NO	BSL
2,3,4,7,8-PECDF	NC	NC	NC	NC	**15 C**	60 C	NC	NC	NC	NC	YES	ASL
2,3,7,8-TCDD	NC	NC	NC	NC	4.5 C	18 C	42 C	79 C	150 C	6500 C	NO	BSL
2,3,7,8-TCDF	NC	NC	NC	NC	45 C	180 C	NC	NC	NC	NC	NO	BSL
TEQ FULLND	NC	NC	NC	NC	**4.5 C**	NC	NC	NC	NC	NC	YES	ASL
TOTAL HPCDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NO	BSL
TOTAL HPCDF	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NO	BSL
TOTAL HXCDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NO	BSL
TOTAL HXCDF	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NO	BSL
TOTAL PECDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NO	BSL
TOTAL PECDF	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NO	BSL
TOTAL TCDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NO	BSL
TOTAL TCDF	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NO	BSL
Herbicides (ug/kg)												
2,4-D	200000 N	NC	NC	NC	69000 N	770000 N	NC	NC	270000 N	NC	NO	BSL
DICAMBA	NC	NC	NC	NC	180000 N	1800000 N	NC	NC	710000 N	NC	NO	BSL
DINOSEB	20000 N	NC	NC	NC	6100 N	62000 N	NC	NC	24000 N	NC	NO	BSL
Inorganics (mg/kg)												
ALUMINUM	NC	41000 N	NC	87000 N	**7700 N**	99000 N	709000 N	1100000 N	31000 N	**1800 N**	YES	ASL
ANTIMONY	8.2 N	NC	NC	NC	**3.1 N**	41 N	NC	NC	12 N	NC	YES	ASL
ARSENIC	61 N	NC	25000 C	NC	**0.39 C**	1.6 C	769 C	1440 C	**13 C**	**5.3 N**	YES	ASL
BARIUM*#	1400 N	NC	87000 N	NC	1500 N	19000 N	70900 N	110000 N	6200 N	**180 N**	YES	ASL
BERYLLIUM	41 N	NC	44000 C	NC	16 N	200 N	1380 C	2570 C	62 N	7.1 N	NO	BSL
CADMIUM	20 N	NC	59000 C	NC	**7 N**	80 N	1840 C	3430 C	28 N	**3.6 N**	YES	ASL
CALCIUM	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NO	BSL
CHROMIUM	410 N	NC	69	NC	NC	NC	276 C	515 C	NC	NC	YES	ASL
COBALT	1200 N	NC	NC	NC	**2.3 N**	30 N	1180 C	2210 C	**9.3 N**	**2.1 N**	YES	ASL
COPPER	820 N	NC	NC	NC	**310 N**	4100 N	NC	NC	1200 N	NC	YES	ASL
IRON	NC	14000 N	NC	NC	**5500 N**	72000 N	NC	NC	**22000 N**	NC	YES	ASL

TABLE 5-1

HUMAN HEALTH SURFACE SOIL SCREENING ASSESSMENT
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Parameter	CAS No.	Minimum Result	Maximum Result	Average Positive Result	Overall Average	TACO - Residential Soil Inhalation[8]	NON-TACO - Residential Soil Inhalation[9]	TACO - Residential Soil Ingestion[8]	NON-TACO - Residential Soil Ingestion[9]	TACO - Industrial - Commercial Soil Inhalation[8]	NON-TACO - Industrial/ Commercial Soil Inhalation[9]	TACO - Industrial - Commercial Soil Ingestion[8]	NON-TACO - Industrial Commercial Soil Ingestion[10]
Inorganics (mg/kg)													
LEAD[+]	7439-92-1	16.7	428	101	101	NC	NC	**400**	NC	NC	NC	800	NC
MAGNESIUM	7439-95-4	1440	75800	34817	34817	NC	NC	325000	NC	NC	NC	NC	NC
MANGANESE	7439-96-5	173	2420 J	589	589	6900 N	NC	**160 N**	NC	9100 N	NC	4100 N	NC
MERCURY	7439-97-6	0.0332	8.98	1	1	**1 N**	NC	**2.3 N**	NC	**1.6 N**	NC	61 N	NC
NICKEL	7440-02-0	5.56	56.2 J	22	22	13000 C	NC	160 N	NC	21000 C	NC	4100 N	NC
POTASSIUM	7440-09-7	428	1930	839	839	NC	NC	NC	NC	NC	NC	NC	NC
SILVER	7440-22-4	0.233	1.41	1	0	NC	NC	39 N	NC	NC	NC	1000 N	NC
SODIUM	7440-23-5	230	2080	927	927	NC	NC	NC	NC	NC	NC	NC	NC
VANADIUM	7440-62-2	8.94	25.7	17	17	NC	NC	55 N	NC	NC	NC	1400 N	NC
ZINC	7440-66-6	46.5	1230	247	247	NC	NC	2300 N	NC	NC	NC	61000 N	NC

TABLE 5-1

HUMAN HEALTH SURFACE SOIL SCREENING ASSESSMENT
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Parameter	TACO - Construction Worker Soil Ingestion[8]	NON-TACO - Construction Worker Soil Ingestion[10]	TACO - Construction Worker Soil Inhalation[8]	NON-TACO - Construction Worker Soil Inhalation[9]	ORNL Residential Soil Criteria[5]	ORNL Industrial Soil Criteria[5]	USEPA Residential Inhalation SSLs[7]	USEPA Industrial SSLs for Inhalation[7]	USEPA Construction Worker Direct Contact SSLs[6]	USEPA Construction Worker Inhalation SSLs[6]	COPC Flag[17]	Rationale for Contaminant Deletion or Selection
Inorganics (mg/kg)												
LEAD+	700	NC	NC	NC	**400**	800	NC	NC	NC	NC	NO	BSL+
MAGNESIUM	730000	NC	NC	NC	NC	NC	NC	NC	NC	NC	NO	BSL
MANGANESE	410 N	NC	870	NC	**180 N**	**2300 N**	7090 N	11000 N	4300 N	**18 N**	YES	ASL
MERCURY	6.1 N	NC	0.01	NC	**0.56 N**	**3.4 N**	**2.9 sat**	2.9 sat	**5 N**	110 N	YES	ASL
NICKEL	410 N	NC	440000 C	NC	150 N	2000 N	NC	NC	620 N	320 N	NO	BSL
POTASSIUM	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NO	BSL
SILVER	100 N	NC	NC	NC	39 N	510 N	NC	NC	150 N	NC	NO	BSL
SODIUM	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NO	BSL
VANADIUM	140 N	NC	NC	NC	39 N	**520 N**	NC	NC	**2.2 N**	36 N	YES	ASL
ZINC	6100 N	NC	NC	NC	2300 N	31000 N	NC	NC	9300 N	NC	NO	BSL

Associated Samples:
NTC21SB01-SO-0102
NTC21SB02-SO-0001
NTC21SB03-SO-0001
NTC21SB04-SO-0001
NTC21SB05-SO-0001
NTC21SB06-SO-0001
NTC21SB07-SO-0001
NTC21SB08-SO-0001
NTC21SB09-SO-0001
NTC21SB10-SO-0001
NTC21SB11-SO-0001
NTC21SB12-SO-0001
NTC21SB13-SO-0001
NTC21SB14-SO-0001
NTC21SB15-SO-0001
NTC21SB16-SO-0001
NTC21SB17-SO-0001
NTC21SB18-SO-0001
NTC21SB19-SO-0001
NTC21SB20-SO-0001
NTC21SB21-SO-0001
NTC21SB22-SO-0001

Footnotes:
1 - Sample and duplicate are counted as two separate samples when determining the minimum and maximum detected concentrations.
2 - The maximum detected concentration is used for screening purposes
3 - Illinois EPA Remediation Objectives for Class 1 Groundwater (online 2010).
4 - Background data used - Illinois EPA background concentration (Illinois EPA, Appendix A, Table G of TACO)
5 - USEPA ORNL Screening Level. The noncarcinogenic values (denoted with a "N" flag) are the ORNL value divided by 10 to correspond to a target hazard quotientof 0.1. Carcinogenic values represent an incremental cancer risk of 1.0E-06 (carcinogens denoted with a "C" flag) (USEPA Region IX, October 2004, Updated December 28, 2004).
6 - Soil Screening Levels for Migration from Soil to Air for Construction Worker Scenario were calculated by Tetra Tech, NUS using methodology and equations presented in the Supplemental Guidance For Developing Soil Screening Levels for Superfund Sites, OSWER 93355.4-24, December 2002.
7 - SSLs for the migration of chemicals from soil to groundwater and soil to air were calculated by Tetra Tech, NUS using the methodology and equations presented in the Supplemental Guidance For Developing Soil Screening Levels for Superfund Sites, OSWER 93355.4-24, December 2002 and online at http://rais.ornl.gov/epa/ssl1.shtml since these values are more recent than those published in the 1996 and 2002 SSL guidance documents.
8 - Section 742 Table A, Tier 1, Soil Remediation Objectives - Residential/Industrial/Commercial (Ingestion or Inhalation)(Online, 2010)
9 - Soil Remediation Objectives for Residential/Industrial/Commercial roperties, Non-TACO Chemicals (2010)
10 - Ten percent of the noncarcinogenic value is less than the carcinogenic value, therefore the noncarcinogenic value is presented.
11 - Values are for hexavalent chromium.
12 - Acenaphthene is used as a surrogate for acenaphthylene
13 - Pyrene is used as a surrogate for benzo(ghi)perylene and phenanthrene
14 - Nickle criteria based on nickle soluble salts
15 - TACO table footnote indicates that elemental Hg " Inhalation remediation objective only applies at sites where elemental mercury is a contaminant of concern."
16 - COPC flag for construction worker inhalation scenario only
17 - The chemical is selected as a COPC if the maximum detected concentration exceeds the risk-based COPC screening level.
BAP equivalent criteria based on BaP
Chlordane used as a surrogate for alpha + gamma chlordane
Endrin used as a surrogate for endrin + endrin aldehyde
Endosulfan used as a surrogate for endosulfan I
Shaded criterion indicates that the maximum detected concentration exceeds one or more screening criteria. Shaded chemical name indicates that the chemical was retained as a COPC.
+ The lead maximum soil concentration is only slightly above the residential screening value (428 mg/kg vs. 400 mg/kg), however the mean lead concentration (which USEPA recommends utilizing for risk evaluations) is way below the residential screening value (101 mg/kg). Therefore, lead is not retained as a COPC and will be discussed qualitatively, as the IEUBK and ALM risk evaluations would be well below acceptable results with such a low lead mean concentration.
*Inhalation pathway only
#Construction worker scenario only

Definitions:
C = Carcinogen
COPC = Chemical of potential concern
J = Estimated value
N = Non-carcinogen
NC = No criteria

Rationale Codes:
For Selection as a COPC:
ASL = Above COPC screening level

For Elimination as a COPC:
BSL = Below COPC screening level
NUT = Essential nutrient

TABLE 5-2

HUMAN HEALTH SUBSURFACE SOIL SCREENING ASSESSMENT
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Parameter	CAS No.	Minimum Result	Maximum Result	Average Positive Result	Overall Average	TACO - Residential Soil Inhalation[8]	NON-TACO - Residential Soil Inhalation[9]	TACO - Residential Soil Ingestion[8]	NON-TACO - Residential Soil Ingestion[9]	TACO - Industrial - Commercial Soil Inhalation[8]	NON-TACO - Industrial/ Commercial Soil Inhalation[9]	TACO - Industrial - Commercial Soil Ingestion[8]	NON-TACO - Industrial Commercial Soil Ingestion[10]
Volatile Organics (ug/kg)													
2-BUTANONE (METHYL ETHYL KETONE)	78-93-3	9 J	28 J	14.2	5.2	NC	NC	NC	NC	NC	NC	NC	NC
ACETONE	67-64-1	25 J	87	56.8	15.0	100000000	NC	7000000 N	NC	100000000	NC	NC	NC
BENZENE	71-43-2	0.41 J	4.8	1.8	2.3	800 C	NC	12000 C	NC	1600 C	NC	100000 C	NC
CARBON DISULFIDE	75-15-0	1.2 J	12	4.5	3.7	720000	NC	780000 N	NC	720000	NC	20000000 N	NC
CHLOROMETHANE	74-87-3	1 J	2.2 J	1.6	4.8	NC	11000 N	NC	NC	NC	18000 N	NC	NC
CIS-1,2-DICHLOROETHENE	156-59-2	1.5 J	1.5 J	1.5	4.9	1200000	NC	78000 N	NC	1200000	NC	2000000 N	NC
CYCLOHEXANE	110-82-7	0.62 J	9	2.4	2.4	NC	280000	NC	NC	NC	280000	NC	NC
ETHYLBENZENE	100-41-4	0.7 J	1.9 J	1.2	2.3	400000	NC	780000 N	NC	400000	NC	20000000 N	NC
ISOPROPYLBENZENE (CUMENE)	98-82-8	0.97 J	0.97 J	1.0	2.5	NC	NC	NC	NC	NC	NC	NC	NC
METHYLCYCLOHEXANE	108-87-2	1.2 J	11	3.9	3.7	NC	120000	NC	NC	NC	120000	NC	NC
TETRACHLOROETHENE	127-18-4	3.3 J	18	10.7	3.4	11000 C	NC	12000 C	NC	20000 C	NC	110000 C	NC
TOLUENE	108-88-3	1.4 J	5.6	3.0	2.9	650000	NC	1600000 N	NC	650000	NC	41000000 N	NC
TOTAL XYLENES	1330-20-7	2.2 J	2.2 J	2.2	2.6	320000	NC	1600000 N	NC	320000	NC	41000000 N	NC
TRICHLOROFLUOROMETHANE	75-69-4	1.4 J	2.8 J	2.3	2.6	NC	NC	NC	NC	NC	NC	NC	NC
Semivolatile Organics (ug/kg)													
1,1-BIPHENYL	92-52-4	96 J	96 J	96.0	192.2	NC	NC	NC	390000 N	NC	NC	NC	10000000 N
2-METHYLNAPHTHALENE	91-57-6	2.4 J	2100	348.5	254.1	NC	NC	NC	NC	NC	NC	NC	NC
ACENAPHTHENE	83-32-9	12	880	165.8	91.4	NC	NC	470000 N	NC	NC	NC	12000000 N	NC
ACENAPHTHYLENE	208-96-8	2.8 J	2000	223.0	112.5	NC	NC	NC	230000 N	NC	NC	NC	6100000 N
ACETOPHENONE	98-86-2	230 J	230 J	230.0	198.8	NC	NC	NC	NC	NC	NC	NC	NC
ANTHRACENE	120-12-7	2.9 J	5000	697.5	349.8	NC	NC	2300000 N	NC	NC	NC	61000000 N	NC
BAP EQUIVALENT-FULLND	NA	8.4353	39374	2316.8	2316.8	NC	NC	NC	NC	NC	NC	NC	NC
BENZALDEHYDE	100-52-7	220 J	220 J	220.0	185.5	NC	620000	NC	780000 N	NC	620000	NC	20000000 N
BENZO(A)ANTHRACENE	56-55-3	2.5 J	32000	2140.3	1848.7	NC	NC	**900 C**	NC	NC	NC	**8000 C**	NC
BENZO(A)PYRENE	50-32-8	12	27000	2701.9	1597.5	NC	NC	**90 C**	NC	NC	NC	**800 C**	NC
BENZO(B)FLUORANTHENE	205-99-2	6.4	41000	3090.4	2388.5	NC	NC	**900 C**	NC	NC	NC	**8000 C**	NC
BENZO(G,H,I)PERYLENE	191-24-2	4.1	11000	973.0	708.2	NC	NC	NC	230000 N	NC	NC	NC	6100000 N
BENZO(K)FLUORANTHENE	207-08-9	7.2	14000	1135.9	878.2	NC	NC	**9000 C**	NC	NC	NC	78000 C	NC
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	54 J	280 J	170.4	196.3	31000000	NC	46000 C	NC	31000000	NC	410000 C	NC
BUTYL BENZYL PHTHALATE	85-68-7	110 J	110 J	110.0	200.9	930000	NC	1600000 N	NC	930000	NC	41000000 N	NC
CARBAZOLE	86-74-8	430 J	1000	715.0	439.8	NC	NC	32000 C	NC	NC	NC	290000 C	NC
CHRYSENE	218-01-9	3.4 J	34000	2091.1	1996.1	NC	NC	88000 C	NC	NC	NC	780000 C	NC
DIBENZO(A,H)ANTHRACENE	53-70-3	2.4 J	3300	440.9	181.6	NC	NC	**90 C**	NC	NC	NC	**800 C**	NC
DIBENZOFURAN	132-64-9	34 J	670	209.6	208.9	NC	NC	NC	NC	NC	NC	NC	NC
FLUORANTHENE	206-44-0	6.8	56000	4247.6	3668.6	NC	NC	310000 N	NC	NC	NC	8200000 N	NC
FLUORENE	86-73-7	2.5 J	1200	253.9	72.7	NC	NC	310000 N	NC	NC	NC	8200000 N	NC
INDENO(1,2,3-CD)PYRENE	193-39-5	12	16000	1706.9	1009.5	NC	NC	**900 C**	NC	NC	NC	**8000 C**	NC
NAPHTHALENE	91-20-3	3.8 J	4600	593.8	432.4	17000 N	NC	160000 N	NC	27000 N	NC	4100000 N	NC
PHENANTHRENE	85-01-8	1.8 J	11000	1498.3	1430.3	NC	NC	NC	230000 N	NC	NC	NC	6100000 N
PYRENE	129-00-0	6.9	52000	3730.6	3222.2	NC	NC	230000 N	NC	NC	NC	6100000 N	NC
TOTAL PAHS-FULLND	NA	61.1	308070	20255.1	20255.1	NC	NC	NC	NC	NC	NC	NC	NC
Pesticides/PCBs (ug/kg)													
4,4'-DDD	72-54-8	0.37 J	480	120.2	49.4	NC	NC	3000 C	NC	NC	NC	24000 C	NC
4,4'-DDE	72-55-9	0.69 J	300	57.0	26.1	NC	NC	2000 C	NC	NC	NC	17000 C	NC
4,4'-DDT	50-29-3	1.2 J	240 J	40.1	18.4	NC	NC	2000 C	NC	1500000 C	NC	17000 C	NC
ALDRIN	309-00-2	0.83 J	0.83 J	0.8	0.2	3000 C	NC	40 C	NC	6600 C	NC	300 C	NC
ALPHA-BHC (ALPHA-HEXACHLOROCYCLOHEXANE)	319-84-6	0.27 J	2.8 J	0.9	0.4	800 C	NC	100 C	NC	1500 C	NC	900 C	NC
ALPHA-CHLORDANE	5103-71-9	0.41 J	26 J	8.1	2.7	NC	NC	NC	NC	NC	NC	NC	NC
AROCLOR-1242	53469-21-9	47 J	47 J	47.0	12.1	NC	NC	NC	NC	NC	NC	NC	NC
AROCLOR-1260	11096-82-5	29 J	440 J	156.5	63.7	NC	NC	NC	NC	NC	NC	NC	NC
BETA-BHC (BETA-HEXACHLOROCYCLOHEXANE)	319-85-7	0.57 J	1.1 J	0.8	0.3	NC	NC	NC	NC	NC	NC	NC	NC
DELTA-BHC (DELTA-HEXACHLOROCYCLOHEXANE)	319-86-8	0.25 J	3	1.1	0.4	NC	NC	NC	NC	NC	NC	NC	NC
DIELDRIN	60-57-1	0.87 J	5.6 J	2.3	1.1	1000 C	NC	40 C	NC	2200 C	NC	400 C	NC
ENDOSULFAN I	959-98-8	0.29 J	3.22 J	1.4	0.4	NC	NC	NC	NC	NC	NC	NC	NC
ENDOSULFAN II	33213-65-9	0.19 J	1.26	0.8	0.5	NC	NC	NC	NC	NC	NC	NC	NC

TABLE 5-2

HUMAN HEALTH SUBSURFACE SOIL SCREENING ASSESSMENT
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Parameter	TACO - Construction Worker Soil Ingestion[8]	NON-TACO - Construction Worker Soil Ingestion[10]	TACO - Construction Worker Soil Inhalation[9]	NON-TACO - Construction Worker Soil Inhalation[8]	ORNL Residential Soil Criteria[5]	ORNL Industrial Soil Criteria[5]	USEPA Residential Inhalation SSLs[7]	USEPA Industrial SSLs for Inhalation[7]	USEPA Construction Worker Direct Contact SSLs[6]	USEPA Construction Worker Inhalation SSLs[6]	COPC Flag[17]	Rationale for Contaminant Deletion or Selection
Volatile Organics (ug/kg)												
2-BUTANONE (METHYL ETHYL KETONE)	NC	NC	NC	NC	2800000 N	20000000 N	24000000 sat	24000000 SAT	19000000 N	2000000 N	NO	BSL
ACETONE	NC	NC	100000000	NC	6100000 N	63000000 N	NC	NC	28000000 N	110000000 SAT	NO	BSL
BENZENE	2300000 C	NC	2200 C	NC	1100 C	5400 C	830 C	1600 C	390000 C	10000 C	NO	BSL
CARBON DISULFIDE	2000000 N	NC	900 N	NC	82000 N	370000 N	720000 sat	720000 sat	3100000 N	26000 N	NO	BSL
CHLOROMETHANE	NC	NC	NC	1100 N	12000 N	50000 N	2100 C	3900 C	NC	3500 N	NO	BSL
CIS-1,2-DICHLOROETHENE	2000000 N	NC	1200000	NC	78000 N	1000000 N	NC	NC	310000 N	NC	NO	BSL
CYCLOHEXANE	NC	NC	NC	11000 N	700000 N	2900000 N	851000000000 N	1320000000000 N	NC	120000 SAT	NO	BSL
ETHYLBENZENE	2000000 N	NC	5800 N	NC	5400 C	27000 C	400000 sat	400000 sat	2000000 C	52000 C	NO	BSL
ISOPROPYLBENZENE (CUMENE)	NC	NC	NC	NC	210000 N	1100000 N	850000 sat	850000 sat	3100000 N	270000 SAT	NO	BSL
METHYLCYCLOHEXANE	NC	NC	NC	4600 N	NC	NC	490000 sat	490000 sat	NC	NC	NO	BSL
TETRACHLOROETHENE	2400000 C	NC	28000 C	NC	550 C	2600 C	10000 C	20000 C	40000 C	9100 C	NO	BSL
TOLUENE	41000000 N	NC	4200 N	NC	500000 N	4500000 N	650000 sat	650000 sat	2500000 N	820000 SAT	NO	BSL
TOTAL XYLENES	4100000 N	NC	560 N	NC	63000 N	270000 N	70000 N	110000 N	6200000 N	19000 N	NO	BSL
TRICHLOROFLUOROMETHANE	NC	NC	NC	NC	79000 N	340000 N	110000 N	160000 N	9300000 N	24000 N	NO	BSL
Semivolatile Organics (ug/kg)												
1,1-BIPHENYL	NC	1000000 N	NC	NC	390000 N	5100000 N	NC	NC	1500000 N	NC	NO	BSL
2-METHYLNAPHTHALENE	NC	NC	NC	NC	31000 N	410000 N	NC	NC	NC	NC	NO	BSL
ACENAPHTHENE	12000000 N	NC	NC	NC	340000 N	3300000 N	NC	NC	1300000 N	NC	NO	BSL
ACENAPHTHYLENE	NC	6100000 N	NC	NC	340000 N	3300000 N	NC	NC	NC	NC	NO	BSL
ACETOPHENONE	NC	NC	NC	NC	780000 N	10000000 N	NC	NC	3100000 N	NC	NO	BSL
ANTHRACENE	61000000 N	NC	NC	NC	1700000 N	17000000 N	NC	NC	6700000 N	NC	NO	BSL
BAP EQUIVALENT-FULLND	**17000 C**	NC	NC	NC	**15 C**	**210 C**	NC	NC	**2100 C**	230000 C	YES	ASL
BENZALDEHYDE	NC	20000000 N	NC	620000	780000 N	10000000 N	NC	NC	3100000 N	NC	NO	BSL
BENZO(A)ANTHRACENE	170000 C	NC	NC	NC	**150 C**	**2100 C**	NC	NC	**21000 C**	2300000 C	YES	ASL
BENZO(A)PYRENE	**17000 C**	NC	NC	NC	**15 C**	**210 C**	NC	NC	**2100 C**	230000 C	YES	ASL
BENZO(B)FLUORANTHENE	170000 C	NC	NC	NC	**150 C**	**2100 C**	NC	NC	**21000 C**	NC	YES	ASL
BENZO(G,H,I)PERYLENE	NC	6100000 N	NC	NC	170000 N	1700000 N	NC	NC	NC	NC	NO	BSL
BENZO(K)FLUORANTHENE	1700000 C	NC	NC	NC	**1500 C**	21000 C	NC	NC	210000 C	2300000 C	NO	BSL
BIS(2-ETHYLHEXYL)PHTHALATE	410000 N	NC	31000000	NC	35000 C	120000 C	NC	NC	1200000 C	100000000 C	NO	BSL
BUTYL BENZYL PHTHALATE	41000000 N	NC	930000	NC	260000 C	910000 C	NC	NC	8800000 C	NC	NO	BSL
CARBAZOLE	6200000 C	NC	NC	NC	NC	NC	NC	NC	NC	NC	NO	BSL
CHRYSENE	17000000 C	NC	NC	NC	**15000 C**	210000 C	NC	NC	2100000 C	23000000 C	YES	ASL
DIBENZO(A,H)ANTHRACENE	17000 C	NC	NC	NC	**15 C**	**210 C**	NC	NC	**2100 C**	210000 C	YES	ASL
DIBENZOFURAN	NC	82000 N	NC	NC	7800 N	100000 N	NC	NC	31000 N	NC	NO	BSL
FLUORANTHENE	8200000 N	NC	NC	NC	230000 N	2200000 N	NC	NC	890000 N	NC	NO	BSL
FLUORENE	8200000 N	NC	NC	NC	230000 N	2200000 N	NC	NC	890000 N	NC	NO	BSL
INDENO(1,2,3-CD)PYRENE	170000 C	NC	NC	NC	**150 C**	**2100 C**	NC	NC	21000 C	2300000 C	NO	BSL
NAPHTHALENE	410000 N	NC	**180 N**	NC	**3600 C**	18000 C	17000 N	27000 N	450000 N	31000 C	NO	BSL
PHENANTHRENE	NC	6100000 N	NC	NC	170000 N	1700000 N	NC	NC	NC	NC	NO	BSL
PYRENE	6100000 N	NC	NC	NC	170000 N	1700000 N	NC	NC	670000 N	NC	NO	BSL
TOTAL PAHS-FULLND	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NO	BSL
Pesticides/PCBs (ug/kg)												
4,4'-DDD	520000 C	NC	NC	NC	2000 C	7200 C	NC	NC	69000 C	3600000 C	NO	BSL
4,4'-DDE	370000 C	NC	NC	NC	1400 C	5100 C	NC	NC	49000 C	2600000 C	NO	BSL
4,4'-DDT	10000 N	NC	2100000 C	NC	1700 C	7000 C	750000 C	1400000 C	58000 C	2600000 C	NO	BSL
ALDRIN	610 N	NC	9300 C	NC	29 C	100 C	3400 C	6300 C	980 C	51000 C	NO	BSL
ALPHA-BHC (ALPHA-HEXACHLOROCYCLOHEXANE)	20000 C	NC	2100 C	NC	77 C	270 C	750 C	1400 C	2600 C	140000 C	NO	BSL
ALPHA-CHLORDANE	NC	NC	NC	NC	1600 C	6500 C	72000 C	130000 C	55000 C	2500000 C	NO	BSL
AROCLOR-1242	NC	NC	NC	NC	220 C	740 C	NC	NC	7600 C	440000 C	NO	BSL
AROCLOR-1260	NC	NC	NC	NC	**220 C**	740 C	NC	NC	7600 C	440000 C	YES	ASL
BETA-BHC (BETA-HEXACHLOROCYCLOHEXANE)	NC	NC	NC	NC	270 C	960 C	6000 C	11000 C	9300 C	470000 C	NO	BSL
DELTA-BHC (DELTA-HEXACHLOROCYCLOHEXANE)	NC	NC	NC	NC	77 C	270 C	NC	NC	NC	NC	NO	BSL
DIELDRIN	7800 C	NC	3100 C	NC	30 C	110 C	1100 C	2100 C	1000 C	54000 C	NO	BSL
ENDOSULFAN I	NC	NC	NC	NC	37000 N	370000 N	NC	NC	140000 N	NC	NO	BSL
ENDOSULFAN II	NC	NC	NC	NC	37000 N	370000 N	NC	NC	140000 N	NC	NO	BSL

TABLE 5-2

HUMAN HEALTH SUBSURFACE SOIL SCREENING ASSESSMENT
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Parameter	CAS No.	Minimum Result	Maximum Result	Average Positive Result	Overall Average	TACO - Residential Soil Inhalation[8]	NON-TACO - Residential Soil Inhalation[9]	TACO - Residential Soil Ingestion[8]	NON-TACO - Residential Soil Ingestion[9]	TACO - Industrial - Commercial Soil Inhalation[8]	NON-TACO - Industrial/ Commercial Soil Inhalation[9]	TACO - Industrial - Commercial Soil Ingestion[8]	NON-TACO - Industrial Commercial Soil Ingestion[10]
Pesticides/PCBs (ug/kg)													
ENDOSULFAN SULFATE	1031-07-8	0.65 J	8.7 J	3.1	1.4	NC	NC	NC	NC	NC	NC	NC	NC
ENDRIN	72-20-8	0.82 J	3.2 J	1.7	0.7	NC	NC	2300 N	NC	NC	NC	61000 N	NC
ENDRIN ALDEHYDE	7421-93-4	1.1 J	4.9 J	3.0	0.6	NC	NC	NC	NC	NC	NC	NC	NC
ENDRIN + ENDRIN ALDEHYDE	NA	1.92 J	8.1 J	4.7	1.4	NC	NC	2300 N	NC	NC	NC	61000 N	NC
ENDRIN KETONE	53494-70-5	1.5 J	1.5 J	1.5	0.5	NC	NC	NC	NC	NC	NC	NC	NC
GAMMA-BHC (LINDANE; GAMMA-HEXACHLOROCYCLOHEXANE)	58-89-9	0.33 J	2.3 J	0.9	0.3	NC	NC	500 C	NC	NC	NC	4000 C	NC
GAMMA-CHLORDANE	5103-74-2	0.15 J	46 J	7.3	4.1	NC	NC	NC	NC	NC	NC	NC	NC
HEPTACHLOR EPOXIDE	1024-57-3	0.26 J	6.9 J	2.4	0.9	5000 C	NC	70 C	NC	9200 C	NC	600 C	NC
METHOXYCHLOR	72-43-5	0.8 J	34.2 J	7.0	3.3	NC	NC	39000 N	NC	NC	NC	1000000 N	NC
ALPHA + GAMMA CHLORDANE	NA	0.56 J	72 J	15.4	6.8	72000 C	NC	1800 C	NC	140000 C	NC	16000 C	NC
Dioxins/Furans (ng/kg)													
1,2,3,4,6,7,8,9-OCDD	3268-87-9	1950	1950	1950.0	1950.0	NC	NC	NC	NC	NC	NC	NC	NC
1,2,3,4,6,7,8,9-OCDF	39001-02-0	44.8	44.8	44.8	44.8	NC	NC	NC	NC	NC	NC	NC	NC
1,2,3,4,6,7,8-HPCDD	35822-46-9	167	167	167.0	167.0	NC	NC	NC	NC	NC	NC	NC	NC
1,2,3,4,6,7,8-HPCDF	67562-39-4	18.1	18.1	18.1	18.1	NC	NC	NC	NC	NC	NC	NC	NC
1,2,3,4,7,8,9-HPCDF	55673-89-7	1.7 J	1.7 J	1.7	1.7	NC	NC	NC	NC	NC	NC	NC	NC
1,2,3,4,7,8-HXCDD	39227-28-6	1.0 J	1.0 J	1.0	1.0	NC	NC	NC	NC	NC	NC	NC	NC
1,2,3,4,7,8-HXCDF	70648-26-9	2.6 J	2.6 J	2.6	2.6	NC	NC	NC	NC	NC	NC	NC	NC
1,2,3,6,7,8-HXCDD	57653-85-7	3.6 J	3.6 J	3.6	3.6	NC	NC	NC	NC	NC	NC	NC	NC
1,2,3,6,7,8-HXCDF	57117-44-9	1.4 J	1.4 J	1.4	1.4	NC	NC	NC	NC	NC	NC	NC	NC
1,2,3,7,8,9-HXCDD	19408-74-3	2.4 J	2.4 J	2.4	2.4	NC	NC	NC	NC	NC	NC	NC	NC
1,2,3,7,8,9-HXCDF	72918-21-9	0.7 J	0.7 J	0.7	0.7	NC	NC	NC	NC	NC	NC	NC	NC
1,2,3,7,8-PECDD	40321-76-4	0.6 J	0.6 J	0.6	0.6	NC	NC	NC	NC	NC	NC	NC	NC
2,3,4,6,7,8-HXCDF	60851-34-5	2.1 J	2.1 J	2.1	2.1	NC	NC	NC	NC	NC	NC	NC	NC
2,3,4,7,8-PECDF	57117-31-4	2.8 J	2.8 J	2.8	2.8	NC	NC	NC	NC	NC	NC	NC	NC
2,3,7,8-TCDD	1746-01-6	0.3 J	0.3 J	0.3	0.3	NC	NC	NC	NC	NC	NC	NC	NC
TEQ FULLND	NA	5.6	5.6	5.6	5.6	NC	NC	NC	NC	NC	NC	NC	NC
TOTAL HPCDD	37871-00-4	335	335	335.0	335.0	NC	NC	NC	NC	NC	NC	NC	NC
TOTAL HPCDF	38998-75-3	61.3	61.3	61.3	61.3	NC	NC	NC	NC	NC	NC	NC	NC
TOTAL HXCDD	34465-46-8	29.8	29.8	29.8	29.8	NC	NC	NC	NC	NC	NC	NC	NC
TOTAL HXCDF	55684-94-1	40.4	40.4	40.4	40.4	NC	NC	NC	NC	NC	NC	NC	NC
TOTAL PECDD	36088-22-9	4.8 J	4.8 J	4.8	4.8	NC	NC	NC	NC	NC	NC	NC	NC
TOTAL PECDF	30402-15-4	32.5	32.5	32.5	32.5	NC	NC	NC	NC	NC	NC	NC	NC
TOTAL TCDD	41903-57-5	2.9	2.9	2.9	2.9	NC	NC	NC	NC	NC	NC	NC	NC
TOTAL TCDF	55722-27-5	12.6	12.6	12.6	12.6	NC	NC	NC	NC	NC	NC	NC	NC
Herbicides (ug/kg)													
2,4-D (Dichlorophenoxy Acetic Acid, 2,4-)	94-75-7	54.6 J	54.6 J	54.6	31.0	NC	NC	78000 N	NC	NC	NC	2000000 N	NC
DICAMBA	1918-00-9	6.13 J	29.2 J	11.5	4.9	NC	NC	NC	NC	NC	NC	NC	NC
Inorganics (mg/kg)													
ALUMINUM	7429-90-5	3720	24300	9343.2	9343.2	NC	100000 N	NC	**7800 N**	NC	100000 N	NC	100000 N
ANTIMONY	7440-36-0	0.6	0.6	0.6	0.4	NC	NC	3.1 N	NC	NC	NC	82 N	NC
ARSENIC	7440-38-2	4.2	85 J	12.1	12.1	750 C	NC	NC	NC	1200 C	NC	NC	NC
BARIUM	7440-39-3	12.4 J	157 J	69.3	69.3	69000 N	NC	550 N	NC	91000 N	NC	14000 N	NC
BERYLLIUM	7440-41-7	0.2	4.1	1.0	1.0	1300 C	NC	16 N	NC	2100 C	NC	410 N	NC
CADMIUM	7440-43-9	0.1	9.6	1.3	1.2	1800 C	NC	**7.8 N**	NC	2800 C	NC	200 N	NC
CALCIUM	7440-70-2	4280 J	177000	54851.8	54851.8	NC	NC	NC	NC	NC	NC	NC	NC
CHROMIUM	7440-47-3	7.9	34.3 J	15.1	15.1	270 C	NC	**23 N**	NC	420 C	NC	610 N	NC
COBALT	7440-48-4	2.3	23.8	8.9	8.9	NC	NC	470 N	NC	NC	NC	12000 N	NC
COPPER	7440-50-8	9.9	124 J	47.6	47.6	NC	NC	290 N	NC	NC	NC	8200 N	NC
IRON	7439-89-6	6560	65800 J	26966.4	26966.4	NC	NC	NC	**5500 N**	NC	NC	NC	100000 N
LEAD	7439-92-1	8.86	228 J	54.5	54.5	NC	NC	400	NC	NC	NC	800	NC
MAGNESIUM	7439-95-4	3150	81500	26891.8	26891.8	NC	NC	325000	NC	NC	NC	NC	NC
MANGANESE	7439-96-5	203	1690	661.5	661.5	6900 N	NC	**160 N**	NC	9100 N	NC	4100 N	NC
MERCURY*[#]	7439-97-6	0.0	0.5	0.1	0.1	1 N	NC	2.3 N	NC	1.6 N	NC	61 N	NC
NICKEL	7440-02-0	4.4	44.4 J	23.2	23.2	13000 C	NC	160 N	NC	21000 C	NC	4100 N	NC

TABLE 5-2

HUMAN HEALTH SUBSURFACE SOIL SCREENING ASSESSMENT
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Parameter	TACO - Construction Worker Soil Ingestion[8]	NON-TACO - Construction Worker Soil Ingestion[10]	TACO - Construction Worker Soil Inhalation[9]	NON-TACO - Construction Worker Soil Inhalation[8]	ORNL Residential Soil Criteria[5]	ORNL Industrial Soil Criteria[5]	USEPA Residential Inhalation SSLs[7]	USEPA Industrial SSLs for Inhalation[7]	USEPA Construction Worker Direct Contact SSLs[6]	USEPA Construction Worker Inhalation SSLs[6]	COPC Flag[17]	Rationale for Contaminant Deletion or Selection
Pesticides/PCBs (ug/kg)												
ENDOSULFAN SULFATE	NC	NC	NC	NC	37000 N	370000 N	NC	NC	NC	NC	NO	BSL
ENDRIN	6100 N	NC	NC	NC	1800 N	18000 N	NC	NC	7100 N	NC	NO	BSL
ENDRIN ALDEHYDE	NC	NC	NC	NC	1800 N	18000 N	NC	NC	NC	NC	NO	BSL
ENDRIN + ENDRIN ALDEHYDE	6100 N	NC	NC	NC	NC	NC	NC	NC	NC	NC	NO	BSL
ENDRIN KETONE	NC	NC	NC	NC	1800 N	18000 N	NC	NC	NC	NC	NO	BSL
GAMMA-BHC (LINDANE; GAMMA-HEXACHLOROCYCLOHEXANE)	96000 C	NC	NC	NC	520 C	2100 C	NC	NC	18000 C	800000 C	NO	BSL
GAMMA-CHLORDANE	NC	NC	NC	NC	1600 C	6500 C	72000 C	130000 C	55000 C	2500000 C	NO	BSL
HEPTACHLOR EPOXIDE	270 N	NC	13000 C	NC	53 C	190 C	4700 C	8800 C	1800 C	96000 C	NO	BSL
METHOXYCHLOR	100000 N	NC	NC	NC	31000 N	310000 N	NC	NC	120000 N	NC	NO	BSL
ALPHA + GAMMA CHLORDANE	100000 C	NC	NC	22000 C	NC	NC	NC	NC	NC	NC	NO	BSL
Dioxins/Furans (ng/kg)												
1,2,3,4,6,7,8,9-OCDD	NC	NC	NC	NC	15000 C	60000 C	NC	NC	NC	NC	NO	BSL
1,2,3,4,6,7,8,9-OCDF	NC	NC	NC	NC	15000 C	60000 C	NC	NC	NC	NC	NO	BSL
1,2,3,4,6,7,8-HPCDD	NC	NC	NC	NC	450 C	1800 C	NC	NC	NC	NC	NO	BSL
1,2,3,4,6,7,8-HPCDF	NC	NC	NC	NC	450 C	1800 C	NC	NC	NC	NC	NO	BSL
1,2,3,4,7,8,9-HPCDF	NC	NC	NC	NC	450 C	1800 C	NC	NC	NC	NC	NO	BSL
1,2,3,4,7,8-HXCDD	NC	NC	NC	NC	45 C	180 C	NC	NC	NC	NC	NO	BSL
1,2,3,4,7,8-HXCDF	NC	NC	NC	NC	45 C	180 C	NC	NC	NC	NC	NO	BSL
1,2,3,6,7,8-HXCDD	NC	NC	NC	NC	45 C	180 C	NC	NC	NC	NC	NO	BSL
1,2,3,6,7,8-HXCDF	NC	NC	NC	NC	45 C	180 C	NC	NC	NC	NC	NO	BSL
1,2,3,7,8,9-HXCDD	NC	NC	NC	NC	94 C	390 C	2540000 C	4750000 C	3200 C	190000 C	NO	BSL
1,2,3,7,8,9-HXCDF	NC	NC	NC	NC	45 C	180 C	NC	NC	NC	NC	NO	BSL
1,2,3,7,8-PECDD	NC	NC	NC	NC	4.5 C	18 C	NC	NC	NC	NC	NO	BSL
2,3,4,6,7,8-HXCDF	NC	NC	NC	NC	45 C	180 C	NC	NC	NC	NC	NO	BSL
2,3,4,7,8-PECDF	NC	NC	NC	NC	15 C	60 C	NC	NC	NC	NC	NO	BSL
2,3,7,8-TCDD	NC	NC	NC	NC	4.5 C	18 C	42 C	79 C	150 C	6500 C	YES	ASL
TEQ FULLND	NC	NC	NC	NC	**4.5 C**	18 C	NC	NC	NC	NC	NO	BSL
TOTAL HPCDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NO	BSL
TOTAL HPCDF	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NO	BSL
TOTAL HXCDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NO	BSL
TOTAL HXCDF	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NO	BSL
TOTAL PECDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NO	BSL
TOTAL PECDF	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NO	BSL
TOTAL TCDD	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NO	BSL
TOTAL TCDF	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NO	BSL
Herbicides (ug/kg)						0						
2,4-D (Dichlorophenoxy Acetic Acid, 2,4-)	200000 N	NC	NC	NC	69000 N	770000 N	NC	NC	270000 N	NC	NO	BSL
DICAMBA	NC	NC	NC	NC	180000 N	1800000 N	NC	NC	710000 N	NC	NO	BSL
Inorganics (mg/kg)												
ALUMINUM	NC	41000 N	NC	87000 N	**7700 N**	99000 N	709000 N	1100000 N	31000 N	**1800 N**	YES	ASL
ANTIMONY	8.2 N	NC	NC	NC	3.1 N	41 N	NC	NC	12 N	NC	NO	BSL
ARSENIC	**61 N**	NC	25000 C	NC	**0.39 C**	**1.6 C**	769 C	1440 C	**13 C**	**5.3 N**	YES	ASL
BARIUM	1400 N	NC	87000 N	NC	1500 N	19000 N	70900 N	110000 N	6200 N	180 N	NO	BSL
BERYLLIUM	41 N	NC	44000 C	NC	16 N	200 N	1380 C	2570 C	62 N	7.1 N	NO	BSL
CADMIUM	20 N	NC	59000 C	NC	**7 N**	80 N	1840 C	3430 C	28 N	**3.6 N**	YES	ASL
CALCIUM	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NO	BSL
CHROMIUM	410 N	NC	69 N	NC	NC	NC	276 C	515 C	NC	NC	YES	ASL
COBALT	1200 N	NC	NC	NC	**2.3 N**	30 N	1180 C	2210 C	**9.3 N**	**2.1 N**	YES	ASL
COPPER	820 N	NC	NC	NC	310 N	4100 N	NC	NC	1200 N	NC	NO	BSL
IRON	NC	**14000 N**	NC	NC	**5500 N**	72000 N	NC	NC	**22000 N**	NC	NO	BSL
LEAD	700	NC	NC	NC	400 N	800 N	NC	NC	NC	NC	NO	BSL
MAGNESIUM	730000	NC	NC	NC	NC	NC	NC	NC	NC	NC	NO	BSL
MANGANESE	**410 N**	NC	**870 N**	NC	**180 N**	2300 N	7090 N	11000 N	4300 N	**18 N**	YES	ASL
MERCURY*#	6.1 N	NC	**0.01 N**	NC	0.56 N	3.4 N	2.9 sat	2.9 SAT	5 N	110 N	YES	ASL
NICKEL	410 N	NC	440000 C	NC	150 N	2000 N	NC	NC	620 N	320 N	NO	BSL

TABLE 5-2

HUMAN HEALTH SUBSURFACE SOIL SCREENING ASSESSMENT
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Parameter	CAS No.	Minimum Result	Maximum Result	Average Positive Result	Overall Average	TACO - Residential Soil Inhalation[8]	NON-TACO - Residential Soil Inhalation[9]	TACO - Residential Soil Ingestion[8]	NON-TACO - Residential Soil Ingestion[9]	TACO - Industrial - Commercial Soil Inhalation[8]	NON-TACO - Industrial/ Commercial Soil Inhalation[9]	TACO - Industrial - Commercial Soil Ingestion[8]	NON-TACO - Industrial Commercial Soil Ingestion[10]
Inorganics (mg/kg)													
POTASSIUM	7440-09-7	558	1930	1035.1	1035.1	NC	NC	NC	NC	NC	NC	NC	NC
SELENIUM	7782-49-2	1.3 J	1.3 J	1.3	0.5	NC	NC	39 N	NC	NC	NC	1000 N	NC
SODIUM	7440-23-5	210	3370	1043.2	1043.2	NC	NC	NC	NC	NC	NC	NC	NC
VANADIUM	7440-62-2	10.5	33.5	19.0	19.0	NC	NC	55 N	NC	NC	NC	1400 N	NC
ZINC	7440-66-6	38.5	1010 J	184.5	184.5	NC	NC	2300 N	NC	NC	NC	61000 N	NC

TABLE 5-2

HUMAN HEALTH SUBSURFACE SOIL SCREENING ASSESSMENT
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Parameter	TACO - Construction Worker Soil Ingestion[8]	NON-TACO - Construction Worker Soil Ingestion[10]	TACO - Construction Worker Soil Inhalation[9]	NON-TACO - Construction Worker Soil Inhalation[8]	ORNL Residential Soil Criteria[5]	ORNL Industrial Soil Criteria[5]	USEPA Residential Inhalation SSLs[7]	USEPA Industrial SSLs for Inhalation[7]	USEPA Construction Worker Direct Contact SSLs[6]	USEPA Construction Worker Inhalation SSLs[6]	COPC Flag[17]	Rationale for Contaminant Deletion or Selection
Inorganics (mg/kg)												
POTASSIUM	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NO	BSL
SELENIUM	100 N	NC	NC	NC	39 N	510 N	NC	NC	150 N	7100 N	NO	BSL
SODIUM	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NO	BSL
VANADIUM	140 N	NC	NC	NC	**39 N**	**520 N**	NC	NC	**2.2 N**	36 N	YES	ASL
ZINC	6100 N	NC	NC	NC	2300 N	31000 N	NC	NC	9300 N	NC	NO	BSL

Associated Samples:
NTC21SB02-SO-0204
NTC21SB02-SO-0406
NTC21SB03-SO-0204
NTC21SB04-SO-0406
NTC21SB05-SO-0204
NTC21SB06-SO-0204
NTC21SB07-SO-0204
NTC21SB08-SO-0204
NTC21SB09-SO-0204
NTC21SB10-SO-0406
NTC21SB11-SO-0204
NTC21SB12-SO-0204
NTC21SB13-SO-0204
NTC21SB14-SO-0204
NTC21SB15-SO-0204
NTC21SB16-SO-0204
NTC21SB17-SO-0507
NTC21SB18-SO-0507

Footnotes:
1 - Sample and duplicate are counted as two separate samples when determining the minimum and maximum detected concentrations.
2 - The maximum detected concentration is used for screening purposes
3 - Illinois EPA Remediation Objectives for Class 1 Groundwater (online 2010).
4 - Background data used - Illinois EPA background concentration (Illinois EPA, Appendix A, Table G of TACO)
5 - USEPA ORNL Screening Level. The noncarcinogenic values (denoted with a "N" flag) are the ORNL value divided by 10 to correspond to a target hazard quotient of 0.1. Carcinogenic values represent an incremental cancer risk of 1.0E-06 (carcinogens denoted with a "C" flag) (USEPA Region IX, October 2004, Updated December 28, 2004).
6 - Soil Screening Levels for Migration from Soil to Air for Construction Worker Scenario were calculated by Tetra Tech, NUS using methodology and equations presented in the Supplemental Guidance For Developing Soil Screening Levels for Superfund Sites, OSWER 93355.4-24, December 2002.
7 - SSLs for the migration of chemicals from soil to groundwater and soil to air were calculated by Tetra Tech, NUS using the methodology and equations presented in the Supplemental Guidance For Developing Soil Screening Levels for Superfund Sites, OSWER 93355.4-24, December 2002 and online at http://rais.ornl.gov/epa/ssl1.shtml since these values are more recent than those published in the 1996 and 2002 SSL guidance documents.
8 - Section 742 Table A, Tier 1, Soil Remediation Objectives - Residential/Industrial/Commercial (Ingestion or Inhalation)(Online, 2010)
9 - Soil Remediation Objectives for Residential/Industrial/Commercial roperties, Non-TACO Chemicals (2010)
10 - Ten percent of the noncarcinogenic value is less than the carcinogenic value, therefore the noncarcinogenic value is presented.
11 - Values are for hexavalent chromium.
12 - Acenaphthene is used as a surrogate for acenaphthylene
13 - Pyrene is used as a surrogate for benzo(ghi)perylene and phenanthrene
14 - Nickle criteria based on nickle soluble salts
15 - TACO table footnote indicates that elemental Hg " Inhalation remediation objective only applies at sites where elemental mercury is a contaminant of concern."
16 - COPC flag for construction worker inhalation scenario only
17 - The chemical is selected as a COPC if the maximum detected concentration exceeds the risk-based COPC screening level.

Definitions:
C = Carcinogen
COPC = Chemical of potential concern
J = Estimated value
N = Non-carcinogen
NC = No criteria

BAP equivalent criteria based on BaP
Chlordane used as a surrogate for alpha + gamma chlordane
Endrin used as a surrogate for endrin + endrin aldehyde
Endosulfan used as a surrogate for endosulfan I
Shaded criterion indicates that the maximum detected concentration exceeds one or more screening criteria. Shaded chemical name indicates that the chemical was retained as a COPC.
* Inhalation pathway only
# Construction worker scenario only

Rationale Codes:
For Selection as a COPC:
ASL = Above COPC screening level

For Elimination as a COPC:
BSL = Below COPC screening level
NUT = Essential nutrient

TABLE 5-3

HUMAN HEALTH GROUNDWATER SCREENING ASSESSMENT
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Parameter	CAS No.	Minimum Result[1]	Maximum Result[1,2]	Average Positive Result	Overall Average	TACO Class 1 Groundwater Criteria[3]	Non-TACO Class 1 Groundwater Criteria[4]	USEPA ORNL Tapwater Criteria[5]		USEPA MCL Criteria[6]	Vapor Intrusion Screening Criteria[7]	COPC Flag[8]	Rationale for Contaminant Delection or Selection[8]
Volatile Organics (ug/L)													
ACETONE	67-64-1	1.8 J	4.6 J	3.12	2.67	6300	NC	2200	N	NC	220000	NO	BSL
BENZENE	71-43-2	0.96 J	0.96 J	0.96	0.205833	5	NC	**0.41**	C	5	5	YES	ASL
CIS-1,2-DICHLOROETHENE	156-59-2	0.79 J	0.79 J	0.79	0.185833	70	NC	37	N	70	210	NO	BSL
METHYL TERT-BUTYL ETHER	1634-04-4	1.6	1.6	1.6	0.308333	70	NC	12	C	NC	120000	NO	BSL
TETRACHLOROETHENE	127-18-4	0.85 J	0.85 J	0.85	0.204166	5	NC	**0.11**	C	5	5	YES	ASL
TRICHLOROFLUOROMETHANE	75-69-4	2.5	2.5	2.5	0.4875	NC	NC	130	N	NC	180	NO	BSL
Semivolatile Organics (ug/L)													
ACENAPHTHENE	83-32-9	0.02 J	0.02 J	0.02	0.019166	420	NC	220	N	NC	NC	NO	BSL
ANTHRACENE	120-12-7	0.03 J	0.04 J	0.035	0.018333	2100	NC	1100	N	NC	NC	NO	BSL
BAP EQUIVALENT-FULLND	NA	0.02311	0.06146	0.045783	0.045783	NC	NC	**0.0029**	C	NC	NC	YES	ASL
BENZO(A)ANTHRACENE	56-55-3	0.04 J	0.05 J	0.045	0.023333	0.13	NC	**0.029**	C	NC	NC	YES	ASL
BENZO(A)PYRENE	50-32-8	0.03 J	0.03 J	0.03	0.016666	0.2	NC	**0.0029**	C	0.2	NC	YES	ASL
BENZO(B)FLUORANTHENE	205-99-2	0.03 J	0.03 J	0.03	0.0175	0.18	NC	**0.029**	C	NC	NC	YES	ASL
BENZO(K)FLUORANTHENE	207-08-9	0.03 J	0.03 J	0.03	0.0175	0.17	NC	0.29	C	NC	NC	NO	BSL
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	1.8 J	1.8 J	1.8	0.8	6	NC	4.8	C	6	NC	NO	BSL
CHRYSENE	218-01-9	0.04 J	0.05 J	0.045	0.024166	1.5	NC	2.9	C	NC	NC	NO	BSL
FLUORANTHENE	206-44-0	0.03 J	0.06	0.043333	0.0375	280	NC	150	N	NC	NC	NO	BSL
FLUORENE	86-73-7	0.02 J	0.03 J	0.025	0.015833	280	NC	150	N	NC	NC	NO	BSL
PENTACHLOROPHENOL	87-86-5	7.8 J	7.8 J	7.8	1.696666	**1**	NC	**0.56**	C	**1**	NC	YES	ASL
PYRENE	129-00-0	0.03 J	0.05 J	0.043333	0.0375	210	NC	110	N	NC	NC	NO	BSL
TOTAL PAHS-FULLND	NA	0.18	0.89	0.491666	0.491666	NC	NC	NC		NC	NC	NO	BSL
Pesticides/PCBs (ug/L)													
ALPHA-CHLORDANE	5103-71-9	0.00385 J	0.00385 J	0.00385	0.001985	NC	NC	NC		NC	NC	NO	BSL
DELTA-BHC (DELTA-HCH)	319-86-8	0.00801 J	0.02	0.014005	0.005742	NC	NC	**0.011**	C	NC	NC	YES	ASL
GAMMA-CHLORDANE	5103-74-2	0.00311 J	0.00311 J	0.00311	0.001862	NC	NC	NC		NC	NC	NO	BSL
TOTAL CHLORDANE (ALPHA + GAMMA)[9]	NA	0.00696	0.00696	0.00348	0.0019235	2	NC	0.19	C	2	NC	NO	BSL
Dioxins (pg/L)													
TEQ FULLND [10]	NA	12.34382	12.3438	12.34382	12.34382	NC	NC	0.52	C	30	NC	YES	ASL
Herbicides (ug/L)													
2,4,5-TP (SILVEX)	93-72-1	0.03 J	0.03 J	0.03	0.013333	50	NC	29	N	50	NC	NO	BSL
2,4-DB	94-82-6	0.62 J	0.62 J	0.62	0.203333	NC	NC	29	N	NC	NC	NO	BSL
DALAPON	75-99-0	0.75 J	0.75 J	0.75	0.379166	200	NC	110	N	200	NC	NO	BSL
DICHLOROPROP	120-36-5	0.34 J	0.78 J	0.54	0.33	NC	NC	NC		NC	NC	NO	BSL
Inorganics (ug/L)													
ALUMINUM	7429-90-5	122	668 J	298	250.416666	NC	3500	3700	N	NC	NC	NO	BSL
ARSENIC	7440-38-2	0.88 J	7.26 J	2.802	2.3975	50	NC	**0.045**	C	10	NC	YES	ASL
BARIUM	7440-39-3	32.3	422	127.15	127.15	2000	NC	730	N	2000	NC	NO	BSL
CADMIUM	7440-43-9	0.69	3.45	1.341666	1.341666	5	NC	**1.8**	N	5	NC	YES	ASL
CALCIUM	7440-70-2	96600	671000	318100	318100	NC	NC	NC		NC	NC	NO	BSL
CHROMIUM	7440-47-3	4.13	4.13	4.13	1.084166	100	NC	NC		100	NC	NO	BSL
COBALT	7440-48-4	3.55	15.3	7.833333	4.229166	1000	NC	**1.1**	N	NC	NC	YES	ASL
COPPER	7440-50-8	4.25 J	4.25 J	4.25	1.229166	650	NC	150	N	1300	NC	NO	BSL
IRON	7439-89-6	22.3	34000	6265.933333	6265.93333	**5000**	**5000**	**2600**	N	NC	NC	YES	ASL

TABLE 5-3

HUMAN HEALTH GROUNDWATER SCREENING ASSESSMENT
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Parameter	CAS No.	Minimum Result[1]	Maximum Result[1,2]	Average Positive Result	Overall Average	TACO Class 1 Groundwater Criteria[3]	Non-TACO Class 1 Groundwater Criteria[4]	USEPA ORNL Tapwater Criteria[5]	USEPA MCL Criteria[6]	Vapor Intrusion Screening Criteria[7]	COPC Flag[8]	Rationale for Contaminant Delection or Selection[8]
Inorganics (ug/L)												
LEAD	7439-92-1	0.83	0.83	0.83	1.608333	7.5	NC	NC	15	NC	NO	BSL
MAGNESIUM	7439-95-4	608	125000	57851.33333	57851.3333	NC	NC	NC	NC	NC	NO	BSL
MANGANESE	7439-96-5	0.89	5400	1803.365	1803.365	**150**	NC	**88** N	NC	NC	YES	ASL
NICKEL	7440-02-0	0.75	11.3	3.26	2.779166	100	NC	73 N	NC	NC	NO	BSL
POTASSIUM	7440-09-7	2980	40200 J	13736.66667	13736.6667	NC	NC	NC	NC	NC	NO	BSL
SELENIUM	7782-49-2	1.63	1.63	1.63	2.084166	50	NC	18 N	50	NC	NO	BSL
SILVER	7440-22-4	0.47 J	1.3	0.885	0.378333	50	NC	18 N	NC	NC	NO	BSL
SODIUM	7440-23-5	55700	1040000	593950	593950	NC	NC	NC	NC	NC	NO	BSL
VANADIUM	7440-62-2	4.36	4.36	4.36	1.2475	49	NC	18 N	NC	NC	NO	BSL
ZINC	7440-66-6	1.5	2.83	2.165	4.988333	5000	NC	1100 N	NC	NC	NO	BSL

Associated Samples:
NTC21MW0101
NTC21MW0201
NTC21MW0301
NTC21MW0401
NTC21MW0501
NTC21MW0601

Definitions:
C = Carcinogen
COPC = Chemical of potential concern
J = Estimated value
N = Non-carcinogen
NA = Not applicable/not available.

Rationale Codes:
For Selection as a COPC:
ASL = Above COPC screening level

For Elimination as a COPC:
BSL = Below COPC screening level
NUT = Essential nutrient

Footnotes:
1 - Duplicate analytical results are not be used for the EPC calculations. Data values less than sample-specific detection limits are reported as the detection limit.
2 - The maximum detected concentration is used for screening purposes.
3 - Illinois EPA Remediation Objectives for Class 1 Groundwater (online 2010).
4 - Groundwater Remediation Objectives for Chemicals Not Listed in TACO (Illinois EPA, May 1, 2007).
5 - USEPA ORNL Tap Water Screening Level. The non-carcinogenic values (denoted with a "N" flag) are the PRG divided by 10 to correspond to a target hazard quotient of 0.1. Carcinogenic values represent an incremental cancer risk of 1.0E-06 (carcinogens denoted with a "C" flag) (USEPA, 2008).
6 - Federal Maximum Contaminant Level (USEPA, 2006).
7 - Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (USEPA, 2002). Values are from Table 2c and correspond to a target cancer risk level of 1E-6 or hazard index =1 and an attenuation factor of 0.001.
8 - The chemical is selected as a COPC if the maximum detected concentration exceeds the screening level.
USEPA ORNL tapwater criteria for acenaphthene is used as a surrogate for acenaphthylene.
9 - Illinois EPA TACO criteria for chlordane are compared to the sum of alpha- and gamma-chlordane.
10 - Dioxins and TEQ was eliminated as a COC because all parameters were below detection limits.
Shaded criterion indicates that the maximum detected concentration exceeds one or more screening criteria. Shaded chemical name indicates that the chemical was retained as a COPC.

TABLE 5-4

CHEMICALS RETAINED AS COPCs
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Chemical	Surface Soil		Subsurface Soil		Groundwater	
	Direct Contact	Soil to Air	Direct Contact	Soil to Air	Direct Contact	Vapor Intrusion
Volatile Organic Compounds						
BENZENE					X	
TETRACHLOROETHENE					X	
Semivolatile Organic Compounds						
BAP EQUIVALENT-FULLND	X		X		X	
BENZO(A)ANTHRACENE	X		X		X	
BENZO(A)PYRENE	X		X		X	
BENZO(B)FLUORANTHENE	X		X		X	
BENZO(K)FLUORANTHENE	X		X			
CHRYSENE	X		X			
DIBENZO(A,H)ANTHRACENE	X		X			
INDENO(1,2,3-CD)PYRENE	X		X			
PENTACHLOROPHENOL					X	
NAPTHALENE		X*	X	X*		
Pesticides/PCBs (ug/L)						
AROCLOR-1260	X		X			
DELTA-BHC (DELTA-HCH)					X	
Dioxins						
1,2,3,7,8-PECDD	X					
2,3,4,7,8-PECDF	X					
TEQ FULLND	X		X			
Inorganics						
ALUMINUM	X	X*	X	X*		
ANTIMONY	X					
ARSENIC	X	X*	X	X*	X	
BARIUM		X*				
CADMIUM	X	X*	X	X*	X	
CHROMIUM	X	X*	X			
COBALT	X	X*	X	X*	X	
COPPER	X					
IRON	X		X		X	
MANGANESE	X	X*	X	X*	X	
MERCURY	X	X		X*		
VANADIUM	X		X			

Notes:

X - Indicates chemical was retained as a COPC.

*Construction worker scenario only

TABLE 5-5

HUMAN HEALTH RISK ASSESSMENT
EXPOSURE ROUTES FOR POSSIBLE QUANTITATIVE EVALUATION
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Receptors	Exposure Routes
Construction Workers (future land use)	• Surface Soil - Dermal Contact • Surface Soil - Incidental Ingestion • Subsurface Soil - Dermal Contact • Subsurface Soil - Incidental Ingestion • Inhalation of Air/Dust • Groundwater - Dermal Contact (during excavation) • Groundwater Inhalation of Volatiles in a Trench (during excavation)
Adolescent Trespasser (current land use)	• Surface Soil - Dermal Contact • Surface Soil - Incidental Ingestion • Inhalation of Air/Dust
Maintenance/Occupational Workers (future and current land use)	• Surface Soil - Dermal Contact • Surface Soil - Incidental Ingestion • Inhalation of Air/Dust
On-Base Military Residents (Adult/Children) (future land use)	• Surface Soil - Dermal Contact • Surface Soil - Incidental Ingestion • Subsurface Soil - Dermal Contact(1) • Subsurface Soil - Incidental Ingestion(1) • Inhalation of Air/Dust • Groundwater - Dermal Contact • Groundwater - Ingestion • Groundwater - Inhalation of Volatiles
Onsite Civilian Residents (Adult/Children) (future land use)	• Surface Soil - Dermal Contact • Surface Soil - Incidental Ingestion • Subsurface Soil - Dermal Contact(1) • Subsurface Soil - Incidental Ingestion(1) • Inhalation of Air/Dust • Groundwater - Dermal Contact • Groundwater - Ingestion • Groundwater - Inhalation of Volatiles

(1) Exposure to subsurface soil for maintenance/occupational workers and future residents will be evaluated to account for the possibility that subsurface soil may be brought to the surface in a future excavation project

TABLE 5-6

EXPOSURE POINT CONCENTRATION SUMMARY - SUBSURFACE SOIL
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Subsurface Soil
Exposure Medium: Subsurface Soil
Exposure Point: Construction excavation or post-construction excavation

Chemical of Potential Concern	Units	# Detects/ # Samples	RME Maximum Detected Concentration	Maximum Qualifier	CTE Mean Concentration
PAHs/Semivolatile Organic Compounds					
BAP EQUIVALENT	mg/kg	22/22	39.4		2.32
NAPHTHALENE	mg/kg	16/22	4.6		0.433
Pesticides/PCBs					
AROCLOR-1260	mg/kg	8/22	0.44	J	0.0704
Dioxins/Furans					
TCDD TEQ full NDs [1]	mg/kg	1/1	5.62E-06		5.62E-06
Inorganics					
ALUMINUM	mg/kg	22/22	24,300		9,340
ARSENIC	mg/kg	22/22	85	J	12.06
CADMIUM	mg/kg	20/22	9.62		1.24
CHROMIUM	mg/kg	22/22	34.3	J	15.1
COBALT	mg/kg	22/22	23.8		8.90
IRON	mg/kg	22/22	65,800	J	26,970
MANGANESE	mg/kg	22/22	1,690		662
MERCURY[*#]	mg/kg	21/22	0.484		0.0999
VANADIUM	mg/kg	22/22	33.5		19.0

Footnotes:
[*] COPC for inhalation pathway only.
[#] COPC for construction worker scenario only.
[1] No mean calculation for 1 sample dataset. CTE uses detected concentration of TCDD TEQ.

TABLE 5-7

EXPOSURE POINT CONCENTRATION SUMMARY - SURFACE SOIL
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Surface Soil
Exposure Point: Entire Site

Chemical of Potential Concern	Units	# Detects/ # Samples	Arithmetic Mean	Maximum Detection	EPC Units	Dataset Distribution	95% UCL of the Mean Statistic	RME[1] EPC 95% UCL	CTE[2] EPC Mean
PAHs/Semivolatile Organic Compounds									
AROCLOR 1260	mg/kg	12/22	0.154 [3]	0.720	mg/kg	nonparametric	95% KM(Percentile Bootstrap) UCL	0.223	0.154
BAP EQUIVALENT	mg/kg	22/22	3.566	50.6	mg/kg	lognormal	95% Chebyshev UCL	13.47	3.566
NAPHTHALENE [4]	mg/kg	22/22	0.24	0.52	mg/kg	--	--	0.52	0.24
Dioxins/Furans									
2,3,7,8-TCDD[5]	mg/kg	2/2	--	8.16E-07	mg/kg	--	--	8.16E-07	8.16E-07
TCDD TEQs full NDs[5]	mg/kg	2/2	--	3.35E-05	mg/kg	--	--	3.35E-05	3.35E-05
Inorganics									
ALUMINUM	mg/kg	22/22	7,623	29,500	mg/kg	LN, gamma	95% Approx Gamma UCL	9,888	7,623
ANTIMONY	mg/kg	6/22	1.06 [3]	5.22	mg/kg	nonparametric	95% KM(Percentile Bootstrap) UCL	2.03	1.06
ARSENIC	mg/kg	22/22	12.46	48.4	mg/kg	nonparametric	95% Chebyshev UCL	23.83	12.46
BARIUM	mg/kg	22/22	76.4	234	mg/kg	LN, gamma	95% Approx Gamma UCL	94.7	76.4
CADMIUM	mg/kg	21/22	2.30	13	mg/kg	nonparametric	97.5% KM(Chebyshev) UCL	6.44	2.3
CHROMIUM	mg/kg	22/22	20.26	163	mg/kg	nonparametric	95% Chebyshev UCL	50.47	20.3
COBALT	mg/kg	22/22	6.59	17.7	mg/kg	LN, gamma	95% Approx Gamma UCL	8.07	6.6
COPPER	mg/kg	22/22	93.6	835	mg/kg	nonparametric	95% Chebyshev UCL	258.2	93.6
IRON	mg/kg	22/22	26,762	69,500	mg/kg	lognormal	95% H-UCL	33,612	26,762
MANGANESE	mg/kg	22/22	588.6	2,420	mg/kg	LN, gamma	95% Approx Gamma UCL	769.2	588.6
MERCURY	mg/kg	22/22	0.57	8.98	mg/kg	nonparametric	95% Chebyshev UCL	2.33	0.57
VANADIUM	mg/kg	22/22	16.68	25.7	mg/kg	normal	95% Student's-t UCL	18.55	16.7

Footnotes:

1. 95UCL for RME scenario except for construction workers and residential scenario; EPCs for soil for these receptors are the maximum detections of COPCs.
2. Mean is the EPC for each soil COPC in the CTE scenarios.
3. Kaplan-Meier statistical mean (with NDs included)
4. Naphthalene is a COPC only for subsurface soil and the inhalation pathway. Included in the CW inhalation exposure risk for surface soil (max. for RME; mean for CTE)
5. Only two samples, so meaningful summary statistics could not be calculated for this dataset.

TABLE 5-8

EXPOSURE POINT CONCENTRATION SUMMARY - GROUNDWATER
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Construction Excavation; Hypothetical Residential Potable Water

Chemical of Potential Concern	Units	# Detects/ # Samples	Maximum Detected Concentration	Maximum Qualifier
Volatile Organics (ug/L)				
BENZENE	ug/L	1/6	0.960	J
TETRACHLOROETHENE	ug/L	1/6	0.850	J
PAHs/Semivolatile Organic Compounds				
BAP EQUIVALENT	ug/L	2/6	0.038	
PENTACHLOROPHENOL	ug/L	1/6	7.8	J
Pesticides/PCBs (ug/L)				
DELTA-BHC (DELTA-HCH)	ug/L	2/6	0.02	
Inorganics				
ARSENIC	ug/L	5/6	7.26	J
CADMIUM	ug/L	6/6	3.45	
COBALT	ug/L	3/6	15.3	
IRON	ug/L	6/6	34000	
MANGANESE	ug/L	6/6	5400	

Footnotes:
ug/L = microgram per liter.
J = Estimated value.
PAH = Polynuclear aromatic hydrocarbon.
PCB = Polychlorinated biphenyl.

TABLE 5-9

SUMMARY OF EXPOSURE INPUT PARAMETERS
REASONABLE MAXIMUM EXPOSURES
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Exposure Parameter	Occupational/ Maintenance Worker	Adolescent Trespasser	Construction Worker	On-Site Adult Resident	On-Site Child Resident
All Exposures					
C_{soil} (mg/kg)	Maximum or 95% UCL[1]	Maximum or 95% UCL[1]	Maximum or 95% UCL[1]	Maximum or 95% UCL[1]	Maximum or 95% UCL[1]
C_{gw} (µg/L)	NA	NA	Maximum	Maximum	Maximum
EF (days/year)	250[3]	26[5]	30[2]	350[5]	350[5]
ED (years)	25[3]	10[5]	1[4]	24[5]	6[5]
BW (kg)	70[5]	42[5]	70[5]	70[5]	15[5]
AT_n (days)	9,125[9]	3650[9]	42[8]	8,760[9]	2,190[9]
AT_c (days)	25,550[9]	25,550[9]	25,550[9]	25,550[9]	25,550[9]
Incidental Ingestion/Dermal Contact with Soil					
IR (mg/day)	100[5]	100[5]	330[10]	100[5]	200[5]
FI (unitless)	1[5]	1[5]	1[5]	1[5]	1[5]
SA (cm^2/day)	3,280[11]	3,280[11]	3,280[11]	5,700[11]	2,800[11]
AF (mg/cm^2)	0.2[11]	0.2[11]	0.3[11]	0.07[11]	0.2[11]
ABS (unitless)	chemical-specific[11]	chemical-specific[11]	chemical-specific[11]	chemical-specific[11]	chemical-specific[11]
CF (kg/mg)	1E-06	1E-06	1E-06	1E-06	1E-06
Inhalation Fugitive Dust/Volatile Emissions from Soil					
C_{air} (mg/m^3)	calculated[10]	calculated[10]	calculated[10]	calculated[10]	calculated[10]
ET (hours/day)	8[10]	2[10]	8[12]	24[10]	24[7]
PEF (m^3/kg)	1.36E+9[10]	1.36E+9[10]	1.27×10^{6}[10]	1.36E+9[10]	1.36E+9[10]
VF (m^3/kg)	chemical-specific[10]	chemical-specific[10]	chemical-specific[10]	chemical-specific[10]	chemical-specific[10]

TABLE 5-9

SUMMARY OF EXPOSURE INPUT PARAMETERS
REASONABLE MAXIMUM EXPOSURES
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Exposure Parameter	Occupational/ Maintenance Worker	Adolescent Trespasser	Construction Worker	On-Site Adult Resident	On-Site Child Resident
Ingestion/Dermal Contact with Groundwater					
IR_{gw} (L/day)	NA	NA	NA	2[5]	1.5[7]
ET (hours/day) and t_{event} (hours/event)	NA	NA	4[4]	0.33[4]	0.33[4]
EV (events/day)	NA	NA	1[4]	1[4]	1[4]
A (cm^2/day)	NA	NA	3,300[11]	18,000[11]	6,600[11]
K_p (cm/hour)	NA	NA	chemical-specific[11]	chemical-specific[11]	chemical-specific[11]
t* (hours), t (hour), and B (unitless)	NA	NA	chemical-specific[11]	chemical-specific[11]	chemical-specific[11]

A Skin surface area available for contact
ABS Absorption factor
AF Soil-to-skin adherence factor
AT_c Averaging time for carcinogenic effects
AT_n Averaging time for non-carcinogenic effects
B Bunge Model partitioning coefficient
BW Body weight
CF Conversion factor
IR Ingestion rate
C_{soil} Exposure concentration for soil
C_{gw} Exposure concentration for groundwater
C_{air} Exposure concentration for air
ED Exposure duration
EF Exposure frequency
ET Exposure time
EV Event frequency
FI Fraction ingested from contaminated source
InhR Inhalation rate
IR Ingestion rate (soil or groundwater)
K_p Permeability coefficient from water through skin
SA Skin surface area available for contact
PEF Particulate emission factor
t Lag time
t* Time it takes to reach steady-state conditions
t_{event} Duration of event

1 - USEPA, 2002.
2 - Illinois EPA, 2004.
3 - USEPA, 1991
4- Professional judgment.
5 - USEPA, 1993
6 - Adolescents (7-16 years).
7 - USEPA, 1997
8 - Illinois EPA, 2003.
9 - USEPA, 1989
10 - USEPA, 2002
11 - USEPA, 2004
12 - Assume an 8-hour work shift.

Note: The exposure factors for future civilian and military residents are the same, except for exposure duration (ED) for adult military residents. Exposure duration for adult military residents was assumed to be the typical enlistment times of 6 years for the RME and CTE.

TABLE 5-10

SUMMARY OF EXPOSURE INPUT PARAMETERS
CENTRAL TENDENCY EXPOSURES
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Exposure Parameter	Occupational/ Maintenance Worker	Adolescent Trespasser	Construction Worker	On-Site Adult Resident	On-Site Child Resident
All Exposures					
C_{soil} (mg/kg)	Mean		Mean	Mean	Mean
C_{gw} (µg/L)	NA	NA	Maximum	Maximum	Maximum
EF (days/year)	219[3]		30[2]	234[3]	234[3]
ED (years)	9[3]		1[4]	7[3]	2[3]
BW (kg)	70[3]		70[3]	70[3]	15[3]
AT_n (days)	3,285[8]		42[7]	2,555[8]	730[8]
AT_c (days)	25,550[8]		25,550[8]	25,550[8]	25,550[8]
Incidental Ingestion/Dermal Contact with Soil					
IR (mg/day)	50[9]		165[9]	50[9]	100[9]
FI (unitless)	1[3]		1[3]	1[3]	1[3]
SA (cm^2/day)	3,300[10]		3,300[10]	5,700[10]	2,800[10]
AF (mg/cm^2)	0.02[10]		0.1[10]	0.01[10]	0.04[10]
ABS (unitless)	chemical-specific[10]		chemical-specific[10]	chemical-specific[10]	chemical-specific[10]
CF (kg/mg)	1E-06		1E-06	1E-06	1E-06
Inhalation Fugitive Dust/Volatile Emissions from Soil					
C_{air} (mg/m^3)	calculated[11]		calculated[11]	calculated[11]	calculated[11]
ET (hours/day)	4[9]		4[9]	24[11]	24[6]
PEF (m^3/kg)	1.36E+9[11]		1.27×10^6[11]	1.36E+9[11]	1.36E+9[11]
VF (m^3/kg)	chemical-specific[11]		chemical-specific[11]	chemical-specific[11]	chemical-specific[11]

TABLE 5-10

SUMMARY OF EXPOSURE INPUT PARAMETERS
CENTRAL TENDENCY EXPOSURES
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Exposure Parameter	Occupational/ Maintenance Worker	Adolescent Trespasser	Construction Worker	On-Site Adult Resident	On-Site Child Resident
Ingestion/Dermal Contact with Groundwater					
IR_{gw} (L/day)	NA	NA	NA	1.4[3]	0.66[6]
ET (hours/day) and t_{event} (hours/event)	NA	NA	2[8]	0.25[4]	0.25[4]
EV (events/day)	NA	NA	1[4]	1[4]	1[4]
A (cm^2/day)	NA	NA	3,300[10]	18,000[10]	6,600[10]
K_p (cm/hour)	NA	NA	chemical-specific[10]	chemical-specific[10]	chemical-specific[10]
t* (hours), τ (hour), and B (unitless)	NA	NA	chemical-specific[10]	chemical-specific[10]	chemical-specific[10]

Notes:

A Skin surface area available for contact
ABS Absorption factor
AF Soil-to-skin adherence factor
AT_c Averaging time for carcinogenic effects
AT_n Averaging time for non-carcinogenic effects
B Bunge Model partitioning coefficient
BW Body weight
CF Conversion factor
IR Ingestion rate
C_{soil} Exposure concentration for soil
C_{gw} Exposure concentration for groundwater
C_{air} Exposure concentration for air
ED Exposure duration
EF Exposure frequency
ET Exposure time
EV Event frequency
FI Fraction ingested from contaminated source
InhR Inhalation rate
IR Ingestion rate (soil or groundwater)
K_p Permeability coefficient from water through skin
SA Skin surface area available for contact
PEF Particulate emission factor
t Lag time
t* Time it takes to reach steady-state conditions
t_{event} Duration of event

1 - USEPA, 2002
2 - Illinois EPA, 2004.
3 - USEPA, 1993
4 - Professional judgment.
5 - Adolescents (7-16 years).
6 - USEPA, 1997
7 - Illinois EPA, 2003.
8 - USEPA, 1989
9 - CTE is assumed to be 1/2 the RME value.
10 - USEPA, 2004
11 - USEPA, 2002

Note: The exposure factors for future civilian and military residents are the same, except for exposure duration (ED) for adult military residents. Exposure duration for adult military residents was assumed to be the typical enlistment times of 6 years for the RME and CTE.

TABLE 5-11

NON-CANCER TOXICITY DATA - ORAL/DERMAL
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD		Oral Absorption Efficiency for Dermal[1]	Absorbed RfD for Dermal[2]		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfD:Target Organ(s)	
		Value	Units		Value	Units			Source	Date
CHRONIC **Semivolatile Organic Compounds**										
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	Chronic	0.02	mg/kg/day	>50%	2.0E-02	mg/kg/day	body weight	3000/1	IRIS	Sep-98
TCDD TEQ (use 2,3,7,8-TCDD)	Chronic	1.00E-09	mg/kg/day	>50%	1.00E-09	mg/kg/day	developmental	NA	ATSDR	12/1998
PENTACHLOROPHENOL	Chronic	5.00E-03	mg/kg/day	>50%	5.00E-03	mg/kg/day	Liver (hepatox.)	300/1	IRIS	9/2010
Pesticides/PCBs										
AROCLOR 1260 [3]	Chronic	2.00E-05	mg/kg/day	>50%	2.00E-05	mg/kg/day	eye, immunolog.	300/1	IRIS	11/1996
DELTA-HEXACHLOROCYCLOHEXANE [3]	Chronic	8.00E-03	mg/kg/day	>50%	8.00E-03	mg/kg/day	Liver (hepatox.)	100	ATSDR	9/2005
Volatile Organic Compound										
BENZENE	Chronic	4.00E-03	mg/kg/day	>50%	4.00E-03	mg/kg/day	Hematological	300/1	IRIS	4/2003
TETRACHLOROETHYLENE	Chronic	1.00E-02	mg/kg/day	>50%	1.00E-02	mg/kg/day	Liver (hepatox.)	1000	IRIS	3/1/1988
Inorganics										
ALUMINUM	Chronic	1.0E+00	mg/kg/day	not available	1.0E+00	mg/kg/day	CNS	100	PPRTV (per ORNL)	10/23/2006
ANTIMONY	Chronic	4.0E-04	mg/kg/day	0.15	6.0E-05	mg/kg/day	longevity	1000	IRIS	2/1991
ARSENIC	Chronic	3.0E-04	mg/kg/day	>50%	3.0E-04	mg/kg/day	Skin, CVS	3/1	IRIS	4/2009
BARIUM	Chronic	2.0E-01	mg/kg/day	0.07	1.4E-02	mg/kg/day	Kidney (nephrtox.)	300	IRIS	7/2005
CADMIUM	Chronic	1.0E-03	mg/kg/day	0.025	2.5E-05	mg/kg/day	Kidney (proteinuria)	10/1	IRIS	2/1994
CHROMIUM VI	Chronic	3.0E-03	mg/kg/day	0.025	7.5E-05	mg/kg/day	Fetotoxicity, GS, Bone	300/3	IRIS	2/2/2009
COBALT	Chronic	3.0E-04	mg/kg/day	not available	3.0E-04	mg/kg/day	Blood	NA	ORNL	9/12/2008
COPPER	Chronic	4.0E-02		not available	4.0E-02	mg/kg/day	GI	NA	HEAST	7/1997
IRON	Chronic	7.0E-01	mg/kg/day	not available	7.0E-01	mg/kg/day	GS	1.5	PPRTV (per ORNL)	9/11/2006
MANGANESE	Chronic	4.7E-02	mg/kg/day	0.04	1.9E-03	mg/kg/day	CNS	1/3	IRIS	4/2009
MERCURY[4]	Chronic	3.0E-04	mg/kg/day	0.07	2.1E-05	mg/kg/day	Autoimmune	1000/1	IRIS	2/2/2009
VANADIUM	Chronic	9.0E-03	mg/kg/day	0.026	2.3E-04	mg/kg/day	Kidney	100	IRIS	12/1/1996
SUBCHRONIC[5,6]										
ALUMINUM	Subchronic	2.0E+00	mg/kg/day	not available	2.0E+00	mg/kg/day	CNS	30	ATSDR	7/1999
ARSENIC	Subchronic	5.0E-03	mg/kg/day	>50%	5.0E-03	mg/kg/day	skin	10	EPA Region 8	8/2002
Chromium VI	Subchronic	2.0E-02	mg/kg/day	0.025	5.0E-04	mg/kg/day	NOAEL	100	HEAST	7/1997
MERCURY[4]	Subchronic	3.0E-03	mg/kg/day	0.07	2.1E-04	mg/kg/day	Autoimmune	100	HEAST	7/1997

Notes:
1 - USEPA, July 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005.
2 - Adjusted dermal RfD = Oral RfD x Oral Absorption Efficiency for Dermal.
3 - No RfD; used surrogates (Aroclor 1254 for Aroclor 1260, and a-BHC for d-BHC)
4 - Values are for mercuric chloride.
5 - If a subchronic RfD was not available, then the chronic RfD was used as a surrogate for subchronic scenarios.
6 - Additional subchronic RfD values were recommended by IEPA comments (2011). These are presented and discussed in Section 5.7.4.2.
ATSDR = Agency for Toxic Substances and Disease Registry

Definitions:
CNS = Central nervous system
CVS = Cardiovascular system
GS = Gastrointestinal System
HEAST= Health Effects Assessment Summary Tables
IRIS = Integrated Risk Information System
NA = Not applicable
NCEA = USEPA National Center for Environmental Assessment
ORNL = Oak Ridge National Laboratory Regional Screening Level tables, June 2011
PPRTV = Provisional Peer Reviewed Toxicity Value

TABLE 5-12

NON-CANCER TOXICITY DATA - INHALATION
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Chemical of Potential Concern	Chronic/ Subchronic	Inhalation RfC		Primary Target Organ(s)	Combined Uncertainty/Modifying Factors	RfC : Target Organ(s)	
		Value	Units			Source(s)	Date(s)
Semivolatile Organic Compounds							
BENZO(A)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA
BENZO(A)PYRENE	NA	NA	NA	NA	NA	NA	NA
BENZO(B)FLUORANTHENE	NA	NA	NA	NA	NA	NA	NA
DIBENZO(A,H)ANTHRACENE	NA	NA	NA	NA	NA	NA	NA
INDENO(1,2,3-CD)PYRENE	NA	NA	NA	NA	NA	NA	NA
NAPHTHALENE	Chronic	3.0E-03	mg/m^3	Nasal	3000/1	IRIS	9/1998
TCDD TEQs (use 2,3,7,8-TCDD tox value)	Chronic	4.0E-08	mg/m^3	NA	NA	CA EPA (per ORNL)	NA
PENTACHLOROPHENOL	NA	NA	NA	NA	NA	NA	NA
Pesticides/PCBs							
AROCLOR 1260	NA	NA	NA	NA	NA	NA	NA
DELTA-HEXACHLOROCYCLOHEXANE	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compound							
BENZENE	Chronic	3.00E-02	mg/m^3	Hematological	300/1	IRIS	4/2003
TETRACHLOROETHYLENE	Chronic	2.7E-01	mg/m^3	CNS	100	ATSDR	9/1997
Inorganics							
ALUMINUM	Chronic	5.0E-03	mg/m^3	CNS	300	PPRTV (per ORNL)	10/23/2006
ARSENIC	Chronic	1.50E-05	mg/m^3	CNS, GI, heart	not available	CA EPA (per ORNL)	not available
BARIUM	Chronic	5.0E-04	mg/m^3	Fetus	1000/1	HEAST	7/1997
CADMIUM	Chronic	1.0E-05	mg/m^3	Kidney	9	ATSDR	9/2008
CHROMIUM VI	Chronic	1.0E-04	mg/m^3	Respiratory	300/1	IRIS	4/2009
COBALT	Chronic	6.0E-06	mg/m^3	Respiratory	NA	PPRTV (per ORNL)	9/12/2008
IRON	NA	NA	NA	NA	NA	NA	NA
MANGANESE	Chronic	5.0E-05	mg/m^3	CNS	1000/1	IRIS	4/2009
MERCURY	Chronic	3.0E-05	mg/m^3	CNS	not available	CA EPA (per ORNL)	not available
VANADIUM	Chronic	7.0E-06	mg/m^3	NA	not available	PPRTV (per ORNL)	not available
SUBCHRONIC[1]							
BARIUM	Subchronic	5.0E-03	mg/m^3	Fetus	100	HEAST	7/1997

Notes:
1 - If a subchronic RfC was not available, then the chronic RfC was used.

ORNL = Oak Ridge National Laboratory RSL tables, June 2011
PPRTV = Provisional Peer Reviewed Toxicity Value

Definitions:
IRIS = Integrated Risk Information System
CNS = Central Nervous System
HEAST= Health Effects Assessment Summary Tables
NA = Not Applicable
NCEA = USEPA National Center for Environmental Assessment
ORNL = Oak Ridge National Laboratory Screening Level Tables, September 2008
ATSDR = Agency for Toxic Substances and Disease Registry
CA EPA = California Envirnomental Protection Agency

TABLE 5-13

CANCER TOXICITY DATA - ORAL/DERMAL
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Chemical of Potential Concern	Oral Cancer Slope Factor		Oral Absorption Efficiency for Dermal[1]	Absorbed Cancer Slope Factor for Dermal[2]		Weight of Evidence/ Cancer Guideline Description	Oral CSF	
	Value	Units		Value	Units		Source	Date
Semivolatile Organic Compounds								
BENZO(A)ANTHRACENE	7.3E-01	$(mg/kg/day)^{-1}$	>50%	7.3E-01	$(mg/kg/day)^{-1}$	B2	USEPA, 1993	7/1993
BENZO(A)PYRENE	7.3E+00	$(mg/kg/day)^{-1}$	>50%	7.3E+00	$(mg/kg/day)^{-1}$	B2	IRIS	4/2009
BENZO(B)FLUORANTHENE	7.3E-01	$(mg/kg/day)^{-1}$	>50%	7.3E-01	$(mg/kg/day)^{-1}$	B2	USEPA, 1993	7/1993
DIBENZO(A,H)ANTHRACENE	7.3E+00	$(mg/kg/day)^{-1}$	>50%	7.3E+00	$(mg/kg/day)^{-1}$	B2	USEPA, 1993	7/1993
INDENO(1,2,3-CD)PYRENE	7.3E-01	$(mg/kg/day)^{-1}$	>50%	7.3E-01	$(mg/kg/day)^{-1}$	B2	USEPA, 1993	7/1993
NAPHTHALENE	NA	NA	NA	NA	NA	C	IRIS	9/1998
TCDD TEQs (use 2,3,7,8-TCDD tox value)	1.5E+05	$(mg/kg/day)^{-1}$	>50%	1.5E+05	$(mg/kg/day)^{-1}$	B2	HEAST	7/1997
PENTACHLOROPHENOL	4.0E-01	(mg/kg/day)-1	>50%	4.0E-01	(mg/kg/day)-1	"Likely to be carcinogenic to humans"	IRIS	9/2010
Pesticides/PCBs								
AROCLOR 1260 (highly chlorinated PCB)	2.0E+00	(mg/kg/day)-1	>50%	2.0E+00	(mg/kg/day)-1	B2	IRIS	6/1997
DELTA-HEXACHLOROCYCLOHEXANE [3]	6.3E+00	(mg/kg/day)-1	>50%	6.3E+00	(mg/kg/day)-1	B2	IRIS	7/1993
Volatile Organic Compound								
BENZENE	5.5E-02	(mg/kg/day)-1	>50%	5.5E-02	(mg/kg/day)-1	A	IRIS	1/2000
TETRACHLOROETHYLENE	5.4E-01	$(mg/kg/day)^{-1}$	>50%	5.4E-01	(mg/kg/day)-1	Not Classified	CA EPA (per ORNL)	NA
Inorganics								
ALUMINUM	NA	NA	NA	NA	NA	NA	NA	NA
ARSENIC	1.5E+00	$(mg/kg/day)^{-1}$	>50%	1.5E+00	$(mg/kg/day)^{-1}$	A	IRIS	4/2009
BARIUM	NA	NA	NA	NA	NA	D	IRIS	4/2009
CHROMIUM	NA	NA	NA	NA	NA	D/Not classifiable as to human carcinogenicity	IRIS	2/2/2009
COBALT	NA	NA	NA	NA	NA	NA	NA	NA
COPPER	NA	NA	NA	NA	NA	D	IRIS	8/1991
IRON	NA	NA	NA	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA	D	IRIS	4/2009
MERCURY	NA	NA	NA	NA	NA	C/Possible Human Carcinogen	IRIS	4/2009
VANADIUM	NA	NA	NA	NA	NA	NA	IRIS	6/1988

Notes:

1 - USEPA, 2004
2 - Adjusted dermal cancer slope factor = oral cancer slope factor/oral absorption efficiency for dermal
3 - No tox values for d-hexachlorocyclohexane (d-BHC); used surrogate tox values for a-BHC.

EPA Group:

A - Human carcinogen.

B1 - Probable human carcinogen - indicates that limited human data are available.
B2 - Probable human carcinogen - indicates sufficient evidence in animals and inadequate or no evidence in humans.
C - Possible human carcinogen.
D - Not classifiable as a human carcinogen.
E - Evidence of non-carcinogenicity.

Definitions:

IRIS = Integrated Risk Information System.
NA = Not available.
NCEA = National Center for Environmental Assessment, value from ORNL Regional Screening Level tables.
USEPA, 1993. Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons. EPA/600/R-93/089. July 1993
ORNL = Oak Ridge National Laboratory Regional Screening Level tables, June 2011
PPRTV = Provisional Peer Reviewed Toxicity Value
CA EPA = California Envirnomental Protection Agency

TABLE 5-14

CANCER TOXICITY DATA - INHALATION
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Chemical of Potential Concern	Unit Risk		Weight of Evidence/ Cancer Guideline Description	Unit Risk : Inhalation CSF	
	Value	Units		Source	Date
Semivolatile Organic Compounds					
BENZO(A)ANTHRACENE	1.1E-04	$(ug/m^3)^{-1}$	B2	CAEPA	4/2009
BENZO(A)PYRENE	1.1E-03	$(ug/m^3)^{-1}$	B2	CAEPA	4/2009
BENZO(B)FLUORANTHENE	1.1E-04	$(ug/m^3)^{-1}$	B2	CAEPA	4/2009
DIBENZO(A,H)ANTHRACENE	1.2E-03	$(ug/m^3)^{-1}$	B2	CAEPA	4/2009
INDENO(1,2,3-CD)PYRENE	1.1E-04	$(ug/m^3)^{-1}$	B2	CAEPA	4/2009
NAPHTHALENE	NA	NA	C	IRIS	9/1998
TCDD TEQs	3.8E+01	(ug/m^3)-1	B2	CA EPA (per ORNL)	NA
Pesticides/PCBs					
AROCLOR 1260	5.7E-04	(ug/m^3)-1	B2	IRIS	6/1997
Volatile Organic Compound					
BENZENE	7.8E-06	(ug/m3)-1	A/Known human carcinogen	IRIS	1/2000
TETRACHLOROETHYLENE	5.9E-06	(ug/m3)-1	Not Classified	CA EPA (per ORNL)	NA
Inorganics					
ALUMINUM	NA	NA	NA	NA	NA
ARSENIC	4.3E-03	(ug/m^3)-1	A	IRIS	4/2009
BARIUM	NA	NA	NA	NA	NA
CADMIUM	1.8E-03	$(ug/m^3)^{-1}$	B1	IRIS	6/1992
CHROMIUM	1.2E-02	$(ug/m^3)^{-1}$	A/Known human carcinogen	IRIS	4/2009
COBALT	9.0E-03	$(ug/m^3)^{-1}$	NA	PPRTV (per ORNL)	9/12/2008
IRON	NA	NA	NA	NA	NA
MANGANESE	NA	NA	NA	NA	NA
MERCURY	NA	NA	C/Possible Human Carcinogen	IRIS	4/2009
VANADIUM	8.0E-03	$(ug/m^3)^{-1}$	NA	PPRTV (per ORNL)	NA

Definitions:
IRIS = Integrated Risk Information System.
HEAST= Health Effects Assessment Summary Tables
ORNL = Oak Ridge National Laboratory Regional Screening Level tables, June 2011.
PPRTV = Provisional Peer Reviewed Toxicity Value
CA EPA = California Envirnomental Protection Agency

A - Human carcinogen.
B1 - Probable human carcinogen - indicates that limited human data are available.
B2 - Probable human carcinogen - indicates sufficient evidence in animals and inadequate or no evidence in humans .
C - Possible human carcinogen.
D - Not classifiable as a human carcinogen.
E - Evidence of non-carcinogenicity.

TABLE 5-15a

SUMMARY OF CANCER RISKS AND HAZARD INDICES - REASONABLE MAXIMUM EXPOSURE (RME)[1]
SITE 21 - BUILDING 1517
NAVAL STATON GREAT LAKES, ILLINOIS

Receptor	Medium	Exposure Route	Cancer Risk	Chemicals with Cancer Risks > 1E-4	Chemicals with Cancer Risks > 1E-5 and ≤ 1E-4	Chemicals with Cancer Risks > 1E-6 and ≤ 1E-5	Hazard Index (HI)	Chemicals with HI > 1
Construction/Excavation Worker	Surface Soil	Ingestion	2.E-06	- -	- -	cPAHs	1	- -
		Dermal Contact	8.E-07	- -	- -	- -	0.07	- -
		Inhalation	7.E-07	- -	- -	- -	12	Manganese
		Total	4.E-06	- -	- -	- -	13	Manganese
	Subsurface Soil	Ingestion	2.E-06	- -	- -	cPAHs	0.9	
		Dermal Contact	7.E-07	- -	- -	- -	0.04	
		Inhalation	3.E-07	- -	- -	- -	9	Manganese
		Total	3.E-06	- -	- -	- -	10	Manganese
	Groundwater	Ingestion	NA	- -	- -	- -	NA	- -
		Dermal Contact	8.E-09	- -	- -	- -	0.4	- -
		Inhalation VOC	9.E-11	- -	- -	- -	0.0002	- -
		Total	8.E-09	- -	- -	- -	0.4	- -
		Total Surface Soil	4.E-06	- -	- -	cPAHs	13	Manganese
		Total Subsurface Soil	3.E-06	- -	- -	- -	10	Manganese
		Total Groundwater	8.E-09	- -	- -	- -	0.4	- -
		Total Across the Entire Site[2]	**4.E-06**	- -	- -	cPAHs	**12**	Manganese

Receptor	Medium	Exposure Route	Cancer Risk	Chemicals with Cancer Risks > 1E-4	Chemicals with Cancer Risks > 1E-5 and ≤ 1E-4	Chemicals with Cancer Risks > 1E-6 and ≤ 1E-5	Hazard Index (HI)	Chemicals with HI > 1
Occupational/Maintenance Worker	Surface Soil	Ingestion	5.E-05	- -	cPAHs, Arsenic	TCDD-TEQs	0.3	- -
		Dermal Contact	3.E-05	- -	cPAHs	Arsenic	0.034	- -
		Inhalation	0.E+00	- -	- -	- -	0.00001	- -
		Total	8.E-05	- -	- -	- -	0.3	- -
		Total Surface Soil	8.E-05	- -	cPAHs, Arsenic	TCDD-TEQs	0.3	- -
		Total Across the Entire Site	**8.E-05**	- -	cPAHs, Arsenic	TCDD-TEQs	**0.3**	- -

Receptor	Medium	Exposure Route	Cancer Risk	Chemicals with Cancer Risks > 1E-4	Chemicals with Cancer Risks > 1E-5 and ≤ 1E-4	Chemicals with Cancer Risks > 1E-6 and ≤ 1E-5	Hazard Index (HI)	Chemicals with HI > 1
Adolescent Trespasser	Surface Soil	Ingestion	8.E-06	- -	- -	cPAHs	0.05	- -
		Dermal Contact	6.E-06	- -	- -	cPAHs	0.006	- -
		Inhalation	0.E+00	- -	- -	- -	0.0000003	- -
		Total	1.E-05	- -	- -	- -	0.05	- -
		Total Surface Soil	1.E-05	- -	- -	cPAHs	0.05	- -
		Total Across the Entire Site	**1.E-05**	- -	- -	cPAHs	**0.05**	- -

TABLE 5-15a

SUMMARY OF CANCER RISKS AND HAZARD INDICES - REASONABLE MAXIMUM EXPOSURE (RME)[1]
SITE 21 - BUILDING 1517
NAVAL STATON GREAT LAKES, ILLINOIS

Receptor	Medium	Exposure Route	Cancer Risk	Chemicals with Cancer Risks > 1E-4	Chemicals with Cancer Risks > 1E-5 and ≤ 1E-4	Chemicals with Cancer Risks > 1E-6 and ≤ 1E-5	Hazard Index (HI)	Chemicals with HI > 1
Future Child Resident	Surface Soil	Ingestion	2.E-03	cPAHs	Arsenic	Aroclor 1260, TCDD-TEQs	8	Arsenic, Iron
		Dermal Contact	8.E-04	cPAHs	- -	Arsenic	0.4	- -
		Inhalation	0.E+00	- -	- -	- -	0.0002	- -
		Total	3.E-03	cPAHs	Arsenic	Aroclor 1260, TCDD-TEQs	8	Arsenic, Iron
	Subsurface Soil	Ingestion	2.E-03	cPAHs, Arsenic	- -	- -	7	Arsenic, Cobalt, Iron
		Dermal Contact	6.E-04	cPAHs	Arsenic	- -	0.4	- -
		Total	2.E-03	cPAHs	Arsenic	- -	8	Arsenic, Cobalt, Iron
	Groundwater	Ingestion	1.E-04	- -	TCDD-TEQ, Pentachlorophenol, Arsenic	cPAHs, Tetrachloroethylene, Delta-BHC	25	Cobalt, Iron, Manganese
		Dermal Contact	1.E-06	- -	- -	- -	0.4	- -
		Inhalation - Showering	1.E-07	- -	- -	- -	0.005	- -
		Total	1.E-04	- -	TCDD-TEQ, Pentachlorophenol, Arsenic	cPAHs, Tetrachloroethylene, Delta-BHC	25	Cobalt, Iron, Manganese
		Total Surface Soil	3.E-03	cPAHs	Arsenic	Aroclor 1260, TCDD-TEQs	8	Arsenic, Iron
		Total Subsurface Soil	2.E-03	cPAHs, Arsenic			8	Arsenic, Cobalt, Iron
		Total Groundwater	1.E-04	- -	TCDD-TEQ, Pentachlorophenol, Arsenic	cPAHs, Tetrachloroethylene, Delta-BHC	25	Cobalt, Iron, Manganese
		Total Across the Entire Site[2]	**3.E-03**	cPAHs, Arsenic	TCDD-TEQ, Pentachlorophenol	Tetrachloroethylene, Delta-BHC	**33**	Arsenic, Cobalt, Iron, Manganese

Receptor	Medium	Exposure Route	Cancer Risk	Chemicals with Cancer Risks > 1E-4	Chemicals with Cancer Risks > 1E-5 and ≤ 1E-4	Chemicals with Cancer Risks > 1E-6 and ≤ 1E-5	Hazard Index (HI)	Chemicals with HI > 1
Future Adult Resident	Surface Soil	Ingestion	4.E-04	cPAHs	Arsenic	TCDD-TEQs	0.8	- -
		Dermal Contact	2.E-04	cPAHs	- -	Arsenic	0.062	- -
		Inhalation	0.E+00	- -	- -	- -	0.0002	- -
		Total	5.E-04	cPAHs	Arsenic	- -	0.9	- -
	Subsurface Soil	Ingestion	3.E-04	cPAHs	Arsenic		0.8	- -
		Dermal Contact	1.E-04	cPAHs	- -	Arsenic	0.07	- -
		Total	4.E-04	cPAHs	Arsenic		0.8	- -
	Groundwater	Ingestion	2.E-04	- -	TCDD-TEQ, Pentachlorophenol, Arsenic	cPAHs, Tetrachloroethylene, Delta-BHC	7.0	Cobalt, Iron, Manganese
		Dermal Contact	3.E-06	- -	- -	Tetrachloroethylene	0.3	- -
		Inhalation - Showering	1.E-07	- -	- -	- -	0.001	- -
		Total	2.E-04	- -	TCDD-TEQ, Pentachlorophenol, Arsenic	cPAHs, Tetrachloroethylene, Delta-BHC	7	Cobalt, Iron, Manganese
		Total Surface Soil	5.E-04	cPAHs	Arsenic	TCDD-TEQs	0.9	- -
		Total Subsurface Soil	4.E-04	cPAHs	Arsenic	- -	0.8	- -
		Total Groundwater	2.E-04	- -	TCDD-TEQ, Pentachlorophenol, Arsenic	cPAHs, Tetrachloroethylene, Delta-BHC	7	Cobalt, Iron, Manganese
		Total Across the Entire Site[2]	**7.E-04**	cPAHs	TCDD-TEQ, Pentachlorophenol, Arsenic	Tetrachloroethylene, Delta-BHC	**8**	Cobalt, Iron, Manganese

TABLE 5-15a

SUMMARY OF CANCER RISKS AND HAZARD INDICES - REASONABLE MAXIMUM EXPOSURE (RME)[1]
SITE 21 - BUILDING 1517
NAVAL STATON GREAT LAKES, ILLINOIS

Receptor	Medium	Exposure Route	Cancer Risk	Chemicals with Cancer Risks > 1E-4	Chemicals with Cancer Risks > 1E-5 and ≤ 1E-4	Chemicals with Cancer Risks > 1E-6 and ≤ 1E-5	Hazard Index (HI)	Chemicals with HI > 1
Total Residential Risks	Surface Soil	Ingestion	3.E-03	cPAHs	Arsenic	TCDD-TEQs	NA	- -
		Dermal Contact	1.E-03	cPAHs	- -	Arsenic	NA	- -
		Inhalation	0.E+00	- -	- -	- -	NA	
		Total	4.E-03	cPAHs	Arsenic	Aroclor 1260, TCDD-TEQs	NA	- -
	Subsurface Soil	Ingestion	2.E-03	cPAHs	Arsenic	- -	NA	
		Dermal Contact	8.E-04	cPAHs	- -	- -	NA	
		Total	3.E-03	cPAHs, Arsenic	- -	- -	NA	
	Groundwater	Ingestion	3.E-04	- -	TCDD-TEQ, Pentachlorophenol, Arsenic	cPAHs, Tetrachloroethylene, Delta-BHC	NA	- -
		Dermal Contact	4.E-06	- -	- -	Tetrachloroethylene	NA	- -
		Inhalation - Showering	3.E-07	- -	- -	- -	NA	
		Total	3.E-04	- -	TCDD-TEQ, Pentachlorophenol, Arsenic	cPAHs, Tetrachloroethylene, Delta-BHC	NA	- -
		Total Surface Soil	4.E-03	cPAHs	Arsenic	Aroclor 1260, TCDD-TEQs	NA	- -
		Total Subsurface Soil	3.E-03	cPAHs, Arsenic	- -	- -	NA	
		Total Groundwater	3.E-04	- -	TCDD-TEQ, Pentachlorophenol, Arsenic	cPAHs, Aroclor 1260, Tetrachloroethylene, Delta-BHC	NA	- -
		Total Across the Entire Site[2]	**4.E-03**	cPAHs, Arsenic	TCDD-TEQ, Pentachlorophenol	Tetrachloroethylene, Delta-BHC	See Child-only summed HI	- -

[1] Includes very conservative inclusion of groundwater exposure pathways for residential receptors. There is a municipal water supply, and a groundwater use restriction ordinance exists.
[2] Total Site Risks average the risk/hazards for surface and subsurface soil because the risk assessment assumes full default exposure factors for both surface and subsurface soil.
To add surface and subsurface risks/hazards would double count soil pathway risks.
cPAHs = Carcinogenic PAHs NA = Not applicable

TABLE 5-16a

SUMMARY OF CANCER RISKS AND HAZARD INDICES - CENTRAL TENDENCY EXPOSURE (CTE)[1]
SITE 21 - BUILDING 1517
NAVAL STATON GREAT LAKES, ILLINOIS

Receptor	Medium	Exposure Route	Cancer Risk	Chemicals with Cancer Risks > 1E-4	Chemicals with Cancer Risks > 1E-5 and ≤ 1E-4	Chemicals with Cancer Risks > 1E-6 and ≤ 1E-5	Hazard Index (HI)	Chemicals with HI > 1
Construction/Excavation Worker	Surface Soil	Ingestion	1.E-07	- -	- -	cPAHs	0.2	- -
		Dermal Contact	2.E-08	- -	- -	- -	0.008	- -
		Inhalation	6.E-08	- -	- -	- -	1.47	Manganese
		Total	2.E-07	- -	- -	- -	2	Manganese
	Subsurface Soil	Ingestion	1.E-07	- -	- -	- -	0.2	
		Dermal Contact	2.E-08	- -	- -	- -	0.003	
		Inhalation	2.E-08	- -	- -	- -	1.6	Manganese
		Total	1.E-07	- -	- -	- -	2	Manganese
	Groundwater	Ingestion	NA	- -	- -	- -	NA	- -
		Dermal Contact	5.E-09	- -	- -	- -	0.4	- -
		Inhalation VOC	--[2]	- -	- -	- -	--[1]	- -
		Total	5.E-09	- -	- -	- -	0.4	- -
		Total Surface Soil	2.E-07	- -	- -	- -	2	Manganese
		Total Subsurface Soil	1.E-07	- -	- -	- -	2	Manganese
		Total Groundwater	5.E-09	- -	- -	- -	0.4	- -
		Total Across the Entire Site[3]	**2.E-07**	- -	- -	- -	**2**	Manganese

Receptor	Medium	Exposure Route	Cancer Risk	Chemicals with Cancer Risks > 1E-4	Chemicals with Cancer Risks > 1E-5 and ≤ 1E-4	Chemicals with Cancer Risks > 1E-6 and ≤ 1E-5	Hazard Index (HI)	Chemicals with HI > 1
Occupational/Maintenance Worker	Surface Soil	Ingestion	3.E-06	- -	- -	cPAHs, Arsenic	0.08	- -
		Dermal Contact	3.E-07	- -	- -	- -	0.002	- -
		Inhalation	0.E+00	- -	- -	- -	0.0000008	- -
		Total	3.E-06	- -	- -	- -	0.08	- -
		Total Surface Soil	3.E-06	- -	- -	cPAHs, Arsenic	0.08	- -
		Total Across the Entire Site[3]	**3.E-06**	- -	- -	cPAHs, Arsenic	**0.08**	- -

Receptor	Medium	Exposure Route	Cancer Risk	Chemicals with Cancer Risks > 1E-4	Chemicals with Cancer Risks > 1E-5 and ≤ 1E-4	Chemicals with Cancer Risks > 1E-6 and ≤ 1E-5	Hazard Index (HI)	Chemicals with HI > 1
Adolescent Trespasser	Surface Soil	Ingestion	6.E-07	- -	- -	- -	0.008	- -
		Dermal Contact	2.E-07	- -	- -	- -	0.0004	- -
		Inhalation	0.E+00	- -	- -	- -	0.00000002	- -
		Total	8.E-07	- -	- -	- -	0.008	- -
		Total Surface Soil	8.E-07	- -	- -	- -	0.008	- -
		Total Across the Entire Site[3]	**8.E-07**	- -	- -	- -	**0.008**	- -

TABLE 5-16a

SUMMARY OF CANCER RISKS AND HAZARD INDICES - CENTRAL TENDENCY EXPOSURE (CTE)[1]
SITE 21 - BUILDING 1517
NAVAL STATON GREAT LAKES, ILLINOIS

Receptor	Medium	Exposure Route	Cancer Risk	Chemicals with Cancer Risks > 1E-4	Chemicals with Cancer Risks > 1E-5 and ≤ 1E-4	Chemicals with Cancer Risks > 1E-6 and ≤ 1E-5	Hazard Index (HI)	Chemicals with HI > 1
Future Child Resident	Surface Soil	Ingestion	6.E-06	- -	- -	cPAHs, Arsenic	0.8	- -
		Dermal Contact	6.E-07	- -	- -	- -	0.016	- -
		Inhalation	0.E+00	- -	- -	- -	0.000009	- -
		Total	7.E-06	- -	- -	cPAHs, Arsenic	0.8	- -
	Subsurface Soil	Ingestion	4.E-06	- -	- -	cPAHs, Arsenic	0.6	- -
		Dermal Contact	4.E-07	- -	- -	- -	0.009	- -
		Total	5.E-06	- -	- -	cPAHs, Arsenic	0.6	- -
	Groundwater	Ingestion	1.E-05	- -	- -	TCDD-TEQ, Pentachlorophenol, Arsenic	7	Manganese
		Dermal Contact	2.E-07	- -	- -	- -	0.2	- -
		Inhalation - Showering	3.E-08	- -	- -	- -	0.003	- -
		Total	1.E-05	- -	- -	TCDD-TEQ, Pentachlorophenol, Arsenic	7	Cobalt, Iron, Manganese
		Total Surface Soil	7.E-06	- -	- -	cPAHs, Arsenic	0.8	- -
		Total Subsurface Soil	5.E-06	- -	- -	cPAHs, Arsenic	0.6	- -
		Total Groundwater	1.E-05	- -	- -	TCDD-TEQ, Pentachlorophenol, Arsenic	7	Cobalt, Iron, Manganese
		Total Across the Entire Site[3]	**2.E-05**	- -	- -	cPAHs, TCDD-TEQ, Pentachlorophenol, Arsenic	**8**	Cobalt, Iron, Manganese
Receptor	**Medium**	**Exposure Route**	**Cancer Risk**	**Chemicals with Cancer Risks > 1E-4**	**Chemicals with Cancer Risks > 1E-5 and ≤ 1E-4**	**Chemicals with Cancer Risks > 1E-6 and ≤ 1E-5**	**Hazard Index (HI)**	**Chemicals with HI > 1**
Future Adult Resident	Surface Soil	Ingestion	2.E-06	- -	- -	cPAHs	0.08	- -
		Dermal Contact	2.E-07	- -	- -	- -	0.002	- -
		Inhalation	0.E+00	- -	- -	- -	0.000009	- -
		Total	3.E-06	- -	- -	cPAHs	0.08	- -
	Subsurface Soil	Ingestion	2.E-06	- -	- -	- -	0.07	- -
		Dermal Contact	1.E-07	- -	- -	- -	0.001	- -
		Total	2.E-06	- -	- -	- -	0.07	- -
	Groundwater	Ingestion	2.E-05	- -	TCDD-TEQ, Pentachlorophenol	cPAHs, Tetrachloroethylene, Delta-BHC	3	Manganese
		Dermal Contact	4.E-07	- -	- -	Pentachlorophenol	0.1	- -
		Inhalation - Showering	1.E-08	- -	- -	- -	0.0004	- -
		Total	2.E-05	- -	TCDD-TEQ, Pentachlorophenol, Arsenic	cPAHs, Tetrachloroethylene, Delta-BHC	3	Manganese
		Total Surface Soil	3.E-06	- -	Arsenic	TCDD-TEQs	0.08	- -
		Total Subsurface Soil	2.E-06	- -	Arsenic	- -	0.07	- -
		Total Groundwater	2.E-05	- -	TCDD-TEQ, Pentachlorophenol	cPAHs, Tetrachloroethylene, Delta-BHC	3	Manganese
		Total Across the Entire Site[3]	**2.E-05**	- -	TCDD-TEQ, Pentachlorophenol, Arsenic	cPAHs, Tetrachloroethylene, Delta-BHC	**3**	Manganese

TABLE 5-16a

SUMMARY OF CANCER RISKS AND HAZARD INDICES - CENTRAL TENDENCY EXPOSURE (CTE)[1]
SITE 21 - BUILDING 1517
NAVAL STATON GREAT LAKES, ILLINOIS

Receptor	Medium	Exposure Route	Cancer Risk	Chemicals with Cancer Risks > 1E-4	Chemicals with Cancer Risks > 1E-5 and ≤ 1E-4	Chemicals with Cancer Risks > 1E-6 and ≤ 1E-5	Hazard Index (HI)	Chemicals with HI > 1
Total Residential Risks	Surface Soil	Ingestion	8.E-06	- -	- -	cPAHs, Arsenic	NA	- -
		Dermal Contact	8.E-07	- -	- -	- -	NA	- -
		Inhalation	0.E+00	- -	- -	- -	NA	
		Total	9.E-06	- -	- -	cPAHs, Arsenic	NA	- -
	Subsurface Soil	Ingestion	6.E-06	- -	- -	cPAHs, Arsenic	NA	
		Dermal Contact	5.E-07	- -	- -	- -	NA	
		Total	7.E-06	- -	- -	cPAHs, Arsenic	NA	
	Groundwater	Ingestion	4.E-05	- -	TCDD-TEQ, Pentachlorophenol	cPAHs, Tetrachloroethylene, Delta-BHC	NA	- -
		Dermal Contact	7.E-07	- -	- -	- -	NA	- -
		Inhalation - Showering	4.E-08	- -	- -	- -	NA	
		Total	4.E-05	- -	TCDD-TEQ, Pentachlorophenol	cPAHs, Tetrachloroethylene, Delta-BHC	NA	- -
		Total Surface Soil	9.E-06	- -	- -	cPAHs, Arsenic	NA	- -
		Total Surbsurface Soil	7.E-06	- -	- -	- -	NA	
		Total Groundwater	4.E-05	- -	TCDD-TEQ, Pentachlorophenol	cPAHs, Tetrachloroethylene, Delta-BHC	NA	- -
		Total Across the Entire Site[3]	**4.E-05**	- -	TCDD-TEQ, Pentachlorophenol	cPAHs, Arsenic, Tetrachloroethylene, Delta-BHC	See Child-only summed HI	- -

[1] Includes very conservative inclusion of groundwater exposure pathways for residential receptors. There is a municipal water supply, and a groundwater use restriction ordinance exists.
[2] Not calculated for CTE because RME risk/HI insignificant for this pathway.
[3] Total Site Risks average the risk/hazards for surface and subsurface soil because the risk assessment assumes full default exposure factors for both surface and subsurface soil.
To add surface and subsurface risks/hazards would double count soil pathway risks.
cPAHs = Carcinogenic PAHs NA = Not applicable

TABLE 5-17A

HUMAN HEALTH SURFACE SOIL MIGRATION TO GROUNDWATER SCREENING ASSESSMENT
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Parameter	CAS #	Minimum Result[1]	Maximum Result[1][2]	Average Positive Result	Overall Average	TACO Migration to Groundwater - Class 1 (Soil Component of the Groundwater Ingestion Route)[3]	NON-TACO Migration to Groundwater - Class 1 (Soil Component of the Groundwater Ingestion Route)[4]	ORNL Risk Based SSL - Migration from Soil to Groundwater[5]	ORNL MCL Based SSL - Migration from Soil to Groundwater[5]
Volatile Organics (ug/kg)									
2-BUTANONE	78-93-3	14.0	14.0	14.0	5.5	NC	NC	1500	NC
ACETONE	67-64-1	21.0	180.0 J	75.8	22.8	25000	NC	4500	NC
BENZENE	71-43-2	0.6 J	1.1 J	0.8	2.3	30	NC	**0.21**	2.6
CARBON DISULFIDE	75-15-0	1.6 J	16.0	4.9	4.1	32000	NC	310	NC
CYCLOHEXANE	110-82-7	0.7 J	2.9 J	1.4	2.0	NC	NC	13000	NC
ETHYLBENZENE	100-41-4	0.9 J	0.9 J	0.9	2.7	13000	NC	1.7	780
METHYL CYCLOHEXANE	108-87-2	0.4 J	3.7 J	1.8	1.9	NC	NC	NC	NC
TETRACHLOROETHENE	127-18-4	1.4 J	1.4 J	1.4	2.7	60	NC	**0.049**	2.3
TOLUENE	108-88-3	1.1 J	1.4 J	1.3	2.7	12000	NC	1600	690
TOTAL XYLENES	1330-20-7	1.6 J	1.6 J	1.6	2.7	150000	NC	200	9800
Semivolatile Organics/PAHs (ug/kg)									
1,1-BIPHENYL	92-52-4	62.0 J	62 J	62.0	182.8	NC	150000	19000	NC
2-METHYLNAPHTHALENE	91-57-6	27.0	900	415.9	415.9	NC	NC	**750**	NC
4-METHYLPHENOL	106-44-5	50.0 J	50 J	50.0	183.6	NC	200	150	NC
ACENAPHTHENE	83-32-9	13.0	2200	304.4	235.6	570000	NC	22000	NC
ACENAPHTHYLENE	208-96-8	20.0	680	124.9	57.8	NC	85000	22000	NC
ACETOPHENONE	98-86-2	48.0 J	48 J	48.0	183.1	NC	NC	1100	NC
ANTHRACENE	120-12-7	37.0	7200	917.6	584.6	12000000	NC	360000	NC
BAP EQUIVALENT-FULLND	NA	9.9	50631	3566.0	3566.0	NC	NC	**3.5**	**240**
BENZO(A)ANTHRACENE	56-55-3	110.0	22000 J	1894.0	1722.0	**2000**	NC	**10**	NC
BENZO(A)PYRENE	50-32-8	200.0	38000 J	3333.5	2576.4	**8000**	NC	**3.5**	**240**
BENZO(B)FLUORANTHENE	205-99-2	290.0	59000 J	4382.5	3984.3	**5000**	NC	**35**	NC
BENZO(G,H,I)PERYLENE	191-24-2	150.0	24000 J	1943.9	1590.8	NC	27000000	120000	NC
BENZO(K)FLUORANTHENE	207-08-9	110.0	21000 J	1735.5	1577.9	49000	NC	**350**	NC
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	51.0 J	3400 J	354.8	312.3	3600000	NC	**1100**	**1400**
BUTYL BENZYL PHTHALATE	85-68-7	97.0 J	97 J	97.0	185.3	930000	NC	510	NC
CARBAZOLE	86-74-8	66.0 J	2400	1086.5	509.1	**600**	NC	NC	NC
CHRYSENE	218-01-9	130.0 J	31000 J	2491.0	2264.7	160000	NC	**1100**	NC
DI-N-BUTYL PHTHALATE	84-74-2	37.0 J	190 J	113.5	182.8	2300000	NC	9200	NC
DIBENZO(A,H)ANTHRACENE	53-70-3	44.0	1100	325.7	178.5	2000	NC	**11**	NC
DIBENZOFURAN	132-64-9	39.0 J	640	222.2	222.2	NC	NC	680	NC
FLUORANTHENE	206-44-0	260.0	84000	6079.5	6079.5	4300000	NC	160000	NC
FLUORENE	86-73-7	11.0	1600	462.0	190.1	560000	NC	27000	NC
INDENO(1,2,3-CD)PYRENE	193-39-5	150.0	36000 J	3038.8	2210.5	**14000**	NC	**120**	NC
NAPHTHALENE	91-20-3	18.0	520	237.0	237.0	12000	NC	**0.47**	NC
PHENANTHRENE	85-01-8	250.0	30000	3104.5	3104.5	NC	200000	120000	NC
PYRENE	129-00-0	240.0	70000	5049.1	5049.1	4200000	NC	120000	NC
TOTAL PAHS-FULLND	NA	2508.0	427249	32065.7	32065.7	NC	NC	NC	NC
Pesticides/PCBs (ug/kg)									
4,4'-DDD	72-54-8	0.8 J	520.0 J	100.6	100.6	16000	NC	**66**	NC
4,4'-DDE	72-55-9	0.5 J	350.0 J	55.5	55.5	54000	NC	**47**	NC
4,4'-DDT	50-29-3	0.8 J	740.0 J	81.4	81.4	32000	NC	**67**	NC

TABLE 5-17A

HUMAN HEALTH SURFACE SOIL MIGRATION TO GROUNDWATER SCREENING ASSESSMENT
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Parameter	CAS #	Minimum Result[1]	Maximum Result[1][2]	Average Positive Result	Overall Average	TACO Migration to Groundwater - Class 1 (Soil Component of the Groundwater Ingestion Route)[3]	NON-TACO Migration to Groundwater - Class 1 (Soil Component of the Groundwater Ingestion Route)[4]	ORNL Risk Based SSL - Migration from Soil to Groundwater[5]	ORNL MCL Based SSL - Migration from Soil to Groundwater[5]
Pesticides/PCBs (ug/kg)									
ALDRIN	309-00-2	0.2 J	0.3 J	0.3	0.2	500	NC	0.65	NC
ALPHA-BHC	319-84-6	0.3 J	12.0 J	3.9	1.4	**0.5**	NC	**0.062**	NC
ALPHA-CHLORDANE	5103-71-9	0.6 J	27.0 J	5.6	3.1	NC	NC	**13**	140
AROCLOR-1260	11096-82-5	21.0 J	720.0 J	229.9	149.9	NC	NC	**24**	NC
BETA-BHC	319-85-7	0.3 J	1.0 J	0.6	0.2	NC	NC	**0.22**	NC
DELTA-BHC	319-86-8	0.4 J	3.5 J	1.3	0.6	NC	NC	**0.062**	NC
DIELDRIN	60-57-1	0.3 J	15.0 J	4.8	3.4	**4**	NC	**0.17**	NC
ENDOSULFAN I	959-98-8	0.2 J	14.0 J	3.9	1.4	NC	NC	3000	NC
ENDOSULFAN II	33213-65-9	0.6 J	4.6 J	2.3	0.9	NC	NC	3000	NC
ENDOSULFAN SULFATE	1031-07-8	1.0 J	25.0 J	6.9	3.9	NC	NC	3000	NC
ENDRIN	72-20-8	0.7 J	224.0	39.4	14.6	1000	NC	440	**81**
ENDRIN ALDEHYDE	7421-93-4	0.4 J	28.0 J	7.9	2.4	NC	NC	440	81
ENDRIN + ENDRIN ALDEHYDE	NA	1.1 J	252.0 J	47.3	17.0	1000	NC	NC	NC
ENDRIN KETONE	53494-70-5	0.9 J	44.0 J	12.4	2.6	NC	NC	440	81
GAMMA-BHC (LINDANE)	58-89-9	0.2 J	20.0	3.1	1.4	**9**	NC	**0.36**	**1.2**
GAMMA-CHLORDANE	5103-74-2	0.6 J	189.0 J	19.6	16.9	NC	NC	**13**	**140**
ALPHA + GAMMA CHLORDANE	NA	1.3 J	216.0 J	25.1	20.1	10000	NC	NC	NC
HEPTACHLOR EPOXIDE	1024-57-3	0.2 J	3.0	1.3	0.8	700	NC	**0.15**	4.1
METHOXYCHLOR	72-43-5	0.4 J	37.0 J	8.5	5.9	160000	NC	9900	2200
Dioxins/Furans (ng/kg)									
1,2,3,4,6,7,8,9-OCDD	3268-87-9	174.0	1310.0	742.0	742.0	NC	NC	**870**	NC
1,2,3,4,6,7,8,9-OCDF	39001-02-0	19.8	141.0	80.4	80.4	NC	NC	870	NC
1,2,3,4,6,7,8-HPCDD	35822-46-9	17.7	169.0	93.4	93.4	NC	NC	**26**	NC
1,2,3,4,6,7,8-HPCDF	67562-39-4	9.6	82.4	46.0	46.0	NC	NC	**26**	NC
1,2,3,4,7,8,9-HPCDF	55673-89-7	1.0 J	4.1 J	2.5	2.5	NC	NC	26	NC
1,2,3,4,7,8-HXCDD	39227-28-6	1.9 J	1.9 J	1.9	2.2	NC	NC	2.6	NC
1,2,3,4,7,8-HXCDF	70648-26-9	1.3 J	5.9	3.6	3.6	NC	NC	**2.6**	NC
1,2,3,6,7,8-HXCDD	57653-85-7	1.1 J	7.9	4.5	4.5	NC	NC	**2.6**	NC
1,2,3,6,7,8-HXCDF	57117-44-9	1.1 J	11.6	6.3	6.3	NC	NC	**2.6**	NC
1,2,3,7,8,9-HXCDD	19408-74-3	0.8 J	5.2	3.0	3.0	NC	NC	**2.6**	NC
1,2,3,7,8,9-HXCDF	72918-21-9	0.4 J	2.7 J	1.5	1.5	NC	NC	**2.6**	NC
1,2,3,7,8-PECDD	40321-76-4	0.8 J	5.9 J	3.3	3.3	NC	NC	**0.26**	NC
1,2,3,7,8-PECDF	57117-41-6	1.9 J	1.9 J	1.9	1.1	NC	NC	8.7	NC
2,3,4,6,7,8-HXCDF	60851-34-5	1.8 J	26.2	14.0	14.0	NC	NC	**2.6**	NC
2,3,4,7,8-PECDF	57117-31-4	3.7 J	57.5	30.6	30.6	NC	NC	**0.87**	NC
2,3,7,8-TCDD	1746-01-6	0.2 J	0.8 J	0.5	0.5	NC	NC	**0.26**	15
2,3,7,8-TCDF	51207-31-9	3.2	3.2	3.2	1.8	NC	NC	**2.6**	NC
TEQ FULLND	CALC066	3.6	33.5	18.6	18.6	NC	NC	**0.26**	NC
TOTAL HPCDD	37871-00-4	33.9	326.0	180.0	180.0	NC	NC	NC	NC
TOTAL HPCDF	38998-75-3	25.2	202.0	113.6	113.6	NC	NC	NC	NC
TOTAL HXCDD	34465-46-8	10.6	67.0	38.8	38.8	NC	NC	NC	NC
TOTAL HXCDF	55684-94-1	29.8 J	393.0 J	211.4	211.4	NC	NC	NC	NC

TABLE 5-17A

HUMAN HEALTH SURFACE SOIL MIGRATION TO GROUNDWATER SCREENING ASSESSMENT
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Parameter	CAS #	Minimum Result[1]	Maximum Result[1][2]	Average Positive Result	Overall Average	TACO Migration to Groundwater - Class 1 (Soil Component of the Groundwater Ingestion Route)[3]	NON-TACO Migration to Groundwater - Class 1 (Soil Component of the Groundwater Ingestion Route)[4]	ORNL Risk Based SSL - Migration from Soil to Groundwater[5]	ORNL MCL Based SSL - Migration from Soil to Groundwater[5]
Dioxins/Furans (ng/kg)									
TOTAL PECDD	36088-22-9	4.0 J	19.4 J	11.7	11.7	NC	NC	NC	NC
TOTAL PECDF	30402-15-4	40.9	712.0 J	376.5	376.5	NC	NC	NC	NC
TOTAL TCDD	41903-57-5	1.6	10.8	6.2	6.2	NC	NC	NC	NC
TOTAL TCDF	55722-27-5	16.2	215.0 J	115.6	115.6	NC	NC	NC	NC
Herbicides (ug/kg)									
2,4-D	94-75-7	217.0 J	217.0 J	217.0	36.9	1500	NC	**95**	**18**
DICAMBA	1918-00-9	4.9 J	10.0 J	7.2	4.2	NC	NC	280	NC
DINOSEB	88-85-7	17.2 J	17.2 J	17.2	14.3	340	NC	320	62
Inorganics (mg/kg)									
ALUMINUM	7429-90-5	2470.0	29500.0	7623.2	7623.2	NC	NC	55000	NC
ANTIMONY	7440-36-0	0.6 J	5.2	2.2	1.0	NC	NC	**0.66**	**0.27**
ARSENIC	7440-38-2	3.1	48.4 J	12.5	12.5	NC	NC	**0.0013**	**0.29**
BARIUM	7440-39-3	29.3 J	234.0 J	76.4	76.4	NC	NC	300	**82**
BERYLLIUM	7440-41-7	0.3	4.7 J	1.0	1.0	NC	NC	58	**3.2**
CADMIUM	7440-43-9	0.1	13.0	2.3	2.2	NC	NC	**1.4**	**0.38**
CALCIUM	7440-70-2	2240.0 J	133000.0	71560.9	71560.9	NC	NC	NC	NC
CHROMIUM	7440-47-3	5.4 J	163.0 J	20.3	20.3	NC	NC	NC	180000
COBALT	7440-48-4	2.3	17.7	6.6	6.6	NC	NC	**0.49**	NC
COPPER	7440-50-8	12.9	835.0	93.6	93.6	NC	NC	**51**	**46**
IRON	7439-89-6	6660.0 J	69500.0 J	26761.8	26761.8	NC	NC	**640**	NC
LEAD	7439-92-1	16.7	428.0	101.0	101.0	NC	NC	NC	**14**
MAGNESIUM	7439-95-4	1440.0	75800.0	34817.3	34817.3	NC	NC	NC	NC
MANGANESE	7439-96-5	173.0	2420.0 J	588.6	588.6	NC	NC	**57**	NC
MERCURY	7439-97-6	0.0	9.0	0.6	0.6	NC	NC	**0.03**	**0.1**
NICKEL	7440-02-0	5.6	56.2 J	21.9	21.9	NC	NC	**48**	NC
POTASSIUM	7440-09-7	428.0	1930.0	839.4	839.4	NC	NC	NC	NC
SILVER	7440-22-4	0.2	1.4	0.7	0.2	NC	NC	1.6	NC
SODIUM	7440-23-5	230.0	2080.0	926.9	926.9	NC	NC	NC	NC
VANADIUM	7440-62-2	8.9	25.7	16.7	16.7	NC	NC	180	NC
ZINC	7440-66-6	46.5	1230.0	246.8	246.8	NC	NC	**680**	NC

Associated Samples:
NTC21SB01-SO-0102
NTC21SB02-SO-0001
NTC21SB03-SO-0001
NTC21SB04-SO-0001
NTC21SB05-SO-0001
NTC21SB06-SO-0001
NTC21SB07-SO-0001
NTC21SB08-SO-0001
NTC21SB09-SO-0001
NTC21SB10-SO-0001
NTC21SB21-SO-0001
NTC21SB22-SO-0001

Notes:
1 - Duplicate analytical results are not be used for the EPC calculations. Data values less than sample-specific detection limits are reported as the detection limit.
2 - The maximum detected concentration is used for screening purposes
3 - Section 742 Table A, Tier 1 Soil Remediation Objectives for Residential Properties (online, 2010).
4 - Soil Remediation Objectives for Residential Properties, Non-TACO Chemicals (2010)
5 - USEPA ORNL Soil Screening Level for the Potection of Groundwater (USEPA, 2008)
Values are for hexavalent chromium.
Acenaphthene is used as a surrogate for acenaphthylene
Pyrene is used as a surrogate for benzo(ghi)perylene and phenanthrene
Nickel criteria based on nickle soluble salts
BAP equivalent criteria based on BaP
Illinois EPA TACO criteria for chlordane used as a surrogate for alpha- and gamma-chlordane
Illinois EPA TACO criteria for endosulfan used as a surrogate for endosulfan I
Shaded criterion indicates that the maximum detected concentration exceeds one or more screening criteria.

Definitions:
J = Estimated value
NC = No criteria

TABLE 5-17B

HUMAN HEALTH SUBSURFACE SOIL MIGRATION TO GROUNDWATER SCREENING ASSESSMENT
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Parameter	CAS #	Minimum Result[1]	Maximum Result[1][2]	Average Positive Result	Overall Average	TACO Migration to Groundwater - Class 1 (Soil Component of the Groundwater Ingestion Route)[3]	NON-TACO Migration to Groundwater - Class 1 (Soil Component of the Groundwater Ingestion Route)[4]	ORNL Risk Based SSL - Migration from Soil to Groundwater[5]	ORNL MCL Based SSL - Migration from Soil to Groundwater[5]
Volatile Organics (ug/kg)									
2-BUTANONE	78-93-3	9.0 J	28.0 J	14.2	5.2	NC	NC	1500	NC
ACETONE	67-64-1	25.0 J	87.0	56.8	15.0	25000	NC	4500	NC
BENZENE	71-43-2	0.4 J	4.8	1.8	2.3	30	NC	**0.21**	**2.6**
CARBON DISULFIDE	75-15-0	1.2 J	12.0	4.5	3.7	32000	NC	310	NC
CHLOROMETHANE	74-87-3	1.0 J	2.2 J	1.6	4.8	NC	NC	49	NC
CIS-1,2-DICHLOROETHENE	156-59-2	1.5 J	1.5 J	1.5	4.9	400	NC	110	21
CYCLOHEXANE	110-82-7	0.6 J	9.0	2.4	2.4	NC	NC	13000	NC
ETHYLBENZENE	100-41-4	0.7 J	1.9 J	1.2	2.3	13000	NC	**1.7**	780
ISOPROPYLBENZENE	98-82-8	1.0 J	1.0 J	1.0	2.5	NC	NC	1100	NC
METHYL CYCLOHEXANE	108-87-2	1.2 J	11.0	3.9	3.7	NC	NC	NC	NC
TETRACHLOROETHENE	127-18-4	3.3 J	18.0	10.7	3.4	60	NC	**0.049**	**2.3**
TOLUENE	108-88-3	1.4 J	5.6	3.0	2.9	12000	NC	1600	690
TOTAL XYLENES	1330-20-7	2.2 J	2.2 J	2.2	2.6	150000	NC	200	9800
TRICHLOROFLUOROMETHANE	75-69-4	1.4 J	2.8 J	2.3	2.6	NC	NC	830	NC
TRICHLOROFLUOROMETHANE	75-69-4	1.4 J	2.8 J	2.3	2.6	NC	NC	830	NC
Semivolatile Organics/PAHs (ug/kg)									
1,1-BIPHENYL	92-52-4	96.0 J	96 J	96.0	192.2	NC	150000	19000	NC
2-METHYLNAPHTHALENE	91-57-6	2.4 J	2100	348.5	254.1	NC	NC	**750**	NC
ACENAPHTHENE	83-32-9	12.0	880	165.8	91.4	570000	NC	22000	NC
ACENAPHTHYLENE	208-96-8	2.8 J	2000	223.0	112.5	NC	85000	22000	NC
ACETOPHENONE	98-86-2	230.0 J	230 J	230.0	198.8	NC	NC	1100	NC
ANTHRACENE	120-12-7	2.9 J	5000	697.5	349.8	12000000	NC	360000	NC
BAP EQUIVALENT-FULLND	NA	8.4	39374	2316.8	2316.8	NC	NC	**3.5**	**240**
BENZALDEHYDE	100-52-7	220.0 J	220 J	220.0	185.5	NC	3300	810	NC
BENZO(A)ANTHRACENE	56-55-3	2.5 J	32000	2140.3	1848.7	**2000**	NC	**10**	NC
BENZO(A)PYRENE	50-32-8	12.0	27000	2701.9	1597.5	**8000**	NC	**3.5**	**240**
BENZO(B)FLUORANTHENE	205-99-2	6.4	41000	3090.4	2388.5	**5000**	NC	**35**	NC
BENZO(G,H,I)PERYLENE	191-24-2	4.1	11000	973.0	708.2	NC	27000000	120000	NC
BENZO(K)FLUORANTHENE	207-08-9	7.2	14000	1135.9	878.2	49000	NC	**350**	NC
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	54.0 J	280 J	170.4	196.3	3600000	NC	1100	1400
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	54.0 J	280 J	170.4	196.3	3600000	NC	1100	1400
BUTYL BENZYL PHTHALATE	85-68-7	110.0 J	110 J	110.0	200.9	930000	NC	510	NC
CARBAZOLE	86-74-8	430.0 J	1000	715.0	439.8	**600**	NC	NC	NC
CHRYSENE	218-01-9	3.4 J	34000	2091.1	1996.1	160000	NC	**1100**	NC
DIBENZO(A,H)ANTHRACENE	53-70-3	2.4 J	3300	440.9	181.6	**2000**	NC	**11**	NC
DIBENZOFURAN	132-64-9	34.0 J	670	209.6	208.9	NC	NC	680	NC
FLUORANTHENE	206-44-0	6.8	56000	4247.6	3668.6	4300000	NC	160000	NC
FLUORENE	86-73-7	2.5 J	1200	253.9	72.7	560000	NC	27000	NC
INDENO(1,2,3-CD)PYRENE	193-39-5	12.0	16000	1706.9	1009.5	**14000**	NC	**120**	NC
NAPHTHALENE	91-20-3	3.8 J	4600	593.8	432.4	12000	NC	**0.47**	NC
PHENANTHRENE	85-01-8	1.8 J	11000	1498.3	1430.3	NC	200000	120000	NC
PHENANTHRENE	85-01-8	1.8 J	11000	1498.3	1430.3	NC	200000	120000	NC
PYRENE	129-00-0	6.9	52000	3730.6	3222.2	4200000	NC	120000	NC
TOTAL PAHS-FULLND	NA	61.1	308070	20255.1	20255.1	NC	NC	NC	NC

TABLE 5-17B

HUMAN HEALTH SUBSURFACE SOIL MIGRATION TO GROUNDWATER SCREENING ASSESSMENT
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Parameter	CAS #	Minimum Result[1]	Maximum Result[1][2]	Average Positive Result	Overall Average	TACO Migration to Groundwater - Class 1 (Soil Component of the Groundwater Ingestion Route)[3]	NON-TACO Migration to Groundwater - Class 1 (Soil Component of the Groundwater Ingestion Route)[4]	ORNL Risk Based SSL - Migration from Soil to Groundwater[5]	ORNL MCL Based SSL - Migration from Soil to Groundwater[5]
Pesticides/PCBs (ug/kg)									
4,4'-DDD	72-54-8	0.4 J	480.0	120.2	49.4	16000	NC	**66**	NC
4,4'-DDE	72-55-9	0.7 J	300.0	57.0	26.1	54000	NC	**47**	NC
4,4'-DDT	50-29-3	1.2 J	240.0 J	40.1	18.4	32000	NC	**67**	NC
ALDRIN	309-00-2	0.8 J	0.8 J	0.8	0.2	500	NC	**0.65**	NC
ALPHA-BHC	319-84-6	0.3 J	2.8 J	0.9	0.4	**0.5**	NC	**0.062**	NC
ALPHA-CHLORDANE	5103-71-9	0.4 J	26.0 J	8.1	2.7	NC	NC	**13**	140
AROCLOR-1242	53469-21-9	47.0 J	47.0 J	47.0	12.1	NC	NC	**5.3**	NC
AROCLOR-1260	11096-82-5	29.0 J	440.0 J	156.5	63.7	NC	NC	**24**	NC
BETA-BHC	319-85-7	0.6 J	1.1 J	0.8	0.3	NC	NC	**0.22**	NC
DELTA-BHC	319-86-8	0.3 J	3.0	1.1	0.4	NC	NC	**0.062**	NC
DIELDRIN	60-57-1	0.9 J	5.6 J	2.3	1.1	**4**	NC	**0.17**	NC
ENDOSULFAN I	959-98-8	0.3 J	3.2 J	1.4	0.4	NC	NC	3000	NC
ENDOSULFAN II	33213-65-9	0.2 J	1.3	0.8	0.5	NC	NC	3000	NC
ENDOSULFAN SULFATE	1031-07-8	0.7 J	8.7 J	3.1	1.4	NC	NC	3000	NC
ENDRIN	72-20-8	0.8 J	3.2 J	1.7	0.7	1000	NC	440	81
ENDRIN ALDEHYDE	7421-93-4	1.1 J	4.9 J	3.0	0.6	NC	NC	440	81
ENDRIN + ENDRIN ALDEHYDE	NA	1.9 J	8.1 J	4.7	1.4	1000	NC	NC	NC
ENDRIN KETONE	53494-70-5	1.5 J	1.5 J	1.5	0.5	NC	NC	440	81
GAMMA-BHC (LINDANE)	58-89-9	0.3 J	2.3 J	0.9	0.3	9	NC	**0.36**	**1.2**
GAMMA-CHLORDANE	5103-74-2	0.2 J	46.0 J	7.3	4.1	NC	NC	**13**	140
ALPHA + GAMMA CHLORDANE	NA	0.6 J	72.0 J	15.4	6.8	10000	NC	NC	NC
HEPTACHLOR EPOXIDE	1024-57-3	0.3 J	6.9 J	2.4	0.9	700	NC	**0.15**	**4.1**
METHOXYCHLOR	72-43-5	0.8 J	34.2 J	7.0	3.3	160000	NC	9900	2200
Dioxins/Furans (ng/kg)									
1,2,3,4,6,7,8,9-OCDD	3268-87-9	1950.0	1950.0	1950.0	1950.0	NC	NC	**870**	NC
1,2,3,4,6,7,8,9-OCDF	39001-02-0	44.8	44.8	44.8	44.8	NC	NC	870	NC
1,2,3,4,6,7,8-HPCDD	35822-46-9	167.0	167.0	167.0	167.0	NC	NC	**26**	NC
1,2,3,4,6,7,8-HPCDF	67562-39-4	18.1	18.1	18.1	18.1	NC	NC	26	NC
1,2,3,4,7,8,9-HPCDF	55673-89-7	1.7 J	1.7 J	1.7	1.7	NC	NC	26	NC
1,2,3,4,7,8-HXCDD	39227-28-6	1.0 J	1.0 J	1.0	1.0	NC	NC	2.6	NC
1,2,3,4,7,8-HXCDF	70648-26-9	2.6 J	2.6 J	2.6	2.6	NC	NC	2.6	NC
1,2,3,6,7,8-HXCDD	57653-85-7	3.6 J	3.6 J	3.6	3.6	NC	NC	**2.6**	NC
1,2,3,6,7,8-HXCDF	57117-44-9	1.4 J	1.4 J	1.4	1.4	NC	NC	2.6	NC
1,2,3,7,8,9-HXCDD	19408-74-3	2.4 J	2.4 J	2.4	2.4	NC	NC	2.6	NC
1,2,3,7,8,9-HXCDF	72918-21-9	0.7 J	0.7 J	0.7	0.7	NC	NC	2.6	NC
1,2,3,7,8-PECDD	40321-76-4	0.6 J	0.6 J	0.6	0.6	NC	NC	**0.26**	NC
2,3,4,6,7,8-HXCDF	60851-34-5	2.1 J	2.1 J	2.1	2.1	NC	NC	2.6	NC
2,3,4,7,8-PECDF	57117-31-4	2.8 J	2.8 J	2.8	2.8	NC	NC	**0.87**	NC
2,3,7,8-TCDD	1746-01-6	0.3 J	0.3 J	0.3	0.3	NC	NC	**0.26**	15
TEQ FULLND	NA	5.6	5.6	5.6	5.6	NC	NC	**0.26**	NC
TOTAL HPCDD	37871-00-4	335.0	335.0	335.0	335.0	NC	NC	NC	NC
TOTAL HPCDF	38998-75-3	61.3	61.3	61.3	61.3	NC	NC	NC	NC
TOTAL HXCDD	34465-46-8	29.8	29.8	29.8	29.8	NC	NC	NC	NC
TOTAL HXCDF	55684-94-1	40.4	40.4	40.4	40.4	NC	NC	NC	NC
TOTAL PECDD	36088-22-9	4.8 J	4.8 J	4.8	4.8	NC	NC	NC	NC
TOTAL PECDF	30402-15-4	32.5	32.5	32.5	32.5	NC	NC	NC	NC
TOTAL TCDD	41903-57-5	2.9	2.9	2.9	2.9	NC	NC	NC	NC
TOTAL TCDF	55722-27-5	12.6	12.6	12.6	12.6	NC	NC	NC	NC

TABLE 5-17B

HUMAN HEALTH SUBSURFACE SOIL MIGRATION TO GROUNDWATER SCREENING ASSESSMENT
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Parameter	CAS #	Minimum Result[1]	Maximum Result[1][2]	Average Positive Result	Overall Average	TACO Migration to Groundwater - Class 1 (Soil Component of the Groundwater Ingestion Route)[3]	NON-TACO Migration to Groundwater - Class 1 (Soil Component of the Groundwater Ingestion Route)[4]	ORNL Risk Based SSL - Migration from Soil to Groundwater[5]	ORNL MCL Based SSL - Migration from Soil to Groundwater[5]
Herbicides (ug/kg)									
2,4-D	94-75-7	54.6 J	54.6 J	54.6	31.0	1500	NC	95	**18**
DICAMBA	1918-00-9	6.1 J	29.2 J	11.5	4.9	NC	NC	280	NC
Inorganics (mg/kg)									
ALUMINUM	7429-90-5	3720.0	24300.0	9343.2	9343.2	NC	NC	55000	NC
ANTIMONY	7440-36-0	0.6	0.6	0.6	0.4	NC	NC	0.66	**0.27**
ARSENIC	7440-38-2	4.2	85.0 J	12.1	12.1	NC	NC	**0.0013**	**0.29**
BARIUM	7440-39-3	12.4 J	157.0 J	69.3	69.3	NC	NC	300	**82**
BERYLLIUM	7440-41-7	0.2	4.1	1.0	1.0	NC	NC	58	**3.2**
CADMIUM	7440-43-9	0.1	9.6	1.3	1.2	NC	NC	**1.4**	**0.38**
CALCIUM	7440-70-2	4280.0 J	177000.0	54851.8	54851.8	NC	NC	NC	NC
CHROMIUM	7440-47-3	7.9	34.3 J	15.1	15.1	NC	NC	NC	180000
COBALT	7440-48-4	2.3	23.8	8.9	8.9	NC	NC	**0.49**	NC
COPPER	7440-50-8	9.9	124.0 J	47.6	47.6	NC	NC	**51**	**46**
IRON	7439-89-6	6560.0	65800.0 J	26966.4	26966.4	NC	NC	**640**	NC
LEAD	7439-92-1	8.9	228.0 J	54.5	54.5	NC	NC	NC	**14**
MAGNESIUM	7439-95-4	3150.0	81500.0	26891.8	26891.8	NC	NC	NC	NC
MANGANESE	7439-96-5	203.0	1690.0	661.5	661.5	NC	NC	**57**	NC
MERCURY	7439-97-6	0.0	0.5	0.1	0.1	NC	NC	**0.03**	**0.1**
NICKEL	7440-02-0	4.4	44.4 J	23.2	23.2	NC	NC	48	NC
POTASSIUM	7440-09-7	558.0	1930.0	1035.1	1035.1	NC	NC	NC	NC
SELENIUM	7782-49-2	1.3 J	1.3 J	1.3	0.5	NC	NC	**0.95**	**0.26**
SODIUM	7440-23-5	210.0	3370.0	1043.2	1043.2	NC	NC	NC	NC
VANADIUM	7440-62-2	10.5	33.5	19.0	19.0	NC	NC	180	NC
ZINC	7440-66-6	38.5	1010.0 J	184.5	184.5	NC	NC	**680**	NC

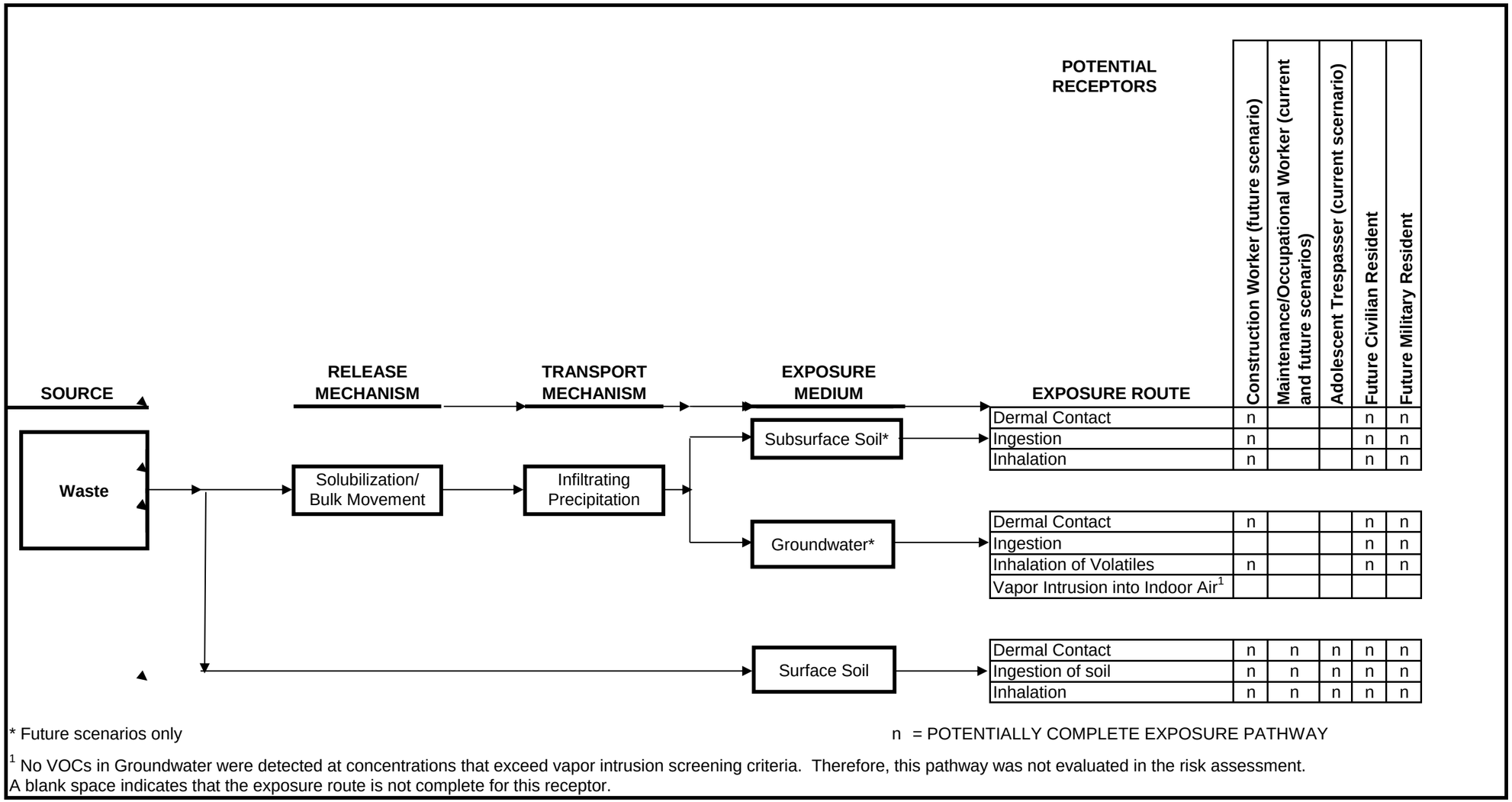
Associated Samples:
NTC21SB02-SO-0204
NTC21SB02-SO-0406
NTC21SB03-SO-0204
NTC21SB04-SO-0406
NTC21SB05-SO-0204
NTC21SB06-SO-0204
NTC21SB07-SO-0204
NTC21SB08-SO-0204
NTC21SB09-SO-0204
NTC21SB10-SO-0406
NTC21SB11-SO-0204
NTC21SB12-SO-0204
NTC21SB13-SO-0204
NTC21SB14-SO-0204
NTC21SB15-SO-0204
NTC21SB16-SO-0204
NTC21SB17-SO-0507
NTC21SB18-SO-0507

Notes:
1 - Duplicate analytical results are not be used for the EPC calculations. Data values less than sample-specific detection limits are reported as the detection limit.
2 - The maximum detected concentration is used for screening purposes
3 - Section 742 Table A, Tier 1 Soil Remediation Objectives for Residential Properties (online, 2010).
4 - Soil Remediation Objectives for Residential Properties, Non-TACO Chemicals (2010)
5 - USEPA ORNL Soil Screening Level for the Potection of Groundwater (USEPA, 2008)
Values are for hexavalent chromium.
Acenaphthene is used as a surrogate for acenaphthylene
Pyrene is used as a surrogate for benzo(ghi)perylene and phenanthrene
Nickel criteria based on nickle soluble salts
BAP equivalent criteria based on BaP
Illinois EPA TACO and Non-TACO criteria for chlordane used as a surrogate for TACO and Non-TACO criteria for alpha- and gamma-chlordane
Illinois EPA TACO and Non-TACO criteria for endosulfan used as a surrogate for TACO and Non-TACO criteria for endosulfan I
Shaded criterion indicates that the maximum detected concentration exceeds one or more screening criteria.

Definitions:
J = Estimated value
NC = No criteria

FIGURE 5-1

HUMAN HEALTH CONCEPTUAL SITE MODEL
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS



* Future scenarios only

n = POTENTIALLY COMPLETE EXPOSURE PATHWAY

[1] No VOCs in Groundwater were detected at concentrations that exceed vapor intrusion screening criteria. Therefore, this pathway was not evaluated in the risk assessment.
A blank space indicates that the exposure route is not complete for this receptor.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 SUMMARY OF INVESTIGATION FINDINGS

Surface soil, subsurface soil, and groundwater analytical results were compared to screening criteria provided by the Illinois Tiered Approach to Corrective Action Objectives (TACO), Illinois Non-TACO, and United States Environmental Protection Agency (USEPA). Analytical results were compared against both the minimum screening values, which are primarily based on conservative residential exposure scenarios, and the applicable Illinois TACO Residential and Industrial criteria that address only ingestion and inhalation exposure routes. The results of the comparisons against the TACO Ingestion and Inhalation Remediation Objectives for Residential and Industrial recipients for surface soil, subsurface soil, and groundwater are summarized below.

Surface Soil Results

PAHs in the form of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)flouranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene, were detected at concentrations above TACO Ingestion Remediation Objectives (Residential and/or Industrial) at numerous sampling locations throughout the site. The highest concentrations of these constituents were encountered at one sample location, NTC21-SB-21, where they exceeded 12 times the average concentration. Only benzo(a)pyrene's average concentration exceeded the TACO industrial criterion while all but benzo(k)flouranthene's average concentration exceeded the relevant TACO residential criterion.

Inorganics in the form of manganese and lead were detected at concentrations above TACO Ingestion Remediation Objectives (Residential only). Lead was detected above the TACO Soil Remediation Objective for Residential Properties (400 mg/kg) at two surface soil locations. Although the two detections (428 mg/kg at SB-10 and 407 mg/kg at SB-13) exceed the relevant TACO criterion, the average lead concentration in surface soil at the Site is below the TACO residential criterion. Manganese was also found in excess of the TACO Soil Remediation Objective for Residential Properties at two surface soil locations. As with lead, the average concentration of manganese across the Site is below the residential criterion.

Subsurface Soil Results

PAHs in the form of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)flouranthene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene, were detected at concentrations above TACO Ingestion Remediation Objectives (Residential and/or Industrial) at numerous sampling locations throughout the site. The highest concentrations of these constituents were encountered at one sample

location, NTC21-SB-03, where they exceeded 16 times the average concentration. Similar to the surface soil results, only benzo(a)pyrene's average concentration exceeded the TACO industrial criterion while all but benzo(k)flouranthene's average concentration exceeded the relevant TACO residential criterion.

Manganese was detected at a concentration slightly above TACO Ingestion Remediation Objectives (Residential only) at one sampling location at the site. As noted for the surface sample data discussed above, the average concentration of manganese in the subsurface is below the residential criterion.

Groundwater Results

Pentachlorophenol and iron were each detected at concentrations above TACO Class I Groundwater criteria in one groundwater sample from monitoring wells located on the site. Manganese was detected at concentrations that exceed TACO Class I Groundwater criteria in groundwater samples from four of the six monitoring wells located at the site.

Summary of Impact to Media

Site 21 soils and groundwater have been impacted by industrial activities at the property. Although the RI noted a broad range of isolated detections of organic and inorganic contaminants above screening and health-based levels in soil and groundwater, it is the site-wide PAH and metals contamination in soils that is most significant. It is likely that impacts to media are primarily due to past activities at the site. Elevated PAHs and inorganic levels in both soils and groundwater could be related to the past use of the site for coal storage. Many of the samples collected and tested were described as consisting of black sand and gravel size material. This is consistent with material that could have remained at the site once the majority of the stockpiles were removed. Studies have shown that leachate from coal piles can contain concentration of PAHs and metals.

While the soil borings and distribution of contamination is indicative of historic impacts, there is also the possibility that some of the impacts are due to more recent site activities. The site is an active facility which is used by cars and trucks daily. A large portion of the site is paved with asphalt. The western portion of the site is occupied by vehicle refueling and maintenance facilities. As with any filling station or parking lot, environmental conditions have the potential to change due to everyday use. Workshops for the trades working on the base including paint, electrical, plumbing, HVAC, etc. are located just south of Building 1517. There is the potential for historical releases from these areas. Additionally Building 1517 houses an active RCRA storage facility. Constituents encountered in the soil and groundwater are also consistent with the both the current and former industrial use of the site

Concentrations of PAHs in soil were relatively high at two sampling locations, NTC21-SB-03 and SB-21. Impacts to subsurface soil in SB-03, located the northwest portion of the site could be related to coal residuals, discharges from the leaking UST at Building 1600A (since remediated), on-site spills, or due to the former presence of an incinerator at that location. Impacts to surface soil in SB-21, located near the shop storage area south of Building 1517, could be related coal residuals or small spills associated with past and/or current operations at the adjacent workshops.

6.2 SUMMARY OF HUMAN HEALTH RISK ASSESSMENT

Four potential receptor groups were evaluated in the HHRA for Site 21. These included: occupational/maintenance workers, adolescent trespassers, adult and child residents, and construction workers. Non-carcinogenic and carcinogenic risks were evaluated for these receptors under RME and CTE exposure scenarios. Evaluations considered exposure to surface and subsurface soil, and groundwater.

Soil Contaminants

Based on the non-cancer and cancer evaluations, the following contaminants with non-cancer HQs greater than 1.0 or with cancer risks greater than $1x10^{-4}$ were identified as COCs:

- In surface soils, c-PAHs, arsenic, and iron for residential exposure and, manganese due to inhalation of construction workers.

- In subsurface soils, c-PAHs, arsenic, iron, and cobalt, and for residential exposure and, manganese due to inhalation of construction workers.

When the maximum concentrations of the inorganic compounds detected at Site 21 in soil were compared to background data established for use by the Illinois EPA, no inorganics were found to be below background, based on maximum concentrations. However, if the overall averages of detected inorganics were compared to the background data set, aluminum, antimony, barium, cobalt, and vanadium were below the background values. This indicates that it is possible that most of the inorganic compounds at Site 21 could be background constituents.

Although the average concentration of arsenic at the site was below background data, soils from borings NTC21-SB-14 and SB-15 had concentrations that were relatively high. Similarly, the average concentration of manganese was near background levels for the site. However, surface soil sample from several borings, most notably NTC21-SB-14 and SB-15, had concentrations that were relatively high. These two borings are located just north of Building 1517. The higher concentrations of arsenic and

manganese encountered there could be related to residues from former coal piles in that area. On average, iron was found to be above background concentrations at the site. It was found in relatively high concentrations at various locations and may also be attributable in the former coal piles.

Carcinogenic risks were calculated using the highest concentrations of c-PAHs encountered at the site. These occurred for subsurface and surface soil at sampling locations NTC21-SB-03 and SB-21, respectively. Concentrations of c-PAHs at these two locations were relatively high compared to the results obtained from all of the other sampling location across Site 21. Therefore, theoretical excess lifetime cancer risks are likely overestimated given the application of the maximum detected soil concentration of BaP Equivalents as the EPC. Inclusion of such high outlier maximum concentrations also will yield the calculation of relatively high mean and 95 percent UCL of the mean concentrations, potentially resulting in an overestimation of risks for scenarios that use statistical values as EPCs.

Groundwater Contaminants

If the domestic use of groundwater is taken into consideration, based on the non-cancer and cancer evaluations, the following contaminants with non-cancer HQs greater than 1.0 or with cancer risks greater than $1x10^{-4}$ were identified as COCs: arsenic, cobalt, iron, manganese, and pentachlorophenol for residential exposure to groundwater. However, direct exposure to groundwater at Site 21 is not expected to occur under current and/or future land uses because the facility and the area surrounding the facility are supplied by public water, the facility has a groundwater use restriction in place, and there are no drinking water wells located downgradient of the site.

6.3 RECOMMENDATIONS

Based on the results of the RI it is recommended that a Focused Feasibility Study be performed for Site 21. Alternatives to be considered in order to mitigate risk should include:

- Use of LUCs to control access of construction activities to impacted soils and groundwater;
- Use of LUCs to limit future land use and restrict residential uses;
- Use of barriers to control access and exposure pathways of construction workers to impacted soils and groundwater; and,
- Revaluation of the site upon decommissioning and prior to any change in industrial or residential use.

Alternative solutions to mitigate risks may be identified and considered during preparation of the FFS.

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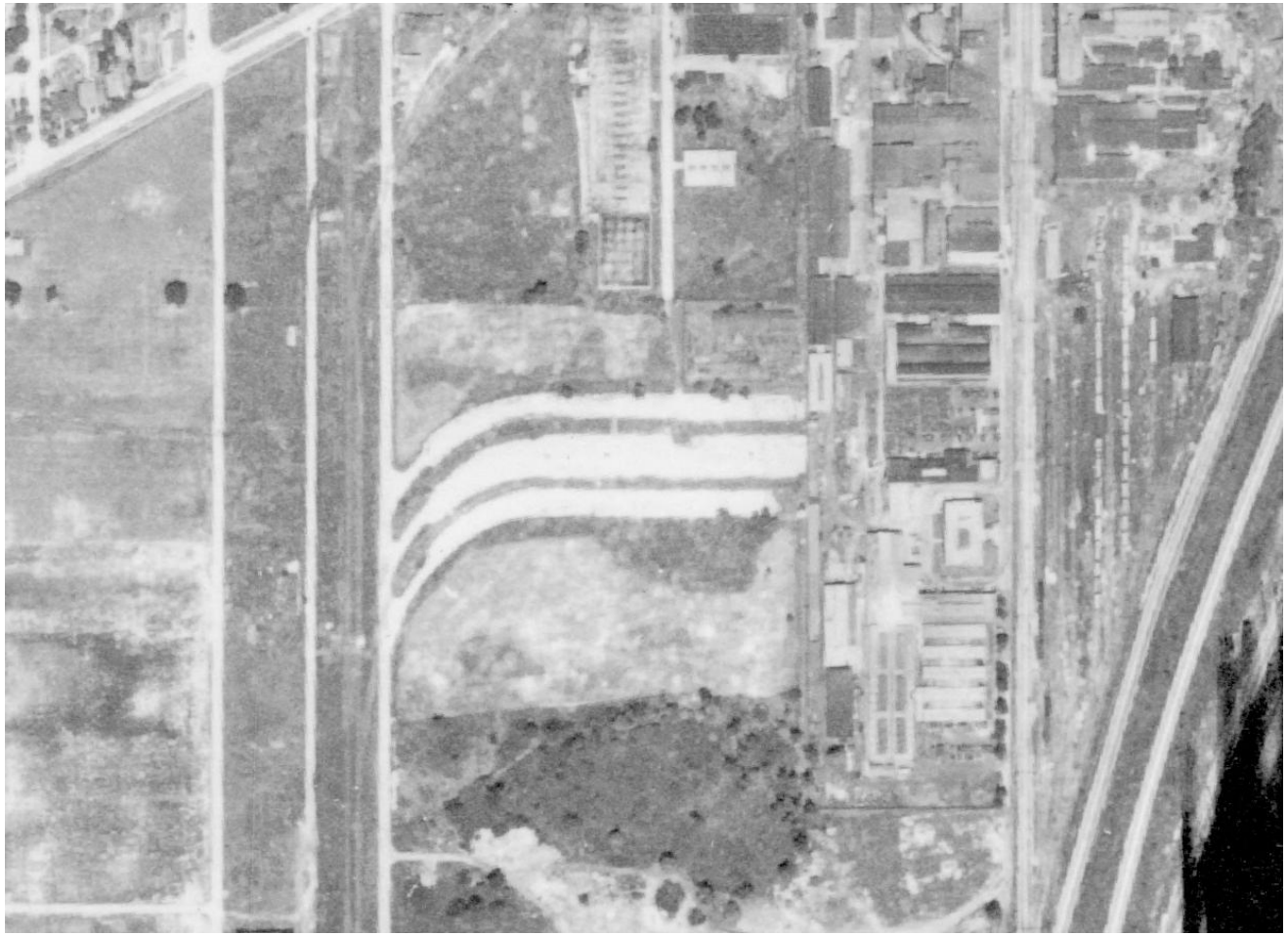
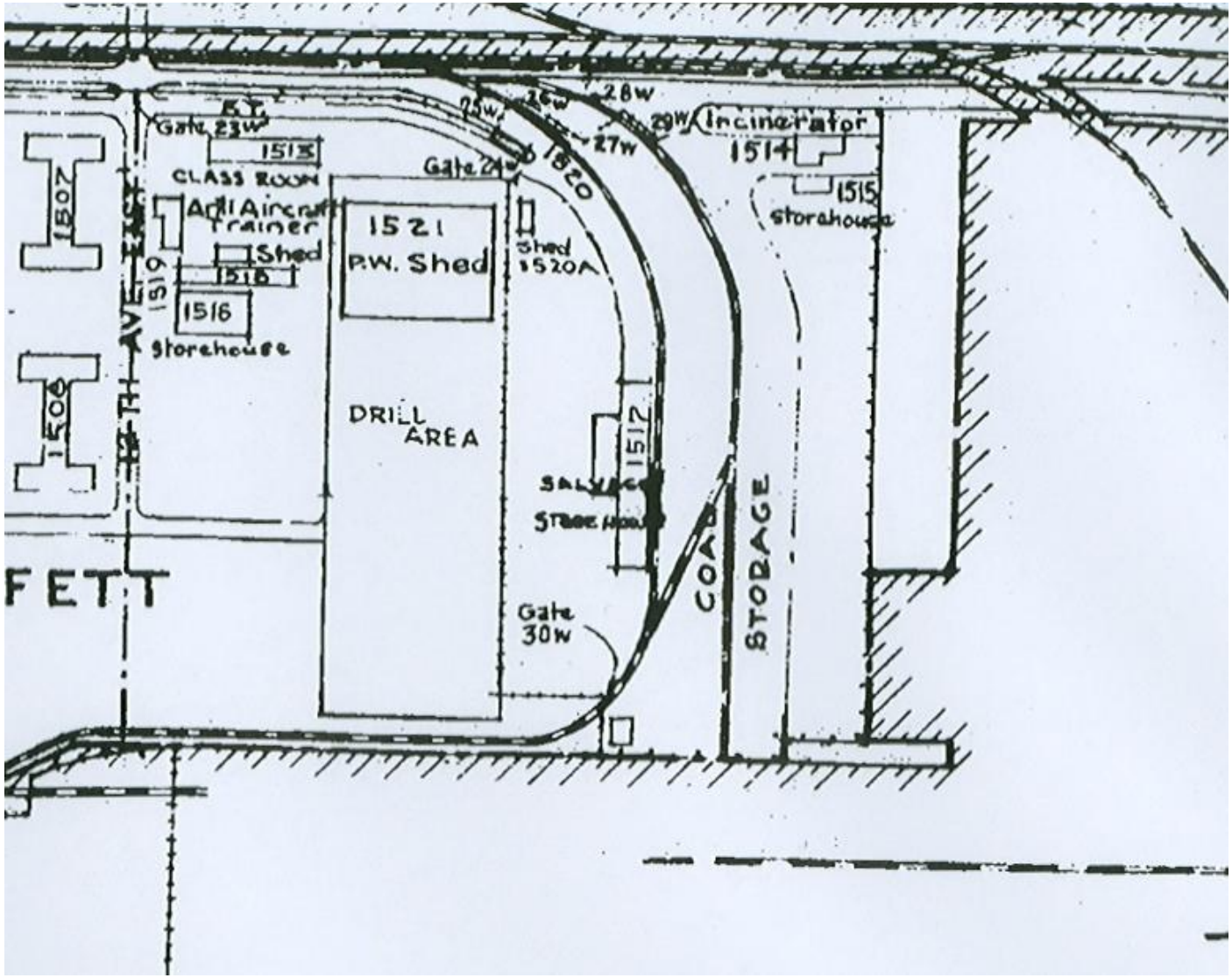
APPENDIX A

HISTORICAL DRAWINGS AND PHOTOGRAPHS

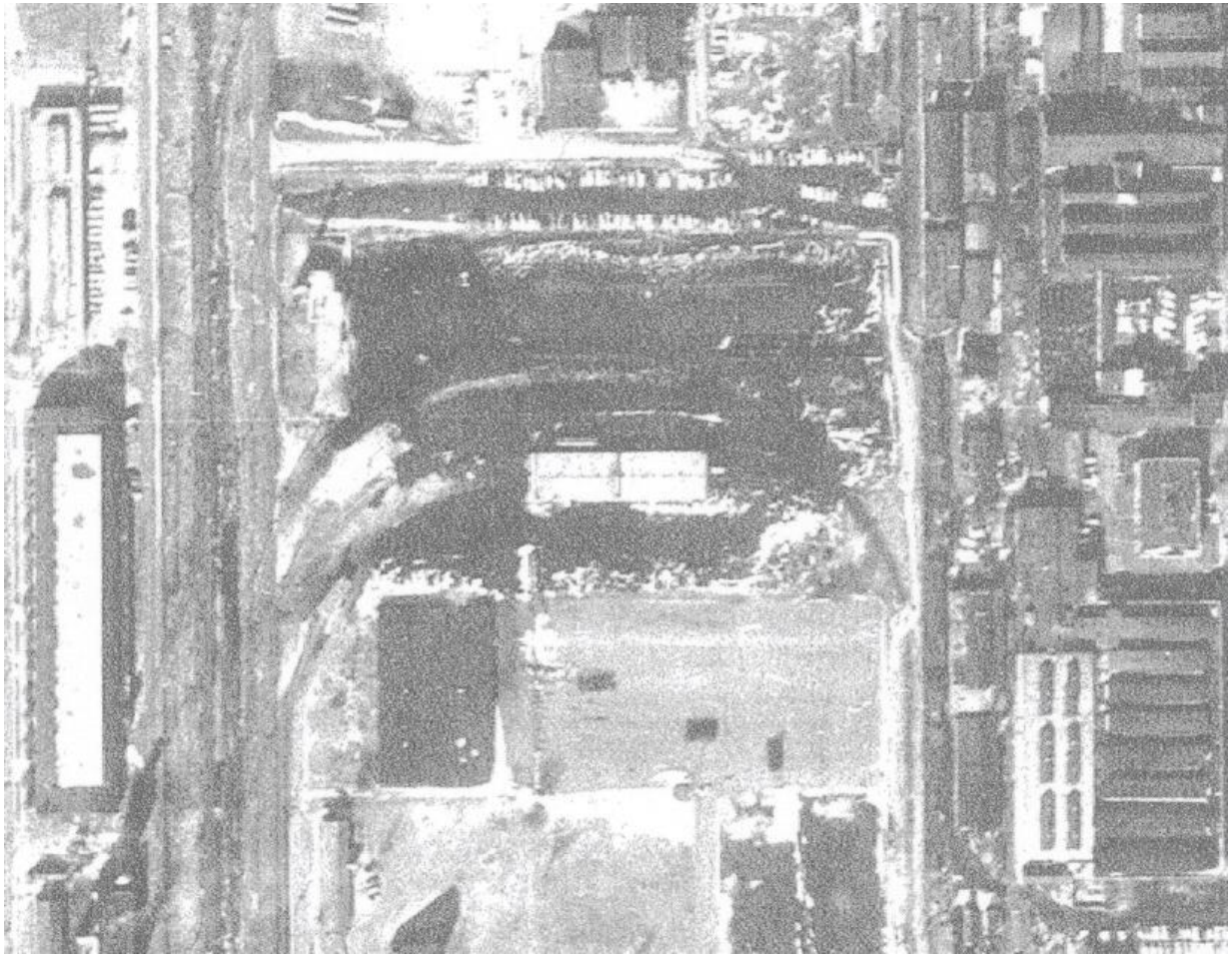
1939 Photo



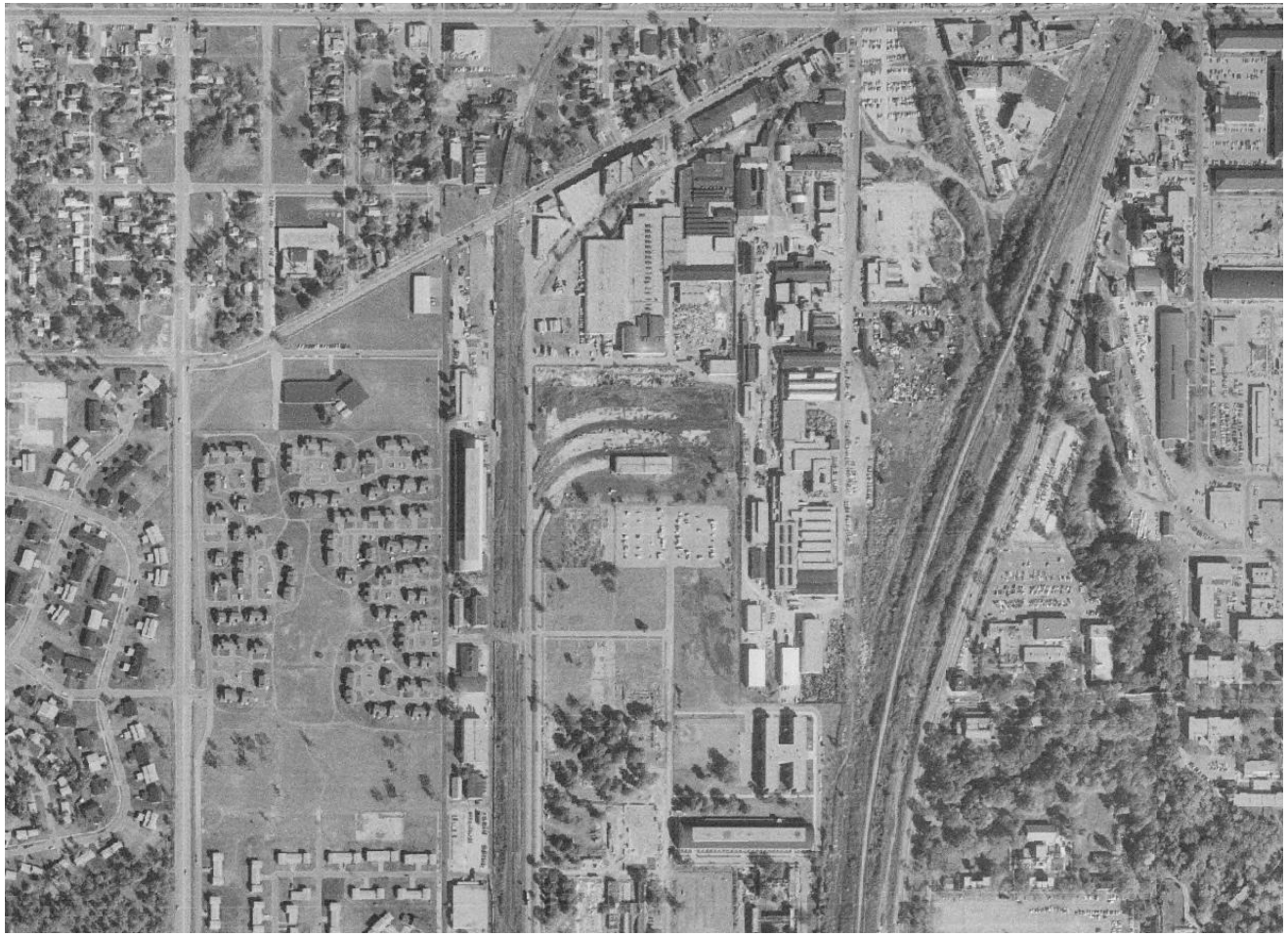
1950 Drawing



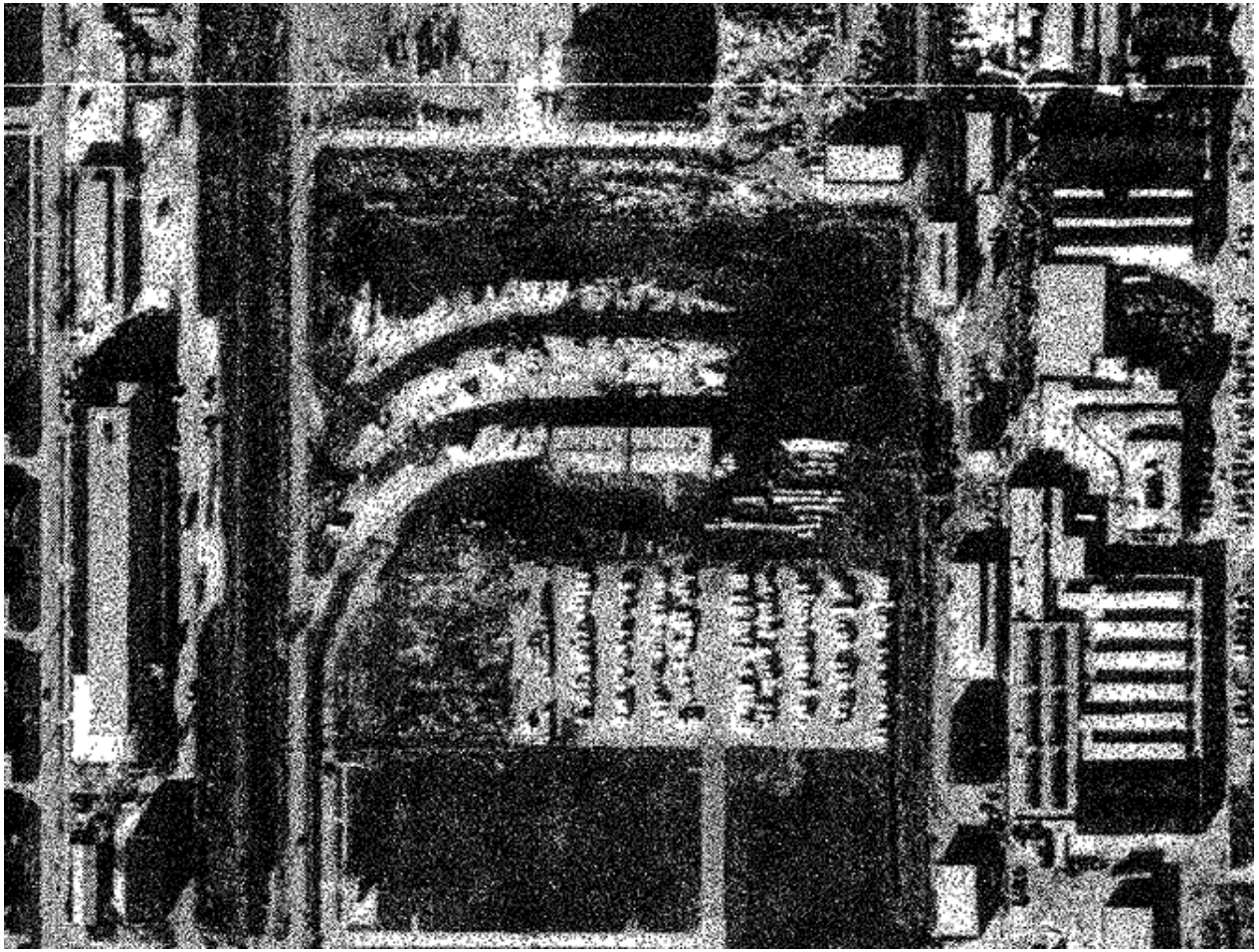
1964 Photo



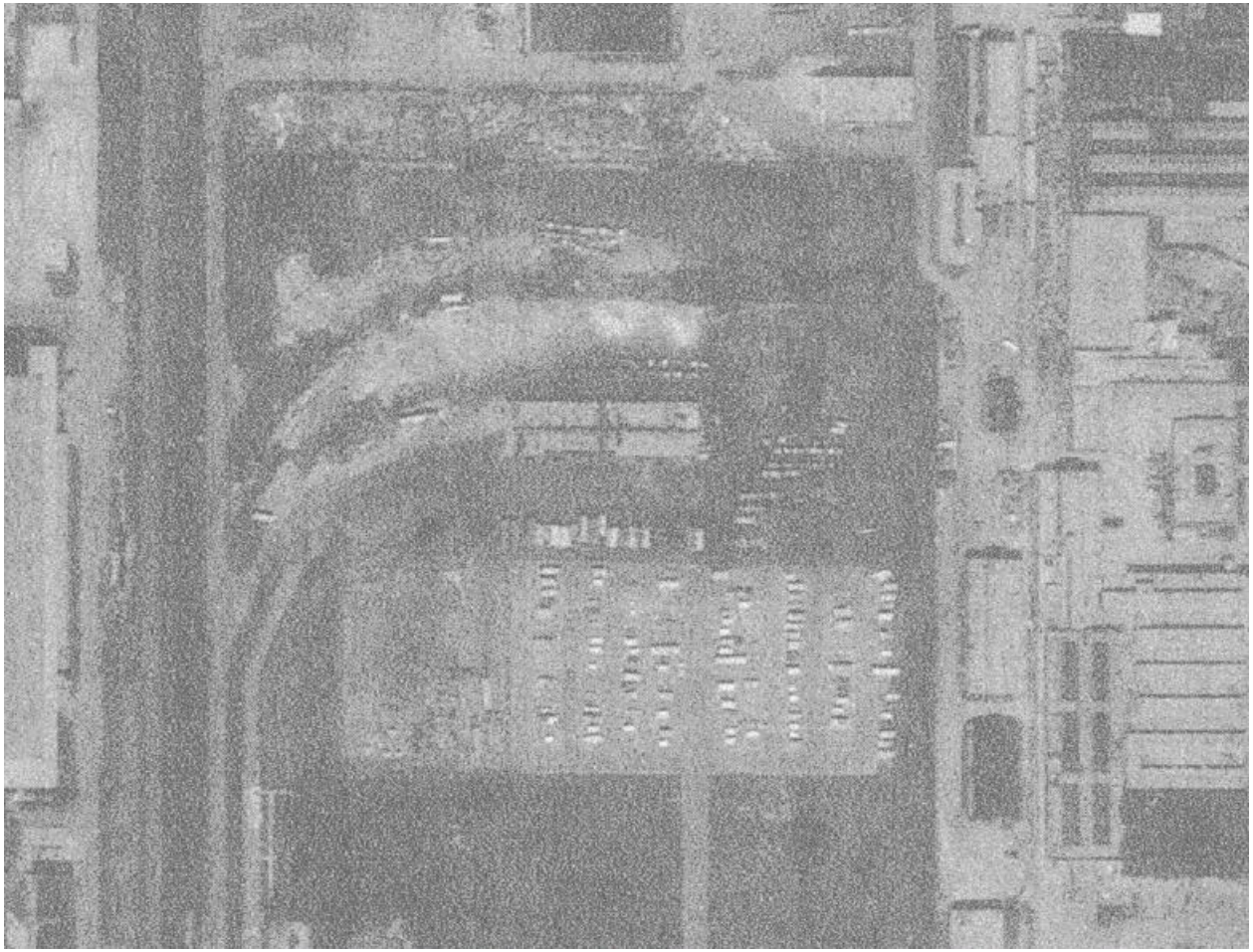
1974 Photo



1977 Photo

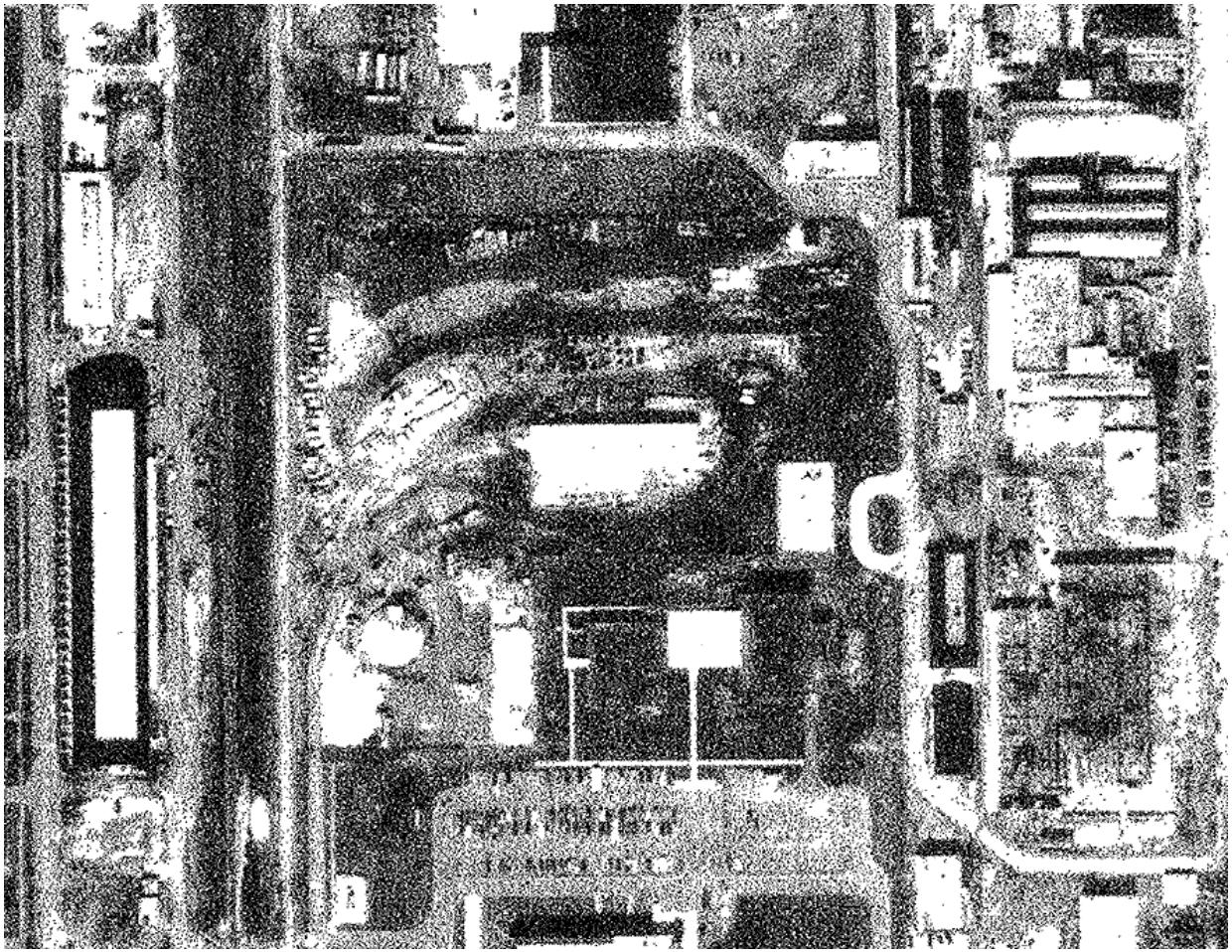


1980 Photo



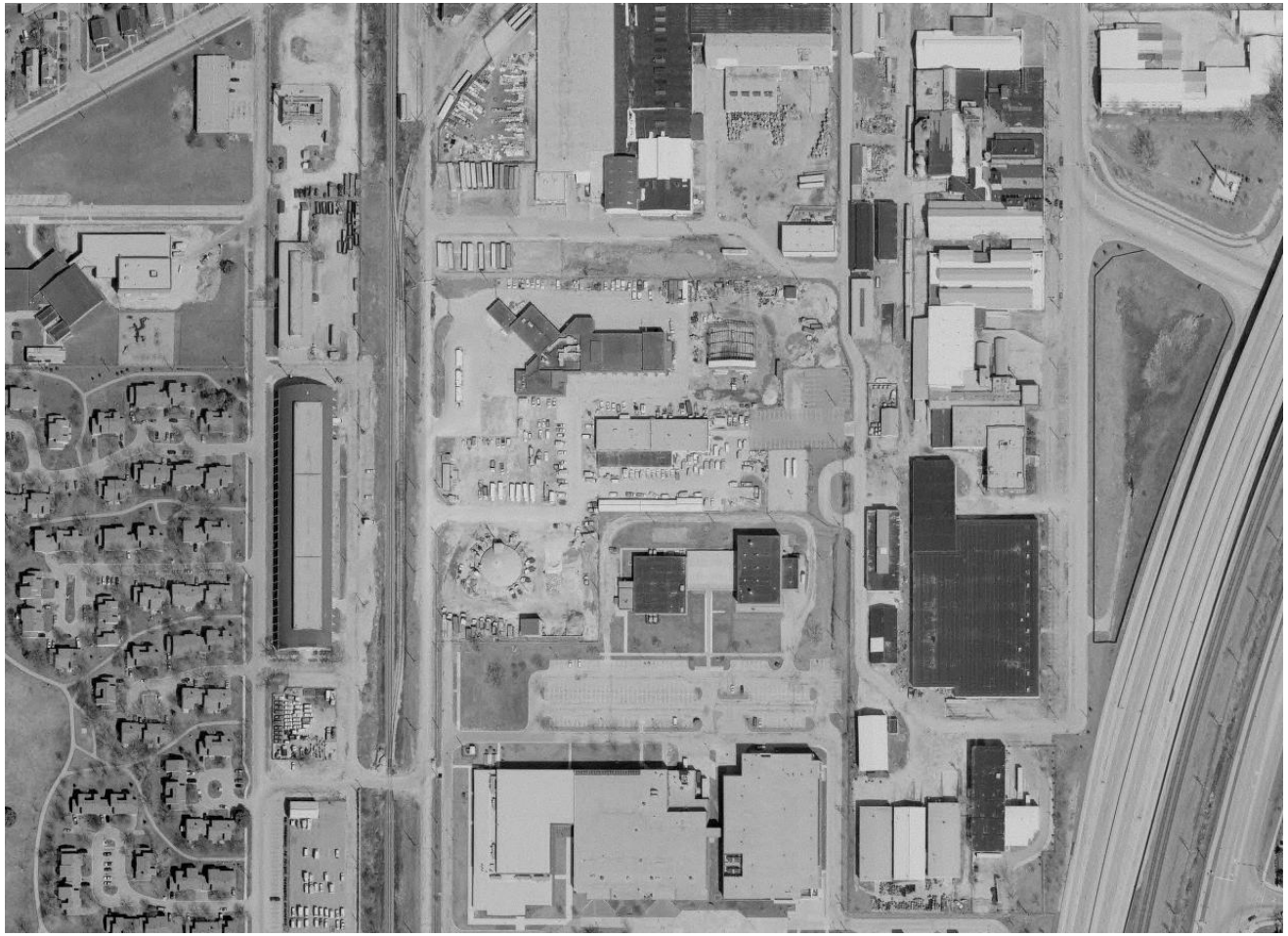
1985 Photo

1990 Photo



1995 Photo

2002 Photo



Current Photo

APPENDIX B

FIELD FORMS

B-1 FIELD TASK MODIFICATION REQUEST FORMS

B-2 BORING LOGS

B-3 SAMPLE LOG SHEETS – SOIL

B-4 MONITORING WELL INSTALLATION SHEETS

B-5 SLUG TEST DATA

B-6 SAMPLE LOG AND PURGE SHEETS - GROUNDWATER

B-7 SAMPLE LOG SHEETS – IDW

B-8 SAMPLE LOG SHEETS – QA/QC

B-9 CALIBRATION LOG SHEETS

B-10 CHAIN OF CUSTODY FORMS

B-1 FIELD TASK MODIFICATION REQUEST FORMS

TETRA TECH NUS
FIELD TASK MODIFICATION REQUEST FORM

NAVSTA - Site 21
Project/Installation Name

112G01797
CTO & Project Number

1
Task Mod. Number

SAP
Modification To (e.g. Work Plan)

SB01-03
Site/Sample Location

9/26/09
Date

Activity Description: Refusal at 4-5' bgs - could not collect deeper samples

Reason for Change: Refusal of DPT

Recommended Disposition: Collect sample during next phase of work when installing MW01 w/ HSA

Field Operations Leader (Signature)

9/26/09
Date

Approved Disposition:

Project/Task Order Manager (Signature)

11/25/09
Date

Distribution:

Program/Project File –
Project/Task Order Manager –
Field Operations Leader –

Other:

TETRA TECH NUS
FIELD TASK MODIFICATION REQUEST FORM

NAVSTA - Site 21
Project/Installation Name

112G01797
CTO & Project Number

2
Task Mod. Number

SAP
Modification To (e.g. Work Plan)

All locations
Site/Sample Location

11/24/09
Date

Activity Description: only professionally survey MW's

Reason for Change: Time between advancing soil borings and MW's - difficult to find locations

Recommended Disposition: Only professionally survey MW's

Field Operations Leader (Signature)

11/24/09
Date

Approved Disposition:

Project/Task Order Manager (Signature)

11/25/09
Date

Distribution:

Program/Project File –
Project/Task Order Manager –
Field Operations Leader –

Other:

B-2 BORING LOGS

Tetra Tech NUS, Inc.

BORING LOG

Project Name: GREAT LAKES NTC - Site 21 - Investigation - Event 1 - Site 21
Boring ID: NTC21SB01
Start Date: 09/28/2009
Project Number: 112G01797
Geologist: Shannon Hill
End of Boring Date: 09/28/2009
Drilling Company:
Lead Driller:
Background PID Screening: 0.0 ppm
Drilling Rig:
Drilling Method:
Convert To Well? (Well ID): No (N/A)

Site 21 - Investigation - Boring ID: NTC21SB01									Analytical Results - Screening
	Run		Lithology						
Depth (ft bgs)*	No.	% Recvy	USCS	Primary Color	Secondary Color	Moisture	Primary Description	Secondary Descriptors	PID - sample
0	1	50	OTHER	black	-Select-	DRY	ASPHALT/PAVEMENT		
1			GP	light grey	-Select-	DMP	GRAVEL	subbase fill	
			SC-ML	brown	-Select-	MST	SAND with silt and clay	silt increases with depth trace gravel	
2									
3									

End of Boring: 4 feet bgs
Notes: Boring caved in to 2.3' bgs prior to obtaining GW level measurement. Boring is dry.

Tetra Tech NUS, Inc.

BORING LOG

Project Name: GREAT LAKES NTC - Site 21 - Investigation - Event 1 - Site 21
Boring ID: NTC21SB02
Start Date: 09/28/2009
Project Number: 112G01797
Geologist: Shannon Hill
End of Boring Date: 11/13/2009
Drilling Company: TTL
Lead Driller: Chris White
Background PID Screening: 0.0 ppm
Drilling Rig: DPT/Split spoon
Drilling Method: Direct-Push Technology
Convert To Well? (Well ID): Yes (NTC21MW01)

Site 21 - Investigation - Boring ID: NTC21SB02									Analytical Results - Screening
	Run		Lithology						
Depth (ft bgs)*	No.	% Recv	USCS	Primary Color	Secondary Color	Moisture	Primary Description	Secondary Descriptors	PID - sample
0	1	92	SP-SM	black	dark brown	DRY	SAND with silt	primarily fill material trace gravel trace organics (grass at top)	
1									
2									
3									
4	2	100							
5									
6									
7									

End of Boring: 8 feet bgs
Notes: Boring caved in to 2' bgs prior to obtaining GW level measurement. Boring is dry. Returned to this location to install Monitoring Well. Collected an addition deeper sar
previously the DPT could not get past 4' bgs.

Tetra Tech NUS, Inc.

BORING LOG

Project Name: GREAT LAKES NTC - Site 21 - Investigation - Event 1 - Site 21
Boring ID: NTC21SB03
Start Date: 09/28/2009
Project Number: 112G01797
Geologist: Shannon Hill
End of Boring Date: 09/28/2009
Drilling Company: TTL
Lead Driller: Chris White
Background PID Screening: 0.0 ppm
Drilling Rig: DPT
Drilling Method: Direct-Push Technology
Convert To Well? (Well ID): No (N/A)

Site 21 - Investigation - Boring ID: NTC21SB03									Analytical Results - Screening
	Run		Lithology						
Depth (ft bgs)*	No.	% Recvy	USCS	Primary Color	Secondary Color	Moisture	Primary Description	Secondary Descriptors	PID - sample
0	1	50	SP-SM	dark brown	-Select-	DRY	SAND with silt	trace gravel fill material	
1									
2									
3									

End of Boring: 4 feet bgs
Notes: Boring caved in to 4.9' bgs prior to obtaining GW level measurement. Boring is dry.

Tetra Tech NUS, Inc.

BORING LOG

Project Name: GREAT LAKES NTC - Site 21 - Investigation - Event 1 - Site 21
Boring ID: NTC21SB04
Start Date: 09/27/2009
Project Number: 112G01797
Geologist: Shannon Hill
End of Boring Date: 09/27/2009
Drilling Company: TTL
Lead Driller: Chris White
Background PID Screening: 0.0 ppm
Drilling Rig: DPT
Drilling Method: Direct-Push Technology
Convert To Well? (Well ID): Yes (NTC21MW02)

Site 21 - Investigation - Boring ID: NTC21SB04

Depth (ft bgs)*	Run No.	Run % Recvy	Lithology: USCS	Primary Color	Secondary Color	Moisture	Primary Description	Secondary Descriptors	Analytical Results - Screening: PID - sample
0	1	75	OTHER	black	-Select-	DRY	ASPHALT/PAVEMENT		
			GW	grey	-Select-	DRY	GRAVEL		
1			SP	black	dark orange	DRY	SAND	little silt trace gravel	
2									
3			SC-ML	black	brown	MST	SILT with sand and clay	trace gravel	
4	2	60	SM	black	-Select-	WET	SILTY SAND	trace gravel	
5			CL-ML	black	-Select-	WET	CLAYEY SILT	trace sand and gravel	
6									
7									
8	3	75	SM	brown	-Select-	WET	GRAVELLY SAND with silt		
9			SP	brown	-Select-	WET	SILTY SAND	trace fine-medium gravel silt increase with depth	
10									
11									
12	4	62	CL-ML	grey	-Select-	WET	CLAYEY SILT	trace sand and gravel	
13									
14									
15			SC-SM	grey	-Select-	MST	SAND with silt and clay	trace gravel	
16	5	100	CL-ML	grey	-Select-	MST	CLAYEY SILT	silt increases with depth trace sand and gravel	
17									
18									
19									
20	6	90							
21									
22									
23									
24	7	85							
25									
26									
27									

End of Boring: 28 feet bgs

Notes: Boring caved in to 17' bgs prior to obtaining GW level measurement.

Tetra Tech NUS, Inc.

BORING LOG

Project Name: GREAT LAKES NTC - Site 21 - Investigation - Event 1 - Site 21
Boring ID: NTC21SB05
Start Date: 09/28/2009
Project Number: 112G01797
Geologist: Shannon Hill
End of Boring Date: 09/28/2009
Drilling Company:
Lead Driller:
Background PID Screening: 0.0 ppm
Drilling Rig:
Drilling Method:
Convert To Well? (Well ID): Yes (NTC21MW03)

Site 21 - Investigation - Boring ID: NTC21SB05									Analytical Results - Screening
	Run		Lithology						
Depth (ft bgs)*	No.	% Recvy	USCS	Primary Color	Secondary Color	Moisture	Primary Description	Secondary Descriptors	PID - sample
0	1	85	OTHER	black	-Select-	DRY	ASPHALT/PAVEMENT		
			SP	black	brown	DRY	SAND	trace gravel fill material	
1			CL-ML	brown	-Select-	MST	CLAYEY SILT	little sand and gravel	
2									
3			SP	light brown	-Select-	DRY	GRAVELLY SAND	f-c sand and gravel	
4	2	60	SP	brown	-Select-	WET	SAND	fill trace silt and gravel	
5			CL	black	dark grey	WET	CLAY with sand and silt	reworked clay sand and silt decreases with depth	
6									
7									
8	3	67	CL	brown	grey-brown	WET	CLAY		
9									
10			SP	brown	-Select-	WET	SAND	trace silt and gravel	
11									

End of Boring: 12 feet bgs
Notes: None

Tetra Tech NUS, Inc.

BORING LOG

Project Name: GREAT LAKES NTC - Site 21 - Investigation - Event 1 - Site 21
Boring ID: NTC21SB06
Start Date: 09/27/2009
Project Number: 112G01797
Geologist: Shannon Hill
End of Boring Date: 09/27/2009
Drilling Company: TTL
Lead Driller: Chris White
Background PID Screening: 0.0 ppm
Drilling Rig: DPT
Drilling Method: Direct-Push Technology
Convert To Well? (Well ID): No (N/A)

Site 21 - Investigation - Boring ID: NTC21SB06									Analytical Results - Screening
	Run		Lithology						
Depth (ft bgs)*	No.	% Recvy	USCS	Primary Color	Secondary Color	Moisture	Primary Description	Secondary Descriptors	PID - sample
0	1	75	OTHER	black	-Select-	DRY	ASPHALT/PAVEMENT		
			SP	black	light brown	MST	SAND	primarily fill material trace gravel	
1									
2									
3			SC-ML	brown	-Select-	MST	SILT with sand and clay	trace gravel	
4	2	75							
5			CL-ML	brown	-Select-	WET	CLAYEY SILT	trace sand and gravel	
6									
7									
8	3	75							
9									
10									
11									

End of Boring: 12 feet bgs
Notes: Boring stayed open to 12' bgs prior to obtaining GW level measurement.

Tetra Tech NUS, Inc.

BORING LOG

Project Name: GREAT LAKES NTC - Site 21 - Investigation - Event 1 - Site 21
Boring ID: NTC21SB07
Start Date: 09/27/2009
Project Number: 112G01797
Geologist: Shannon Hill
End of Boring Date: 09/27/2009
Drilling Company: TTL
Lead Driller: Chris White
Background PID Screening: 0.0 ppm
Drilling Rig: DPT
Drilling Method: Direct-Push Technology
Convert To Well? (Well ID): No (N/A)

Site 21 - Investigation - Boring ID: NTC21SB07									Analytical Results - Screening
	Run		Lithology						
Depth (ft bgs)*	No.	% Recvy	USCS	Primary Color	Secondary Color	Moisture	Primary Description	Secondary Descriptors	PID - sample
0	1	82	OTHER	black	-Select-	DRY	ASPHALT/PAVEMENT		
			SP-SM	dark brown	dark orange	MST	SAND with silt	little f-m gravel	
1									
2									
3			CL-ML	grey-brown	-Select-	MST	CLAYEY SILT	little sand and trace gravel	
4	2	92	SC-SM	brown	-Select-	WET	SAND with silt and clay	trace gravel	
5			CL-ML	brown	grey-brown	WET	CLAYEY SILT	trace sand and gravel	
6									
7									
8	3	100							
9									
10									
11									

End of Boring: 12 feet bgs
Notes: Boring caved in to 7.1' bgs prior to obtaining GW level measurement.

Tetra Tech NUS, Inc.

BORING LOG

Project Name: GREAT LAKES NTC - Site 21 - Investigation - Event 1 - Site 21
Boring ID: NTC21SB08
Start Date: 09/28/2009
Project Number: 112G01797
Geologist: Shannon Hill
End of Boring Date: 09/28/2009
Drilling Company: TTL
Lead Driller: Chris White
Background PID Screening: 0.0 ppm
Drilling Rig: DPT
Drilling Method: Direct-Push Technology
Convert To Well? (Well ID): Yes (NTC21MW04)

Site 21 - Investigation - Boring ID: NTC21SB08									Analytical Results - Screening
	Run		Lithology						
Depth (ft bgs)*	No.	% Recvy	USCS	Primary Color	Secondary Color	Moisture	Primary Description	Secondary Descriptors	PID - sample
0	1	75	OTHER	black	-Select-	DRY	ASPHALT/PAVEMENT		
			SP-SM	light brown	-Select-	DRY	SAND	little silt trace gravel fill material	
1			CL-ML	brown	-Select-	MST	CLAYEY SILT	little sand and trace gravel fill material	
2									
3			SM	brown	-Select-	MST	SAND with silt	little clay (native)	
4	2	70							
			CL-ML	brown	-Select-	MST	CLAYEY SILT	trace sand and gravel	
5									
6									
7									

End of Boring: 8 feet bgs
Notes: Boring caved in to 6.0' bgs prior to obtaining GW level measurement.

Tetra Tech NUS, Inc.

BORING LOG

Project Name: GREAT LAKES NTC - Site 21 - Investigation - Event 1 - Site 21
Boring ID: NTC21SB09
Start Date: 09/26/2009
Project Number: 112G01797
Geologist: Shannon Hill
End of Boring Date: 09/26/2009
Drilling Company: TTL
Lead Driller: Chris White
Background PID Screening: 0.0 ppm
Drilling Rig: DPT
Drilling Method: Direct-Push Technology
Convert To Well? (Well ID): No (N/A)

Site 21 - Investigation - Boring ID: NTC21SB09									Analytical Results - Screening
	Run		Lithology						
Depth (ft bgs)*	No.	% Recvy	USCS	Primary Color	Secondary Color	Moisture	Primary Description	Secondary Descriptors	PID - sample
0	1	82	OTHER	black	-Select-	DRY	ASPHALT/PAVEMENT		
			SP	black	dark brown	MST	SAND	trace silt and gravel	
1									
2			SC-SM	black	dark brown	MST	SAND with silt and clay	trace gravel	
3									
4	2	75							
5			CL-ML	brown	grey-brown	MST	CLAYEY SILT	trace sand and gravel	
6									
7									
8	3	95							
9									
10									
11									

End of Boring: 12 feet bgs
Notes: Boring caved in to 4.2' bgs prior to obtaining GW level measurement.

Tetra Tech NUS, Inc.

BORING LOG

Project Name: GREAT LAKES NTC - Site 21 - Investigation - Event 1 - Site 21
Boring ID: NTC21SB10
Start Date: 09/26/2009
Project Number: 112G01797
Geologist: Shannon Hill
End of Boring Date: 09/26/2009
Drilling Company: TTL
Lead Driller: Chris White
Background PID Screening: 0.0 ppm
Drilling Rig: DPT
Drilling Method: Direct-Push Technology
Convert To Well? (Well ID): No (N/A)

Site 21 - Investigation - Boring ID: NTC21SB10									Analytical Results - Screening
	Run		Lithology						
Depth (ft bgs)*	No.	% Recov	USCS	Primary Color	Secondary Color	Moisture	Primary Description	Secondary Descriptors	PID - sample
0	1	80	OTHER	black	-Select-	DRY	ASPHALT/PAVEMENT		
			SP	black	dark brown	DRY	SAND	Primarily fill material trace gravel	
1									
			CL-ML	brown	-Select-	MST	CLAYEY SILT	little sand and trace gravel	
2									
3									
4	2	55							
			CL-ML	brown	-Select-	MST	SILTY CLAY	trace sand	
5									
6									
7			CL-ML	grey-brown	-Select-	WET	SILTY CLAY	trace sand	
8	3	100	SC-SM	brown	-Select-	WET	SAND with silt and clay		
9			CL-ML	brown	grey-brown	WET	CLAYEY SILT	trace sand and gravel (clay increases with depth)	
10									
11									

End of Boring: 12 feet bgs
Notes: Boring caved in to 5.9' bgs prior to obtaining GW level measurement.

Tetra Tech NUS, Inc.

BORING LOG

Project Name: GREAT LAKES NTC - Site 21 - Investigation - Event 1 - Site 21
Boring ID: NTC21SB11
Start Date: 09/26/2009
Project Number: 112G01797
Geologist: Shannon Hill
End of Boring Date: 09/26/2009
Drilling Company:
Lead Driller:
Background PID Screening: 0.0 ppm
Drilling Rig:
Drilling Method:
Convert To Well? (Well ID): No (N/A)

Site 21 - Investigation - Boring ID: NTC21SB11									Analytical Results - Screening
	Run		Lithology						
Depth (ft bgs)*	No.	% Recvy	USCS	Primary Color	Secondary Color	Moisture	Primary Description	Secondary Descriptors	PID - sample
0	1	55	OTHER	black	-Select-	DRY	ASPHALT/PAVEMENT		
			SP	black	dark brown	DRY	SAND	trace gravel	
1									
2									
3									
4	2	77	CL-ML	dark brown	-Select-	MST	SILTY CLAY	little sand and trace gravel	
5			ML	brown	grey-brown	MST	SILT	trace clay and sand	
6									
7									
8	3	77							
9			CL-ML	grey	-Select-	MST	CLAYEY SILT	trace sand and gravel	
10									
11									

End of Boring: 12 feet bgs
Notes: Boring caved in to 7.7' bgs prior to obtaining GW level measurement.

Tetra Tech NUS, Inc.

BORING LOG

Project Name: GREAT LAKES NTC - Site 21 - Investigation - Event 1 - Site 21
Boring ID: NTC21SB12
Start Date: 09/26/2009
Project Number: 112G01797
Geologist: Shannon Hill
End of Boring Date: 09/26/2009
Drilling Company: TTL
Lead Driller: Chris White
Background PID Screening: 0.0 ppm
Drilling Rig: DPT
Drilling Method: Direct-Push Technology
Convert To Well? (Well ID): No (N/A)

Site 21 - Investigation - Boring ID: NTC21SB12									Analytical Results - Screening
	Run		Lithology						
Depth (ft bgs)*	No.	% Recvy	USCS	Primary Color	Secondary Color	Moisture	Primary Description	Secondary Descriptors	PID - sample
0	1	60	OTHER	black	-Select-	DRY	ASPHALT/PAVEMENT		
			SP	black	dark brown	DRY	SAND	Primarily fill material trace gravel	
1									
2									
3									
4	2	65	SC-SM	brown	-Select-	WET	SAND with silt and clay	trace gravel	
5									
6									
7									
8	3	50	CL-ML	brown	grey	MST	CLAYEY SILT	trace gravel and sand	
9									
10									
11									

End of Boring: 12 feet bgs
Notes: Boring caved in to 7.7' bgs prior to obtaining GW level measurement.

Tetra Tech NUS, Inc.

BORING LOG

Project Name: GREAT LAKES NTC - Site 21 - Investigation - Event 1 - Site 21
Boring ID: NTC21SB13
Start Date: 09/27/2009
Project Number: 112G01797
Geologist: Shannon Hill
End of Boring Date: 09/27/2009
Drilling Company: TTL
Lead Driller: Chris White
Background PID Screening: 0.0 ppm
Drilling Rig: DPT
Drilling Method: Direct-Push Technology
Convert To Well? (Well ID): No (N/A)

Site 21 - Investigation - Boring ID: NTC21SB13

Depth (ft bgs)*	Run No.	Run % Recvy	Lithology USCS	Primary Color	Secondary Color	Moisture	Primary Description	Secondary Descriptors	Analytical Results - Screening PID - sample
0	1	80	OTHER	black	-Select-	DRY	ASPHALT/PAVEMENT		
			GW	grey	other - describe	DRY	GRAVEL	gray-white	
1			SP	black	dark orange	DRY	SAND	primarily fill material	
2									
3			CL	brown	-Select-	MST	CLAY	with some silt and sand trace gravel	
4	2	80							
5			SP	brown	-Select-	WET	SAND	trace gravel silt and sand	
6									
			CL-ML	brown	grey	WET	CLAYEY SILT	silt increase with depth trace sand and gravel	
7									
8	3	85							
9									
10									
11									

End of Boring: 12 feet bgs
Notes: Boring caved in to 6.6' bgs prior to obtaining GW level measurement.

Tetra Tech NUS, Inc.

BORING LOG

Project Name: GREAT LAKES NTC - Site 21 - Investigation - Event 1 - Site 21
Boring ID: NTC21SB14
Start Date: 09/27/2009
Project Number: 112G01797
Geologist: Shannon Hill
End of Boring Date: 09/27/2009
Drilling Company: TTL
Lead Driller: Chris White
Background PID Screening: 0.0 ppm
Drilling Rig: DPT
Drilling Method: Direct-Push Technology
Convert To Well? (Well ID): No (N/A)

Site 21 - Investigation - Boring ID: NTC21SB14

Depth (ft bgs)*	Run No.	Run % Recov	USCS	Primary Color	Secondary Color	Moisture	Primary Description	Secondary Descriptors	Analytical Results - Screening: PID - sample
0	1	77	OTHER	black	-Select-	DRY	ASPHALT/PAVEMENT		
			SP	dark brown	dark orange	DRY	SAND	little silt trace gravel	
1									
2			ML	black	brown	MST	SILT with clay	trace fine gravel	
3									
4	2	77	SC-SM	brown	-Select-	WET	SAND with silt and clay	trace gravel	
5									
6									
7			CL-ML	brown	grey	WET	CLAYEY SILT	trace sand and gravel	
8	3	95							
9									
10									
11									

End of Boring: 12 feet bgs
Notes: Boring caved in to 6.3' bgs prior to obtaining GW level measurement.

Tetra Tech NUS, Inc.

BORING LOG

Project Name: GREAT LAKES NTC - Site 21 - Investigation - Event 1 - Site 21
Boring ID: NTC21SB15
Start Date: 09/27/2009
Project Number: 112G01797
Geologist: Shannon Hill
End of Boring Date: 09/27/2009
Drilling Company:
Lead Driller:
Background PID Screening: 0.0 ppm
Drilling Rig:
Drilling Method:
Convert To Well? (Well ID): No (N/A)

Site 21 - Investigation - Boring ID: NTC21SB15									Analytical Results - Screening
	Run		Lithology						
Depth (ft bgs)*	No.	% Recvy	USCS	Primary Color	Secondary Color	Moisture	Primary Description	Secondary Descriptors	PID - sample
0	1	75	OTHER	black	-Select-	DRY	ASPHALT/PAVEMENT		
			SM	brown	dark orange	DRY	SILTY SAND	trace gravel-primarily fill	
1									
2									
3									
4	2	92	SC-SM	dark brown	-Select-	WET	SAND with silt and clay		
			SM	brown	-Select-	WET	SILTY SAND	silt increases with depth	
5									
			ML	grey	-Select-	WET	SILT	trace gravel and sand	
6			CL-ML	brown	-Select-	WET	SILTY CLAY	trace sand and gravel	
7			SC-SM	brown	-Select-	WET	SAND with silt and clay	trace gravel	

End of Boring: 8 feet bgs
Notes: Boring caved in to 6.3' bgs prior to obtaining GW level measurement.

Tetra Tech NUS, Inc.

BORING LOG

Project Name: GREAT LAKES NTC - Site 21 - Investigation - Event 1 - Site 21
Boring ID: NTC21SB16
Start Date: 09/27/2009
Project Number: 112G01797
Geologist: Shannon Hill
End of Boring Date: 09/27/2009
Drilling Company: TTL
Lead Driller: Chris White
Background PID Screening: 0.0 ppm
Drilling Rig: DPT
Drilling Method: Direct-Push Technology
Convert To Well? (Well ID): No (N/A)

Site 21 - Investigation - Boring ID: NTC21SB16

Depth (ft bgs)*	Run No.	Run % Recvy	USCS	Primary Color	Secondary Color	Moisture	Primary Description	Secondary Descriptors	Analytical Results - Screening: PID - sample
0	1	82	OTHER	black	-Select-	DRY	ASPHALT/PAVEMENT		
			SP-SM	dark brown	dark orange	MST	SAND with silt	FILL trace gravel	
1									
2			CL-ML	dark grey	-Select-	MST	CLAYEY SILT	trace sand and gravel	
3			CL-ML	brown	-Select-	MST	CLAYEY SILT	trace sand and gravel	
4	2	82							
5			SC-SM	brown	-Select-	WET	SAND with silt and clay	trace gravel	
6									
7									
8	3	77							
9			CL-ML	brown	grey	WET	CLAYEY SILT	trace sand and gravel	
10									
11									

End of Boring: 12 feet bgs
Notes: Boring caved in to 5' bgs prior to obtaining GW level measurement. Boring dry.

Tetra Tech NUS, Inc.

BORING LOG

Project Name: GREAT LAKES NTC - Site 21 - Investigation - Event 1 - Site 21
Boring ID: NTC21SB17
Start Date: 09/26/2009
Project Number: 112G01797
Geologist: Shannon Hill
End of Boring Date: 09/26/2009
Drilling Company:
Lead Driller:
Background PID Screening: 0.0 ppm
Drilling Rig:
Drilling Method:
Convert To Well? (Well ID): No (N/A)

Site 21 - Investigation - Boring ID: NTC21SB17									Analytical Results - Screening
	Run		Lithology						
Depth (ft bgs)*	No.	% Recov	USCS	Primary Color	Secondary Color	Moisture	Primary Description	Secondary Descriptors	PID - sample
0	1	77	OTHER	black	-Select-	DRY	ASPHALT/PAVEMENT		
			CL-ML	dark brown	black	MST	SILTY CLAY	trace sand and gravel	
1									
2									
3			CL-ML	brown	-Select-	MST	SILTY SAND	little sand and trace gravel	
4	2	82							
5			SP	brown	-Select-	WET	SAND with silt and clay	little silt and clay trace gravel	
6									
7			SP	brown	-Select-	WET	SAND with silt and clay	little fine gravel	
8	3	95	CL-ML	brown	grey-brown	WET	CLAYEY SILT	trace sand and gravel	
9									
10									
11									

End of Boring: 12 feet bgs
Notes: Boring caved in to 8.6' bgs prior to obtaining GW level measurement.

Tetra Tech NUS, Inc.

BORING LOG

Project Name: GREAT LAKES NTC - Site 21 - Investigation - Event 1 - Site 21
Boring ID: NTC21SB18
Start Date: 09/26/2009
Project Number: 112G01797
Geologist: Shannon Hill
End of Boring Date: 09/26/2009
Drilling Company: TTL
Lead Driller: Chris White
Background PID Screening: 0.0 ppm
Drilling Rig: DPT
Drilling Method: Direct-Push Technology
Convert To Well? (Well ID): Yes (NTC21MW06)

Site 21 - Investigation - Boring ID: NTC21SB18									Analytical Results - Screening
	Run		Lithology						
Depth (ft bgs)*	No.	% Recov	USCS	Primary Color	Secondary Color	Moisture	Primary Description	Secondary Descriptors	PID - sample
0	1	50	OTHER	black	-Select-	DRY	ASPHALT/PAVEMENT		
			CL-ML	dark brown	-Select-	MST	SILTY CLAY	trace sand	
1			CL-ML	brown	-Select-	MST	SILTY CLAY	trace sand and gravel	
			SC-SM	brown	-Select-	MST	SAND with silt and clay	little fine gravel	
2									
3									
4	2	50							
5									
6									
7			SC-SM	brown	-Select-	WET	SAND with silt and clay	little gravel	
8	3	55							
9									
10			SC-SM	grey	-Select-	WET	SAND with silt and clay	little fine gravel	
11									

End of Boring: 12 feet bgs
Notes: Boring caved in to 8.6' bgs prior to obtaining GW level measurement.

Tetra Tech NUS, Inc.

BORING LOG

Project Name: GREAT LAKES NTC - Site 21 - Investigation - Event 1 - Site 21
Boring ID: NTC21SB19
Start Date: 09/27/2009
Project Number: 112G01797
Geologist: Shannon Hill
End of Boring Date: 09/27/2009
Drilling Company:
Lead Driller:
Background PID Screening: 0.0 ppm
Drilling Rig:
Drilling Method:
Convert To Well? (Well ID): No (N/A)

Site 21 - Investigation - Boring ID: NTC21SB19									Analytical Results - Screening
	Run		Lithology						
Depth (ft bgs)*	No.	% Recv	USCS	Primary Color	Secondary Color	Moisture	Primary Description	Secondary Descriptors	PID - sample
0	1	50	OTHER	black	-Select-	DRY	ASPHALT/PAVEMENT		
			SP	black	-Select-	DRY	SAND	fill trace gravel	
1									
2									
3			CL-ML	dark grey	-Select-	MST	CLAYEY SILT	trace sand and gravel	
4	2	75	CL-ML	brown	-Select-	MST	CLAYEY SILT	trace sand and gravel	
5			SC-SM	brown	-Select-	WET	CLAY with sand and silt	trace gravel	
6									
7									
8	3	100							
9			CL-ML	grey	-Select-	WET	CLAYEY SILT	trace sand and gravel	
10									
11									

End of Boring: 12 feet bgs
Notes: Boring caved in to 5' bgs prior to obtaining GW level measurement. Boring dry.

Tetra Tech NUS, Inc.

BORING LOG

Project Name: GREAT LAKES NTC - Site 21 - Investigation - Event 1 - Site 21
Boring ID: NTC21SB20
Start Date: 09/26/2009
Project Number: 112G01797
Geologist: Shannon Hill
End of Boring Date: 09/26/2009
Drilling Company: TTL
Lead Driller: Chris White
Background PID Screening: 0.0 ppm
Drilling Rig: DPT
Drilling Method: Direct-Push Technology
Convert To Well? (Well ID): No (N/A)

Site 21 - Investigation - Boring ID: NTC21SB20									Analytical Results - Screening
	Run		Lithology						
Depth (ft bgs)*	No.	% Recvy	USCS	Primary Color	Secondary Color	Moisture	Primary Description	Secondary Descriptors	PID - sample
0	1	37	OTHER	black	-Select-	DRY	ASPHALT/PAVEMENT		
1			SW	brown	-Select-	DRY	SAND	little gravel	
2			CL-ML	dark brown	brown	MST	SILTY CLAY	trace sand and gravel clay and sand increases with depth	
3									
4	2	50							
5									
6			SC-SM	brown	-Select-	WET	SAND with silt and clay	trace gravel	
7									
8	3	50							
			CL-ML	grey-brown	grey	MST	CLAYEY SILT	trace sand and gravel	
9									
10									
11									

End of Boring: 12 feet bgs
Notes: Boring caved in to 7.6' bgs prior to obtaining GW level measurement.

Tetra Tech NUS, Inc.

BORING LOG

Project Name: GREAT LAKES NTC - Site 21 - Investigation - Event 1 - Site 21
Boring ID: NTC21SB21
Start Date: 09/26/2009
Project Number: 112G01797
Geologist: Shannon Hill
End of Boring Date: 09/26/2009
Drilling Company: TTL
Lead Driller: Chris White
Background PID Screening: 0.0 ppm
Drilling Rig: DPT
Drilling Method: Direct-Push Technology
Convert To Well? (Well ID): No (N/A)

Site 21 - Investigation - Boring ID: NTC21SB21									Analytical Results - Screening
	Run		Lithology						
Depth (ft bgs)*	No.	% Recvy	USCS	Primary Color	Secondary Color	Moisture	Primary Description	Secondary Descriptors	PID - sample
0	1	70	OTHER	black	-Select-	DRY	ASPHALT/PAVEMENT		
			SP	black	brown	DRY	SAND	trace gravel	
1									
2			CL-ML	dark brown	brown	MST	SILTY CLAY	little sand and trace gravel	
3									
4	2	75	SC-SM	brown	-Select-	MST	SAND with silt and clay	little gravel	
5									
6									
7									
8	3	100	SM	brown	-Select-	WET	SILTY SAND		
9			CL-ML	brown	grey-brown	WET	CLAYEY SILT	silt increase with depth trace sand and gravel	
10									
11									

End of Boring: 12 feet bgs
Notes: Boring caved in to 7.2' bgs prior to obtaining GW level measurement.

Tetra Tech NUS, Inc.

BORING LOG

Project Name: GREAT LAKES NTC - Site 21 - Investigation - Event 1 - Site 21
Boring ID: NTC21SB22
Start Date: 09/27/2009
Project Number: 112G01797
Geologist: Shannon Hill
End of Boring Date: 09/27/2009
Drilling Company: TTL
Lead Driller: Chris White
Background PID Screening: 0.0 ppm
Drilling Rig: DPT
Drilling Method: Direct-Push Technology
Convert To Well? (Well ID): Yes (NTC21MW05)

Site 21 - Investigation - Boring ID: NTC21SB22									Analytical Results - Screening
	Run		Lithology						
Depth (ft bgs)*	No.	% Recvy	USCS	Primary Color	Secondary Color	Moisture	Primary Description	Secondary Descriptors	PID - sample
0	1	87	OTHER	black	-Select-	DRY	ASPHALT/PAVEMENT		
			SP	black	dark brown	DRY	SAND	trace gravel	
1									
2									
3									
4	2	87	CL-ML	black	grey	MST	CLAYEY SILT	trace sand and gravel	
5			SC-SM	brown	-Select-	WET	SAND with silt and clay	trace gravel	
6									
7									
8	3	77							
			CL-ML	brown	grey-brown	WET	CLAYEY SILT	trace sand and gravel	
9									
10									
11									

End of Boring: 12 feet bgs
Notes: Boring caved in to 4.2' bgs prior to obtaining GW level measurement. Boring dry.

B-3 SAMPLE LOG SHEETS – SOIL

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB01-SO-0102	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB01	**Created Date**	9/26/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/10/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/28/09		DPT	0.5	0.5	brown	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/28/09	12:00	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1
✓	9/28/09	12:00	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB02-SO-0204	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB02	**Created Date**	9/27/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/10/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/28/09		DPT	0.2	2	black	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/28/09	10:30	SW-846 8290	Dioxins/Furans	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	Run MS/MSD	ED00000105-2
✓	9/28/09	10:30	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	9	Glass - Clear	4 oz. wide-mouth w/Teflon cap	Run MS/MSD	ED00000105-1
✓	9/28/09	10:30	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	12	TerraCore	TerraCore	Run MS/MSD	ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB02-SO-0001	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB02	**Created Date**	9/26/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/10/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/28/09		DPT	0.3	0.5	black	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/28/09	10:20	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1
✓	9/28/09	10:20	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB02-SO-0406	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB02	**Created Date**	11/13/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/10/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
11/13/09		Split spoon	0.0	2	brown	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	11/13/09	09:12	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-3
✓	11/13/09	09:12	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-3

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB03-SO-0001	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB03	**Created Date**	9/27/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/10/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain#
✓	9/28/09	12:20	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1
✓	9/28/09	12:20	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB03-SO-0204	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB03	**Created Date**	9/26/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/10/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/28/09		DPT	0.2	2	dark brown	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/28/09	12:30	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1
✓	9/28/09	12:30	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB04-SO-0001	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB04	**Created Date**	9/27/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/10/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/27/09		DPT	0.4	0.5	black	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/27/09	12:50	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1
✓	9/27/09	12:50	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB04-SO-0406	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB04	**Created Date**	9/27/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/10/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/27/09		DPT	0.3	2	dark brown	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/27/09	13:00	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1
✓	9/27/09	13:00	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB05-SO-0001	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB05	**Created Date**	9/27/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/10/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/28/09		DPT	0.4	0.5	black	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/28/09	10:00	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1
✓	9/28/09	10:00	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB05-SO-0204	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB05	**Created Date**	9/27/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/10/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/28/09		DPT	0.5	2	brown	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/28/09	10:10	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1
✓	9/28/09	10:10	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB06-SO-0001	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB06	**Created Date**	9/27/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/10/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/27/09		DPT	0.6	0.5	dark brown	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/27/09	15:10	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1
✓	9/27/09	15:10	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB06-SO-0204	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB06	**Created Date**	9/27/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/10/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/27/09		DPT	0.3	2	dark brown	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/27/09	15:20	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1
✓	9/27/09	15:20	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB07-SO-0001	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB07	**Created Date**	9/26/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/10/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/27/09		DPT	0.4	0.5	dark brown	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/27/09	10:40	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1
✓	9/27/09	10:40	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB07-SO-0204	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB07	**Created Date**	9/27/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/10/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/27/09		DPT	0.3	2	dark brown	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/27/09	10:50	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1
✓	9/27/09	10:50	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB08-SO-0001	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB08	**Created Date**	9/26/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/10/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/28/09		DPT	0.4	0.5	brown	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/28/09	11:55	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1
✓	9/28/09	11:55	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB08-SO-0204	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB08	**Created Date**	9/27/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/10/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/28/09		DPT	0.3	2	brown	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/28/09	12:00	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1
✓	9/28/09	12:00	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1
✓	9/28/09	12:00	ASTM D422 (or as instructed by TtNUS)	Grain Size	None	1	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB09-SO-0204	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB09	**Created Date**	9/26/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/10/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/26/09		DPT	2.0	2	black	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/26/09	16:28	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1
✓	9/26/09	16:28	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB09-SO-0001	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB09	**Created Date**	9/26/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/10/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/26/09		DPT	0.5	0.5	black	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/26/09	16:20	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1
✓	9/26/09	16:20	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1
✓	9/26/09	16:20	SW-846 8290	Dioxins/Furans	4°C	2	Glass - Amber	4 oz. wide-mouth w/Teflon cap		ED00000105-2

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB10-SO-0001	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB10	**Created Date**	9/26/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/10/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/26/09		DPT	0.7	0.5	black	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/26/09	18:36	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1
✓	9/26/09	18:36	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB10-SO-0406	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB10	**Created Date**	9/26/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/10/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/26/09		DPT	0.5	2	brown	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/26/09	18:40	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1
✓	9/26/09	18:40	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB11-SO-0001	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB11	**Created Date**	9/26/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/10/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/26/09		DPT	0.4	0.5	black	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/26/09	18:10	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1
✓	9/26/09	18:10	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB11-SO-0204	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB11	**Created Date**	9/26/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/10/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/26/09		DPT	0.3	2	dark brown	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/26/09	18:12	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1
✓	9/26/09	18:12	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB12-SO-0204	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB12	**Created Date**	9/26/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/10/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/26/09		DPT	0.3	2	black	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/26/09	14:10	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1
✓	9/26/09	14:10	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB12-SO-0001	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB12	**Created Date**	9/26/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/10/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/26/09		DPT	0.5	0.5	black	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/26/09	14:00	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1
✓	9/26/09	14:00	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB13-SO-0204	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB13	**Created Date**	9/26/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/10/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/27/09		DPT	0.2	2	brown	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/27/09	09:10	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1
✓	9/27/09	09:10	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB13-SO-0001	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB13	**Created Date**	9/26/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/10/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/27/09		DPT	0.3	0.5	black	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/27/09	09:00	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1
✓	9/27/09	09:00	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB14-SO-0001	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB14	**Created Date**	9/26/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/10/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/27/09		DPT	0.3	0.5	dark brown	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/27/09	09:30	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	12	TerraCore	TerraCore	Run MS/MSD	ED00000105-1
✓	9/27/09	09:30	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	9	Glass - Clear	4 oz. wide-mouth w/Teflon cap	Run MS/MSD	ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB14-SO-0204	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB14	**Created Date**	9/26/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/10/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/27/09		DPT	0.1	2	brown	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/27/09	09:40	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1
✓	9/27/09	09:40	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB15-SO-0001	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB15	**Created Date**	9/26/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/10/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/27/09		DPT	0.4	0.5	brown	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/27/09	10:00	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1
✓	9/27/09	10:00	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB15-SO-0204	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB15	**Created Date**	9/26/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/10/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/27/09		DPT	0.3	2	brown	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/27/09	10:10	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1
✓	9/27/09	10:10	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB16-SO-0204	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB16	**Created Date**	9/26/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/10/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/27/09		DPT	0.1	2	brown	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/27/09	16:50	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1
✓	9/27/09	16:50	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB16-SO-0001	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB16	**Created Date**	9/26/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/10/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/27/09		DPT	0.3	0.5	black	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/27/09	17:00	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4° C/HNaO4S/MeOH	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1
✓	9/27/09	17:00	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB17-SO-0001	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB17	**Created Date**	9/26/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/10/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/26/09		DPT	1.2	0.5	dark brown	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/26/09	13:26	SW-846 8290	Dioxins/Furans	4°C	2	Glass - Amber	4 oz. wide-mouth w/Teflon cap		ED00000105-2
✓	9/26/09	13:26	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4° C/HNaO4S/MeOH	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1
✓	9/26/09	13:26	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB17-SO-0507	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB17	**Created Date**	9/26/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/10/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/26/09		DPT	0.5	2	brown	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/26/09	13:32	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1
✓	9/26/09	13:32	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB18-SO-0001	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB18	**Created Date**	9/26/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/10/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/26/09		DPT	0.6	0.5	dark brown	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/26/09	12:47	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1
✓	9/26/09	12:47	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB18-SO-0507	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB18	**Created Date**	9/26/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/10/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/26/09		DPT	0.5	2	brown	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/26/09	12:59	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1
✓	9/26/09	12:59	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB19-SO-0001	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB19	**Created Date**	9/26/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/10/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/27/09		DPT	0.0	0.5	black	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/27/09	17:40	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1
✓	9/27/09	17:40	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB19-SO-0204	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB19	**Created Date**	9/26/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/10/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/27/09		DPT	0.3	2	dark brown	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/27/09	17:50	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1
✓	9/27/09	17:50	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB20-SO-0001	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB20	**Created Date**	9/26/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/23/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/26/09		DPT	0.4	0.5	dark brown	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/26/09	16:57	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1
✓	9/26/09	16:57	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB20-SO-0406	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB20	**Created Date**	9/26/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/23/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/26/09		DPT	0.3	2	brown	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/26/09	17:02	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1
✓	9/26/09	17:02	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB21-SO-0001	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB21	**Created Date**	9/26/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/23/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/26/09		DPT	0.4	0.5	black	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/26/09	15:10	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1
✓	9/26/09	15:10	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB21-SO-0608	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB21	**Created Date**	9/26/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/23/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/26/09		DPT	0.6	2	brown	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/26/09	15:20	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1
✓	9/26/09	15:20	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB22-SO-0204	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB22	**Created Date**	9/26/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/23/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/27/09		DPT	0.4	2	black	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/27/09	12:10	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1
✓	9/27/09	12:10	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	NTC21SB22-SO-0001	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Sample Location ID**	NTC21SB22	**Created Date**	9/26/09
Task/Contract #	0064	**Sampled By**	Shannon Hill	**Modified By**	Shannon Hill
WBS Code #		**Concentration**	Low concentration	**Modified Date**	12/23/09
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description
9/27/09		DPT	0.4	0.5	black	

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain #
✓	9/27/09	12:00	SW-846 8260B	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore		ED00000105-1
✓	9/27/09	12:00	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		ED00000105-1

General Observations and Notes

No Notes

- End of Report -

B-4 MONITORING WELL INSTALLATION SHEETS

Tetra Tech NUS, Inc.

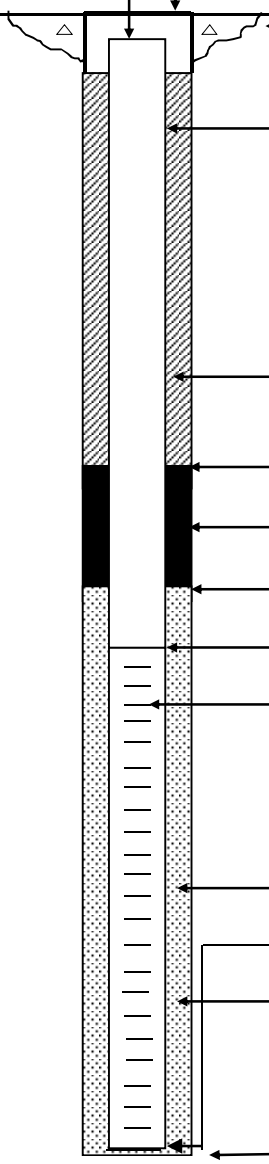
WELL No.: NTC21MW01

MONITORING WELL SHEET

PERMIT No:

PROJECT: NAVSTA Great Lakes		DRILLING Co.:	TTL	BORING No.:	NTC21SB02
PROJECT No.:	112G01797	DRILLER:	C. White	DATE COMPLETED:	11/13/09
SITE:	NTC21	DRILLING METHOD:	Hollow Stem Auger	NORTHING:	2057880.8339
GEOLOGIST:	J. Ferguson	DEV. METHOD:	Submersible pump	EASTING:	1114691.8809

Ground Elevation Datum: 660.63



Not to Scale

Elevation / Depth of Top of Riser:		660.37 / 0.265'
Elevation / Height of Top of Surface Casing:		660.63 / 0.0'
I.D. of Surface Casing:	6"	
Type of Surface Casing:	FLUSH MOUNT	
Type of Surface Seal:	CONCRETE	
I.D. of Riser:	2"	
Type of Riser:	Schedule 40 PVC	
Borehole Diameter:	8.25"	
Type of Backfill:	Cetco Holeplug - granular bentonite	
Elevation / Depth of Seal:		659.37 / 1'
Type of Seal:	Bentonite pellet	
Elevation / Depth of Top of Filter Pack:		657.37 / 3'
Elevation / Depth of Top of Screen:		556.37 / 4'
Type of Screen:	PVC	
Slot Size x Length:	0.010 SLOT, 10'	
I.D. of Screen:	2"	
Type of Filter Pack:	No. 4 Global Silica	
Elevation / Depth of Bottom of Screen:		646.37 / 14'
Elevation / Depth of Bottom of Filter Pack:		646.37 / 14'
Type of Backfill Below Well:	NA	
Elevation / Total Depth of Borehole:		646.37 / 14'

Tetra Tech NUS, Inc.

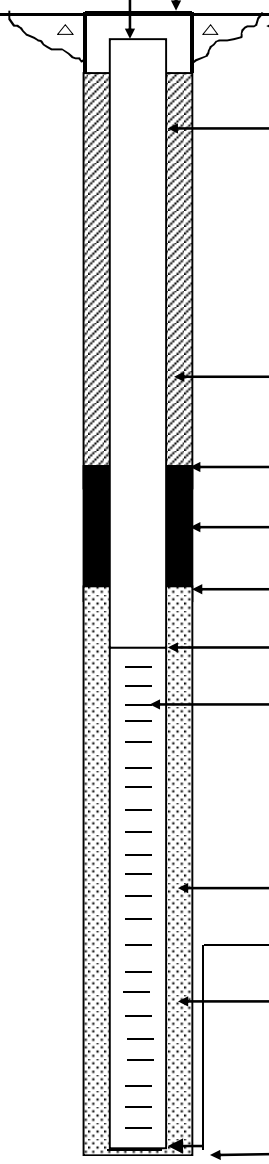
WELL No.: NTC21MW02

MONITORING WELL SHEET

PERMIT No:

PROJECT: NAVSTA Great Lakes		DRILLING Co.:	TTL	BORING No.:	NTC21SB04
PROJECT No.:	112G01797	DRILLER:	C. White	DATE COMPLETED:	11/13/09
SITE:	NTC21	DRILLING METHOD:	Hollow Stem Auger	NORTHING:	2057873.4863
GEOLOGIST:	J. Ferguson	DEV. METHOD:	Submersible pump	EASTING:	1115236.5181

Ground Elevation Datum: 654.245



Not to Scale

Elevation / Depth of Top of Riser:		653.66 / 0.585'
Elevation / Height of Top of Surface Casing:		654.25 / 0.0'
I.D. of Surface Casing:	6"	
Type of Surface Casing:	FLUSH MOUNT	
Type of Surface Seal:	CONCRETE	
I.D. of Riser:	2"	
Type of Riser:	Schedule 40 PVC	
Borehole Diameter:	8.25"	
Type of Backfill:	Cetco Holeplug - granular bentonite	
Elevation / Depth of Seal:		652.66 / 1'
Type of Seal:	Bentonite pellet	
Elevation / Depth of Top of Filter Pack:		648.66 / 5'
Elevation / Depth of Top of Screen:		647.66 / 6'
Type of Screen:	PVC	
Slot Size x Length:	0.010 SLOT, 10'	
I.D. of Screen:	2"	
Type of Filter Pack:	No. 4 Global Silica	
Elevation / Depth of Bottom of Screen:		637.66 / 16'
Elevation / Depth of Bottom of Filter Pack:		637.66 / 16'
Type of Backfill Below Well:	NA	
Elevation / Total Depth of Borehole:		637.66 / 16'

Tetra Tech NUS, Inc.

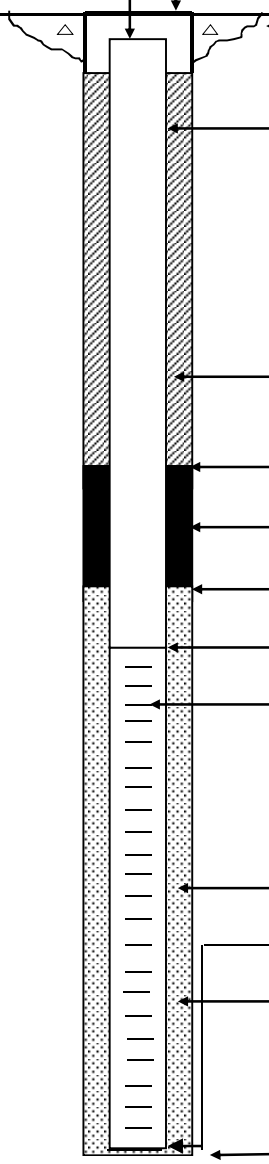
WELL No.: NTC21MW03

MONITORING WELL SHEET

PERMIT No:

PROJECT: NAVSTA Great Lakes		DRILLING Co.:	TTL	BORING No.:	NTC21SB05
PROJECT No.:	112G01797	DRILLER:	C. White	DATE COMPLETED:	11/14/09
SITE:	NTC21	DRILLING METHOD:	Hollow Stem Auger	NORTHING:	2057733.695
GEOLOGIST:	J. Ferguson	DEV. METHOD:	Submersible pump	EASTING:	1115391.7063

Ground Elevation Datum: 653.315



Not to Scale

Elevation / Depth of Top of Riser:		652.83 / 0.49'
Elevation / Height of Top of Surface Casing:		653.32 / 0.0'
I.D. of Surface Casing:	6"	
Type of Surface Casing:	FLUSH MOUNT	
Type of Surface Seal:	CONCRETE	
I.D. of Riser:	2"	
Type of Riser:	Schedule 40 PVC	
Borehole Diameter:	8.25"	
Type of Backfill:	Cetco Holeplug - granular bentonite	
Elevation / Depth of Seal:		651.83 / 1'
Type of Seal:	Bentonite pellet	
Elevation / Depth of Top of Filter Pack:		649.83 / 3'
Elevation / Depth of Top of Screen:		648.83 / 4'
Type of Screen:	PVC	
Slot Size x Length:	0.010 SLOT, 10'	
I.D. of Screen:	2"	
Type of Filter Pack:	No. 4 Global Silica	
Elevation / Depth of Bottom of Screen:		638.83 / 14'
Elevation / Depth of Bottom of Filter Pack:		638.83 / 14'
Type of Backfill Below Well:	NA	
Elevation / Total Depth of Borehole:		638.83 / 14'

Tetra Tech NUS, Inc.

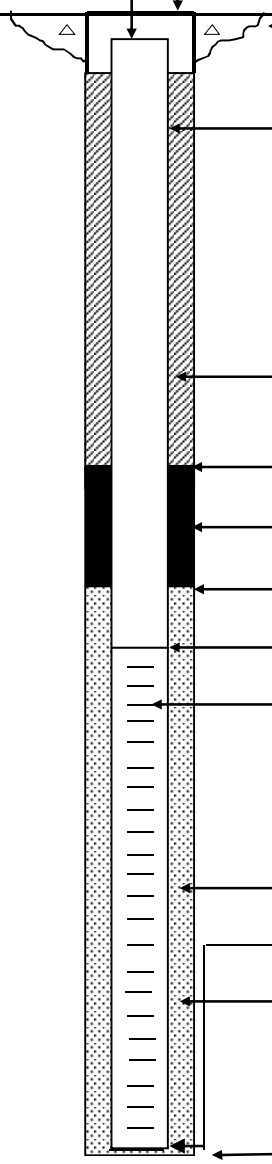
WELL No.: NTC21MW04

MONITORING WELL SHEET

PERMIT No:

PROJECT: NAVSTA Great Lakes		DRILLING Co.:	TTL	BORING No.:	NTC21SB08
PROJECT No.:	112G01797	DRILLER:	C. White	DATE COMPLETED:	11/13/09
SITE:	NTC21	DRILLING METHOD:	Hollow Stem Auger	NORTHING:	2057444.4702
GEOLOGIST:	J. Ferguson	DEV. METHOD:	Submersible pump	EASTING:	1115416.4507

Ground Elevation Datum: 653.105



Not to Scale

Elevation / Depth of Top of Riser:		652.74 / 0.37
Elevation / Height of Top of Surface Casing:		653.11 / 0.0'
I.D. of Surface Casing:	6"	
Type of Surface Casing:	FLUSH MOUNT	
Type of Surface Seal:	CONCRETE	
I.D. of Riser:	2"	
Type of Riser:	Schedule 40 PVC	
Borehole Diameter:	8.25"	
Type of Backfill:	Cetco Holeplug - granular bentonite	
Elevation / Depth of Seal:		651.74 / 1'
Type of Seal:	Bentonite pellet	
Elevation / Depth of Top of Filter Pack:		644.74 / 8'
Elevation / Depth of Top of Screen:		642.74 / 10.0
Type of Screen:	PVC	
Slot Size x Length:	0.010 SLOT, 10'	
I.D. of Screen:	2"	
Type of Filter Pack:	No. 4 Global Silica	
Elevation / Depth of Bottom of Screen:		632.74 / 20'
Elevation / Depth of Bottom of Filter Pack:		632.74 / 20'
Type of Backfill Below Well:	NA	
Elevation / Total Depth of Borehole:		632.74 / 20'

Tetra Tech NUS, Inc.

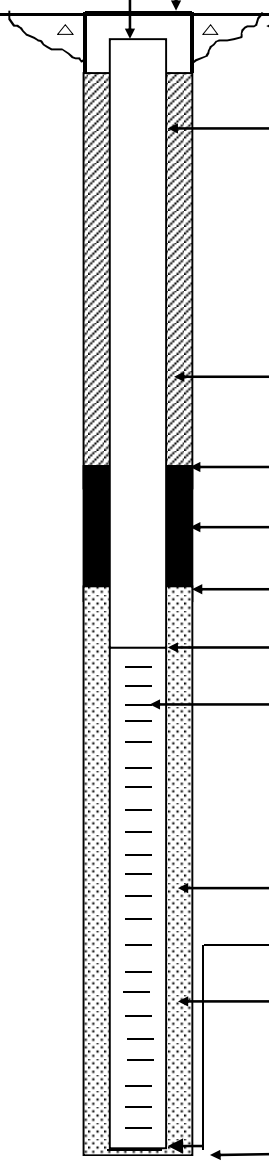
WELL No.: NTC21MW05

MONITORING WELL SHEET

PERMIT No:

PROJECT: NAVSTA Great Lakes		DRILLING Co.:	TTL	BORING No.:	NTC21SB22
PROJECT No.:	112G01797	DRILLER:	C. White	DATE COMPLETED:	11/14/09
SITE:	NTC21	DRILLING METHOD:	Hollow Stem Auger	NORTHING:	2057518.8101
GEOLOGIST:	J. Ferguson	DEV. METHOD:	Submersible pump	EASTING:	1115138.923

Ground Elevation Datum: 655.28



Not to Scale

Elevation / Depth of Top of Riser:		655.03 / 0.25
Elevation / Height of Top of Surface Casing:		655.28 / 0.0'
I.D. of Surface Casing:	6"	
Type of Surface Casing:	FLUSH MOUNT	
Type of Surface Seal:	CONCRETE	
I.D. of Riser:	2"	
Type of Riser:	Schedule 40 PVC	
Borehole Diameter:	8.25"	
Type of Backfill:	Cetco Holeplug - granular bentonite	
Elevation / Depth of Seal:		654.03 / 1'
Type of Seal:	Bentonite pellet	
Elevation / Depth of Top of Filter Pack:		653.03 / 2'
Elevation / Depth of Top of Screen:		652.03 / 3'
Type of Screen:	PVC	
Slot Size x Length:	0.010 SLOT, 10'	
I.D. of Screen:	2"	
Type of Filter Pack:	No. 4 Global Silica	
Elevation / Depth of Bottom of Screen:		642.03 / 13'
Elevation / Depth of Bottom of Filter Pack:		642.03 / 13'
Type of Backfill Below Well:	NA	
Elevation / Total Depth of Borehole:		642.03 / 13'

Tetra Tech NUS, Inc.

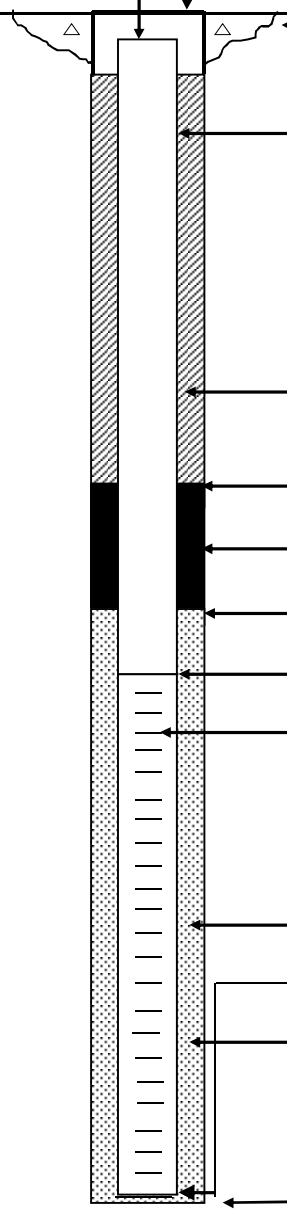
WELL No.: NTC21MW06

MONITORING WELL SHEET

PERMIT No:

PROJECT: NAVSTA Great Lakes		DRILLING Co.:	TTL	BORING No.:	NTC21SB18
PROJECT No.:	112G01797	DRILLER:	C. White	DATE COMPLETED:	11/14/09
SITE:	NTC21	DRILLING METHOD:	Hollow Stem Auger	NORTHING:	2057503.8066
GEOLOGIST:	J. Ferguson	DEV. METHOD:	Submersible pump	EASTING:	1114703.354

Ground Elevation Datum: 659.53



Not to Scale

Elevation / Depth of Top of Riser:		659.17 / 0.36'
Elevation / Height of Top of Surface Casing:		659.53 / 0.0'
I.D. of Surface Casing:	6"	
Type of Surface Casing:	FLUSH MOUNT	
Type of Surface Seal:	CONCRETE	
I.D. of Riser:	2"	
Type of Riser:	Schedule 40 PVC	
Borehole Diameter:	8.25"	
Type of Backfill:	Cetco Holeplug - granular bentonite	
Elevation / Depth of Seal:		658.17 / 1'
Type of Seal:	Bentonite pellet	
Elevation / Depth of Top of Filter Pack:		656.17 / 3'
Elevation / Depth of Top of Screen:		655.17 / 4'
Type of Screen:	PVC	
Slot Size x Length:	0.010 SLOT, 10'	
I.D. of Screen:	2"	
Type of Filter Pack:	No. 4 Global Silica	
Elevation / Depth of Bottom of Screen:		645.17 / 14'
Elevation / Depth of Bottom of Filter Pack:		645.17 / 14'
Type of Backfill Below Well:	NA	
Elevation / Total Depth of Borehole:		645.17 / 14'

B-5 SLUG TEST DATA

GREAT LAKES NAVAL STATION 112601489
NTC21-MW01 RISING HEAD SLUG TEST
Bouwer and Rice Method

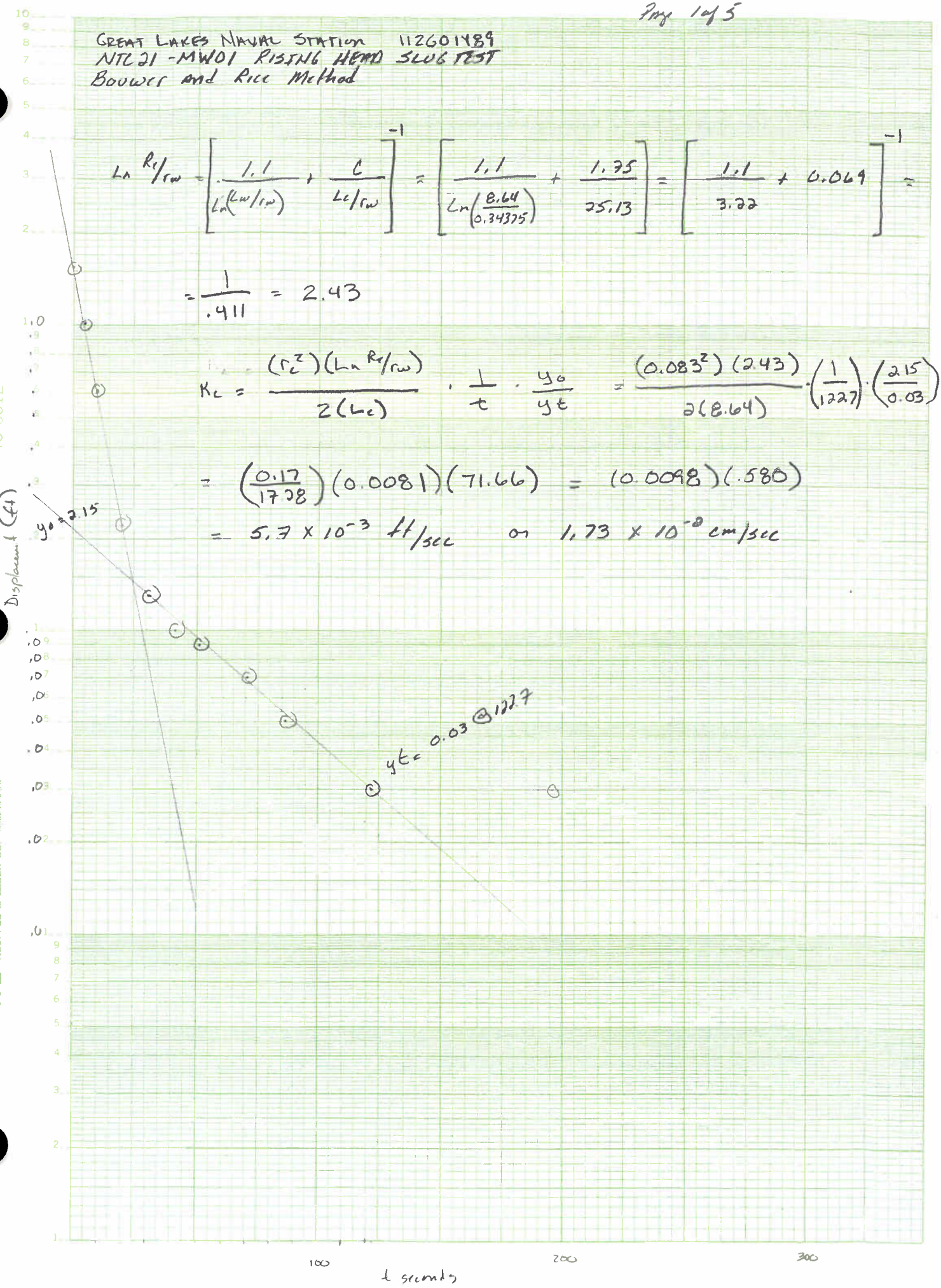
$$\ln R_e/r_w = \left[\frac{1.1}{\ln(L_w/r_w)} + \frac{C}{L_c/r_w}\right]^{-1} = \left[\frac{1.1}{\ln\left(\frac{8.64}{0.34375}\right)} + \frac{1.75}{25.13}\right] = \left[\frac{1.1}{3.22} + 0.069\right]^{-1} =$$

$$= \frac{1}{.411} = 2.43$$

$$K_c = \frac{(r_c^2)(\ln R_e/r_w)}{2(L_c)} \cdot \frac{1}{t} \cdot \frac{y_0}{y_t} = \frac{(0.083^2)(2.43)}{2(8.64)} \cdot \left(\frac{1}{1227}\right) \cdot \left(\frac{2.15}{0.03}\right)$$

$$= \left(\frac{0.17}{1728}\right)(0.0081)(71.66) = (0.0098)(.580)$$

$$= 5.7 \times 10^{-3} \text{ ft/sec} \quad \text{or} \quad 1.73 \times 10^{-2} \text{ cm/sec}$$



In-Situ Inc.	MiniTroll Pro		
Report generated:		11/19/2009	12:15:28
Report from file:	...\SN13334 2009-11-18 085500 NTC21 MW01.bin		
Win-Situ Version		4.47	
Serial number:		13334	
Firmware Version		3.09	
Unit name:	NTC21-MW01		
Test name:		NTC21 MW01	
Test defined on:		11/18/2009	8:50:22
Test scheduled for:		11/18/2009	8:55:00
Test started on:		11/18/2009	8:55:00
Test stopped on:		11/18/2009	9:02:02
Test extracted on:	N/A	N/A	
Data gathered using Logarithmic testing			
Maximum time between data points:	Seconds.		
Number of data samples:		95	
TOTAL DATA SAMPLES		95	
Channel number [2]			
Measurement type:	Pressure		
Channel name:	OnBoard Pressure		
Sensor Range:	30 PSIG.		
Specific gravity:		1	
Mode:	Surface		
User-defined reference:		0 Feet H2O	
Referenced on:	test start		
Pressure head at reference:		8.043 Feet H2O	

Monitoring Well	Northing	Easting	Elevation Top of PVC	Existing Ground Elevation	Total Depth	Screen Depth	Screen Elevation	Sandpack Depth	Sandpack Elevation
NTC21-MW01	2057880.83	1114691.88	660.37	660.63	14.00	4.00 - 14.00	656.37 - 646.37	3.00 - 14.00	657.37 - 646.37

Date	Time	ET (sec)	Chan[2] Feet H2O
11/18/2009	8:55:00	0	0
11/18/2009	8:55:00	0.3	-0.007
11/18/2009	8:55:00	0.6	0.005
11/18/2009	8:55:00	0.9	-0.003
11/18/2009	8:55:01	1.2	0.013
11/18/2009	8:55:01	1.5	-0.002
11/18/2009	8:55:01	1.8	0.015
11/18/2009	8:55:02	2.1	-1.122

		ET (sec)	Drawdown	ET (sec)	Drawdown
11/18/2009	8:55:02	2.4	-1.543	0	1.543
11/18/2009	8:55:03	3	-1.505	0.6	1.51
11/18/2009	8:55:03	3.3	-1.459	0.9	1.46
11/18/2009	8:55:03	3.6	-1.371	1.2	1.37
11/18/2009	8:55:03	3.9	-1.36	1.5	1.36
11/18/2009	8:55:04	4.2	-1.362	1.8	1.36
11/18/2009	8:55:04	4.5	-1.333	2.1	1.33
11/18/2009	8:55:04	4.8	-1.295	2.4	1.30
11/18/2009	8:55:05	5.1	-1.253	2.7	1.25
11/18/2009	8:55:05	5.4	-1.213	3	1.21
11/18/2009	8:55:05	5.7	-1.186	3.3	1.19
11/18/2009	8:55:06	6	-1.155	3.6	1.16
11/18/2009	8:55:06	6.4	-1.119	4	1.12
11/18/2009	8:55:06	6.7	-1.083	4.3	1.08
11/18/2009	8:55:07	7.1	-1.047	4.7	1.05
11/18/2009	8:55:07	7.5	-1.007	5.1	1.01
11/18/2009	8:55:07	8	-0.984	5.6	0.98
11/18/2009	8:55:08	8.4	-0.925	6	0.93
11/18/2009	8:55:08	8.9	-0.869	6.5	0.87
11/18/2009	8:55:09	9.5	-0.827	7.1	0.83
11/18/2009	8:55:10	10	-0.788	7.6	0.79
11/18/2009	8:55:10	10.6	-0.746	8.2	0.75
11/18/2009	8:55:11	11.3	-0.7	8.9	0.70
11/18/2009	8:55:11	11.9	-0.651	9.5	0.65
11/18/2009	8:55:12	12.6	-0.605	10.2	0.61
11/18/2009	8:55:13	13.4	-0.573	11	0.57
11/18/2009	8:55:14	14.2	-0.508	11.8	0.51
11/18/2009	8:55:15	15	-0.496	12.6	0.50
11/18/2009	8:55:15	15.9	-0.428	13.5	0.43
11/18/2009	8:55:16	16.8	-0.367	14.4	0.37
11/18/2009	8:55:17	17.8	-0.323	15.4	0.32
11/18/2009	8:55:18	18.9	-0.296	16.5	0.30
11/18/2009	8:55:20	20	-0.287	17.6	0.29
11/18/2009	8:55:21	21.2	-0.241	18.8	0.24
11/18/2009	8:55:22	22.4	-0.22	20	0.22
11/18/2009	8:55:23	23.8	-0.195	21.4	0.20
11/18/2009	8:55:25	25.2	-0.165	22.8	0.17
11/18/2009	8:55:26	26.7	-0.167	24.3	0.17
11/18/2009	8:55:28	28.2	-0.157	25.8	0.16
11/18/2009	8:55:29	29.8	-0.146	27.4	0.15
11/18/2009	8:55:31	31.5	-0.14	29.1	0.14
11/18/2009	8:55:33	33.3	-0.132	30.9	0.13

11/18/2009	8:55:35	35.2	-0.127	32.8	0.13	
11/18/2009	8:55:37	37.3	-0.119	34.9	0.12	
11/18/2009	8:55:39	39.5	-0.115	37.1	0.12	
11/18/2009	8:55:41	41.8	-0.108	39.4	0.11	
11/18/2009	8:55:44	44.3	-0.104	41.9	0.10	X
11/18/2009	8:55:46	46.9	-0.083	44.5	0.08	
11/18/2009	8:55:49	49.7	-0.083	47.3	0.08	
11/18/2009	8:55:52	52.6	-0.093	50.2	0.09	X
11/18/2009	8:55:55	55.7	-0.087	53.3	0.09	
11/18/2009	8:55:58	59	-0.066	56.6	0.07	
11/18/2009	8:56:02	62.5	-0.062	60.1	0.06	X
11/18/2009	8:56:06	66.2	-0.06	63.8	0.06	
11/18/2009	8:56:10	70.1	-0.055	67.7	0.06	
11/18/2009	8:56:14	74.3	-0.07	71.9	0.07	X
11/18/2009	8:56:18	78.7	-0.066	76.3	0.07	
11/18/2009	8:56:23	83.4	-0.066	81	0.07	
11/18/2009	8:56:28	88.4	-0.047	86	0.05	X
11/18/2009	8:56:33	93.7	-0.061	91.3	0.06	
11/18/2009	8:56:39	99.3	-0.057	96.9	0.06	
11/18/2009	8:56:45	105.2	-0.057	102.8	0.06	
11/18/2009	8:56:51	111.5	-0.053	109.1	0.05	
11/18/2009	8:56:58	118.1	-0.051	115.7	0.05	
11/18/2009	8:57:05	125.1	-0.034	122.7	0.03	X
11/18/2009	8:57:12	132.6	-0.032	130.2	0.03	
11/18/2009	8:57:20	140.5	-0.048	138.1	0.05	
11/18/2009	8:57:28	148.9	-0.048	146.5	0.05	
11/18/2009	8:57:37	157.8	-0.048	155.4	0.05	X
11/18/2009	8:57:47	167.2	-0.065	164.8	0.07	
11/18/2009	8:57:57	177.2	-0.029	174.8	0.03	
11/18/2009	8:58:07	187.8	-0.032	185.4	0.03	
11/18/2009	8:58:18	199	-0.032	196.6	0.03	X
11/18/2009	8:58:30	210.9	-0.048	208.5	0.05	
11/18/2009	8:58:43	223.5	-0.029	221.1	0.03	
11/18/2009	8:58:56	236.8	-0.04	234.4	0.04	–
11/18/2009	8:59:10	250.9	-0.046	248.5	0.05	
11/18/2009	8:59:25	265.8	-0.032	263.4	0.03	
11/18/2009	8:59:41	281.6	-0.033	279.2	0.03	
11/18/2009	8:59:58	298.4	-0.046	296	0.05	
11/18/2009	9:00:16	316.2	-0.046	313.8	0.05	
11/18/2009	9:00:34	335	-0.063	332.6	0.06	
11/18/2009	9:00:54	354.9	-0.046	352.5	0.05	
11/18/2009	9:01:15	376	-0.027	373.6	0.03	
11/18/2009	9:01:38	398.4	-0.029	396	0.03	
11/18/2009	9:02:02	422.1	-0.031	419.7	0.03	

Client: Great Lakes Naval Station

Project: NTL21 MW01

Project No.: 112601489

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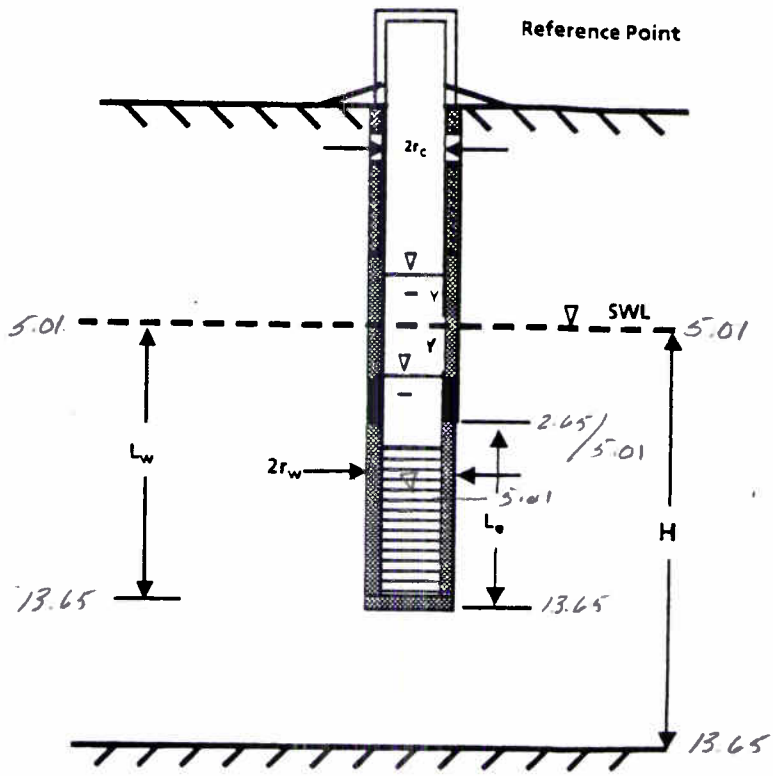
Schematic of Geometry and Boundary Conditions for a Screened Well

MW# MW01

Drawdown
-or-
Recovery Test
(circle)

H = 13.65 - 5.01 = 8.64
L_w = 8.64
L_e = 8.64
r_w = 0.34375
r_c = 0.083
L_e/r_w = 25.13 ;

∴ A = _____, B = _____, or C = 1.75



Relatively Impermeable Material

Known/Assume @ 13.65 feet
(circle)

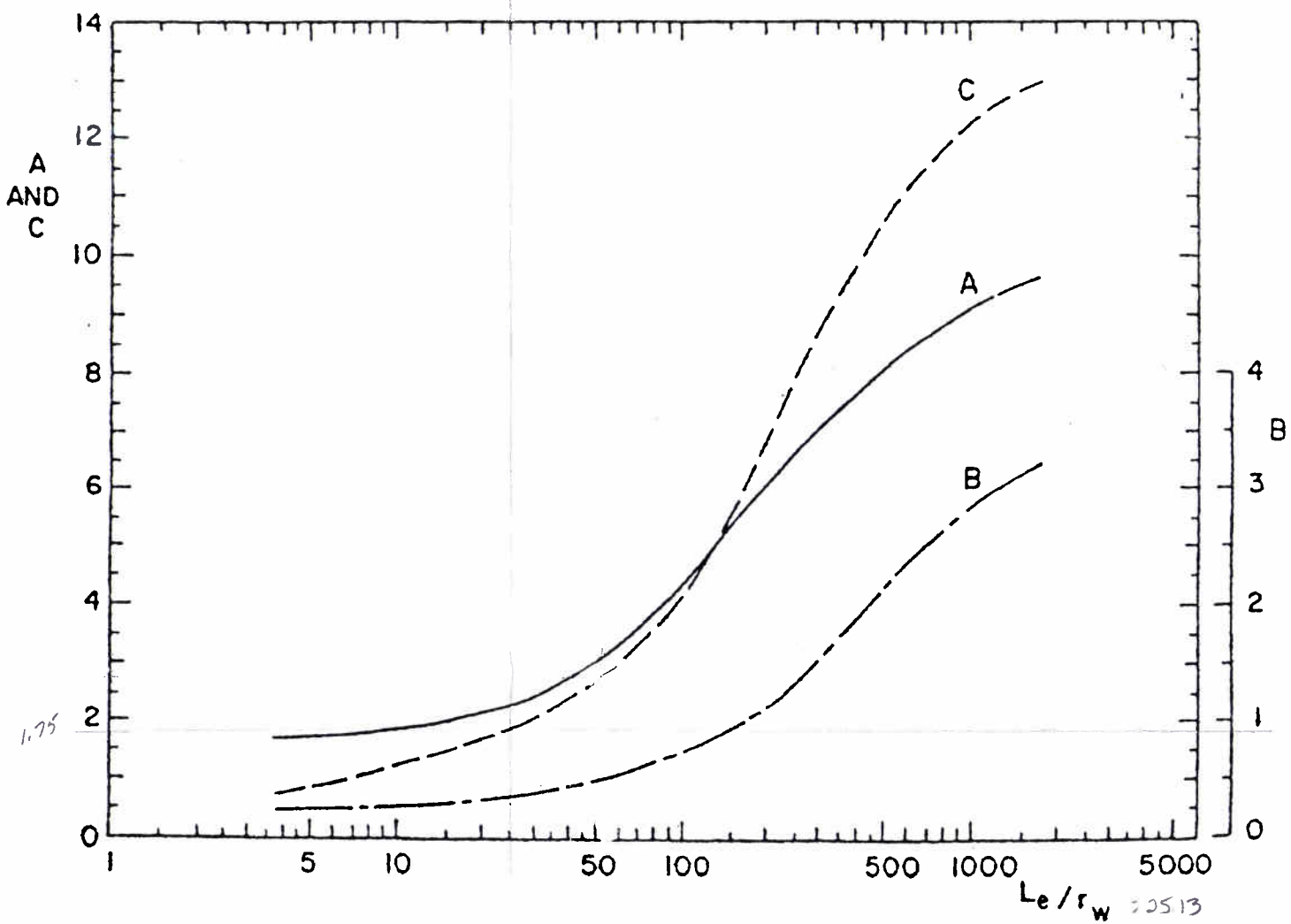
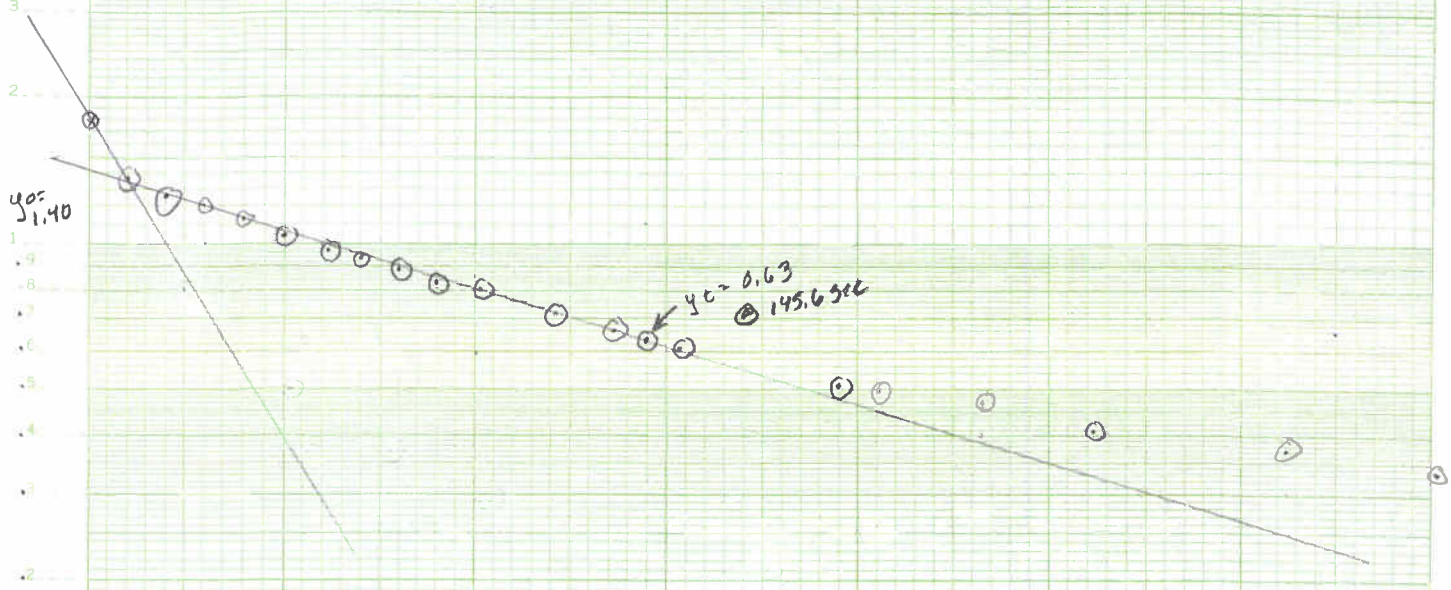


Fig. 2. Dimensionless parameters A, B, and C as a function of L_e/r_w for calculation of $\ln(R_e/r_w)$.

NAVAL STATION GREAT LAKES 112601489
NTC21 - MW02 RISING HEAD TEST
BOUWER and RICE METHOD



$$\ln R_e/r_w = \left[\frac{1.1}{\ln(L_w/r_w)} + \frac{A}{L_e/r_w}\right]^{-1} = \left[\frac{1.1}{\ln\left(\frac{13.30}{0.37375}\right)} + \frac{0.95}{6.23}\right]^{-1} = \left[\frac{1.1}{3.65} + (0.152)\right] = \frac{1}{0.453}$$

$$\ln R_e/r_w = 2.21$$

$$K = \frac{(r_c^2)(\ln R_e/r_w)}{2(L_e)} \cdot \frac{1}{t} \cdot \frac{y_0}{y_t} = \frac{(0.007)(2.21)}{(22.0)} \cdot \frac{1}{145.6} \cdot \frac{1.40}{0.63} = (.000703)(0.0068)(2.22)$$

$$= 1.06 \times 10^{-5}\ \text{ft/sec} \quad \text{or} \quad 3.23 \times 10^{-4}\ \text{cm/sec}$$

K+E SEMI-LOGARITHMIC 4 CYCLES X 70 DIVISIONS KEUFFEL & ESSER CO. MADE IN U.S.A. 46 6012

In-Situ Inc.	MiniTroll Pro		
Report generated:		11/27/2009	11:31:26
Report from file:	...\SN13334 2009-11-17 205500 NTC21 MW02.bin		
Win-Situ Version		4.47	
Serial number:		13334	
Firmware Version		3.09	
Unit name:	NTC21-MW02		
Test name:		NTC21 MW02 RH	
Test defined on:		11/17/2009	20:50:43
Test scheduled for:		11/17/2009	20:55:00
Test started on:		11/17/2009	20:55:00
Test stopped on:	N/A	N/A	
Test extracted on:	N/A	N/A	
Data gathered using Logarithmic testing			
Maximum time between data points:	1 Seconds.		
Number of data samples:		120	
TOTAL DATA SAMPLES		120	
Channel number [2]			
Measurement type:	Pressure		
Channel name:	OnBoard Pressure		
Sensor Range:	30 PSIG.		
Specific gravity:		1	
Mode:	Surface		
User-defined reference:		0 Feet H2O	
Referenced on:	test start		
Pressure head at reference:		12.875 Feet H2O	

Monitoring Well	Northing	Easting	Elevation Top of PVC	Existing Ground Elevation	Total Depth	Screen Depth	Screen Elevation	Sandp Dep
NTC21-MW02	2057873.49	1115236.52	653.66	654.25	16.00	6.00 - 16.00	647.66 - 637.66	5.00 -

Date	Time	ET (sec)	Chan[2] Feet H2O
11/17/2009	20:55:00	0	0
11/17/2009	20:55:00	0.3	0.014
11/17/2009	20:55:00	0.6	0.032
11/17/2009	20:55:00	0.9	0.018
11/17/2009	20:55:01	1.2	0.019
11/17/2009	20:55:01	1.5	0.036
11/17/2009	20:55:01	1.8	0.007
11/17/2009	20:55:02	2.1	0.021
11/17/2009	20:55:02	2.4	-0.04
11/17/2009	20:55:02	2.7	-1.549
11/17/2009	20:55:03	3	-1.387
11/17/2009	20:55:03	3.3	-1.787
11/17/2009	20:55:03	3.6	-1.724
11/17/2009	20:55:04	4.2	-1.693
11/17/2009	20:55:05	5.1	-1.522
11/17/2009	20:55:05	5.7	-1.512
11/17/2009	20:55:06	6	-1.484
11/17/2009	20:55:06	6.4	-1.47
11/17/2009	20:55:06	6.7	-1.461
11/17/2009	20:55:07	7.1	-1.455
11/17/2009	20:55:07	8	-1.436
11/17/2009	20:55:08	8.9	-1.44
11/17/2009	20:55:10	10.6	-1.425
11/17/2009	20:55:11	11.3	-1.419
11/17/2009	20:55:11	11.9	-1.404
11/17/2009	20:55:12	12.6	-1.385
11/17/2009	20:55:13	13.4	-1.376
11/17/2009	20:55:14	14.2	-1.385
11/17/2009	20:55:15	15	-1.376
11/17/2009	20:55:15	15.9	-1.366
11/17/2009	20:55:16	16.8	-1.357
11/17/2009	20:55:17	17.8	-1.33
11/17/2009	20:55:18	18.9	-1.336
11/17/2009	20:55:20	20	-1.326
11/17/2009	20:55:21	21.2	-1.313
11/17/2009	20:55:22	22.4	-1.3
11/17/2009	20:55:23	23.8	-1.271
11/17/2009	20:55:25	25.2	-1.275
11/17/2009	20:55:26	26.7	-1.254
11/17/2009	20:55:28	28.2	-1.248
11/17/2009	20:55:29	29.8	-1.235
11/17/2009	20:55:31	31.5	-1.22
11/17/2009	20:55:33	33.3	-1.206

ET (sec)	Drawdown
0	1.79
0.3	1.72
0.9	1.69
1.8	1.52
2.4	1.51
2.7	1.48
3.1	1.47
3.4	1.46
3.8	1.46
4.7	1.44
5.6	1.44
7.3	1.43
8	1.42
8.6	1.40
9.3	1.39
10.1	1.38
10.9	1.39
11.7	1.38
12.6	1.37
13.5	1.36
14.5	1.33
15.6	1.34
16.7	1.33
17.9	1.31
19.1	1.30
20.5	1.27
21.9	1.28
23.4	1.25
24.9	1.25
26.5	1.24
28.2	1.22
30	1.21

11/17/2009	20:55:35	35.2	-1.191	31.9	1.19
11/17/2009	20:55:37	37.3	-1.174	34	1.17
11/17/2009	20:55:39	39.5	-1.157	36.2	1.16
11/17/2009	20:55:41	41.8	-1.122	38.5	1.12
11/17/2009	20:55:44	44.3	-1.121	41	1.12
11/17/2009	20:55:46	46.9	-1.102	43.6	1.10
11/17/2009	20:55:49	49.7	-1.102	46.4	1.10
11/17/2009	20:55:52	52.6	-1.083	49.3	1.08
11/17/2009	20:55:55	55.7	-1.027	52.4	1.03
11/17/2009	20:55:58	59	-1.022	55.7	1.02
11/17/2009	20:56:02	62.5	-1.006	59.2	1.01
11/17/2009	20:56:06	66.2	-0.972	62.9	0.97
11/17/2009	20:56:10	70.1	-0.976	66.8	0.98
11/17/2009	20:56:14	74.3	-0.955	71	0.96
11/17/2009	20:56:18	78.7	-0.896	75.4	0.90
11/17/2009	20:56:23	83.4	-0.892	80.1	0.89
11/17/2009	20:56:28	88.4	-0.885	85.1	0.89
11/17/2009	20:56:33	93.7	-0.829	90.4	0.83
11/17/2009	20:56:39	99.3	-0.818	96	0.82
11/17/2009	20:56:45	105.2	-0.812	101.9	0.81
11/17/2009	20:56:51	111.5	-0.753	108.2	0.75
11/17/2009	20:56:58	118.1	-0.728	114.8	0.73
11/17/2009	20:57:05	125.1	-0.721	121.8	0.72
11/17/2009	20:57:12	132.6	-0.698	129.3	0.70
11/17/2009	20:57:20	140.5	-0.656	137.2	0.66
11/17/2009	20:57:28	148.9	-0.631	145.6	0.63
11/17/2009	20:57:37	157.8	-0.605	154.5	0.61
11/17/2009	20:57:47	167.2	-0.58	163.9	0.58
11/17/2009	20:57:57	177.2	-0.576	173.9	0.58
11/17/2009	20:58:07	187.8	-0.57	184.5	0.57
11/17/2009	20:58:18	199	-0.513	195.7	0.51
11/17/2009	20:58:30	210.9	-0.504	207.6	0.50
11/17/2009	20:58:43	223.5	-0.475	220.2	0.48
11/17/2009	20:58:56	236.8	-0.465	233.5	0.47
11/17/2009	20:59:10	250.9	-0.443	247.6	0.44
11/17/2009	20:59:25	265.8	-0.408	262.5	0.41
11/17/2009	20:59:41	281.6	-0.408	278.3	0.41
11/17/2009	20:59:58	298.4	-0.387	295.1	0.39
11/17/2009	21:00:16	316.2	-0.368	312.9	0.37
11/17/2009	21:00:34	335	-0.336	331.7	0.34
11/17/2009	21:00:54	354.9	-0.33	351.6	0.33
11/17/2009	21:01:15	376	-0.322	372.7	0.32
11/17/2009	21:01:38	398.4	-0.324	395.1	0.32
11/17/2009	21:02:02	422.1	-0.294	418.8	0.29
11/17/2009	21:02:27	447.2	-0.28	443.9	0.28
11/17/2009	21:02:53	473.8	-0.269	470.5	0.27
11/17/2009	21:03:21	502	-0.25	498.7	0.25
11/17/2009	21:03:51	531.9	-0.248	528.6	0.25
11/17/2009	21:04:23	563.5	-0.229	560.2	0.23
11/17/2009	21:04:56	597	-0.212	593.7	0.21
11/17/2009	21:05:32	632.5	-0.22	629.2	0.22
11/17/2009	21:06:10	670.1	-0.214	666.8	0.21
11/17/2009	21:06:49	709.9	-0.207	706.6	0.21
11/17/2009	21:07:32	752.1	-0.201	748.8	0.20
11/17/2009	21:08:16	796.8	-0.186	793.5	0.19
11/17/2009	21:09:04	844.2	-0.207	840.9	0.21
11/17/2009	21:09:54	894.4	-0.167	891.1	0.17
11/17/2009	21:10:47	947.5	-0.18	944.2	0.18
11/17/2009	21:11:43	1003.8	-0.179	1000.5	0.18
11/17/2009	21:12:43	1063.4	-0.173	1060.1	0.17
11/17/2009	21:13:46	1126.6	-0.152	1123.3	0.15
11/17/2009	21:14:53	1193.5	-0.15	1190.2	0.15
11/17/2009	21:16:04	1264.4	-0.148	1261.1	0.15
11/17/2009	21:17:19	1339.5	-0.158	1336.2	0.16
11/17/2009	21:18:38	1419	-0.139	1415.7	0.14
11/17/2009	21:20:03	1503.3	-0.137	1500	0.14
11/17/2009	21:21:32	1592.6	-0.154	1589.3	0.15
11/17/2009	21:23:07	1687.1	-0.135	1683.8	0.14
11/17/2009	21:24:47	1787.2	-0.15	1783.9	0.15

Client: Naval Station Great Lakes

Project: NTL 21 - MW02

Project No.: 112601409

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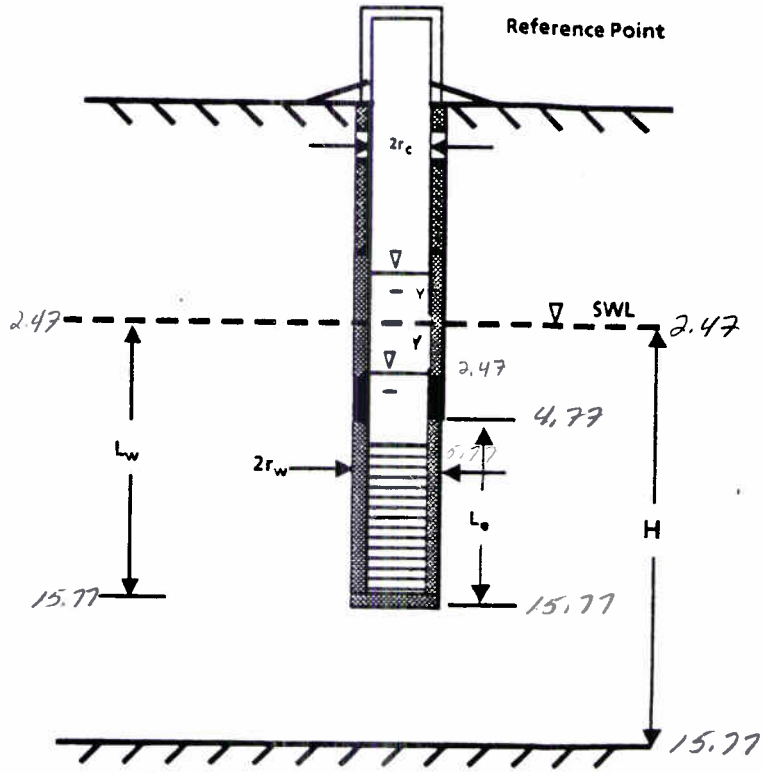
Schematic of Geometry and Boundary Conditions for a Screened Well

MW# MW02

Drawdown
-or-
Recovery Test
(circle)

H = 15.77 - 2.47 = 13.30
L_w = 13.30
L_e = 11.0
r_w = 0.34375
r_c = 0.083
L_e/r_w = 6.23;

∴ A = _____, B = _____, or C = 0.95



Relatively Impermeable Material

Known/Assume @ 15.77 feet
(circle)

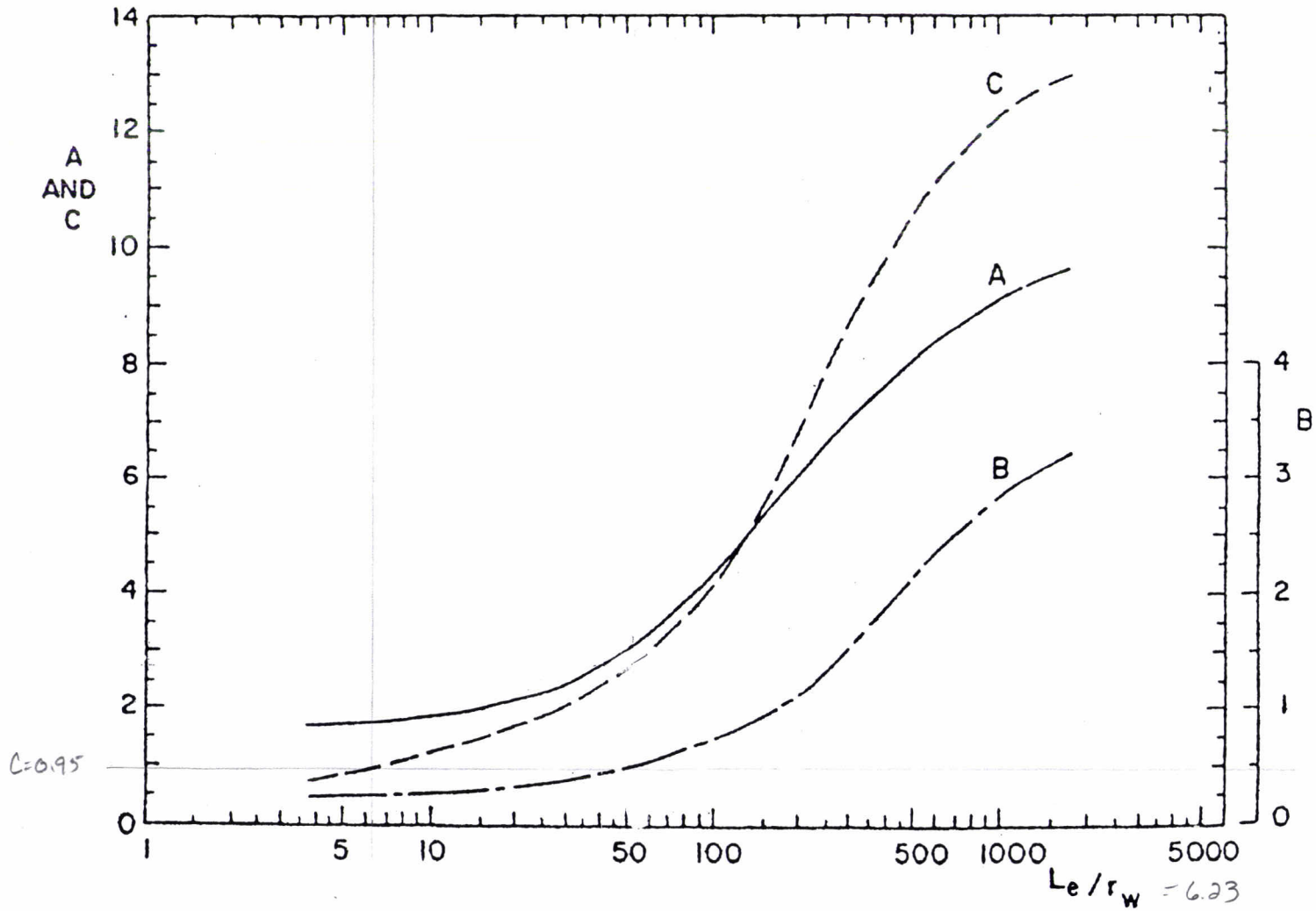


Fig. 2. Dimensionless parameters A, B, and C as a function of L_e/r_w for calculation of $\ln(R_e/r_w)$.

GREAT LAKES NAVAL STATION 1126074B4
NTC 21 - MW05 RISING HEAD SLUG TEST
BOUWER and RICE METHOD

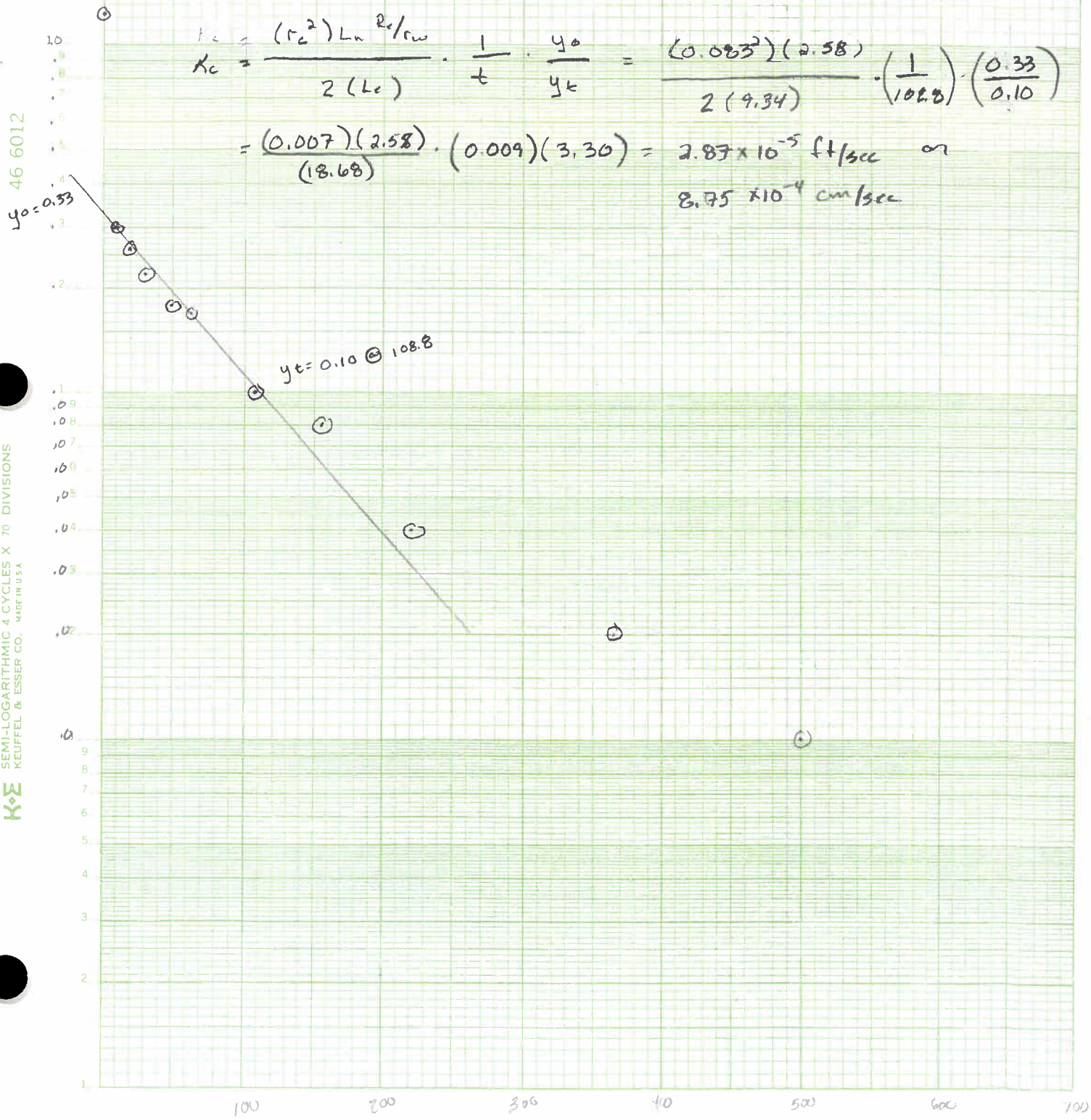
$$\ln R_e/r_w = \left[\frac{1.1}{\ln(L_e/r_w)} + \frac{C}{L_e/r_w}\right]^{-1} = \left[\frac{1.1}{\ln\left(\frac{9.70}{0.34375}\right)} + \frac{1.6}{9.7/0.34375}\right]^{-1} = \left[\frac{1.1}{3.33} + \frac{1.6}{28.25}\right]^{-1} =$$

$$= \left[(0.330)+(0.057)\right]^{-1} = \frac{1}{0.387} = 2.58 = \ln R_e/r_w$$

$$K_c = \frac{(r_c^2)\ln R_e/r_w}{2(L_e)} \cdot \frac{1}{t} \cdot \frac{y_o}{y_t} = \frac{(0.083^2)(2.58)}{2(9.34)} \cdot \left(\frac{1}{108.8}\right) \cdot \left(\frac{0.33}{0.10}\right)$$

$$= \frac{(0.007)(2.58)}{(18.68)} \cdot (0.009)(3.30) = 2.87 \times 10^{-5} \text{ ft/sec} \quad \text{or}$$

$$8.75 \times 10^{-4} \text{ cm/sec}$$



K+E SEMI-LOGARITHMIC 4 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO. MADE IN U.S.A.
46 6012

In-Situ Inc.	MiniTroll Pro		
Report generated:		11/27/2009	11:28:07
Report from file:	...\SN13334 2009-11-17 214500 NTC21 MW05 RH.bin		
Win-Situ Version		4.47	
Serial number:		13334	
Firmware Version		3.09	
Unit name:	NTC21-MW05		
Test name:		NTC21 MW05 RH	
Test defined on:		11/17/2009	21:40:45
Test scheduled for:		11/17/2009	21:45:00
Test started on:		11/17/2009	21:45:00
Test stopped on:	N/A	N/A	
Test extracted on:	N/A	N/A	
Data gathered using Logarithmic testing			
Maximum time between data points:	Seconds.		
Number of data samples:		105	
TOTAL DATA SAMPLES		105	
Channel number [2]			
Measurement type:	Pressure		
Channel name:	OnBoard Pressure		
Sensor Range:	30 PSIG.		
Specific gravity:		1	
Mode:	Surface		
User-defined reference:		0 Feet H2O	
Referenced on:	test start		
Pressure head at reference:		9.676 Feet H2O	

Monitoring Well	Northing	Easting	Elevation Top of PVC	Existing Ground Elevation	Total Depth	Screen Depth	Screen Elevation	Sandpack Depth	Sandp Eleva
NTC21-MW05	2057518.81	1115138.92	655.03	655.28	16.00	6.00 - 16.00	649.03 - 639.03	2.00 - 14.00	653.03 -

Date	Time	ET (sec)	Chan[2] Feet H2O
11/17/2009	21:45:00	0	0
11/17/2009	21:45:00	0.3	0.01
11/17/2009	21:45:00	0.6	-0.02
11/17/2009	21:45:00	0.9	-0.013
11/17/2009	21:45:01	1.2	0.017
11/17/2009	21:45:01	1.5	0
11/17/2009	21:45:01	1.8	0.015
11/17/2009	21:45:02	2.1	0.002
11/17/2009	21:45:02	2.4	-0.059
11/17/2009	21:45:02	2.7	-1.211
11/17/2009	21:45:03	3	-0.715
11/17/2009	21:45:03	3.3	-1.173
11/17/2009	21:45:03	3.6	-1.196
11/17/2009	21:45:03	3.9	-0.984
11/17/2009	21:45:04	4.2	-0.839
11/17/2009	21:45:04	4.5	-0.719
11/17/2009	21:45:04	4.8	-0.623
11/17/2009	21:45:05	5.1	-0.545
11/17/2009	21:45:05	5.4	-0.478
11/17/2009	21:45:05	5.7	-0.446
11/17/2009	21:45:06	6	-0.394
11/17/2009	21:45:06	6.4	-0.406
11/17/2009	21:45:06	6.7	-0.358
11/17/2009	21:45:07	7.1	-0.362
11/17/2009	21:45:07	7.5	-0.352
11/17/2009	21:45:07	8	-0.344
11/17/2009	21:45:08	8.4	-0.32
11/17/2009	21:45:08	8.9	-0.329
11/17/2009	21:45:09	9.5	-0.341
11/17/2009	21:45:10	10	-0.341
11/17/2009	21:45:10	10.6	-0.301
11/17/2009	21:45:11	11.3	-0.313
11/17/2009	21:45:11	11.9	-0.294
11/17/2009	21:45:12	12.6	-0.307
11/17/2009	21:45:13	13.4	-0.303
11/17/2009	21:45:14	14.2	-0.292
11/17/2009	21:45:15	15	-0.292
11/17/2009	21:45:15	15.9	-0.288
11/17/2009	21:45:16	16.8	-0.285
11/17/2009	21:45:17	17.8	-0.296
11/17/2009	21:45:18	18.9	-0.258
11/17/2009	21:45:20	20	-0.285
11/17/2009	21:45:21	21.2	-0.281
11/17/2009	21:45:22	22.4	-0.26
11/17/2009	21:45:23	23.8	-0.239
11/17/2009	21:45:25	25.2	-0.253
11/17/2009	21:45:26	26.7	-0.245
11/17/2009	21:45:28	28.2	-0.224
11/17/2009	21:45:29	29.8	-0.22
11/17/2009	21:45:31	31.5	-0.232
11/17/2009	21:45:33	33.3	-0.222
11/17/2009	21:45:35	35.2	-0.224
11/17/2009	21:45:37	37.3	-0.217
11/17/2009	21:45:39	39.5	-0.194

ET (sec)	Drawdown
0	1.21
0.3	0.72
0.6	1.17
0.9	1.20
1.2	0.98
1.5	0.84
1.8	0.72
2.1	0.62
2.4	0.55
2.7	0.48
3	0.45
3.3	0.39
3.7	0.41
4	0.36
4.4	0.36
4.8	0.35
5.3	0.34
5.7	0.32
6.2	0.33
6.8	0.34
7.3	0.34
7.9	0.30
8.6	0.31
9.2	0.29
9.9	0.31
10.7	0.30
11.5	0.29
12.3	0.29
13.2	0.29
14.1	0.29
15.1	0.30
16.2	0.26
17.3	0.29
18.5	0.28
19.7	0.26
21.1	0.24
22.5	0.25
24	0.25
25.5	0.22
27.1	0.22
28.8	0.23
30.6	0.22
32.5	0.22
34.6	0.22
36.8	0.19

11/17/2009	21:45:41	41.8	-0.192	39.1	0.19
11/17/2009	21:45:44	44.3	-0.217	41.6	0.22
11/17/2009	21:45:46	46.9	-0.205	44.2	0.21
11/17/2009	21:45:49	49.7	-0.194	47	0.19
11/17/2009	21:45:52	52.6	-0.179	49.9	0.18
11/17/2009	21:45:55	55.7	-0.162	53	0.16
11/17/2009	21:45:58	59	-0.158	56.3	0.16
11/17/2009	21:46:02	62.5	-0.183	59.8	0.18
11/17/2009	21:46:06	66.2	-0.145	63.5	0.15
11/17/2009	21:46:10	70.1	-0.152	67.4	0.15
11/17/2009	21:46:14	74.3	-0.152	71.6	0.15
11/17/2009	21:46:18	78.7	-0.145	76	0.15
11/17/2009	21:46:23	83.4	-0.139	80.7	0.14
11/17/2009	21:46:28	88.4	-0.118	85.7	0.12
11/17/2009	21:46:33	93.7	-0.126	91	0.13
11/17/2009	21:46:39	99.3	-0.105	96.6	0.11
11/17/2009	21:46:45	105.2	-0.128	102.5	0.13
11/17/2009	21:46:51	111.5	-0.097	108.8	0.10
11/17/2009	21:46:58	118.1	-0.103	115.4	0.10
11/17/2009	21:47:05	125.1	-0.084	122.4	0.08
11/17/2009	21:47:12	132.6	-0.113	129.9	0.11
11/17/2009	21:47:20	140.5	-0.092	137.8	0.09
11/17/2009	21:47:28	148.9	-0.086	146.2	0.09
11/17/2009	21:47:37	157.8	-0.082	155.1	0.08
11/17/2009	21:47:47	167.2	-0.083	164.5	0.08
11/17/2009	21:47:57	177.2	-0.071	174.5	0.07
11/17/2009	21:48:07	187.8	-0.052	185.1	0.05
11/17/2009	21:48:18	199	-0.047	196.3	0.05
11/17/2009	21:48:30	210.9	-0.058	208.2	0.06
11/17/2009	21:48:43	223.5	-0.039	220.8	0.04
11/17/2009	21:48:56	236.8	-0.034	234.1	0.03
11/17/2009	21:49:10	250.9	-0.049	248.2	0.05
11/17/2009	21:49:25	265.8	-0.045	263.1	0.05
11/17/2009	21:49:41	281.6	-0.041	278.9	0.04
11/17/2009	21:49:58	298.4	-0.039	295.7	0.04
11/17/2009	21:50:16	316.2	-0.036	313.5	0.04
11/17/2009	21:50:34	335	-0.032	332.3	0.03
11/17/2009	21:50:54	354.9	-0.032	352.2	0.03
11/17/2009	21:51:15	376	-0.015	373.3	0.02
11/17/2009	21:51:38	398.4	-0.032	395.7	0.03
11/17/2009	21:52:02	422.1	-0.028	419.4	0.03
11/17/2009	21:52:27	447.2	-0.011	444.5	0.01
11/17/2009	21:52:53	473.8	-0.023	471.1	0.02
11/17/2009	21:53:21	502	-0.012	499.3	0.01
11/17/2009	21:53:51	531.9	-0.006	529.2	0.01
11/17/2009	21:54:23	563.5	-0.023	560.8	0.02
11/17/2009	21:54:56	597	-0.019	594.3	0.02
11/17/2009	21:55:32	632.5	-0.004	629.8	0.00
11/17/2009	21:56:10	670.1	-0.017	667.4	0.02
11/17/2009	21:56:49	709.9	-0.002	707.2	0.00
11/17/2009	21:57:32	752.1	-0.018	749.4	0.02

Client: Naval Station Great Lakes

Project: NTC21 - MW06

Project No.: 112601489

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Schematic of Geometry and Boundary Conditions for a Screened Well

MW# MW06

Drawdown
-or-
Recovery Test
(circle)

H = 12.68 - 2.98 = 9.7

L_w = 9.70

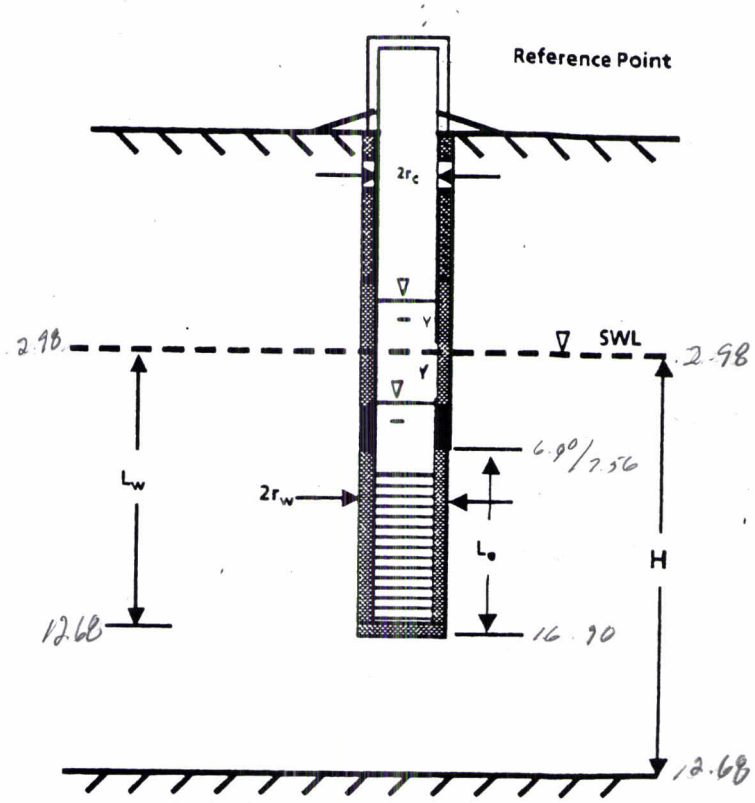
L_e = 9.70

r_w = 0.34375

r_c = 0.083

L_e/r_w = 28.21 ;

∴ A = _____, B = _____, or C = 1.6



Relatively Impermeable Material

Known/Assume @ 16.90 feet
(circle)

H = Lw

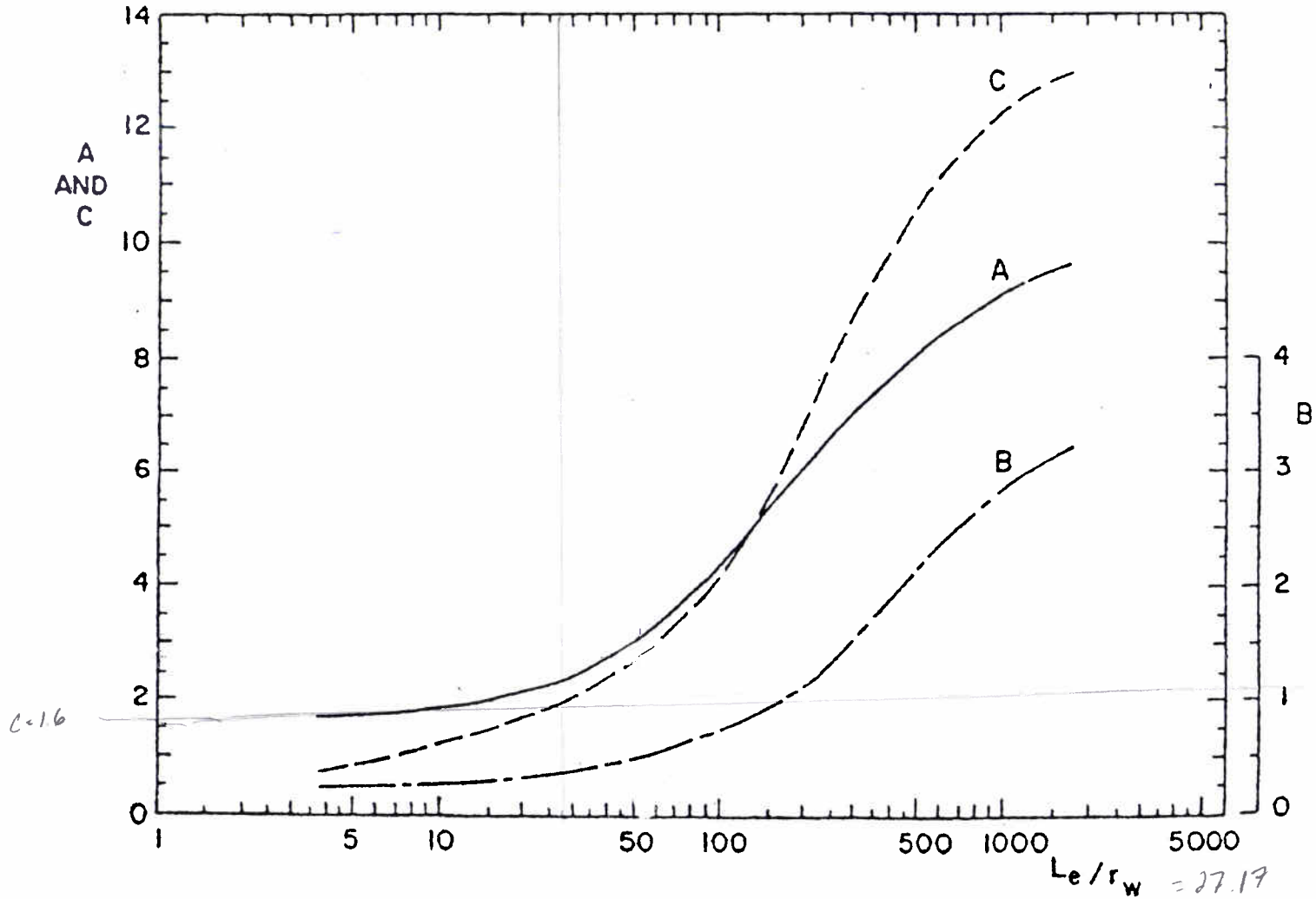


Fig. 2. Dimensionless parameters A, B, and C as a function of L_e/r_w for calculation of $\ln(R_e/r_w)$.

NAVAL STATION GREAT LAKES 10/26/1989
NTL21-MW06 Rising Head Slug Test
BOUWER and RICE METHOD

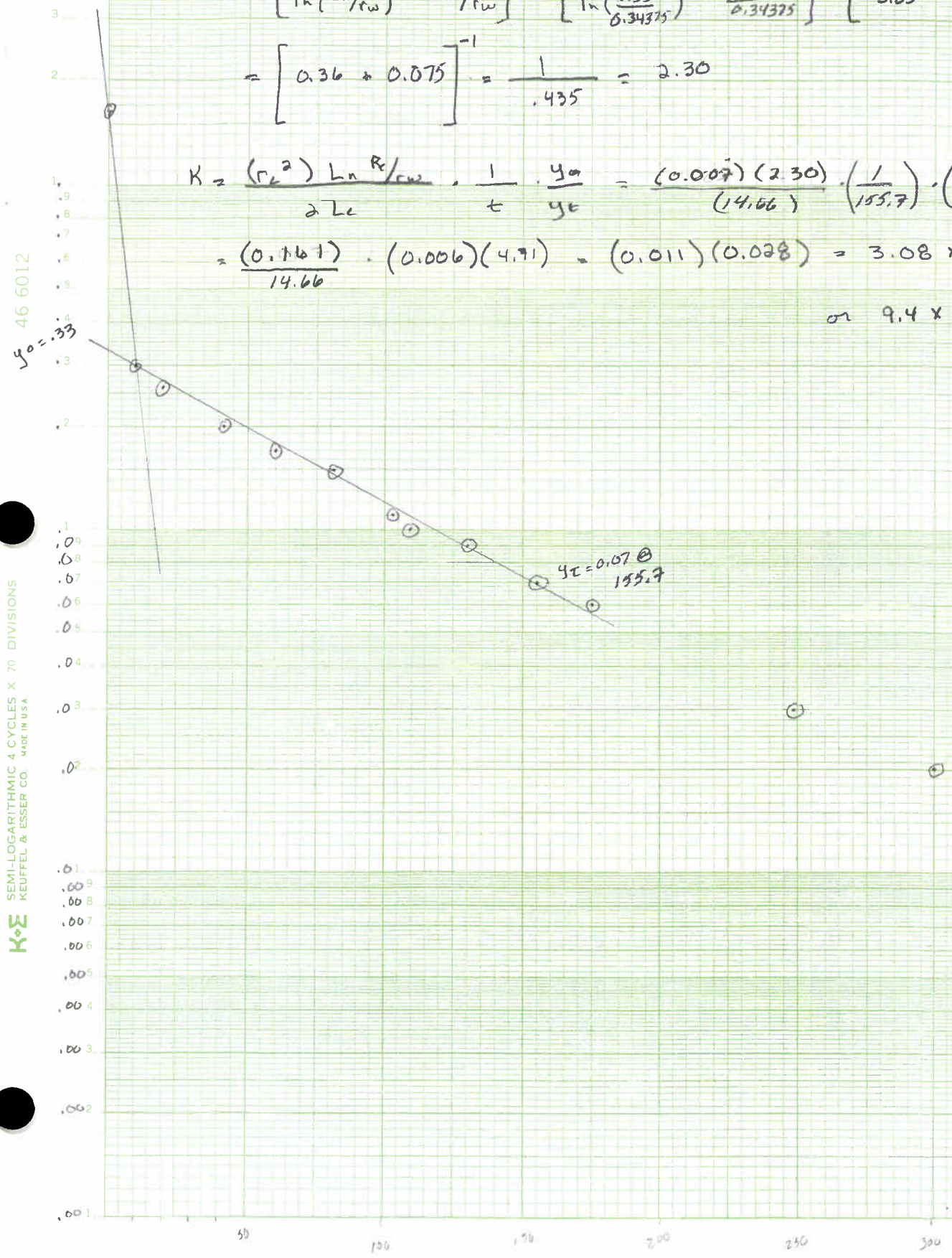
$$\ln \frac{R_e}{r_w} = \left[\frac{1.1}{\ln(L_w/r_w)} + \frac{C}{L_e/r_w}\right]^{-1} = \left[\frac{1.1}{\ln\left(\frac{7.33}{0.34375}\right)} + \frac{1.6}{\frac{7.33}{0.34375}}\right]^{-1} = \left[\frac{1.1}{3.05} + \frac{1.6}{21.32}\right]^{-1}$$

$$= \left[0.36 + 0.075\right]^{-1} = \frac{1}{.435} = 2.30$$

$$K = \frac{(r_c^2)\ \ln R_e/r_w}{2L_e} \cdot \frac{1}{t} \cdot \frac{y_0}{y_t} = \frac{(0.007)(2.30)}{(14.66)} \cdot \left(\frac{1}{155.7}\right) \cdot \left(\frac{0.33}{0.07}\right)$$

$$= \frac{(0.161)}{14.66} \cdot (0.006)(4.71) = (0.011)(0.028) = 3.08 \times 10^{-4}\ \text{ft/sec}$$

or 9.4×10^{-3} cm/sec



K+E SEMI-LOGARITHMIC 4 CYCLES X 70 DIVISIONS KEUFFEL & ESSER CO. MADE IN USA 46 6012

In-Situ Inc. MiniTroll Pro

Report generated: 11/19/2009 12:21:10
Report from file: ...\SN13334 2009-11-18 093500 NTC21 MW06.bin
Win-Situ Version 4.47

Serial number: 13334
Firmware Version 3.09
Unit name: NTC21-MW06

Test name: NTC21 MW06

Test defined on: 11/18/2009 9:30:08
Test scheduled for: 11/18/2009 9:35:00
Test started on: 11/18/2009 9:35:00
Test stopped on: N/A N/A
Test extracted on: N/A N/A

Data gathered using Logarithmic testing
Maximum time between data p Seconds.
Number of data samples: 94

TOTAL DATA SAMPLES 94

Channel number [2]
Measurement type: Pressure
Channel name: OnBoard Pressure
Sensor Range: 30 PSIG.
Specific gravity: 1
Mode: Surface
User-defined reference: 0 Feet H2O
Referenced on: test start
Pressure head at reference: 6.848 Feet H2O

Monitoring Well	Northing	Easting	Elevation Top of PVC	Existing Ground Elevation	Total Depth	Screen Depth	Screen Elevation	Sandpack Depth	Sandpack Elevation
NTC21-MW06	2057503.81	1114703.35	659.17	659.53	14.00	4.00 - 14.00	655.17 - 645.17	3.00 - 14.00	656.17 - 645.17

Date	Time	ET (sec)	Chan[2] Feet H2O
11/18/2009	9:35:00	0	0
11/18/2009	9:35:00	0.3	0.01
11/18/2009	9:35:00	0.6	-0.005
11/18/2009	9:35:00	0.9	0.028
11/18/2009	9:35:01	1.2	0.022
11/18/2009	9:35:01	1.5	0.03
11/18/2009	9:35:01	1.8	-0.695
11/18/2009	9:35:02	2.1	-1.65
11/18/2009	9:35:02	2.4	-1.547
11/18/2009	9:35:02	2.7	-1.29
11/18/2009	9:35:03	3	-1.147
11/18/2009	9:35:03	3.3	-0.992
11/18/2009	9:35:03	3.6	-0.883
11/18/2009	9:35:03	3.9	-0.742
11/18/2009	9:35:04	4.2	-0.635
11/18/2009	9:35:04	4.5	-0.58
11/18/2009	9:35:04	4.8	-0.509
11/18/2009	9:35:05	5.1	-0.475
11/18/2009	9:35:05	5.4	-0.439
11/18/2009	9:35:05	5.7	-0.45
11/18/2009	9:35:06	6	-0.446
11/18/2009	9:35:06	6.4	-0.418
11/18/2009	9:35:06	6.7	-0.389
11/18/2009	9:35:07	7.1	-0.396
11/18/2009	9:35:07	7.5	-0.387
11/18/2009	9:35:07	8	-0.364
11/18/2009	9:35:08	8.4	-0.417
11/18/2009	9:35:08	8.9	-0.362
11/18/2009	9:35:09	9.5	-0.328
11/18/2009	9:35:10	10	-0.336
11/18/2009	9:35:10	10.6	-0.33
11/18/2009	9:35:11	11.3	-0.325
11/18/2009	9:35:11	11.9	-0.338
11/18/2009	9:35:12	12.6	-0.302
11/18/2009	9:35:13	13.4	-0.309
11/18/2009	9:35:14	14.2	-0.294
11/18/2009	9:35:15	15	-0.307
11/18/2009	9:35:15	15.9	-0.287
11/18/2009	9:35:16	16.8	-0.3
11/18/2009	9:35:17	17.8	-0.279
11/18/2009	9:35:18	18.9	-0.289
11/18/2009	9:35:20	20	-0.285
11/18/2009	9:35:21	21.2	-0.3
11/18/2009	9:35:22	22.4	-0.262
11/18/2009	9:35:23	23.8	-0.291
11/18/2009	9:35:25	25.2	-0.266

ET (sec)	Drawdown
0	1.65
0.3	1.55
0.6	1.29
0.9	1.15
1.2	0.99
1.5	0.88
1.8	0.74
2.1	0.64
2.4	0.58
2.7	0.51
3	0.48
3.3	0.44
3.6	0.45
3.9	0.45
4.3	0.42
4.6	0.39
5	0.40
5.4	0.39
5.9	0.36
6.3	0.42
6.8	0.36
7.4	0.33
7.9	0.34
8.5	0.33
9.2	0.33
9.8	0.34
10.5	0.30
11.3	0.31
12.1	0.29
12.9	0.31
13.8	0.29
14.7	0.30
15.7	0.28
16.8	0.29
17.9	0.29
19.1	0.30
20.3	0.26
21.7	0.29
23.1	0.27

11/18/2009	9:35:26	26.7	-0.26	24.6	0.26	
11/18/2009	9:35:28	28.2	-0.241	26.1	0.24	
11/18/2009	9:35:29	29.8	-0.237	27.7	0.24	
11/18/2009	9:35:31	31.5	-0.249	29.4	0.25	
11/18/2009	9:35:33	33.3	-0.262	31.2	0.26	x
11/18/2009	9:35:35	35.2	-0.256	33.1	0.26	
11/18/2009	9:35:37	37.3	-0.232	35.2	0.23	
11/18/2009	9:35:39	39.5	-0.245	37.4	0.25	
11/18/2009	9:35:41	41.8	-0.222	39.7	0.22	
11/18/2009	9:35:44	44.3	-0.198	42.2	0.20	x
11/18/2009	9:35:46	46.9	-0.194	44.8	0.19	
11/18/2009	9:35:49	49.7	-0.19	47.6	0.19	
11/18/2009	9:35:52	52.6	-0.198	50.5	0.20	
11/18/2009	9:35:55	55.7	-0.192	53.6	0.19	
11/18/2009	9:35:58	59	-0.169	56.9	0.17	
11/18/2009	9:36:02	62.5	-0.165	60.4	0.17	x
11/18/2009	9:36:06	66.2	-0.19	64.1	0.19	
11/18/2009	9:36:10	70.1	-0.15	68	0.15	
11/18/2009	9:36:14	74.3	-0.146	72.2	0.15	
11/18/2009	9:36:18	78.7	-0.156	76.6	0.16	
11/18/2009	9:36:23	83.4	-0.15	81.3	0.15	x
11/18/2009	9:36:28	88.4	-0.127	86.3	0.13	
11/18/2009	9:36:33	93.7	-0.137	91.6	0.14	
11/18/2009	9:36:39	99.3	-0.129	97.2	0.13	
11/18/2009	9:36:45	105.2	-0.108	103.1	0.11	x
11/18/2009	9:36:51	111.5	-0.103	109.4	0.10	
11/18/2009	9:36:58	118.1	-0.112	116	0.11	
11/18/2009	9:37:05	125.1	-0.101	123	0.10	
11/18/2009	9:37:12	132.6	-0.087	130.5	0.09	x
11/18/2009	9:37:20	140.5	-0.078	138.4	0.08	
11/18/2009	9:37:28	148.9	-0.091	146.8	0.09	
11/18/2009	9:37:37	157.8	-0.07	155.7	0.07	x
11/18/2009	9:37:47	167.2	-0.08	165.1	0.08	
11/18/2009	9:37:57	177.2	-0.059	175.1	0.06	x
11/18/2009	9:38:07	187.8	-0.055	185.7	0.06	
11/18/2009	9:38:18	199	-0.082	196.9	0.08	
11/18/2009	9:38:30	210.9	-0.055	208.8	0.06	
11/18/2009	9:38:43	223.5	-0.057	221.4	0.06	
11/18/2009	9:38:56	236.8	-0.053	234.7	0.05	
11/18/2009	9:39:10	250.9	-0.032	248.8	0.03	x
11/18/2009	9:39:25	265.8	-0.045	263.7	0.05	
11/18/2009	9:39:41	281.6	-0.026	279.5	0.03	
11/18/2009	9:39:58	298.4	-0.024	296.3	0.02	x
11/18/2009	9:40:16	316.2	-0.036	314.1	0.04	
11/18/2009	9:40:34	335	-0.034	332.9	0.03	
11/18/2009	9:40:54	354.9	-0.032	352.8	0.03	
11/18/2009	9:41:15	376	-0.013	373.9	0.01	
11/18/2009	9:41:38	398.4	-0.028	396.3	0.03	

Client: Naval Station Great Lakes

Project: NTL21 MW06

Project No.: 112601489

Page 4 of 5

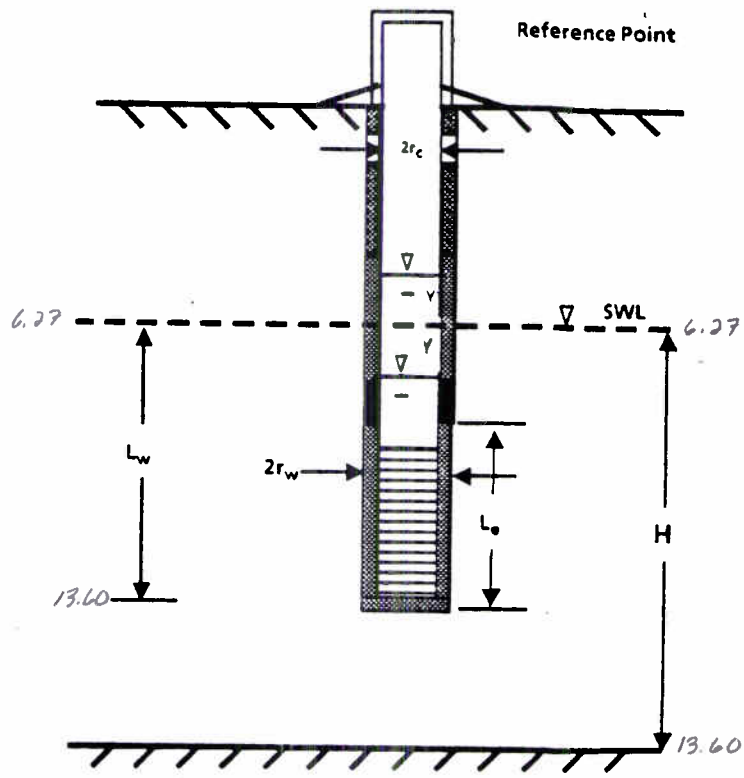
Schematic of Geometry and Boundary Conditions for a Screened Well

MW# MW06

Drawdown
-or-
Recovery Test
(circle)

H = 13.60 - 6.27 = 7.33
L_w = 7.33
L_e = 7.33
r_w = 0.34375
r_c = 0.083
L_e/r_w = 21.32 ;

∴ A = _____, B = _____, or C = 1.60



Relatively Impermeable Material

Known/Assume @ _____ feet
(circle)

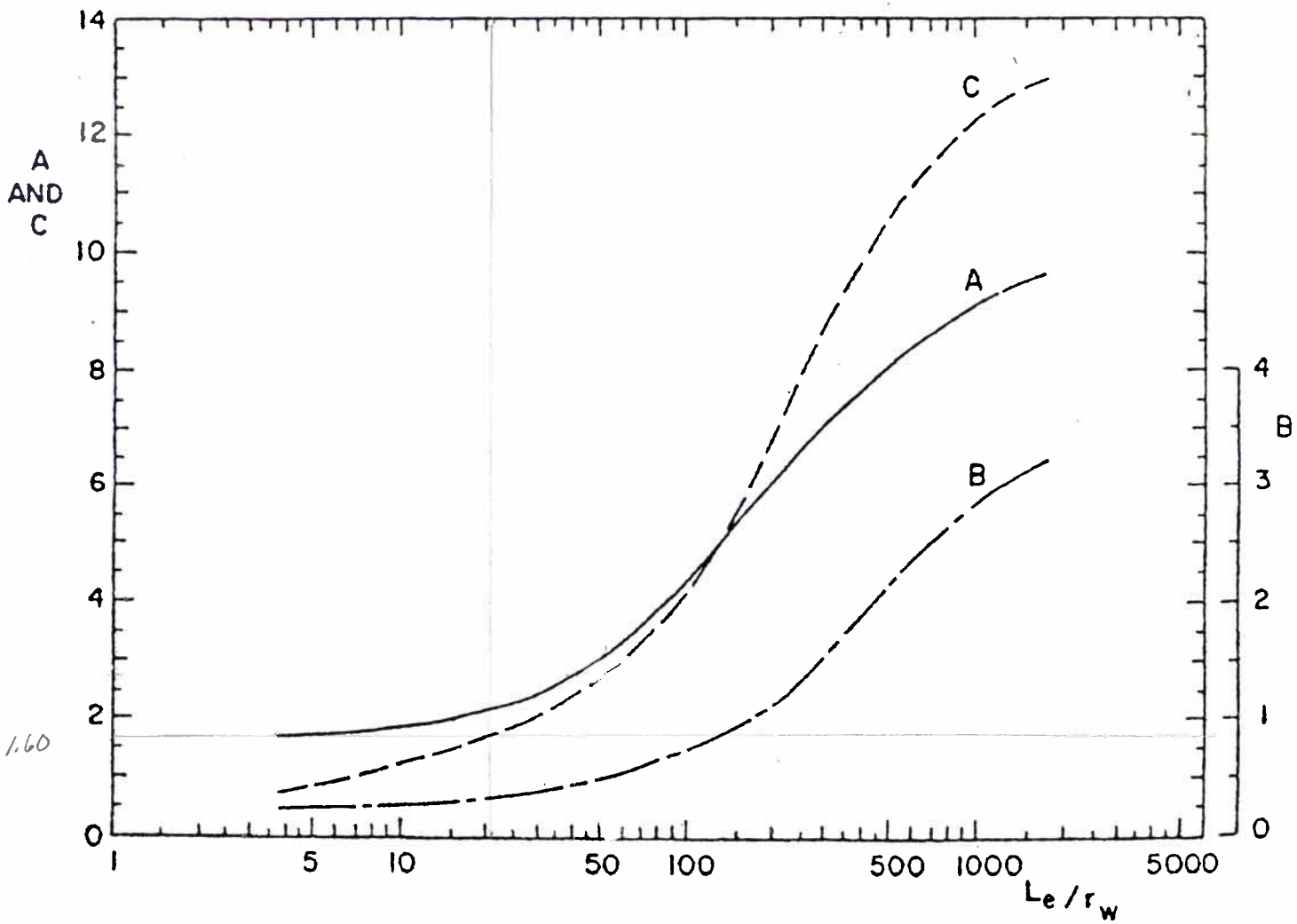


Fig. 2. Dimensionless parameters A, B, and C as a function of L_e/r_w for calculation of $\ln(R_e/r_w)$.

B-6 SAMPLE LOG AND PURGE SHEETS - GROUNDWATER

GROUNDWATER SAMPLE LOG SHEET

TETRA TECH NUS, Inc.

Event: Site 21 - Investigation
Site Name: GREAT LAKES NTC - Site 21
Project No: 112G01797.0000.0320 (ED00000105)

Sample ID:	**NTC21-MW01-DEVELOPMENT**	Sampler:	Nicole Rochna
Well ID:	NTC21-MW01	Well Type:	Monitoring Well
QC Duplicate ID:	N/A	MS/MSD:	N/A

Well Information

Well Diameter (in.)	2	Static Water Level (ft-BTOR)	4.92
Top of Screen (ft-BTOR)	4	H&S PID Monitor Reading (ppm)	NA
Bottom of Screen (ft-BTOR)	14	Purge Method	Submersible pump
Total Depth of Well (ft-BTOR)	14	Sample Method	High velocity developement purge

Equipment

Water Quality Meter:	05D2372	Pump Control Box:	N/A	Turbidity Meter:	ME 13089

Purge Information

Date	Time	Level (ft-BTOR)	Rate (ml/min)	Color	Odor	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTUs)	Temp (ºC)	ORP (mV)	Salinity (%)	Other
11/14/09	9:10	4.92	1250.0	Highly Turbid	None	NA	NA	NA	NA	NA	NA	NA	N/A
11/14/09	9:30	5.05	1250.0	Clear	None	11.80	3.018	0.62	7.05	14.32	-73.8	NA	N/A
11/14/09	9:50	5.05	1250.0	Clear	None	11.65	3.108	0.55	2.63	14.40	-82.4	NA	N/A
11/14/09	10:10	5.05	1250.0	Clear	None	11.55	3.138	0.51	1.63	14.45	-87.2	NA	N/A
11/14/09	10:30	5.05	1250.0	Clear	None	11.26	3.188	1.28	37.8	14.61	-47.5	NA	N/A

Final Purge / Sample Data

Start Purge	End Purge	Duration (min.)	Total Vol. (L)	Color	Odor	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTUs)	Temp (ºC)	ORP (mV)	Salinity (%)	Other
10:10	11:30	80	100.0	Clear	None	11.26	3.188	1.28	37.8	14.61	-47.5	NA	N/A

Laboratory Analysis

Coll.	Date	Time	Description	Analysis	Preservative	No.	Type	Vol.	COC Notes	Chain No.

General Notes

Initial well development log

GROUNDWATER SAMPLE LOG SHEET

TETRA TECH NUS, Inc.

Event: Site 21 - Investigation
Site Name: GREAT LAKES NTC - Site 21
Project No: 112G01797.0000.0320 (ED00000105)

Sample ID:	**NTC21MW0101**	Sampler:	Nicole Rochna
Well ID:	NTC21-MW01	Well Type:	Monitoring Well
QC Duplicate ID:	N/A	MS/MSD:	N/A

Well Information

Well Diameter (in.)	2	Static Water Level (ft-BTOR)	5.01
Top of Screen (ft-BTOR)	4	H&S PID Monitor Reading (ppm)	NA
Bottom of Screen (ft-BTOR)	14	Purge Method	Low flow - peristaltic
Total Depth of Well (ft-BTOR)	14	Sample Method	Low flow - peristaltic

Equipment

Water Quality Meter:	05D2372	Pump Control Box:	H07006412	Turbidity Meter:	ME 13089

Purge Information

Date	Time	Level (ft-BTOR)	Rate (ml/min)	Color	Odor	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTUs)	Temp (ºC)	ORP (mV)	Salinity (%)	Other
11/17/09	10:30	5.01	250.0	Cloudy	None	NA	NA	NA	NA	NA	NA	NA	N/A
11/17/09	10:40	5.03	250.0	Clear	None	11.82	2.608	0.88	20.4	13.13	-60.3	NA	N/A
11/17/09	10:50	5.03	250.0	Clear	None	11.78	2.752	0.76	17.8	13.16	-70.8	NA	N/A
11/17/09	11:00	5.03	200.0	Clear	None	11.81	2.832	0.74	12.6	13.11	-73.7	NA	N/A
11/17/09	11:10	5.03	200.0	Clear	None	11.77	2.867	0.72	10.06	13.17	-79.1	NA	N/A
11/17/09	11:20	5.03	200.0	Clear	None	11.72	2.923	0.68	9.05	13.16	-78.3	NA	N/A
11/17/09	11:30	5.03	200.0	Clear	None	11.71	2.938	0.56	6.66	13.10	-78.9	NA	N/A
11/17/09	11:40	5.03	200.0	Clear	None	11.71	2.932	0.72	6.02	13.05	-79.7	NA	N/A

Final Purge / Sample Data

Start Purge	End Purge	Duration (min.)	Total Vol. (L)	Color	Odor	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTUs)	Temp (ºC)	ORP (mV)	Salinity (%)	Other
11:30	12:40	70	15.0	Clear	None	11.71	2.932	0.72	6.02	13.05	-79.7	NA	N/A

Laboratory Analysis

Coll.	Date	Time	Description	Analysis	Preservative	No.	Type	Vol.	COC Notes	Chain No.
✓	11/17/09	11:45	TAL Metals (Total)	SW-846 6010B	4°C/HNO3	1	Plastic - PE	250ml	None	ED00000105-6
✓	11/17/09	11:45	TCL VOCs	SW-846 8260B	4°C/HCL	3	Glass - Clear	40ml vials	None	ED00000105-6
✓	11/17/09	11:45	TCL SVOCs/Herb/Pest/PCB	SW-846 8270C/8181/8081A/8082	4°C	6	Glass - Amber	1L	None	ED00000105-6
✗	N/A	N/A	TAL Metals (Dissolved)	SW-846 6010B - Filtered	4°C/HNO3	1	Plastic - PE	250ml	None	N/A

General Notes

None

GROUNDWATER SAMPLE LOG SHEET

TETRA TECH NUS, Inc.

Event: Site 21 - Investigation
Site Name: GREAT LAKES NTC - Site 21
Project No: 112G01797.0000.0320 (ED00000105)

Sample ID:	**NTC21-MW02-DEVELOPMENT**	Sampler:	Shannon Hill
Well ID:	NTC21-MW02	Well Type:	Monitoring Well
QC Duplicate ID:	N/A	MS/MSD:	N/A

Well Information

Well Diameter (in.)	2	Static Water Level (ft-BTOR)	4
Top of Screen (ft-BTOR)	6	H&S PID Monitor Reading (ppm)	0.0
Bottom of Screen (ft-BTOR)	16	Purge Method	Submersible pump
Total Depth of Well (ft-BTOR)	16	Sample Method	High velocity developement

Equipment

Water Quality Meter:	08K100392	Pump Control Box:	N/A	Turbidity Meter:	ME12230

Purge Information

Date	Time	Level (ft-BTOR)	Rate (ml/min)	Color	Odor	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTUs)	Temp (ºC)	ORP (mV)	Salinity (%)	Other
11/14/09	9:19	6.4	2500.0	Cloudy	None	6.4	5.233	1.74	243	14.4	-15.4	na	N/A
11/14/09	9:39	7.75	1800.0	Cloudy	None	6.39	5.312	0.57	632	14.71	-62.5	na	N/A
11/14/09	9:51	8.5	1500.0	Cloudy	None	6.35	5.340	0.46	5875	14.78	-68.3	na	N/A
11/14/09	10:12	8.7	1500.0	Slightly Turbid	None	6.54	5.293	0.56	263	14.9	-70.3	NA	N/A
11/14/09	10:32	8.75	1500.0	Clear	None	6.55	5.296	0.65	167	14.9	-64.7	NA	N/A
11/14/09	10:56	9.75	1500.0	Clear	None	6.45	5.310	0.68	54.5	15.01	-62.4	na	N/A
11/14/09	11:16	8.75	1500.0	Clear	None	6.41	5.321	0.69	47	15.06	-61	na	N/A

Final Purge / Sample Data

Start Purge	End Purge	Duration (min.)	Total Vol. (L)	Color	Odor	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTUs)	Temp (ºC)	ORP (mV)	Salinity (%)	Other
10:19	12:16	117	181.5	Clear	None	6.41	5.321	0.69	47	15.06	-61	na	N/A

Laboratory Analysis

Coll.	Date	Time	Description	Analysis	Preservative	No.	Type	Vol.	COC Notes	Chain No.

General Notes

Initial well development log

GROUNDWATER SAMPLE LOG SHEET

TETRA TECH NUS, Inc.

Event: Site 21 - Investigation
Site Name: GREAT LAKES NTC - Site 21
Project No: 112G01797.0000.0320 (ED00000105)

Sample ID:	**NTC21MW0201**	Sampler:	Shannon Hill
Well ID:	NTC21-MW02	Well Type:	Monitoring Well
QC Duplicate ID:	NTC21-FD111609-01	MS/MSD:	N/A

Well Information

Well Diameter (in.)	2	Static Water Level (ft-BTOR)	2.3
Top of Screen (ft-BTOR)	6	H&S PID Monitor Reading (ppm)	0.0
Bottom of Screen (ft-BTOR)	16	Purge Method	Low flow - peristaltic
Total Depth of Well (ft-BTOR)	16	Sample Method	Low flow - peristaltic

Equipment

Water Quality Meter:	08K100392	Pump Control Box:	1470	Turbidity Meter:	ME 12230

Purge Information

Date	Time	Level (ft-BTOR)	Rate (ml/min)	Color	Odor	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTUs)	Temp (ºC)	ORP (mV)	Salinity (%)	Other
11/16/09	11:27	2.55	225.0	Slightly Turbid	None	6.35	5.048	5.95	214	12.6	-36.1	na	N/A
11/16/09	11:37	3.15	200.0	Slightly Turbid	None	6.25	5.078	1.17	146	13.09	-29	na	N/A
11/16/09	11:47	3.15	175.0	Clear	None	6.22	5.025	0.81	86.5	12.9	-30.8	na	N/A
11/16/09	12:00	3.25	175.0	Clear	None	6.31	5.022	0.65	69	13.10	-37.2	na	N/A
11/16/09	12:10	3.3	175.0	Clear	None	6.35	5.022	0.58	46.1	13.04	-41.3	na	N/A
11/16/09	12:20	3.35	175.0	Clear	None	6.35	5.020	0.52	32.7	13.16	-43.7	na	N/A
11/16/09	12:30	3.4	175.0	Clear	None	6.35	5.028	0.51	20.6	13.27	-46	na	N/A
11/16/09	12:40	3.42	175.0	Clear	None	6.4	5.033	0.45	11.3	13.25	-49.8	NA	N/A
11/16/09	12:45	3.45	175.0	Clear	None	6.53	5.037	0.45	9.61	13.26	-52.6	NA	N/A

Final Purge / Sample Data

Start Purge	End Purge	Duration (min.)	Total Vol. (L)	Color	Odor	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTUs)	Temp (ºC)	ORP (mV)	Salinity (%)	Other
12:27	13:45	78	13.9	Clear	None	6.53	5.037	0.45	9.61	13.26	-52.6	NA	N/A

Laboratory Analysis

Coll.	Date	Time	Description	Analysis	Preservative	No.	Type	Vol.	COC Notes	Chain No.
✓	11/16/09	12:46	TCL VOCs	SW-846 8260B	4°C/HCL	3	Glass - Clear	40ml vials	None	ED00000105-4
✓	11/16/09	12:46	TCL SVOCs/Herb/Pest/PCB	SW-846 8270C/8181/8081A/8082	4°C	6	Glass - Amber	1L	None	ED00000105-4
✓	11/16/09	12:46	TAL Metals (Total)	SW-846 6010B	4°C/HNO3	1	Plastic - PE	250ml	None	ED00000105-4

General Notes

None

GROUNDWATER SAMPLE LOG SHEET

TETRA TECH NUS, Inc.

Event: Site 21 - Investigation
Site Name: GREAT LAKES NTC - Site 21
Project No: 112G01797.0000.0320 (ED00000105)

Sample ID:	**NTC21-MW03-DEVELOPMENT**	Sampler:	Shannon Hill
Well ID:	NTC21-MW03	Well Type:	Monitoring Well
QC Duplicate ID:	N/A	MS/MSD:	N/A

Well Information

Well Diameter (in.)	2	Static Water Level (ft-BTOR)	6.65
Top of Screen (ft-BTOR)	4	H&S PID Monitor Reading (ppm)	0.0
Bottom of Screen (ft-BTOR)	14	Purge Method	Submersible pump
Total Depth of Well (ft-BTOR)	14	Sample Method	high velocity purge

Equipment

Water Quality Meter:	N/A	Pump Control Box:	N/A	Turbidity Meter:	N/A

Purge Information

Date	Time	Level (ft-BTOR)	Rate (ml/min)	Color	Odor	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTUs)	Temp (ºC)	ORP (mV)	Salinity (%)	Other
11/14/09	13:10	10	1900.0	Cloudy	None	7.30	0.980	7.1	1010	14.88	-6.3	na	N/A
11/14/09	13:30	15	1900.0	Cloudy	None	7.08	1.025	3.41	453	14.8	-26.6	na	N/A
11/14/09	13:55	18	0.0	Other	None	0	0	0	0	0	0	0	N/A
11/14/09	13:55	16.5	900.0	Cloudy	None	7.03	1.019	1.76	3153	14.92	-40.6	na	N/A
11/14/09	14:10	18	0.0	Highly Turbid	None	0	0	0	0	0	0	0	N/A
11/14/09	14:39	14.6	1600.0	Cloudy	None	7.09	1.006	39.1	4577	14.51	-19.1	na	N/A
11/14/09	14:54	18	0.0	Highly Turbid	None	0	0	0	0	0	0	0	N/A
11/14/09	15:12	16	500.0	Cloudy	None	7.03	1.004	3.37	2435	14.69	-23.2	na	N/A
11/14/09	15:21	18	0.0	Slightly Turbid	None	0	0	0	0	0	0	0	0

Final Purge / Sample Data

Start Purge	End Purge	Duration (min.)	Total Vol. (L)	Color	Odor	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTUs)	Temp (ºC)	ORP (mV)	Salinity (%)	Other
14:10	16:21	131	93.4	Slightly Turbid	None	0	0	0	0	0	0	0	0

Laboratory Analysis

Coll.	Date	Time	Description	Analysis	Preservative	No.	Type	Vol.	COC Notes	Chain No.

General Notes

Initial well development log

GROUNDWATER SAMPLE LOG SHEET

TETRA TECH NUS, Inc.

Event: Site 21 - Investigation
Site Name: GREAT LAKES NTC - Site 21
Project No: 112G01797.0000.0320 (ED00000105)

Sample ID:	**NTC21MW0301**	Sampler:	Nicole Rochna
Well ID:	NTC21-MW03	Well Type:	Monitoring Well
QC Duplicate ID:	N/A	MS/MSD:	N/A

Well Information

Well Diameter (in.)	2	Static Water Level (ft-BTOR)	1.33
Top of Screen (ft-BTOR)	4	H&S PID Monitor Reading (ppm)	NA
Bottom of Screen (ft-BTOR)	14	Purge Method	Low flow - peristaltic
Total Depth of Well (ft-BTOR)	14	Sample Method	Low flow - peristaltic

Equipment

Water Quality Meter:	05D2372	Pump Control Box:	H07006412	Turbidity Meter:	ME 13089

Purge Information

Date	Time	Level (ft-BTOR)	Rate (ml/min)	Color	Odor	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTUs)	Temp (ºC)	ORP (mV)	Salinity (%)	Other
11/16/09	8:50	1.33	350.0	Slightly Turbid	None	NA	NA	NA	NA	NA	NA	NA	N/A
11/16/09	9:00	1.35	300.0	Clear	None	7.28	3.761	0.43	24.5	11.46	-71.6	NA	N/A
11/16/09	9:10	1.35	250.0	Clear	None	7.29	3.753	0.33	14.1	11.42	-79.9	NA	N/A
11/16/09	9:20	1.35	300.0	Clear	None	7.28	3.777	0.39	6.37	11.43	-78.7	NA	N/A
11/16/09	9:30	1.35	200.0	Clear	None	7.29	3.778	0.28	5.00	11.32	-74.5	NA	N/A
11/16/09	9:40	1.35	250.0	Clear	None	7.30	3.791	0.24	6.52	11.42	-72.9	NA	N/A
11/16/09	9:50	1.35	200.0	Clear	None	7.29	3.788	0.25	6.50	11.38	-74.1	NA	N/A
11/16/09	10:00	1.35	250.0	Clear	None	7.26	3.794	0.24	6.37	11.45	-71.6	NA	N/A

Final Purge / Sample Data

Start Purge	End Purge	Duration (min.)	Total Vol. (L)	Color	Odor	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTUs)	Temp (ºC)	ORP (mV)	Salinity (%)	Other
9:50	11:00	70	17.5	Clear	None	7.26	3.794	0.24	6.37	11.45	-71.6	NA	N/A

Laboratory Analysis

Coll.	Date	Time	Description	Analysis	Preservative	No.	Type	Vol.	COC Notes	Chain No.
✓	11/16/09	10:05	TAL Metals (Total)	SW-846 6010B	4°C/HNO3	1	Plastic - PE	250ml	None	ED00000105-4
✓	11/16/09	10:05	TCL VOCs	SW-846 8260B	4°C/HCL	3	Glass - Clear	40ml vials	None	ED00000105-4
✓	11/16/09	10:05	TCL SVOCs/Herb/Pest/PCB	SW-846 8270C/8181/8081A/8082	4°C	6	Glass - Amber	1L	None	ED00000105-4

General Notes

None

GROUNDWATER SAMPLE LOG SHEET

TETRA TECH NUS, Inc.

Event: Site 21 - Investigation
Site Name: GREAT LAKES NTC - Site 21
Project No: 112G01797.0000.0320 (ED00000105)

Sample ID:	**NTC21-MW04-DEVELOPMENT**	Sampler:	Nicole Rochna
Well ID:	NTC21-MW04	Well Type:	Monitoring Well
QC Duplicate ID:	N/A	MS/MSD:	N/A

Well Information

Well Diameter (in.)	2	Static Water Level (ft-BTOR)	1.13
Top of Screen (ft-BTOR)	10	H&S PID Monitor Reading (ppm)	NA
Bottom of Screen (ft-BTOR)	20	Purge Method	Submersible pump
Total Depth of Well (ft-BTOR)	20	Sample Method	High velocity developement purge

Equipment

Water Quality Meter:	05D2372	Pump Control Box:	N/A	Turbidity Meter:	ME 13089

Purge Information

Date	Time	Level (ft-BTOR)	Rate (ml/min)	Color	Odor	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTUs)	Temp (ºC)	ORP (mV)	Salinity (%)	Other
11/14/09	13:05	1.13	600.0	Highly Turbid	None	NA	NA	NA	NA	NA	NA	NA	N/A
11/14/09	13:35	1.25	600.0	Slightly Turbid	None	7.08	4.456	0.15	133	14.29	-100.7	NA	N/A
11/14/09	14:00	1.25	600.0	Cloudy	None	7.30	4.249	0.12	2706	13.24	-109.3	NA	N/A
11/14/09	14:25	1.50	1000.0	Clear	None	7.29	4.435	0.08	19.1	12.66	-113.2	NA	N/A
11/14/09	14:45	1.50	1000.0	Clear	None	7.15	4.450	0.07	18.1	12.62	-114.9	NA	N/A

Final Purge / Sample Data

Start Purge	End Purge	Duration (min.)	Total Vol. (L)	Color	Odor	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTUs)	Temp (ºC)	ORP (mV)	Salinity (%)	Other
14:05	15:45	100	78.0	Clear	None	7.15	4.450	0.07	18.1	12.62	-114.9	NA	N/A

Laboratory Analysis

Coll.	Date	Time	Description	Analysis	Preservative	No.	Type	Vol.	COC Notes	Chain No.

General Notes

Initial well development log

GROUNDWATER SAMPLE LOG SHEET

TETRA TECH NUS, Inc.

Event: Site 21 - Investigation
Site Name: GREAT LAKES NTC - Site 21
Project No: 112G01797.0000.0320 (ED00000105)

Sample ID:	**NTC21MW0401**	Sampler:	Nicole Rochna
Well ID:	NTC21-MW04	Well Type:	Monitoring Well
QC Duplicate ID:	N/A	MS/MSD:	N/A

Well Information

Well Diameter (in.)	2	Static Water Level (ft-BTOR)	3.37
Top of Screen (ft-BTOR)	10	H&S PID Monitor Reading (ppm)	NA
Bottom of Screen (ft-BTOR)	20	Purge Method	Low flow - peristaltic
Total Depth of Well (ft-BTOR)	20	Sample Method	Low flow - peristaltic

Equipment

Water Quality Meter:	05D2372	Pump Control Box:	ME 13089	Turbidity Meter:	H07006412

Purge Information

Date	Time	Level (ft-BTOR)	Rate (ml/min)	Color	Odor	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTUs)	Temp (ºC)	ORP (mV)	Salinity (%)	Other
11/16/09	12:25	3.37	175.0	Clear	None	NA	NA	NA	NA	NA	NA	NA	N/A
11/16/09	12:30	4.29	175.0	Clear	None	7.10	1.005	1.82	37.1	13.00	21.1	NA	N/A
11/16/09	12:35	4.98	150.0	Clear	None	7.18	0.992	1.87	38.2	12.98	13.2	NA	N/A
11/16/09	12:40	5.35	150.0	Clear	None	7.20	0.987	1.91	38.1	12.95	12.5	NA	N/A
11/16/09	12:45	5.65	150.0	Clear	None	7.20	0.969	1.96	64.0	12.69	3.8	NA	N/A
11/16/09	12:50	6.25	150.0	Clear	None	7.14	0.969	1.88	75.8	12.92	0.9	NA	N/A
11/16/09	12:55	6.72	150.0	Clear	None	7.13	0.973	1.73	67.3	13.04	0.4	NA	N/A
11/16/09	13:00	6.92	150.0	Clear	None	7.14	0.970	1.81	51.4	12.94	-1.8	NA	N/A
11/16/09	13:05	7.31	150.0	Clear	None	7.10	0.970	1.55	43.0	12.91	-16.3	NA	N/A

Final Purge / Sample Data

Start Purge	End Purge	Duration (min.)	Total Vol. (L)	Color	Odor	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTUs)	Temp (ºC)	ORP (mV)	Salinity (%)	Other
13:25	14:05	40	6.125	Clear	None	7.10	0.970	1.55	43.0	12.91	-16.3	NA	N/A

Laboratory Analysis

Coll.	Date	Time	Description	Analysis	Preservative	No.	Type	Vol.	COC Notes	Chain No.
✓	11/16/09	13:10	TAL Metals (Dissolved)	SW-846 6010B - Filtered	4°C/HNO3	1	Plastic - PE	250ml	None	ED00000105-4
✓	11/16/09	13:10	TCL SVOCs/Herb/Pest/ PCB	SW-846 8270C/8181/8081A/808 2	4°C	6	Glass - Amber	1L	None	ED00000105-4
✓	11/16/09	13:10	TAL Metals (Total)	SW-846 6010B	4°C/HNO3	1	Plastic - PE	250ml	None	ED00000105-4
✓	11/16/09	13:10	TCL VOCs	SW-846 8260B	4°C/HCL	3	Glass - Clear	40ml vials	None	ED00000105-4

General Notes

None

GROUNDWATER SAMPLE LOG SHEET

TETRA TECH NUS, Inc.

Event: Site 21 - Investigation
Site Name: GREAT LAKES NTC - Site 21
Project No: 112G01797.0000.0320 (ED00000105)

Sample ID:	**NTC21-MW05-DEVELOPMENT**	Sampler:	Nicole Rochna
Well ID:	NTC21-MW05	Well Type:	Monitoring Well
QC Duplicate ID:	N/A	MS/MSD:	N/A

Well Information

Well Diameter (in.)	2	Static Water Level (ft-BTOR)	2.80
Top of Screen (ft-BTOR)	3	H&S PID Monitor Reading (ppm)	NA
Bottom of Screen (ft-BTOR)	13	Purge Method	Submersible pump
Total Depth of Well (ft-BTOR)	13	Sample Method	High velocity developement purge

Equipment

Water Quality Meter:	05D2372	Pump Control Box:	N/A	Turbidity Meter:	ME 13089

Purge Information

Date	Time	Level (ft-BTOR)	Rate (ml/min)	Color	Odor	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTUs)	Temp (ºC)	ORP (mV)	Salinity (%)	Other
11/14/09	15:20	2.80	700.0	Highly Turbid	None	NA	NA	NA	NA	NA	NA	NA	N/A
11/14/09	15:50	3.7	800.0	Slightly Turbid	None	7.00	5.041	0.49	196	17.50	-5.1	NA	N/A
11/14/09	16:10	4.51	1250.0	Cloudy	None	6.90	4.499	0.21	257	16.14	-30.0	NA	N/A
11/14/09	16:20	3.61	1000.0	Slightly Turbid	None	6.90	4.517	0.16	61.8	16.44	-27.5	NA	N/A
11/14/09	16:30	3.51	1000.0	Clear	None	6.87	4.590	0.26	22.1	16.42	-25.1	NA	N/A

Final Purge / Sample Data

Start Purge	End Purge	Duration (min.)	Total Vol. (L)	Color	Odor	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTUs)	Temp (ºC)	ORP (mV)	Salinity (%)	Other
15:20	16:30	70	69.0	Clear	None	6.87	4.590	0.26	22.1	16.42	-25.1	NA	N/A

Laboratory Analysis

Coll.	Date	Time	Description	Analysis	Preservative	No.	Type	Vol.	COC Notes	Chain No.

General Notes

Initial well development log

GROUNDWATER SAMPLE LOG SHEET

TETRA TECH NUS, Inc.

Event: Site 21 - Investigation
Site Name: GREAT LAKES NTC - Site 21
Project No: 112G01797.0000.0320 (ED00000105)

Sample ID:	**NTC21MW0501**	Sampler:	Shannon Hill
Well ID:	NTC21-MW05	Well Type:	Monitoring Well
QC Duplicate ID:	N/A	MS/MSD:	MS/MSD

Well Information

Well Diameter (in.)	2	Static Water Level (ft-BTOR)	2.91
Top of Screen (ft-BTOR)	3	H&S PID Monitor Reading (ppm)	0.0
Bottom of Screen (ft-BTOR)	13	Purge Method	Low flow - peristaltic
Total Depth of Well (ft-BTOR)	13	Sample Method	Low flow - peristaltic

Equipment

Water Quality Meter:	08K100392	Pump Control Box:	1470	Turbidity Meter:	ME 12230

Purge Information

Date	Time	Level (ft-BTOR)	Rate (ml/min)	Color	Odor	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTUs)	Temp (ºC)	ORP (mV)	Salinity (%)	Other
11/15/09	15:23	3.03	200.0	Slightly Turbid	None	6.8	8.986	1.32	266	14.56	41.4	na	N/A
11/15/09	15:33	3.05	200.0	Clear	None	6.81	9.039	1.19	127	14.72	32.4	na	N/A
11/15/09	15:44	3.1	200.0	Clear	None	6.81	8.9	1.12	80.4	14.71	27.3	na	N/A
11/15/09	15:53	3.1	200.0	Clear	None	6.8	8.622	0.85	41.6	14.79	20.6	na	N/A
11/15/09	16:03	3.1	200.0	Clear	None	6.80	8.161	0.70	25	14.79	15.9	na	N/A
11/15/09	16:13	3.1	200.0	Clear	None	6.97	7.588	0.56	8.08	14.8	10	na	N/A
11/15/09	16:18	3.1	200.0	Clear	None	6.79	7.443	0.6	7.31	14.81	8.4	na	N/A
11/15/09	16:23	3.1	200.0	Clear	None	6.78	7.203	0.57	5.99	14.83	6.5	na	N/A

Final Purge / Sample Data

Start Purge	End Purge	Duration (min.)	Total Vol. (L)	Color	Odor	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTUs)	Temp (ºC)	ORP (mV)	Salinity (%)	Other
15:23	16:23	60	12.0	Clear	None	6.78	7.203	0.57	5.99	14.83	6.5	na	N/A

Laboratory Analysis

Coll.	Date	Time	Description	Analysis	Preservative	No.	Type	Vol.	COC Notes	Chain No.
✓	11/15/09	16:26	TCL SVOCs/Herb/Pest/PCB	SW-846 8270C/8181/8081A/8082	4°C	18	Glass - Amber	1L	MS/MSD	ED00000105-4
✓	11/15/09	16:26	TAL Metals (Total)	SW-846 6010B	4°C/HNO3	3	Plastic - PE	250ml	MS/MSD	ED00000105-4
✓	11/15/09	16:26	Dioxins/Furans	SW-846 8290	4°C	6	Glass - Amber	1L	MS/MSD	ED00000105-5
✓	11/15/09	16:26	TCL VOCs	SW-846 8260B	4°C/HCL	9	Glass - Clear	40ml vials	MS/MSD	ED00000105-4

General Notes

None

GROUNDWATER SAMPLE LOG SHEET

TETRA TECH NUS, Inc.

Event: Site 21 - Investigation
Site Name: GREAT LAKES NTC - Site 21
Project No: 112G01797.0000.0320 (ED00000105)

Sample ID:	**NTC21-MW06-DEVELOPMENT**	Sampler:	Nicole Rochna
Well ID:	NTC21-MW06	Well Type:	Monitoring Well
QC Duplicate ID:	N/A	MS/MSD:	N/A

Well Information

Well Diameter (in.)	2	Static Water Level (ft-BTOR)	6.21
Top of Screen (ft-BTOR)	4	H&S PID Monitor Reading (ppm)	NA
Bottom of Screen (ft-BTOR)	14	Purge Method	Submersible pump
Total Depth of Well (ft-BTOR)	14	Sample Method	High velocity developement purge

Equipment

Water Quality Meter:	05D2372	Pump Control Box:	N/A	Turbidity Meter:	ME 13089

Purge Information

Date	Time	Level (ft-BTOR)	Rate (ml/min)	Color	Odor	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTUs)	Temp (ºC)	ORP (mV)	Salinity (%)	Other
11/15/09	7:25	6.21	1500.0	Highly Turbid	None	NA	NA	NA	NA	NA	NA	NA	N/A
11/15/09	7:50	8.05	1500.0	Cloudy	None	7.17	2.129	2.86	193	14.46	21.2	NA	N/A
11/15/09	8:15	8.50	1500.0	Slightly Turbid	None	7.16	2.154	2.47	165	14.48	33.2	NA	N/A
11/15/09	8:40	8.65	1500.0	Slightly Turbid	None	7.15	2.150	2.58	62.5	14.50	42.2	NA	N/A
11/15/09	9:05	9.30	1500.0	Clear	None	7.32	2.149	2.60	33.1	14.51	45.6	NA	N/A

Final Purge / Sample Data

Start Purge	End Purge	Duration (min.)	Total Vol. (L)	Color	Odor	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTUs)	Temp (ºC)	ORP (mV)	Salinity (%)	Other
8:25	10:05	100	150.0	Clear	None	7.32	2.149	2.60	33.1	14.51	45.6	NA	N/A

Laboratory Analysis

Coll.	Date	Time	Description	Analysis	Preservative	No.	Type	Vol.	COC Notes	Chain No.

General Notes

Initial well development log

GROUNDWATER SAMPLE LOG SHEET

TETRA TECH NUS, Inc.

Event: Site 21 - Investigation
Site Name: GREAT LAKES NTC - Site 21
Project No: 112G01797.0000.0320 (ED00000105)

Sample ID:	**NTC21MW0601**	Sampler:	Nicole Rochna
Well ID:	NTC21-MW06	Well Type:	Monitoring Well
QC Duplicate ID:	N/A	MS/MSD:	N/A

Well Information

Well Diameter (in.)	2	Static Water Level (ft-BTOR)	6.25
Top of Screen (ft-BTOR)	4	H&S PID Monitor Reading (ppm)	NA
Bottom of Screen (ft-BTOR)	14	Purge Method	Low flow - peristaltic
Total Depth of Well (ft-BTOR)	14	Sample Method	Low flow - peristaltic

Equipment

Water Quality Meter:	05D2372	Pump Control Box:	H07006412	Turbidity Meter:	ME 13089

Purge Information

Date	Time	Level (ft-BTOR)	Rate (ml/min)	Color	Odor	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTUs)	Temp (ºC)	ORP (mV)	Salinity (%)	Other
11/17/09	12:40	6.25	225.0	Slightly Turbid	None	NA	NA	NA	NA	NA	NA	NA	N/A
11/17/09	12:50	6.38	200.0	Clear	None	7.25	1.930	1.61	15.1	13.43	67.9	NA	N/A
11/17/09	13:00	6.38	200.0	Clear	None	7.15	1.930	1.90	8.64	13.42	71.3	NA	N/A
11/17/09	13:10	6.39	200.0	Clear	None	7.13	1.923	1.80	6.84	13.41	68.3	NA	N/A
11/17/09	13:20	6.39	200.0	Clear	None	7.12	1.925	2.44	4.51	13.31	67.4	NA	N/A
11/17/09	13:30	6.39	200.0	Clear	None	7.12	1.933	1.77	6.04	13.39	67.1	NA	N/A
11/17/09	13:40	6.39	200.0	Clear	None	7.10	1.923	1.46	5.71	13.34	65.7	NA	N/A
11/17/09	13:50	6.39	200.0	Clear	None	7.09	1.919	1.58	4.07	13.33	65.1	NA	N/A
11/17/09	14:00	6.39	200.0	Clear	None	7.09	1.919	1.56	5.86	13.37	64.3	NA	N/A

Final Purge / Sample Data

Start Purge	End Purge	Duration (min.)	Total Vol. (L)	Color	Odor	pH (S.U.)	S.C. (mS/cm)	DO (mg/L)	Turbidity (NTUs)	Temp (ºC)	ORP (mV)	Salinity (%)	Other
13:40	15:00	80	16.0	Clear	None	7.09	1.919	1.56	5.86	13.37	64.3	NA	N/A

Laboratory Analysis

Coll.	Date	Time	Description	Analysis	Preservative	No.	Type	Vol.	COC Notes	Chain No.
✓	11/17/09	14:05	TCL VOCs	SW-846 8260B	4°C/HCL	3	Glass - Clear	40ml vials	None	ED00000105-6
✓	11/17/09	14:05	TCL SVOCs/Herb/Pest/PCB	SW-846 8270C/8181/8081A/8082	4°C	6	Glass - Amber	1L	None	ED00000105-6
✓	11/17/09	14:05	TAL Metals (Total)	SW-846 6010B	4°C/HNO3	1	Plastic - PE	250ml	None	ED00000105-6
✗	N/A	N/A	TAL Metals (Dissolved)	SW-846 6010B - Filtered	4°C/HNO3	1	Plastic - PE	250ml	None	N/A

General Notes

None

Illinois Department of Public Health
WATER WELL CONSTRUCTION REPORT

Date MARCH 1 2010

TYPE OR PRESS FIRMLY WITH BLACK INK PEN. COMPLETE WITHIN 30 DAYS OF WELL COMPLETION AND SEND TO THE APPROPRIATE HEALTH DEPARTMENT.

1. Type of Well a. **Driven** Well Casing diam. _____in. Depth _____ft.
   b. **Bored** Well Buried Slab [ ] Yes [ ] No
   Hole Diameter _____in. to _____ft.; _____in. to _____ft.; _____in. to _____ft.
   c. **Drilled** Well PVC casing Formation packer set at depth of N/A ft.
   Hole Diameter 8 1/4 in. to 14 ft. _____in. to _____ft. _____in. to _____ft.

Type of Grout	# of Bags	Grout Weight	From (ft.)	To (ft.)	Tremie Depth (ft.)

d. **Drilled** Well **Steel** Casing- - - Mechanically Driven [ ] Yes [ ] No
Hole Diameter _____in. to _____ft. _____in. to _____ft. _____in. to _____ft.

Type of Grout	# of Bags	Grout Weight	From (ft.)	To (ft.)	Tremie Depth (ft.)

e. Well finished within [X] Unconsolidated Materials [ ] Bedrock

f. Kind of Gravel Sand Pack

Grain Size/Supplier #	From (ft.)	To (ft.)
GLOBAL SILICA #4	14.0	3.0

2. Well Use [ ] Domestic [ ] Irrigation [ ] Commercial [ ] Livestock
   [X] Monitoring [ ] Other
3. Date Well Completed NOV 13 2009 Well Disinfected [ ] Yes [ ] No
   Driller's estimated well yield _____gpm
4. Date Permanent Pump Installed _____
5. Pump Capacity _____gpm Set at (depth) _____ft.
6. Pitless Adapter Model and Manufacturer _____
7. Well Cap Type and Manufacturer _____
8. Pressure Tank Working Cycle _____gals. Captive Air [ ] Yes [ ] No
9. Pump System Disinfected [ ] Yes [ ] No
10. Name of Pump Company _____
11. Pump Installer _____ License # _____
12. _____ License # _____
    Licensed Pump Contractor Signature

N/A

Illinois Department of Public Health
Division of Environmental Health
525 W. Jefferson St.
Springfield, IL 62761

DO NOT write on these lines

IMPORTANT NOTICE: This state agency is requesting disclosure of information that is necessary to accomplish the statutory purpose as outlined under Public Act 85-0863. **DISCLOSURE OF THIS INFORMATION IS MANDATORY**. This form has been approved by the Forms Management Center.

GEOLOGICAL AND WATER SURVEY WELL RECORD

13. Property Owner UNITED STATES NAVY Well # NTC 21 MW01
14. Driller CHRIS WHITE License # _____
15. Name of Drilling Co. TTL ASSOCIATES INC
16. Permit No. _____ Date Issued _____
17. Date Drilling Started NOV. 13 2009
18. Well SITE address 24TH @ SPALDING ST. BLDG 1517 LANDFILL
19. Township Name _____ Land ID # _____
20. Subdivision Name GREAT LAKES NAVAL BASE Lot # _____
21. Location a. County LAKE
    b. Township _____ Range _____ Section _____
    c. _____ Quarter _____ Quarter _____ Quarter
    d. Coordinates NORTHING 2057880.8339 EASTING 1114691.8809 Site Elevation 7 ft. (msl) 660.63

For Survey Use

22. Casings, Liners* and Screen Information

Diam. (in.)	Material	Joint	Slot Size	From (ft.)	To (ft.)
2IN	PVC	THREAD	.010	14.0	4.0

(*) _____
(List reason for liner, type of upper and lower seals installed)

23. Water from _____ at a depth of _____ft. to _____ft.
    a. Static water level _____ ft. below casing which is _____in. above ground
    b. Pumping level is _____ ft. pumping _____gpm after pumping for _____hours

24. Earth Materials Passed Through

	From (ft.)	To (ft.)
No. 4 GLOBAL SAND	14.0	3.0
BENTONITE CHIPS	3.0	1.0

(If dry hole, fill out log and indicate how hole was sealed.)

25. Licensed Water Well Contractor Signature _____ License Number _____

SEE REVERSE SIDE FOR ADDITIONAL INFORMATION)

Illinois Department of Public Health
WATER WELL CONSTRUCTION REPORT

Date MARCH 1 2010

TYPE OR PRESS FIRMLY WITH BLACK INK PEN. COMPLETE WITHIN 30 DAYS OF WELL COMPLETION AND SEND TO THE APPROPRIATE HEALTH DEPARTMENT.

1. Type of Well a. **Driven** Well Casing diam. _____in. Depth _____ft.
   b. **Bored** Well Buried Slab [ ] Yes [ ] No
   Hole Diameter _____in. to _____ft.; _____in. to _____ft. _____in. to _____ft.
   c. **Drilled** Well PVC Casing Formation packer set at depth of N/A ft.
   Hole Diameter 8 1/4 in. to 16 ft. _____in. to _____ft. _____in. to _____ft.

Type of Grout	# of Bags	Grout Weight	From (ft.)	To (ft.)	Tremie Depth (ft.)

d. **Drilled** Well **Steel** Casing- - - Mechanically Driven [ ] Yes [ ] No
Hole Diameter _____in. to _____ft. _____in. to _____ft. _____in. to _____ft.

Type of Grout	# of Bags	Grout Weight	From (ft.)	To (ft.)	Tremie Depth (ft.)

e. Well finished within [X] Unconsolidated Materials [ ] Bedrock

f. Kind of Gravel Sand Pack	Grain Size/Supplier #	From (ft.)	To (ft.)
GLOBALSILICA	No. 4	16.0	5.0

2. Well Use [ ] Domestic [ ] Irrigation [ ] Commercial [ ] Livestock
   [X] Monitoring [ ] Other
3. Date Well Completed NOV. 13 2009 Well Disinfected [ ] Yes [ ] No
   Driller's estimated well yield _____gpm
4. Date Permanent Pump Installed _____
5. Pump Capacity _____gpm Set at (depth) _____ft.
6. Pitless Adapter Model and Manufacturer _____
7. Well Cap Type and Manufacturer _____
8. Pressure Tank Working Cycle _____gals. Captive Air [ ] Yes [ ] No
9. Pump System Disinfected [ ] Yes [ ] No
10. Name of Pump Company _____
11. Pump Installer _____ License # _____
12. _____ License # _____
    Licensed Pump Contractor Signature

Illinois Department of Public Health
Division of Environmental Health
525 W. Jefferson St.
Springfield, IL 62761

DO NOT write on these lines

IMPORTANT NOTICE: This state agency is requesting disclosure of information that is necessary to accomplish the statutory purpose as outlined under Public Act 85-0863. **DISCLOSURE OF THIS INFORMATION IS MANDATORY.** This form has been approved by the Forms Management Center.

GEOLOGICAL AND WATER SURVEY WELL RECORD

13. Property Owner UNITED STATES NAVY Well # NTC21MW02
14. Driller CHRIS WHITE License # _____
15. Name of Drilling Co. TTL ASSOCIATES INC
16. Permit No. _____ Date Issued _____
17. Date Drilling Started NOV. 13 2009
18. Well SITE address 24TH & GREENFIELD BLDG 1517 LANDFILL
19. Township Name _____ Land ID # _____
20. Subdivision Name GREAT LAKES NAVAL BASE Lot # _____
21. Location a. County LAKE
    b. Township _____ Range _____ Section _____
    c. _____ Quarter _____ Quarter _____ Quarter
    d. Coordinates NORTHING 2057873.4863 EASTING 1115236.5181 Site Elevation _____ ft. (msl)

For Survey Use

22. Casings, Liners* and Screen Information

Diam. (in.)	Material	Joint	Slot Size	From (ft.)	To (ft.)
2IN.	PVC	THREAD	.010	16.0	6.0

(*) _____
(List reason for liner, type of upper and lower seals installed)

23. Water from _____ at a depth of _____ft. to _____ft.
    a. Static water level _____ ft. below casing which is _____in. above ground
    b. Pumping level is _____ ft. pumping _____gpm after pumping for _____hours

24. Earth Materials Passed Through	From (ft.)	To (ft.)
NO. 4 GLOBAL SAND	16.0	5.0
BENTONITE CHIPS	5.0	1.0

(If dry hole, fill out log and indicate how hole was sealed.)

25. Licensed Water Well Contractor Signature _____ License Number _____

SEE REVERSE SIDE FOR ADDITIONAL INFORMATION)

Illinois Department of Public Health
WATER WELL CONSTRUCTION REPORT

Date MARCH 1 2010

TYPE OR PRESS FIRMLY WITH BLACK INK PEN. COMPLETE WITHIN 30 DAYS OF WELL COMPLETION AND SEND TO THE APPROPRIATE HEALTH DEPARTMENT.

1. Type of Well a. **Driven** Well Casing diam. _____in. Depth _____ft.
   b. **Bored** Well Buried Slab [ ] Yes [ ] No
   Hole Diameter ____in. to _____ft.; ____in. to_____ft. ____in. to_____ft.
   c. **Drilled** Well **PVC** casing Formation packer set at depth of N/A ft.
   Hole Diameter 8 1/4 in. to 14 ft. ____in. to_____ft. ____in. to_____ft.

Type of Grout	# of Bags	Grout Weight	From (ft.)	To (ft.)	Tremie Depth (ft.)

d. **Drilled** Well **Steel** Casing- - - Mechanically Driven [ ] Yes [ ] No
Hole Diameter ____in. to _____ft. ____in. to_____ft. ____in. to_____ft.

Type of Grout	# of Bags	Grout Weight	From (ft.)	To (ft.)	Tremie Depth (ft.)

e. Well finished within [X] Unconsolidated Materials [ ] Bedrock

f. Kind of Gravel Sand Pack

Grain Size/Supplier #	From (ft.)	To (ft.)
GLOBAL SILICA #4	14.0	3.0

2. Well Use [ ] Domestic [ ] Irrigation [ ] Commercial [ ] Livestock
   [X] Monitoring [ ] Other
3. Date Well Completed NOV 14 2009 Well Disinfected [ ] Yes [ ] No
   Driller's estimated well yield _____gpm
4. Date Permanent Pump Installed_____
5. Pump Capacity _____gpm Set at (depth) _____ft.
6. Pitless Adapter Model and Manufacturer _____
7. Well Cap Type and Manufacturer _____
8. Pressure Tank Working Cycle_____gals. Captive Air [ ] Yes [ ] No
9. Pump System Disinfected [ ] Yes [ ] No
10. Name of Pump Company _____
11. Pump Installer _____ License # _____
12. _____ License # _____
    Licensed Pump Contractor Signature

Illinois Department of Public Health
Division of Environmental Health
525 W. Jefferson St.
Springfield, IL 62761

DO NOT write on these lines

IMPORTANT NOTICE: This state agency is requesting disclosure of information that is necessary to accomplish the statutory purpose as outlined under Public Act 85-0863. **DISCLOSURE OF THIS INFORMATION IS MANDATORY.** This form has been approved by the Forms Management Center.

GEOLOGICAL AND WATER SURVEY WELL RECORD

13. Property Owner UNITED STATES NAVY Well # NTC21 MW03
14. Driller CHRIS WHITE License # _____
15. Name of Drilling Co. TTL ASSOCIATES INC
16. Permit No. _____ Date Issued _____
17. Date Drilling Started NOV. 14 2009
18. Well **SITE** address 24 IH & GREENFIELD BLDG 1517 LANDFILL
19. Township Name _____ Land ID # _____
20. Subdivision Name GREAT LAKES NAVAL BASE Lot # _____
21. Location a. County LAKE
    b. Township _____ Range _____ Section _____
    NORTHING 2057733.695
    c. _____ Quarter _____ Quarter _____ Quarter
    d. Coordinates Site Elevation _____ ft. (msl)
    EASTING 1115391.7063 653.315

For Survey Use

22. Casings, Liners* and Screen Information

Diam. (in.)	Material	Joint	Slot Size	From (ft.)	To (ft.)
2 IN.	PVC	THREAD	.010	14.0	4.0

(*) _____
(List reason for liner, type of upper and lower seals installed)

23. Water from _____at a depth of _____ft. to _____ft.
    a. Static water level _____ ft. below casing which is _____in. above ground
    b. Pumping level is _____ ft. pumping _____gpm after pumping for _____hours

24. Earth Materials Passed Through

	From (ft.)	To (ft.)
No. 4 GLOBAL SAND	14.0	3.0
BENTONITE CHIPS	3.0	1.0

(If dry hole, fill out log and indicate how hole was sealed.)

25. Licensed Water Well Contractor Signature _____ License Number _____

SEE REVERSE SIDE FOR ADDITIONAL INFORMATION)

Illinois Department of Public Health
WATER WELL CONSTRUCTION REPORT

Date MARCH 1 2010

TYPE OR PRESS FIRMLY WITH BLACK INK PEN. COMPLETE WITHIN 30 DAYS OF WELL COMPLETION AND SEND TO THE APPROPRIATE HEALTH DEPARTMENT.

1. Type of Well a. **Driven** Well Casing diam. _____in. Depth _____ft.
   b. **Bored** Well Buried Slab [ ] Yes [ ] No
   Hole Diameter _____in. to _____ft.; _____in. to_____ft.; _____in. to_____ft.
   c. **Drilled** Well **PVC** casing Formation packer set at depth of N/A ft.
   Hole Diameter 8 1/4 in. to 20 ft. _____in. to_____ft. _____in. to_____ft.

Type of Grout	# of Bags	Grout Weight	From (ft.)	To (ft.)	Tremie Depth (ft.)

d. **Drilled** Well **Steel** Casing- - - Mechanically Driven [ ] Yes [ ] No
Hole Diameter _____in. to _____ft. _____in. to_____ft. _____in. to_____ft.

Type of Grout	# of Bags	Grout Weight	From (ft.)	To (ft.)	Tremie Depth (ft.)

e. Well finished within [X] Unconsolidated Materials [ ] Bedrock

f. Kind of Gravel Sand Pack

Grain Size/Supplier #	From (ft.)	To (ft.)
GLOBALSILICA #4	20.0	8.0

2. Well Use [ ] Domestic [ ] Irrigation [ ] Commercial [ ] Livestock
   [X] Monitoring [ ] Other
3. Date Well Completed NOV 13 2009 Well Disinfected [ ] Yes [ ] No
   Driller's estimated well yield _____gpm
4. Date Permanent Pump Installed _____
5. Pump Capacity _____gpm Set at (depth) _____ft.
6. Pitless Adapter Model and Manufacturer _____
7. Well Cap Type and Manufacturer _____
8. Pressure Tank Working Cycle_____gals. Captive Air [ ] Yes [ ] No
9. Pump System Disinfected [ ] Yes [ ] No
10. Name of Pump Company _____
11. Pump Installer _____ License # _____
12. _____ License # _____
    Licensed Pump Contractor Signature

Illinois Department of Public Health
Division of Environmental Health
525 W. Jefferson St.
Springfield, IL 62761

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GEOLOGICAL AND WATER SURVEY WELL RECORD

13. Property Owner UNITED STATES NAVY Well # NTC21 MW04
14. Driller CHRIS WHITE License # _____
15. Name of Drilling Co. TTL ASSOCIATES INC
16. Permit No. _____ Date Issued _____
17. Date Drilling Started NOV 13 2009
18. Well SITE address 24TH & GREENFIELD BLDG 1517 LANDFILL
19. Township Name _____ Land ID # _____
20. Subdivision Name GREAT LAKES NAVAL BASE Lot # _____
21. Location a. County LAKE
    b. Township _____ Range _____ Section _____
    c. _____ Quarter _____ Quarter _____ Quarter
    d. Coordinates NORTHING 2057444.4702 EASTING 1115416.4507 Site Elevation 653.105 ft. (msl)

For Survey Use

22. Casings, Liners* and Screen Information

Diam. (in.)	Material	Joint	Slot Size	From (ft.)	To (ft.)
2IN	PVC	THREADED	010	20.0	10.0

(*) _____
(List reason for liner, type of upper and lower seals installed)

23. Water from _____at a depth of _____ft. to _____ft.
    a. Static water level _____ ft. below casing which is _____in. above ground
    b. Pumping level is _____ ft. pumping _____gpm after pumping for _____hours

24. Earth Materials Passed Through

	From (ft.)	To (ft.)
NO. 4 GLOBAL SAND	20.0	8.0
BENTONITE CHIPS	8.0	1.0

(If dry hole, fill out log and indicate how hole was sealed.)

25. Licensed Water Well Contractor Signature _____ License Number _____

SEE REVERSE SIDE FOR ADDITIONAL INFORMATION)

Illinois Department of Public Health
WATER WELL CONSTRUCTION REPORT

Date MARCH 1 2010

TYPE OR PRESS FIRMLY WITH BLACK INK PEN. COMPLETE WITHIN 30 DAYS OF WELL COMPLETION AND SEND TO THE APPROPRIATE HEALTH DEPARTMENT.

1. Type of Well a. **Driven** Well Casing diam. _____in. Depth _____ft.
   b. **Bored** Well Buried Slab [ ] Yes [ ] No
   Hole Diameter _____in. to _____ft.; _____in. to _____ft.; _____in. to _____ft.
   c. **Drilled** Well PVC casing Formation packer set at depth of N/A ft.
   Hole Diameter 8 1/4 in. to 13.0 ft. _____in. to _____ft. _____in. to _____ft.

Type of Grout	# of Bags	Grout Weight	From (ft.)	To (ft.)	Tremie Depth (ft.)

d. **Drilled** Well **Steel** Casing- - - Mechanically Driven [ ] Yes [ ] No
Hole Diameter _____in. to _____ft. _____in. to _____ft. _____in. to _____ft.

Type of Grout	# of Bags	Grout Weight	From (ft.)	To (ft.)	Tremie Depth (ft.)

e. Well finished within [X] Unconsolidated Materials [ ] Bedrock

f. Kind of Gravel Sand Pack

Grain Size/Supplier #	From (ft.)	To (ft.)
GLOBAL SILICA #4	13.0	2.0

2. Well Use [ ] Domestic [ ] Irrigation [ ] Commercial [ ] Livestock
   [X] Monitoring [ ] Other
3. Date Well Completed NOV. 14 2009 Well Disinfected [ ] Yes [ ] No
   Driller's estimated well yield _____gpm
4. Date Permanent Pump Installed _____
5. Pump Capacity _____gpm Set at (depth) _____ft.
6. Pitless Adapter Model and Manufacturer _____
7. Well Cap Type and Manufacturer _____
8. Pressure Tank Working Cycle _____gals. Captive Air [ ] Yes [ ] No
9. Pump System Disinfected [ ] Yes [ ] No
10. Name of Pump Company _____
11. Pump Installer _____ License # _____
12. _____ License # _____
    Licensed Pump Contractor Signature

Illinois Department of Public Health
Division of Environmental Health
525 W. Jefferson St.
Springfield, IL 62761

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GEOLOGICAL AND WATER SURVEY WELL RECORD

13. Property Owner UNITED STATES NAVY Well # NTC21MW05
14. Driller CHRIS WHITE License # _____
15. Name of Drilling Co. TTL ASSOCIATES INC
16. Permit No. _____ Date Issued _____
17. Date Drilling Started NOV 14 2009
18. Well SITE address 24TH & GREENFIELD BLDG 1517 LANDFILL
19. Township Name _____ Land ID # _____
20. Subdivision Name GREAT LAKES NAVAL BASE Lot # _____
21. Location a. County LAKE
    b. Township _____ Range _____ Section _____
    c. _____ Quarter _____ Quarter _____ Quarter
    d. Coordinates NORTHING 2057518.8101 EASTING 1115138.923 Site Elevation 7 ft. (msl)
22. Casings, Liners* and Screen Information 655.28

For Survey Use

Diam. (in.)	Material	Joint	Slot Size	From (ft.)	To (ft.)
2IN	PVC	THREAD	.010	13.0	3.0

(*) _____
(List reason for liner, type of upper and lower seals installed)

23. Water from _____ at a depth of _____ft. to _____ft.
    a. Static water level _____ ft. below casing which is _____in. above ground
    b. Pumping level is _____ ft. pumping _____gpm after pumping for _____hours

24. Earth Materials Passed Through

	From (ft.)	To (ft.)
No. 4 GLOBAL SAND	13.0	2.0
BENTONITE CHIPS	2.0	1.0

(If dry hole, fill out log and indicate how hole was sealed.)

25. Licensed Water Well Contractor Signature _____ License Number _____

SEE REVERSE SIDE FOR ADDITIONAL INFORMATION)

Illinois Department of Public Health
WATER WELL CONSTRUCTION REPORT

Date MARCH 1 2010

TYPE OR PRESS FIRMLY WITH BLACK INK PEN. COMPLETE WITHIN 30 DAYS OF WELL COMPLETION AND SEND TO THE APPROPRIATE HEALTH DEPARTMENT.

1. Type of Well a. **Driven** Well Casing diam. _____in. Depth _____ft.
   b. **Bored** Well Buried Slab [ ] Yes [ ] No
   Hole Diameter _____in. to _____ft.; _____in. to_____ft.; _____in. to_____ft.
   c. **Drilled** Well PVC casing Formation packer set at depth of N/A ft.
   Hole Diameter 8 1/4 in. to 14.0 ft. _____in. to_____ft. _____in. to_____ft.

Type of Grout	# of Bags	Grout Weight	From (ft.)	To (ft.)	Tremie Depth (ft.)

d. **Drilled** Well **Steel** Casing- - - Mechanically Driven [ ] Yes [ ] No
Hole Diameter _____in. to _____ft. _____in. to_____ft. _____in. to_____ft.

Type of Grout	# of Bags	Grout Weight	From (ft.)	To (ft.)	Tremie Depth (ft.)

e. Well finished within [X] Unconsolidated Materials [ ] Bedrock

f. Kind of Gravel Sand Pack

Kind of Gravel Sand Pack	Grain Size/Supplier #	From (ft.)	To (ft.)
GLOBAL SILICA	#4	14.0	3.0

2. Well Use [ ] Domestic [ ] Irrigation [ ] Commercial [ ] Livestock
   [X] Monitoring [ ] Other
3. Date Well Completed NOV. 14 2009 Well Disinfected [ ] Yes [ ] No
   Driller's estimated well yield _____gpm
4. Date Permanent Pump Installed_____
5. Pump Capacity _____gpm Set at (depth) _____ft.
6. Pitless Adapter Model and Manufacturer _____
7. Well Cap Type and Manufacturer _____
8. Pressure Tank Working Cycle_____gals. Captive Air [ ] Yes [ ] No
9. Pump System Disinfected [ ] Yes [ ] No
10. Name of Pump Company _____
11. Pump Installer _____ License # _____
12. _____ License # _____
    Licensed Pump Contractor Signature

Illinois Department of Public Health
Division of Environmental Health
525 W. Jefferson St.
Springfield, IL 62761

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GEOLOGICAL AND WATER SURVEY WELL RECORD

13. Property Owner UNITED STATES NAVY Well # NTC21MW06
14. Driller CHRIS WHITE License # _____
15. Name of Drilling Co. TTL ASSOCIATES INC
16. Permit No. _____ Date Issued _____
17. Date Drilling Started NOV. 14 2009
18. Well SITE address SPALDING ST @ 24TH BLDG 1517 LANDFILL
19. Township Name _____ Land ID # _____
20. Subdivision Name GREAT LAKES NAVAL BASE Lot # _____
21. Location a. County LAKE
    b. Township _____ Range _____ Section _____
    NORTHING 2057503.8066
    c. _____ Quarter _____ Quarter _____ Quarter
    d. Coordinates _____ Site Elevation 7 ft. (msl)
    EASTING 1114703.354
22. Casings, Liners* and Screen Information 659.53

For Survey Use

Diam. (in.)	Material	Joint	Slot Size	From (ft.)	To (ft.)
2IN	PVC	THREAD	.010	14.0	4.0

(*) _____
(List reason for liner, type of upper and lower seals installed)

23. Water from _____at a depth of _____ft. to _____ft.
    a. Static water level _____ ft. below casing which is _____in. above ground
    b. Pumping level is _____ ft. pumping _____gpm after pumping for _____hours

24. Earth Materials Passed Through

Earth Materials Passed Through	From (ft.)	To (ft.)
No. 4 GLOBAL SAND	14.0	3.0
BENTONITE CHIPS	3.0	1.0

(If dry hole, fill out log and indicate how hole was sealed.)

25. Licensed Water Well Contractor Signature _____ License Number _____

SEE REVERSE SIDE FOR ADDITIONAL INFORMATION)

B-7 SAMPLE LOG SHEETS – IDW

Tetra Tech NUS, Inc.

QUALITY CONTROL SAMPLING LOG

Site 9 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**QC Sample ID #**	IDW-AQ-092909-01	**Created By**	John Wright
TtNUS Project #	112G01489	**Corresponding Sample ID**		**Created Date**	9/29/09
Task/Contract #	0510	**QA Sample Type**	IDW Log	**Modified By**	Shannon Hill
WBS Code #		**Sample Location**	QC	**Modified Date**	9/29/09
Status	Complete	**Sampled By**	Shannon Hill	**Printed By**	Bob Davis
		Concentration	Low concentration	**Printed Date**	3/19/10

Log Entries

Collected	Date	Time	Analysis / Method	Description of Analysis	Count	Type	Requirements	Matrix	Preservative	Comments	Chain of Custody #
✓	9/29/09	18:21	1311/8260B	TCLP VOC	3	Glass - Clear	40ml vials	AQ	4°C/HCL	IDW Water	ED00000104-4
✓	9/29/09	18:21	1311/8270C, 1311/8081A, 1311/8151, 6010B/7471A, 7.3.4, 1020A, 9066, 9095B, SW8082, 110.2, 140.2, 9045C	TCLP SVOC, TCLP Pest, TCLP Herb, TCLP Metals, Reactive Sulfide, Flashpoint, Phenolics, paint filter, PCBs, Color, Odor, Density, Corrosivity as pH	6	Glass - Amber	1L	AQ	4°C	IDW Water	ED00000104-4
✓	9/29/09	18:21	9012A	Cyanide	1	Plastic - PE	250ml	AQ	4° C/NAOH	IDW Water	ED00000104-4

Tetra Tech NUS, Inc.

QUALITY CONTROL SAMPLING LOG

Site 9 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**QC Sample ID #**	IDW-111709	**Created By**	Shannon Hill
TtNUS Project #	112G01489	**Corresponding Sample ID**		**Created Date**	11/17/09
Task/Contract #	0510	**QA Sample Type**	IDW Log	**Modified By**	Shannon Hill
WBS Code #		**Sample Location**	QC	**Modified Date**	11/17/09
Status	Complete	**Sampled By**	Shannon Hill	**Printed By**	Bob Davis
		Concentration	Low concentration	**Printed Date**	3/19/10

Log Entries

Collected	Date	Time	Analysis / Method	Description of Analysis	Count	Type	Requirements	Matrix	Preservative	Comments	Chain of Custody #
✓	11/17/09	16:00	1311/8270C, 1311/8081A, 1311/8151, 6010B/7471A, 7.3.4, 1020A, 9066, 9095B, SW8082, 110.2, 140.2, 9045C	TCLP SVOC, TCLP Pest, TCLP Herb, TCLP Metals, Reactive Sulfide, Flashpoint, Phenolics, paint filter, PCBs, Color, Odor, Density, Corrosivity as pH	6	Glass - Amber	1L	AQ	4°C		ED00000104-8
✓	11/17/09	16:00	SW-846 8260B	TCL VOCs	3	Glass - Clear	40ml vials	AQ	4°C/HCL		ED00000104-8
✓	11/17/09	16:00	9012A	Cyanide	1	Plastic - PE	250ml	AQ	4° C/NAOH		ED00000104-8

Tetra Tech NUS, Inc.

SOIL SEDIMENT SAMPLING LOG

Site 9 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Sample ID #**	IDW-SO-092909-01	**Created By**	John Wright
TtNUS Project #	112G01489	**Sample Location ID**	QC	**Created Date**	9/29/09
Task/Contract #	0510	**Sampled By**	Shannon Hill	**Modified By**	John Wright
WBS Code #		**Concentration**	Low concentration	**Modified Date**	3/8/10
QA Sample Type				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Sample Collection Records

Date	Time	Method	Monitor (ppm)	Depth (ft)	Color	Description

Analysis Records

Collected	Date	Time	Analysis / Method	Description of Analysis	Preservative	Count	Type	Requirements	Comments	Chain#
✓	9/29/09	18:50	1311/8260B, 1311/8270C, 1311/8081A, 1311/8151, 6010B/7471A, 8082A, 7.3.4, 9012, 9066, Color EPA 110, 140.1, 1020A, 9045D	TCLP VOC, TCLP SVOC, TCLP Pest, TCLP Herb, TCLP Metals, PCB, Reactive Sulfide, Phenolics, Color, Odor, Density, % Moisture, Flash Point, Corrosivity as pH	4°C	7	Glass - Clear	4 oz. wide-mouth w/Teflon cap	IDW Soils	ED00000104-4
✗			ASTM D422 (or as instructed by TtNUS)	Grain Size	4°C	1	Glass - Clear	4 oz. wide-mouth w/Teflon cap	IDW Soils	

General Observations and Notes

No Notes

- End of Report -

B-8 SAMPLE LOG SHEETS – QA/QC

Tetra Tech NUS, Inc.

QUALITY CONTROL SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**QC Sample ID #**	TB-092609-01	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Corresponding Sample ID**		**Created Date**	9/26/09
Task/Contract #	0064	**QA Sample Type**	Temperature Blank	**Modified By**	John Wright
WBS Code #		**Sample Location**	QC	**Modified Date**	9/30/09
Status	Complete	**Sampled By**	Shannon Hill	**Printed By**	Bob Davis
		Concentration	Low concentration	**Printed Date**	3/19/10

Log Entries

Collected	Date	Time	Analysis / Method	Description of Analysis	Count	Type	Requirements	Matrix	Preservative	Comments	Chain of Custody #
✓	9/26/09	08:00	SW-846 8260B	TCL VOCs	2	Glass - Clear	40ml vials	AQ	4°C/HCL	Trip Blank	ED00000105-1

Tetra Tech NUS, Inc.

QUALITY CONTROL SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**QC Sample ID #**	FD-092709-01	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Corresponding Sample ID**	NTC21SB15-SO-0204	**Created Date**	9/27/09
Task/Contract #	0064	**QA Sample Type**	Field Duplicate	**Modified By**	Shannon Hill
WBS Code #		**Sample Location**	QC	**Modified Date**	9/27/09
Status	Complete	**Sampled By**	Shannon Hill	**Printed By**	Bob Davis
		Concentration	Low concentration	**Printed Date**	3/19/10

Log Entries

Collected	Date	Time	Analysis / Method	Description of Analysis	Count	Type	Requirements	Matrix	Preservative	Comments	Chain of Custody #
✓	9/27/09	00:00	SW-846 8260B	TCL VOCs	4	TerraCore	TerraCore	SO	4° C/HNaO4S/MeOH		ED00000105-1
✓	9/27/09	00:00	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	SO	4°C		ED00000105-1

Tetra Tech NUS, Inc.

QUALITY CONTROL SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**QC Sample ID #**	FD-092609-01	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Corresponding Sample ID**	NTC21SB18-SO-0507	**Created Date**	9/26/09
Task/Contract #	0064	**QA Sample Type**	Field Duplicate	**Modified By**	Shannon Hill
WBS Code #		**Sample Location**	QC	**Modified Date**	9/26/09
Status	Complete	**Sampled By**	Shannon Hill	**Printed By**	Bob Davis
		Concentration	Low concentration	**Printed Date**	3/19/10

Log Entries

Collected	Date	Time	Analysis / Method	Description of Analysis	Count	Type	Requirements	Matrix	Preservative	Comments	Chain of Custody #
✓	9/26/09	00:00	SW-846 8260B	TCL VOCs	4	TerraCore	TerraCore	SO	4° C/HNaO4S/MeOH		ED00000105-1
✓	9/26/09	00:00	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	SO	4°C		ED00000105-1

Tetra Tech NUS, Inc.

QUALITY CONTROL SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**QC Sample ID #**	FD-092609-02	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Corresponding Sample ID**	NTC21SB09-SO-0001	**Created Date**	9/26/09
Task/Contract #	0064	**QA Sample Type**	Field Duplicate	**Modified By**	Shannon Hill
WBS Code #		**Sample Location**	QC	**Modified Date**	9/26/09
Status	Complete	**Sampled By**	Shannon Hill	**Printed By**	Bob Davis
		Concentration	Low concentration	**Printed Date**	3/19/10

Log Entries

Collected	Date	Time	Analysis / Method	Description of Analysis	Count	Type	Requirements	Matrix	Preservative	Comments	Chain of Custody #
✓	9/26/09	00:00	SW-846 8290	Dioxins/Furans	2	Glass - Amber	4 oz. wide-mouth w/Teflon cap	SO	4°C		ED00000105-2
✓	9/26/09	00:00	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	SO	4°C		ED00000105-1
✓	9/26/09	00:00	SW-846 8260B	TCL VOCs	4	TerraCore	TerraCore	SO	4° C/HNaO4S/MeOH		ED00000105-1

Tetra Tech NUS, Inc.

QUALITY CONTROL SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**QC Sample ID #**	TB-092709-01	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Corresponding Sample ID**		**Created Date**	9/27/09
Task/Contract #	0064	**QA Sample Type**	Trip Blank	**Modified By**	Shannon Hill
WBS Code #		**Sample Location**	QC	**Modified Date**	9/27/09
Status	Complete	**Sampled By**	Shannon Hill	**Printed By**	Bob Davis
		Concentration	Low concentration	**Printed Date**	3/19/10

Log Entries

Collected	Date	Time	Analysis / Method	Description of Analysis	Count	Type	Requirements	Matrix	Preservative	Comments	Chain of Custody #
✓	9/27/09	08:00	SW-846 8260B	TCL VOCs	2	Glass - Clear	40ml vials	AQ	4°C/H3PO4	Trip Blank	ED00000105-1

Tetra Tech NUS, Inc.

QUALITY CONTROL SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**QC Sample ID #**	TB-092809-01	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Corresponding Sample ID**		**Created Date**	9/28/09
Task/Contract #	0064	**QA Sample Type**	Trip Blank	**Modified By**	Shannon Hill
WBS Code #		**Sample Location**	QC	**Modified Date**	9/28/09
Status	Complete	**Sampled By**	Shannon Hill	**Printed By**	Bob Davis
		Concentration	Low concentration	**Printed Date**	3/19/10

Log Entries

Collected	Date	Time	Analysis / Method	Description of Analysis	Count	Type	Requirements	Matrix	Preservative	Comments	Chain of Custody #
✓	9/28/09	08:00	SW-846 8260B	TCL VOCs	2	Glass - Clear	40ml vials	AQ	4°C/HCL	Trip Blank	ED00000105-1

Tetra Tech NUS, Inc.

QUALITY CONTROL SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**QC Sample ID #**	FD-092809-01	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Corresponding Sample ID**	NTC21SB05-SO-0001	**Created Date**	9/28/09
Task/Contract #	0064	**QA Sample Type**	Field Duplicate	**Modified By**	Shannon Hill
WBS Code #		**Sample Location**	QC	**Modified Date**	9/28/09
Status	Complete	**Sampled By**	Shannon Hill	**Printed By**	Bob Davis
		Concentration	Low concentration	**Printed Date**	3/19/10

Log Entries

Collected	Date	Time	Analysis / Method	Description of Analysis	Count	Type	Requirements	Matrix	Preservative	Comments	Chain of Custody #
✓	9/28/09	00:00	SW-846 8260B	TCL VOCs	4	TerraCore	TerraCore	SO	4° C/HNaO4S/MeOH		ED00000105-1
✓	9/28/09	00:00	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	SO	4°C		ED00000105-1

Tetra Tech NUS, Inc.

QUALITY CONTROL SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**QC Sample ID #**	TB-092909-01	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Corresponding Sample ID**		**Created Date**	9/29/09
Task/Contract #	0064	**QA Sample Type**	Trip Blank	**Modified By**	John Wright
WBS Code #		**Sample Location**	QC	**Modified Date**	9/30/09
Status	Complete	**Sampled By**	Shannon Hill	**Printed By**	Bob Davis
		Concentration	Low concentration	**Printed Date**	3/19/10

Log Entries

Collected	Date	Time	Analysis / Method	Description of Analysis	Count	Type	Requirements	Matrix	Preservative	Comments	Chain of Custody #
✓	9/29/09	10:28	SW-846 8260B	TCL VOCs	2	Glass - Clear	40ml vials	AQ	4°C/HCL	Trip Blank	ED00000105-1

Tetra Tech NUS, Inc.

QUALITY CONTROL SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**QC Sample ID #**	SB-092909-01	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Corresponding Sample ID**		**Created Date**	9/29/09
Task/Contract #	0064	**QA Sample Type**	Source Water Blank	**Modified By**	Shannon Hill
WBS Code #		**Sample Location**	QC	**Modified Date**	9/29/09
Status	Complete	**Sampled By**	Shannon Hill	**Printed By**	Bob Davis
		Concentration	Low concentration	**Printed Date**	3/19/10

Log Entries

Collected	Date	Time	Analysis / Method	Description of Analysis	Count	Type	Requirements	Matrix	Preservative	Comments	Chain of Custody #
✓	9/29/09	10:31	SW-846 6010B	TAL Metals (Total)	1	Plastic - Bell Arte HDPE	250ml	AQ	4° C/HNO3		ED00000105-1
✓	9/29/09	10:31	SW-846 8260B	TCL VOCs	3	Glass - Clear	40ml vials	AQ	4°C/HCL		ED00000105-1
✓	9/29/09	10:31	SW-846 8290	Dioxins/Furans	2	Glass - Amber	1L	AQ	4°C		ED00000105-2
✓	9/29/09	10:31	SW-846 8270C/8181/8081A/8082	TCL SVOCs/Herb/Pest/PCB	6	Glass - Amber	1L	AQ	4°C		ED00000105-1

Tetra Tech NUS, Inc.

QUALITY CONTROL SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**QC Sample ID #**	RB-092909-01	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Corresponding Sample ID**		**Created Date**	9/29/09
Task/Contract #	0064	**QA Sample Type**	Rinsate Blank	**Modified By**	John Wright
WBS Code #		**Sample Location**	QC	**Modified Date**	9/29/09
Status	Complete	**Sampled By**	Shannon Hill	**Printed By**	Bob Davis
		Concentration	Low concentration	**Printed Date**	3/19/10

Log Entries

Collected	Date	Time	Analysis / Method	Description of Analysis	Count	Type	Requirements	Matrix	Preservative	Comments	Chain of Custody #
✓	9/29/09	11:26	SW-846 8260B	TCL VOCs	3	Glass - Clear	40ml vials	AQ	4°C/HCL		ED00000105-1
✓	9/29/09	11:26	SW-846 8270C/8181/8081A/8082	TCL SVOCs/Herb/Pest/PCB	6	Glass - Amber	1L	AQ	4°C	from deconned shoe of DPT rig	ED00000105-1
✓	9/29/09	11:26	SW-846 8290	Dioxins/Furans	2	Glass - Amber	1L	AQ	4°C		ED00000105-2
✓	9/29/09	11:26	SW-846 6010B	TAL Metals (Total)	1	Plastic - Bell Arte HDPE	250ml	AQ	4° C/HNO3		ED00000105-1

Tetra Tech NUS, Inc.

QUALITY CONTROL SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**QC Sample ID #**	RB-092909-02	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Corresponding Sample ID**		**Created Date**	9/29/09
Task/Contract #	0064	**QA Sample Type**	Rinsate Blank	**Modified By**	John Wright
WBS Code #		**Sample Location**	QC	**Modified Date**	9/29/09
Status	Complete	**Sampled By**	Shannon Hill	**Printed By**	Bob Davis
		Concentration	Low concentration	**Printed Date**	3/19/10

Log Entries

Collected	Date	Time	Analysis / Method	Description of Analysis	Count	Type	Requirements	Matrix	Preservative	Comments	Chain of Custody #
✓	9/29/09	13:02	SW-846 8270C/8181/8081A/8082	TCL SVOCs/Herb/Pest/PCB	6	Glass - Amber	1L	AQ	4°C	DPT disposible sleeve	ED00000105-1
✓	9/29/09	13:02	SW-846 8260B	TCL VOCs	3	Glass - Clear	40ml vials	AQ	4°C/HCL		ED00000105-1
✓	9/29/09	13:02	SW-846 6010B	TAL Metals (Total)	1	Plastic - Bell Arte HDPE	250ml	AQ	4° C/HNO3		ED00000105-1

Tetra Tech NUS, Inc.

QUALITY CONTROL SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**QC Sample ID #**	NTC21-FD111609-01	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Corresponding Sample ID**	NTC21MW0201	**Created Date**	11/16/09
Task/Contract #	0064	**QA Sample Type**	Field Duplicate	**Modified By**	Shannon Hill
WBS Code #		**Sample Location**	QC	**Modified Date**	11/16/09
Status	Complete	**Sampled By**	Shannon Hill	**Printed By**	Bob Davis
		Concentration	Low concentration	**Printed Date**	3/19/10

Log Entries

Collected	Date	Time	Analysis / Method	Description of Analysis	Count	Type	Requirements	Matrix	Preservative	Comments	Chain of Custody #
✓	11/16/09	00:00	SW-846 8270C/8181/8081A/8082	TCL SVOCs/Herb/Pest/PCB	6	Glass - Amber	1L	GW	4°C		ED00000105-4
✓	11/16/09	00:00	SW-846 6010B	TAL Metals (Total)	1	Plastic - PE	250ml	GW	4° C/HNO3		ED00000105-4
✓	11/16/09	00:00	SW-846 8260B	TCL VOCs	3	Glass - Clear	40ml vials	GW	4°C/HCL		ED00000105-4

Tetra Tech NUS, Inc.

QUALITY CONTROL SAMPLING LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**QC Sample ID #**	TB-111709-01	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Corresponding Sample ID**		**Created Date**	11/17/09
Task/Contract #	0064	**QA Sample Type**	Field Blank	**Modified By**	Shannon Hill
WBS Code #		**Sample Location**	QC	**Modified Date**	12/23/09
Status	Complete	**Sampled By**	Shannon Hill	**Printed By**	Bob Davis
		Concentration	-Select-	**Printed Date**	3/19/10

Log Entries

Collected	Date	Time	Analysis / Method	Description of Analysis	Count	Type	Requirements	Matrix	Preservative	Comments	Chain of Custody #
✓	11/17/09	08:00	SW-846 8260B	TCL VOCs	2	Glass - Clear	40ml vials	AQ	4°C/HCL		ED00000105-6

B-9 CALIBRATION LOG SHEETS

Tetra Tech NUS, Inc.

EQUIPMENT CALIBRATION LOG

PROJECT NAME: Camp Moffet/1517

SITE NAME: Great Lakes

PROJECT No.: 112G01989/112G01797

INSTRUMENT NAME/MODEL: YSI ~~LaMotte 20~~

MANUFACTURER: YSI incorporated

SERIAL NUMBER: 05D2372 AK

Date of Calibration	Instrument I.D. Number	Person Performing Calibration	Instrument Settings		Instrument Readings		Calibration Standard (Lot No.)	Remarks and Comments
			~~Pre-~~ pH ~~calibration~~	~~Post-~~ pH ~~calibration~~	~~Pre-~~ pH ~~calibration~~	~~Post-~~ Spec Cond ~~calibration~~		
11/12/2009	05D2372AK	NCR	6.78	-2.3	9.70	0.010		pre
~~11/13/09~~		~~SEH~~	10.0	7.02	calibrated	1.409		Post
11/13/09		SEH	10.1	7.05	4.04	1.410		
11/14/09		SEH	10.05	7.01	4.02	1.408		
11/15/09		NCR	10.05	7.12	4.10	1.420		

Tetra Tech NUS, Inc.

EQUIPMENT CALIBRATION LOG

PROJECT NAME: Camp Moffet/1517

INSTRUMENT NAME/MODEL: LaMotte 2020e Turbidity Meter

SITE NAME: Great Lakes

MANUFACTURER: LaMotte

PROJECT No.: 112G01989/112G01797

SERIAL NUMBER: ~~454766X~~ ME-13089

Date of Calibration	Instrument I.D. Number	Person Performing Calibration	Instrument Settings		Instrument Readings		Calibration Standard (Lot No.)	Remarks and Comments
			Pre-calibration	Post-calibration	Pre-calibration	Post-calibration		
11/12/2009	13089	Nicole Rochna	0.98	1.00	10.41	9.80		
11/13/09		SEH	0.98	1.02	8.20	9.95		
11/14/09		SEH	0.94	1.01	9.20	10.05		
11/15/2009		NCR	0.75	0.97	10.41	10.04		

Tetra Tech NUS, Inc.

EQUIPMENT CALIBRATION LOG

PROJECT NAME: Great Lakes

SITE NAME: Camp Moffett/1517

PROJECT No.: 112G01797/112G01489

INSTRUMENT NAME/MODEL: YSI 556 MPS

MANUFACTURER: YSI

SERIAL NUMBER: 08K100392

Date of Calibration	Instrument I.D. Number	Person Performing Calibration	Instrument Settings		Instrument Readings		Calibration Standard (Lot No.)	Remarks and Comments
			Pre-calibration Ph	Post-calibration Ph	Pre-calibration DO	Post-calibration Spec. Conductivity		
11/12/09	08K100392	S.Hill	4.00	7.06	10.07	Calibrated	1.409	
11/13/09		SEH	4.05	7.07	9.95	" "	1.410	
11/14/09		SEH	4.10	7.10	10.05	" "	1.405	
11/15/09		SEH	4.01	6.94	9.98	" "	1.409	

Tetra Tech NUS, Inc.

EQUIPMENT CALIBRATION LOG

PROJECT NAME : Camp Moffett/517

SITE NAME: Great Lakes

PROJECT No.: 112G01489/112G01797

INSTRUMENT NAME/MODEL: LaMotte/2020e

MANUFACTURER: LaMotte

SERIAL NUMBER: ME-12230

Date of Calibration	Instrument I.D. Number	Person Performing Calibration	Instrument Settings		Instrument Readings		Calibration Standard (Lot No.)	Remarks and Comments
			Pre-calibration (Blank)	Post-calibration 1.0	Pre-calibration 10.0	Post-calibration		
11/12/09	12230	S. Hill	0.0	1.63 → 1.0	6.53 → 10.0			
11/13/09		SEH	0.0	0.93 → 1.0	6.95 → 10.0			
11/14/09		SEH	0.0	0.96 → 1.0	6.75 → 10.0			
11/15/09		SEH	0.0	1.79 → 1.0	5.98 → 9.90			

Tetra Tech NUS, Inc.

EQUIPMENT CALIBRATION LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Instrument**	MiniRAE 2000	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Manufacturer**	RAE Systems	**Created Date**	11/10/09
Task/Contract #	0064	**Serial Number**	110-011512	**Modified By**	Shannon Hill
WBS Code #	0000.0320			**Modified Date**	11/10/09
Client				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Calibration Records

Date	Calibrator	Isobutylene (100 ppm)	Comments
9/28/09	Shannon Hill	Pre: 100 Post: 100 Std: Exp:	
9/27/09	Shannon Hill	Pre: 102 Post: 101 Std: Exp:	

Tetra Tech NUS, Inc.

EQUIPMENT CALIBRATION LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Instrument**	MiniRAE 2000	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**Manufacturer**	RAE Systems	**Created Date**	12/7/09
Task/Contract #	0064	**Serial Number**	110-007957	**Modified By**	Shannon Hill
WBS Code #	0000.0320			**Modified Date**	12/7/09
Client				**Printed By**	Bob Davis
Status	Complete			**Printed Date**	3/19/10

Calibration Records

Date	Calibrator	Ambient air (ppm)	Isobutylene (100 ppm)	Comments
11/17/09	Shannon Hill	Pre: 0.0 Post: 0.0 Std: Exp:	Pre: 99 Post: 100 Std: 09-3734 Exp: 2.12.11	
11/16/09	Shannon Hill	Pre: 0.0 Post: 0.0 Std: Exp:	Pre: 98 Post: 101 Std: 09-3734 Exp: 2.12.11	
11/15/09	Shannon Hill	Pre: 0.0 Post: 0.0 Std: Exp:	Pre: 100 Post: 101 Std: 09-3734 Exp: 2.12.11	
11/14/09	Shannon Hill	Pre: 0.0 Post: 0.0 Std: Exp:	Pre: 99 Post: 100 Std: 09-3734 Exp: 2.12.11	

B-10 CHAIN OF CUSTODY FORMS

Appendix B-10 Notes:

1) The "Relinquished By" time and "Received By" time for each sample is one hour apart. The reason for this time discrepancy is in the computer program, eData, that was used to collect the laboratory data. The computer running the eData program was in Eastern Time Zone and the data was collected in Central Time Zone. There is a one hour difference between these time zones. Therefore, when the user entered the relinquished time based upon their watch in central time, the computer immediately assigned the received by time one hour earlier in Eastern time.

Tetra Tech NUS, Inc.

CHAIN OF CUSTODY LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Project Manager (PM)**	Biff Cummings	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**PM Telephone**		**Created Date**	9/29/09
Task/Contract #	0064	**Field Op Leader (FOL)**	Shannon Hill	**Modified By**	
WBS Code #	0000.0320	**FOL Phone**		**Modified Date**	
Chain of Custody ID	ED00000105-1	**Carrier**	Airborne Express	**Printed By**	Bob Davis
		Carrier/Waybill No.	8631 2526 8200	**Printed Date**	9/30/09

Chain of Custody Information

Chain of Custody #	**ED00000105-1**	**Lab Name**	Empirical Laboritories, LLC.	**Relenquished By**	Shannon Hill
Carrier	Airborne Express	**Address**	227 French Landing Drive	**Date**	09/29/2009
Carrier/Waybill No.	8631 2526 8200	**City, State, Zip**	Nashville, TN 37228	**Time**	13:11
		Lab Contact	Janice Shilling	**Received By:**	Airborne Express
		Lab Telephone	615.345.1115 ext. 256	**Date**	9/29/09
				Time	14:11

Sample Records

Date	Sample ID#	Time	Analysis	Description	Loc ID	Matrix	Preservative	No.	Type	Requirements	Comments
9/26/09	FD-092609-01	00:00	SW-846 8260B	TCL VOCs	QC	SO	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/26/09	FD-092609-01	00:00	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	QC	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	

9/26/09	FD-092609-02	00:00	SW-846 8260B	TCL VOCs	QC	SO	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/26/09	FD-092609-02	00:00	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	QC	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/26/09	NTC21SB09-SO-0001	16:20	SW-846 8260B	TCL VOCs	NTC21SB09	SO	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/26/09	NTC21SB09-SO-0001	16:20	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB09	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/26/09	NTC21SB09-SO-0204	16:28	SW-846 8260B	TCL VOCs	NTC21SB09	SO	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/26/09	NTC21SB09-SO-0204	16:28	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB09	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	

Tetra Tech NUS, Inc.

CHAIN OF CUSTODY LOG

Site 21 - Investigation - GREAT LAKES NTC

Sample Records

Date	Sample ID#	Time	Analysis	Description	Loc ID	Matrix	Preservative	No.	Type	Requirements	Comments
9/26/09	NTC21SB10-SO-0001	18:36	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB10	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/26/09	NTC21SB10-SO-0001	18:36	SW-846 8260B	TCL VOCs	NTC21SB10	SO	4°C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/26/09	NTC21SB10-SO-0406	18:40	SW-846 8260B	TCL VOCs	NTC21SB10	SO	4°C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/26/09	NTC21SB10-SO-0406	18:40	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB10	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/26/09	NTC21SB11-SO-0001	18:10	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB11	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/26/09	NTC21SB11-SO-0001	18:10	SW-846 8260B	TCL VOCs	NTC21SB11	SO	4°C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/26/09	NTC21SB11-SO-0204	18:12	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB11	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/26/09	NTC21SB11-SO-0204	18:12	SW-846 8260B	TCL VOCs	NTC21SB11	SO	4°C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/26/09	NTC21SB12-SO-0001	14:00	SW-846 8260B	TCL VOCs	NTC21SB12	SO	4°C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/26/09	NTC21SB12-	14:00	SW-846 8270C/8181/80	TCL SVOCs/Herb/Pe	NTC21SB12	SO	4°C	3	Glass - Clear	4 oz. wide-mouth	

	SO-0001		81A/8082/6010 B	st/PCB/TAL Metals						w/Teflon cap	
9/26/09	NTC21SB12-SO-0204	14:10	SW-846 8270C/8181/8081A/8082/6010 B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB12	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/26/09	NTC21SB12-SO-0204	14:10	SW-846 8260B	TCL VOCs	NTC21SB12	SO	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/26/09	NTC21SB17-SO-0001	13:26	SW-846 8270C/8181/8081A/8082/6010 B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB17	SO	4° C/HNaO4S/MeOH	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/26/09	NTC21SB17-SO-0001	13:26	SW-846 8260B	TCL VOCs	NTC21SB17	SO	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/26/09	NTC21SB17-SO-0507	13:32	SW-846 8270C/8181/8081A/8082/6010 B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB17	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/26/09	NTC21SB17-SO-0507	13:32	SW-846 8260B	TCL VOCs	NTC21SB17	SO	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/26/09	NTC21SB18-SO-0001	12:47	SW-846 8270C/8181/8081A/8082/6010 B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB18	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/26/09	NTC21SB18-SO-0001	12:47	SW-846 8260B	TCL VOCs	NTC21SB18	SO	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/26/09	NTC21SB18-SO-0507	12:59	SW-846 8270C/8181/8081A/8082/6010 B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB18	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/26/09	NTC21SB18-SO-0507	12:59	SW-846 8260B	TCL VOCs	NTC21SB18	SO	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore	

Tetra Tech NUS, Inc.

CHAIN OF CUSTODY LOG

Site 21 - Investigation - GREAT LAKES NTC

Sample Records

Date	Sample ID#	Time	Analysis	Description	Loc ID	Matrix	Preservative	No.	Type	Requirements	Comments
9/26/09	NTC21SB20-SO-0001	16:57	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB20	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/26/09	NTC21SB20-SO-0001	16:57	SW-846 8260B	TCL VOCs	NTC21SB20	SO	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/26/09	NTC21SB20-SO-0406	17:02	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB20	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/26/09	NTC21SB20-SO-0406	17:02	SW-846 8260B	TCL VOCs	NTC21SB20	SO	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/26/09	NTC21SB21-SO-0001	15:10	SW-846 8260B	TCL VOCs	NTC21SB21	SO	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/26/09	NTC21SB21-SO-0001	15:10	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB21	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/26/09	NTC21SB21-SO-0608	15:20	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB21	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/26/09	NTC21SB21-SO-0608	15:20	SW-846 8260B	TCL VOCs	NTC21SB21	SO	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/26/09	TB-092609-01	08:00	SW-846 8260B	TCL VOCs	QC	AQ	4°C/HCL	2	Glass - Clear	40ml vials	Trip Blank
9/27/09	FD-092709-01	00:00	SW-846 8260B	TCL VOCs	QC	SO	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore	
			SW-846	TCL							

9/27/09	FD-092709-01	00:00	8270C/8181/8081A/8082/6010B	SVOCs/Herb/Pest/PCB/TAL Metals	QC	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/27/09	NTC21SB04-SO-0001	12:50	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB04	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/27/09	NTC21SB04-SO-0001	12:50	SW-846 8260B	TCL VOCs	NTC21SB04	SO	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/27/09	NTC21SB04-SO-0406	13:00	SW-846 8260B	TCL VOCs	NTC21SB04	SO	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/27/09	NTC21SB04-SO-0406	13:00	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB04	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/27/09	NTC21SB06-SO-0001	15:10	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB06	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/27/09	NTC21SB06-SO-0001	15:10	SW-846 8260B	TCL VOCs	NTC21SB06	SO	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/27/09	NTC21SB06-SO-0204	15:20	SW-846 8260B	TCL VOCs	NTC21SB06	SO	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/27/09	NTC21SB06-SO-0204	15:20	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB06	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/27/09	NTC21SB07-SO-0001	10:40	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB07	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	

Tetra Tech NUS, Inc.

CHAIN OF CUSTODY LOG

Site 21 - Investigation - GREAT LAKES NTC

Sample Records

Date	Sample ID#	Time	Analysis	Description	Loc ID	Matrix	Preservative	No.	Type	Requirements	Comments
9/27/09	NTC21SB07-SO-0001	10:40	SW-846 8260B	TCL VOCs	NTC21SB07	SO	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/27/09	NTC21SB07-SO-0204	10:50	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB07	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/27/09	NTC21SB07-SO-0204	10:50	SW-846 8260B	TCL VOCs	NTC21SB07	SO	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/27/09	NTC21SB13-SO-0001	09:00	SW-846 8260B	TCL VOCs	NTC21SB13	SO	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/27/09	NTC21SB13-SO-0001	09:00	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB13	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/27/09	NTC21SB13-SO-0204	09:10	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB13	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/27/09	NTC21SB13-SO-0204	09:10	SW-846 8260B	TCL VOCs	NTC21SB13	SO	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/27/09	NTC21SB14-SO-0001	09:30	SW-846 8260B	TCL VOCs	NTC21SB14	SO	4° C/HNaO4S/MeOH	12	TerraCore	TerraCore	Run MS/MSD
9/27/09	NTC21SB14-SO-0001	09:30	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB14	SO	4°C	9	Glass - Clear	4 oz. wide-mouth w/Teflon cap	Run MS/MSD
9/27/09	NTC21SB14-SO-0204	09:40	SW-846 8260B	TCL VOCs	NTC21SB14	SO	4° C/HNaO4S/MeO	4	TerraCore	TerraCore	

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9/27/09	NTC21SB14-SO-0204	09:40	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB14	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/27/09	NTC21SB15-SO-0001	10:00	SW-846 8260B	TCL VOCs	NTC21SB15	SO	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/27/09	NTC21SB15-SO-0001	10:00	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB15	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/27/09	NTC21SB15-SO-0204	10:10	SW-846 8260B	TCL VOCs	NTC21SB15	SO	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/27/09	NTC21SB15-SO-0204	10:10	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB15	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/27/09	NTC21SB16-SO-0001	17:00	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB16	SO	4° C/HNaO4S/MeOH	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/27/09	NTC21SB16-SO-0001	17:00	SW-846 8260B	TCL VOCs	NTC21SB16	SO	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/27/09	NTC21SB16-SO-0204	16:50	SW-846 8260B	TCL VOCs	NTC21SB16	SO	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/27/09	NTC21SB16-SO-0204	16:50	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB16	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/27/09	NTC21SB19-SO-0001	17:40	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB19	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	

Tetra Tech NUS, Inc.

CHAIN OF CUSTODY LOG

Site 21 - Investigation - GREAT LAKES NTC

Sample Records

Date	Sample ID#	Time	Analysis	Description	Loc ID	Matrix	Preservative	No.	Type	Requirements	Comments
9/27/09	NTC21SB19-SO-0001	17:40	SW-846 8260B	TCL VOCs	NTC21SB19	SO	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/27/09	NTC21SB19-SO-0204	17:50	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB19	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/27/09	NTC21SB19-SO-0204	17:50	SW-846 8260B	TCL VOCs	NTC21SB19	SO	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/27/09	NTC21SB22-SO-0001	12:00	SW-846 8260B	TCL VOCs	NTC21SB22	SO	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/27/09	NTC21SB22-SO-0001	12:00	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB22	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/27/09	NTC21SB22-SO-0204	12:10	SW-846 8260B	TCL VOCs	NTC21SB22	SO	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/27/09	NTC21SB22-SO-0204	12:10	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB22	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/27/09	TB-092709-01	08:00	SW-846 8260B	TCL VOCs	QC	AQ	4°C/H3PO4	2	Glass - Clear	40ml vials	Trip Blank
9/28/09	FD-092809-01	00:00	SW-846 8260B	TCL VOCs	QC	SO	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/28/09	FD-092809-01	00:00	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	QC	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
			SW-846	TCL							

9/28/09	NTC21SB01-SO-0102	12:00	8270C/8181/8081A/8082/6010B	SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB01	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/28/09	NTC21SB01-SO-0102	12:00	SW-846 8260B	TCL VOCs	NTC21SB01	SO	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/28/09	NTC21SB02-SO-0001	10:20	SW-846 8260B	TCL VOCs	NTC21SB02	SO	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/28/09	NTC21SB02-SO-0001	10:20	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB02	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/28/09	NTC21SB02-SO-0204	10:30	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB02	SO	4°C	9	Glass - Clear	4 oz. wide-mouth w/Teflon cap	Run MS/MSD
9/28/09	NTC21SB02-SO-0204	10:30	SW-846 8260B	TCL VOCs	NTC21SB02	SO	4° C/HNaO4S/MeOH	12	TerraCore	TerraCore	Run MS/MSD
9/28/09	NTC21SB03-SO-0001	12:20	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB03	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/28/09	NTC21SB03-SO-0001	12:20	SW-846 8260B	TCL VOCs	NTC21SB03	SO	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/28/09	NTC21SB03-SO-0204	12:30	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB03	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/28/09	NTC21SB03-SO-0204	12:30	SW-846 8260B	TCL VOCs	NTC21SB03	SO	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore	

Tetra Tech NUS, Inc.

CHAIN OF CUSTODY LOG

Site 21 - Investigation - GREAT LAKES NTC

Sample Records

Date	Sample ID#	Time	Analysis	Description	Loc ID	Matrix	Preservative	No.	Type	Requirements	Comments
9/28/09	NTC21SB05-SO-0001	10:00	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB05	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/28/09	NTC21SB05-SO-0001	10:00	SW-846 8260B	TCL VOCs	NTC21SB05	SO	4°C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/28/09	NTC21SB05-SO-0204	10:10	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB05	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/28/09	NTC21SB05-SO-0204	10:10	SW-846 8260B	TCL VOCs	NTC21SB05	SO	4°C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/28/09	NTC21SB08-SO-0001	11:55	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB08	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/28/09	NTC21SB08-SO-0001	11:55	SW-846 8260B	TCL VOCs	NTC21SB08	SO	4°C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/28/09	NTC21SB08-SO-0204	12:00	SW-846 8260B	TCL VOCs	NTC21SB08	SO	4°C/HNaO4S/MeOH	4	TerraCore	TerraCore	
9/28/09	NTC21SB08-SO-0204	12:00	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB08	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/28/09	NTC21SB08-SO-0204	12:00	ASTM D422 (or as instructed by TtNUS)	Grain Size	NTC21SB08	SO	None	1	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
9/28/09	TB-092809-01	08:00	SW-846 8260B	TCL VOCs	QC	AQ	4°C/HCL	2	Glass - Clear	40ml vials	Trip Blank
	RB-092909-										

9/29/09	01	11:26	SW-846 8260B	TCL VOCs	QC	AQ	4°C/HCL	3	Glass - Clear	40ml vials	
9/29/09	RB-092909-01	11:26	SW-846 8270C/8181/8081A/8082	TCL SVOCs/Herb/Pest/PCB	QC	AQ	4°C	6	Glass - Amber	1L	from deconned shoe of DPT rig
9/29/09	RB-092909-01	11:26	SW-846 6010B	TAL Metals (Total)	QC	AQ	4°C/HNO3	1	Plastic - Bell Arte HDPE	250ml	
9/29/09	RB-092909-02	13:02	SW-846 8270C/8181/8081A/8082	TCL SVOCs/Herb/Pest/PCB	QC	AQ	4°C	6	Glass - Amber	1L	DPT disposible sleeve
9/29/09	RB-092909-02	13:02	SW-846 8260B	TCL VOCs	QC	AQ	4°C/HCL	3	Glass - Clear	40ml vials	
9/29/09	RB-092909-02	13:02	SW-846 6010B	TAL Metals (Total)	QC	AQ	4°C/HNO3	1	Plastic - Bell Arte HDPE	250ml	
9/29/09	SB-092909-01	10:31	SW-846 6010B	TAL Metals (Total)	QC	AQ	4°C/HNO3	1	Plastic - Bell Arte HDPE	250ml	
9/29/09	SB-092909-01	10:31	SW-846 8260B	TCL VOCs	QC	AQ	4°C/HCL	3	Glass - Clear	40ml vials	
9/29/09	SB-092909-01	10:31	SW-846 8270C/8181/8081A/8082	TCL SVOCs/Herb/Pest/PCB	QC	AQ	4°C	6	Glass - Amber	1L	
9/29/09	TB-092909-01	10:28	SW-846 8260B	TCL VOCs	QC	AQ	4°C/HCL	2	Glass - Clear	40ml vials	Trip Blank

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

CHAIN OF CUSTODY LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Project Manager (PM)**	Biff Cummings	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**PM Telephone**		**Created Date**	9/29/09
Task/Contract #	0064	**Field Op Leader (FOL)**	Shannon Hill	**Modified By**	
WBS Code #	0000.0320	**FOL Phone**		**Modified Date**	
Chain of Custody ID	ED00000105-2	**Carrier**	Airborne Express	**Printed By**	Bob Davis
		Carrier/Waybill No.	8698 1038 6240 0215	**Printed Date**	9/30/09

Chain of Custody Information

Chain of Custody #	**ED00000105-2**	**Lab Name**	SGS North American Inc.	**Relenquished By**	Shannon Hill
Carrier	Airborne Express	**Address**	5500 Business Drive	**Date**	09/29/2009
Carrier/Waybill No.	8698 1038 6240 0215	**City, State, Zip**	Wilmington, NC 28405	**Time**	17:54
		Lab Contact	Linda McWhirter	**Received By:**	Airborne Express
		Lab Telephone	910.350.1903	**Date**	9/29/09
				Time	18:54

Sample Records

Date	Sample ID#	Time	Analysis	Description	Loc ID	Matrix	Preservative	No.	Type	Requirements	Comments
9/26/09	FD-092609-02	00:00	SW-846 8290	Dioxins/Furans	QC	SO	4°C	2	Glass - Amber	4 oz. wide-mouth w/Teflon cap	
9/26/09	NTC21SB09-SO-0001	16:20	SW-846 8290	Dioxins/Furans	NTC21SB09	SO	4°C	2	Glass - Amber	4 oz. wide-mouth w/Teflon cap	
9/26/09	NTC21SB17-SO-0001	13:26	SW-846 8290	Dioxins/Furans	NTC21SB17	SO	4°C	2	Glass - Amber	4 oz. wide-mouth w/Teflon cap	
										4 oz. wide-	

9/27/09	NTC21SB14-SO-0001	09:30	SW-846 8290	Dioxins/Furans	NTC21SB14	SO	4°C	2	Glass - Amber	mouth w/Teflon cap	
9/28/09	NTC21SB02-SO-0204	10:30	SW-846 8290	Dioxins/Furans	NTC21SB02	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	Run MS/MSD
9/29/09	RB-092909-01	11:26	SW-846 8290	Dioxins/Furans	QC	AQ	4°C	2	Glass - Amber	1L	
9/29/09	SB-092909-01	10:31	SW-846 8290	Dioxins/Furans	QC	AQ	4°C	2	Glass - Amber	1L	

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

CHAIN OF CUSTODY LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Project Manager (PM)**	Biff Cummings	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**PM Telephone**		**Created Date**	11/13/09
Task/Contract #	0064	**Field Op Leader (FOL)**	Shannon Hill	**Modified By**	
WBS Code #	0000.0320	**FOL Phone**		**Modified Date**	
Chain of Custody ID	ED00000105-3	**Carrier**	Federal Express	**Printed By**	Bob Davis
		Carrier/Waybill No.	8631 3888 3733 0215	**Printed Date**	1/14/10

Chain of Custody Information

Chain of Custody #	**ED00000105-3**	**Lab Name**	Empirical Laboritories, LLC.	**Relenquished By**	Shannon Hill
Carrier	Federal Express	**Address**	227 French Landing Drive	**Date**	11/13/2009
Carrier/Waybill No.	8631 3888 3733 0215	**City, State, Zip**	Nashville, TN 37228	**Time**	18:11
		Lab Contact	Janice Shilling	**Received By:**	Federal Express
		Lab Telephone	615.345.1115 ext. 256	**Date**	11/13/09
				Time	19:11

Sample Records

Date	Sample ID #	Time	Analysis	Description	Loc ID	Matrix	Preservative	No.	Type	Requirements	Comments
11/13/09	NTC21SB02-SO-0406	09:12	SW-846 8270C/8181/8081A/8082/6010B	TCL SVOCs/Herb/Pest/PCB/TAL Metals	NTC21SB02	SO	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
11/13/09	NTC21SB02-SO-0406	09:12	SW-846 8260B	TCL VOCs	NTC21SB02	SO	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore	

Tetra Tech NUS, Inc.

CHAIN OF CUSTODY LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Project Manager (PM)**	Biff Cummings	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**PM Telephone**		**Created Date**	11/16/09
Task/Contract #	0064	**Field Op Leader (FOL)**	Shannon Hill	**Modified By**	
WBS Code #	0000.0320	**FOL Phone**		**Modified Date**	
Chain of Custody ID	ED00000105-5	**Carrier**	Federal Express	**Printed By**	Bob Davis
		Carrier/Waybill No.	8631 3888 3722 0215	**Printed Date**	1/14/10

Chain of Custody Information

Chain of Custody #	**ED00000105-5**	**Lab Name**	SGS North American Inc.	**Relenquished By**	Shannon Hill
Carrier	Federal Express	**Address**	5500 Business Drive	**Date**	11/16/2009
Carrier/Waybill No.	8631 3888 3722 0215	**City, State, Zip**	Wilmington, NC 28405	**Time**	17:54
		Lab Contact	Linda McWhirter	**Received By:**	Federal Express
		Lab Telephone	910.350.1903	**Date**	11/16/09
				Time	18:54

Sample Records

Date	Sample ID #	Time	Analysis	Description	Loc ID	Matrix	Preservative	No.	Type	Requirements	Comments
11/15/09	NTC21MW0501	16:26	SW-846 8290	Dioxins/Furans	NTC21-MW05	GW	4°C	6	Glass - Amber	1L	MS/MSD

Tetra Tech NUS, Inc.

CHAIN OF CUSTODY LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Project Manager (PM)**	Biff Cummings	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**PM Telephone**		**Created Date**	11/16/09
Task/Contract #	0064	**Field Op Leader (FOL)**	Shannon Hill	**Modified By**	
WBS Code #	0000.0320	**FOL Phone**		**Modified Date**	
Chain of Custody ID	ED00000105-4	**Carrier**	Federal Express	**Printed By**	Bob Davis
		Carrier/Waybill No.	8631 3888 3744 0215	**Printed Date**	1/14/10

Chain of Custody Information

Chain of Custody #	**ED00000105-4**	**Lab Name**	Empirical Laboritories, LLC.	**Relenquished By**	Shannon Hill
Carrier	Federal Express	**Address**	227 French Landing Drive	**Date**	11/16/2009
Carrier/Waybill No.	8631 3888 3744 0215	**City, State, Zip**	Nashville, TN 37228	**Time**	17:46
		Lab Contact	Janice Shilling	**Received By:**	Federal Express
		Lab Telephone	615.345.1115 ext. 256	**Date**	11/16/09
				Time	18:46

Sample Records

Date	Sample ID#	Time	Analysis	Description	Loc ID	Matrix	Preservative	No.	Type	Requirements	Comments
11/15/09	NTC21MW0501	16:26	SW-846 8270C/8181/8081A/8082	TCL SVOCs/Herb/Pest/PCB	NTC21-MW05	GW	4°C	18	Glass - Amber	1L	MS/MSD
11/15/09	NTC21MW0501	16:26	SW-846 6010B	TAL Metals (Total)	NTC21-MW05	GW	4°C/HNO3	3	Plastic - PE	250ml	MS/MSD
11/15/09	NTC21MW0501	16:26	SW-846 8260B	TCL VOCs	NTC21-MW05	GW	4°C/HCL	9	Glass - Clear	40ml vials	MS/MSD
11/16/09	NTC21-FD111609-01	00:00	SW-846 8270C/8181/8081A/8082	TCL SVOCs/Herb/Pest/PCB	QC	GW	4°C	6	Glass - Amber	1L	

11/16/09	NTC21-FD111609-01	00:00	SW-846 6010B	TAL Metals (Total)	QC	GW	4°C/HNO3	1	Plastic - PE	250ml	
11/16/09	NTC21-FD111609-01	00:00	SW-846 8260B	TCL VOCs	QC	GW	4°C/HCL	3	Glass - Clear	40ml vials	
11/16/09	NTC21MW0201	12:46	SW-846 8260B	TCL VOCs	NTC21-MW02	GW	4°C/HCL	3	Glass - Clear	40ml vials	
11/16/09	NTC21MW0201	12:46	SW-846 8270C/8181/8081A/8082	TCL SVOCs/Herb/Pest/PCB	NTC21-MW02	GW	4°C	6	Glass - Amber	1L	

Tetra Tech NUS, Inc.

CHAIN OF CUSTODY LOG

Site 21 - Investigation - GREAT LAKES NTC

Sample Records

Date	Sample ID #	Time	Analysis	Description	Loc ID	Matrix	Preservative	No.	Type	Requirements	Comments
11/16/09	NTC21MW0201	12:46	SW-846 6010B	TAL Metals (Total)	NTC21-MW02	GW	4°C/HNO3	1	Plastic - PE	250ml	
11/16/09	NTC21MW0301	10:05	SW-846 6010B	TAL Metals (Total)	NTC21-MW03	GW	4°C/HNO3	1	Plastic - PE	250ml	
11/16/09	NTC21MW0301	10:05	SW-846 8260B	TCL VOCs	NTC21-MW03	GW	4°C/HCL	3	Glass - Clear	40ml vials	
11/16/09	NTC21MW0301	10:05	SW-846 8270C/8181/8081A/8082	TCL SVOCs/Herb/Pest/PCB	NTC21-MW03	GW	4°C	6	Glass - Amber	1L	
11/16/09	NTC21MW0401	13:10	SW-846 6010B - Filtered	TAL Metals (Dissolved)	NTC21-MW04	GW	4°C/HNO3	1	Plastic - PE	250ml	
11/16/09	NTC21MW0401	13:10	SW-846 8270C/8181/8081A/8082	TCL SVOCs/Herb/Pest/PCB	NTC21-MW04	GW	4°C	6	Glass - Amber	1L	
11/16/09	NTC21MW0401	13:10	SW-846 6010B	TAL Metals (Total)	NTC21-MW04	GW	4°C/HNO3	1	Plastic - PE	250ml	
11/16/09	NTC21MW0401	13:10	SW-846 8260B	TCL VOCs	NTC21-MW04	GW	4°C/HCL	3	Glass - Clear	40ml vials	

General Observations and Notes

No Notes

- End of Report -

Tetra Tech NUS, Inc.

CHAIN OF CUSTODY LOG

Site 21 - Investigation - GREAT LAKES NTC

Project Information

Facility Name	GREAT LAKES NTC	**Project Manager (PM)**	Biff Cummings	**Created By**	Shannon Hill
TtNUS Project #	112G01797	**PM Telephone**		**Created Date**	11/17/09
Task/Contract #	0064	**Field Op Leader (FOL)**	Shannon Hill	**Modified By**	
WBS Code #	0000.0320	**FOL Phone**		**Modified Date**	
Chain of Custody ID	ED00000105-6	**Carrier**	Federal Express	**Printed By**	Bob Davis
		Carrier/Waybill No.	8631 2526 7844 0215	**Printed Date**	1/14/10

Chain of Custody Information

Chain of Custody #	**ED00000105-6**	**Lab Name**	Empirical Laboritories, LLC.	**Relenquished By**	Shannon Hill
Carrier	Federal Express	**Address**	227 French Landing Drive	**Date**	11/17/2009
Carrier/Waybill No.	8631 2526 7844 0215	**City, State, Zip**	Nashville, TN 37228	**Time**	18:50
		Lab Contact	Janice Shilling	**Received By:**	Federal Express
		Lab Telephone	615.345.1115 ext. 256	**Date**	11/17/09
				Time	19:50

Sample Records

Date	Sample ID #	Time	Analysis	Description	Loc ID	Matrix	Preservative	No.	Type	Requirements	Comments
11/17/09	NTC21MW0101	11:45	SW-846 6010B	TAL Metals (Total)	NTC21-MW01	GW	4°C/HNO3	1	Plastic - PE	250ml	
11/17/09	NTC21MW0101	11:45	SW-846 8260B	TCL VOCs	NTC21-MW01	GW	4°C/HCL	3	Glass - Clear	40ml vials	
11/17/09	NTC21MW0101	11:45	SW-846 8270C/8181/8081A/8082	TCL SVOCs/Herb/Pest/PCB	NTC21-MW01	GW	4°C	6	Glass - Amber	1L	
11/17/09	NTC21MW0601	14:05	SW-846 8260B	TCL VOCs	NTC21-MW06	GW	4°C/HCL	3	Glass - Clear	40ml vials	
			SW-846	TCL							

11/17/09	NTC21MW0601	14:05	8270C/8181/8081A/8082	SVOCs/Herb/Pest/PCB	NTC21-MW06	GW	4°C	6	Glass - Amber	1L	
11/17/09	NTC21MW0601	14:05	SW-846 6010B	TAL Metals (Total)	NTC21-MW06	GW	4°C/HNO3	1	Plastic - PE	250ml	
11/17/09	TB-111709-01	08:00	SW-846 8260B	TCL VOCs	QC	AQ	4°C/HCL	2	Glass - Clear	40ml vials	

APPENDIX C

WASTE PROFILES

HAZCHEM ENVIRONMENTAL CORP.
1115 WEST NATIONAL AVE.
ADDISON, IL. 60101-3128
PHONE: 630-458-1910 FAX: 630-458-1918
www.hazchem.com

Sales Order

SHIP DATE	S.O. NO.
2/4/2010	6580

NAME/ADDRESS
NAVAL STATION AT GREAT LAKES 201 DECATUR AVENUE GREAT LAKES, IL. 60088

SHIP TO
NAVAL STATION AT GREAT LAKES CAMP MOFFET 201 DECATUR AVE GREAT LAKES, IL. 60088

INSTRUCTIONS	Rep	P.O. No.	MANIFEST #
P/U ONLY: 18 55GAL DRUMS NON-HAZ SOIL	90	B1120039	000288618WAS-PCI

SUPPLIES USED		DISPOSAL OUTLET	PROFILE #	QUANTITY	SIZE	CATEGORY
	5 GAL OTP	PCI	328528	18	55	NH - Soil
	5 GAL STERI					
	15 GAL OTP					
	15 GAL CTP					
	30 GAL OTP					
	30 GAL CTP					
	55 GAL OTP					
	55 GAL CTP					
	15 GAL OTS					
	15 GAL CTS					
	30 GAL OTS					
	30 GAL CTS					
	55 GAL OTS					
	55 GAL CTS					
	55 GAL OTS (U)					
	85 GAL OP	PERSONNEL				
	YD. 3 BOX	NAME:	Blade			
	VERMICULITE	HOURS:	7 32/			

I hereby declare that the quantity and contents of this consignment are fully and accurately described. All items are packaged in accordance with DOT specification and drum integrity according to 49 CFR, Part 173, Subpart E and F. Customer agrees to pay a finance charge of 2% per month on past due balance until paid in full.

Customer Signature _____ Date 2/4/2010

Generator acknowledges by signature below that the original quotation was exceeded due to additional time and materials

Customer Signature _____ Date _____

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM ~~HAZARDOUS~~ WASTE MANIFEST M.H.

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
IL7170024577	1	(847) 688-6934	000288[illegible]5JAE

GENERATOR

5. Generator's Name and Mailing Address
Naval Station at Great Lakes
201 Decatur Avenue Great Lakes, Illinois 60088
Generator's Phone: 847-688-~~6934~~ [illegible]

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: HazChem Environmental Corporation — U.S. EPA ID Number: ILD984785238

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address
Pollution Control Industries
1343 Kennedy Avenue East Chicago, IN 46312
Facility's Phone: (900) 398-7242
U.S. EPA ID Number: IND000646003

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1. IDW Waste Not Hazardous Not Regulated by DOT (soil)	18	DM	9000	P	NONE
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
Camp Moffet #12603
11 338578

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: MARK S HOYER — Signature: Mark S. Hoyer — Month 02 Day 04 Year 10

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Bruce Seeman — Signature: [signature] — Month 02 Day 04 Year 10
Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:

18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. ~~Hazardous~~ M.H. Waste Report Management Method Codes (i.e., codes for ~~hazardous~~ M.H. waste treatment, disposal, and recycling systems)
1. 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of ~~hazardous~~ M.H. materials covered by the manifest except as noted in Item 18a
Printed/Typed Name — Signature — Month Day Year

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

GENERATOR'S INITIAL COPY

APPENDIX D

DATA VALIDATION REPORTS

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO: **B. CUMMINGS** **DATE:** **JANUARY 7, 2010**

FROM: **JOSEPH KALINYAK** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION: VOC/SVOC/PAH/PEST/PCB/HERB**
CTO C064, NTC GREAT LAKES
SDG CTO064_001

SAMPLES: 47 / Soil / VOC / SVOC / PAH / PEST/PCB / HERB

FD-092609-01	FD-092609-02	FD-092709-01
FD-092809-01	NTC21SB01-SO-0102	NTC21SB02-SO-0001
NTC21SB02-SO-0204	NTC21SB03-SO-0001	NTC21SB03-SO-0204
NTC21SB04-SO-0001	NTC21SB04-SO-0406	NTC21SB05-SO-0001
NTC21SB05-SO-0204	NTC21SB06-SO-0001	NTC21SB06-SO-0204
NTC21SB07-SO-0001	NTC21SB07-SO-0204	NTC21SB08-SO-0001
NTC21SB08-SO-0204	NTC21SB09-SO-0001	NTC21SB09-SO-0204
NTC21SB10-SO-0001	NTC21SB10-SO-0406	NTC21SB11-SO-0001
NTC21SB11-SO-0204	NTC21SB12-SO-0001	NTC21SB12-SO-0204
NTC21SB13-SO-0001	NTC21SB13-SO-0204	NTC21SB14-SO-0001
NTC21SB14-SO-0204	NTC21SB15-SO-0001	NTC21SB15-SO-0204
NTC21SB16-SO-0001	NTC21SB16-SO-0204	NTC21SB17-SO-0001
NTC21SB17-SO-0507	NTC21SB18-SO-0001	NTC21SB18-SO-0507
NTC21SB19-SO-0001	NTC21SB19-SO-0204	NTC21SB20-SO-0001
NTC21SB20-SO-0406	NTC21SB21-SO-0001	NTC21SB21-SO-0608
NTC21SB22-SO-0001	NTC21SB22-SO-0204	

4 / Aqueous / VOC

TB-092609-01	TB-092709-01	TB-092809-01
TB-092909-01		

3 / Aqueous / VOC / SVOC / PAH / PEST/PCB / HERB

RB-092909-01	RB-092909-02	SB-092909-01

OVERVIEW

The sample set for CTO C064, NTC Great Lakes, SDG CTO064_001 consists of one (1) aqueous source blank, two (2) aqueous rinse blanks, four (4) aqueous trip blanks and forty-seven (47) soil environmental samples including four (4) field duplicate samples. The soil environmental samples, aqueous rinse blanks, and aqueous source blank were analyzed for target compound list (TCL) volatile organic compounds (VOCs), semi-volatile organic compounds (SVOC), polynuclear aromatic hydrocarbons (PAH), chlorinated pesticides (PEST), polychlorinated biphenyls (PCB), and herbicides (HERB). Four (4) aqueous trip blanks were analyzed for target compound list (TCL) volatile organic compounds (VOCs) only. Four (4) field duplicate pairs were included in this sample delivery group (SDG): FD-092609-01 / NTC21SB18-SO-0507, FD-092609-02 / NTC21SB09-SO-0001, FD-092709-01 / NTC21SB15-SO-0204, and FD-092809-01 / NTC21SB05-SO-0001.

The samples were collected by TetraTech NUS on September 26, 27, 28, 29, 2009 and analyzed by Empirical Laboratories, LLC. All analyses were conducted using USEPA SW-846 Methods 8260B, 8270C, 8081A, 8082, and 8151A analytical and reporting protocols.

The data contained in this SDG were validated with regard to the following parameters:

- Data Completeness
- * Holding Times
- * GC/MS Tuning
- Initial and Continuing Calibration
- Laboratory Blank Analyses
- Surrogate Recoveries
- Blank Spike/Blank Spike Duplicate Results
- Matrix Spike/Matrix Spike Duplicate Results
- Internal Standard Recoveries
- Field Duplicate Results
- Compound Quantitation
- * Compound Identification
- * Detection Limits

The symbol (*) indicates that quality control criteria were met for this parameter. Problems affecting data quality are discussed below; documentation supporting these findings is presented in Appendix C. Qualified Analytical results are presented in Appendix A. Results as reported by the laboratory are presented in Appendix B.

VOC

The following compounds were detected in the method blanks:

Compound	Maximum Conc. (µg/l)	Action Level (µg/l)
Methylene chloride (1)	0.49	4.90
1,2,4-Trichlorobenzene (1)	0.20	1.00
Methylene chloride (2)	0.76	7.60
Methyl cyclohexane (2)	0.22	1.10

Compound	Maximum Conc. (µg/kg)	Action Level (µg/kg)
Methylene chloride (3)	1.9	19.0
Acetone (4)	5.9	59.0
Methylene chloride (4)	2.3	23.0
Methylene chloride (5)	2.8	28.0
Acetone (6)	5.2	52.0
Methylene chloride (6)	2.9	29.0

(1) Maximum concentration detected in the aqueous method blank V3BLK1002F affecting SDG aqueous samples TB-092709-01, TB-092809-01, RB-092909-01, RB-092909-02, and SB-092909-01.

(2) Maximum concentration detected in the aqueous method blank V3BLK1009 affecting aqueous samples TB-092609-01and TB-092909-01.

(3) Maximum concentration detected in the soil method blank V5BLK1003E and V5BLK1003F affecting soil samples FD-092609-01, NTC21SB09-SO-0001, NTC21SB09-SO-0204, NTC21SB12-SO-0001, NTC21SB12-SO-0204, NTC21SB17-SO-0001, NTC21SB17-SO-0507, NTC21SB18-SO-0001, NTC21SB18-SO-0507, NTC21SB10-SO-0001, NTC21SB10-SO-0406, NTC21SB11-SO-0001, and NTC21SB11-SO-0204.

(4) Maximum concentration detected in the soil method blank V5BLK1005 affecting soil samples FD-092609-02, NTC21SB20-SO-0001, NTC21SB20-SO-0406, NTC21SB21-SO-0001, NTC21SB21-SO-0608, FD-092709-01, NTC21SB04-SO-

0001, NTC21SB04-SO-0406, NTC21SB06-SO-0001, NTC21SB06-SO-0204, NTC21SB07-SO-0204, and NTC21SB14-SO-0001.

(5) Maximum concentration detected in the soil method blank V5BLK1005E affecting soil samples NTC21SB13-SO-0001, NTC21SB13-SO-0204, NTC21SB14-SO-0204, NTC21SB15-SO-0001, NTC21SB15-SO-0204, NTC21SB16-SO-0001, NTC21SB16-SO-0204, NTC21SB19-SO-0001, NTC21SB19-SO-0204, NTC21SB22-SO-0001, NTC21SB22-SO-0204, FD-092809-01, NTC21SB01-SO-0102, NTC21SB02-SO-0001, NTC21SB02-SO-0204, NTC21SB03-SO-0001, NTC21SB03-SO-0204, and NTC21SB07-SO-0001.

(6) Maximum concentration detected in the soil method blank V5BLK1006 affecting soil samples NTC21SB05-SO-0001, NTC21SB05-SO-0204, NTC21SB08-SO-0001, and NTC21SB08-SO-0204.

An action level of 10X the maximum contaminant concentration for the common laboratory contaminants methylene chloride and acetone and 5X the maximum contaminant concentration for other contaminants was established to evaluate sample data for blank contamination. Dilution factors, % moisture, and sample aliquots, if applicable, were taken into consideration during the application of the action level when evaluating for blank contamination for each individual sample.

Blank Actions

- Value < Reporting Limit (RL); value followed by a U, raise value to CRQL.
- Value > RL and < Action level; report value followed by a U.

A continuing calibration percent difference (%D) was greater than the 25% quality control limit for acetone, 2-butanone, chloroethane, cyclohexane, trans-1,3-dichloropropene, 2-hexanone, and 1,1,2,2-tetrachloroethane on instrument VOA3 on 10/03/09 at 13:40 affecting samples TB-092709-01, TB-092809-01, RB-092909-01, RB-092909-02, and SB-092909-01. The positive and non-detected sample results for the aforementioned analytes for the aforementioned samples were qualified estimated, (J) and (UJ).

A continuing calibration percent difference (%D) was greater than the 25% quality control limit for acetone, 2-butanone, 2-hexanone, and 4-methyl-2-pentanone on instrument VOA5 on 10/04/09 at 14:22 affecting samples NTC21SB09-SO-0001, NTC21SB09-SO-0204, NTC21SB12-SO-0001, NTC21SB12-SO-0204, NTC21SB17-SO-0001, NTC21SB17-SO-0507, NTC21SB18-SO-0001, NTC21SB18-SO-0507, NTC21SB10-SO-0001, NTC21SB10-SO-0406, NTC21SB11-SO-0001, and NTC21SB11-SO-0204. The positive and non-detected sample results for the aforementioned samples for acetone, 2-butanone, 2-hexanone, and 4-methyl-2-pentanone were qualified estimated, (J) and (UJ), respectively.

A continuing calibration percent difference (%D) was greater than the 25% quality control limit for 2-butanone on instrument VOA5 on 10/05/09 at 12:41 affecting samples FD-092609-02, NTC21SB20-SO-0001, NTC21SB20-SO-0406, NTC21SB21-SO-0001, NTC21SB21-SO-0608, FD-092709-01, NTC21SB04-SO-0001, NTC21SB04-SO-0406, NTC21SB06-SO-0001, NTC21SB06-SO-0204, NTC21SB07-SO-0204, and NTC21SB14-SO-0001. The positive and non-detected sample results for the aforementioned samples for 2-butanone were qualified estimated, (J) and (UJ), respectively.

A continuing calibration percent difference (%D) was greater than the 25% quality control limit for 1,1-dichloroethane on instrument VOA5 on 10/06/09 at 00:24 affecting samples NTC21SB13-SO-0001, NTC21SB13-SO-0204, NTC21SB14-SO-0204, NTC21SB15-SO-0001, NTC21SB15-SO-0204, NTC21SB16-SO-0001, NTC21SB16-SO-0204, NTC21SB19-SO-0001, NTC21SB19-SO-0204, NTC21SB22-SO-0001, NTC21SB22-SO-0204, FD-092809-01, NTC21SB01-SO-0102, NTC21SB02-SO-0001, NTC21SB02-SO-0204, NTC21SB03-SO-0001, NTC21SB03-SO-0204, and NTC21SB07-SO-0001. The non-detected sample results for the aforementioned samples for 1,1-dichloroethane were qualified estimated, (UJ).

A continuing calibration percent difference (%D) was greater than the 25% quality control limit for 2-butanone and 4-methyl-2-pentanone on instrument VOA5on 10/06/09 at 14:43 affecting samples NTC21SB05-SO-0001, NTC21SB05-SO-0204, NTC21SB08-SO-0001, and NTC21SB08-SO-0204. The positive and non-detected sample results for the aforementioned samples for 2-butanone and 4-methyl-2-pentanone were qualified estimated, (J) and (UJ), respectively.

The recovery for the internal standard 1,4-dichlorobenzene-d4 (DCB) was less than the 50% quality control limit for the samples NTC21SB05-SO-0204, NTC21SB06-SO-0204, NTC21SB13-SO-0001, NTC21SB02-SO-0204, and NTC21SB03-SO-0204, and NTC21SB08-SO-0001. The samples were re-analyzed with similar results. The initial analysis results were used for validation.

The % recovery was less than the quality control limit for surrogate bromofluorobenzene for sample NTC21SB06-SO-0204. All positive and non-detected sample results for NTC21SB06-SO-0204 were qualified estimated, (J) and (UJ), respectively, except where qualified due to blank contamination.

The % recovery was less than the quality control limit for surrogate bromofluorobenzene for sample NTC21SB13-SO-0001. All positive and non-detected sample results for NTC21SB13-SO-0001 were qualified estimated, (J) and (UJ), respectively, except where qualified due to blank contamination.

The % recovery was less than the quality control limit for surrogate bromofluorobenzene for sample NTC21SB03-SO-0204. All positive and non-detected sample results for NTC21SB03-SO-0204 were qualified estimated, (J) and (UJ), respectively, except where qualified due to blank contamination.

The laboratory control sample (LCS) V3BLK1002F % recoveries were greater than the quality control limit for cyclohexane, 2-hexanone, isopropylbenzene, and toluene. The affected samples had non-detected results for cyclohexane, 2-hexanone, and isopropylbenzene which were not qualified. The positive toluene results for samples RB-092909-01, RB-092909-02, and SB-092909-01 were qualified estimated, (J).

The LCS V5BLK1003E % recovery was greater than the quality control limit for dichlorodifluoromethane. No action was taken as all the affected samples had non-detected results for dichlorodifluoromethane.

The LCS duplicate (LCSD) V5BLK1003F % recovery was greater than the quality control limit for 1,1-dichloroethane and the relative percent difference (RPD) for the LCS/LCSD was greater than the quality control limit for 1,1-dichloroethane. No action was taken as all the affected samples had non-detected results for 1,1-dichloroethane.

The LCS V5BLK1006 % recovery was greater than the quality control limit for 1,1-dichloroethane. No action was taken as all the affected samples had non-detected results for 1,1-dichloroethane.

The matrix spike and matrix spike duplicate (MS/MSD) analyses performed on sample NTC021SB14-SO-0001 had % recoveries less than the quality control limit for a number of VOC analytes for both the MS and the MSD. Most of the affected analytes were non-detected in the sample and were qualified estimated, (UJ), if both the MS and the MSD had % recoveries less than the quality control limit. In addition, the positive result for methyl cyclohexane was qualified for the same issue. The low % recoveries were most likely due to a sample matrix affect.

The matrix spike and matrix spike duplicate (MS/MSD) analyses performed on sample NTC021SB02-SO-0204 had % recoveries less than the quality control limit for a number of VOC analytes for both the MS and the MSD. Most of the affected analytes were non-detected in the sample and were qualified estimated, (UJ), if both the MS and the MSD had % recoveries less than the quality control limit. In addition, the positive results for methyl cyclohexane and cyclohexane were qualified estimated, (J), for the same issue. The low % recoveries were most likely due to a sample matrix affect.

The RPD was greater than the 50% quality control limit for acetone for the field duplicate sample pair samples FD-092609-02 / NTC21SB09-SO-0001. The positive and non-detected results for acetone were qualified estimated, (J) and (UJ), respectively, for the field duplicate samples FD-092609-02 / NTC21SB09-SO-0001.

The RPD was greater than the 50% quality control limit for acetone for the field duplicate sample pair samples FD-092709-01 / NTC21SB15-SO-0204. The positive result for acetone for sample NTC21SB09-SO-0001 was qualified estimated, (J), and the non-detected result for FD-092609-02 was not qualified as it was qualified due method blank contamination.

The RPD was greater than the 50% quality control limit for 2-butanone and acetone for the field duplicate sample pair samples FD-092809-01 / NTC21SB05-SO-0001. The positive and non-detected results for acetone and 2-butanone were qualified estimated, (J) and (UJ), respectively, for the field duplicate samples FD-092809-01 / NTC21SB05-SO-0001.

SVOC

The continuing calibration %D was greater than the 25% quality control limit for instrument BNA1 on 10/09/09 @ 14:58 for 2,2'-oxybis(1-chloropropane), 2-chlorophenol, 2,4-dimethylphenol, 2-nitroaniline, nitrobenzene, 4-nitrophenol, and n-nitroso-di-n-propylamine affecting samples RB-092901-01 and RB-092909-02. All the results were non-detected for the aforementioned analytes which were qualified estimated, (UJ), for samples RB-092901-01 and RB-092909-02.

The continuing calibration %D was greater than the 25% quality control limit for instrument BNA1 on 10/10/09 @ 07:56 for 2,2'-oxybis(1-chloropropane), 2-chlorophenol, 2,4-dimethylphenol, 2-nitroaniline, nitrobenzene, 4-nitrophenol, and n-nitroso-di-n-propylamine affecting sample SB-092901-01. All the results were non-detected for the aforementioned analytes which were qualified estimated, (UJ), for the sample SB-092901-01.

The continuing calibration %D was greater than the 25% quality control limit for instrument BNA1 on 10/16/09 @ 15:42 for atrazine, 2,4-dimethylphenol, 2-nitroaniline, nitrobenzene, 4-nitrophenol, and n-nitroso-di-n-propylamine affecting samples FD-092609-01, NTC21SB09-SO-0204, NTC21SB10-SO-0406, NTC21SB17-SO-0507, NTC21SB18-SO-0507, NTC21SB20-SO-0406, NTC21SB21-SO-0608, and FD-092709-01. All the results were non-detected for the aforementioned analytes which were qualified estimated, (UJ), for the aforementioned samples.

The continuing calibration %D was greater than the 25% quality control limit for instrument BNA1 on 10/17/09 @ 00:41 for butylbenzylphthalate, 2-chlorophenol, 2,4-dimethylphenol, 4,6-dinitro-2-methylphenol, di-n-octylphthalate, hexachlorocyclopentadiene, 2-nitroaniline, nitrobenzene, 4-nitrophenol, and n-nitroso-di-n-propylamine affecting samples FD-092609-02, NTC21SB09-SO-0001, NTC21SB10-SO-0001, NTC21SB11-SO-0001, NTC21SB11-SO-0204, NTC21SB12-SO-0001, NTC21SB12-SO-0204, NTC21SB17-SO-0001, NTC21SB18-SO-0001, NTC21SB20-SO-0001, and NTC21SB21-SO-0001. All the results were non-detected for the aforementioned analytes which were qualified estimated, (UJ), for the aforementioned samples (except for the acid fraction for sample NTC21SB20-SO-0001 which was qualified rejected due to surrogate % recovery issues described below).

The continuing calibration %D was greater than the 25% quality control limit for instrument BNA1 on 10/17/09 @ 11:08 for atrazine, 2,4-dimethylphenol, 4,6-dinitro-2-methylphenol, 2,4-dinitrophenol, 2-nitroaniline, nitrobenzene, and n-nitroso-di-n-propylamine affecting samples NTC21SB13-SO-0204, NTC21SB14-SO-0204, NTC21SB15-SO-0204, and NTC21SB16-SO-0204. All the results were non-detected for the aforementioned analytes which were qualified estimated, (UJ), for the aforementioned samples.

The continuing calibration %D was greater than the 25% quality control limit for instrument BNA3 on 10/17/09 @ 14:56 for atrazine, bis(2-ethylhexyl)phthalate, butylbenzylphthalate, di-n-butylphthalate, di-n-octylphthalate, and 4-nitrophenol affecting samples NTC21SB02-SO-0001, NTC21SB02-SO-0204, NTC21SB03-SO-0001,

NTC21SB03-SO-0204, NTC21SB05-SO-0001, NTC21SB05-SO-0204, NTC21SB08-SO-0001, and NTC21SB08-SO-0204. The positive and non-detected results for the aforementioned analytes were qualified estimated, (J) and (UJ), respectively, for the aforementioned samples.

The continuing calibration %D was greater than the 25% quality control limit for instrument BNA1 on 10/17/09 @ 17:24 for 4-chloro-3-methylphenol, 2,4-dimethylphenol, 4,6-dinitro-2-methylphenol, 2,4-dinitrophenol, 2-nitroaniline, nitrobenzene, and n-nitroso-di-n-propylamine affecting samples NTC21SB04-SO-0001, NTC21SB04-SO-0406, NTC21SB06-SO-0001, NTC21SB06-SO-0204, NTC21SB07-SO-0001, NTC21SB07-SO-0204, NTC21SB13-SO-0001, NTC21SB14-SO-0001, NTC21SB15-SO-0001, NTC21SB16-SO-0001, NTC21SB19-SO-0001, NTC21SB19-SO-0204, NTC21SB22-SO-0001, NTC21SB22-SO-0204, FD-092809-01, and NTC21SB01-SO-0102. All the results were non-detected for the aforementioned analytes which were qualified estimated, (UJ), for the aforementioned samples.

The continuing calibration %D was greater than the 25% quality control limit for instrument BNA1 on 10/18/09 @ 10:03 for a number of analytes affecting the dilution analysis of samples NTC21SB03-SO-0001, NTC21SB07-SO-0001, and NTC21SB07-SO-0204. The dilution results were not reported for the aforementioned samples and no action was taken for the analytes which had quality control limit exceedances.

The surrogate % recovery was less than the quality control limit and >10% for the surrogate 2-fluorophenol for samples NTC21SB09-SO-0001 and NTC21SB11-SO-0001. The surrogate % recovery was less than the quality control limit and >10% for the surrogate 2,4,6-tribromopehenol for samples NTC21SB02-SO-0204, NTC21SB02-SO-0204 matrix spike (MS) and NTC21SB02-SO-0204 MS duplicate (MSD). The surrogate % recovery was less than the quality control limit and >10% for the surrogate phenol-d5 for sample RB-092909-01. No action was taken for single surrogate quality control limit exceedances.

The surrogate % recoveries were less than the quality control limit and >10% for the acid surrogates 2-fluorophenol and phenol-d6 for sample NTC21SB10-SO-0001. The non-detected acid fraction analytes for the sample were qualified estimated, (UJ).

The surrogate % recoveries were less than the quality control limit for the acid surrogates 2-fluorophenol and 2,4,6-tribromophenol for sample NTC21SB20-SO-0001. Surrogate 2,4,6-tribromophenol % recovery was also <10% for the sample. The non-detected acid fraction analytes were qualified rejected, (UR), for the sample.

The laboratory control sample (LCS) 9J02015-BLK1 from 10/16/09 associated with batch 9J02015 for instrument BNA1 had % recoveries greater than the quality control limit for 2,4-dimethylphenol and 4-chloroaniline. No action was taken as all associated samples had non-detects for 2,4-dimethylphenol and 4-chloroaniline.

The LCS 9J05025-BLK1 from 10/17/09 associated with batch 9J05055 for instrument BNA1 had % recoveries greater than the quality control limit for 2,4-dimethylphenol and 4-chloroaniline. No action was taken as all associated samples had non-detects for 2,4-dimethylphenol and 4-chloroaniline.

The LCS 9J05025-BLK1 had a % recovery less than the quality control limit for benzaldehyde at 0%. The non-detected results for benzaldehyde for the associated samples NTC21SB13-SO-0204, NTC21SB14-SO-0204, NTC21SB15-SO-0204, NTC21SB16-SO-0204, NTC21SB04-SO-0001, NTC21SB04-SO-0406, NTC21SB06-SO-0001, NTC21SB06-SO-0204, NTC21SB07-SO-0001, NTC21SB07-SO-0204, NTC21SB13-SO-0001, NTC21SB14-SO-0001, NTC21SB15-SO-0001, NTC21SB16-SO-0001, NTC21SB19-SO-0001, NTC21SB19-SO-0204, NTC21SB22-SO-0001, NTC21SB22-SO-0204, FD-092809-01, and NTC21SB01-SO-0102 were qualified rejected, (UR).

The LCS BLK1001BW1 from 10/09/09 associated with batch 9J01008 for instrument BNA1 had % recoveries greater than the quality control limit for 2,4-dimethylphenol, 2-nitroaniline, and n-nitroso-di-n-propylamine and the LCS duplicate (LCSD) associated with the same batch had % recoveries greater than the quality control limit for

2-nitroaniline and n-nitroso-di-n-propylamine. No action was taken as all associated samples had non-detected results for the aforementioned analytes

The LCS and the LCSD from 10/09/09 associated with batch 9J01008 for instrument BNA1 had % recoveries less than the quality control limit (and >10%) for caprolactam. The positive result for sample SB-092909-01 was qualified estimated, (J), and the non-detected results for samples RB-092909-01 and RB-092909-02 were qualified rejected, (UJ).

The matrix spike (MS) and matrix spike duplicate (MSD) performed on sample NTC21SB02-SO-0204 had percent recoveries which were less than quality control limit for benzaldehyde, 2,4-dichlorophenol, hexachlorocyclopentadiene, 3-nitroaniline, 4-nitroaniline, 2-nitrophenol, pentachlorophenol, 2,4,5-trichlorophenol, and 2,4,6-trichlorophenol. The positive and non-detected sample results for these analytes were qualified estimated, (J) and (UJ), respectively for sample NTC21SB02-SO-0204. The analytes 3,3'-dichlorobenzidine, 4,6-dinitro-2-methylphenol, 2,4-dinitrophenol, and 4-nitrophenol were recovered at 0% for the MS and MSD. These non-detected sample results were qualified rejected, (UR). Results that were within the quality control specification for either the MS or the MSD, and results that exceeded the MS/MSD relative percent difference (RPD), were not qualified.

The matrix spike (MS) and matrix spike duplicate (MSD) performed on sample NTC21SB14-SO-0001 had percent recoveries which were less than quality control limit for atrazine, benzaldehyde, dimethylphthalate, di-n-butylphthalate, 4,6-dinitro-2-methylphenol, 2,4-dinitrotoluene, 2,6-dinitrotoluene, hexachlorocyclopentadiene, 3-nitroaniline, 4-nitroaniline, 2-nitrophenol, and 2,4,5-trichlorophenol. The positive and non-detected results for these analytes were qualified estimated, (J) and (UJ), respectively for sample NTC21SB14-SO-0001, with the exception of benzaldehyde as the benzaldehyde result was rejected due to the LCS % recovery as previously noted. The analytes 3,3'-dichlorobenzidine and 2,4-dinitrophenol were recovered at 0% for the MS and MSD. These non-detected sample results were qualified rejected, (UR). Results that were within the quality control specification for either the MS or the MSD, and results that exceeded the MS/MSD RPD quality control limit, were not qualified.

The following samples had internal standard recoveries less than the 50% quality control limit. Those positive and non-detected analytes associated with the internal standards were qualified estimated, (J) and (UJ), respectively.

Sample	Internal Standard
NTC21SB12-SO-0001	Chrysene-d12
NTC21SB20-SO-0001	Chrysene-d12
	Perylene-d12
NTC21SB21-SO-0001	Chrysene-d12
	Perylene-d12
NTC21SB04-SO-0001	Chrysene-d12
	Perylene-d12
NTC21SB06-SO-0001	Perylene-d12
NTC21SB06-SO-0204	Perylene-d12
NTC21SB07-SO-0001	Perylene-d12
NTC21SB07-SO-0204	Perylene-d12
NTC21SB13-SO-0001	Chrysene-d12
	Perylene-d12
NTC21SB14-SO-0001	Perylene-d12
NTC21SB15-SO-0001	Chrysene-d12
	Perylene-d12
NTC21SB16-SO-0001	Chrysene-d12
	Perylene-d12
NTC21SB19-SO-0001	Perylene-d12
	Chrysene-d12
NTC21SB19-SO-0204	Perylene-d12

NTC21SB22-SO-0001	Chrysene-d12
	Perylene-d12
NTC21SB22-SO-0204	Chrysene-d12
	Perylene-d12
FD-092609-02	Chrysene-d12
	Perylene-d12
NTC21SB01-SO-0102	Chrysene-d12
	Perylene-d12
NTC21SB20-SO-0001-DL	Perylene-d12
NTC21SB15-SO-0001-DL	Perylene-d12
NTC21SB22-SO-0204-DL	Perylene-d12

PAH

The following compounds were detected in the method blanks:

Compound	Maximum Conc. (µg/l)	Action Level (µg/l)
Acenaphthene [1]	0.024	0.120
Acenaphthylene [1]	0.020	0.100
2-Methylnaphthalene [1]	0.065	0.325
Naphthalene [1]	0.081	0.405
Phenanthrene [1]	0.031	0.155

Compound	Maximum Conc. (µg/kg)	Action Level (µg/kg)
Fluoranthene [2]	1.4	7.0
2-Methylnaphthalene [2]	1.4	7.0
Pyrene [2]	1.4	7.0

[1] Maximum concentration detected in the aqueous method blank SBLK1001BW1 affecting SDG aqueous samples RB-092909-01, RB-092909-02, and SB-092909-01.

[2] Maximum concentration detected in the method blank 9J05025-BLK1 affecting samples FD-092809-01, NTC21SB04-SO-0001, NTC21SB04-SO-0406, NTC21SB06-SO-0001, NTC21SB06-SO-0204, NTC21SB07-SO-0001, NTC21SB07-SO-0204, NTC21SB07-SO-0001-DL, NTC21SB07-SO-0204-DL, NTC21SB13-SO-0001, NTC21SB13-SO-0204, NTC21SB14-SO-0001, NTC21SB14-SO-0204, NTC21SB15-SO-0001, NTC21SB15-SO-0204, NTC21SB16-SO-0001, NTC21SB16-SO-0204, NTC21SB19-SO-0001, NTC21SB19-SO-0204, NTC21SB22-SO-0001, NTC21SB22-SO-0204, NTC21SB22-SO-0204-DL, NTC21SB01-SO-0102, and NTC21SB01-SO-0102-DL.

Action levels of 5X the maximum contaminant concentration for PAH contaminants were established to evaluate sample data for blank contamination. Dilution factors, % moisture, and sample aliquots, if applicable, were taken into consideration during the application of the action level when evaluating for blank contamination for each individual sample.

Blank Actions

- Value < Reporting Limit (RL); value followed by a U, raise value to CRQL.
- Value > RL and < Action level; report value followed by a U.

The continuing calibration %D was greater than the 25% quality control limit for instrument BNA3 on 10/02/09 @ 13:37 for benzo(k)fluoranthene affecting samples RB-092909-01 and RB-092909-02. The positive and

non-detected benzo(k)fluoranthene results for the aforementioned samples were qualified estimated, (J) and (UJ), respectively.

The continuing calibration %D was greater than the 25% quality control limit for instrument BNA3 on 10/03/09 @ 08:02 for benzo(k)fluoranthene and indeno(1,2,3-cd)pyrene affecting sample SB-092909-01. The non-detected benzo(k)fluoranthene and indeno(1,2,3-cd)pyrene results were qualified estimated, (UJ).

The continuing calibration %D was greater than the 25% quality control limit for instrument BNA3 on 10/10/09 @ 14:26 for benzo(g,h,i)perylene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene affecting samples NTC21SB02-SO-0001, NTC21SB02-SO-0204, NTC21SB03-SO-0001, NTC21SB05-SO-0001, NTC21SB05-SO-0204, NTC21SB08-SO-0001, NTC21SB08-SO-0204, NTC21SB11-SO-0204-DL, NTC21SB12-SO-0204-DL, and NTC21SB21-SO-0001-DL. The positive and non-detected benzo(g,h,i)perylene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene results for the aforementioned samples were qualified estimated, (J) and (UJ), respectively.

The LCSD SBLK1001BW1 from 10/02/09 associated with batch 9J01008 for instrument BNA3 had a % recovery less than the quality control limit for benzo(a)anthracene affecting samples RB-092909-01, RB-092909-02, and SB-092909-01. All positive and non-detected results for the aforementioned samples were qualified estimated, (J) and (UJ), respectively.

The matrix spike and matrix spike duplicate (MS/MSD) analyses performed on sample NTC021SB02-SO-0204 had % recoveries less than the quality control limit for both the MS and the MSD for 2-methylnaphthalene. The positive result for 2-methylnaphthalene was qualified estimated, (J).

The matrix spike and matrix spike duplicate (MS/MSD) analyses performed on sample NTC021SB14-SO-0001 had % recoveries greater than the quality control limit for both the MS and the MSD for benzo(b)fluoranthene, benzo(k)fluoranthene, and benzo(a)pyrene. The positive result for benzo(a)pyrene for sample NTC021SB14-SO-0001 was qualified estimated, (J), and the non-detected results for benzo(b)fluoranthene and benzo(k)fluoranthene were not qualified.

The following samples had internal standard recoveries less than the 50% quality control limit for perylene-d12 (possibly due to sample matrix affects); FD-092609-02, NTC21SB03-SO-0001(-DL), NTC21SB05-SO-0001, NTC21SB05-SO-0204, NTC21SB08-SO-0001, NTC21SB08-SO-0204, NTC21SB09-SO-0001, NTC21SB09-SO-0204, NTC21SB10-SO-0406, NTC21SB11-SO-0001, NTC21SB11-SO-0001(-DL), NTC21SB11-SO-0204, NTC21SB11-SO-0204(-DL), NTC21SB12-SO-0204, NTC21SB12-SO-0204(-DL), NTC21SB14-SO-0001, NTC21SB15-SO-0001, NTC21SB20-SO-0001, NTC21SB20-SO-0001(-DL), NTC21SB21-SO-0001, NTC21SB21-SO-0001(-DL). Those positive and non-detected analytes associated with the internal standards were qualified estimated, (J) and (UJ), respectively. The internal standard perylene-d12 was associated with benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, and benzo(g,h,i)perylene. Some samples were re-analyzed at a dilution with improved internal standard recoveries. The aforementioned analyte results from some of the dilutions were reported.

Per the laboratory narrative, the sample NTC21SB03-SO-0001 indeno(1,2,3-cd) result was reported from the 5X dilution due to a matrix interference in the undiluted sample.

The RPD was greater than the 50% quality control limit for fluorene for the field duplicate pair samples FD-092609-02/NTC21SB09-SO-0001. The positive and non-detected fluorene results for the aforementioned samples were qualified estimated, (J) and (UJ), respectively, due to field duplicate imprecision.

The RPD was greater than the 50% quality control limit for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, and indeno(1,2,3-cd)pyrene for the field duplicate pair samples FD-092709-01/NTC21SB15-SO-0204. The positive and non-detected results for the aforementioned analytes for samples FD-092709-01 and NTC21SB15-SO-0204 were qualified estimated, (J)

and (UJ), respectively, due to field duplicate imprecision.

The RPD was greater than the 50% quality control limit for anthracene and dibenzo(a,h)anthracene for the field duplicate pair samples FD-092809-01/NTC21SB05-SO-0001. The positive and non-detected anthracene and dibenzo(a,h)anthracene results for the aforementioned samples were qualified estimated, (J) and (UJ), respectively, due to field duplicate imprecision.

PEST/PCB

The continuing calibrations verifications (CCV) % recoveries were greater than the 15% quality control limit for multiple CCVs affecting a large number of analytes for both the initial and confirmatory chromatography columns resulting in data qualifications for the associated samples. The positive and non-detected sample results were qualified estimated, (J) and (UJ), respectively, for those analytes of the samples which were affected by the quality control limit exceedances for both columns. The samples analytes affected on both columns are listed as follows.

CCV % Recovery Exceedance on Both Columns:		
Date	Analytes	Affected Samples
10/06/09 @ 10:06, @ 12:50	PCB-1016	RB-092909-01, RB-092909-02, SB-092909-01
10/09/09 @ 20:07	Endrin	blanks only no samples qualified
10/10/09 @ 08:48, @ 09:06, @14:34, @ 14:53	Beta-BHC, Delta-BHC, Heptachlor, Aldrin, Heptachlor epoxide, Gamma-chlordane, Alpha-chlordane, Endosulfan I, 4,4'-DDE, Dieldrin, Endosulfan II, Endrin aldehyde, 4,4'-DDT, Endosulfan Sulfate, Methoxychlor, Endrin ketone, PCB-1260.	FD-092609-01, FD-092609-02, NTC21SB09-SO-0001, NTC21SB09-SO-0204, NTC21SB10-SO-0001, NTC21SB10-SO-0406, NTC21SB11-SO-0001, NTC21SB11-SO-0204, NTC21SB12-SO-0001, NTC21SB12-SO-0204, NTC21SB17-SO-0001, NTC21SB17-SO-0507, NTC21SB18-SO-0001, NTC21SB18-SO-0507, NTC21SB20-SO-0001, NTC21SB20-SO-0406, NTC21SB21-SO-0001, NTC21SB21-SO-0608
10/10/09 @ 14:34	Endrin	NTC21SB12-SO-0001, NTC21SB12-SO-0204, NTC21SB17-SO-0001, NTC21SB17-SO-0507, NTC21SB18-SO-0001, NTC21SB18-SO-0507, NTC21SB20-SO-0001, NTC21SB20-SO-0406, NTC21SB21-SO-0001, NTC21SB21-SO-0608
10/13/09 @ 15:00, @ 22:06	Endrin, Heptachlor, 4,4'-DDT, Methoxychlor	FD-092709-01, NTC21SB04-SO-0406, NTC21SB07-SO-0204, NTC21SB13-SO-0204, NTC21SB14-SO-0204, NTC21SB15-SO-0204, NTC21SB16-SO-0001, NTC21SB16-SO-0204, NTC21SB19-SO-0204
10/16/09 @ 9:07, @ 16:04	4,4'-DDD, 4,4'-DDT,	NTC21SB10-SO-0001-DL
10/16/09 @ 6:04, @ 21:19	4,4'-DDT	NTC21SB21-SO-0001-DL, NTC21SB06-SO-0001-DL, NTC21SB06-SO-0204-DL
10/24/09 @ 10:50, @ 21:13	Heptachlor, Dieldrin, Endosulfan II, 4,4'-DDT, Methoxychlor, Endrin ketone, Aldrin, Gamma chlordane, Alpha chlordane, Endosulfan I, Endrin aldehyde, Endosulfan sulfate, PCB-1260	NTC21SB04-SO-0001, NTC21SB06-SO-0001, NTC21SB06-SO-0204, NTC21SB07-SO-0001, NTC21SB13-SO-0001, NTC21SB14-SO-0001, NTC21SB15-SO-0001, NTC21SB19-SO-0001,

10/24/09 @ 21:13, 10/25/09 @ 05:05, @ 05:24	Heptachlor, Aldrin, Heptachlor epoxide, Gamma-chlordane, Alpha-chlordane, Endosulfan I, Dieldrin, Endrin, Endosulfan II, 4,4'-DDT, Endrin aldehyde, Endosulfan sulfate, Methoxychlor, Endrin Ketone, PCB-1260	NTC21SB22-SO-0001, NTC21SB22-SO-0204, FD-092809-01, NTC21SB01-SO-0102, NTC21SB02-SO-0001, NTC21SB02-SO-0204, NTC21SB03-SO-0001, NTC21SB03-SO-0204, NTC21SB05-SO-0001, NTC21SB05-SO-0204, 04
10/25/09 @ 05:05, @ 05:24, 10/25/09 07:15	Heptachlor, Aldrin, Heptachlor epoxide, Gamma-chlordane, Alpha-chlordane, Endosulfan I, Dieldrin, Endrin, Endosulfan II, 4,4'-DDT, Endrin aldehyde, Endosulfan sulfate, Methoxychlor, Endrin Ketone, PCB-1260	NTC21SB08-SO-0001, NTC21SB08-SO-02

The matrix spike / matrix spike duplicate (MS/MSD) performed on sample NTC21SB14-SO-0001 had % recoveries less than the quality control limit (>10%) for alpha-chlordane, 4,4'-DDE, delta-BHC, dieldrin, endosulfan sulfate, endrin ketone, gamma-BHC, gamma-chlordane, heptachlor, heptachlor epoxide, and methoxychlor for both the MS and MSD. The positive and non-detected aforementioned analytes for the sample were qualified estimated, (J) and (UJ), respectively.

The matrix spike / matrix spike duplicate (MS/MSD) performed on sample NTC21SB02-SO-0204 had % recoveries less than the quality control limit (>10%) for alpha-chlordane, beta-BHC, dieldrin, endosulfan II, endosulfan sulfate, endrin aldehyde, endrin ketone, gamma-chlordane, heptachlor, heptachlor epoxide, and methoxychlor for both the MS and MSD. The positive and non-detected aforementioned analytes for the sample were qualified estimated, (J) and (UJ), respectively. Alpha-BHC, 4,4'-DDE, 4,4'-DDT, delta-BHC, endrin, and gamma-BHC % recoveries were less than the quality control limit on the MS, but within the quality control limits for the MSD, and the results for these analytes were not qualified in the sample.

The higher of the two columns positive results were reported except when quantitative matrix interferences were detected as identified by the laboratory. In those cases the alternate column value was reported and these analytes were qualified estimated, (J). Sample analytes were not qualified if they were reported from a column which met the quality control limits.

Positive PEST/PCB results with column RPDs >25% were qualified estimated, (J). No results were rejected even though some RPDs were >100%.

The RPD was greater than the 50% quality control limit for 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, endrin aldehyde, gamma-chlordane, and heptachlor epoxide for the field duplicate pair samples FD-092609-02/NTC21SB09-SO-0001. The positive and non-detected results for the aforementioned analytes for samples FD-092609-02 and NTC21SB09-SO-0001 were qualified estimated, (J) and (UJ), respectively.

The RPD was greater than the 50% quality control limit for 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, alpha-BHC, aroclor-1260, gamma-chlordane, heptachlor epoxide, and methoxychlor for the field duplicate pair samples FD-092809-01/NTC21SB05-SO-0001. The positive and non-detected results for the aforementioned analytes for samples FD-092809-01 and NTC21SB05-SO-0001 were qualified estimated, (J) and (UJ), respectively.

The electronic database sample FD-092809-01 endosulfan II, endrin ketone, gamma-chlordane, and heptachlor epoxide results, NTC21SB03-SO-0001 PCB-1260 results, NTC21SB10-SO-0406 beta-BHC, 4,4'-DDT, delta-BHC, endosulfan, and gamma-chlordane results, NTC21SB11-SO-0001 gamma-chlordane results, NTC21SB17-SO-0001 endosulfan, endrin aldehyde, gamma-chlordane, methoxychlor results, and NTC21SB20-SO-0001 gamma-chlordane, were edited using data reported from the original submitted laboratory data forms.

The electronic database results were listed as non-detected prior to editing but were found to be positive on the laboratory data forms.

HERB

The opening continuing calibration verification (CCV) % D exceeded the 15% quality control limit on the MR-2 column for 2,4-D, 2,4,5-T, and dinoseb for instrument GL-ECD3 on 10/05/09 @ 18:33. The closing continuing calibration verification %D was greater than the 15% quality control limit on the MR-1 column for 2,4,5-T, 2,4-D, dalapon, dicamba, dichloroprop, dinoseb, MCPA, and MCPP on instrument GL-ECD3 on 10/06/09 @02:08. No action was taken for dalapon, dicamba, dichloroprop, MCPA, and MCPP for the affected samples as all samples had non-detected herbicide results and the continuing calibration check % Ds for the aforementioned analytes were within the quality control limit on the alternate column. The non-detected 2,4-D, 2,4,5-T, and dinoseb sample results for affected aqueous samples RB-092909-01, RB-092909-02, and SB-092909-01 were qualified estimated, (UJ), due to the CCV %D quality control limit exceedances on both columns.

The opening continuing calibration verification (CCV) % D exceeded the 15% quality control limit on the MR-1 column for 2,4,5-T, 2,4-D, 2,4-DB, dalapon, dichloroprop, MCPA, MCPP, and dinoseb, and on the MR-2 column for 2,4,5-T, 2,4-D, 2,4-DB, and dalapon for instrument GL-ECD3 on 10/10/09 @ 08:59. The continuing calibration verification %D was greater than the 15% quality control limit on the MR-1 column for dalapon, and on the MR-2 column for 2,4-D and dalapon for instrument GL-ECD3 on 10/10/09 @ 15:19. No action was taken for dichloroprop, MCPA, and MCPP for the affected samples as all samples had non-detected herbicide results and the continuing calibration check % Ds for the aforementioned analytes were within the quality control limit on the alternate column. The positive dinoseb result for sample NTC21SB14-SO-001 was not qualified as it was reported from the column that had %Ds within the 15% quality control limit. The non-detected 2,4,5-T, 2,4-DB, and dalapon sample results for the affected samples were qualified estimated, (UJ), due to the CCV %D quality control limit exceedances on both columns for the affected samples NTC21SB04-SO-0001, NTC21SB04-SO-0406, NTC21SB06-SO-0001, NTC21SB06-SO-0204, NTC21SB07-SO-0001, NTC21SB07-SO-0204, NTC21SB13-SO-0001, NTC21SB13-SO-0204, NTC21SB14-SO-0001, and NTC21SB14-SO-0204. The 2,4-D positive results for samples NTC21SB06-SO-0204 and NTC21SB13-SO-0001 were qualified estimated, (J), as both columns had quality control limit exceedances. The remainder of the 2,4-D results for the aforementioned samples were non-detected and were qualified estimated, (UJ).

The continuing calibration verification %D was greater than the 15% quality control limit for dalapon on the MR-1 column, and for 2,4-D and dalapon on the MR-2 column for instrument GL-ECD3 on 10/10/09 @ 15:19. The continuing calibration verification %D was greater than the 15% quality control limit for dalapon on the MR-1 column, and for 2,4,5-T, 2,4-D, 2,4-DB, dalapon, dicamba, and dichloroprop on the MR-2 column for instrument GL-ECD3 on 10/10/09 @ 19:57. No action was taken for 2,4,5-T, 2,4-D, 2,4-DB, and dichloroprop for the affected samples as all samples had non-detected herbicide results and the continuing calibration check % Ds for the aforementioned analytes were within the quality control limit on the alternate column. The non-detected dalapon sample results for the affected samples were qualified estimated, (UJ), due to the CCV %D quality control limit exceedances on both columns for the affected samples NTC21SB15-SO-0001, NTC21SB15-SO-0204, NTC21SB16-SO-0001, NTC21SB16-SO-0204, NTC21SB19-SO-0001, NTC21SB19-SO-0204, NTC21SB22-SO-0001, NTC21SB22-SO-0204, NTC21SB01-SO-0102, and FD-092809-01. The positive result for dicamba for sample NTC21SB16-SO-0204 was qualified estimated due to being reported from the MR-2 column. The remainder of the aforementioned non-detected sample dicamba results were not qualified as the alternate column had %Ds within the quality control limits.

The continuing calibration verification %D was greater than the 15% quality control limit for dalapon on the MR-1 column, and for 2,4,5-T, 2,4-D, 2,4-DB, dalapon, dicamba, and dichloroprop on the MR-2 column for instrument GL-ECD3 on 10/10/09 @ 19:57. The closing continuing calibration verification %D was greater than the 15% quality control limit for 2,4-D and 2,4-DB on the MR-2 column for instrument GL-ECD3 on 10/11/09 @ 02:17. No action was taken for 2,4,5-T, 2,4-D, 2,4-DB, and dichloroprop for the affected samples

as all samples had non-detected herbicide results and the continuing calibration check % Ds for the aforementioned analytes were within the quality control limit on the alternate column. The non-detected dalapon sample results for the affected samples were qualified estimated, (UJ), due to the CCV %D quality control limit exceedances on both columns for the affected samples NTC21SB02-SO-0001, NTC21SB02-SO-0204, NTC21SB03-SO-0001, NTC21SB03-SO-0204, NTC21SB05-SO-0001, NTC21SB05-SO-0204, NTC21SB08-SO-0001, and NTC21SB08-SO-0204. The positive result for dicamba for samples NTC21SB02-SO-0001, NTC21SB02-SO-0204, NTC21SB03-SO-0001, and NTC21SB03-SO-0204 were not qualified as they were reported from the MR-1 column which had %Ds within the quality control limit. The remainder of the aforementioned non-detected sample dicamba results were not qualified as the alternate column had %Ds within the quality control limits.

The opening continuing calibration verification %D was greater than the 15% quality control limit for 2,4,5-T, dinoseb, and MCPA on the MR-1 column, and for 2,4,5-T, 2,4,5-TP(silvex), 2,4-D, 2,4-DB, and dinoseb on the MR-2 column for instrument GL-ECD3 on 10/16/09 @ 04:39. The continuing calibration verification %D was greater than the 15% quality control limit for 2,4,5-T, 2,4,5-TP(silvex), 2,4-D, 2,4-DB, dalapon, dicamba, dichloroprop, dinoseb, MCPA, and MCPP on the MR-2 column for instrument GL-ECD3 on 10/16/09 @ 11:00. No action was taken for 2,4,5-TP(silvex), 2,4-D, 2,4-DB, dalapon, dicamba, dichloroprop, and MCPP for the affected samples as all samples had non-detected herbicide results and the continuing calibration check % Ds for the aforementioned analytes were within the quality control limit on the alternate column. The non-detected 2,4,5-T and MCPA sample results for the affected samples were qualified estimated, (UJ), due to the CCV %D quality control limit exceedances on both columns for the affected samples FD-092609-01, FD-092609-02, NTC21SB09-SO-0001, NTC21SB10-SO-0001, NTC21SB10-SO-0406, NTC21SB11-SO-0001, NTC21SB11-SO-0204, and NTC21SB12-SO-0001.

The continuing calibration verification %D was greater than the 15% quality control limit for 2,4,5-T, 2,4,5-TP(silvex), 2,4-D, 2,4-DB, dalapon, dicamba, dichloroprop, dinoseb, MCPA, and MCPP on the MR-2 column for instrument GL-ECD3 on 10/16/09 @ 11:00. The closing continuing calibration verification %D was greater than the 15% quality control limit for dinoseb on the MR-1 column, and 2,4,5-T, 2,4-DB, and dinoseb on the MR-2 column for instrument GL-ECD3 on 10/16/09 @ 18:00. No action was taken for 2,4,5-T, 2,4,5-TP(silvex), 2,4-D, 2,4-DB, dalapon, dichloroprop, MCPA, and MCPP for the affected samples as all samples had non-detected herbicide results and the continuing calibration check % Ds for the aforementioned analytes were within the quality control limit on the alternate column. The non-detected dinoseb sample results for the affected samples were qualified estimated, (UJ), due to the CCV %D quality control limit exceedances on both columns for the affected samples NTC21SB12-SO-0204, NTC21SB17-SO-0001, NTC21SB17-SO-0507, NTC21SB18-SO-0001, NTC21SB18-SO-0507, NTC21SB20-SO-0001, NTC21SB20-SO-0406, NTC21SB21-SO-0001, NTC21SB21-SO-0608, and FD-092709-01.

The opening calibration verification %D was greater than the 15% quality control limit for 2,4,5-TP(silvex), dalapon, and dicamba on the MR-2 column for instrument GL-ECD3 on 10/24/09 @ 20:10. The closing continuing calibration verification %D was greater than the 15% quality control limit for 2,4,5-T, dalapon, dicamba, and dinoseb on the MR-1 column, and 2,4,5-T, 2,4,5-TP(silvex), 2,4-D, 2,4-DB, dalapon, dicamba, and dinoseb on the MR-2 column for instrument GL-ECD3 on 10/24/09 @ 21:01. No action was taken for 2,4,5-TP(silvex), 2,4-D, and 2,4-DB for the affected sample as the sample had non-detected herbicide results and the continuing calibration check % Ds for the aforementioned analytes were within the quality control limit on the alternate column. The non-detected 2,4,5-T, dalapon, dicamba, and dinoseb sample results for the affected sample were qualified estimated, (UJ), due to the CCV %D quality control limit exceedances on both columns for the affected sample, NTC21SB09-SO-0204.

The surrogate % recovery for 2,4-dichlorophenylacetic acid (DCAA) was higher than the quality control limit for the MR-1 column for samples NTC21SB11-SO-0204. No action was taken as the sample had non-detected results for all herbicides.

All positive dicamba results were reported from the column with the lower result with the exception of sample NTC21SB16-SO-0204. The laboratory designation indicated that the sample matrix interfered with the

quantitation of the analyte and therefore the lower of the column results was reported.

The positive 2,4-D results for samples NTC21SB06-SO-0204 and NTC21SB13-SO-0001 were reported from the MR-1 column which was the higher of the two column results. The laboratory designation indicated that the sample matrix interfered with the quantitation of the analyte.

There were relative percent differences (RPD) greater than 25% between the analytical columns for positive dicamba and 2,4-D results for samples NTC21SB02-SO-0001, NTC21SB02-SO-0204, NTC21SB03-SO-0001, NTC21SB03-SO-0204, NTC21SB04-SO-0001, NTC21SB06-SO-0001, NTC21SB06-SO-0204, NTC21SB07-SO-0001, NTC21SB13-SO-0001, NTC21SB14-SO-0001, and NTC21SB14-SO-0204. The positive results for these samples with RPDs greater than 25% were qualified estimated, (J).

The matrix spike (MS)/MS duplicate (MSD) and the laboratory control sample (LCS)/LCS duplicate (LCSD) results were not analyzed in detail as a limited review was performed on the herbicide analysis. However, the results were included in the data package. There were no items of significance noted in the examination of either the MS/MSD or the LCS/LCSD analyses.

ADDITIONAL COMMENTS

Positive results less than the reporting limit (RL) were qualified as estimated, (J), due to uncertainty near the detection limit.

EXECUTIVE SUMMARY

Laboratory Performance Issues: VOC method blank contamination resulted in sample data qualification. VOC continuing calibration %Ds greater than the 25% quality control limits for a number of analytes resulted in data qualification of the positive and non-detected sample analytes. VOC surrogate % recoveries quality control limit exceedances resulted in data qualification. There were VOC LCS, MS/MSD, and field duplicate RPD quality control limit exceedances which resulted in VOC sample data qualification.

SVOC continuing calibration %Ds greater than the 25% quality control limit for a number of analytes resulted in data qualification of positive and non-detected SVOC sample analytes. SVOC surrogate % recoveries resulted in data qualification. There were SVOC LCS, and MS/MSD quality control limit exceedances which resulted in SVOC sample data qualification. Low SVOC internal standard recoveries resulted in SVOC analyte data qualifications.

PAH method blank contamination resulted in sample data qualification. PAH continuing calibration %Ds greater than the quality control limit resulted in PAH sample data qualification. There were PAH LCS, MS/MSD, and field duplicate RPD quality control limit exceedances which resulted in PAH sample data qualification.

PEST/PCB continuing calibration %Ds greater than the quality control limits for a number of analytes resulted in data qualification of the positive and non-detected sample analytes. There were PEST/PCB MS/MSD and field duplicate RPD quality control limit exceedances which resulted in sample data qualification. Matrix interferences identified by the laboratory resulted in PEST/PCB data qualification when sample results were reported from an alternate column. The RPDs between analytical columns which exceeded 25% resulted in PEST/PCB sample data qualification.

HERB continuing calibration %Ds greater than the quality control limit for a number of analytes resulted in HERB sample data qualification. The RPDs between analytical columns which exceeded 25% resulted in HERB sample data qualification.

Other factors affecting data quality: Positive results less than the reporting limit (RL) were qualified as estimated, (J), due to uncertainty near the detection limit.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (October 1999) and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (January 2006). The text of this report has been formulated to address only those problem areas affecting data quality.

Tetra Tech NUS

Joseph Kalinyak
Chemist/Data Validator

TetraTech NUS

Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Support Documentation

PROJ_NO: 01797	NSAMPLE	RB-092909-01			RB-092909-02			SB-092909-01			TB-092609-01		
SDG: CTO064_001	LAB_ID	0910006-51			0910006-52			0910006-53			0910006-19		
FRACTION: OV	SAMP_DATE	9/29/2009			9/29/2009			9/29/2009			9/26/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		1	U		1	U		1	U		1	U	
1,1,2,2-TETRACHLOROETHANE		1	UJ	C	1	UJ	C	1	UJ	C	1	U	
1,1,2-TRICHLOROETHANE		1	U		1	U		1	U		1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE		2	U		2	U		2	U		2	U	
1,1-DICHLOROETHANE		1	U		1	U		1	U		1	U	
1,1-DICHLOROETHENE		1	U		1	U		1	U		1	U	
1,2,4-TRICHLOROBENZENE		1	U		1	U		1	U		0.31	J	P
1,2-DIBROMO-3-CHLOROPROPANE		1	U		1	U		1	U		1	U	
1,2-DIBROMOETHANE		1	U		1	U		1	U		1	U	
1,2-DICHLOROBENZENE		1	U		1	U		1	U		1	U	
1,2-DICHLOROETHANE		1	U		1	U		1	U		1	U	
1,2-DICHLOROPROPANE		1	U		1	U		1	U		1	U	
1,3-DICHLOROBENZENE		1	U		1	U		1	U		1	U	
1,4-DICHLOROBENZENE		1	U		1	U		1	U		0.13	J	P
2-BUTANONE		10	UJ	C	10	UJ	C	10	UJ	C	10	U	
2-HEXANONE		5	UJ	C	5	UJ	C	5	UJ	C	5	U	
4-METHYL-2-PENTANONE		5	U		5	U		5	U		5	U	
ACETONE		5.3	J	CP	10	UJ	C	4.8	J	CP	10	U	
BENZENE		1	U		1	U		1	U		1	U	
BROMODICHLOROMETHANE		1	U		1	U		1	U		1	U	
BROMOFORM		1	U		1	U		1	U		1	U	
BROMOMETHANE		2	U		2	U		2	U		2	U	
CARBON DISULFIDE		1	U		1	U		1	U		1	U	
CARBON TETRACHLORIDE		1	U		1	U		1	U		1	U	
CHLOROBENZENE		1	U		1	U		1	U		1	U	
CHLORODIBROMOMETHANE		1	U		1	U		1	U		1	U	
CHLOROETHANE		2	UJ	C	2	UJ	C	2	UJ	C	2	U	
CHLOROFORM		1	U		1	U		1	U		0.12	J	P
CHLOROMETHANE		1.6	J	P	0.72	J	P	0.61	J	P	2	U	
CIS-1,2-DICHLOROETHENE		1	U		1	U		1	U		1	U	
CIS-1,3-DICHLOROPROPENE		1	U		1	U		1	U		1	U	
CYCLOHEXANE		1	UJ	C	1	UJ	C	1	UJ	C	1	U	
DICHLORODIFLUOROMETHANE		2	U		2	U		2	U		2	U	
ETHYLBENZENE		0.17	J	P	1	U		0.2	J	P	1	U	
ISOPROPYLBENZENE		1	U		1	U		1	U		1	U	
METHYL ACETATE		2	U		2	U		2	U		2	U	

PROJ_NO: 01797	NSAMPLE	TB-092709-01			TB-092809-01			TB-092909-01		
SDG: CTO064_001	LAB_ID	0910006-39			0910006-50			0910006-54		
FRACTION: OV	SAMP_DATE	9/27/2009			9/28/2009			9/29/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0		
	DUP_OF									
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		1	U		1	U		1	U	
1,1,2,2-TETRACHLOROETHANE		1	UJ	C	1	UJ	C	1	U	
1,1,2-TRICHLOROETHANE		1	U		1	U		1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE		2	U		2	U		2	U	
1,1-DICHLOROETHANE		1	U		1	U		1	U	
1,1-DICHLOROETHENE		1	U		1	U		1	U	
1,2,4-TRICHLOROBENZENE		1	U		1	U		0.2	J	P
1,2-DIBROMO-3-CHLOROPROPANE		1	U		1	U		1	U	
1,2-DIBROMOETHANE		1	U		1	U		1	U	
1,2-DICHLOROBENZENE		1	U		1	U		1	U	
1,2-DICHLOROETHANE		1	U		1	U		1	U	
1,2-DICHLOROPROPANE		1	U		1	U		1	U	
1,3-DICHLOROBENZENE		1	U		1	U		1	U	
1,4-DICHLOROBENZENE		1	U		1	U		1	U	
2-BUTANONE		10	UJ	C	10	UJ	C	10	U	
2-HEXANONE		5	UJ	C	5	UJ	C	5	U	
4-METHYL-2-PENTANONE		5	U		5	U		5	U	
ACETONE		10	UJ	C	10	UJ	C	10	U	
BENZENE		1	U		1	U		1	U	
BROMODICHLOROMETHANE		1	U		1	U		1	U	
BROMOFORM		1	U		1	U		1	U	
BROMOMETHANE		2	U		2	U		2	U	
CARBON DISULFIDE		1	U		1	U		1	U	
CARBON TETRACHLORIDE		1	U		1	U		1	U	
CHLOROBENZENE		1	U		1	U		1	U	
CHLORODIBROMOMETHANE		1	U		1	U		1	U	
CHLOROETHANE		2	UJ	C	2	UJ	C	2	U	
CHLOROFORM		0.13	J	P	1	U		1	U	
CHLOROMETHANE		2	U		2	U		2	U	
CIS-1,2-DICHLOROETHENE		1	U		1	U		1	U	
CIS-1,3-DICHLOROPROPENE		1	U		1	U		1	U	
CYCLOHEXANE		1	UJ	C	1	UJ	C	1	U	
DICHLORODIFLUOROMETHANE		2	U		2	U		2	U	
ETHYLBENZENE		1	U		1	U		1	U	
ISOPROPYLBENZENE		1	U		1	U		1	U	
METHYL ACETATE		2	U		2	U		2	U	

PROJ_NO: 01797	NSAMPLE	RB-092909-01			RB-092909-02			SB-092909-01			TB-092609-01		
SDG: CTO064_001	LAB_ID	0910006-51			0910006-52			0910006-53			0910006-19		
FRACTION: OV	SAMP_DATE	9/29/2009			9/29/2009			9/29/2009			9/26/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		1	U		1	U		1	U		1	U	A
METHYL TERT-BUTYL ETHER		1	U		1	U		1	U		1	U	
METHYLENE CHLORIDE		2.4	U	A	2	U	A	2.4	U	A	2	U	A
STYRENE		1	U		1	U		1	U		1	U	
TETRACHLOROETHENE		1	U		1	U		1	U		1	U	
TOLUENE		2.1	J	E	13	J	E	2.1	J	E	1	U	
TOTAL XYLENES		0.66	J	P	0.53	J	P	0.65	J	P	1	U	
TRANS-1,2-DICHLOROETHENE		1	U		1	U		1	U		1	U	
TRANS-1,3-DICHLOROPROPENE		1	UJ	C	1	UJ	C	1	UJ	C	1	U	
TRICHLOROETHENE		1	U		1	U		1	U		1	U	
TRICHLOROFLUOROMETHANE		2	U		2	U		2	U		2	U	
VINYL CHLORIDE		1	U		1	U		1	U		1	U	

PROJ_NO: 01797	NSAMPLE	TB-092709-01			TB-092809-01			TB-092909-01		
SDG: CTO064_001	LAB_ID	0910006-39			0910006-50			0910006-54		
FRACTION: OV	SAMP_DATE	9/27/2009			9/28/2009			9/29/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0		
	DUP_OF									
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		1	U		1	U		1	U	
METHYL TERT-BUTYL ETHER		1	U		1	U		1	U	
METHYLENE CHLORIDE		2	U	A	2	U	A	2	U	A
STYRENE		1	U		1	U		1	U	
TETRACHLOROETHENE		1	U		1	U		1	U	
TOLUENE		1	U		1	U		1	U	
TOTAL XYLENES		1	U		1	U		1	U	
TRANS-1,2-DICHLOROETHENE		1	U		1	U		1	U	
TRANS-1,3-DICHLOROPROPENE		1	UJ	C	1	UJ	C	1	U	
TRICHLOROETHENE		1	U		1	U		1	U	
TRICHLOROFLUOROMETHANE		2	U		2	U		2	U	
VINYL CHLORIDE		1	U		1	U		1	U	

PROJ_NO: 01797	NSAMPLE	FD-092609-01			FD-092609-02			FD-092709-01			FD-092809-01		
SDG: CTO064_001	LAB_ID	0910006-01			0910006-02			0910006-20			0910006-40		
FRACTION: OV	SAMP_DATE	9/26/2009			9/26/2009			9/27/2009			9/28/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	93.0			93.0			76.0			80.0		
	DUP_OF	NTC21SB18-SO-0507			NTC21SB09-SO-0001			NTC21SB15-SO-0204			NTC21SB05-SO-0001		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		4	U		4.7	U		5.2	U		4.9	U	
1,1,2,2-TETRACHLOROETHANE		4	U		4.7	U		5.2	U		4.9	U	
1,1,2-TRICHLOROETHANE		4	U		4.7	U		5.2	U		4.9	U	
1,1,2-TRICHLOROTRIFLUOROETHANE		4	U		4.7	U		5.2	U		4.9	U	
1,1-DICHLOROETHANE		4	U		4.7	U		5.2	U		4.9	UJ	C
1,1-DICHLOROETHENE		4	U		4.7	U		5.2	U		4.9	U	
1,2,4-TRICHLOROBENZENE		4	U		4.7	U		5.2	U		4.9	U	
1,2-DIBROMO-3-CHLOROPROPANE		4	U		4.7	U		5.2	U		4.9	U	
1,2-DIBROMOETHANE		4	U		4.7	U		5.2	U		4.9	U	
1,2-DICHLOROBENZENE		4	U		4.7	U		5.2	U		4.9	U	
1,2-DICHLOROETHANE		4	U		4.7	U		5.2	U		4.9	U	
1,2-DICHLOROPROPANE		4	U		4.7	U		5.2	U		4.9	U	
1,3-DICHLOROBENZENE		4	U		4.7	U		5.2	U		4.9	U	
1,4-DICHLOROBENZENE		4	U		4.7	U		5.2	U		4.9	U	
2-BUTANONE		4	U		4.7	UJ	C	5.2	UJ	C	4.9	UJ	G
2-HEXANONE		4	U		4.7	U		5.2	U		4.9	U	
4-METHYL-2-PENTANONE		4	U		4.7	U		5.2	U		4.9	U	
ACETONE		4	U		4.7	UJ	G	42	U	A	4.9	UJ	G
BENZENE		2.1	J	P	4.7	U		5.2	U		4.9	U	
BROMODICHLOROMETHANE		8	U		9.4	U		10	U		9.9	U	
BROMOFORM		4	U		4.7	U		5.2	U		4.9	U	
BROMOMETHANE		8	U		9.4	U		10	U		9.9	U	
CARBON DISULFIDE		4	U		4.1	J	P	3.8	J	P	4.9	U	
CARBON TETRACHLORIDE		4	U		4.7	U		5.2	U		4.9	U	
CHLOROBENZENE		4	U		4.7	U		5.2	U		4.9	U	
CHLORODIBROMOMETHANE		4	U		4.7	U		5.2	U		4.9	U	
CHLOROETHANE		8	U		9.4	U		10	U		9.9	U	
CHLOROFORM		4	U		4.7	U		5.2	U		4.9	U	
CHLOROMETHANE		8	U		9.4	U		10	U		9.9	U	
CIS-1,2-DICHLOROETHENE		8	U		9.4	U		10	U		9.9	U	
CIS-1,3-DICHLOROPROPENE		4	U		4.7	U		5.2	U		4.9	U	
CYCLOHEXANE		3.4	J	P	4.7	U		5.2	U		1.4	J	P
DICHLORODIFLUOROMETHANE		4	U		4.7	U		5.2	U		4.9	U	
ETHYLBENZENE		4	U		4.7	U		5.2	U		4.9	U	
ISOPROPYLBENZENE		4	U		4.7	U		5.2	U		4.9	U	
METHYL ACETATE		8	U		9.4	U		10	U		9.9	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB01-SO-0102			NTC21SB02-SO-0001			NTC21SB02-SO-0204			NTC21SB03-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-41			0910006-42			0910006-43			0910006-44		
FRACTION: OV	SAMP_DATE	9/28/2009			9/28/2009			9/28/2009			9/28/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	84.0			90.0			89.0			95.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		4.3	U		4.8	U		5.8	UJ	D	5.3	U	
1,1,2,2-TETRACHLOROETHANE		4.3	U		4.8	U		5.8	UJ	D	5.3	U	
1,1,2-TRICHLOROETHANE		4.3	U		4.8	U		5.8	UJ	D	5.3	U	
1,1,2-TRICHLOROTRIFLUOROETHANE		4.3	U		4.8	U		5.8	U		5.3	U	
1,1-DICHLOROETHANE		4.3	UJ	C	4.8	UJ	C	5.8	UJ	CD	5.3	UJ	C
1,1-DICHLOROETHENE		4.3	U		4.8	U		5.8	UJ	D	5.3	U	
1,2,4-TRICHLOROBENZENE		4.3	U		4.8	U		5.8	UJ	D	5.3	U	
1,2-DIBROMO-3-CHLOROPROPANE		4.3	U		4.8	U		5.8	UJ	D	5.3	U	
1,2-DIBROMOETHANE		4.3	U		4.8	U		5.8	UJ	D	5.3	U	
1,2-DICHLOROBENZENE		4.3	U		4.8	U		5.8	UJ	D	5.3	U	
1,2-DICHLOROETHANE		4.3	U		4.8	U		5.8	UJ	D	5.3	U	
1,2-DICHLOROPROPANE		4.3	U		4.8	U		5.8	UJ	D	5.3	U	
1,3-DICHLOROBENZENE		4.3	U		4.8	U		5.8	UJ	D	5.3	U	
1,4-DICHLOROBENZENE		4.3	U		4.8	U		5.8	UJ	D	5.3	U	
2-BUTANONE		4.3	U		4.8	U		5.8	U		5.3	U	
2-HEXANONE		4.3	U		4.8	U		5.8	UJ	D	5.3	U	
4-METHYL-2-PENTANONE		4.3	U		4.8	U		5.8	U		5.3	U	
ACETONE		4.3	U		130			5.8	U		5.3	U	
BENZENE		1.1	J	P	4.8	U		5.8	UJ	D	5.3	U	
BROMODICHLOROMETHANE		8.6	U		9.7	U		12	UJ	D	10	U	
BROMOFORM		4.3	U		4.8	U		5.8	UJ	D	5.3	U	
BROMOMETHANE		8.6	U		9.7	U		12	U		10	U	
CARBON DISULFIDE		2.8	J	P	4.1	J	P	5.8	UJ	D	1.6	J	P
CARBON TETRACHLORIDE		4.3	U		4.8	U		5.8	UJ	D	5.3	U	
CHLOROBENZENE		4.3	U		4.8	U		5.8	UJ	D	5.3	U	
CHLORODIBROMOMETHANE		4.3	U		4.8	U		5.8	UJ	D	5.3	U	
CHLOROETHANE		8.6	U		9.7	U		12	U		10	U	
CHLOROFORM		4.3	U		4.8	U		5.8	UJ	D	5.3	U	
CHLOROMETHANE		8.6	U		9.7	U		12	U		10	U	
CIS-1,2-DICHLOROETHENE		8.6	U		9.7	U		12	UJ	D	10	U	
CIS-1,3-DICHLOROPROPENE		4.3	U		4.8	U		5.8	UJ	D	5.3	U	
CYCLOHEXANE		1.2	J	P	4.8	U		1.1	J	DP	0.81	J	P
DICHLORODIFLUOROMETHANE		4.3	U		4.8	U		5.8	U		5.3	U	
ETHYLBENZENE		4.3	U		4.8	U		5.8	UJ	D	5.3	U	
ISOPROPYLBENZENE		4.3	U		4.8	U		5.8	UJ	D	5.3	U	
METHYL ACETATE		8.6	U		9.7	U		12	U		10	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB03-SO-0204			NTC21SB04-SO-0001			NTC21SB04-SO-0406			NTC21SB05-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-45			0910006-21			0910006-22			0910006-46		
FRACTION: OV	SAMP_DATE	9/28/2009			9/27/2009			9/27/2009			9/28/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	92.0			92.0			58.0			94.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		5.4	UJ	R	5.2	U		6.6	U		7.1	U	
1,1,2,2-TETRACHLOROETHANE		5.4	UJ	R	5.2	U		6.6	U		7.1	U	
1,1,2-TRICHLOROETHANE		5.4	UJ	R	5.2	U		6.6	U		7.1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE		5.4	UJ	R	5.2	U		6.6	U		7.1	U	
1,1-DICHLOROETHANE		5.4	UJ	CR	5.2	U		6.6	U		7.1	U	
1,1-DICHLOROETHENE		5.4	UJ	R	5.2	U		6.6	U		7.1	U	
1,2,4-TRICHLOROBENZENE		5.4	UJ	R	5.2	U		6.6	U		7.1	U	
1,2-DIBROMO-3-CHLOROPROPANE		5.4	UJ	R	5.2	U		6.6	U		7.1	U	
1,2-DIBROMOETHANE		5.4	UJ	R	5.2	U		6.6	U		7.1	U	
1,2-DICHLOROBENZENE		5.4	UJ	R	5.2	U		6.6	U		7.1	U	
1,2-DICHLOROETHANE		5.4	UJ	R	5.2	U		6.6	U		7.1	U	
1,2-DICHLOROPROPANE		5.4	UJ	R	5.2	U		6.6	U		7.1	U	
1,3-DICHLOROBENZENE		5.4	UJ	R	5.2	U		6.6	U		7.1	U	
1,4-DICHLOROBENZENE		5.4	UJ	R	5.2	U		6.6	U		7.1	U	
2-BUTANONE		5.4	UJ	R	5.2	UJ	C	28	J	C	30	J	CG
2-HEXANONE		5.4	UJ	R	5.2	U		6.6	U		7.1	U	
4-METHYL-2-PENTANONE		5.4	UJ	R	5.2	U		6.6	U		7.1	UJ	C
ACETONE		5.4	UJ	R	5.2	U		6.6	U		180	J	G
BENZENE		5.4	UJ	R	5.2	U		1.2	J	P	7.1	U	
BROMODICHLOROMETHANE		11	UJ	R	10	U		13	U		14	U	
BROMOFORM		5.4	UJ	R	5.2	U		6.6	U		7.1	U	
BROMOMETHANE		11	UJ	R	10	U		13	U		14	U	
CARBON DISULFIDE		5.4	UJ	R	6.7			8.1			2.3	J	P
CARBON TETRACHLORIDE		5.4	UJ	R	5.2	U		6.6	U		7.1	U	
CHLOROBENZENE		5.4	UJ	R	5.2	U		6.6	U		7.1	U	
CHLORODIBROMOMETHANE		5.4	UJ	R	5.2	U		6.6	U		7.1	U	
CHLOROETHANE		11	UJ	R	10	U		13	U		14	U	
CHLOROFORM		5.4	UJ	R	5.2	U		6.6	U		7.1	U	
CHLOROMETHANE		11	UJ	R	10	U		13	U		14	U	
CIS-1,2-DICHLOROETHENE		11	UJ	R	10	U		13	U		14	U	
CIS-1,3-DICHLOROPROPENE		5.4	UJ	R	5.2	U		6.6	U		7.1	U	
CYCLOHEXANE		1	J	PR	0.91	J	P	0.74	J	P	1.4	J	P
DICHLORODIFLUOROMETHANE		5.4	UJ	R	5.2	U		6.6	U		7.1	U	
ETHYLBENZENE		5.4	UJ	R	5.2	U		6.6	U		7.1	U	
ISOPROPYLBENZENE		5.4	UJ	R	5.2	U		6.6	U		7.1	U	
METHYL ACETATE		11	UJ	R	10	U		13	U		14	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB05-SO-0204			NTC21SB06-SO-0001			NTC21SB06-SO-0204			NTC21SB07-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-47			0910006-23			0910006-24			0910006-25		
FRACTION: OV	SAMP_DATE	9/28/2009			9/27/2009			9/27/2009			9/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	91.0			82.0			77.0			92.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		4.3	UJ		4.3	U		6.2	UJ	R	6	U	
1,1,2,2-TETRACHLOROETHANE		4.3	U		4.3	U		6.2	UJ	R	6	U	
1,1,2-TRICHLOROETHANE		4.3	U		4.3	U		6.2	UJ	R	6	U	
1,1,2-TRICHLOROTRIFLUOROETHANE		4.3	U		4.3	U		6.2	UJ	R	6	U	
1,1-DICHLOROETHANE		4.3	U		4.3	U		6.2	UJ	R	6	UJ	C
1,1-DICHLOROETHENE		4.3	U		4.3	U		6.2	UJ	R	6	U	
1,2,4-TRICHLOROBENZENE		4.3	U		4.3	U		6.2	UJ	R	6	U	
1,2-DIBROMO-3-CHLOROPROPANE		4.3	U		4.3	U		6.2	UJ	R	6	U	
1,2-DIBROMOETHANE		4.3	U		4.3	U		6.2	UJ	R	6	U	
1,2-DICHLOROBENZENE		4.3	U		4.3	U		6.2	UJ	R	6	U	
1,2-DICHLOROETHANE		4.3	U		4.3	U		6.2	UJ	R	6	U	
1,2-DICHLOROPROPANE		4.3	U		4.3	U		6.2	UJ	R	6	U	
1,3-DICHLOROBENZENE		4.3	U		4.3	U		6.2	UJ	R	6	U	
1,4-DICHLOROBENZENE		4.3	U		4.3	U		6.2	UJ	R	6	U	
2-BUTANONE		4.3	UJ	C	4.3	UJ	C	6.2	UJ	CR	6	U	
2-HEXANONE		4.3	U		4.3	U		6.2	UJ	R	6	U	
4-METHYL-2-PENTANONE		4.3	UJ	C	4.3	U		6.2	UJ	R	6	U	
ACETONE		4.3	U		14	U	A	6.2	UJ	R	6	U	
BENZENE		0.41	J	P	4.3	U		6.2	UJ	R	0.82	J	P
BROMODICHLOROMETHANE		8.6	U		8.6	U		12	UJ	R	12	U	
BROMOFORM		4.3	U		4.3	U		6.2	UJ	R	6	U	
BROMOMETHANE		8.6	U		8.6	U		12	UJ	R	12	U	
CARBON DISULFIDE		4.3	U		5			6.2	UJ	R	2.4	J	P
CARBON TETRACHLORIDE		4.3	U		4.3	U		6.2	UJ	R	6	U	
CHLOROBENZENE		4.3	U		4.3	U		6.2	UJ	R	6	U	
CHLORODIBROMOMETHANE		4.3	U		4.3	U		6.2	UJ	R	6	U	
CHLOROETHANE		8.6	U		8.6	U		12	UJ	R	12	U	
CHLOROFORM		4.3	U		4.3	U		6.2	UJ	R	6	U	
CHLOROMETHANE		8.6	U		8.6	U		12	UJ	R	12	U	
CIS-1,2-DICHLOROETHENE		8.6	U		8.6	U		12	UJ	R	12	U	
CIS-1,3-DICHLOROPROPENE		4.3	U		4.3	U		6.2	UJ	R	6	U	
CYCLOHEXANE		1.7	J	P	4.3	U		0.9	J	PR	1.4	J	P
DICHLORODIFLUOROMETHANE		4.3	U		4.3	U		6.2	UJ	R	6	U	
ETHYLBENZENE		4.3	U		4.3	U		6.2	UJ	R	6	U	
ISOPROPYLBENZENE		4.3	U		4.3	U		6.2	UJ	R	6	U	
METHYL ACETATE		8.6	U		8.6	U		12	UJ	R	12	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB07-SO-0204			NTC21SB08-SO-0001			NTC21SB08-SO-0204			NTC21SB09-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-26			0910006-48			0910006-49			0910006-03		
FRACTION: OV	SAMP_DATE	9/27/2009			9/28/2009			9/28/2009			9/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	86.0			93.0			74.0			91.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		5.1	U		5.4	U		6.8	U		4.4	U	
1,1,2,2-TETRACHLOROETHANE		5.1	U		5.4	U		6.8	U		4.4	U	
1,1,2-TRICHLOROETHANE		5.1	U		5.4	U		6.8	U		4.4	U	
1,1,2-TRICHLOROTRIFLUOROETHANE		5.1	U		5.4	U		6.8	U		4.4	U	
1,1-DICHLOROETHANE		5.1	U		5.4	U		6.8	U		4.4	U	
1,1-DICHLOROETHENE		5.1	U		5.4	U		6.8	U		4.4	U	
1,2,4-TRICHLOROBENZENE		5.1	U		5.4	U		6.8	U		4.4	U	
1,2-DIBROMO-3-CHLOROPROPANE		5.1	U		5.4	U		6.8	U		4.4	U	
1,2-DIBROMOETHANE		5.1	U		5.4	U		6.8	U		4.4	U	
1,2-DICHLOROBENZENE		5.1	U		5.4	U		6.8	U		4.4	U	
1,2-DICHLOROETHANE		5.1	U		5.4	U		6.8	U		4.4	U	
1,2-DICHLOROPROPANE		5.1	U		5.4	U		6.8	U		4.4	U	
1,3-DICHLOROBENZENE		5.1	U		5.4	U		6.8	U		4.4	U	
1,4-DICHLOROBENZENE		5.1	U		5.4	U		6.8	U		4.4	U	
2-BUTANONE		5.1	UJ	C	5.4	UJ	C	6.8	UJ	C	4.4	UJ	C
2-HEXANONE		5.1	U		5.4	U		6.8	U		4.4	UJ	C
4-METHYL-2-PENTANONE		5.1	U		5.4	UJ	C	6.8	UJ	C	4.4	UJ	C
ACETONE		5.1	U		5.4	U		6.8	U		23	J	CG
BENZENE		0.71	J	P	5.4	U		2.6	J	P	4.4	U	
BROMODICHLOROMETHANE		10	U		11	U		14	U		8.9	U	
BROMOFORM		5.1	U		5.4	U		6.8	U		4.4	U	
BROMOMETHANE		10	U		11	U		14	U		8.9	U	
CARBON DISULFIDE		3.1	J	P	5.4	U		6.8	U		7		
CARBON TETRACHLORIDE		5.1	U		5.4	U		6.8	U		4.4	U	
CHLOROBENZENE		5.1	U		5.4	U		6.8	U		4.4	U	
CHLORODIBROMOMETHANE		5.1	U		5.4	U		6.8	U		4.4	U	
CHLOROETHANE		10	U		11	U		14	U		8.9	U	
CHLOROFORM		5.1	U		5.4	U		6.8	U		4.4	U	
CHLOROMETHANE		10	U		11	U		14	U		8.9	U	
CIS-1,2-DICHLOROETHENE		10	U		11	U		14	U		8.9	U	
CIS-1,3-DICHLOROPROPENE		5.1	U		5.4	U		6.8	U		4.4	U	
CYCLOHEXANE		2.2	J	P	1.7	J	P	3.8	J	P	4.4	U	
DICHLORODIFLUOROMETHANE		5.1	U		5.4	U		6.8	U		4.4	U	
ETHYLBENZENE		5.1	U		5.4	U		1.3	J	P	4.4	U	
ISOPROPYLBENZENE		5.1	U		5.4	U		6.8	U		4.4	U	
METHYL ACETATE		10	U		11	U		14	U		8.9	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB09-SO-0204			NTC21SB10-SO-0001			NTC21SB10-SO-0406			NTC21SB11-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-04			0910006-05			0910006-06			0910006-07		
FRACTION: OV	SAMP_DATE	9/26/2009			9/26/2009			9/26/2009			9/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	79.0			90.0			83.0			92.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		4.7	U		5.3	U		4.9	U		5.2	U	
1,1,2,2-TETRACHLOROETHANE		4.7	U		5.3	U		4.9	U		5.2	U	
1,1,2-TRICHLOROETHANE		4.7	U		5.3	U		4.9	U		5.2	U	
1,1,2-TRICHLOROTRIFLUOROETHANE		4.7	U		5.3	U		4.9	U		5.2	U	
1,1-DICHLOROETHANE		4.7	U		5.3	U		4.9	U		5.2	U	
1,1-DICHLOROETHENE		4.7	U		5.3	U		4.9	U		5.2	U	
1,2,4-TRICHLOROBENZENE		4.7	U		5.3	U		4.9	U		5.2	U	
1,2-DIBROMO-3-CHLOROPROPANE		4.7	U		5.3	U		4.9	U		5.2	U	
1,2-DIBROMOETHANE		4.7	U		5.3	U		4.9	U		5.2	U	
1,2-DICHLOROBENZENE		4.7	U		5.3	U		4.9	U		5.2	U	
1,2-DICHLOROETHANE		4.7	U		5.3	U		4.9	U		5.2	U	
1,2-DICHLOROPROPANE		4.7	U		5.3	U		4.9	U		5.2	U	
1,3-DICHLOROBENZENE		4.7	U		5.3	U		4.9	U		5.2	U	
1,4-DICHLOROBENZENE		4.7	U		5.3	U		4.9	U		5.2	U	
2-BUTANONE		9	UJ	C	5.3	UJ	C	4.9	UJ	C	5.2	UJ	C
2-HEXANONE		4.7	UJ	C	5.3	UJ	C	4.9	UJ	C	5.2	UJ	C
4-METHYL-2-PENTANONE		4.7	UJ	C	5.3	UJ	C	4.9	UJ	C	5.2	UJ	C
ACETONE		4.7	UJ	C	5.3	UJ	C	4.9	UJ	C	5.2	UJ	C
BENZENE		4.7	U		0.56	J	P	1.2	J	P	5.2	U	
BROMODICHLOROMETHANE		9.4	U		10	U		9.8	U		10	U	
BROMOFORM		4.7	U		5.3	U		4.9	U		5.2	U	
BROMOMETHANE		9.4	U		10	U		9.8	U		10	U	
CARBON DISULFIDE		4.2	J	P	5.3	U		1.3	J	P	5.2	U	
CARBON TETRACHLORIDE		4.7	U		5.3	U		4.9	U		5.2	U	
CHLOROBENZENE		4.7	U		5.3	U		4.9	U		5.2	U	
CHLORODIBROMOMETHANE		4.7	U		5.3	U		4.9	U		5.2	U	
CHLOROETHANE		9.4	U		10	U		9.8	U		10	U	
CHLOROFORM		4.7	U		5.3	U		4.9	U		5.2	U	
CHLOROMETHANE		9.4	U		10	U		9.8	U		10	U	
CIS-1,2-DICHLOROETHENE		9.4	U		10	U		1.5	J	P	10	U	
CIS-1,3-DICHLOROPROPENE		4.7	U		5.3	U		4.9	U		5.2	U	
CYCLOHEXANE		0.62	J	P	2.9	J	P	3	J	P	5.2	U	
DICHLORODIFLUOROMETHANE		4.7	U		5.3	U		4.9	U		5.2	U	
ETHYLBENZENE		4.7	U		5.3	U		4.9	U		0.9	J	P
ISOPROPYLBENZENE		0.97	J	P	5.3	U		4.9	U		5.2	U	
METHYL ACETATE		9.4	U		10	U		9.8	U		10	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB11-SO-0204			NTC21SB12-SO-0001			NTC21SB12-SO-0204			NTC21SB13-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-08			0910006-09			0910006-10			0910006-27		
FRACTION: OV	SAMP_DATE	9/26/2009			9/26/2009			9/26/2009			9/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	84.0			85.0			77.0			78.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		5.6	U		5.6	U		7.7	U		6.5	UJ	R
1,1,2,2-TETRACHLOROETHANE		5.6	U		5.6	U		7.7	U		6.5	UJ	R
1,1,2-TRICHLOROETHANE		5.6	U		5.6	U		7.7	U		6.5	UJ	R
1,1,2-TRICHLOROTRIFLUOROETHANE		5.6	U		5.6	U		7.7	U		6.5	UJ	R
1,1-DICHLOROETHANE		5.6	U		5.6	U		7.7	U		6.5	UJ	CR
1,1-DICHLOROETHENE		5.6	U		5.6	U		7.7	U		6.5	UJ	R
1,2,4-TRICHLOROBENZENE		5.6	U		5.6	U		7.7	U		6.5	UJ	R
1,2-DIBROMO-3-CHLOROPROPANE		5.6	U		5.6	U		7.7	U		6.5	UJ	R
1,2-DIBROMOETHANE		5.6	U		5.6	U		7.7	U		6.5	UJ	R
1,2-DICHLOROBENZENE		5.6	U		5.6	U		7.7	U		6.5	UJ	R
1,2-DICHLOROETHANE		5.6	U		5.6	U		7.7	U		6.5	UJ	R
1,2-DICHLOROPROPANE		5.6	U		5.6	U		7.7	U		6.5	UJ	R
1,3-DICHLOROBENZENE		5.6	U		5.6	U		7.7	U		6.5	UJ	R
1,4-DICHLOROBENZENE		5.6	U		5.6	U		7.7	U		6.5	UJ	R
2-BUTANONE		5.6	UJ	C	5.6	UJ	C	7.7	UJ	C	6.5	UJ	R
2-HEXANONE		5.6	UJ	C	5.6	UJ	C	7.7	UJ	C	6.5	UJ	R
4-METHYL-2-PENTANONE		5.6	UJ	C	5.6	UJ	C	7.7	UJ	C	6.5	UJ	R
ACETONE		5.6	UJ	C	5.6	UJ	C	7.7	UJ	C	54	J	R
BENZENE		5.6	U		0.63	J	P	7.7	U		6.5	UJ	R
BROMODICHLOROMETHANE		11	U		11	U		15	U		13	UJ	R
BROMOFORM		5.6	U		5.6	U		7.7	U		6.5	UJ	R
BROMOMETHANE		11	U		11	U		15	U		13	UJ	R
CARBON DISULFIDE		4.6	J	P	2.1	J	P	2	J	P	6.5	UJ	R
CARBON TETRACHLORIDE		5.6	U		5.6	U		7.7	U		6.5	UJ	R
CHLOROBENZENE		5.6	U		5.6	U		7.7	U		6.5	UJ	R
CHLORODIBROMOMETHANE		5.6	U		5.6	U		7.7	U		6.5	UJ	R
CHLOROETHANE		11	U		11	U		15	U		13	UJ	R
CHLOROFORM		5.6	U		5.6	U		7.7	U		6.5	UJ	R
CHLOROMETHANE		11	U		11	U		15	U		13	UJ	R
CIS-1,2-DICHLOROETHENE		11	U		11	U		15	U		13	UJ	R
CIS-1,3-DICHLOROPROPENE		5.6	U		5.6	U		7.7	U		6.5	UJ	R
CYCLOHEXANE		1	J	P	2.3	J	P	2.6	J	P	6.5	UJ	R
DICHLORODIFLUOROMETHANE		5.6	U		5.6	U		7.7	U		6.5	UJ	R
ETHYLBENZENE		5.6	U		5.6	U		7.7	U		6.5	UJ	R
ISOPROPYLBENZENE		5.6	U		5.6	U		7.7	U		6.5	UJ	R
METHYL ACETATE		11	U		11	U		15	U		13	UJ	R

PROJ_NO: 01797	NSAMPLE	NTC21SB13-SO-0204			NTC21SB14-SO-0001			NTC21SB14-SO-0204			NTC21SB15-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-28			0910006-29			0910006-30			0910006-31		
FRACTION: OV	SAMP_DATE	9/27/2009			9/27/2009			9/27/2009			9/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	84.0			82.0			75.0			83.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		4.2	U		6.8	UJ	D	6.7	U		5.5	U	
1,1,2,2-TETRACHLOROETHANE		4.2	U		6.8	UJ	D	6.7	U		5.5	U	
1,1,2-TRICHLOROETHANE		4.2	U		6.8	UJ	D	6.7	U		5.5	U	
1,1,2-TRICHLOROTRIFLUOROETHANE		4.2	U		6.8	U		6.7	U		5.5	U	
1,1-DICHLOROETHANE		4.2	UJ	C	6.8	UJ	D	6.7	UJ	C	5.5	UJ	C
1,1-DICHLOROETHENE		4.2	U		6.8	UJ	D	6.7	U		5.5	U	
1,2,4-TRICHLOROBENZENE		4.2	U		6.8	UJ	D	6.7	U		5.5	U	
1,2-DIBROMO-3-CHLOROPROPANE		4.2	U		6.8	UJ	D	6.7	U		5.5	U	
1,2-DIBROMOETHANE		4.2	U		6.8	UJ	D	6.7	U		5.5	U	
1,2-DICHLOROBENZENE		4.2	U		6.8	UJ	D	6.7	U		5.5	U	
1,2-DICHLOROETHANE		4.2	U		6.8	UJ	D	6.7	U		5.5	U	
1,2-DICHLOROPROPANE		4.2	U		6.8	UJ	D	6.7	U		5.5	U	
1,3-DICHLOROBENZENE		4.2	U		6.8	UJ	D	6.7	U		5.5	U	
1,4-DICHLOROBENZENE		4.2	U		6.8	UJ	D	6.7	U		5.5	U	
2-BUTANONE		4.2	U		6.8	UJ	C	11			5.5	U	
2-HEXANONE		4.2	U		6.8	UJ	D	6.7	U		5.5	U	
4-METHYL-2-PENTANONE		4.2	U		6.8	U		6.7	U		5.5	U	
ACETONE		4.2	U		6.8	U		58			5.5	U	
BENZENE		1.6	J	P	6.8	UJ	D	6.7	U		5.5	U	
BROMODICHLOROMETHANE		8.4	U		14	UJ	D	13	U		11	U	
BROMOFORM		4.2	U		6.8	UJ	D	6.7	U		5.5	U	
BROMOMETHANE		8.4	U		14	U		13	U		11	U	
CARBON DISULFIDE		6.3			6.4	J	P	3.2	J	P	5.6		
CARBON TETRACHLORIDE		4.2	U		6.8	UJ	D	6.7	U		5.5	U	
CHLOROBENZENE		4.2	U		6.8	UJ	D	6.7	U		5.5	U	
CHLORODIBROMOMETHANE		4.2	U		6.8	UJ	D	6.7	U		5.5	U	
CHLOROETHANE		8.4	U		14	U		13	U		11	U	
CHLOROFORM		4.2	U		6.8	UJ	D	6.7	U		5.5	U	
CHLOROMETHANE		8.4	U		14	U		13	U		11	U	
CIS-1,2-DICHLOROETHENE		8.4	U		14	UJ	D	13	U		11	U	
CIS-1,3-DICHLOROPROPENE		4.2	U		6.8	UJ	D	6.7	U		5.5	U	
CYCLOHEXANE		2.5	J	P	6.8	U		6.7	U		5.5	U	
DICHLORODIFLUOROMETHANE		4.2	U		6.8	UJ	D	6.7	U		5.5	U	
ETHYLBENZENE		0.7	J	P	6.8	UJ	D	6.7	U		5.5	U	
ISOPROPYLBENZENE		4.2	U		6.8	UJ	D	6.7	U		5.5	U	
METHYL ACETATE		8.4	U		14	U		13	U		11	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB15-SO-0204			NTC21SB16-SO-0001			NTC21SB16-SO-0204			NTC21SB17-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-32			0910006-33			0910006-34			0910006-11		
FRACTION: OV	SAMP_DATE	9/27/2009			9/27/2009			9/27/2009			9/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	77.0			89.0			77.0			83.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		4.9	U		5.3	U		4.9	U		7.8	U	
1,1,2,2-TETRACHLOROETHANE		4.9	U		5.3	U		4.9	U		7.8	U	
1,1,2-TRICHLOROETHANE		4.9	U		5.3	U		4.9	U		7.8	U	
1,1,2-TRICHLOROTRIFLUOROETHANE		4.9	U		5.3	U		4.9	U		7.8	U	
1,1-DICHLOROETHANE		4.9	UJ	C	5.3	UJ	C	4.9	UJ	C	7.8	U	
1,1-DICHLOROETHENE		4.9	U		5.3	U		4.9	U		7.8	U	
1,2,4-TRICHLOROBENZENE		4.9	U		5.3	U		4.9	U		7.8	U	
1,2-DIBROMO-3-CHLOROPROPANE		4.9	U		5.3	U		4.9	U		7.8	U	
1,2-DIBROMOETHANE		4.9	U		5.3	U		4.9	U		7.8	U	
1,2-DICHLOROBENZENE		4.9	U		5.3	U		4.9	U		7.8	U	
1,2-DICHLOROETHANE		4.9	U		5.3	U		4.9	U		7.8	U	
1,2-DICHLOROPROPANE		4.9	U		5.3	U		4.9	U		7.8	U	
1,3-DICHLOROBENZENE		4.9	U		5.3	U		4.9	U		7.8	U	
1,4-DICHLOROBENZENE		4.9	U		5.3	U		4.9	U		7.8	U	
2-BUTANONE		4.9	U		5.3	U		14			7.8	UJ	C
2-HEXANONE		4.9	U		5.3	U		4.9	U		7.8	UJ	C
4-METHYL-2-PENTANONE		4.9	U		5.3	U		4.9	U		7.8	UJ	C
ACETONE		25	J	G	5.3	U		79			47	J	C
BENZENE		4.9	U		5.3	U		4.9	U		7.8	U	
BROMODICHLOROMETHANE		9.9	U		10	U		9.8	U		16	U	
BROMOFORM		4.9	U		5.3	U		4.9	U		7.8	U	
BROMOMETHANE		9.9	U		10	U		9.8	U		16	U	
CARBON DISULFIDE		1.4	J	P	5.3	U		4.9	U		16		
CARBON TETRACHLORIDE		4.9	U		5.3	U		4.9	U		7.8	U	
CHLOROBENZENE		4.9	U		5.3	U		4.9	U		7.8	U	
CHLORODIBROMOMETHANE		4.9	U		5.3	U		4.9	U		7.8	U	
CHLOROETHANE		9.9	U		10	U		9.8	U		16	U	
CHLOROFORM		4.9	U		5.3	U		4.9	U		7.8	U	
CHLOROMETHANE		9.9	U		10	U		1	J	P	16	U	
CIS-1,2-DICHLOROETHENE		9.9	U		10	U		9.8	U		16	U	
CIS-1,3-DICHLOROPROPENE		4.9	U		5.3	U		4.9	U		7.8	U	
CYCLOHEXANE		4.9	U		5.3	U		4.9	U		7.8	U	
DICHLORODIFLUOROMETHANE		4.9	U		5.3	U		4.9	U		7.8	U	
ETHYLBENZENE		4.9	U		5.3	U		4.9	U		7.8	U	
ISOPROPYLBENZENE		4.9	U		5.3	U		4.9	U		7.8	U	
METHYL ACETATE		9.9	U		10	U		9.8	U		16	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB17-SO-0507			NTC21SB18-SO-0001			NTC21SB18-SO-0507			NTC21SB19-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-12			0910006-13			0910006-14			0910006-35		
FRACTION: OV	SAMP_DATE	9/26/2009			9/26/2009			9/26/2009			9/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	90.0			86.0			89.0			92.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		3.8	U		5.2	U		4.5	U		4.5	U	
1,1,2,2-TETRACHLOROETHANE		3.8	U		5.2	U		4.5	U		4.5	U	
1,1,2-TRICHLOROETHANE		3.8	U		5.2	U		4.5	U		4.5	U	
1,1,2-TRICHLOROTRIFLUOROETHANE		3.8	U		5.2	U		4.5	U		4.5	U	
1,1-DICHLOROETHANE		3.8	U		5.2	U		4.5	U		4.5	UJ	C
1,1-DICHLOROETHENE		3.8	U		5.2	U		4.5	U		4.5	U	
1,2,4-TRICHLOROBENZENE		3.8	U		5.2	U		4.5	U		4.5	U	
1,2-DIBROMO-3-CHLOROPROPANE		3.8	U		5.2	U		4.5	U		4.5	U	
1,2-DIBROMOETHANE		3.8	U		5.2	U		4.5	U		4.5	U	
1,2-DICHLOROBENZENE		3.8	U		5.2	U		4.5	U		4.5	U	
1,2-DICHLOROETHANE		3.8	U		5.2	U		4.5	U		4.5	U	
1,2-DICHLOROPROPANE		3.8	U		5.2	U		4.5	U		4.5	U	
1,3-DICHLOROBENZENE		3.8	U		5.2	U		4.5	U		4.5	U	
1,4-DICHLOROBENZENE		3.8	U		5.2	U		4.5	U		4.5	U	
2-BUTANONE		3.8	UJ	C	5.2	UJ	C	4.5	UJ	C	4.5	U	
2-HEXANONE		3.8	UJ	C	5.2	UJ	C	4.5	UJ	C	4.5	U	
4-METHYL-2-PENTANONE		3.8	UJ	C	5.2	UJ	C	4.5	UJ	C	4.5	U	
ACETONE		3.8	UJ	C	5.2	UJ	C	4.5	UJ	C	4.5	U	
BENZENE		3	J	P	5.2	U		4.8			4.5	U	
BROMODICHLOROMETHANE		7.6	U		10	U		8.9	U		8.9	U	
BROMOFORM		3.8	U		5.2	U		4.5	U		4.5	U	
BROMOMETHANE		7.6	U		10	U		8.9	U		8.9	U	
CARBON DISULFIDE		3.8	U		5.2	U		1.2	J	P	2.6	J	P
CARBON TETRACHLORIDE		3.8	U		5.2	U		4.5	U		4.5	U	
CHLOROBENZENE		3.8	U		5.2	U		4.5	U		4.5	U	
CHLORODIBROMOMETHANE		3.8	U		5.2	U		4.5	U		4.5	U	
CHLOROETHANE		7.6	U		10	U		8.9	U		8.9	U	
CHLOROFORM		3.8	U		5.2	U		4.5	U		4.5	U	
CHLOROMETHANE		7.6	U		10	U		8.9	U		8.9	U	
CIS-1,2-DICHLOROETHENE		7.6	U		10	U		8.9	U		8.9	U	
CIS-1,3-DICHLOROPROPENE		3.8	U		5.2	U		4.5	U		4.5	U	
CYCLOHEXANE		4.4			0.71	J	P	9			1.3	J	P
DICHLORODIFLUOROMETHANE		3.8	U		5.2	U		4.5	U		4.5	U	
ETHYLBENZENE		1.9	J	P	5.2	U		1	J	P	4.5	U	
ISOPROPYLBENZENE		3.8	U		5.2	U		4.5	U		4.5	U	
METHYL ACETATE		7.6	U		10	U		8.9	U		8.9	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB19-SO-0204			NTC21SB20-SO-0001			NTC21SB20-SO-0406			NTC21SB21-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-36			0910006-15			0910006-16			0910006-17		
FRACTION: OV	SAMP_DATE	9/27/2009			9/26/2009			9/26/2009			9/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	83.0			94.0			87.0			93.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		5	U		4.4	U		4	U		5.2	U	
1,1,2,2-TETRACHLOROETHANE		5	U		4.4	U		4	U		5.2	U	
1,1,2-TRICHLOROETHANE		5	U		4.4	U		4	U		5.2	U	
1,1,2-TRICHLOROTRIFLUOROETHANE		5	U		4.4	U		4	U		5.2	U	
1,1-DICHLOROETHANE		5	UJ	C	4.4	U		4	U		5.2	U	
1,1-DICHLOROETHENE		5	U		4.4	U		4	U		5.2	U	
1,2,4-TRICHLOROBENZENE		5	U		4.4	U		4	U		5.2	U	
1,2-DIBROMO-3-CHLOROPROPANE		5	U		4.4	U		4	U		5.2	U	
1,2-DIBROMOETHANE		5	U		4.4	U		4	U		5.2	U	
1,2-DICHLOROBENZENE		5	U		4.4	U		4	U		5.2	U	
1,2-DICHLOROETHANE		5	U		4.4	U		4	U		5.2	U	
1,2-DICHLOROPROPANE		5	U		4.4	U		4	U		5.2	U	
1,3-DICHLOROBENZENE		5	U		4.4	U		4	U		5.2	U	
1,4-DICHLOROBENZENE		5	U		4.4	U		4	U		5.2	U	
2-BUTANONE		9.1			4.4	UJ	C	4	UJ	C	5.2	UJ	C
2-HEXANONE		5	U		4.4	U		4	U		5.2	U	
4-METHYL-2-PENTANONE		5	U		4.4	U		4	U		5.2	U	
ACETONE		87			4.4	U		4	U		5.2	U	
BENZENE		5	U		0.74	J	P	1.2	J	P	5.2	U	
BROMODICHLOROMETHANE		10	U		8.8	U		8	U		10	U	
BROMOFORM		5	U		4.4	U		4	U		5.2	U	
BROMOMETHANE		10	U		8.8	U		8	U		10	U	
CARBON DISULFIDE		5	U		4.4	U		12			4.2	J	P
CARBON TETRACHLORIDE		5	U		4.4	U		4	U		5.2	U	
CHLOROBENZENE		5	U		4.4	U		4	U		5.2	U	
CHLORODIBROMOMETHANE		5	U		4.4	U		4	U		5.2	U	
CHLOROETHANE		10	U		8.8	U		8	U		10	U	
CHLOROFORM		5	U		4.4	U		4	U		5.2	U	
CHLOROMETHANE		2.2	J	P	8.8	U		8	U		10	U	
CIS-1,2-DICHLOROETHENE		10	U		8.8	U		8	U		10	U	
CIS-1,3-DICHLOROPROPENE		5	U		4.4	U		4	U		5.2	U	
CYCLOHEXANE		5	U		0.75	J	P	2.5	J	P	0.94	J	P
DICHLORODIFLUOROMETHANE		5	U		4.4	U		4	U		5.2	U	
ETHYLBENZENE		5	U		4.4	U		4	U		5.2	U	
ISOPROPYLBENZENE		5	U		4.4	U		4	U		5.2	U	
METHYL ACETATE		10	U		8.8	U		8	U		10	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB21-SO-0608			NTC21SB22-SO-0001			NTC21SB22-SO-0204		
SDG: CTO064_001	LAB_ID	0910006-18			0910006-37			0910006-38		
FRACTION: OV	SAMP_DATE	9/26/2009			9/27/2009			9/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	90.0			81.0			80.0		
	DUP_OF									
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		5.1	U		6.6	U		5.5	U	
1,1,2,2-TETRACHLOROETHANE		5.1	U		6.6	U		5.5	U	
1,1,2-TRICHLOROETHANE		5.1	U		6.6	U		5.5	U	
1,1,2-TRICHLOROTRIFLUOROETHANE		5.1	U		6.6	U		5.5	U	
1,1-DICHLOROETHANE		5.1	U		6.6	UJ	C	5.5	UJ	C
1,1-DICHLOROETHENE		5.1	U		6.6	U		5.5	U	
1,2,4-TRICHLOROBENZENE		5.1	U		6.6	U		5.5	U	
1,2-DIBROMO-3-CHLOROPROPANE		5.1	U		6.6	U		5.5	U	
1,2-DIBROMOETHANE		5.1	U		6.6	U		5.5	U	
1,2-DICHLOROBENZENE		5.1	U		6.6	U		5.5	U	
1,2-DICHLOROETHANE		5.1	U		6.6	U		5.5	U	
1,2-DICHLOROPROPANE		5.1	U		6.6	U		5.5	U	
1,3-DICHLOROBENZENE		5.1	U		6.6	U		5.5	U	
1,4-DICHLOROBENZENE		5.1	U		6.6	U		5.5	U	
2-BUTANONE		5.1	UJ	C	6.6	U		5.5	U	
2-HEXANONE		5.1	U		6.6	U		5.5	U	
4-METHYL-2-PENTANONE		5.1	U		6.6	U		5.5	U	
ACETONE		5.1	U		21			5.5	U	
BENZENE		1.6	J	P	6.6	U		5.5	U	
BROMODICHLOROMETHANE		10	U		13	U		11	U	
BROMOFORM		5.1	U		6.6	U		5.5	U	
BROMOMETHANE		10	U		13	U		11	U	
CARBON DISULFIDE		5.1	U		6.6	U		9		
CARBON TETRACHLORIDE		5.1	U		6.6	U		5.5	U	
CHLOROBENZENE		5.1	U		6.6	U		5.5	U	
CHLORODIBROMOMETHANE		5.1	U		6.6	U		5.5	U	
CHLOROETHANE		10	U		13	U		11	U	
CHLOROFORM		5.1	U		6.6	U		5.5	U	
CHLOROMETHANE		10	U		13	U		11	U	
CIS-1,2-DICHLOROETHENE		10	U		13	U		11	U	
CIS-1,3-DICHLOROPROPENE		5.1	U		6.6	U		5.5	U	
CYCLOHEXANE		3.2	J	P	6.6	U		0.75	J	P
DICHLORODIFLUOROMETHANE		5.1	U		6.6	U		5.5	U	
ETHYLBENZENE		5.1	U		6.6	U		5.5	U	
ISOPROPYLBENZENE		5.1	U		6.6	U		5.5	U	
METHYL ACETATE		10	U		13	U		11	U	

PROJ_NO: 01797	NSAMPLE	FD-092609-01			FD-092609-02			FD-092709-01			FD-092809-01		
SDG: CTO064_001	LAB_ID	0910006-01			0910006-02			0910006-20			0910006-40		
FRACTION: OV	SAMP_DATE	9/26/2009			9/26/2009			9/27/2009			9/28/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	93.0			93.0			76.0			80.0		
	DUP_OF	NTC21SB18-SO-0507			NTC21SB09-SO-0001			NTC21SB15-SO-0204			NTC21SB05-SO-0001		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		5.4			0.91	J	P	5.2	U		2.7	J	P
METHYL TERT-BUTYL ETHER		4	U		4.7	U		5.2	U		4.9	U	
METHYLENE CHLORIDE		1.3	U	A	0.78	U	A	1.1	U	A	1.1	U	A
STYRENE		4	U		4.7	U		5.2	U		4.9	U	
TETRACHLOROETHENE		4	U		4.7	U		5.2	U		4.9	U	
TOLUENE		2.6	J	P	4.7	U		5.2	U		4.9	U	
TOTAL XYLENES		4	U		4.7	U		5.2	U		4.9	U	
TRANS-1,2-DICHLOROETHENE		4	U		4.7	U		5.2	U		4.9	U	
TRANS-1,3-DICHLOROPROPENE		4	U		4.7	U		5.2	U		4.9	U	
TRICHLOROETHENE		4	U		4.7	U		5.2	U		4.9	U	
TRICHLOROFLUOROMETHANE		4	U		4.7	U		5.2	U		4.9	U	
VINYL CHLORIDE		4	U		4.7	U		5.2	U		4.9	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB01-SO-0102			NTC21SB02-SO-0001			NTC21SB02-SO-0204			NTC21SB03-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-41			0910006-42			0910006-43			0910006-44		
FRACTION: OV	SAMP_DATE	9/28/2009			9/28/2009			9/28/2009			9/28/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	84.0			90.0			89.0			95.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		2.4	J	P	0.43	J	P	1.8	J	DP	1.6	J	P
METHYL TERT-BUTYL ETHER		4.3	U		4.8	U		5.8	U		5.3	U	
METHYLENE CHLORIDE		1	U	A	1.3	U	A	1.3	U	A	1.4	U	A
STYRENE		4.3	U		4.8	U		5.8	UJ	D	5.3	U	
TETRACHLOROETHENE		4.3	U		4.8	U		5.8	UJ	D	5.3	U	
TOLUENE		1.4	J	P	4.8	U		5.8	UJ	D	5.3	U	
TOTAL XYLENES		4.3	U		4.8	U		5.8	UJ	D	5.3	U	
TRANS-1,2-DICHLOROETHENE		4.3	U		4.8	U		5.8	UJ	D	5.3	U	
TRANS-1,3-DICHLOROPROPENE		4.3	U		4.8	U		5.8	UJ	D	5.3	U	
TRICHLOROETHENE		4.3	U		4.8	U		5.8	UJ	D	5.3	U	
TRICHLOROFLUOROMETHANE		4.3	U		4.8	U		2.8	J	P	5.3	U	
VINYL CHLORIDE		4.3	U		4.8	U		5.8	UJ	D	5.3	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB03-SO-0204			NTC21SB04-SO-0001			NTC21SB04-SO-0406			NTC21SB05-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-45			0910006-21			0910006-22			0910006-46		
FRACTION: OV	SAMP_DATE	9/28/2009			9/27/2009			9/27/2009			9/28/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	92.0			92.0			58.0			94.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		1.6	J	PR	2.1	J	P	1.4	J	P	2.5	J	P
METHYL TERT-BUTYL ETHER		5.4	UJ	R	5.2	U		6.6	U		7.1	U	
METHYLENE CHLORIDE		1.3	U	A	1.1	U	A	1.3	U	A	3.2	U	A
STYRENE		5.4	UJ	R	5.2	U		6.6	U		7.1	U	
TETRACHLOROETHENE		5.4	UJ	R	5.2	U		6.6	U		7.1	U	
TOLUENE		5.4	UJ	R	5.2	U		6.6	U		7.1	U	
TOTAL XYLENES		5.4	UJ	R	5.2	U		6.6	U		7.1	U	
TRANS-1,2-DICHLOROETHENE		5.4	UJ	R	5.2	U		6.6	U		7.1	U	
TRANS-1,3-DICHLOROPROPENE		5.4	UJ	R	5.2	U		6.6	U		7.1	U	
TRICHLOROETHENE		5.4	UJ	R	5.2	U		6.6	U		7.1	U	
TRICHLOROFLUOROMETHANE		2.8	J	PR	5.2	U		6.6	U		7.1	U	
VINYL CHLORIDE		5.4	UJ	R	5.2	U		6.6	U		7.1	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB05-SO-0204			NTC21SB06-SO-0001			NTC21SB06-SO-0204			NTC21SB07-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-47			0910006-23			0910006-24			0910006-25		
FRACTION: OV	SAMP_DATE	9/28/2009			9/27/2009			9/27/2009			9/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	91.0			82.0			77.0			92.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		3.1	J	P	4.3	U		2.2	J	PR	3.5	J	P
METHYL TERT-BUTYL ETHER		4.3	U		4.3	U		6.2	UJ	R	6	U	
METHYLENE CHLORIDE		1.8	U	A	0.94	U	A	1.1	U	A	1.2	U	A
STYRENE		4.3	U		4.3	U		6.2	UJ	R	6	U	
TETRACHLOROETHENE		4.3	U		4.3	U		6.2	UJ	R	6	U	
TOLUENE		4.3	U		4.3	U		6.2	UJ	R	6	U	
TOTAL XYLENES		4.3	U		4.3	U		6.2	UJ	R	6	U	
TRANS-1,2-DICHLOROETHENE		4.3	U		4.3	U		6.2	UJ	R	6	U	
TRANS-1,3-DICHLOROPROPENE		4.3	U		4.3	U		6.2	UJ	R	6	U	
TRICHLOROETHENE		4.3	U		4.3	U		6.2	UJ	R	6	U	
TRICHLOROFLUOROMETHANE		4.3	U		4.3	U		6.2	UJ	R	6	U	
VINYL CHLORIDE		4.3	U		4.3	U		6.2	UJ	R	6	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB07-SO-0204			NTC21SB08-SO-0001			NTC21SB08-SO-0204			NTC21SB09-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-26			0910006-48			0910006-49			0910006-03		
FRACTION: OV	SAMP_DATE	9/27/2009			9/28/2009			9/28/2009			9/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	86.0			93.0			74.0			91.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		4.5	J	P	2.6	J	P	7.1			4.4	U	
METHYL TERT-BUTYL ETHER		5.1	U		5.4	U		6.8	U		4.4	U	
METHYLENE CHLORIDE		1.1	U	A	2	U	A	3.3	U	A	1.8	U	A
STYRENE		5.1	U		5.4	U		6.8	U		4.4	U	
TETRACHLOROETHENE		5.1	U		5.4	U		6.8	U		4.4	U	
TOLUENE		5.1	U		5.4	U		4.3	J	P	4.4	U	
TOTAL XYLENES		5.1	U		5.4	U		6.8	U		4.4	U	
TRANS-1,2-DICHLOROETHENE		5.1	U		5.4	U		6.8	U		4.4	U	
TRANS-1,3-DICHLOROPROPENE		5.1	U		5.4	U		6.8	U		4.4	U	
TRICHLOROETHENE		5.1	U		5.4	U		6.8	U		4.4	U	
TRICHLOROFLUOROMETHANE		5.1	U		5.4	U		6.8	U		4.4	U	
VINYL CHLORIDE		5.1	U		5.4	U		6.8	U		4.4	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB09-SO-0204			NTC21SB10-SO-0001			NTC21SB10-SO-0406			NTC21SB11-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-04			0910006-05			0910006-06			0910006-07		
FRACTION: OV	SAMP_DATE	9/26/2009			9/26/2009			9/26/2009			9/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	79.0			90.0			83.0			92.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		1.2	J	P	3.2	J	P	5			5.2	U	
METHYL TERT-BUTYL ETHER		4.7	U		5.3	U		4.9	U		5.2	U	
METHYLENE CHLORIDE		1.8	U	A	2.1	U	A	1.8	U	A	14	U	A
STYRENE		4.7	U		5.3	U		4.9	U		5.2	U	
TETRACHLOROETHENE		4.7	U		5.3	U		4.9	U		5.2	U	
TOLUENE		4.7	U		5.3	U		1.6	J	P	5.2	U	
TOTAL XYLENES		4.7	U		5.3	U		4.9	U		1.6	J	P
TRANS-1,2-DICHLOROETHENE		4.7	U		5.3	U		4.9	U		5.2	U	
TRANS-1,3-DICHLOROPROPENE		4.7	U		5.3	U		4.9	U		5.2	U	
TRICHLOROETHENE		4.7	U		5.3	U		4.9	U		5.2	U	
TRICHLOROFLUOROMETHANE		4.7	U		5.3	U		4.9	U		5.2	U	
VINYL CHLORIDE		4.7	U		5.3	U		4.9	U		5.2	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB11-SO-0204			NTC21SB12-SO-0001			NTC21SB12-SO-0204			NTC21SB13-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-08			0910006-09			0910006-10			0910006-27		
FRACTION: OV	SAMP_DATE	9/26/2009			9/26/2009			9/26/2009			9/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	84.0			85.0			77.0			78.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		1.5	J	P	3.7	J	P	4.8	J	P	0.88	J	PR
METHYL TERT-BUTYL ETHER		5.6	U		5.6	U		7.7	U		6.5	UJ	R
METHYLENE CHLORIDE		1.9	U	A	2.3	U	A	2.6	U	A	1.5	U	A
STYRENE		5.6	U		5.6	U		7.7	U		6.5	UJ	R
TETRACHLOROETHENE		5.6	U		5.6	U		7.7	U		6.5	UJ	R
TOLUENE		5.6	U		5.6	U		7.7	U		6.5	UJ	R
TOTAL XYLENES		5.6	U		5.6	U		7.7	U		6.5	UJ	R
TRANS-1,2-DICHLOROETHENE		5.6	U		5.6	U		7.7	U		6.5	UJ	R
TRANS-1,3-DICHLOROPROPENE		5.6	U		5.6	U		7.7	U		6.5	UJ	R
TRICHLOROETHENE		5.6	U		5.6	U		7.7	U		6.5	UJ	R
TRICHLOROFLUOROMETHANE		5.6	U		5.6	U		7.7	U		6.5	UJ	R
VINYL CHLORIDE		5.6	U		5.6	U		7.7	U		6.5	UJ	R

PROJ_NO: 01797	NSAMPLE	NTC21SB13-SO-0204			NTC21SB14-SO-0001			NTC21SB14-SO-0204			NTC21SB15-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-28			0910006-29			0910006-30			0910006-31		
FRACTION: OV	SAMP_DATE	9/27/2009			9/27/2009			9/27/2009			9/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	84.0			82.0			75.0			83.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		4.6			0.56	J	DP	6.7	U		0.86	J	P
METHYL TERT-BUTYL ETHER		4.2	U		6.8	U		6.7	U		5.5	U	
METHYLENE CHLORIDE		0.86	U	A	1.5	U	A	1.7	U	A	1.3	U	A
STYRENE		4.2	U		6.8	UJ	D	6.7	U		5.5	U	
TETRACHLOROETHENE		4.2	U		6.8	UJ	D	6.7	U		5.5	U	
TOLUENE		2.7	J	P	6.8	UJ	D	6.7	U		5.5	U	
TOTAL XYLENES		4.2	U		6.8	UJ	D	6.7	U		5.5	U	
TRANS-1,2-DICHLOROETHENE		4.2	U		6.8	UJ	D	6.7	U		5.5	U	
TRANS-1,3-DICHLOROPROPENE		4.2	U		6.8	UJ	D	6.7	U		5.5	U	
TRICHLOROETHENE		4.2	U		6.8	UJ	D	6.7	U		5.5	U	
TRICHLOROFLUOROMETHANE		4.2	U		6.8	U		6.7	U		5.5	U	
VINYL CHLORIDE		4.2	U		6.8	U		6.7	U		5.5	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB15-SO-0204			NTC21SB16-SO-0001			NTC21SB16-SO-0204			NTC21SB17-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-32			0910006-33			0910006-34			0910006-11		
FRACTION: OV	SAMP_DATE	9/27/2009			9/27/2009			9/27/2009			9/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	77.0			89.0			77.0			83.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		4.9	U		0.72	J	P	4.9	U		0.78	J	P
METHYL TERT-BUTYL ETHER		4.9	U		5.3	U		4.9	U		7.8	U	
METHYLENE CHLORIDE		1.3	U	A	1.4	U	A	1.1	U	A	3.2	U	A
STYRENE		4.9	U		5.3	U		4.9	U		7.8	U	
TETRACHLOROETHENE		4.9	U		5.3	U		4.9	U		7.8	U	
TOLUENE		4.9	U		5.3	U		4.9	U		7.8	U	
TOTAL XYLENES		4.9	U		5.3	U		4.9	U		7.8	U	
TRANS-1,2-DICHLOROETHENE		4.9	U		5.3	U		4.9	U		7.8	U	
TRANS-1,3-DICHLOROPROPENE		4.9	U		5.3	U		4.9	U		7.8	U	
TRICHLOROETHENE		4.9	U		5.3	U		4.9	U		7.8	U	
TRICHLOROFLUOROMETHANE		4.9	U		5.3	U		4.9	U		7.8	U	
VINYL CHLORIDE		4.9	U		5.3	U		4.9	U		7.8	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB17-SO-0507			NTC21SB18-SO-0001			NTC21SB18-SO-0507			NTC21SB19-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-12			0910006-13			0910006-14			0910006-35		
FRACTION: OV	SAMP_DATE	9/26/2009			9/26/2009			9/26/2009			9/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	90.0			86.0			89.0			92.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		8.7			1.2	J	P	11			2.6	J	P
METHYL TERT-BUTYL ETHER		3.8	U		5.2	U		4.5	U		4.5	U	
METHYLENE CHLORIDE		1.4	U	A	2	U	A	1.8	U	A	1	U	A
STYRENE		3.8	U		5.2	U		4.5	U		4.5	U	
TETRACHLOROETHENE		3.8	U		5.2	U		4.5	U		1.4	J	P
TOLUENE		5.6			5.2	U		5.4			4.5	U	
TOTAL XYLENES		2.2	J	P	5.2	U		4.5	U		4.5	U	
TRANS-1,2-DICHLOROETHENE		3.8	U		5.2	U		4.5	U		4.5	U	
TRANS-1,3-DICHLOROPROPENE		3.8	U		5.2	U		4.5	U		4.5	U	
TRICHLOROETHENE		3.8	U		5.2	U		4.5	U		4.5	U	
TRICHLOROFLUOROMETHANE		3.8	U		5.2	U		4.5	U		4.5	U	
VINYL CHLORIDE		3.8	U		5.2	U		4.5	U		4.5	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB19-SO-0204			NTC21SB20-SO-0001			NTC21SB20-SO-0406			NTC21SB21-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-36			0910006-15			0910006-16			0910006-17		
FRACTION: OV	SAMP_DATE	9/27/2009			9/26/2009			9/26/2009			9/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	83.0			94.0			87.0			93.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		5	U		1.1	J	P	5.4			1.2	J	P
METHYL TERT-BUTYL ETHER		5	U		4.4	U		4	U		5.2	U	
METHYLENE CHLORIDE		1.4	U	A	0.97	U	A	0.72	U	A	1.1	U	A
STYRENE		5	U		4.4	U		4	U		5.2	U	
TETRACHLOROETHENE		18			4.4	U		4	U		5.2	U	
TOLUENE		5	U		1.1	J	P	1.4	J	P	5.2	U	
TOTAL XYLENES		5	U		4.4	U		4	U		5.2	U	
TRANS-1,2-DICHLOROETHENE		5	U		4.4	U		4	U		5.2	U	
TRANS-1,3-DICHLOROPROPENE		5	U		4.4	U		4	U		5.2	U	
TRICHLOROETHENE		5	U		4.4	U		4	U		5.2	U	
TRICHLOROFLUOROMETHANE		5	U		4.4	U		4	U		5.2	U	
VINYL CHLORIDE		5	U		4.4	U		4	U		5.2	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB21-SO-0608			NTC21SB22-SO-0001			NTC21SB22-SO-0204		
SDG: CTO064_001	LAB_ID	0910006-18			0910006-37			0910006-38		
FRACTION: OV	SAMP_DATE	9/26/2009			9/27/2009			9/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	90.0			81.0			80.0		
	DUP_OF									
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		4.4	J	P	6.6	U		1.4	J	P
METHYL TERT-BUTYL ETHER		5.1	U		6.6	U		5.5	U	
METHYLENE CHLORIDE		1	U	A	1.9	U	A	1.4	U	A
STYRENE		5.1	U		6.6	U		5.5	U	
TETRACHLOROETHENE		5.1	U		6.6	U		5.5	U	
TOLUENE		1.4	J	P	6.6	U		5.5	U	
TOTAL XYLENES		5.1	U		6.6	U		5.5	U	
TRANS-1,2-DICHLOROETHENE		5.1	U		6.6	U		5.5	U	
TRANS-1,3-DICHLOROPROPENE		5.1	U		6.6	U		5.5	U	
TRICHLOROETHENE		5.1	U		6.6	U		5.5	U	
TRICHLOROFLUOROMETHANE		5.1	U		6.6	U		5.5	U	
VINYL CHLORIDE		5.1	U		6.6	U		5.5	U	

PROJ_NO: 01797	NSAMPLE	RB-092909-01			RB-092909-02			SB-092909-01		
SDG: CTO064_001	LAB_ID	0910006-51			0910006-52			0910006-53		
FRACTION: OS	SAMP_DATE	9/29/2009			9/29/2009			9/29/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0		
	DUP_OF									
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		4.8	U		4.7	U		4.6	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		4.8	UJ	C	4.7	UJ	C	4.6	UJ	C
2,4,5-TRICHLOROPHENOL		4.8	U		4.7	U		4.6	U	
2,4,6-TRICHLOROPHENOL		4.8	U		4.7	U		4.6	U	
2,4-DICHLOROPHENOL		4.8	U		4.7	U		4.6	U	
2,4-DIMETHYLPHENOL		19	UJ	C	19	UJ	C	18	UJ	C
2,4-DINITROPHENOL		48	U		47	U		46	U	
2,4-DINITROTOLUENE		4.8	U		4.7	U		4.6	U	
2,6-DINITROTOLUENE		4.8	U		4.7	U		4.6	U	
2-CHLORONAPHTHALENE		4.8	U		4.7	U		4.6	U	
2-CHLOROPHENOL		4.8	UJ	C	4.7	UJ	C	4.6	UJ	C
2-METHYLNAPHTHALENE		0.068	U	A	0.07	U	A	0.046	U	
2-METHYLPHENOL		4.8	U		4.7	U		4.6	U	
2-NITROANILINE		19	UJ	C	19	UJ	C	18	UJ	C
2-NITROPHENOL		4.8	U		4.7	U		4.6	U	
3,3'-DICHLOROBENZIDINE		4.8	U		4.7	U		4.6	U	
3-NITROANILINE		19	U		19	U		18	U	
4,6-DINITRO-2-METHYLPHENOL		19	U		19	U		18	U	
4-BROMOPHENYL PHENYL ETHER		4.8	U		4.7	U		4.6	U	
4-CHLORO-3-METHYLPHENOL		4.8	U		4.7	U		4.6	U	
4-CHLOROANILINE		4.8	U		4.7	U		4.6	U	
4-CHLOROPHENYL PHENYL ETHER		4.8	U		4.7	U		4.6	U	
4-METHYLPHENOL		4.8	U		4.7	U		4.6	U	
4-NITROANILINE		19	U		19	U		18	U	
4-NITROPHENOL		19	UJ	C	19	UJ	C	18	UJ	C
ACENAPHTHENE		0.048	U		0.056	U	A	0.046	U	
ACENAPHTHYLENE		0.048	U		0.049	U	A	0.046	U	
ACETOPHENONE		4.8	U		4.7	U		4.6	U	
ANTHRACENE		0.048	U		0.07			0.046	U	
ATRAZINE		4.8	U		4.7	U		4.6	U	
BENZALDEHYDE		4.8	U		4.7	U		4.6	U	
BENZO(A)ANTHRACENE		0.048	UJ	E	0.034	J	EP	0.046	UJ	E
BENZO(A)PYRENE		0.048	U		0.028	J	P	0.046	U	
BENZO(B)FLUORANTHENE		0.048	U		0.04	J	P	0.046	U	
BENZO(G,H,I)PERYLENE		0.048	U		0.047	U		0.046	U	

PROJ_NO: 01797	NSAMPLE	RB-092909-01			RB-092909-02			SB-092909-01		
SDG: CTO064_001	LAB_ID	0910006-51			0910006-52			0910006-53		
FRACTION: OS	SAMP_DATE	9/29/2009			9/29/2009			9/29/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0		
	DUP_OF									
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BENZO(K)FLUORANTHENE		0.048	UJ	C	0.066	UJ	C	0.046	UJ	C
BIS(2-CHLOROETHOXY)METHANE		4.8	U		4.7	U		4.6	U	
BIS(2-CHLOROETHYL)ETHER		4.8	U		4.7	U		4.6	U	
BIS(2-ETHYLHEXYL)PHTHALATE		4.8	U		4.7	U		4.6	U	
BUTYL BENZYL PHTHALATE		4.8	U		4.7	U		4.6	U	
CAPROLACTAM		4.8	UJ	E	4.7	UJ	E	0.6	J	EP
CARBAZOLE		4.8	U		4.7	U		4.6	U	
CHRYSENE		0.048	U		0.058			0.046	U	
DIBENZO(A,H)ANTHRACENE		0.048	U		0.036	J	P	0.046	U	
DIBENZOFURAN		4.8	U		4.7	U		4.6	U	
DIETHYL PHTHALATE		4.8	U		4.7	U		4.6	U	
DIMETHYL PHTHALATE		4.8	U		4.7	U		4.6	U	
DI-N-BUTYL PHTHALATE		4.8	U		4.7	U		4.6	U	
DI-N-OCTYL PHTHALATE		4.8	U		4.7	U		4.6	U	
FLUORANTHENE		0.048	U		0.058			0.046	U	
FLUORENE		0.048	U		0.063			0.046	U	
HEXACHLOROBENZENE		4.8	U		4.7	U		4.6	U	
HEXACHLOROBUTADIENE		4.8	U		4.7	U		4.6	U	
HEXACHLOROCYCLOPENTADIENE		4.8	U		4.7	U		4.6	U	
HEXACHLOROETHANE		4.8	U		4.7	U		4.6	U	
INDENO(1,2,3-CD)PYRENE		0.048	U		0.047	U		0.046	UJ	C
ISOPHORONE		4.8	U		4.7	U		4.6	U	
NAPHTHALENE		0.055	U	A	0.069	U	A	0.046	U	A
NITROBENZENE		4.8	UJ	C	4.7	UJ	C	4.6	UJ	C
N-NITROSO-DI-N-PROPYLAMINE		4.8	UJ	C	4.7	UJ	C	4.6	UJ	C
N-NITROSODIPHENYLAMINE		4.8	U		4.7	U		4.6	U	
PENTACHLOROPHENOL		19	U		19	U		18	U	
PHENANTHRENE		0.048	U		0.076	U	A	0.046	U	
PHENOL		4.8	U		4.7	U		4.6	U	
PYRENE		0.048	U		0.056			0.046	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB01-SO-0102			NTC21SB02-SO-0001			NTC21SB02-SO-0204			NTC21SB03-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-41			0910006-42			0910006-43			0910006-44		
FRACTION: OS	SAMP_DATE	9/28/2009			9/28/2009			9/28/2009			9/28/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	84.0			90.0			89.0			95.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		62	J	P	370	U		380	U		350	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		790	U		740	U		750	U		700	U	
2,4,5-TRICHLOROPHENOL		400	U		370	U		380	UJ	D	350	U	
2,4,6-TRICHLOROPHENOL		400	U		370	U		380	UJ	D	350	U	
2,4-DICHLOROPHENOL		400	U		370	U		380	UJ	D	350	U	
2,4-DIMETHYLPHENOL		790	U		740	U		750	U		700	U	
2,4-DINITROPHENOL		4000	U		3700	U		3800	UR	D	3500	U	
2,4-DINITROTOLUENE		400	U		370	U		380	U		350	U	
2,6-DINITROTOLUENE		400	U		370	U		380	U		350	U	
2-CHLORONAPHTHALENE		400	U		370	U		380	U		350	U	
2-CHLOROPHENOL		400	U		370	U		380	U		350	U	
2-METHYLNAPHTHALENE		180			450			1000	J	D	330		
2-METHYLPHENOL		400	U		370	U		380	U		350	U	
2-NITROANILINE		1600	U		1500	U		1500	UJ	D	1400	U	
2-NITROPHENOL		400	U		370	U		380	U		350	U	
3,3'-DICHLOROBENZIDINE		400	U		370	U		380	UR	D	350	U	
3-NITROANILINE		1600	U		1500	U		1500	UJ	D	1400	U	
4,6-DINITRO-2-METHYLPHENOL		1600	U		1500	U		1500	UR	D	1400	U	
4-BROMOPHENYL PHENYL ETHER		400	U		370	U		380	U		350	U	
4-CHLORO-3-METHYLPHENOL		400	U		370	U		380	U		350	U	
4-CHLOROANILINE		400	U		370	U		380	U		350	U	
4-CHLOROPHENYL PHENYL ETHER		400	U		370	U		380	U		350	U	
4-METHYLPHENOL		400	U		370	U		380	U		350	U	
4-NITROANILINE		1600	U		1500	U		1500	UJ	D	1400	U	
4-NITROPHENOL		1600	U		1500	UJ	C	1500	UR	D	1400	UJ	C
ACENAPHTHENE		880			3.7	U		110			54		
ACENAPHTHYLENE		20			56			3.8	U		680		
ACETOPHENONE		400	U		370	U		230	J	P	350	U	
ANTHRACENE		1700			59			130			350		
ATRAZINE		400	U		370	UJ	C	380	UJ	C	350	UJ	C
BENZALDEHYDE		400	UR	E	370	U		220	J	DP	350	U	
BENZO(A)ANTHRACENE		4800			240			280			1100	J	N
BENZO(A)PYRENE		4200			360			320			2400	J	N
BENZO(B)FLUORANTHENE		6600			540			450			3500	J	N
BENZO(G,H,I)PERYLENE		2200			340	J	C	250	J	C	1300	J	N
BENZO(K)FLUORANTHENE		2500			120			150			2000		

PROJ_NO: 01797	NSAMPLE	NTC21SB03-SO-0204			NTC21SB04-SO-0001			NTC21SB04-SO-0406			NTC21SB05-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-45			0910006-21			0910006-22			0910006-46		
FRACTION: OS	SAMP_DATE	9/28/2009			9/27/2009			9/27/2009			9/28/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	92.0			92.0			58.0			94.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		360	U		360	U		580	U		360	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		720	U		720	U		1200	U		710	U	
2,4,5-TRICHLOROPHENOL		360	U		360	U		580	U		360	U	
2,4,6-TRICHLOROPHENOL		360	U		360	U		580	U		360	U	
2,4-DICHLOROPHENOL		360	U		360	U		580	U		360	U	
2,4-DIMETHYLPHENOL		720	U		720	U		1200	U		710	U	
2,4-DINITROPHENOL		3600	U		3600	U		5800	U		3600	U	
2,4-DINITROTOLUENE		360	U		360	U		580	U		360	U	
2,6-DINITROTOLUENE		360	U		360	U		580	U		360	U	
2-CHLORONAPHTHALENE		360	U		360	U		580	U		360	U	
2-CHLOROPHENOL		360	U		360	U		580	U		360	U	
2-METHYLNAPHTHALENE		2100			700			7.5	U	A	400		
2-METHYLPHENOL		360	U		360	U		580	U		360	U	
2-NITROANILINE		1400	U		1400	U		2300	U		1400	U	
2-NITROPHENOL		360	U		360	U		580	U		360	U	
3,3'-DICHLOROBENZIDINE		360	U		360	U		580	U		360	U	
3-NITROANILINE		1400	U		1400	U		2300	U		1400	U	
4,6-DINITRO-2-METHYLPHENOL		1400	U		1400	U		2300	U		1400	U	
4-BROMOPHENYL PHENYL ETHER		360	U		360	U		580	U		360	U	
4-CHLORO-3-METHYLPHENOL		360	U		360	U		580	U		360	U	
4-CHLOROANILINE		360	U		360	U		580	U		360	U	
4-CHLOROPHENYL PHENYL ETHER		360	U		360	U		580	U		360	U	
4-METHYLPHENOL		360	U		360	U		580	U		360	U	
4-NITROANILINE		1400	U		1400	U		2300	U		1400	U	
4-NITROPHENOL		1400	UJ	C	1400	U		2300	U		1400	UJ	C
ACENAPHTHENE		480			87			5.8	U		81		
ACENAPHTHYLENE		2000			3.6	U		25			3.6	U	
ACETOPHENONE		360	U		360	U		580	U		360	U	
ANTHRACENE		5000			3.6	U		8			180	J	G
ATRAZINE		360	UJ	C	360	U		580	U		360	UJ	C
BENZALDEHYDE		360	U		360	UR	E	580	UR	E	360	U	
BENZO(A)ANTHRACENE		32000			380			120			250	J	N
BENZO(A)PYRENE		27000			3.6	U		5.8	U		390	J	N
BENZO(B)FLUORANTHENE		41000			870			230			480	J	N
BENZO(G,H,I)PERYLENE		11000			290			65			260	J	CN
BENZO(K)FLUORANTHENE		14000			820			220			300	J	N

PROJ_NO: 01797	NSAMPLE	NTC21SB05-SO-0001-D						NTC21SB05-SO-0204			NTC21SB06-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-40						0910006-47			0910006-23		
FRACTION: OS	SAMP_DATE	9/28/2009			9/28/2009			9/28/2009			9/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	80.0			80.0			91.0			82.0		
	DUP_OF	NTC21SB05-SO-0001			NTC21SB05-SO-0001								
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		420	U					370	U		400	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		830	U					740	U		810	U	
2,4,5-TRICHLOROPHENOL		420	U					370	U		400	U	
2,4,6-TRICHLOROPHENOL		420	U					370	U		400	U	
2,4-DICHLOROPHENOL		420	U					370	U		400	U	
2,4-DIMETHYLPHENOL		830	U					740	U		810	U	
2,4-DINITROPHENOL		4200	U					3700	U		4000	U	
2,4-DINITROTOLUENE		420	U					370	U		400	U	
2,6-DINITROTOLUENE		420	U					370	U		400	U	
2-CHLORONAPHTHALENE		420	U					370	U		400	U	
2-CHLOROPHENOL		420	U					370	U		400	U	
2-METHYLNAPHTHALENE					490			150			640		
2-METHYLPHENOL		420	U					370	U		400	U	
2-NITROANILINE		1700	U					1500	U		1600	U	
2-NITROPHENOL		420	U					370	U		400	U	
3,3'-DICHLOROBENZIDINE		420	U					370	U		400	U	
3-NITROANILINE		1700	U					1500	U		1600	U	
4,6-DINITRO-2-METHYLPHENOL		1700	U					1500	U		1600	U	
4-BROMOPHENYL PHENYL ETHER		420	U					370	U		400	U	
4-CHLORO-3-METHYLPHENOL		420	U					370	U		400	U	
4-CHLOROANILINE		420	U					370	U		400	U	
4-CHLOROPHENYL PHENYL ETHER		420	U					370	U		400	U	
4-METHYLPHENOL		420	U					370	U		400	U	
4-NITROANILINE		1700	U					1500	U		1600	U	
4-NITROPHENOL		1700	U					1500	UJ	C	1600	U	
ACENAPHTHENE					60			33			65		
ACENAPHTHYLENE					4.2	U		19			4	U	
ACETOPHENONE		420	U					370	U		400	U	
ANTHRACENE					4.2	UJ	G	3.7	U		4	U	
ATRAZINE		420	U					370	UJ	C	400	U	
BENZALDEHYDE		420	UR	E				370	U		400	UR	E
BENZO(A)ANTHRACENE					290			140	J	N	4	U	
BENZO(A)PYRENE					440			210	J	N	4	U	
BENZO(B)FLUORANTHENE					330			290	J	N	720		
BENZO(G,H,I)PERYLENE					320			130	J	CN	4	U	
BENZO(K)FLUORANTHENE					370			120	J	N	690		

PROJ_NO: 01797	NSAMPLE	NTC21SB06-SO-0204			NTC21SB07-SO-0001			NTC21SB07-SO-0204			NTC21SB08-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-24			0910006-25			0910006-26			0910006-48		
FRACTION: OS	SAMP_DATE	9/27/2009			9/27/2009			9/27/2009			9/28/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	77.0			92.0			86.0			93.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		440	U		360	U		96	J	P	360	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		870	U		730	U		780	U		720	U	
2,4,5-TRICHLOROPHENOL		440	U		360	U		390	U		360	U	
2,4,6-TRICHLOROPHENOL		440	U		360	U		390	U		360	U	
2,4-DICHLOROPHENOL		440	U		360	U		390	U		360	U	
2,4-DIMETHYLPHENOL		870	U		730	U		780	U		720	U	
2,4-DINITROPHENOL		4400	U		3600	U		3900	U		3600	U	
2,4-DINITROTOLUENE		440	U		360	U		390	U		360	U	
2,6-DINITROTOLUENE		440	U		360	U		390	U		360	U	
2-CHLORONAPHTHALENE		440	U		360	U		390	U		360	U	
2-CHLOROPHENOL		440	U		360	U		390	U		360	U	
2-METHYLNAPHTHALENE		500			800			400			230		
2-METHYLPHENOL		440	U		360	U		390	U		360	U	
2-NITROANILINE		1700	U		1400	U		1600	U		1400	U	
2-NITROPHENOL		440	U		360	U		390	U		360	U	
3,3'-DICHLOROBENZIDINE		440	U		360	U		390	U		360	U	
3-NITROANILINE		1700	U		1400	U		1600	U		1400	U	
4,6-DINITRO-2-METHYLPHENOL		1700	U		1400	U		1600	U		1400	U	
4-BROMOPHENYL PHENYL ETHER		440	U		360	U		390	U		360	U	
4-CHLORO-3-METHYLPHENOL		440	U		360	U		390	U		360	U	
4-CHLOROANILINE		440	U		360	U		390	U		360	U	
4-CHLOROPHENYL PHENYL ETHER		440	U		360	U		390	U		360	U	
4-METHYLPHENOL		440	U		360	U		390	U		360	U	
4-NITROANILINE		1700	U		1400	U		1600	U		1400	U	
4-NITROPHENOL		1700	U		1400	U		1600	U		1400	UJ	C
ACENAPHTHENE		68			840			880			42		
ACENAPHTHYLENE		4.4	U		130			69			110		
ACETOPHENONE		440	U		360	U		390	U		48	J	P
ANTHRACENE		4.4	U		1700			1400			150		
ATRAZINE		440	U		360	U		390	U		360	UJ	C
BENZALDEHYDE		440	UR	E	360	UR	E	390	UR	E	360	U	
BENZO(A)ANTHRACENE		260			4200			4300			520	J	N
BENZO(A)PYRENE		520			3200			3600			830	J	N
BENZO(B)FLUORANTHENE		860			4400			4300			1200	J	N
BENZO(G,H,I)PERYLENE		320			1400			1600			460	J	CN
BENZO(K)FLUORANTHENE		840			1700			1700			560	J	N

PROJ_NO: 01797	NSAMPLE	NTC21SB08-SO-0204			NTC21SB09-SO-0001			NTC21SB09-SO-0001-D			NTC21SB09-SO-0204		
SDG: CTO064_001	LAB_ID	0910006-49			0910006-03			0910006-02			0910006-04		
FRACTION: OS	SAMP_DATE	9/28/2009			9/26/2009			9/26/2009			9/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	74.0			91.0			93.0			79.0		
	DUP_OF							NTC21SB09-SO-0001					
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		450	U		360	U		360	U		420	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		900	U		730	U		720	U		840	U	
2,4,5-TRICHLOROPHENOL		450	U		360	U		360	U		420	U	
2,4,6-TRICHLOROPHENOL		450	U		360	U		360	U		420	U	
2,4-DICHLOROPHENOL		450	U		360	U		360	U		420	U	
2,4-DIMETHYLPHENOL		900	U		730	UJ	C	720	UJ	C	840	UJ	C
2,4-DINITROPHENOL		4500	U		3600	U		3600	U		4200	U	
2,4-DINITROTOLUENE		450	U		360	U		360	U		420	U	
2,6-DINITROTOLUENE		450	U		360	U		360	U		420	U	
2-CHLORONAPHTHALENE		450	U		360	U		360	U		420	U	
2-CHLOROPHENOL		450	U		360	UJ	C	360	UJ	C	420	U	
2-METHYLNAPHTHALENE		84			340			350			22		
2-METHYLPHENOL		450	U		360	U		360	U		420	U	
2-NITROANILINE		1800	U		1500	UJ	C	1400	UJ	C	1700	UJ	C
2-NITROPHENOL		450	U		360	U		360	U		420	U	
3,3'-DICHLOROBENZIDINE		450	U		360	U		360	U		420	U	
3-NITROANILINE		1800	U		1500	U		1400	U		1700	U	
4,6-DINITRO-2-METHYLPHENOL		1800	U		1500	UJ	C	1400	UJ	C	1700	U	
4-BROMOPHENYL PHENYL ETHER		450	U		360	U		360	U		420	U	
4-CHLORO-3-METHYLPHENOL		450	U		360	U		360	U		420	U	
4-CHLOROANILINE		450	U		360	U		360	U		420	U	
4-CHLOROPHENYL PHENYL ETHER		450	U		360	U		360	U		420	U	
4-METHYLPHENOL		450	U		360	U		360	U		420	U	
4-NITROANILINE		1800	U		1500	U		1400	U		1700	U	
4-NITROPHENOL		1800	UJ	C	1500	UJ	C	1400	UJ	C	1700	UJ	C
ACENAPHTHENE		38			67			82			38		
ACENAPHTHYLENE		88			3.6	U		3.6	U		16		
ACETOPHENONE		450	U		360	U		360	U		420	U	
ANTHRACENE		150			110			100			110		
ATRAZINE		450	UJ	C	360	U		360	U		420	UJ	C
BENZALDEHYDE		450	U		360	U		360	U		420	U	
BENZO(A)ANTHRACENE		430	J	N	250	J	N	310	J	N	81	J	N
BENZO(A)PYRENE		740	J	N	460	J	N	660	J	N	170	J	N
BENZO(B)FLUORANTHENE		1200	J	N	670	J	N	860	J	N	280	J	N
BENZO(G,H,I)PERYLENE		470	J	CN	350	J	N	420	J	N	100	J	N
BENZO(K)FLUORANTHENE		460	J	N	290	J	N	440	J	N	92	J	N

PROJ_NO: 01797	NSAMPLE	NTC21SB10-SO-0001			NTC21SB10-SO-0406			NTC21SB11-SO-0001			NTC21SB11-SO-0204		
SDG: CTO064_001	LAB_ID	0910006-05			0910006-06			0910006-07			0910006-08		
FRACTION: OS	SAMP_DATE	9/26/2009			9/26/2009			9/26/2009			9/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	90.0			83.0			92.0			84.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		370	U		400	U		360	U		400	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		740	U		800	U		720	U		790	U	
2,4,5-TRICHLOROPHENOL		370	UJ	R	400	U		360	U		400	U	
2,4,6-TRICHLOROPHENOL		370	UJ	R	400	U		360	U		400	U	
2,4-DICHLOROPHENOL		370	UJ	R	400	U		360	U		400	U	
2,4-DIMETHYLPHENOL		740	UJ	CR	800	UJ	C	720	UJ	C	790	UJ	C
2,4-DINITROPHENOL		3700	UJ	R	4000	U		3600	U		4000	U	
2,4-DINITROTOLUENE		370	U		400	U		360	U		400	U	
2,6-DINITROTOLUENE		370	U		400	U		360	U		400	U	
2-CHLORONAPHTHALENE		370	U		400	U		360	U		400	U	
2-CHLOROPHENOL		370	UJ	CR	400	U		360	UJ	C	400	UJ	C
2-METHYLNAPHTHALENE		280			8.8			320			240		
2-METHYLPHENOL		370	UJ	R	400	U		360	U		400	U	
2-NITROANILINE		1500	UJ	C	1600	UJ	C	1400	UJ	C	1600	UJ	C
2-NITROPHENOL		370	UJ	R	400	U		360	U		400	U	
3,3'-DICHLOROBENZIDINE		370	U		400	U		360	U		400	U	
3-NITROANILINE		1500	U		1600	U		1400	U		1600	U	
4,6-DINITRO-2-METHYLPHENOL		1500	UJ	CR	1600	U		1400	UJ	C	1600	UJ	C
4-BROMOPHENYL PHENYL ETHER		370	U		400	U		360	U		400	U	
4-CHLORO-3-METHYLPHENOL		370	UJ	R	400	U		360	U		400	U	
4-CHLOROANILINE		370	U		400	U		360	U		400	U	
4-CHLOROPHENYL PHENYL ETHER		370	U		400	U		360	U		400	U	
4-METHYLPHENOL		370	UJ	R	400	U		360	U		400	U	
4-NITROANILINE		1500	U		1600	U		1400	U		1600	U	
4-NITROPHENOL		1500	UJ	CR	1600	UJ	C	1400	UJ	C	1600	UJ	C
ACENAPHTHENE		57			12			290			57		
ACENAPHTHYLENE		35			2.8	J	P	25			19		
ACETOPHENONE		370	U		400	U		360	U		400	U	
ANTHRACENE		170			16			590			76		
ATRAZINE		370	U		400	UJ	C	360	U		400	U	
BENZALDEHYDE		370	U		400	U		360	U		400	U	
BENZO(A)ANTHRACENE		390			16			1600	J	N	150	J	N
BENZO(A)PYRENE		690			33			2900	J	N	220	J	N
BENZO(B)FLUORANTHENE		970			52			4100	J	N	380	J	N
BENZO(G,H,I)PERYLENE		480			23			2000	J	CN	120	J	N
BENZO(K)FLUORANTHENE		260			17			1600	J	N	88	J	N

PROJ_NO: 01797	NSAMPLE	NTC21SB12-SO-0001			NTC21SB12-SO-0204			NTC21SB13-SO-0001			NTC21SB13-SO-0204		
SDG: CTO064_001	LAB_ID	0910006-09			0910006-10			0910006-27			0910006-28		
FRACTION: OS	SAMP_DATE	9/26/2009			9/26/2009			9/27/2009			9/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	85.0			77.0			78.0			84.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		390	U		430	U		430	U		400	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		780	U		860	U		860	U		790	U	
2,4,5-TRICHLOROPHENOL		390	U		430	U		430	U		400	U	
2,4,6-TRICHLOROPHENOL		390	U		430	U		430	U		400	U	
2,4-DICHLOROPHENOL		390	U		430	U		430	U		400	U	
2,4-DIMETHYLPHENOL		780	UJ	C	860	UJ	C	860	U		790	U	
2,4-DINITROPHENOL		3900	U		4300	U		4300	U		4000	U	
2,4-DINITROTOLUENE		390	U		430	U		430	U		400	U	
2,6-DINITROTOLUENE		390	U		430	U		430	U		400	U	
2-CHLORONAPHTHALENE		390	U		430	U		430	U		400	U	
2-CHLOROPHENOL		390	UJ	C	430	UJ	C	430	U		400	U	
2-METHYLNAPHTHALENE		450			480			840			4	U	A
2-METHYLPHENOL		390	U		430	U		430	U		400	U	
2-NITROANILINE		1600	UJ	C	1700	UJ	C	1700	U		1600	U	
2-NITROPHENOL		390	U		430	U		430	U		400	U	
3,3'-DICHLOROBENZIDINE		390	U		430	U		430	U		400	U	
3-NITROANILINE		1600	U		1700	U		1700	U		1600	U	
4,6-DINITRO-2-METHYLPHENOL		1600	UJ	C	1700	UJ	C	1700	U		1600	U	
4-BROMOPHENYL PHENYL ETHER		390	U		430	U		430	U		400	U	
4-CHLORO-3-METHYLPHENOL		390	U		430	U		430	U		400	U	
4-CHLOROANILINE		390	U		430	U		430	U		400	U	
4-CHLOROPHENYL PHENYL ETHER		390	U		430	U		430	U		400	U	
4-METHYLPHENOL		390	U		430	U		430	U		400	U	
4-NITROANILINE		1600	U		1700	U		1700	U		1600	U	
4-NITROPHENOL		1600	UJ	C	1700	UJ	C	1700	U		1600	U	
ACENAPHTHENE		49			4.3	U		4.3	U		4	U	
ACENAPHTHYLENE		3.9	U		170			4.3	U		4	U	
ACETOPHENONE		390	U		430	U		430	U		400	U	
ANTHRACENE		150			220			4.3	U		4	U	
ATRAZINE		390	U		430	U		430	U		400	U	
BENZALDEHYDE		390	U		430	U		430	UR	E	400	UR	E
BENZO(A)ANTHRACENE		400			420	J	N	4.3	U		14		
BENZO(A)PYRENE		430			620	J	N	4.3	U		4	U	
BENZO(B)FLUORANTHENE		740			1200	J	N	4.3	U		6.4		
BENZO(G,H,I)PERYLENE		210			330	J	N	410			4	U	
BENZO(K)FLUORANTHENE		220			380	J	N	4.3	U		7.2		

PROJ_NO: 01797	NSAMPLE	NTC21SB14-SO-0001			NTC21SB14-SO-0204			NTC21SB15-SO-0001			NTC21SB15-SO-0204		
SDG: CTO064_001	LAB_ID	0910006-29			0910006-30			0910006-31			0910006-32		
FRACTION: OS	SAMP_DATE	9/27/2009			9/27/2009			9/27/2009			9/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	82.0			75.0			83.0			77.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		410	U		440	U		400	U		430	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		810	U		880	U		800	U		860	U	
2,4,5-TRICHLOROPHENOL		410	UJ	D	440	U		400	U		430	U	
2,4,6-TRICHLOROPHENOL		410	U		440	U		400	U		430	U	
2,4-DICHLOROPHENOL		410	U		440	U		400	U		430	U	
2,4-DIMETHYLPHENOL		810	U		880	U		800	U		860	U	
2,4-DINITROPHENOL		4100	UR	D	4400	U		4000	U		4300	U	
2,4-DINITROTOLUENE		410	UJ	D	440	U		400	U		430	U	
2,6-DINITROTOLUENE		410	UJ	D	440	U		400	U		430	U	
2-CHLORONAPHTHALENE		410	U		440	U		400	U		430	U	
2-CHLOROPHENOL		410	U		440	U		400	U		430	U	
2-METHYLNAPHTHALENE		900			4.4	U		540			99		
2-METHYLPHENOL		410	U		440	U		400	U		430	U	
2-NITROANILINE		1600	U		1800	U		1600	U		1700	U	
2-NITROPHENOL		410	UJ	D	440	U		400	U		430	U	
3,3'-DICHLOROBENZIDINE		410	UR	D	440	U		400	U		430	U	
3-NITROANILINE		1600	UJ	D	1800	U		1600	U		1700	U	
4,6-DINITRO-2-METHYLPHENOL		1600	UJ	D	1800	U		1600	U		1700	U	
4-BROMOPHENYL PHENYL ETHER		410	U		440	U		400	U		430	U	
4-CHLORO-3-METHYLPHENOL		410	U		440	U		400	U		430	U	
4-CHLOROANILINE		410	U		440	U		400	U		430	U	
4-CHLOROPHENYL PHENYL ETHER		410	U		440	U		400	U		430	U	
4-METHYLPHENOL		410	U		440	U		400	U		430	U	
4-NITROANILINE		1600	UJ	D	1800	U		1600	U		1700	U	
4-NITROPHENOL		1600	U		1800	U		1600	U		1700	U	
ACENAPHTHENE		4.1	U		4.4	U		4	U		4.3	U	
ACENAPHTHYLENE		4.1	U		4.4	U		4	U		12		
ACETOPHENONE		410	U		440	U		400	U		430	U	
ANTHRACENE		4.1	U		4.4	U		4	U		4.3	U	
ATRAZINE		410	UJ	D	440	U		400	U		430	U	
BENZALDEHYDE		410	UR	E	440	UR	E	400	UR	E	430	UR	E
BENZO(A)ANTHRACENE		280			4.4	U		200	J	N	47	J	G
BENZO(A)PYRENE		860	J	DN	4.4	U		4	UJ	N	4.3	UJ	G
BENZO(B)FLUORANTHENE		4.1	UJ	N	4.4	U		550	J	N	4.3	UJ	G
BENZO(G,H,I)PERYLENE		180	J	N	4.4	U		4	UJ	N	4.3	UJ	G
BENZO(K)FLUORANTHENE		4.1	UJ	N	4.4	U		540	J	N	4.3	UJ	G

PROJ_NO: 01797	NSAMPLE	NTC21SB15-SO-0204-D			NTC21SB16-SO-0001						NTC21SB16-SO-0204		
SDG: CTO064_001	LAB_ID	0910006-20			0910006-33						0910006-34		
FRACTION: OS	SAMP_DATE	9/27/2009			9/27/2009			9/27/2009			9/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	76.0			89.0			89.0			77.0		
	DUP_OF	NTC21SB15-SO-0204											
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		440	U					370	U		430	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		880	U					750	U		860	U	
2,4,5-TRICHLOROPHENOL		440	U					370	U		430	U	
2,4,6-TRICHLOROPHENOL		440	U					370	U		430	U	
2,4-DICHLOROPHENOL		440	U					370	U		430	U	
2,4-DIMETHYLPHENOL		880	UJ	C				750	U		860	UJ	C
2,4-DINITROPHENOL		4400	U					3700	U		4300	UJ	C
2,4-DINITROTOLUENE		440	U					370	U		430	U	
2,6-DINITROTOLUENE		440	U					370	U		430	U	
2-CHLORONAPHTHALENE		440	U					370	U		430	U	
2-CHLOROPHENOL		440	U					370	U		430	U	
2-METHYLNAPHTHALENE		110			460						17		
2-METHYLPHENOL		440	U					370	U		430	U	
2-NITROANILINE		1800	UJ	C				1500	U		1700	UJ	C
2-NITROPHENOL		440	U					370	U		430	U	
3,3'-DICHLOROBENZIDINE		440	U					370	U		430	U	
3-NITROANILINE		1800	U					1500	U		1700	U	
4,6-DINITRO-2-METHYLPHENOL		1800	U					1500	U		1700	UJ	C
4-BROMOPHENYL PHENYL ETHER		440	U					370	U		430	U	
4-CHLORO-3-METHYLPHENOL		440	U					370	U		430	U	
4-CHLOROANILINE		440	U					370	U		430	U	
4-CHLOROPHENYL PHENYL ETHER		440	U					370	U		430	U	
4-METHYLPHENOL		440	U					370	U		430	U	
4-NITROANILINE		1800	U					1500	U		1700	U	
4-NITROPHENOL		1800	UJ	C				1500	U		1700	U	
ACENAPHTHENE		4.4	U		3.7	U					4.3	U	
ACENAPHTHYLENE		11			3.7	U					4.3	U	
ACETOPHENONE		440	U					370	U		430	U	
ANTHRACENE		4.4	U		3.7	U					4.3	U	
ATRAZINE		440	UJ	C				370	U		430	U	
BENZALDEHYDE		440	U					370	UR	E	430	UR	E
BENZO(A)ANTHRACENE		22	J	G	110						16		
BENZO(A)PYRENE		22	J	G	3.7	U					4.3	U	
BENZO(B)FLUORANTHENE		38	J	G	290						8.7		
BENZO(G,H,I)PERYLENE		14	J	G	3.7	U					4.3	U	
BENZO(K)FLUORANTHENE		10	J	G	270						7.4		

PROJ_NO: 01797	NSAMPLE	NTC21SB17-SO-0001			NTC21SB17-SO-0507			NTC21SB18-SO-0001			NTC21SB18-SO-0507		
SDG: CTO064_001	LAB_ID	0910006-11			0910006-12			0910006-13			0910006-14		
FRACTION: OS	SAMP_DATE	9/26/2009			9/26/2009			9/26/2009			9/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	83.0			90.0			86.0			89.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		400	U		370	U		390	U		370	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		800	U		740	U		780	U		750	U	
2,4,5-TRICHLOROPHENOL		400	U		370	U		390	U		370	U	
2,4,6-TRICHLOROPHENOL		400	U		370	U		390	U		370	U	
2,4-DICHLOROPHENOL		400	U		370	U		390	U		370	U	
2,4-DIMETHYLPHENOL		800	UJ	C	740	UJ	C	780	UJ	C	750	UJ	C
2,4-DINITROPHENOL		4000	U		3700	U		3900	U		3700	U	
2,4-DINITROTOLUENE		400	U		370	U		390	U		370	U	
2,6-DINITROTOLUENE		400	U		370	U		390	U		370	U	
2-CHLORONAPHTHALENE		400	U		370	U		390	U		370	U	
2-CHLOROPHENOL		400	UJ	C	370	U		390	UJ	C	370	U	
2-METHYLNAPHTHALENE		94			3.7	U		100			3.7	U	
2-METHYLPHENOL		400	U		370	U		390	U		370	U	
2-NITROANILINE		1600	UJ	C	1500	UJ	C	1600	UJ	C	1500	UJ	C
2-NITROPHENOL		400	U		370	U		390	U		370	U	
3,3'-DICHLOROBENZIDINE		400	U		370	U		390	U		370	U	
3-NITROANILINE		1600	U		1500	U		1600	U		1500	U	
4,6-DINITRO-2-METHYLPHENOL		1600	UJ	C	1500	U		1600	UJ	C	1500	U	
4-BROMOPHENYL PHENYL ETHER		400	U		370	U		390	U		370	U	
4-CHLORO-3-METHYLPHENOL		400	U		370	U		390	U		370	U	
4-CHLOROANILINE		400	U		370	U		390	U		370	U	
4-CHLOROPHENYL PHENYL ETHER		400	U		370	U		390	U		370	U	
4-METHYLPHENOL		400	U		370	U		390	U		370	U	
4-NITROANILINE		1600	U		1500	U		1600	U		1500	U	
4-NITROPHENOL		1600	UJ	C	1500	UJ	C	1600	UJ	C	1500	UJ	C
ACENAPHTHENE		280			3.7	U		13			3.7	U	
ACENAPHTHYLENE		70			3.7	U		34			3.7	U	
ACETOPHENONE		400	U		370	U		390	U		370	U	
ANTHRACENE		300			3.7	U		37			3.7	U	
ATRAZINE		400	U		370	UJ	C	390	U		370	UJ	C
BENZALDEHYDE		400	U		370	U		390	U		370	U	
BENZO(A)ANTHRACENE		350			3.7	U		140			3.7	U	
BENZO(A)PYRENE		600			3.7	U		200			3.7	U	
BENZO(B)FLUORANTHENE		940			3.7	U		310			3.7	U	
BENZO(G,H,I)PERYLENE		360			4.1			150			3.7	U	
BENZO(K)FLUORANTHENE		320			3.7	U		110			3.7	U	

PROJ_NO: 01797 SDG: CTO064_001 FRACTION: OS MEDIA: SOIL	NSAMPLE	NTC21SB18-SO-0507-D			NTC21SB19-SO-0001			NTC21SB19-SO-0204			NTC21SB20-SO-0001		
	LAB_ID	0910006-01			0910006-35			0910006-36			0910006-15		
	SAMP_DATE	9/26/2009			9/27/2009			9/27/2009			9/26/2009		
	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	93.0			92.0			83.0			94.0		
	DUP_OF	NTC21SB18-SO-0507											
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		360	U		360	U		400	U		350	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		720	U		720	U		800	U		710	U	
2,4,5-TRICHLOROPHENOL		360	U		360	U		400	U		350	UR	R
2,4,6-TRICHLOROPHENOL		360	U		360	U		400	U		350	UR	R
2,4-DICHLOROPHENOL		360	U		360	U		400	U		350	UR	R
2,4-DIMETHYLPHENOL		720	UJ	C	720	U		800	U		710	UR	R
2,4-DINITROPHENOL		3600	U		3600	U		4000	U		3500	UR	R
2,4-DINITROTOLUENE		360	U		360	U		400	U		350	U	
2,6-DINITROTOLUENE		360	U		360	U		400	U		350	U	
2-CHLORONAPHTHALENE		360	U		360	U		400	U		350	U	
2-CHLOROPHENOL		360	U		360	U		400	U		350	UR	R
2-METHYLNAPHTHALENE		3.6	U		98			33			27		
2-METHYLPHENOL		360	U		360	U		400	U		350	U	
2-NITROANILINE		1400	UJ	C	1400	U		1600	U		1400	UJ	C
2-NITROPHENOL		360	U		360	U		400	U		350	UR	R
3,3'-DICHLOROBENZIDINE		360	U		360	U		400	U		350	U	
3-NITROANILINE		1400	U		1400	U		1600	U		1400	U	
4,6-DINITRO-2-METHYLPHENOL		1400	U		1400	U		1600	U		1400	UR	R
4-BROMOPHENYL PHENYL ETHER		360	U		360	U		400	U		350	U	
4-CHLORO-3-METHYLPHENOL		360	U		360	U		400	U		350	UR	R
4-CHLOROANILINE		360	U		360	U		400	U		350	U	
4-CHLOROPHENYL PHENYL ETHER		360	U		360	U		400	U		350	U	
4-METHYLPHENOL		360	U		360	U		400	U		350	UR	R
4-NITROANILINE		1400	U		1400	U		1600	U		1400	U	
4-NITROPHENOL		1400	UJ	C	1400	U		1600	U		1400	UR	R
ACENAPHTHENE		3.6	U		24			12			53		
ACENAPHTHYLENE		3.6	U		3.6	U		4	U		3.5	U	
ACETOPHENONE		360	U		360	U		400	U		350	U	
ANTHRACENE		3.6	U		3.6	U		4	U		150		
ATRAZINE *		360	UJ	C	360	U		400	U		350	U	
BENZALDEHYDE		360	U		360	UR	E	400	UR	E	350	U	
BENZO(A)ANTHRACENE		3.6	U		150			150			200	J	N
BENZO(A)PYRENE		3.6	U		250			4	U		560	J	N
BENZO(B)FLUORANTHENE		3.6	U		440			260			620	J	N
BENZO(G,H,I)PERYLENE		3.6	U		170			50			430	J	N
BENZO(K)FLUORANTHENE		3.6	U		430			250			300	J	N

PROJ_NO: 01797	NSAMPLE	NTC21SB20-SO-0406			NTC21SB21-SO-0001			NTC21SB21-SO-0608			NTC21SB22-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-16			0910006-17			0910006-18			0910006-37		
FRACTION: OS	SAMP_DATE	9/26/2009			9/26/2009			9/26/2009			9/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	87.0			93.0			90.0			81.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		380	U		360	U		370	U		410	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		770	U		720	U		740	U		820	U	
2,4,5-TRICHLOROPHENOL		380	U		360	U		370	U		410	U	
2,4,6-TRICHLOROPHENOL		380	U		360	U		370	U		410	U	
2,4-DICHLOROPHENOL		380	U		360	U		370	U		410	U	
2,4-DIMETHYLPHENOL		770	UJ	C	720	UJ	C	740	UJ	C	820	U	
2,4-DINITROPHENOL		3800	U		3600	U		3700	U		4100	U	
2,4-DINITROTOLUENE		380	U		360	U		370	U		410	U	
2,6-DINITROTOLUENE		380	U		360	U		370	U		410	U	
2-CHLORONAPHTHALENE		380	U		360	U		370	U		410	U	
2-CHLOROPHENOL		380	U		360	UJ	C	370	U		410	U	
2-METHYLNAPHTHALENE		2.4	J	P	260			3.7	U		710		
2-METHYLPHENOL		380	U		360	U		370	U		410	U	
2-NITROANILINE		1500	UJ	C	1400	UJ	C	1500	UJ	C	1600	U	
2-NITROPHENOL		380	U		360	U		370	U		410	U	
3,3'-DICHLOROBENZIDINE		380	U		360	U		370	U		410	U	
3-NITROANILINE		1500	U		1400	U		1500	U		1600	U	
4,6-DINITRO-2-METHYLPHENOL		1500	U		1400	UJ	C	1500	U		1600	U	
4-BROMOPHENYL PHENYL ETHER		380	U		360	U		370	U		410	U	
4-CHLORO-3-METHYLPHENOL		380	U		360	U		370	U		410	U	
4-CHLOROANILINE		380	U		360	U		370	U		410	U	
4-CHLOROPHENYL PHENYL ETHER		380	U		360	U		370	U		410	U	
4-METHYLPHENOL		380	U		50	J	P	370	U		410	U	
4-NITROANILINE		1500	U		1400	U		1500	U		1600	U	
4-NITROPHENOL		1500	UJ	C	1400	UJ	C	1500	UJ	C	1600	U	
ACENAPHTHENE		3.8	U		2200			3.7	U		92		
ACENAPHTHYLENE		3.8	U		89			3.7	U		4.1	U	
ACETOPHENONE		380	U		360	U		370	U		410	U	
ANTHRACENE		2.9	J	P	7200			3.7	U		4.1	U	
ATRAZINE		380	UJ	C	360	U		370	UJ	C	410	U	
BENZALDEHYDE		380	U		360	U		370	U		410	UR	E
BENZO(A)ANTHRACENE		9.4			22000	J	N	2.5	J	P	320		
BENZO(A)PYRENE		12			38000	J	N	3.7	U		340		
BENZO(B)FLUORANTHENE		19			59000	J	N	3.7	U		710		
BENZO(G,H,I)PERYLENE		3.8	U		24000	J	CN	6.2			4.1	U	
BENZO(K)FLUORANTHENE		8.5			21000	J	N	3.7	U		680		

PROJ_NO: 01797	NSAMPLE	NTC21SB22-SO-0204		
SDG: CTO064_001	LAB_ID	0910006-38		
FRACTION: OS	SAMP_DATE	9/27/2009		
MEDIA: SOIL	QC_TYPE	NM		
	UNITS	UG/KG		
	PCT_SOLIDS	80.0		
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
1,1-BIPHENYL		410	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		830	U	
2,4,5-TRICHLOROPHENOL		410	U	
2,4,6-TRICHLOROPHENOL		410	U	
2,4-DICHLOROPHENOL		410	U	
2,4-DIMETHYLPHENOL		830	U	
2,4-DINITROPHENOL		4100	U	
2,4-DINITROTOLUENE		410	U	
2,6-DINITROTOLUENE		410	U	
2-CHLORONAPHTHALENE		410	U	
2-CHLOROPHENOL		410	U	
2-METHYLNAPHTHALENE		410		
2-METHYLPHENOL		410	U	
2-NITROANILINE		1600	U	
2-NITROPHENOL		410	U	
3,3'-DICHLOROBENZIDINE		410	U	
3-NITROANILINE		1600	U	
4,6-DINITRO-2-METHYLPHENOL		1600	U	
4-BROMOPHENYL PHENYL ETHER		410	U	
4-CHLORO-3-METHYLPHENOL		410	U	
4-CHLOROANILINE		410	U	
4-CHLOROPHENYL PHENYL ETHER		410	U	
4-METHYLPHENOL		410	U	
4-NITROANILINE		1600	U	
4-NITROPHENOL		1600	U	
ACENAPHTHENE		62		
ACENAPHTHYLENE		4.1	U	
ACETOPHENONE		410	U	
ANTHRACENE		4.1	U	
ATRAZINE		410	U	
BENZALDEHYDE		410	UR	E
BENZO(A)ANTHRACENE		230		
BENZO(A)PYRENE		480		
BENZO(B)FLUORANTHENE		400		
BENZO(G,H,I)PERYLENE		370		
BENZO(K)FLUORANTHENE		350		

PROJ_NO: 01797	NSAMPLE	NTC21SB01-SO-0102			NTC21SB02-SO-0001			NTC21SB02-SO-0204			NTC21SB03-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-41			0910006-42			0910006-43			0910006-44		
FRACTION: OS	SAMP_DATE	9/28/2009			9/28/2009			9/28/2009			9/28/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	84.0			90.0			89.0			95.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BIS(2-CHLOROETHOXY)METHANE		400	U		370	U		380	U		350	U	
BIS(2-CHLOROETHYL)ETHER		400	U		370	U		380	U		350	U	
BIS(2-ETHYLHEXYL)PHTHALATE		400	UJ	N	200	J	CP	230	J	CP	240	J	CP
BUTYL BENZYL PHTHALATE		400	UJ	N	370	UJ	C	380	UJ	C	350	UJ	C
CAPROLACTAM		400	U		370	U		380	U		350	U	
CARBAZOLE		1000			740	U		750	U		700	U	
CHRYSENE		5900			270			290			1300	J	N
DIBENZO(A,H)ANTHRACENE		1100			89	J	C	66	J	C	900	J	C
DIBENZOFURAN		540			97	J	P	310	J	P	110	J	P
DIETHYL PHTHALATE		400	U		370	U		380	U		350	U	
DIMETHYL PHTHALATE		400	U		370	U		380	U		350	U	
DI-N-BUTYL PHTHALATE		400	U		370	UJ	C	380	UJ	C	350	UJ	C
DI-N-OCTYL PHTHALATE		400	UJ	N	370	UJ	C	380	UJ	C	350	UJ	C
FLUORANTHENE		14000			420			650			3300		
FLUORENE		960			3.7	U		3.8	U		55		
HEXACHLOROBENZENE		400	U		370	U		380	U		350	U	
HEXACHLOROBUTADIENE		400	U		370	U		380	U		350	U	
HEXACHLOROCYCLOPENTADIENE		400	U		370	U		380	UJ	D	350	U	
HEXACHLOROETHANE		790	U		740	U		750	U		700	U	
INDENO(1,2,3-CD)PYRENE		3300			420	J	C	330	J	C	3.5	UJ	C
ISOPHORONE		400	U		370	U		380	U		350	U	
NAPHTHALENE		520			210			470			200		
NITROBENZENE		400	U		370	U		380	U		350	U	
N-NITROSO-DI-N-PROPYLAMINE		400	U		370	U		380	U		350	U	
N-NITROSODIPHENYLAMINE		400	U		370	U		380	U		350	U	
PENTACHLOROPHENOL		1600	UJ		1500	U		1500	UJ	D	1400	U	
PHENANTHRENE		9500			620			1100			960		
PHENOL		400	U		370	U		380	U		350	U	
PYRENE		11000			420			540			3000		

PROJ_NO: 01797	NSAMPLE	NTC21SB03-SO-0204			NTC21SB04-SO-0001			NTC21SB04-SO-0406			NTC21SB05-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-45			0910006-21			0910006-22			0910006-46		
FRACTION: OS	SAMP_DATE	9/28/2009			9/27/2009			9/27/2009			9/28/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	92.0			92.0			58.0			94.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BIS(2-CHLOROETHOXY)METHANE		360	U		360	U		580	U		360	U	
BIS(2-CHLOROETHYL)ETHER		360	U		360	U		580	U		360	U	
BIS(2-ETHYLHEXYL)PHTHALATE		280	J	CP	110	J	P	580	U		240	J	CP
BUTYL BENZYL PHTHALATE		360	UJ	C	360	UJ	N	580	U		360	UJ	C
CAPROLACTAM		360	U		360	U		580	U		360	U	
CARBAZOLE		720	U		720	U		1200	U		710	U	
CHRYSENE		34000			340			100			280	J	N
DIBENZO(A,H)ANTHRACENE		3300			3.6	U		5.8	U		78	J	CGN
DIBENZOFURAN		490			250	J	P	580	U		130	J	P
DIETHYL PHTHALATE		360	U		360	U		580	U		360	U	
DIMETHYL PHTHALATE		360	U		360	U		580	U		360	U	
DI-N-BUTYL PHTHALATE		360	UJ	C	360	U		580	U		360	UJ	C
DI-N-OCTYL PHTHALATE		360	UJ	C	360	UJ	N	580	U		360	UJ	C
FLUORANTHENE		56000			1100			200			790		
FLUORENE		90	U		3.6	U		5.8	U		3.6	U	
HEXACHLOROBENZENE		360	U		360	U		580	U		360	U	
HEXACHLOROBUTADIENE		360	U		360	U		580	U		360	U	
HEXACHLOROCYCLOPENTADIENE		360	U		360	U		580	U		360	U	
HEXACHLOROETHANE		720	U		720	U		1200	U		710	U	
INDENO(1,2,3-CD)PYRENE		16000			3.6	U		5.8	U		330	J	CN
ISOPHORONE		360	U		360	U		580	U		360	U	
NAPHTHALENE		1100			300			10			140		
NITROBENZENE		360	U		360	U		580	U		360	U	
N-NITROSO-DI-N-PROPYLAMINE		360	U		360	U		580	U		360	U	
N-NITROSODIPHENYLAMINE		360	U		360	U		580	U		360	U	
PENTACHLOROPHENOL		1400	U		1400	U		2300	U		1400	U	
PHENANTHRENE		11000			1200			34			790		
PHENOL		360	U		360	U		580	U		360	U	
PYRENE		52000			890			200			660		

PROJ_NO: 01797	NSAMPLE	NTC21SB05-SO-0001-D						NTC21SB05-SO-0204			NTC21SB06-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-40						0910006-47			0910006-23		
FRACTION: OS	SAMP_DATE	9/28/2009			9/28/2009			9/28/2009			9/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	80.0			80.0			91.0			82.0		
	DUP_OF	NTC21SB05-SO-0001			NTC21SB05-SO-0001								
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BIS(2-CHLOROETHOXY)METHANE		420	U					370	U		400	U	
BIS(2-CHLOROETHYL)ETHER		420	U					370	U		400	U	
BIS(2-ETHYLHEXYL)PHTHALATE		170	J	NP				170	J	CP	150	J	P
BUTYL BENZYL PHTHALATE		420	UJ	N				370	UJ	C	400	U	
CAPROLACTAM		420	U					370	U		400	U	
CARBAZOLE		830	U					740	U		810	U	
CHRYSENE					400	J	N	170	J	N	4	U	
DIBENZO(A,H)ANTHRACENE					4.2	UJ	G	38	J	CN	4	U	
DIBENZOFURAN		160	J	P				66	J	P	200	J	P
DIETHYL PHTHALATE		420	U					370	U		400	U	
DIMETHYL PHTHALATE		420	U					370	U		400	U	
DI-N-BUTYL PHTHALATE		420	U					370	UJ	C	400	U	
DI-N-OCTYL PHTHALATE		420	UJ	N				370	UJ	C	400	UJ	N
FLUORANTHENE					850			360			1000		
FLUORENE					4.2	U		3.7	U		4	U	
HEXACHLOROBENZENE		420	U					370	U		400	U	
HEXACHLOROBUTADIENE		420	U					370	U		400	U	
HEXACHLOROCYCLOPENTADIENE		420	U					370	U		400	U	
HEXACHLOROETHANE		830	U					740	U		810	U	
INDENO(1,2,3-CD)PYRENE					310			200	J	CN	4	U	
ISOPHORONE		420	U					370	U		400	U	
NAPHTHALENE					150			58			480		
NITROBENZENE		420	U					370	U		400	U	
N-NITROSO-DI-N-PROPYLAMINE		420	U					370	U		400	U	
N-NITROSODIPHENYLAMINE		420	U					370	U		400	U	
PENTACHLOROPHENOL		1700	U					1500	U		1600	U	
PHENANTHRENE					850			380			810		
PHENOL		420	U					370	U		400	U	
PYRENE					700			320			870		

PROJ_NO: 01797 SDG: CTO064_001 FRACTION: OS MEDIA: SOIL	NSAMPLE	NTC21SB06-SO-0204			NTC21SB07-SO-0001			NTC21SB07-SO-0204			NTC21SB08-SO-0001		
	LAB_ID	0910006-24			0910006-25			0910006-26			0910006-48		
	SAMP_DATE	9/27/2009			9/27/2009			9/27/2009			9/28/2009		
	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	77.0			92.0			86.0			93.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BIS(2-CHLOROETHOXY)METHANE		440	U		360	U		390	U		360	U	
BIS(2-CHLOROETHYL)ETHER		440	U		360	U		390	U		360	U	
BIS(2-ETHYLHEXYL)PHTHALATE		440	U		150	J	P	390	U		190	J	CP
BUTYL BENZYL PHTHALATE		440	U		360	U		390	U		97	J	CP
CAPROLACTAM		440	U		360	U		390	U		360	U	
CARBAZOLE		870	U		880			1000			720	U	
CHRYSENE		360			4600			4900			660	J	N
DIBENZO(A,H)ANTHRACENE		4.4	U		3.6	U		3.9	U		140	J	CN
DIBENZOFURAN		180	J	P	620			670			76	J	P
DIETHYL PHTHALATE		440	U		360	U		390	U		360	U	
DIMETHYL PHTHALATE		440	U		360	U		390	U		360	U	
DI-N-BUTYL PHTHALATE		440	U		360	U		390	U		360	UJ	C
DI-N-OCTYL PHTHALATE		440	UJ	N	360	UJ	N	390	UJ	N	360	UJ	C
FLUORANTHENE		930			12000			13000			1200		
FLUORENE		4.4	U		890			1200			3.6	U	
HEXACHLOROBENZENE		440	U		360	U		390	U		360	U	
HEXACHLOROBUTADIENE		440	U		360	U		390	U		360	U	
HEXACHLOROCYCLOPENTADIENE		440	U		360	U		390	U		360	U	
HEXACHLOROETHANE		870	U		730	U		780	U		720	U	
INDENO(1,2,3-CD)PYRENE		420			2100			2500			630	J	CN
ISOPHORONE		440	U		360	U		390	U		360	U	
NAPHTHALENE		230			370			550			190		
NITROBENZENE		440	U		360	U		390	U		360	U	
N-NITROSO-DI-N-PROPYLAMINE		440	U		360	U		390	U		360	U	
N-NITROSODIPHENYLAMINE		440	U		360	U		390	U		360	U	
PENTACHLOROPHENOL		1700	U		1400	U		1600	U		1400	U	
PHENANTHRENE		970			8400			11000			560		
PHENOL		440	U		360	U		390	U		360	U	
PYRENE		760			9400			10000			1100		

PROJ_NO: 01797	NSAMPLE	NTC21SB08-SO-0204			NTC21SB09-SO-0001			NTC21SB09-SO-0001-D			NTC21SB09-SO-0204		
SDG: CTO064_001	LAB_ID	0910006-49			0910006-03			0910006-02			0910006-04		
FRACTION: OS	SAMP_DATE	9/28/2009			9/26/2009			9/26/2009			9/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	74.0			91.0			93.0			79.0		
	DUP_OF							NTC21SB09-SO-0001					
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BIS(2-CHLOROETHOXY)METHANE		450	U		360	U		360	U		420	U	
BIS(2-CHLOROETHYL)ETHER		450	U		360	U		360	U		420	U	
BIS(2-ETHYLHEXYL)PHTHALATE		280	J	CP	130	J	P	160	J	P	420	U	
BUTYL BENZYL PHTHALATE		450	UJ	C	360	UJ	C	360	UJ	C	420	U	
CAPROLACTAM		450	U		360	U		360	U		420	U	
CARBAZOLE		900	U		730	U		65	J	P	840	U	
CHRYSENE		580	J	N	320	J	N	450	J	N	120	J	N
DIBENZO(A,H)ANTHRACENE		160	J	CN	81	J	N	110	J	N	28	J	N
DIBENZOFURAN		36	J	P	110	J	P	96	J	P	420	U	
DIETHYL PHTHALATE		450	U		360	U		360	U		420	U	
DIMETHYL PHTHALATE		450	U		360	U		360	U		420	U	
DI-N-BUTYL PHTHALATE		450	UJ	C	37	J	P	69	J	P	420	U	
DI-N-OCTYL PHTHALATE		450	UJ	C	360	UJ	C	360	UJ	C	420	U	
FLUORANTHENE		1100			860			1100			450		
FLUORENE		57			3.6	UJ	G	63	J	G	68		
HEXACHLOROBENZENE		450	U		360	U		360	U		420	U	
HEXACHLOROBUTADIENE		450	U		360	U		360	U		420	U	
HEXACHLOROCYCLOPENTADIENE		450	U		360	UJ	C	360	UJ	C	420	U	
HEXACHLOROETHANE		900	U		730	U		720	U		840	U	
INDENO(1,2,3-CD)PYRENE		690	J	CN	400	J	N	480	J	N	160	J	N
ISOPHORONE		450	U		360	U		360	U		420	U	
NAPHTHALENE		43			280			210			180		
NITROBENZENE		450	U		360	UJ	C	360	UJ	C	420	UJ	C
N-NITROSO-DI-N-PROPYLAMINE		450	U		360	UJ	C	360	UJ	C	420	UJ	C
N-NITROSODIPHENYLAMINE		450	U		360	U		360	U		420	U	
PENTACHLOROPHENOL		1800	U		1500	U		1400	U		1700	U	
PHENANTHRENE		560			760			870			290		
PHENOL		450	U		360	U		360	U		420	U	
PYRENE		950			760			940			340		

PROJ_NO: 01797 SDG: CTO064_001 FRACTION: OS MEDIA: SOIL	NSAMPLE	NTC21SB10-SO-0001			NTC21SB10-SO-0406			NTC21SB11-SO-0001			NTC21SB11-SO-0204		
	LAB_ID	0910006-05			0910006-06			0910006-07			0910006-08		
	SAMP_DATE	9/26/2009			9/26/2009			9/26/2009			9/26/2009		
	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	90.0			83.0			92.0			84.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BIS(2-CHLOROETHOXY)METHANE		370	U		400	U		360	U		400	U	
BIS(2-CHLOROETHYL)ETHER		370	U		400	U		360	U		400	U	
BIS(2-ETHYLHEXYL)PHTHALATE		130	J	P	400	U		280	J	P	400	U	
BUTYL BENZYL PHTHALATE		370	UJ	C	400	U		360	UJ	C	400	UJ	C
CAPROLACTAM		370	U		400	U		360	U		400	U	
CARBAZOLE		740	U		800	U		720	U		790	U	
CHRYSENE		390			23			1900	J	N	160	J	N
DIBENZO(A,H)ANTHRACENE		150			4	UJ	N	470	J	N	34	J	N
DIBENZOFURAN		90	J	P	400	U		180	J	P	74	J	P
DIETHYL PHTHALATE		370	U		400	U		360	U		400	U	
DIMETHYL PHTHALATE		370	U		400	U		360	U		400	U	
DI-N-BUTYL PHTHALATE		190	J	P	400	U		360	U		400	U	
DI-N-OCTYL PHTHALATE		370	UJ	C	400	U		360	UJ	C	400	UJ	C
FLUORANTHENE		1000			78			5700			520		
FLUORENE		50			16			220			4	U	
HEXACHLOROBENZENE		370	U		400	U		360	U		400	U	
HEXACHLOROBUTADIENE		370	U		400	U		360	U		400	U	
HEXACHLOROCYCLOPENTADIENE		370	UJ	C	400	U		360	UJ	C	400	UJ	C
HEXACHLOROETHANE		740	U		800	U		720	U		790	U	
INDENO(1,2,3-CD)PYRENE		630			28			2700	J	CN	150	J	N
ISOPHORONE		370	U		400	U		360	U		400	U	
NAPHTHALENE		210			8.9			190			1700		
NITROBENZENE		370	UJ	C	400	UJ	C	360	UJ	C	400	UJ	C
N-NITROSO-DI-N-PROPYLAMINE		370	UJ	C	400	UJ	C	360	UJ	C	400	UJ	C
N-NITROSODIPHENYLAMINE		370	U		400	U		360	U		400	U	
PENTACHLOROPHENOL		1500	UJ	R	1600	U		1400	U		1600	U	
PHENANTHRENE		650			67			3100			470		
PHENOL		370	UJ	R	400	U		360	U		400	U	
PYRENE		920			63			4800			420		

PROJ_NO: 01797 SDG: CTO064_001 FRACTION: OS MEDIA: SOIL	NSAMPLE	NTC21SB12-SO-0001			NTC21SB12-SO-0204			NTC21SB13-SO-0001			NTC21SB13-SO-0204		
	LAB_ID	0910006-09			0910006-10			0910006-27			0910006-28		
	SAMP_DATE	9/26/2009			9/26/2009			9/27/2009			9/27/2009		
	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	85.0			77.0			78.0			84.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BIS(2-CHLOROETHOXY)METHANE		390	U		430	U		430	U		400	U	
BIS(2-CHLOROETHYL)ETHER		390	U		430	U		430	U		400	U	
BIS(2-ETHYLHEXYL)PHTHALATE		390	UJ	N	430	U		78	J	NP	400	U	
BUTYL BENZYL PHTHALATE		390	UJ	CN	430	UJ	C	430	UJ	N	400	U	
CAPROLACTAM		390	U		430	U		430	U		400	U	
CARBAZOLE		780	U		860	U		860	U		790	U	
CHRYSENE		470			530	J	N	4.3	UJ	N	8		
DIBENZO(A,H)ANTHRACENE		66			100	J	N	4.3	U		4	U	
DIBENZOFURAN		240	J	P	330	J	P	320	J	P	400	U	
DIETHYL PHTHALATE		390	U		430	U		430	U		400	U	
DIMETHYL PHTHALATE		390	U		430	U		430	U		400	U	
DI-N-BUTYL PHTHALATE		390	U		430	U		430	U		400	U	
DI-N-OCTYL PHTHALATE		390	UJ	C	430	UJ	C	430	UJ	N	400	U	
FLUORANTHENE		1000			1400			2000			15		
FLUORENE		3.9	U		4.3	U		4.3	U		4	U	
HEXACHLOROBENZENE		390	U		430	U		430	U		400	U	
HEXACHLOROBUTADIENE		390	U		430	U		430	U		400	U	
HEXACHLOROCYCLOPENTADIENE		390	UJ	C	430	UJ	C	430	U		400	U	
HEXACHLOROETHANE		780	U		860	U		860	U		790	U	
INDENO(1,2,3-CD)PYRENE		300			470	J	N	4.3	U		4	U	
ISOPHORONE		390	U		430	U		430	U		400	U	
NAPHTHALENE		240			440			350			4	U	
NITROBENZENE		390	UJ	C	430	UJ	C	430	U		400	U	
N-NITROSO-DI-N-PROPYLAMINE		390	UJ	C	430	UJ	C	430	U		400	U	
N-NITROSODIPHENYLAMINE		390	U		430	U		430	U		400	U	
PENTACHLOROPHENOL		1600	U		1700	U		1700	U		1600	U	
PHENANTHRENE		890			2100			2900			19		
PHENOL		390	U		430	U		430	U		400	U	
PYRENE		860			1000			1700			14		

PROJ_NO: 01797 SDG: CTO064_001 FRACTION: OS MEDIA: SOIL	NSAMPLE	NTC21SB14-SO-0001			NTC21SB14-SO-0204			NTC21SB15-SO-0001			NTC21SB15-SO-0204		
	LAB_ID	0910006-29			0910006-30			0910006-31			0910006-32		
	SAMP_DATE	9/27/2009			9/27/2009			9/27/2009			9/27/2009		
	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	82.0			75.0			83.0			77.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BIS(2-CHLOROETHOXY)METHANE		410	U		440	U		400	U		430	U	
BIS(2-CHLOROETHYL)ETHER		410	U		440	U		400	U		430	U	
BIS(2-ETHYLHEXYL)PHTHALATE		51	J	P	440	U		400	UJ	N	430	U	
BUTYL BENZYL PHTHALATE		410	U		440	U		400	UJ	N	430	U	
CAPROLACTAM		410	U		440	U		400	U		430	U	
CARBAZOLE		810	U		880	U		800	U		860	U	
CHRYSENE		410	J	N	4.4	U		250	J	N	35		
DIBENZO(A,H)ANTHRACENE		4.1	UJ	N	4.4	U		4	UJ	N	4.3	U	
DIBENZOFURAN		320	J	P	440	U		250	J	P	55	J	P
DIETHYL PHTHALATE		410	U		440	U		400	U		430	U	
DIMETHYL PHTHALATE		410	UJ	D	440	U		400	U		430	U	
DI-N-BUTYL PHTHALATE		410	UJ	D	440	U		400	U		430	U	
DI-N-OCTYL PHTHALATE		410	UJ	N	440	U		400	UJ	N	430	U	
FLUORANTHENE		810			1.9	U	A	670			80		
FLUORENE		4.1	U		4.4	U		4	U		4.3	U	
HEXACHLOROBENZENE		410	U		440	U		400	U		430	U	
HEXACHLOROBUTADIENE		410	U		440	U		400	U		430	U	
HEXACHLOROCYCLOPENTADIENE		410	UJ	D	440	U		400	U		430	U	
HEXACHLOROETHANE		810	U		880	U		800	U		860	U	
INDENO(1,2,3-CD)PYRENE		4.1	UJ	N	4.4	U		4	UJ	N	4.3	UJ	G
ISOPHORONE		410	U		440	U		400	U		430	U	
NAPHTHALENE		350			4.4	U		350			44		
NITROBENZENE		410	U		440	U		400	U		430	U	
N-NITROSO-DI-N-PROPYLAMINE		410	U		440	U		400	U		430	U	
N-NITROSODIPHENYLAMINE		410	U		440	U		400	U		430	U	
PENTACHLOROPHENOL		1600	U		1800	U		1600	U		1700	U	
PHENANTHRENE		1300			4.4	U		1100			190		
PHENOL		410	U		440	U		400	U		430	U	
PYRENE		740			4.4	U		570			70		

PROJ_NO: 01797	NSAMPLE	NTC21SB15-SO-0204-D			NTC21SB16-SO-0001						NTC21SB16-SO-0204		
SDG: CTO064_001	LAB_ID	0910006-20			0910006-33						0910006-34		
FRACTION: OS	SAMP_DATE	9/27/2009			9/27/2009			9/27/2009			9/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	76.0			89.0			89.0			77.0		
	DUP_OF	NTC21SB15-SO-0204											
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BIS(2-CHLOROETHOXY)METHANE		440	U					370	U		430	U	
BIS(2-CHLOROETHYL)ETHER		440	U					370	U		430	U	
BIS(2-ETHYLHEXYL)PHTHALATE		440	U					77	J	NP	430	U	
BUTYL BENZYL PHTHALATE		440	U					370	UJ	N	430	U	
CAPROLACTAM		440	U					370	U		430	U	
CARBAZOLE		880	U					750	U		860	U	
CHRYSENE		31			130	J	N				7.2		
DIBENZO(A,H)ANTHRACENE		4.4	U		3.7	U					4.3	U	
DIBENZOFURAN		42	J	P				130	J	P	430	U	
DIETHYL PHTHALATE		440	U					370	U		430	U	
DIMETHYL PHTHALATE		440	U					370	U		430	U	
DI-N-BUTYL PHTHALATE		440	U					370	U		430	U	
DI-N-OCTYL PHTHALATE		440	U					370	UJ	N	430	U	
FLUORANTHENE		57			260						12		
FLUORENE		4.4	U		3.7	U					4.3	U	
HEXACHLOROBENZENE		440	U					370	U		430	U	
HEXACHLOROBUTADIENE		440	U					370	U		430	U	
HEXACHLOROCYCLOPENTADIENE		440	U					370	U		430	U	
HEXACHLOROETHANE		880	U					750	U		860	U	
INDENO(1,2,3-CD)PYRENE		18	J	G	150						4.3	U	
ISOPHORONE		440	U					370	U		430	U	
NAPHTHALENE		49			160						4.3	U	
NITROBENZENE		440	UJ	C				370	U		430	UJ	C
N-NITROSO-DI-N-PROPYLAMINE		440	UJ	C				370	U		430	UJ	C
N-NITROSODIPHENYLAMINE		440	U					370	U		430	U	
PENTACHLOROPHENOL		1800	U					1500	U		1700	U	
PHENANTHRENE		190			1300						2.2	J	P
PHENOL		440	U					370	U		430	U	
PYRENE		55			240						12		

PROJ_NO: 01797 SDG: CTO064_001 FRACTION: OS MEDIA: SOIL	NSAMPLE	NTC21SB17-SO-0001			NTC21SB17-SO-0507			NTC21SB18-SO-0001			NTC21SB18-SO-0507		
	LAB_ID	0910006-11			0910006-12			0910006-13			0910006-14		
	SAMP_DATE	9/26/2009			9/26/2009			9/26/2009			9/26/2009		
	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	83.0			90.0			86.0			89.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BIS(2-CHLOROETHOXY)METHANE		400	U		370	U		390	U		370	U	
BIS(2-CHLOROETHYL)ETHER		400	U		370	U		390	U		370	U	
BIS(2-ETHYLHEXYL)PHTHALATE		400	U		370	U		390	U		370	U	
BUTYL BENZYL PHTHALATE		400	UJ	C	370	U		390	UJ	C	370	U	
CAPROLACTAM		400	U		370	U		390	U		370	U	
CARBAZOLE		800	U		740	U		780	U		750	U	
CHRYSENE		480			3.4	J	P	190			3.4	J	P
DIBENZO(A,H)ANTHRACENE		100			3.7	U		44			3.7	U	
DIBENZOFURAN		210	J	P	370	U		46	J	P	370	U	
DIETHYL PHTHALATE		400	U		370	U		390	U		370	U	
DIMETHYL PHTHALATE		400	U		370	U		390	U		370	U	
DI-N-BUTYL PHTHALATE		400	U		370	U		390	U		370	U	
DI-N-OCTYL PHTHALATE		400	UJ	C	370	U		390	UJ	C	370	U	
FLUORANTHENE		1100			3.7	U		340			3.7	U	
FLUORENE		320			3.7	U		11			3.7	U	
HEXACHLOROBENZENE		400	U		370	U		390	U		370	U	
HEXACHLOROBUTADIENE		400	U		370	U		390	U		370	U	
HEXACHLOROCYCLOPENTADIENE		400	UJ	C	370	U		390	UJ	C	370	U	
HEXACHLOROETHANE		800	U		740	U		780	U		750	U	
INDENO(1,2,3-CD)PYRENE		510			3.7	U		200			3.7	U	
ISOPHORONE		400	U		370	U		390	U		370	U	
NAPHTHALENE		53			3.7	U		49			3.7	U	
NITROBENZENE		400	U		370	UJ	C	390	UJ	C	370	UJ	C
N-NITROSO-DI-N-PROPYLAMINE		400	UJ	C	370	UJ	C	390	UJ	C	370	UJ	C
N-NITROSODIPHENYLAMINE		400	UJ	C	370	U		390	U		370	U	
PENTACHLOROPHENOL		1600	U		1500	U		1600	U		1500	U	
PHENANTHRENE		1100			1.8	J	P	290			2.3	J	P
PHENOL		400	U		370	U		390	U		370	U	
PYRENE		960			3.7	U		290			3.7	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB18-SO-0507-D			NTC21SB19-SO-0001			NTC21SB19-SO-0204			NTC21SB20-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-01			0910006-35			0910006-36			0910006-15		
FRACTION: OS	SAMP_DATE	9/26/2009			9/27/2009			9/27/2009			9/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	93.0			92.0			83.0			94.0		
	DUP_OF	NTC21SB18-SO-0507											
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BIS(2-CHLOROETHOXY)METHANE		360	U		360	U		400	U		350	U	
BIS(2-CHLOROETHYL)ETHER		360	U		360	U		400	U		350	U	
BIS(2-ETHYLHEXYL)PHTHALATE		360	U		110	J	NP	54	J	P	140	J	NP
BUTYL BENZYL PHTHALATE		360	U		360	UJ	N	400	U		350	UJ	CN
CAPROLACTAM		360	U		360	U		400	U		350	U	
CARBAZOLE		720	U		720	U		800	U		66	J	P
CHRYSENE		1.8	J	P	190	J	N	140			280	J	N
DIBENZO(A,H)ANTHRACENE		3.6	U		3.6	U		4	U		3.5	UJ	N
DIBENZOFURAN		360	U		39	J	P	34	J	P	41	J	P
DIETHYL PHTHALATE		360	U		360	U		400	U		350	U	
DIMETHYL PHTHALATE		360	U		360	U		400	U		350	U	
DI-N-BUTYL PHTHALATE		360	U		360	U		400	U		350	U	
DI-N-OCTYL PHTHALATE		360	U		360	UJ	N	400	UJ	N	350	UJ	CN
FLUORANTHENE		3.6	U		400			340			830		
FLUORENE		3.6	U		3.6	U		4	U		52		
HEXACHLOROBENZENE		360	U		360	U		400	U		350	U	
HEXACHLOROBUTADIENE		360	U		360	U		400	U		350	U	
HEXACHLOROCYCLOPENTADIENE		360	U		360	U		400	U		350	UJ	C
HEXACHLOROETHANE		720	U		720	U		800	U		710	U	
INDENO(1,2,3-CD)PYRENE		3.6	U		250			4	U		350	J	N
ISOPHORONE		360	U		360	U		400	U		350	U	
NAPHTHALENE		3.6	U		44			30			18		
NITROBENZENE		360	UJ	C	360	U		400	U		350	UJ	C
N-NITROSO-DI-N-PROPYLAMINE		360	UJ	C	360	U		400	U		350	UJ	C
N-NITROSODIPHENYLAMINE		360	U		360	U		400	U		350	U	
PENTACHLOROPHENOL		1400	U		1400	U		1600	U		1400	UR	R
PHENANTHRENE		3.6	U		250			310			720		
PHENOL		360	U		360	U		400	U		350	UR	R
PYRENE		3.6	U		360			260			650		

PROJ_NO: 01797	NSAMPLE	NTC21SB20-SO-0406			NTC21SB21-SO-0001			NTC21SB21-SO-0608			NTC21SB22-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-16			0910006-17			0910006-18			0910006-37		
FRACTION: OS	SAMP_DATE	9/26/2009			9/26/2009			9/26/2009			9/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	87.0			93.0			90.0			81.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BIS(2-CHLOROETHOXY)METHANE		380	U		360	U		370	U		410	U	
BIS(2-CHLOROETHYL)ETHER		380	U		360	U		370	U		410	U	
BIS(2-ETHYLHEXYL)PHTHALATE		380	U		3400	J	N	370	U		410	UJ	N
BUTYL BENZYL PHTHALATE		380	U		360	UJ	CN	370	U		410	UJ	N
CAPROLACTAM		380	U		360	U		370	U		410	U	
CARBAZOLE		770	U		2400			740	U		820	U	
CHRYSENE		14			31000	J	N	8.3			460		
DIBENZO(A,H)ANTHRACENE		2.4	J	P	690	J	N	3.7	U		4.1	U	
DIBENZOFURAN		380	U		640			370	U		250	J	P
DIETHYL PHTHALATE		380	U		360	U		370	U		410	U	
DIMETHYL PHTHALATE		380	U		360	U		370	U		410	U	
DI-N-BUTYL PHTHALATE		380	U		360	U		370	U		410	U	
DI-N-OCTYL PHTHALATE		380	U		360	UJ	CN	370	U		410	UJ	N
FLUORANTHENE		33			84000			6.8			970		
FLUORENE		2.5	J	P	1600			3.7	U		4.1	U	
HEXACHLOROBENZENE		380	U		360	U		370	U		410	U	
HEXACHLOROBUTADIENE		380	U		360	U		370	U		410	U	
HEXACHLOROCYCLOPENTADIENE		380	U		360	UJ	C	370	U		410	U	
HEXACHLOROETHANE		770	U		720	U		740	U		820	U	
INDENO(1,2,3-CD)PYRENE		12			36000	J	CN	3.7	U		350		
ISOPHORONE		380	U		360	U		370	U		410	U	
NAPHTHALENE		3.8	J	P	210			3.7	U		300		
NITROBENZENE		380	UJ	C	360	UJ	C	370	UJ	C	410	U	
N-NITROSO-DI-N-PROPYLAMINE		380	UJ	C	360	UJ	C	370	UJ	C	410	U	
N-NITROSODIPHENYLAMINE		380	U		360	U		370	U		410	U	
PENTACHLOROPHENOL		1500	U		1400	U		1500	U		1600	U	
PHENANTHRENE		24			30000			4.2			1100		
PHENOL		380	U		360	U		370	U		410	U	
PYRENE		26			70000			6.9			890		

PROJ_NO: 01797
SDG: CTO064_001
FRACTION: OS
MEDIA: SOIL

NSAMPLE	NTC21SB22-SO-0204
LAB_ID	0910006-38
SAMP_DATE	9/27/2009
QC_TYPE	NM
UNITS	UG/KG
PCT_SOLIDS	80.0
DUP_OF	

	RESULT	VQL	QLCD
BIS(2-CHLOROETHOXY)METHANE	410	U	
BIS(2-CHLOROETHYL)ETHER	410	U	
BIS(2-ETHYLHEXYL)PHTHALATE	110	J	NP
BUTYL BENZYL PHTHALATE	410	UJ	N
CAPROLACTAM	410	U	
CARBAZOLE	830	U	
CHRYSENE	360		
DIBENZO(A,H)ANTHRACENE	4.1	U	
DIBENZOFURAN	120	J	P
DIETHYL PHTHALATE	410	U	
DIMETHYL PHTHALATE	410	U	
DI-N-BUTYL PHTHALATE	410	U	
DI-N-OCTYL PHTHALATE	410	UJ	N
FLUORANTHENE	830		
FLUORENE	4.1	U	
HEXACHLOROBENZENE	410	U	
HEXACHLOROBUTADIENE	410	U	
HEXACHLOROCYCLOPENTADIENE	410	U	
HEXACHLOROETHANE	830	U	
INDENO(1,2,3-CD)PYRENE	340		
ISOPHORONE	410	U	
NAPHTHALENE	4600		
NITROBENZENE	410	U	
N-NITROSO-DI-N-PROPYLAMINE	410	U	
N-NITROSODIPHENYLAMINE	410	U	
PENTACHLOROPHENOL	1600	U	
PHENANTHRENE	740		
PHENOL	410	U	
PYRENE	700		

ERROR: syntaxerror
OFFENDING COMMAND: P8$ BaP,d6 DbQ8/V- FcQ, v= HdR9$ M' JeR„d¶]/ LfS9/ m7 NgS„

STACK:

-savelevel-

PROJ_NO: 01797	NSAMPLE	RB-092909-01			RB-092909-02			SB-092909-01		
SDG: CTO064_001	LAB_ID	0910006-51			0910006-52			0910006-53		
FRACTION: PEST/PCB	SAMP_DATE	9/29/2009			9/29/2009			9/29/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0		
	DUP_OF									
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		0.0196	U		0.0189	U		0.0192	U	
4,4'-DDE		0.0196	U		0.0189	U		0.0192	U	
4,4'-DDT		0.0196	U		0.0189	U		0.0192	U	
ALDRIN		0.0098	U		0.00943	U		0.00962	U	
ALPHA-BHC		0.0098	U		0.00943	U		0.00962	U	
ALPHA-CHLORDANE		0.0098	U		0.00943	U		0.00962	U	
AROCLOR-1016		0.49	UJ	C	0.472	UJ	C	0.481	UJ	C
AROCLOR-1221		0.49	U		0.472	U		0.481	U	
AROCLOR-1232		0.49	U		0.472	U		0.481	U	
AROCLOR-1242		0.49	U		0.472	U		0.481	U	
AROCLOR-1248		0.49	U		0.472	U		0.481	U	
AROCLOR-1254		0.49	U		0.472	U		0.481	U	
AROCLOR-1260		0.49	U		0.472	U		0.481	U	
BETA-BHC		0.0098	U		0.00943	U		0.00962	U	
CHLORDANE (TECHNICAL)		0.049	U		0.0472	U		0.0481	U	
DELTA-BHC		0.0098	U		0.00943	U		0.00962	U	
DIELDRIN		0.0196	U		0.0189	U		0.0192	U	
ENDOSULFAN I		0.0098	U		0.00943	U		0.00962	U	
ENDOSULFAN II		0.0196	U		0.0189	U		0.0192	U	
ENDOSULFAN SULFATE		0.0196	U		0.0189	U		0.0192	U	
ENDRIN		0.0196	U		0.0189	U		0.0192	U	
ENDRIN ALDEHYDE		0.0196	U		0.0189	U		0.0192	U	
ENDRIN KETONE		0.0196	U		0.0189	U		0.0192	U	
GAMMA-BHC (LINDANE)		0.0098	U		0.00943	U		0.00962	U	
GAMMA-CHLORDANE		0.01			0.0097	J	U	0.0057	J	P
HEPTACHLOR		0.0098	U		0.00943	U		0.00962	U	
HEPTACHLOR EPOXIDE		0.0098	U		0.00943	U		0.00962	U	
METHOXYCHLOR		0.0098	U		0.00943	U		0.00962	U	
TOXAPHENE		0.98	U		0.943	U		0.962	U	

PROJ_NO: 01797	NSAMPLE	FD-092609-01			FD-092609-02			FD-092609-02-DL			FD-092709-01		
SDG: CTO064_001	LAB_ID	0910006-01			0910006-02			0910006-02RE1			0910006-20		
FRACTION: PEST/PCB	SAMP_DATE	9/26/2009			9/26/2009			9/26/2009			9/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	92.6			92.8			92.8			75.6		
	DUP_OF	NTC21SB18-SO-0507			NTC21SB18-SO-0507			NTC21SB18-SO-0507			NTC21SB15-SO-0204		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		0.72	U					270	J	U	0.89	U	
4,4'-DDE		0.72	UJ	C	38	J	CGU				0.89	U	
4,4'-DDT		0.72	UJ	C	31	J	CGU				0.89	UJ	C
ALDRIN		0.36	UJ	C	0.36	UJ	C				0.44	U	
ALPHA-BHC		0.36	U		0.36	U					0.44	U	
ALPHA-CHLORDANE		0.36	UJ	C	4.5	J	CU				0.44	U	
AROCLOR-1016		18.4	U		18.3	U					22.5	U	
AROCLOR-1221		18.4	U		18.3	U					22.5	U	
AROCLOR-1232		18.4	U		18.3	U					22.5	U	
AROCLOR-1242		18.4	U		18.3	U					22.5	U	
AROCLOR-1248		18.4	U		18.3	U					22.5	U	
AROCLOR-1254		18.4	U		18.3	U					22.5	U	
AROCLOR-1260		18.4	UJ	C	190	J	C				22.5	U	
BETA-BHC		0.36	UJ	C	0.36	UJ	C				0.44	U	
CHLORDANE (TECHNICAL)											0.23	U	
DELTA-BHC		0.36	UJ	C	0.36	UJ	C				0.44	U	
DIELDRIN		0.72	UJ	C	3.6	J	CQU				0.89	U	
ENDOSULFAN I		0.36	UJ	C	0.36	UJ	C				0.44	U	
ENDOSULFAN II		0.72	UJ	C	4	J	CU				0.89	U	
ENDOSULFAN SULFATE		0.72	UJ	C	5.7	J	CU				0.89	U	
ENDRIN		0.72	U		9	J	CU				0.89	UJ	C
ENDRIN ALDEHYDE		0.72	UJ	C	0.72	UJ	CG				0.89	UJ	C
ENDRIN KETONE		0.72	UJ	C	0.72	UJ	C				0.89	U	
GAMMA-BHC (LINDANE)		0.36	U		0.36	U					0.44	U	
GAMMA-CHLORDANE		0.36	UJ	C	20	J	CGU				0.44	U	
HEPTACHLOR		0.36	UJ	C	0.36	UJ	C				0.44	U	
HEPTACHLOR EPOXIDE		0.36	UJ	C	0.91	J	CGQU				0.44	U	
METHOXYCHLOR		0.36	UJ	C	0.36	UJ	C				0.44	UJ	C
TOXAPHENE		36	U		36	U					44	U	

PROJ_NO: 01797	NSAMPLE	FD-092809-01			NTC21SB01-SO-0102			NTC21SB02-SO-0001			NTC21SB02-SO-0204		
SDG: CTO064_001	LAB_ID	0910006-40			0910006-41			0910006-42			0910006-43		
FRACTION: PEST/PCB	SAMP_DATE	9/28/2009			9/28/2009			9/28/2009			9/28/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	80.0			84.2			89.7			88.7		
	DUP_OF	NTC21SB05-SO-0001											
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		19	J	GU	14	J	U	17	J	U	7.9	J	U
4,4'-DDE		10	J	G	10			5.3			8.2		
4,4'-DDT		6.5	J	CGU	14	J	CU	20	J	CU	8	J	CU
ALDRIN		0.41	UJ	C	0.33	J	CPQU	0.37	UJ	C	0.37	UJ	C
ALPHA-BHC		0.21	J	GPQU	0.39	U		0.28	J	U	2.8	J	U
ALPHA-CHLORDANE		0.41	UJ	C	7.4	J	CU	0.64	J	CU	0.37	UJ	CD
AROCLOR-1016		21.3	U		20.2	U		19	U		19.2	U	
AROCLOR-1221		21.3	U		20.2	U		19	U		19.2	U	
AROCLOR-1232		21.3	U		20.2	U		19	U		19.2	U	
AROCLOR-1242		21.3	U		20.2	U		19	U		19.2	U	
AROCLOR-1248		21.3	U		20.2	U		19	U		19.2	U	
AROCLOR-1254		21.3	U		20.2	U		19	U		19.2	U	
AROCLOR-1260		81	J	CGU	20.2	UJ	C	190	J	CU	69	J	CU
BETA-BHC		0.41	U		0.27	J	PQU	0.37	U		0.37	UJ	D
CHLORDANE (TECHNICAL)		2.1	U		2	U		1.9	U		1.9	U	
DELTA-BHC		0.39	J	PU	0.51	J	U	0.37	U		0.37	U	
DIELDRIN		1.4	J	CPU	0.8	UJ	C	2	J	CU	0.87	J	CD
ENDOSULFAN I		0.41	UJ	C	0.39	UJ	C	0.37	UJ	C	0.37	UJ	C
ENDOSULFAN II		0.99	J	CU	0.8	UJ	C	1.5	J	C	0.59	J	CDPU
ENDOSULFAN SULFATE		1.3	J	CU	1.8	J	CU	1.3	J	CQU	1.3	J	CDU
ENDRIN		0.74	UJ	C	0.71	J	CPQU	0.75	UJ	C	0.82	J	CU
ENDRIN ALDEHYDE		0.74	UJ	C	0.39	J	CPU	0.75	UJ	C	0.76	UJ	CD
ENDRIN KETONE		3.75	J	CU	0.85	J	C	0.75	UJ	C	0.76	UJ	CD
GAMMA-BHC (LINDANE)		0.41	U		0.25	J	PQU	0.37	U		0.37	U	
GAMMA-CHLORDANE		3.2	J	CGU	11	J	CU	1.7	J	CU	3.5	J	CD
HEPTACHLOR		0.41	UJ	C	0.39	UJ	C	0.37	UJ	C	0.37	UJ	CD
HEPTACHLOR EPOXIDE		0.74	J	CQGU	0.24	J	CPQU	0.37	UJ	C	0.9	J	CDU
METHOXYCHLOR		8.3	J	CGU	3.1	J	CQU	3.3	J	CQU	1.2	J	CDQU
TOXAPHENE		41	U		39	U		37	U		37	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB03-SO-0001			NTC21SB03-SO-0204			NTC21SB04-SO-0001			NTC21SB04-SO-0406		
SDG: CTO064_001	LAB_ID	0910006-44			0910006-45			0910006-21			0910006-22		
FRACTION: PEST/PCB	SAMP_DATE	9/28/2009			9/28/2009			9/27/2009			9/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	94.9			92.2			92.2			57.8		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		20	J	U	11	J	U	4.7	J	QU	1.2	U	
4,4'-DDE		9.4			15			7.9	J	QU	1.2	U	
4,4'-DDT		23	J	CU	16	J	CU	30	J	CQU	1.2	UJ	C
ALDRIN		0.23	J	CPU	0.36	UJ	C	0.36	UJ	C	0.571	U	
ALPHA-BHC		5.2	J	U	0.37	J	QU	0.36	U		0.571	U	
ALPHA-CHLORDANE		1.1	J	CU	0.36	UJ	C	0.36	UJ	C	0.571	U	
AROCLOR-1016		17.9	U		18.4	U		18.4	U		29.4	U	
AROCLOR-1221		17.9	U		18.4	U		18.4	U		29.4	U	
AROCLOR-1232		17.9	U		18.4	U		18.4	U		29.4	U	
AROCLOR-1242		17.9	U		18.4	U		18.4	U		29.4	U	
AROCLOR-1248		17.9	U		18.4	U		18.4	U		29.4	U	
AROCLOR-1254		17.9	U		18.4	U		18.4	U		29.4	U	
AROCLOR-1260		130	J	CU	29	J	CU	310	J	C	29.4	U	
BETA-BHC		1	J	U	0.36	U		0.36	U		0.571	U	
CHLORDANE (TECHNICAL)		1.8	U		1.8	U		1.8	U		2.9	U	
DELTA-BHC		0.35	U		0.36	U		0.36	U		0.571	U	
DIELDRIN		1.9	J	CU	1.1	J	C	13	J	CU	1.2	U	
ENDOSULFAN I		0.2	J	CPQU	0.36	UJ	C	3.2	J	CU	0.571	U	
ENDOSULFAN II		1.7	J	CU	0.19	J	CPQU	0.73	UJ	C	1.2	U	
ENDOSULFAN SULFATE		2.7	J	CU	0.72	J	CP	4.9	J	CU	1.2	U	
ENDRIN		1.1	J	CU	0.73	UJ	C	72			1.2	UJ	C
ENDRIN ALDEHYDE		0.71	UJ	C	0.73	UJ	C	8.6	J	C	1.2	UJ	C
ENDRIN KETONE		1.5	J	CQU	1.5	J	CU	0.73	UJ	C	1.2	U	
GAMMA-BHC (LINDANE)		0.49	J	U	0.33	J	P	0.36	U		0.571	U	
GAMMA-CHLORDANE		3.4	J	CU	2.4	J	CU	71	J	CU	0.571	U	
HEPTACHLOR		0.35	UJ	C	0.36	UJ	C	0.36	UJ	C	0.571	U	
HEPTACHLOR EPOXIDE		2	J	CU	0.39	J	CQU	0.36	U		0.571	U	
METHOXYCHLOR		17	J	CU	4.3	J	CU	37	J	C	0.571	UJ	C
TOXAPHENE		35	U		36	U		36	U		57	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB05-SO-0001			NTC21SB05-SO-0001-DL			NTC21SB05-SO-0204			NTC21SB06-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-46			0910006-46RE1			0910006-47			0910006-23		
FRACTION: PEST/PCB	SAMP_DATE	9/28/2009			9/28/2009			9/28/2009			9/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	93.6			93.6			90.7			82.5		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD					130			30	J	U			
4,4'-DDE					130			22					
4,4'-DDT					160	J	CU	14	J	CU			
ALDRIN		0.35	UJ	C				0.36	UJ	C	0.4	UJ	C
ALPHA-BHC		12	J	U				0.36	U		0.3	J	PQU
ALPHA-CHLORDANE		0.35	UJ	C				0.62	J	C	5.1	J	C
AROCLOR-1016		18.2	U					18.7	U		20.6	U	
AROCLOR-1221		18.2	U					18.7	U		20.6	U	
AROCLOR-1232		18.2	U					18.7	U		20.6	U	
AROCLOR-1242		18.2	U					18.7	U		20.6	U	
AROCLOR-1248		18.2	U					18.7	U		20.6	U	
AROCLOR-1254		18.2	U					18.7	U		20.6	U	
AROCLOR-1260		210	J	CU				130	J	CU	310	J	CU
BETA-BHC		0.35	U					0.36	U		0.4	U	
CHLORDANE (TECHNICAL)		1.8	U					1.9	U		2.1	U	
DELTA-BHC		0.35	U					0.36	U		1.4		
DIELDRIN		2.8	J	CU				1.6	J	CU	3.5	J	CQU
ENDOSULFAN I		0.35	UJ	C				0.36	UJ	C	2.3	J	CU
ENDOSULFAN II		0.72	UJ	C				1.1	J	C	0.81	UJ	C
ENDOSULFAN SULFATE		0.72	UJ	C				0.65	J	CPQU	0.81	UJ	C
ENDRIN		0.72	UJ	C				1.5	J	CU	6.7	J	U
ENDRIN ALDEHYDE		0.72	UJ	C				0.739	UJ	C	0.81	UJ	C
ENDRIN KETONE		0.72	UJ	C				0.739	UJ	C	0.81	UJ	C
GAMMA-BHC (LINDANE)		0.35	U					0.36	U		0.4	U	
GAMMA-CHLORDANE		11	J	C				3.9	J	CU	3.8	J	CQU
HEPTACHLOR		0.35	UJ	C				0.36	UJ	C	0.4	UJ	C
HEPTACHLOR EPOXIDE		2.3	J	CU				0.53	J	CQU	3		
METHOXYCHLOR		4	J	CQU				2.8	J	CQU	7.5	J	CQU
TOXAPHENE		35	U					36	U		40	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB06-SO-0001-DL			NTC21SB06-SO-0204			NTC21SB06-SO-0204-DL			NTC21SB07-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-23RE1			0910006-24			0910006-24RE1			0910006-25		
FRACTION: PEST/PCB	SAMP_DATE	9/27/2009			9/27/2009			9/27/2009			9/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	82.5			76.6			76.6			91.6		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		290						480			30		
4,4'-DDE		220						300			16		
4,4'-DDT		110	J	CU				240	J	C	9.1	J	CU
ALDRIN					0.43	UJ	C				0.36	UJ	C
ALPHA-BHC					0.64	J	QU				0.36	U	
ALPHA-CHLORDANE					9.9	J	C				1.3	J	C
AROCLOR-1016					22.2	U					18.6	U	
AROCLOR-1221					22.2	U					18.6	U	
AROCLOR-1232					22.2	U					18.6	U	
AROCLOR-1242					22.2	U					18.6	U	
AROCLOR-1248					22.2	U					18.6	U	
AROCLOR-1254					22.2	U					18.6	U	
AROCLOR-1260					440	J	CU				21	J	C
BETA-BHC					0.57	J	QU				0.56	J	U
CHLORDANE (TECHNICAL)					2.2	U					1.9	U	
DELTA-BHC					3						0.36	U	
DIELDRIN					5.6	J	CQU				3.7	J	CU
ENDOSULFAN I					0.43	UJ	C				0.36	UJ	C
ENDOSULFAN II					0.88	UJ	C				0.731	UJ	C
ENDOSULFAN SULFATE					8.7	J	CU				0.731	UJ	C
ENDRIN					0.88	U					0.731	U	
ENDRIN ALDEHYDE					0.88	UJ	C				0.731	UJ	C
ENDRIN KETONE					0.88	UJ	C				0.731	UJ	C
GAMMA-BHC (LINDANE)					2.3	J	U				0.44	J	U
GAMMA-CHLORDANE					4.5	J	CQU				3.4	J	CU
HEPTACHLOR					0.43	UJ	C				0.36	UJ	C
HEPTACHLOR EPOXIDE					6.3						0.51	J	QU
METHOXYCHLOR					11	J	CQU				3.9	J	C
TOXAPHENE					43	U					36	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB07-SO-0204			NTC21SB08-SO-0001			NTC21SB08-SO-0204			NTC21SB09-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-26			0910006-48			0910006-49			0910006-03		
FRACTION: PEST/PCB	SAMP_DATE	9/27/2009			9/28/2009			9/28/2009			9/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	86.0			92.7			73.7			91.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		0.78	U		51	J	U	31	J	U			
4,4'-DDE		0.78	U		48			20			65	J	CG
4,4'-DDT		0.78	UJ	C	72	J	CU	31	J	CU	62	J	CG
ALDRIN		0.38	U		0.36	UJ	C	0.45	UJ	C	0.36	UJ	C
ALPHA-BHC		0.38	U		8.9	J	U	0.45	U		0.36	U	
ALPHA-CHLORDANE		0.38	U		3.2	J	C	2	J	C	7.3	J	C
AROCLOR-1016		19.8	U		18.3	U		23.1	U		18.7	U	
AROCLOR-1221		19.8	U		18.3	U		23.1	U		18.7	U	
AROCLOR-1232		19.8	U		18.3	U		23.1	U		18.7	U	
AROCLOR-1242		19.8	U		18.3	U		23.1	U		18.7	U	
AROCLOR-1248		19.8	U		18.3	U		23.1	U		18.7	U	
AROCLOR-1254		19.8	U		18.3	U		23.1	U		18.7	U	
AROCLOR-1260		19.8	U		84	J	CU	120	J	CU	130	J	C
BETA-BHC		0.38	U		0.36	U		0.45	U		0.36	UJ	C
CHLORDANE (TECHNICAL)		2	U		1.8	U		2.3	U				
DELTA-BHC		0.38	U		0.36	U		0.45	U		0.36	UJ	C
DIELDRIN		0.78	U		3.5	J	CU	1.1	J	C	2.5	J	CQU
ENDOSULFAN I		0.38	U		0.36	UJ	C	0.45	UJ	C	0.36	UJ	C
ENDOSULFAN II		0.78	U		0.72	UJ	C	1.2	J	CU	4	J	CU
ENDOSULFAN SULFATE		0.78	U		1.8	J	CU	0.73	J	CPQU	6.7	J	CU
ENDRIN		0.78	UJ	C	0.72	UJ	C	1.3	J	CU	7.3	J	U
ENDRIN ALDEHYDE		0.78	UJ	C	0.72	UJ	C	0.91	UJ	C	6.8	J	CGU
ENDRIN KETONE		0.78	U		0.72	UJ	C	0.91	UJ	C	0.74	UJ	C
GAMMA-BHC (LINDANE)		0.38	U		0.36	U		0.45	U		0.36	U	
GAMMA-CHLORDANE		0.38	U		7	J	CU	4.2	J	CU	5.7	J	CGQU
HEPTACHLOR		0.38	U		0.36	UJ	C	0.45	UJ	C	0.36	UJ	C
HEPTACHLOR EPOXIDE		0.38	U		1	J	CQU	1.4	J	CU	0.36	UJ	CG
METHOXYCHLOR		2.7	J	CU	9.4	J	CU	3.7	J	CQU	0.36	UJ	C
TOXAPHENE		38	U		36	U		45	U		36	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB09-SO-0001-DL			NTC21SB09-SO-0204			NTC21SB10-SO-0001			NTC21SB10-SO-0001-DL		
SDG: CTO064_001	LAB_ID	0910006-03RE1			0910006-04			0910006-05			0910006-05RE1		
FRACTION: PEST/PCB	SAMP_DATE	9/26/2009			9/26/2009			9/26/2009			9/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	91.1			79.5			89.6			89.6		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		480			0.37	J	PU				520	J	CU
4,4'-DDE					0.84	UJ	C				350	J	U
4,4'-DDT					0.84	UJ	C				740	J	CU
ALDRIN					0.42	UJ	C	0.37	UJ	C			
ALPHA-BHC					0.42	U		0.37	U				
ALPHA-CHLORDANE					0.42	UJ	C	7.5	J	CQU			
AROCLOR-1016					21.4	U		19	U				
AROCLOR-1221					21.4	U		19	U				
AROCLOR-1232					21.4	U		19	U				
AROCLOR-1242					21.4	U		19	U				
AROCLOR-1248					21.4	U		19	U				
AROCLOR-1254					21.4	U		19	U				
AROCLOR-1260					21.4	UJ	C	720	J	CU			
BETA-BHC					0.42	UJ	C	0.37	UJ	C			
CHLORDANE (TECHNICAL)													
DELTA-BHC					0.42	UJ	C	3.5	J	C			
DIELDRIN					0.84	UJ	C	12	J	CQU			
ENDOSULFAN I					0.42	UJ	C	14	J	CU			
ENDOSULFAN II					0.84	UJ	C	4.6	J	CQU			
ENDOSULFAN SULFATE					0.84	UJ	C	18	J	CU			
ENDRIN					0.84	U					224		
ENDRIN ALDEHYDE					0.84	UJ	C	28	J	CU			
ENDRIN KETONE					0.84	UJ	C	0.75	UJ	C			
GAMMA-BHC (LINDANE)					0.42	U		0.37	U				
GAMMA-CHLORDANE					0.15	J	CPQU				189	J	U
HEPTACHLOR					0.42	UJ	C	0.37	UJ	C			
HEPTACHLOR EPOXIDE					0.42	UJ	C	2.7	J	CQU			
METHOXYCHLOR					0.8	J	CU	0.37	UJ	C			
TOXAPHENE					42	U		37	U				

PROJ_NO: 01797	NSAMPLE	NTC21SB10-SO-0406			NTC21SB11-SO-0001			NTC21SB11-SO-0001-DL			NTC21SB11-SO-0204		
SDG: CTO064_001	LAB_ID	0910006-06			0910006-07			0910006-07RE1			0910006-08		
FRACTION: PEST/PCB	SAMP_DATE	9/26/2009			9/26/2009			9/26/2009			9/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	82.8			92.0			92.0			84.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		1.7	J	U				230	J	U			
4,4'-DDE		0.69	J	CPU	53	J	CU				35	J	C
4,4'-DDT		1.9	J	U	34	J	CU				18	J	C
ALDRIN		0.4	UJ	C	0.36	UJ	C				0.39	UJ	C
ALPHA-BHC		0.71	J	U	0.36	U					0.39	U	
ALPHA-CHLORDANE		0.73	J	C	4.3	J	C				17	J	CU
AROCLOR-1016		20.5	U		18.5	U					20.2	U	
AROCLOR-1221		20.5	U		18.5	U					20.2	U	
AROCLOR-1232		20.5	U		18.5	U					20.2	U	
AROCLOR-1242		20.5	U		18.5	U					20.2	U	
AROCLOR-1248		20.5	U		18.5	U					20.2	U	
AROCLOR-1254		20.5	U		18.5	U					20.2	U	
AROCLOR-1260		20.5	UJ	C	390	J	C				72	J	C
BETA-BHC		1.1	J	CU	0.36	UJ	C				0.39	UJ	C
CHLORDANE (TECHNICAL)													
DELTA-BHC		0.52	J	CQU	0.36	UJ	C				0.39	UJ	C
DIELDRIN		0.81	UJ	C	6.8	J	CQU				1.7	J	C
ENDOSULFAN I		0.96	J	CU	4.1	J	CQU				0.39	UJ	C
ENDOSULFAN II		0.81	UJ	C	0.73	UJ	C				0.8	UJ	C
ENDOSULFAN SULFATE		0.81	UJ	C	13	J	CU				3.1	J	CU
ENDRIN		0.81	U		0.73	U					3.2	J	U
ENDRIN ALDEHYDE		4.9	J	CU	0.73	UJ	C				0.8	UJ	C
ENDRIN KETONE		0.81	UJ	C	0.73	UJ	C				0.8	UJ	C
GAMMA-BHC (LINDANE)		0.42	J	U	4.7	J	U				0.39	U	
GAMMA-CHLORDANE		1.7	J	CQU	8.3	J	CU				19	J	CU
HEPTACHLOR		0.4	UJ	C	0.36	UJ	C				0.39	UJ	C
HEPTACHLOR EPOXIDE		0.4	UJ	C	0.36	UJ	C				0.39	UJ	C
METHOXYCHLOR		0.4	UJ	C	0.36	UJ	C				0.39	UJ	C
TOXAPHENE		40	U		36	U					39	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB11-SO-0204-DL			NTC21SB12-SO-0001			NTC21SB12-SO-0204			NTC21SB13-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-08RE1			0910006-09			0910006-10			0910006-27		
FRACTION: PEST/PCB	SAMP_DATE	9/26/2009			9/26/2009			9/26/2009			9/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	84.1			84.9			77.0			77.7		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		190			3.9	J	U	0.87	U		1.2	J	QU
4,4'-DDE					7.2	J	C	1.7	J	C	1.4	J	U
4,4'-DDT					7.6	J	C	1.2	J	C	9.9	J	CU
ALDRIN					0.39	UJ	C	0.43	UJ	C	0.43	UJ	C
ALPHA-BHC					0.39	U		0.43	U		0.43	U	
ALPHA-CHLORDANE					0.39	UJ	C	0.43	UJ	C	0.43	UJ	C
AROCLOR-1016					20	U		22.1	U		21.9	U	
AROCLOR-1221					20	U		22.1	U		21.9	U	
AROCLOR-1232					20	U		22.1	U		21.9	U	
AROCLOR-1242					20	U		22.1	U		21.9	U	
AROCLOR-1248					20	U		22.1	U		21.9	U	
AROCLOR-1254					20	U		22.1	U		21.9	U	
AROCLOR-1260					20	UJ	C	22.1	UJ	C	120	J	CU
BETA-BHC					0.39	UJ	C	0.43	UJ	C	0.43	U	
CHLORDANE (TECHNICAL)											2.2	U	
DELTA-BHC					0.56	J	CQU	0.34	J	CPQU	0.43	U	
DIELDRIN					0.79	UJ	C	0.87	UJ	C	3.1	J	CU
ENDOSULFAN I					0.55	J	CQU	1.3	J	C	0.43	UJ	C
ENDOSULFAN II					0.79	UJ	C	0.87	UJ	C	1.5	J	CU
ENDOSULFAN SULFATE					0.79	UJ	C	0.87	UJ	C	2.7	J	CU
ENDRIN					0.79	UJ	C	0.87	UJ	C	0.86	U	
ENDRIN ALDEHYDE					1.6	J	CU	1.1	J	C	0.86	UJ	C
ENDRIN KETONE					0.79	UJ	C	0.87	UJ	C	0.86	UJ	C
GAMMA-BHC (LINDANE)					0.39	U		0.43	U		0.96		
GAMMA-CHLORDANE					1.3	J	C	1.1	J	C	2.2	J	CU
HEPTACHLOR					0.39	UJ	C	0.43	UJ	C	0.43	UJ	C
HEPTACHLOR EPOXIDE					0.69	J	CU	0.43	UJ	C	1.1	J	QU
METHOXYCHLOR					6.6	J	CU	8.9	J	CU	17	J	CU
TOXAPHENE					39	U		43	U		43	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB13-SO-0204			NTC21SB14-SO-0001			NTC21SB14-SO-0204			NTC21SB15-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-28			0910006-29			0910006-30			0910006-31		
FRACTION: PEST/PCB	SAMP_DATE	9/27/2009			9/27/2009			9/27/2009			9/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	84.3			81.8			75.3			83.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		0.79	U		1.6	J	U	0.89	U		2.9	J	U
4,4'-DDE		0.79	U		1.9	J	D	0.89	U		3.5		
4,4'-DDT		0.79	UJ	C	7.1	J	C	0.89	UJ	C	8.5	J	C
ALDRIN		0.39	U		0.4	UJ	C	0.44	U		0.4	UJ	C
ALPHA-BHC		0.39	U		0.4	U		0.44	U		0.4	U	
ALPHA-CHLORDANE		0.39	U		0.4	UJ	CD	0.44	U		0.4	UJ	C
AROCLOR-1016		20.2	U		20.8	U		22.6	U		20.4	U	
AROCLOR-1221		20.2	U		20.8	U		22.6	U		20.4	U	
AROCLOR-1232		20.2	U		20.8	U		22.6	U		20.4	U	
AROCLOR-1242		20.2	U		20.8	U		22.6	U		20.4	U	
AROCLOR-1248		20.2	U		20.8	U		22.6	U		20.4	U	
AROCLOR-1254		20.2	U		20.8	U		22.6	U		20.4	U	
AROCLOR-1260		20.2	U		20.8	UJ	C	22.6	U		20.4	UJ	C
BETA-BHC		0.39	U		0.4	U		0.44	U		0.4	U	
CHLORDANE (TECHNICAL)		2	U		2.1	U		2.3	U		2	U	
DELTA-BHC		0.39	U		0.4	UJ	D	0.44	U		0.4	U	
DIELDRIN		0.79	U		0.82	UJ	CD	0.89	U		0.81	UJ	C
ENDOSULFAN I		0.39	U		0.4	UJ	C	0.44	U		0.4	UJ	C
ENDOSULFAN II		0.79	U		0.82	UJ	C	0.89	U		0.81	UJ	C
ENDOSULFAN SULFATE		0.79	U		0.82	UJ	CD	0.89	U		0.81	UJ	C
ENDRIN		0.79	UJ	C	0.82	U		0.89	UJ	C	0.81	U	
ENDRIN ALDEHYDE		0.79	UJ	C	0.82	U		0.89	UJ	C	0.81	UJ	C
ENDRIN KETONE		0.79	U		0.82	UJ	CD	0.89	U		0.81	UJ	C
GAMMA-BHC (LINDANE)		0.39	U		0.22	J	DP	0.44	U		0.4	U	
GAMMA-CHLORDANE		0.39	U		0.4	UJ	CD	0.44	U		0.67	J	CU
HEPTACHLOR		0.39	U		0.4	UJ	CD	0.44	U		0.4	UJ	C
HEPTACHLOR EPOXIDE		0.39	U		0.4	UJ	D	0.44	U		0.15	J	PQU
METHOXYCHLOR		0.39	UJ	C	0.4	UJ	CD	0.44	UJ	C	0.4	UJ	C
TOXAPHENE		39	U		40	U		44	U		40	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB15-SO-0204			NTC21SB16-SO-0001			NTC21SB16-SO-0204			NTC21SB17-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-32			0910006-33			0910006-34			0910006-11		
FRACTION: PEST/PCB	SAMP_DATE	9/27/2009			9/27/2009			9/27/2009			9/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	77.2			89.1			77.4			82.8		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		0.87	U		0.75	J	PU	0.87	U		9.2	J	U
4,4'-DDE		0.87	U		0.61	J	P	0.87	U		1.9	J	CU
4,4'-DDT		0.87	UJ	C	1.7	J	CU	0.87	UJ	C	2.6	J	CU
ALDRIN		0.43	U		0.37	U		0.43	U		0.4	UJ	C
ALPHA-BHC		0.43	U		0.44			0.43	U		0.4	U	
ALPHA-CHLORDANE		0.43	U		0.37	U		0.43	U		0.4	UJ	C
AROCLOR-1016		22	U		19.1	U		22	U		20.5	U	
AROCLOR-1221		22	U		19.1	U		22	U		20.5	U	
AROCLOR-1232		22	U		19.1	U		22	U		20.5	U	
AROCLOR-1242		22	U		19.1	U		22	U		20.5	U	
AROCLOR-1248		22	U		19.1	U		22	U		20.5	U	
AROCLOR-1254		22	U		19.1	U		22	U		20.5	U	
AROCLOR-1260		22	U		19.1	U		22	U		20.5	UJ	C
BETA-BHC		0.43	U		0.37	U		0.43	U		0.4	UJ	C
CHLORDANE (TECHNICAL)		2.2	U		1.9	U		2.2	U				
DELTA-BHC		0.43	U		0.37	U		0.43	U		0.65	J	CQU
DIELDRIN		0.87	U		0.75	U		0.87	U		0.81	UJ	C
ENDOSULFAN I		0.43	U		0.37	U		0.43	U		2.8	J	CU
ENDOSULFAN II		0.87	U		0.75	U		0.87	U		0.81	UJ	C
ENDOSULFAN SULFATE		0.87	U		0.75	U		0.87	U		0.81	UJ	C
ENDRIN		0.87	UJ	C	0.75	UJ	C	0.87	UJ	C	0.81	UJ	C
ENDRIN ALDEHYDE		0.87	UJ	C	0.75	UJ	C	0.87	UJ	C	2		
ENDRIN KETONE		0.87	U		0.75	U		0.87	U		0.81	UJ	C
GAMMA-BHC (LINDANE)		0.43	U		0.37	U		0.43	U		0.4	U	
GAMMA-CHLORDANE		0.43	U		0.37	U		0.43	U		1.8	J	C
HEPTACHLOR		0.43	U		0.37	U		0.43	U		0.4	UJ	C
HEPTACHLOR EPOXIDE		0.43	U		0.37	U		0.43	U		0.4	UJ	C
METHOXYCHLOR		0.43	UJ	C	0.35	J	CPQU	0.43	UJ	C	15	J	CU
TOXAPHENE		43	U		37	U		43	U		40	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB17-SO-0507			NTC21SB18-SO-0001			NTC21SB18-SO-0507			NTC21SB19-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-12			0910006-13			0910006-14			0910006-35		
FRACTION: PEST/PCB	SAMP_DATE	9/26/2009			9/26/2009			9/26/2009			9/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	89.6			85.8			89.3			92.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		0.75	U		1.1	J	U	0.75	U		25		
4,4'-DDE		0.75	UJ	C	0.45	J	CP	0.75	UJ	C	12		
4,4'-DDT		0.75	UJ	C	0.77	J	CPU	0.75	UJ	C	15	J	CU
ALDRIN		0.37	UJ	C	0.39	UJ	C	0.37	UJ	C	0.36	UJ	C
ALPHA-BHC		0.37	U		0.39	U		0.37	U		0.36	U	
ALPHA-CHLORDANE		0.37	UJ	C	0.39	UJ	C	0.37	UJ	C	0.95	J	C
AROCLOR-1016		19	U		19.8	U		19	U		18.5	U	
AROCLOR-1221		19	U		19.8	U		19	U		18.5	U	
AROCLOR-1232		19	U		19.8	U		19	U		18.5	U	
AROCLOR-1242		19	U		19.8	U		19	U		18.5	U	
AROCLOR-1248		19	U		19.8	U		19	U		18.5	U	
AROCLOR-1254		19	U		19.8	U		19	U		18.5	U	
AROCLOR-1260		19	UJ	C	19.8	UJ	C	19	UJ	C	43	J	CU
BETA-BHC		0.37	UJ	C	0.39	UJ	C	0.37	UJ	C	0.36	U	
CHLORDANE (TECHNICAL)											1.9	U	
DELTA-BHC		0.37	UJ	C	2.4	J	CU	0.37	UJ	C	0.36	U	
DIELDRIN		0.75	UJ	C	0.78	UJ	C	0.75	UJ	C	0.68	J	CP
ENDOSULFAN I		0.37	UJ	C	0.39	UJ	C	0.37	UJ	C	0.36	UJ	C
ENDOSULFAN II		0.75	UJ	C	0.78	UJ	C	0.75	UJ	C	0.58	J	CPU
ENDOSULFAN SULFATE		0.75	UJ	C	0.78	UJ	C	0.75	UJ	C	0.96	J	CU
ENDRIN		0.75	UJ	C	0.78	UJ	C	0.75	UJ	C	0.73	U	
ENDRIN ALDEHYDE		0.75	U		0.78	U		0.75	U		0.73	UJ	C
ENDRIN KETONE		0.75	UJ	C	0.78	UJ	C	0.75	UJ	C	0.73	UJ	C
GAMMA-BHC (LINDANE)		0.37	U		0.39	U		0.37	U		0.36	U	
GAMMA-CHLORDANE		0.37	UJ	C	0.64	J	CU	0.37	UJ	C	4.1	J	CU
HEPTACHLOR		0.37	UJ	C	0.39	UJ	C	0.37	UJ	C	0.36	UJ	C
HEPTACHLOR EPOXIDE		0.37	UJ	C	0.39	UJ	C	0.37	UJ	C	0.74		
METHOXYCHLOR		0.37	UJ	C	2	J	CU	0.37	UJ	C	0.62	J	CQU
TOXAPHENE		37	U		39	U		37	U		36	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB19-SO-0204			NTC21SB20-SO-0001			NTC21SB20-SO-0406			NTC21SB21-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-36			0910006-15			0910006-16			0910006-17		
FRACTION: PEST/PCB	SAMP_DATE	9/27/2009			9/26/2009			9/26/2009			9/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	83.1			94.1			86.7			93.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		0.81	U		0.86	J	QU	0.77	U				
4,4'-DDE		0.81	U		5.5	J	CU	0.77	UJ	C			
4,4'-DDT		0.81	UJ	C	1.5	J	C	0.77	UJ	C			
ALDRIN		0.4	U		0.35	UJ	C	0.38	UJ	C	0.35	UJ	C
ALPHA-BHC		0.31	J	PU	0.35	U		0.38	U		0.35	U	
ALPHA-CHLORDANE		0.4	U		1.3	J	CU	0.38	UJ	C	0.35	UJ	C
AROCLOR-1016		20.5	U		18.1	U		19.6	U		18.3	U	
AROCLOR-1221		20.5	U		18.1	U		19.6	U		18.3	U	
AROCLOR-1232		20.5	U		18.1	U		19.6	U		18.3	U	
AROCLOR-1242		20.5	U		18.1	U		19.6	U		18.3	U	
AROCLOR-1248		20.5	U		18.1	U		19.6	U		18.3	U	
AROCLOR-1254		20.5	U		18.1	U		19.6	U		18.3	U	
AROCLOR-1260		20.5	U		18.1	UJ	C	19.6	UJ	C	450	J	CU
BETA-BHC		0.4	U		0.35	UJ	C	0.38	UJ	C	0.35	UJ	C
CHLORDANE (TECHNICAL)		2.1	U										
DELTA-BHC		0.25	J	PU	0.35	UJ	C	0.38	UJ	C	0.35	UJ	C
DIELDRIN		0.81	U		0.33	J	CPQU	0.77	UJ	C	15	J	CQU
ENDOSULFAN I		0.29	J	P	0.35	UJ	C	0.38	UJ	C	0.35	UJ	C
ENDOSULFAN II		0.81	U		0.71	UJ	C	0.77	UJ	C	0.72	UJ	C
ENDOSULFAN SULFATE		0.81	U		0.71	UJ	C	0.77	UJ	C	25	J	CU
ENDRIN		0.81	UJ	C	1	J	CU	0.77	UJ	C	0.72	UJ	C
ENDRIN ALDEHYDE		0.81	UJ	C	0.71	UJ	C	0.77	UJ	C	0.72	UJ	C
ENDRIN KETONE		0.81	U		3.2	J	CU	0.77	UJ	C	44	J	CQU
GAMMA-BHC (LINDANE)		0.4	U		0.7	J	U	0.38	U		20		
GAMMA-CHLORDANE		0.47	J	U	1.6	J	CU	0.38	UJ	C	0.35	UJ	C
HEPTACHLOR		0.4	U		0.35	UJ	C	0.38	UJ	C	0.35	UJ	C
HEPTACHLOR EPOXIDE		0.26	J	PQU	0.95	J	CQU	0.38	UJ	C	0.35	UJ	C
METHOXYCHLOR		0.84	J	CQU	0.35	UJ	C	0.38	UJ	C	0.35	UJ	C
TOXAPHENE		40	U		35	U		38	U		35	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB21-SO-0001-DL			NTC21SB21-SO-0608			NTC21SB22-SO-0001			NTC21SB22-SO-0001-DL		
SDG: CTO064_001	LAB_ID	0910006-17RE1			0910006-18			0910006-37			0910006-37RE1		
FRACTION: PEST/PCB	SAMP_DATE	9/26/2009			9/26/2009			9/27/2009			9/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	93.1			89.7			81.0			81.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		150	J	U	0.75	U					230		
4,4'-DDE		190			0.75	UJ	C	82					
4,4'-DDT		390	J	C	0.75	UJ	C	71	J	CU			
ALDRIN					0.37	UJ	C	0.41	UJ	C			
ALPHA-BHC					0.37	U		0.46	J	QU			
ALPHA-CHLORDANE					0.37	UJ	C	27	J	C			
AROCLOR-1016					19	U		21	U				
AROCLOR-1221					19	U		21	U				
AROCLOR-1232					19	U		21	U				
AROCLOR-1242					19	U		21	U				
AROCLOR-1248					19	U		21	U				
AROCLOR-1254					19	U		21	U				
AROCLOR-1260					19	UJ	C	110	J	CU			
BETA-BHC					0.37	UJ	C	0.41	U				
CHLORDANE (TECHNICAL)								2.1	U				
DELTA-BHC					0.37	UJ	C	0.42	J	QU			
DIELDRIN					0.75	UJ	C	1.8	J	CQU			
ENDOSULFAN I					0.37	UJ	C	0.41	UJ	C			
ENDOSULFAN II					0.75	UJ	C	0.83	UJ	C			
ENDOSULFAN SULFATE					0.75	UJ	C	3.4	J	CU			
ENDRIN					0.75	UJ	C	2.2	J	C			
ENDRIN ALDEHYDE					0.75	UJ	C	0.83	UJ	C			
ENDRIN KETONE					0.75	UJ	C	0.83	UJ	C			
GAMMA-BHC (LINDANE)					0.37	U		0.53	J	U			
GAMMA-CHLORDANE					0.37	UJ	C	44	J	CU			
HEPTACHLOR					0.37	UJ	C	0.41	UJ	C			
HEPTACHLOR EPOXIDE					0.37	UJ	C	1.5	J	CQU			
METHOXYCHLOR					0.37	UJ	C	0.71	J	CQU			
TOXAPHENE					37	U		41	U				

PROJ_NO: 01797	NSAMPLE	NTC21SB22-SO-0204			NTC21SB22-SO-0204-DL		
SDG: CTO064_001	LAB_ID	0910006-38			0910006-38RE1		
FRACTION: PEST/PCB	SAMP_DATE	9/27/2009			9/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM		
	UNITS	UG/KG			UG/KG		
	PCT_SOLIDS	80.4			80.4		
	DUP_OF						
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD					330		
4,4'-DDE					150		
4,4'-DDT		62	J	CU			
ALDRIN		0.41	UJ	C			
ALPHA-BHC		0.27	J	PQU			
ALPHA-CHLORDANE		26	J	C			
AROCLOR-1016		21.1	U				
AROCLOR-1221		21.1	U				
AROCLOR-1232		21.1	U				
AROCLOR-1242		21.1	U				
AROCLOR-1248		21.1	U				
AROCLOR-1254		21.1	U				
AROCLOR-1260		270	J	CU			
BETA-BHC		0.41	U				
CHLORDANE (TECHNICAL)		2.1	U				
DELTA-BHC		0.41	U				
DIELDRIN		3.2	J	CQU			
ENDOSULFAN I		0.41	UJ	C			
ENDOSULFAN II		0.65	J	CPQU			
ENDOSULFAN SULFATE		5.8	J	CU			
ENDRIN		0.83	UJ	C			
ENDRIN ALDEHYDE		0.83	UJ	C			
ENDRIN KETONE		0.83	UJ	C			
GAMMA-BHC (LINDANE)		0.41	U				
GAMMA-CHLORDANE		46	J	CU			
HEPTACHLOR		0.41	UJ	C			
HEPTACHLOR EPOXIDE		6.9	J	CU			
METHOXYCHLOR		0.41	UJ	C			
TOXAPHENE		41	U				

PROJ_NO: 01797	NSAMPLE	RB-092909-01			RB-092909-02			SB-092909-01		
SDG: CTO064_001	LAB_ID	0910006-51			0910006-52			0910006-53		
FRACTION: HERB	SAMP_DATE	9/29/2009			9/29/2009			9/29/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0		
	DUP_OF									
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2,4,5-T		0.05	UJ	C	0.05	UJ	C	0.05	UJ	C
2,4,5-TP (SILVEX)		0.05	U		0.05	U		0.05	U	
2,4-D		0.5	UJ	C	0.5	UJ	C	0.5	UJ	C
2,4-DB		0.5	U		0.5	U		0.5	U	
DALAPON		1.2	U		1.2	U		1.2	U	
DICAMBA		0.05	U		0.05	U		0.05	U	
DICHLOROPROP		0.5	U		0.5	U		0.5	U	
DINOSEB		0.25	UJ	C	0.25	UJ	C	0.25	UJ	C
MCPA		50	U		50	U		50	U	
MCPP		50	U		50	U		50	U	

PROJ_NO: 01797	NSAMPLE	FD-092609-01			FD-092609-02			FD-092709-01			FD-092809-01		
SDG: CTO064_001	LAB_ID	0910006-01			0910006-02			0910006-20			0910006-40		
FRACTION: HERB	SAMP_DATE	9/26/2009			9/26/2009			9/27/2009			9/28/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	93.0			93.0			76.0			80.0		
	DUP_OF	NTC21SB18-SO-0507			NTC21SB09-SO-0001			NTC21SB15-SO-0204			NTC21SB05-SO-0001		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2,4,5-T		5.4	UJ	C	5.39	UJ	C	6.62	U		6.25	U	
2,4,5-TP (SILVEX)		5.4	U		5.39	U		6.62	U		6.25	U	
2,4-D		54	U		53.9	U		66.2	U		62.5	U	
2,4-DB		54	U		53.9	U		66.2	U		62.5	U	
DALAPON		135	U		135	U		165	U		156	UJ	C
DICAMBA		5.4	U		5.39	U		6.62	U		6.25	U	
DICHLOROPROP		54	U		53.9	U		66.2	U		62.5	U	
DINOSEB		27	U		26.9	U		33.1	UJ	C	31.3	U	
MCPA		5400	UJ	C	5390	UJ	C	6620	U		6250	U	
MCPP		5400	U		5390	U		6620	U		6250	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB01-SO-0102			NTC21SB02-SO-0001			NTC21SB02-SO-0204			NTC21SB03-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-41			0910006-42			0910006-43			0910006-44		
FRACTION: HERB	SAMP_DATE	9/28/2009			9/28/2009			9/28/2009			9/28/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	84.0			90.0			89.0			95.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2,4,5-T		5.94	U		5.58	U		5.63	U		5.27	U	
2,4,5-TP (SILVEX)		5.94	U		5.58	U		5.63	U		5.27	U	
2,4-D		59.4	U		55.8	U		56.3	U		52.7	U	
2,4-DB		59.4	U		55.8	UJ	C	56.3	UJ	C	52.7	UJ	C
DALAPON		148	UJ	C	139	UJ	C	141	UJ	C	132	UJ	C
DICAMBA		5.94	U		6.91	J	QU	6.89	J	QU	5.41	J	QU
DICHLOROPROP		59.4	U		55.8	U		56.3	U		52.7	U	
DINOSEB		29.7	U		27.9	U		28.2	U		26.3	U	
MCPA		5940	U		5580	U		5630	U		5270	U	
MCPP		5940	U		5580	U		5630	U		5270	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB03-SO-0204			NTC21SB04-SO-0001			NTC21SB04-SO-0406			NTC21SB05-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-45			0910006-21			0910006-22			0910006-46		
FRACTION: HERB	SAMP_DATE	9/28/2009			9/27/2009			9/27/2009			9/28/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	92.0			92.0			58.0			94.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2,4,5-T		5.42	U		5.43	UJ	C	8.66	UJ	C	5.34	U	
2,4,5-TP (SILVEX)		5.42	U		5.43	U		8.66	U		5.34	U	
2,4-D		54.2	U		54.3	UJ	C	86.6	UJ	C	53.4	U	
2,4-DB		54.2	UJ	C	54.3	UJ	C	86.6	UJ	C	53.4	UJ	C
DALAPON		136	UJ	C	136	UJ	C	216	UJ	C	133	UJ	C
DICAMBA		6.81	J	QU	6.77	J	QU	8.66	U		5.34	U	
DICHLOROPROP		54.2	U		54.3	U		86.6	U		53.4	U	
DINOSEB		27.1	U		27.1	U		43.3	U		26.7	U	
MCPA		5420	U		5430	U		8660	U		5340	U	
MCPP		5420	U		5430	U		8660	U		5340	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB05-SO-0204			NTC21SB06-SO-0001			NTC21SB06-SO-0204			NTC21SB07-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-47			0910006-23			0910006-24			0910006-25		
FRACTION: HERB	SAMP_DATE	9/28/2009			9/27/2009			9/27/2009			9/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	91.0			82.0			77.0			92.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2,4,5-T		5.51	U		6.06	UJ	C	6.53	UJ	C	5.46	UJ	C
2,4,5-TP (SILVEX)		5.51	U		6.06	U		6.53	U		5.46	U	
2,4-D		55.1	U		60.6	UJ	C	54.6	J	CQU	54.6	UJ	C
2,4-DB		55.1	UJ	C	60.6	UJ	C	65.3	UJ	C	54.6	UJ	C
DALAPON		138	UJ	C	152	UJ	C	163	UJ	C	136	UJ	C
DICAMBA		5.51	U		8.07	J	QU	6.13	J	PQU	4.86	J	PQU
DICHLOROPROP		55.1	U		60.6	U		65.3	U		54.6	U	
DINOSEB		27.6	U		30.3	U		32.7	U		27.3	U	
MCPA		5510	U		6060	U		6530	U		5460	U	
MCPP		5510	U		6060	U		6530	U		5460	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB07-SO-0204			NTC21SB08-SO-0001			NTC21SB08-SO-0204			NTC21SB09-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-26			0910006-48			0910006-49			0910006-03		
FRACTION: HERB	SAMP_DATE	9/27/2009			9/28/2009			9/28/2009			9/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	86.0			93.0			74.0			91.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2,4,5-T		5.81	UJ	C	5.39	U		6.78	U		5.49	UJ	C
2,4,5-TP (SILVEX)		5.81	U		5.39	U		6.78	U		5.49	U	
2,4-D		58.1	UJ	C	53.9	U		67.8	U		54.9	U	
2,4-DB		58.1	UJ	C	53.9	UJ	C	67.8	UJ	C	54.9	U	
DALAPON		145	UJ	C	135	UJ	C	170	UJ	C	137	U	
DICAMBA		5.81	U		5.39	U		6.78	U		5.49	U	
DICHLOROPROP		58.1	U		53.9	U		67.8	U		54.9	U	
DINOSEB		29.1	U		27	U		33.9	U		27.4	U	
MCPA		5810	U		5390	U		6780	U		5490	UJ	C
MCPP		5810	U		5390	U		6780	U		5490	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB09-SO-0204			NTC21SB10-SO-0001			NTC21SB10-SO-0406			NTC21SB11-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-04			0910006-05			0910006-06			0910006-07		
FRACTION: HERB	SAMP_DATE	9/26/2009			9/26/2009			9/26/2009			9/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	79.0			90.0			83.0			92.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2,4,5-T		6.29	UJ	C	5.58	UJ	C	6.04	UJ	C	5.43	UJ	C
2,4,5-TP (SILVEX)					5.58	U		6.04	U		5.43	U	
2,4-D		62.9	U		55.8	U		60.4	U		54.3	U	
2,4-DB		62.9	U		55.8	U		60.4	U		54.3	U	
DALAPON		157	UJ	C	139	U		151	U		136	U	
DICAMBA		6.29	UJ	C	5.58	U		6.04	U		5.43	U	
DICHLOROPROP		62.9	U		55.8	U		60.4	U		54.3	U	
DINOSEB		31.5	UJ	C	27.9	U		30.2	U		27.2	U	
MCPA		6290	U		5580	UJ	C	6040	UJ	C	5430	UJ	C
MCPP		6290	U		5580	U		6040	U		5430	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB11-SO-0204			NTC21SB12-SO-0001			NTC21SB12-SO-0204			NTC21SB13-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-08			0910006-09			0910006-10			0910006-27		
FRACTION: HERB	SAMP_DATE	9/26/2009			9/26/2009			9/26/2009			9/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	84.0			85.0			77.0			78.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2,4,5-T		5.94	UJ	C	5.89	UJ	C	6.49	U		6.44	UJ	C
2,4,5-TP (SILVEX)		5.94	U		5.89	U		6.49	U		6.44	U	
2,4-D		59.4	U		58.9	U		64.9	U		217	J	CQU
2,4-DB		59.4	U		58.9	U		64.9	U		64.4	UJ	C
DALAPON		149	U		147	U		162	U		161	UJ	C
DICAMBA		5.94	U		5.89	U		6.49	U		8.56	J	QU
DICHLOROPROP		59.4	U		58.9	U		64.9	U		64.4	U	
DINOSEB		29.7	U		29.5	U		32.5	UJ	C	32.2	U	
MCPA		5940	UJ	C	5890	UJ	C	6490	U		6440	U	
MCPP		5940	U		5890	U		6490	U		6440	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB13-SO-0204			NTC21SB14-SO-0001			NTC21SB14-SO-0204			NTC21SB15-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-28			0910006-29			0910006-30			0910006-31		
FRACTION: HERB	SAMP_DATE	9/27/2009			9/27/2009			9/27/2009			9/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	84.0			82.0			75.0			83.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2,4,5-T		5.93	UJ	C	6.11	UJ	C	6.64	UJ	C	6	U	
2,4,5-TP (SILVEX)		5.93	U		6.11	U		6.64	U		6	U	
2,4-D		59.3	UJ	C	61.1	UJ	C	66.4	UJ	C	60	U	
2,4-DB		59.3	UJ	C	61.1	UJ	C	66.4	UJ	C	60	U	
DALAPON		148	UJ	C	153	UJ	C	166	UJ	C	150	UJ	C
DICAMBA		5.93	U		9.99	J	QU	8.28	J	QU	6	U	
DICHLOROPROP		59.3	U		61.1	U		66.4	U		60	U	
DINOSEB		29.6	U		17.2	J	P	33.2	U		30	U	
MCPA		5930	U		6110	U		6640	U		6000	U	
MCPP		5930	U		6110	U		6640	U		6000	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB15-SO-0204			NTC21SB16-SO-0001			NTC21SB16-SO-0204			NTC21SB17-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-32			0910006-33			0910006-34			0910006-11		
FRACTION: HERB	SAMP_DATE	9/27/2009			9/27/2009			9/27/2009			9/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	77.0			89.0			77.0			83.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2,4,5-T		6.48	U		5.61	U		6.46	U		6.04	U	
2,4,5-TP (SILVEX)		6.48	U		5.61	U		6.46	U		6.04	U	
2,4-D		64.8	U		56.1	U		64.6	U		60.4	U	
2,4-DB		64.8	U		56.1	U		64.6	U		60.4	U	
DALAPON		162	UJ	C	140	UJ	C	161	UJ	C	151	U	
DICAMBA		6.48	U		5.61	U		29.2	J	C	6.04	U	
DICHLOROPROP		64.8	U		56.1	U		64.6	U		60.4	U	
DINOSEB		32.4	U		28.1	U		32.3	U		30.2	UJ	C
MCPA		6480	U		5610	U		6460	U		6040	U	
MCPP		6480	U		5610	U		6460	U		6040	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB17-SO-0507			NTC21SB18-SO-0001			NTC21SB18-SO-0507			NTC21SB19-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-12			0910006-13			0910006-14			0910006-35		
FRACTION: HERB	SAMP_DATE	9/26/2009			9/26/2009			9/26/2009			9/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	90.0			86.0			89.0			92.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2,4,5-T		5.58	U		5.83	U		5.6	U		5.43	U	
2,4,5-TP (SILVEX)		5.58	U		5.83	U		5.6	U		5.43	U	
2,4-D		55.8	U		58.3	U		56	U		54.3	U	
2,4-DB		55.8	U		58.3	U		56	U		54.3	U	
DALAPON		140	U		146	U		140	U		136	UJ	C
DICAMBA		5.58	U		5.83	U		5.6	U		5.43	U	
DICHLOROPROP		55.8	U		58.3	U		56	U		54.3	U	
DINOSEB		27.9	UJ	C	29.1	UJ	C	28	UJ	C	27.1	U	
MCPA		5580	U		5830	U		5600	U		5430	U	
MCPP		5580	U		5830	U		5600	U		5430	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB19-SO-0204			NTC21SB20-SO-0001			NTC21SB20-SO-0406			NTC21SB21-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-36			0910006-15			0910006-16			0910006-17		
FRACTION: HERB	SAMP_DATE	9/27/2009			9/26/2009			9/26/2009			9/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	83.0			94.0			87.0			93.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2,4,5-T		6.02	U		5.31	U		5.77	U		5.37	U	
2,4,5-TP (SILVEX)		6.02	U		5.31	U		5.77	U		5.37	U	
2,4-D		60.2	U		53.1	U		57.7	U		53.7	U	
2,4-DB		60.2	U		53.1	U		57.7	U		53.7	U	
DALAPON		150	UJ	C	133	U		144	U		134	U	
DICAMBA		6.02	U		5.31	U		5.77	U		5.37	U	
DICHLOROPROP		60.2	U		53.1	U		57.7	U		53.7	U	
DINOSEB		30.1	U		26.6	UJ	C	28.9	UJ	C	26.9	UJ	C
MCPA		6020	U		5310	U		5770	U		5370	U	
MCPP		6020	U		5310	U		5770	U		5370	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB21-SO-0608			NTC21SB22-SO-0001			NTC21SB22-SO-0204		
SDG: CTO064_001	LAB_ID	0910006-18			0910006-37			0910006-38		
FRACTION: HERB	SAMP_DATE	9/26/2009			9/27/2009			9/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM		
	UNITS	UG/KG			UG/KG			UG/KG		
	PCT_SOLIDS	90.0			81.0			80.0		
	DUP_OF									
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2,4,5-T		5.58	U		6.18	U		6.22	U	
2,4,5-TP (SILVEX)		5.58	U		6.18	U		6.22	U	
2,4-D		55.8	U		61.8	U		62.2	U	
2,4-DB		55.8	U		61.8	U		62.2	U	
DALAPON		139	U		154	UJ	C	155	UJ	C
DICAMBA		5.58	U		6.18	U		6.22	U	
DICHLOROPROP		55.8	U		61.8	U		62.2	U	
DINOSEB		27.9	UJ	C	30.9	U		31.1	U	
MCPA		5580	U		6180	U		6220	U	
MCPP		5580	U		6180	U		6220	U	

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

VALUE QUALIFIER KEY (VAL QUAL)

U – The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ – The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R – The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

DATA QUALIFICATION CODE (QUAL CODE)

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's r < 0.995 / ICP PDS Recovery Noncompliance
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (e.g. base-line drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient r < 0.995
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is greater than sample activity

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

RB-092909-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) WATER Lab Sample ID: 0910006-51

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1000651

Level: (low/med) LOW Date Sampled: 09/29/09 11:26

% Moisture: not dec. _____ Date Analyzed: 10/03/09 18:05

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	0.84	10	5.3	J
71-43-2	Benzene	0.11	1.0		U
75-27-4	Bromodichloromethane	0.10	1.0		U
75-25-2	Bromoform	0.10	1.0		U
74-83-9	Bromomethane	0.32	2.0		U
78-93-3	2-Butanone	1.0	10		U
75-15-0	Carbon disulfide	0.13	1.0		U
56-23-5	Carbon tetrachloride	0.15	1.0		U
108-90-7	Chlorobenzene	0.10	1.0		U
75-00-3	Chloroethane	0.18	2.0		U
67-66-3	Chloroform	0.11	1.0		U
74-87-3	Chloromethane	0.29	2.0	1.6	J
110-82-7	Cyclohexane	0.20	1.0		U
124-48-1	Dibromochloromethane	0.10	1.0		U
96-12-8	1,2-Dibromo-3-chloropropane	0.11	1.0		U
106-93-4	1,2-Dibromoethane	0.10	1.0		U
95-50-1	1,2-Dichlorobenzene	0.10	1.0		U
541-73-1	1,3-Dichlorobenzene	0.13	1.0		U
106-46-7	1,4-Dichlorobenzene	0.10	1.0		U
75-71-8	Dichlorodifluoromethane	0.22	2.0		U
75-34-3	1,1-Dichloroethane	0.12	1.0		U
107-06-2	1,2-Dichloroethane	0.10	1.0		U
75-35-4	1,1-Dichloroethene	0.15	1.0		U
156-59-2	cis-1,2-Dichloroethene	0.13	1.0		U
156-60-5	trans-1,2-Dichloroethene	0.13	1.0		U
78-87-5	1,2-Dichloropropane	0.10	1.0		U
10061-01-5	cis-1,3-Dichloropropene	0.11	1.0		U
10061-02-6	trans-1,3-Dichloropropene	0.10	1.0		U
100-41-4	Ethylbenzene	0.13	1.0	0.17	J
591-78-6	2-Hexanone	0.30	5.0		U
98-82-8	Isopropylbenzene	0.15	1.0		U
79-20-9	Methyl acetate	0.30	2.0		U
75-09-2	Methylene chloride	0.14	2.0	2.4	B
108-87-2	Methyl cyclohexane	0.17	1.0		U
1634-04-4	Methyl-tert-butyl-ether	0.10	1.0		U
108-10-1	4-Methyl-2-pentanone	0.29	5.0		U
100-42-5	Styrene	0.10	1.0		U
79-34-5	1,1,2,2-Tetrachloroethane	0.10	1.0		U
127-18-4	Tetrachloroethene	0.15	1.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

RB-092909-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) WATER Lab Sample ID: 0910006-51

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1000651

Level: (low/med) LOW Date Sampled: 09/29/09 11:26

% Moisture: not dec. _____ Date Analyzed: 10/03/09 18:05

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.10	1.0	2.1	
120-82-1	1,2,4-Trichlorobenzene	0.10	1.0		U
71-55-6	1,1,1-Trichloroethane	0.17	1.0		U
79-00-5	1,1,2-Trichloroethane	0.10	1.0		U
79-01-6	Trichloroethene	0.13	1.0		U
76-13-1	Trichlorotrifluoroethane	0.18	2.0		U
75-69-4	Trichlorofluoromethane	0.17	2.0		U
75-01-4	Vinyl chloride	0.18	1.0		U
1330-20-7	Xylene(total)	0.22	1.0	0.66	J

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

RB-092909-02

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) WATER Lab Sample ID: 0910006-52

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1000652

Level: (low/med) LOW Date Sampled: 09/29/09 13:02

% Moisture: not dec. _____ Date Analyzed: 10/03/09 18:35

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	0.84	10		U
71-43-2	Benzene	0.11	1.0		U
75-27-4	Bromodichloromethane	0.10	1.0		U
75-25-2	Bromoform	0.10	1.0		U
74-83-9	Bromomethane	0.32	2.0		U
78-93-3	2-Butanone	1.0	10		U
75-15-0	Carbon disulfide	0.13	1.0		U
56-23-5	Carbon tetrachloride	0.15	1.0		U
108-90-7	Chlorobenzene	0.10	1.0		U
75-00-3	Chloroethane	0.18	2.0		U
67-66-3	Chloroform	0.11	1.0		U
74-87-3	Chloromethane	0.29	2.0	0.72	J
110-82-7	Cyclohexane	0.20	1.0		U
124-48-1	Dibromochloromethane	0.10	1.0		U
96-12-8	1,2-Dibromo-3-chloropropane	0.11	1.0		U
106-93-4	1,2-Dibromoethane	0.10	1.0		U
95-50-1	1,2-Dichlorobenzene	0.10	1.0		U
541-73-1	1,3-Dichlorobenzene	0.13	1.0		U
106-46-7	1,4-Dichlorobenzene	0.10	1.0		U
75-71-8	Dichlorodifluoromethane	0.22	2.0		U
75-34-3	1,1-Dichloroethane	0.12	1.0		U
107-06-2	1,2-Dichloroethane	0.10	1.0		U
75-35-4	1,1-Dichloroethene	0.15	1.0		U
156-59-2	cis-1,2-Dichloroethene	0.13	1.0		U
156-60-5	trans-1,2-Dichloroethene	0.13	1.0		U
78-87-5	1,2-Dichloropropane	0.10	1.0		U
10061-01-5	cis-1,3-Dichloropropene	0.11	1.0		U
10061-02-6	trans-1,3-Dichloropropene	0.10	1.0		U
100-41-4	Ethylbenzene	0.13	1.0		U
591-78-6	2-Hexanone	0.30	5.0		U
98-82-8	Isopropylbenzene	0.15	1.0		U
79-20-9	Methyl acetate	0.30	2.0		U
75-09-2	Methylene chloride	0.14	2.0	1.8	JB
108-87-2	Methyl cyclohexane	0.17	1.0		U
1634-04-4	Methyl-tert-butyl-ether	0.10	1.0		U
108-10-1	4-Methyl-2-pentanone	0.29	5.0		U
100-42-5	Styrene	0.10	1.0		U
79-34-5	1,1,2,2-Tetrachloroethane	0.10	1.0		U
127-18-4	Tetrachloroethene	0.15	1.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

RB-092909-02

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) WATER Lab Sample ID: 0910006-52

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1000652

Level: (low/med) LOW Date Sampled: 09/29/09 13:02

% Moisture: not dec. _____ Date Analyzed: 10/03/09 18:35

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.10	1.0	13	
120-82-1	1,2,4-Trichlorobenzene	0.10	1.0		U
71-55-6	1,1,1-Trichloroethane	0.17	1.0		U
79-00-5	1,1,2-Trichloroethane	0.10	1.0		U
79-01-6	Trichloroethene	0.13	1.0		U
76-13-1	Trichlorotrifluoroethane	0.18	2.0		U
75-69-4	Trichlorofluoromethane	0.17	2.0		U
75-01-4	Vinyl chloride	0.18	1.0		U
1330-20-7	Xylene(total)	0.22	1.0	0.53	J

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SB-092909-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) WATER Lab Sample ID: 0910006-53

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1000653

Level: (low/med) LOW Date Sampled: 09/29/09 10:31

% Moisture: not dec. _____ Date Analyzed: 10/03/09 19:05

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	0.84	10	4.8	J
71-43-2	Benzene	0.11	1.0		U
75-27-4	Bromodichloromethane	0.10	1.0		U
75-25-2	Bromoform	0.10	1.0		U
74-83-9	Bromomethane	0.32	2.0		U
78-93-3	2-Butanone	1.0	10		U
75-15-0	Carbon disulfide	0.13	1.0		U
56-23-5	Carbon tetrachloride	0.15	1.0		U
108-90-7	Chlorobenzene	0.10	1.0		U
75-00-3	Chloroethane	0.18	2.0		U
67-66-3	Chloroform	0.11	1.0		U
74-87-3	Chloromethane	0.29	2.0	0.61	J
110-82-7	Cyclohexane	0.20	1.0		U
124-48-1	Dibromochloromethane	0.10	1.0		U
96-12-8	1,2-Dibromo-3-chloropropane	0.11	1.0		U
106-93-4	1,2-Dibromoethane	0.10	1.0		U
95-50-1	1,2-Dichlorobenzene	0.10	1.0		U
541-73-1	1,3-Dichlorobenzene	0.13	1.0		U
106-46-7	1,4-Dichlorobenzene	0.10	1.0		U
75-71-8	Dichlorodifluoromethane	0.22	2.0		U
75-34-3	1,1-Dichloroethane	0.12	1.0		U
107-06-2	1,2-Dichloroethane	0.10	1.0		U
75-35-4	1,1-Dichloroethene	0.15	1.0		U
156-59-2	cis-1,2-Dichloroethene	0.13	1.0		U
156-60-5	trans-1,2-Dichloroethene	0.13	1.0		U
78-87-5	1,2-Dichloropropane	0.10	1.0		U
10061-01-5	cis-1,3-Dichloropropene	0.11	1.0		U
10061-02-6	trans-1,3-Dichloropropene	0.10	1.0		U
100-41-4	Ethylbenzene	0.13	1.0	0.20	J
591-78-6	2-Hexanone	0.30	5.0		U
98-82-8	Isopropylbenzene	0.15	1.0		U
79-20-9	Methyl acetate	0.30	2.0		U
75-09-2	Methylene chloride	0.14	2.0	2.4	B
108-87-2	Methyl cyclohexane	0.17	1.0		U
1634-04-4	Methyl-tert-butyl-ether	0.10	1.0		U
108-10-1	4-Methyl-2-pentanone	0.29	5.0		U
100-42-5	Styrene	0.10	1.0		U
79-34-5	1,1,2,2-Tetrachloroethane	0.10	1.0		U
127-18-4	Tetrachloroethene	0.15	1.0		U

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FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SB-092909-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) WATER Lab Sample ID: 0910006-53

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1000653

Level: (low/med) LOW Date Sampled: 09/29/09 10:31

% Moisture: not dec. _____ Date Analyzed: 10/03/09 19:05

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.10	1.0	2.1	
120-82-1	1,2,4-Trichlorobenzene	0.10	1.0		U
71-55-6	1,1,1-Trichloroethane	0.17	1.0		U
79-00-5	1,1,2-Trichloroethane	0.10	1.0		U
79-01-6	Trichloroethene	0.13	1.0		U
76-13-1	Trichlorotrifluoroethane	0.18	2.0		U
75-69-4	Trichlorofluoromethane	0.17	2.0		U
75-01-4	Vinyl chloride	0.18	1.0		U
1330-20-7	Xylene(total)	0.22	1.0	0.65	J

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

TB-092609-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) WATER Lab Sample ID: 0910006-19

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1000619

Level: (low/med) LOW Date Sampled: 09/26/09 08:00

% Moisture: not dec. _____ Date Analyzed: 10/09/09 22:04

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	0.84	10		U
71-43-2	Benzene	0.11	1.0		U
75-27-4	Bromodichloromethane	0.10	1.0		U
75-25-2	Bromoform	0.10	1.0		U
74-83-9	Bromomethane	0.32	2.0		U
78-93-3	2-Butanone	1.0	10		U
75-15-0	Carbon disulfide	0.13	1.0		U
56-23-5	Carbon tetrachloride	0.15	1.0		U
108-90-7	Chlorobenzene	0.10	1.0		U
75-00-3	Chloroethane	0.18	2.0		U
67-66-3	Chloroform	0.11	1.0	0.12	J
74-87-3	Chloromethane	0.29	2.0		U
110-82-7	Cyclohexane	0.20	1.0		U
124-48-1	Dibromochloromethane	0.10	1.0		U
96-12-8	1,2-Dibromo-3-chloropropane	0.11	1.0		U
106-93-4	1,2-Dibromoethane	0.10	1.0		U
95-50-1	1,2-Dichlorobenzene	0.10	1.0		U
541-73-1	1,3-Dichlorobenzene	0.13	1.0		U
106-46-7	1,4-Dichlorobenzene	0.10	1.0	0.13	J
75-71-8	Dichlorodifluoromethane	0.22	2.0		U
75-34-3	1,1-Dichloroethane	0.12	1.0		U
107-06-2	1,2-Dichloroethane	0.10	1.0		U
75-35-4	1,1-Dichloroethene	0.15	1.0		U
156-59-2	cis-1,2-Dichloroethene	0.13	1.0		U
156-60-5	trans-1,2-Dichloroethene	0.13	1.0		U
78-87-5	1,2-Dichloropropane	0.10	1.0		U
10061-01-5	cis-1,3-Dichloropropene	0.11	1.0		U
10061-02-6	trans-1,3-Dichloropropene	0.10	1.0		U
100-41-4	Ethylbenzene	0.13	1.0		U
591-78-6	2-Hexanone	0.30	5.0		U
98-82-8	Isopropylbenzene	0.15	1.0		U
79-20-9	Methyl acetate	0.30	2.0		U
75-09-2	Methylene chloride	0.14	2.0	0.40	JB
108-87-2	Methyl cyclohexane	0.17	1.0	0.21	JB
1634-04-4	Methyl-tert-butyl-ether	0.10	1.0		U
108-10-1	4-Methyl-2-pentanone	0.29	5.0		U
100-42-5	Styrene	0.10	1.0		U
79-34-5	1,1,2,2-Tetrachloroethane	0.10	1.0		U
127-18-4	Tetrachloroethene	0.15	1.0		U

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FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

TB-092609-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) WATER Lab Sample ID: 0910006-19

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1000619

Level: (low/med) LOW Date Sampled: 09/26/09 08:00

% Moisture: not dec. _____ Date Analyzed: 10/09/09 22:04

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.10	1.0		U
120-82-1	1,2,4-Trichlorobenzene	0.10	1.0	0.31	JB
71-55-6	1,1,1-Trichloroethane	0.17	1.0		U
79-00-5	1,1,2-Trichloroethane	0.10	1.0		U
79-01-6	Trichloroethene	0.13	1.0		U
76-13-1	Trichlorotrifluoroethane	0.18	2.0		U
75-69-4	Trichlorofluoromethane	0.17	2.0		U
75-01-4	Vinyl chloride	0.18	1.0		U
1330-20-7	Xylene(total)	0.22	1.0		U

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FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

TB-092709-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) WATER Lab Sample ID: 0910006-39

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1000639

Level: (low/med) LOW Date Sampled: 09/27/09 08:00

% Moisture: not dec. _____ Date Analyzed: 10/03/09 17:06

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	0.84	10		U
71-43-2	Benzene	0.11	1.0		U
75-27-4	Bromodichloromethane	0.10	1.0		U
75-25-2	Bromoform	0.10	1.0		U
74-83-9	Bromomethane	0.32	2.0		U
78-93-3	2-Butanone	1.0	10		U
75-15-0	Carbon disulfide	0.13	1.0		U
56-23-5	Carbon tetrachloride	0.15	1.0		U
108-90-7	Chlorobenzene	0.10	1.0		U
75-00-3	Chloroethane	0.18	2.0		U
67-66-3	Chloroform	0.11	1.0	0.13	J
74-87-3	Chloromethane	0.29	2.0		U
110-82-7	Cyclohexane	0.20	1.0		U
124-48-1	Dibromochloromethane	0.10	1.0		U
96-12-8	1,2-Dibromo-3-chloropropane	0.11	1.0		U
106-93-4	1,2-Dibromoethane	0.10	1.0		U
95-50-1	1,2-Dichlorobenzene	0.10	1.0		U
541-73-1	1,3-Dichlorobenzene	0.13	1.0		U
106-46-7	1,4-Dichlorobenzene	0.10	1.0		U
75-71-8	Dichlorodifluoromethane	0.22	2.0		U
75-34-3	1,1-Dichloroethane	0.12	1.0		U
107-06-2	1,2-Dichloroethane	0.10	1.0		U
75-35-4	1,1-Dichloroethene	0.15	1.0		U
156-59-2	cis-1,2-Dichloroethene	0.13	1.0		U
156-60-5	trans-1,2-Dichloroethene	0.13	1.0		U
78-87-5	1,2-Dichloropropane	0.10	1.0		U
10061-01-5	cis-1,3-Dichloropropene	0.11	1.0		U
10061-02-6	trans-1,3-Dichloropropene	0.10	1.0		U
100-41-4	Ethylbenzene	0.13	1.0		U
591-78-6	2-Hexanone	0.30	5.0		U
98-82-8	Isopropylbenzene	0.15	1.0		U
79-20-9	Methyl acetate	0.30	2.0		U
75-09-2	Methylene chloride	0.14	2.0	0.24	JB
108-87-2	Methyl cyclohexane	0.17	1.0		U
1634-04-4	Methyl-tert-butyl-ether	0.10	1.0		U
108-10-1	4-Methyl-2-pentanone	0.29	5.0		U
100-42-5	Styrene	0.10	1.0		U
79-34-5	1,1,2,2-Tetrachloroethane	0.10	1.0		U
127-18-4	Tetrachloroethene	0.15	1.0		U

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FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

TB-092709-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) WATER Lab Sample ID: 0910006-39

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1000639

Level: (low/med) LOW Date Sampled: 09/27/09 08:00

% Moisture: not dec. _____ Date Analyzed: 10/03/09 17:06

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.10	1.0		U
120-82-1	1,2,4-Trichlorobenzene	0.10	1.0		U
71-55-6	1,1,1-Trichloroethane	0.17	1.0		U
79-00-5	1,1,2-Trichloroethane	0.10	1.0		U
79-01-6	Trichloroethene	0.13	1.0		U
76-13-1	Trichlorotrifluoroethane	0.18	2.0		U
75-69-4	Trichlorofluoromethane	0.17	2.0		U
75-01-4	Vinyl chloride	0.18	1.0		U
1330-20-7	Xylene(total)	0.22	1.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

TB-092809-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) WATER Lab Sample ID: 0910006-50

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1000650

Level: (low/med) LOW Date Sampled: 09/28/09 08:00

% Moisture: not dec. _____ Date Analyzed: 10/03/09 17:36

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	0.84	10		U
71-43-2	Benzene	0.11	1.0		U
75-27-4	Bromodichloromethane	0.10	1.0		U
75-25-2	Bromoform	0.10	1.0		U
74-83-9	Bromomethane	0.32	2.0		U
78-93-3	2-Butanone	1.0	10		U
75-15-0	Carbon disulfide	0.13	1.0		U
56-23-5	Carbon tetrachloride	0.15	1.0		U
108-90-7	Chlorobenzene	0.10	1.0		U
75-00-3	Chloroethane	0.18	2.0		U
67-66-3	Chloroform	0.11	1.0		U
74-87-3	Chloromethane	0.29	2.0		U
110-82-7	Cyclohexane	0.20	1.0		U
124-48-1	Dibromochloromethane	0.10	1.0		U
96-12-8	1,2-Dibromo-3-chloropropane	0.11	1.0		U
106-93-4	1,2-Dibromoethane	0.10	1.0		U
95-50-1	1,2-Dichlorobenzene	0.10	1.0		U
541-73-1	1,3-Dichlorobenzene	0.13	1.0		U
106-46-7	1,4-Dichlorobenzene	0.10	1.0		U
75-71-8	Dichlorodifluoromethane	0.22	2.0		U
75-34-3	1,1-Dichloroethane	0.12	1.0		U
107-06-2	1,2-Dichloroethane	0.10	1.0		U
75-35-4	1,1-Dichloroethene	0.15	1.0		U
156-59-2	cis-1,2-Dichloroethene	0.13	1.0		U
156-60-5	trans-1,2-Dichloroethene	0.13	1.0		U
78-87-5	1,2-Dichloropropane	0.10	1.0		U
10061-01-5	cis-1,3-Dichloropropene	0.11	1.0		U
10061-02-6	trans-1,3-Dichloropropene	0.10	1.0		U
100-41-4	Ethylbenzene	0.13	1.0		U
591-78-6	2-Hexanone	0.30	5.0		U
98-82-8	Isopropylbenzene	0.15	1.0		U
79-20-9	Methyl acetate	0.30	2.0		U
75-09-2	Methylene chloride	0.14	2.0	0.46	JB
108-87-2	Methyl cyclohexane	0.17	1.0		U
1634-04-4	Methyl-tert-butyl-ether	0.10	1.0		U
108-10-1	4-Methyl-2-pentanone	0.29	5.0		U
100-42-5	Styrene	0.10	1.0		U
79-34-5	1,1,2,2-Tetrachloroethane	0.10	1.0		U
127-18-4	Tetrachloroethene	0.15	1.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

TB-092809-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) WATER Lab Sample ID: 0910006-50

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1000650

Level: (low/med) LOW Date Sampled: 09/28/09 08:00

% Moisture: not dec. _____ Date Analyzed: 10/03/09 17:36

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.10	1.0		U
120-82-1	1,2,4-Trichlorobenzene	0.10	1.0		U
71-55-6	1,1,1-Trichloroethane	0.17	1.0		U
79-00-5	1,1,2-Trichloroethane	0.10	1.0		U
79-01-6	Trichloroethene	0.13	1.0		U
76-13-1	Trichlorotrifluoroethane	0.18	2.0		U
75-69-4	Trichlorofluoromethane	0.17	2.0		U
75-01-4	Vinyl chloride	0.18	1.0		U
1330-20-7	Xylene(total)	0.22	1.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

TB-092909-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) WATER Lab Sample ID: 0910006-54

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1000654

Level: (low/med) LOW Date Sampled: 09/29/09 08:00

% Moisture: not dec. _____ Date Analyzed: 10/09/09 22:34

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	0.84	10		U
71-43-2	Benzene	0.11	1.0		U
75-27-4	Bromodichloromethane	0.10	1.0		U
75-25-2	Bromoform	0.10	1.0		U
74-83-9	Bromomethane	0.32	2.0		U
78-93-3	2-Butanone	1.0	10		U
75-15-0	Carbon disulfide	0.13	1.0		U
56-23-5	Carbon tetrachloride	0.15	1.0		U
108-90-7	Chlorobenzene	0.10	1.0		U
75-00-3	Chloroethane	0.18	2.0		U
67-66-3	Chloroform	0.11	1.0		U
74-87-3	Chloromethane	0.29	2.0		U
110-82-7	Cyclohexane	0.20	1.0		U
124-48-1	Dibromochloromethane	0.10	1.0		U
96-12-8	1,2-Dibromo-3-chloropropane	0.11	1.0		U
106-93-4	1,2-Dibromoethane	0.10	1.0		U
95-50-1	1,2-Dichlorobenzene	0.10	1.0		U
541-73-1	1,3-Dichlorobenzene	0.13	1.0		U
106-46-7	1,4-Dichlorobenzene	0.10	1.0		U
75-71-8	Dichlorodifluoromethane	0.22	2.0		U
75-34-3	1,1-Dichloroethane	0.12	1.0		U
107-06-2	1,2-Dichloroethane	0.10	1.0		U
75-35-4	1,1-Dichloroethene	0.15	1.0		U
156-59-2	cis-1,2-Dichloroethene	0.13	1.0		U
156-60-5	trans-1,2-Dichloroethene	0.13	1.0		U
78-87-5	1,2-Dichloropropane	0.10	1.0		U
10061-01-5	cis-1,3-Dichloropropene	0.11	1.0		U
10061-02-6	trans-1,3-Dichloropropene	0.10	1.0		U
100-41-4	Ethylbenzene	0.13	1.0		U
591-78-6	2-Hexanone	0.30	5.0		U
98-82-8	Isopropylbenzene	0.15	1.0		U
79-20-9	Methyl acetate	0.30	2.0		U
75-09-2	Methylene chloride	0.14	2.0	0.29	JB
108-87-2	Methyl cyclohexane	0.17	1.0		U
1634-04-4	Methyl-tert-butyl-ether	0.10	1.0		U
108-10-1	4-Methyl-2-pentanone	0.29	5.0		U
100-42-5	Styrene	0.10	1.0		U
79-34-5	1,1,2,2-Tetrachloroethane	0.10	1.0		U
127-18-4	Tetrachloroethene	0.15	1.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

TB-092909-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) WATER Lab Sample ID: 0910006-54

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1000654

Level: (low/med) LOW Date Sampled: 09/29/09 08:00

% Moisture: not dec. _____ Date Analyzed: 10/09/09 22:34

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.10	1.0		U
120-82-1	1,2,4-Trichlorobenzene	0.10	1.0	0.20	JB
71-55-6	1,1,1-Trichloroethane	0.17	1.0		U
79-00-5	1,1,2-Trichloroethane	0.10	1.0		U
79-01-6	Trichloroethene	0.13	1.0		U
76-13-1	Trichlorotrifluoroethane	0.18	2.0		U
75-69-4	Trichlorofluoromethane	0.17	2.0		U
75-01-4	Vinyl chloride	0.18	1.0		U
1330-20-7	Xylene(total)	0.22	1.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FD-092609-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-01

Sample wt/vol: 6.8 (g/mL) G Lab File ID: 1000601A

Level: (low/med) LOW Date Sampled: 09/26/09 :

% Moisture: not dec. 7 Date Analyzed: 10/04/09 10:45

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	1.6	4.0		U
71-43-2	Benzene	0.37	4.0	2.1	J
75-27-4	Bromodichloromethane	0.24	8.0		U
75-25-2	Bromoform	0.80	4.0		U
74-83-9	Bromomethane	0.57	8.0		U
78-93-3	2-Butanone	1.1	4.0		U
75-15-0	Carbon disulfide	1.0	4.0		U
56-23-5	Carbon tetrachloride	0.70	4.0		U
108-90-7	Chlorobenzene	0.27	4.0		U
75-00-3	Chloroethane	0.87	8.0		U
67-66-3	Chloroform	0.44	4.0		U
74-87-3	Chloromethane	0.41	8.0		U
110-82-7	Cyclohexane	0.43	4.0	3.4	J
124-48-1	Dibromochloromethane	0.27	4.0		U
96-12-8	1,2-Dibromo-3-chloropropane	0.95	4.0		U
106-93-4	1,2-Dibromoethane	0.34	4.0		U
95-50-1	1,2-Dichlorobenzene	0.29	4.0		U
541-73-1	1,3-Dichlorobenzene	0.67	4.0		U
106-46-7	1,4-Dichlorobenzene	0.44	4.0		U
75-71-8	Dichlorodifluoromethane	0.87	4.0		U
75-34-3	1,1-Dichloroethane	0.43	4.0		U
107-06-2	1,2-Dichloroethane	0.36	4.0		U
75-35-4	1,1-Dichloroethene	0.95	4.0		U
156-59-2	cis-1,2-Dichloroethene	0.95	8.0		U
156-60-5	trans-1,2-Dichloroethene	0.87	4.0		U
78-87-5	1,2-Dichloropropane	0.36	4.0		U
10061-01-5	cis-1,3-Dichloropropene	0.40	4.0		U
10061-02-6	trans-1,3-Dichloropropene	0.25	4.0		U
100-41-4	Ethylbenzene	0.60	4.0		U
591-78-6	2-Hexanone	1.8	4.0		U
98-82-8	Isopropylbenzene	0.70	4.0		U
79-20-9	Methyl acetate	1.3	8.0		U
75-09-2	Methylene chloride	0.49	8.0	1.3	JB
108-87-2	Methyl cyclohexane	0.24	4.0	5.4	
1634-04-4	Methyl-tert-butyl-ether	0.25	4.0		U
108-10-1	4-Methyl-2-pentanone	0.46	4.0		U
100-42-5	Styrene	0.28	4.0		U
79-34-5	1,1,2,2-Tetrachloroethane	0.34	4.0		U
127-18-4	Tetrachloroethene	0.77	4.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FD-092609-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-01

Sample wt/vol: 6.8 (g/mL) G Lab File ID: 1000601A

Level: (low/med) LOW Date Sampled: 09/26/09 :

% Moisture: not dec. 7 Date Analyzed: 10/04/09 10:45

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.68	4.0	2.6	J
120-82-1	1,2,4-Trichlorobenzene	0.14	4.0		U
71-55-6	1,1,1-Trichloroethane	0.72	4.0		U
79-00-5	1,1,2-Trichloroethane	0.28	4.0		U
79-01-6	Trichloroethene	0.68	4.0		U
76-13-1	Trichlorotrifluoroethane	0.44	4.0		U
75-69-4	Trichlorofluoromethane	0.76	4.0		U
75-01-4	Vinyl chloride	0.87	4.0		U
1330-20-7	Xylene(total)	0.56	4.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FD-092609-02

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-02

Sample wt/vol: 5.7 (g/mL) G Lab File ID: 1000602B

Level: (low/med) LOW Date Sampled: 09/26/09 :

% Moisture: not dec. 7 Date Analyzed: 10/05/09 16:38

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	1.9	4.7		U
71-43-2	Benzene	0.44	4.7		U
75-27-4	Bromodichloromethane	0.28	9.4		U
75-25-2	Bromoform	0.94	4.7		U
74-83-9	Bromomethane	0.68	9.4		U
78-93-3	2-Butanone	1.3	4.7		U
75-15-0	Carbon disulfide	1.2	4.7	4.1	J
56-23-5	Carbon tetrachloride	0.83	4.7		U
108-90-7	Chlorobenzene	0.32	4.7		U
75-00-3	Chloroethane	1.0	9.4		U
67-66-3	Chloroform	0.52	4.7		U
74-87-3	Chloromethane	0.49	9.4		U
110-82-7	Cyclohexane	0.51	4.7		U
124-48-1	Dibromochloromethane	0.32	4.7		U
96-12-8	1,2-Dibromo-3-chloropropane	1.1	4.7		U
106-93-4	1,2-Dibromoethane	0.40	4.7		U
95-50-1	1,2-Dichlorobenzene	0.35	4.7		U
541-73-1	1,3-Dichlorobenzene	0.79	4.7		U
106-46-7	1,4-Dichlorobenzene	0.52	4.7		U
75-71-8	Dichlorodifluoromethane	1.0	4.7		U
75-34-3	1,1-Dichloroethane	0.51	4.7		U
107-06-2	1,2-Dichloroethane	0.43	4.7		U
75-35-4	1,1-Dichloroethene	1.1	4.7		U
156-59-2	cis-1,2-Dichloroethene	1.1	9.4		U
156-60-5	trans-1,2-Dichloroethene	1.0	4.7		U
78-87-5	1,2-Dichloropropane	0.43	4.7		U
10061-01-5	cis-1,3-Dichloropropene	0.47	4.7		U
10061-02-6	trans-1,3-Dichloropropene	0.30	4.7		U
100-41-4	Ethylbenzene	0.71	4.7		U
591-78-6	2-Hexanone	2.2	4.7		U
98-82-8	Isopropylbenzene	0.83	4.7		U
79-20-9	Methyl acetate	1.5	9.4		U
75-09-2	Methylene chloride	0.58	9.4	0.78	JB
108-87-2	Methyl cyclohexane	0.28	4.7	0.91	J
1634-04-4	Methyl-tert-butyl-ether	0.30	4.7		U
108-10-1	4-Methyl-2-pentanone	0.55	4.7		U
100-42-5	Styrene	0.33	4.7		U
79-34-5	1,1,2,2-Tetrachloroethane	0.40	4.7		U
127-18-4	Tetrachloroethene	0.92	4.7		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FD-092609-02

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-02

Sample wt/vol: 5.7 (g/mL) G Lab File ID: 1000602B

Level: (low/med) LOW Date Sampled: 09/26/09 :

% Moisture: not dec. 7 Date Analyzed: 10/05/09 16:38

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.81	4.7		U
120-82-1	1,2,4-Trichlorobenzene	0.17	4.7		U
71-55-6	1,1,1-Trichloroethane	0.85	4.7		U
79-00-5	1,1,2-Trichloroethane	0.33	4.7		U
79-01-6	Trichloroethene	0.80	4.7		U
76-13-1	Trichlorotrifluoroethane	0.52	4.7		U
75-69-4	Trichlorofluoromethane	0.90	4.7		U
75-01-4	Vinyl chloride	1.0	4.7		U
1330-20-7	Xylene(total)	0.66	4.7		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FD-092709-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-20

Sample wt/vol: 6.4 (g/mL) G Lab File ID: 1000620A

Level: (low/med) LOW Date Sampled: 09/27/09 :

% Moisture: not dec. 24 Date Analyzed: 10/05/09 19:13

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.1	5.2	42	B
71-43-2	Benzene	0.49	5.2		U
75-27-4	Bromodichloromethane	0.31	10		U
75-25-2	Bromoform	1.0	5.2		U
74-83-9	Bromomethane	0.75	10		U
78-93-3	2-Butanone	1.4	5.2		U
75-15-0	Carbon disulfide	1.3	5.2	3.8	J
56-23-5	Carbon tetrachloride	0.91	5.2		U
108-90-7	Chlorobenzene	0.35	5.2		U
75-00-3	Chloroethane	1.1	10		U
67-66-3	Chloroform	0.57	5.2		U
74-87-3	Chloromethane	0.54	10		U
110-82-7	Cyclohexane	0.56	5.2		U
124-48-1	Dibromochloromethane	0.35	5.2		U
96-12-8	1,2-Dibromo-3-chloropropane	1.2	5.2		U
106-93-4	1,2-Dibromoethane	0.45	5.2		U
95-50-1	1,2-Dichlorobenzene	0.38	5.2		U
541-73-1	1,3-Dichlorobenzene	0.87	5.2		U
106-46-7	1,4-Dichlorobenzene	0.57	5.2		U
75-71-8	Dichlorodifluoromethane	1.1	5.2		U
75-34-3	1,1-Dichloroethane	0.56	5.2		U
107-06-2	1,2-Dichloroethane	0.48	5.2		U
75-35-4	1,1-Dichloroethene	1.2	5.2		U
156-59-2	cis-1,2-Dichloroethene	1.2	10		U
156-60-5	trans-1,2-Dichloroethene	1.1	5.2		U
78-87-5	1,2-Dichloropropane	0.48	5.2		U
10061-01-5	cis-1,3-Dichloropropene	0.52	5.2		U
10061-02-6	trans-1,3-Dichloropropene	0.33	5.2		U
100-41-4	Ethylbenzene	0.78	5.2		U
591-78-6	2-Hexanone	2.4	5.2		U
98-82-8	Isopropylbenzene	0.91	5.2		U
79-20-9	Methyl acetate	1.7	10		U
75-09-2	Methylene chloride	0.64	10	1.1	JB
108-87-2	Methyl cyclohexane	0.31	5.2		U
1634-04-4	Methyl-tert-butyl-ether	0.33	5.2		U
108-10-1	4-Methyl-2-pentanone	0.60	5.2		U
100-42-5	Styrene	0.36	5.2		U
79-34-5	1,1,2,2-Tetrachloroethane	0.45	5.2		U
127-18-4	Tetrachloroethene	1.0	5.2		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FD-092709-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-20

Sample wt/vol: 6.4 (g/mL) G Lab File ID: 1000620A

Level: (low/med) LOW Date Sampled: 09/27/09 :

% Moisture: not dec. 24 Date Analyzed: 10/05/09 19:13

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.89	5.2		U
120-82-1	1,2,4-Trichlorobenzene	0.19	5.2		U
71-55-6	1,1,1-Trichloroethane	0.93	5.2		U
79-00-5	1,1,2-Trichloroethane	0.36	5.2		U
79-01-6	Trichloroethene	0.88	5.2		U
76-13-1	Trichlorotrifluoroethane	0.57	5.2		U
75-69-4	Trichlorofluoromethane	0.99	5.2		U
75-01-4	Vinyl chloride	1.1	5.2		U
1330-20-7	Xylene(total)	0.73	5.2		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FD-092809-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-40

Sample wt/vol: 6.3 (g/mL) G Lab File ID: 1000640A

Level: (low/med) LOW Date Sampled: 09/28/09 :

% Moisture: not dec. 20 Date Analyzed: 10/06/09 08:11

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.0	4.9		U
71-43-2	Benzene	0.46	4.9		U
75-27-4	Bromodichloromethane	0.30	9.9		U
75-25-2	Bromoform	0.99	4.9		U
74-83-9	Bromomethane	0.71	9.9		U
78-93-3	2-Butanone	1.4	4.9		U
75-15-0	Carbon disulfide	1.3	4.9		U
56-23-5	Carbon tetrachloride	0.87	4.9		U
108-90-7	Chlorobenzene	0.34	4.9		U
75-00-3	Chloroethane	1.1	9.9		U
67-66-3	Chloroform	0.54	4.9		U
74-87-3	Chloromethane	0.51	9.9		U
110-82-7	Cyclohexane	0.53	4.9	1.4	J
124-48-1	Dibromochloromethane	0.34	4.9		U
96-12-8	1,2-Dibromo-3-chloropropane	1.2	4.9		U
106-93-4	1,2-Dibromoethane	0.42	4.9		U
95-50-1	1,2-Dichlorobenzene	0.36	4.9		U
541-73-1	1,3-Dichlorobenzene	0.83	4.9		U
106-46-7	1,4-Dichlorobenzene	0.54	4.9		U
75-71-8	Dichlorodifluoromethane	1.1	4.9		U
75-34-3	1,1-Dichloroethane	0.53	4.9		U
107-06-2	1,2-Dichloroethane	0.45	4.9		U
75-35-4	1,1-Dichloroethene	1.2	4.9		U
156-59-2	cis-1,2-Dichloroethene	1.2	9.9		U
156-60-5	trans-1,2-Dichloroethene	1.1	4.9		U
78-87-5	1,2-Dichloropropane	0.45	4.9		U
10061-01-5	cis-1,3-Dichloropropene	0.49	4.9		U
10061-02-6	trans-1,3-Dichloropropene	0.32	4.9		U
100-41-4	Ethylbenzene	0.74	4.9		U
591-78-6	2-Hexanone	2.3	4.9		U
98-82-8	Isopropylbenzene	0.87	4.9		U
79-20-9	Methyl acetate	1.6	9.9		U
75-09-2	Methylene chloride	0.61	9.9	1.1	JB
108-87-2	Methyl cyclohexane	0.30	4.9	2.7	J
1634-04-4	Methyl-tert-butyl-ether	0.32	4.9		U
108-10-1	4-Methyl-2-pentanone	0.57	4.9		U
100-42-5	Styrene	0.35	4.9		U
79-34-5	1,1,2,2-Tetrachloroethane	0.42	4.9		U
127-18-4	Tetrachloroethene	0.96	4.9		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FD-092809-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-40

Sample wt/vol: 6.3 (g/mL) G Lab File ID: 1000640A

Level: (low/med) LOW Date Sampled: 09/28/09 :

% Moisture: not dec. 20 Date Analyzed: 10/06/09 08:11

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.85	4.9		U
120-82-1	1,2,4-Trichlorobenzene	0.18	4.9		U
71-55-6	1,1,1-Trichloroethane	0.89	4.9		U
79-00-5	1,1,2-Trichloroethane	0.35	4.9		U
79-01-6	Trichloroethene	0.84	4.9		U
76-13-1	Trichlorotrifluoroethane	0.54	4.9		U
75-69-4	Trichlorofluoromethane	0.94	4.9		U
75-01-4	Vinyl chloride	1.1	4.9		U
1330-20-7	Xylene(total)	0.69	4.9		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
1-SO-0102

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-41

Sample wt/vol: 6.9 (g/mL) G Lab File ID: 1000641A

Level: (low/med) LOW Date Sampled: 09/28/09 12:00

% Moisture: not dec. 16 Date Analyzed: 10/06/09 08:42

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	1.7	4.3		U
71-43-2	Benzene	0.41	4.3	1.1	J
75-27-4	Bromodichloromethane	0.26	8.6		U
75-25-2	Bromoform	0.86	4.3		U
74-83-9	Bromomethane	0.62	8.6		U
78-93-3	2-Butanone	1.2	4.3		U
75-15-0	Carbon disulfide	1.1	4.3	2.8	J
56-23-5	Carbon tetrachloride	0.76	4.3		U
108-90-7	Chlorobenzene	0.29	4.3		U
75-00-3	Chloroethane	0.95	8.6		U
67-66-3	Chloroform	0.48	4.3		U
74-87-3	Chloromethane	0.45	8.6		U
110-82-7	Cyclohexane	0.47	4.3	1.2	J
124-48-1	Dibromochloromethane	0.29	4.3		U
96-12-8	1,2-Dibromo-3-chloropropane	1.0	4.3		U
106-93-4	1,2-Dibromoethane	0.37	4.3		U
95-50-1	1,2-Dichlorobenzene	0.32	4.3		U
541-73-1	1,3-Dichlorobenzene	0.73	4.3		U
106-46-7	1,4-Dichlorobenzene	0.48	4.3		U
75-71-8	Dichlorodifluoromethane	0.95	4.3		U
75-34-3	1,1-Dichloroethane	0.47	4.3		U
107-06-2	1,2-Dichloroethane	0.40	4.3		U
75-35-4	1,1-Dichloroethene	1.0	4.3		U
156-59-2	cis-1,2-Dichloroethene	1.0	8.6		U
156-60-5	trans-1,2-Dichloroethene	0.95	4.3		U
78-87-5	1,2-Dichloropropane	0.40	4.3		U
10061-01-5	cis-1,3-Dichloropropene	0.43	4.3		U
10061-02-6	trans-1,3-Dichloropropene	0.28	4.3		U
100-41-4	Ethylbenzene	0.65	4.3		U
591-78-6	2-Hexanone	2.0	4.3		U
98-82-8	Isopropylbenzene	0.76	4.3		U
79-20-9	Methyl acetate	1.4	8.6		U
75-09-2	Methylene chloride	0.54	8.6	1.0	JB
108-87-2	Methyl cyclohexane	0.26	4.3	2.4	J
1634-04-4	Methyl-tert-butyl-ether	0.28	4.3		U
108-10-1	4-Methyl-2-pentanone	0.50	4.3		U
100-42-5	Styrene	0.30	4.3		U
79-34-5	1,1,2,2-Tetrachloroethane	0.37	4.3		U
127-18-4	Tetrachloroethene	0.84	4.3		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
1-SO-0102

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-41

Sample wt/vol: 6.9 (g/mL) G Lab File ID: 1000641A

Level: (low/med) LOW Date Sampled: 09/28/09 12:00

% Moisture: not dec. 16 Date Analyzed: 10/06/09 08:42

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.74	4.3	1.4	J
120-82-1	1,2,4-Trichlorobenzene	0.16	4.3		U
71-55-6	1,1,1-Trichloroethane	0.78	4.3		U
79-00-5	1,1,2-Trichloroethane	0.30	4.3		U
79-01-6	Trichloroethene	0.74	4.3		U
76-13-1	Trichlorotrifluoroethane	0.48	4.3		U
75-69-4	Trichlorofluoromethane	0.82	4.3		U
75-01-4	Vinyl chloride	0.95	4.3		U
1330-20-7	Xylene(total)	0.60	4.3		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
2-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-42

Sample wt/vol: 5.7 (g/mL) G Lab File ID: 1000642A

Level: (low/med) LOW Date Sampled: 09/28/09 10:20

% Moisture: not dec. 10 Date Analyzed: 10/06/09 09:13

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	1.9	4.8	130	
71-43-2	Benzene	0.46	4.8		U
75-27-4	Bromodichloromethane	0.29	9.7		U
75-25-2	Bromoform	0.97	4.8		U
74-83-9	Bromomethane	0.70	9.7		U
78-93-3	2-Butanone	1.4	4.8		U
75-15-0	Carbon disulfide	1.3	4.8	4.1	J
56-23-5	Carbon tetrachloride	0.85	4.8		U
108-90-7	Chlorobenzene	0.33	4.8		U
75-00-3	Chloroethane	1.1	9.7		U
67-66-3	Chloroform	0.53	4.8		U
74-87-3	Chloromethane	0.50	9.7		U
110-82-7	Cyclohexane	0.52	4.8		U
124-48-1	Dibromochloromethane	0.33	4.8		U
96-12-8	1,2-Dibromo-3-chloropropane	1.2	4.8		U
106-93-4	1,2-Dibromoethane	0.42	4.8		U
95-50-1	1,2-Dichlorobenzene	0.36	4.8		U
541-73-1	1,3-Dichlorobenzene	0.82	4.8		U
106-46-7	1,4-Dichlorobenzene	0.53	4.8		U
75-71-8	Dichlorodifluoromethane	1.1	4.8		U
75-34-3	1,1-Dichloroethane	0.52	4.8		U
107-06-2	1,2-Dichloroethane	0.45	4.8		U
75-35-4	1,1-Dichloroethene	1.2	4.8		U
156-59-2	cis-1,2-Dichloroethene	1.2	9.7		U
156-60-5	trans-1,2-Dichloroethene	1.1	4.8		U
78-87-5	1,2-Dichloropropane	0.45	4.8		U
10061-01-5	cis-1,3-Dichloropropene	0.48	4.8		U
10061-02-6	trans-1,3-Dichloropropene	0.31	4.8		U
100-41-4	Ethylbenzene	0.73	4.8		U
591-78-6	2-Hexanone	2.2	4.8		U
98-82-8	Isopropylbenzene	0.85	4.8		U
79-20-9	Methyl acetate	1.6	9.7		U
75-09-2	Methylene chloride	0.60	9.7	1.3	JB
108-87-2	Methyl cyclohexane	0.29	4.8	0.43	J
1634-04-4	Methyl-tert-butyl-ether	0.31	4.8		U
108-10-1	4-Methyl-2-pentanone	0.56	4.8		U
100-42-5	Styrene	0.34	4.8		U
79-34-5	1,1,2,2-Tetrachloroethane	0.42	4.8		U
127-18-4	Tetrachloroethene	0.94	4.8		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
2-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-42

Sample wt/vol: 5.7 (g/mL) G Lab File ID: 1000642A

Level: (low/med) LOW Date Sampled: 09/28/09 10:20

% Moisture: not dec. 10 Date Analyzed: 10/06/09 09:13

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.84	4.8		U
120-82-1	1,2,4-Trichlorobenzene	0.17	4.8		U
71-55-6	1,1,1-Trichloroethane	0.87	4.8		U
79-00-5	1,1,2-Trichloroethane	0.34	4.8		U
79-01-6	Trichloroethene	0.82	4.8		U
76-13-1	Trichlorotrifluoroethane	0.53	4.8		U
75-69-4	Trichlorofluoromethane	0.92	4.8		U
75-01-4	Vinyl chloride	1.1	4.8		U
1330-20-7	Xylene(total)	0.68	4.8		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
2-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-43

Sample wt/vol: 4.9 (g/mL) G Lab File ID: 1000643A

Level: (low/med) LOW Date Sampled: 09/28/09 10:30

% Moisture: not dec. 11 Date Analyzed: 10/06/09 10:46

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.3	5.8		U
71-43-2	Benzene	0.54	5.8		U
75-27-4	Bromodichloromethane	0.35	12		U
75-25-2	Bromoform	1.2	5.8		U
74-83-9	Bromomethane	0.83	12		U
78-93-3	2-Butanone	1.6	5.8		U
75-15-0	Carbon disulfide	1.5	5.8		U
56-23-5	Carbon tetrachloride	1.0	5.8		U
108-90-7	Chlorobenzene	0.39	5.8		U
75-00-3	Chloroethane	1.3	12		U
67-66-3	Chloroform	0.64	5.8		U
74-87-3	Chloromethane	0.60	12		U
110-82-7	Cyclohexane	0.62	5.8	1.1	J
124-48-1	Dibromochloromethane	0.39	5.8		U
96-12-8	1,2-Dibromo-3-chloropropane	1.4	5.8		U
106-93-4	1,2-Dibromoethane	0.50	5.8		U
95-50-1	1,2-Dichlorobenzene	0.43	5.8		U
541-73-1	1,3-Dichlorobenzene	0.97	5.8		U
106-46-7	1,4-Dichlorobenzene	0.64	5.8		U
75-71-8	Dichlorodifluoromethane	1.3	5.8		U
75-34-3	1,1-Dichloroethane	0.62	5.8		U
107-06-2	1,2-Dichloroethane	0.53	5.8		U
75-35-4	1,1-Dichloroethene	1.4	5.8		U
156-59-2	cis-1,2-Dichloroethene	1.4	12		U
156-60-5	trans-1,2-Dichloroethene	1.3	5.8		U
78-87-5	1,2-Dichloropropane	0.53	5.8		U
10061-01-5	cis-1,3-Dichloropropene	0.58	5.8		U
10061-02-6	trans-1,3-Dichloropropene	0.37	5.8		U
100-41-4	Ethylbenzene	0.87	5.8		U
591-78-6	2-Hexanone	2.7	5.8		U
98-82-8	Isopropylbenzene	1.0	5.8		U
79-20-9	Methyl acetate	1.8	12		U
75-09-2	Methylene chloride	0.72	12	1.3	JB
108-87-2	Methyl cyclohexane	0.35	5.8	1.8	J
1634-04-4	Methyl-tert-butyl-ether	0.37	5.8		U
108-10-1	4-Methyl-2-pentanone	0.67	5.8		U
100-42-5	Styrene	0.40	5.8		U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	5.8		U
127-18-4	Tetrachloroethene	1.1	5.8		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
2-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-43

Sample wt/vol: 4.9 (g/mL) G Lab File ID: 1000643A

Level: (low/med) LOW Date Sampled: 09/28/09 10:30

% Moisture: not dec. 11 Date Analyzed: 10/06/09 10:46

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.99	5.8		U
120-82-1	1,2,4-Trichlorobenzene	0.21	5.8		U
71-55-6	1,1,1-Trichloroethane	1.0	5.8		U
79-00-5	1,1,2-Trichloroethane	0.40	5.8		U
79-01-6	Trichloroethene	0.98	5.8		U
76-13-1	Trichlorotrifluoroethane	0.64	5.8		U
75-69-4	Trichlorofluoromethane	1.1	5.8	2.8	J
75-01-4	Vinyl chloride	1.3	5.8		U
1330-20-7	Xylene(total)	0.81	5.8		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB02
-SO-0204RE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-43RE

Sample wt/vol: 4.5 (g/mL) G Lab File ID: 1000643B

Level: (low/med) LOW Date Sampled: 09/28/09 10:30

% Moisture: not dec. 11 Date Analyzed: 10/08/09 11:37

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.5	6.2		U
71-43-2	Benzene	0.58	6.2		U
75-27-4	Bromodichloromethane	0.37	12		U
75-25-2	Bromoform	1.2	6.2		U
74-83-9	Bromomethane	0.90	12		U
78-93-3	2-Butanone	1.7	6.2		U
75-15-0	Carbon disulfide	1.6	6.2		U
56-23-5	Carbon tetrachloride	1.1	6.2		U
108-90-7	Chlorobenzene	0.42	6.2		U
75-00-3	Chloroethane	1.4	12		U
67-66-3	Chloroform	0.68	6.2		U
74-87-3	Chloromethane	0.65	12		U
110-82-7	Cyclohexane	0.67	6.2	1.1	J
124-48-1	Dibromochloromethane	0.42	6.2		U
96-12-8	1,2-Dibromo-3-chloropropane	1.5	6.2		U
106-93-4	1,2-Dibromoethane	0.54	6.2		U
95-50-1	1,2-Dichlorobenzene	0.46	6.2		U
541-73-1	1,3-Dichlorobenzene	1.0	6.2		U
106-46-7	1,4-Dichlorobenzene	0.68	6.2		U
75-71-8	Dichlorodifluoromethane	1.4	6.2		U
75-34-3	1,1-Dichloroethane	0.67	6.2		U
107-06-2	1,2-Dichloroethane	0.57	6.2		U
75-35-4	1,1-Dichloroethene	1.5	6.2		U
156-59-2	cis-1,2-Dichloroethene	1.5	12		U
156-60-5	trans-1,2-Dichloroethene	1.4	6.2		U
78-87-5	1,2-Dichloropropane	0.57	6.2		U
10061-01-5	cis-1,3-Dichloropropene	0.62	6.2		U
10061-02-6	trans-1,3-Dichloropropene	0.40	6.2		U
100-41-4	Ethylbenzene	0.93	6.2		U
591-78-6	2-Hexanone	2.9	6.2		U
98-82-8	Isopropylbenzene	1.1	6.2		U
79-20-9	Methyl acetate	2.0	12		U
75-09-2	Methylene chloride	0.77	12	2.5	JB
108-87-2	Methyl cyclohexane	0.37	6.2	1.7	J
1634-04-4	Methyl-tert-butyl-ether	0.40	6.2		U
108-10-1	4-Methyl-2-pentanone	0.72	6.2		U
100-42-5	Styrene	0.44	6.2		U
79-34-5	1,1,2,2-Tetrachloroethane	0.54	6.2		U
127-18-4	Tetrachloroethene	1.2	6.2		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB02
-SO-0204RE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-43RE

Sample wt/vol: 4.5 (g/mL) G Lab File ID: 1000643B

Level: (low/med) LOW Date Sampled: 09/28/09 10:30

% Moisture: not dec. 11 Date Analyzed: 10/08/09 11:37

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	1.1	6.2		U
120-82-1	1,2,4-Trichlorobenzene	0.22	6.2		U
71-55-6	1,1,1-Trichloroethane	1.1	6.2		U
79-00-5	1,1,2-Trichloroethane	0.44	6.2		U
79-01-6	Trichloroethene	1.0	6.2		U
76-13-1	Trichlorotrifluoroethane	0.68	6.2		U
75-69-4	Trichlorofluoromethane	1.2	6.2	2.6	J
75-01-4	Vinyl chloride	1.4	6.2		U
1330-20-7	Xylene(total)	0.87	6.2		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
3-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-44

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1000644A

Level: (low/med) LOW Date Sampled: 09/28/09 12:20

% Moisture: not dec. 5 Date Analyzed: 10/06/09 09:44

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.1	5.3		U
71-43-2	Benzene	0.50	5.3		U
75-27-4	Bromodichloromethane	0.32	10		U
75-25-2	Bromoform	1.0	5.3		U
74-83-9	Bromomethane	0.76	10		U
78-93-3	2-Butanone	1.5	5.3		U
75-15-0	Carbon disulfide	1.4	5.3	1.6	J
56-23-5	Carbon tetrachloride	0.93	5.3		U
108-90-7	Chlorobenzene	0.36	5.3		U
75-00-3	Chloroethane	1.2	10		U
67-66-3	Chloroform	0.58	5.3		U
74-87-3	Chloromethane	0.55	10		U
110-82-7	Cyclohexane	0.57	5.3	0.81	J
124-48-1	Dibromochloromethane	0.36	5.3		U
96-12-8	1,2-Dibromo-3-chloropropane	1.3	5.3		U
106-93-4	1,2-Dibromoethane	0.45	5.3		U
95-50-1	1,2-Dichlorobenzene	0.39	5.3		U
541-73-1	1,3-Dichlorobenzene	0.88	5.3		U
106-46-7	1,4-Dichlorobenzene	0.58	5.3		U
75-71-8	Dichlorodifluoromethane	1.2	5.3		U
75-34-3	1,1-Dichloroethane	0.57	5.3		U
107-06-2	1,2-Dichloroethane	0.48	5.3		U
75-35-4	1,1-Dichloroethene	1.3	5.3		U
156-59-2	cis-1,2-Dichloroethene	1.3	10		U
156-60-5	trans-1,2-Dichloroethene	1.2	5.3		U
78-87-5	1,2-Dichloropropane	0.48	5.3		U
10061-01-5	cis-1,3-Dichloropropene	0.53	5.3		U
10061-02-6	trans-1,3-Dichloropropene	0.34	5.3		U
100-41-4	Ethylbenzene	0.79	5.3		U
591-78-6	2-Hexanone	2.4	5.3		U
98-82-8	Isopropylbenzene	0.93	5.3		U
79-20-9	Methyl acetate	1.7	10		U
75-09-2	Methylene chloride	0.65	10	1.4	JB
108-87-2	Methyl cyclohexane	0.32	5.3	1.6	J
1634-04-4	Methyl-tert-butyl-ether	0.34	5.3		U
108-10-1	4-Methyl-2-pentanone	0.61	5.3		U
100-42-5	Styrene	0.37	5.3		U
79-34-5	1,1,2,2-Tetrachloroethane	0.45	5.3		U
127-18-4	Tetrachloroethene	1.0	5.3		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
3-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-44

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1000644A

Level: (low/med) LOW Date Sampled: 09/28/09 12:20

% Moisture: not dec. 5 Date Analyzed: 10/06/09 09:44

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.91	5.3		U
120-82-1	1,2,4-Trichlorobenzene	0.19	5.3		U
71-55-6	1,1,1-Trichloroethane	0.95	5.3		U
79-00-5	1,1,2-Trichloroethane	0.37	5.3		U
79-01-6	Trichloroethene	0.90	5.3		U
76-13-1	Trichlorotrifluoroethane	0.58	5.3		U
75-69-4	Trichlorofluoromethane	1.0	5.3		U
75-01-4	Vinyl chloride	1.2	5.3		U
1330-20-7	Xylene(total)	0.74	5.3		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
3-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-45

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1000645A

Level: (low/med) LOW Date Sampled: 09/28/09 12:30

% Moisture: not dec. 8 Date Analyzed: 10/06/09 11:17

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.2	5.4		U
71-43-2	Benzene	0.51	5.4		U
75-27-4	Bromodichloromethane	0.32	11		U
75-25-2	Bromoform	1.1	5.4		U
74-83-9	Bromomethane	0.78	11		U
78-93-3	2-Butanone	1.5	5.4		U
75-15-0	Carbon disulfide	1.4	5.4		U
56-23-5	Carbon tetrachloride	0.95	5.4		U
108-90-7	Chlorobenzene	0.37	5.4		U
75-00-3	Chloroethane	1.2	11		U
67-66-3	Chloroform	0.60	5.4		U
74-87-3	Chloromethane	0.56	11		U
110-82-7	Cyclohexane	0.58	5.4	1.0	J
124-48-1	Dibromochloromethane	0.37	5.4		U
96-12-8	1,2-Dibromo-3-chloropropane	1.3	5.4		U
106-93-4	1,2-Dibromoethane	0.47	5.4		U
95-50-1	1,2-Dichlorobenzene	0.40	5.4		U
541-73-1	1,3-Dichlorobenzene	0.91	5.4		U
106-46-7	1,4-Dichlorobenzene	0.60	5.4		U
75-71-8	Dichlorodifluoromethane	1.2	5.4		U
75-34-3	1,1-Dichloroethane	0.58	5.4		U
107-06-2	1,2-Dichloroethane	0.50	5.4		U
75-35-4	1,1-Dichloroethene	1.3	5.4		U
156-59-2	cis-1,2-Dichloroethene	1.3	11		U
156-60-5	trans-1,2-Dichloroethene	1.2	5.4		U
78-87-5	1,2-Dichloropropane	0.50	5.4		U
10061-01-5	cis-1,3-Dichloropropene	0.54	5.4		U
10061-02-6	trans-1,3-Dichloropropene	0.35	5.4		U
100-41-4	Ethylbenzene	0.81	5.4		U
591-78-6	2-Hexanone	2.5	5.4		U
98-82-8	Isopropylbenzene	0.95	5.4		U
79-20-9	Methyl acetate	1.7	11		U
75-09-2	Methylene chloride	0.67	11	1.3	JB
108-87-2	Methyl cyclohexane	0.32	5.4	1.6	J
1634-04-4	Methyl-tert-butyl-ether	0.35	5.4		U
108-10-1	4-Methyl-2-pentanone	0.63	5.4		U
100-42-5	Styrene	0.38	5.4		U
79-34-5	1,1,2,2-Tetrachloroethane	0.47	5.4		U
127-18-4	Tetrachloroethene	1.0	5.4		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
3-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-45

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1000645A

Level: (low/med) LOW Date Sampled: 09/28/09 12:30

% Moisture: not dec. 8 Date Analyzed: 10/06/09 11:17

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.93	5.4		U
120-82-1	1,2,4-Trichlorobenzene	0.20	5.4		U
71-55-6	1,1,1-Trichloroethane	0.98	5.4		U
79-00-5	1,1,2-Trichloroethane	0.38	5.4		U
79-01-6	Trichloroethene	0.92	5.4		U
76-13-1	Trichlorotrifluoroethane	0.60	5.4		U
75-69-4	Trichlorofluoromethane	1.0	5.4	2.8	J
75-01-4	Vinyl chloride	1.2	5.4		U
1330-20-7	Xylene(total)	0.76	5.4		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB03
-SO-0204RE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-45RE

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1000645B

Level: (low/med) LOW Date Sampled: 09/28/09 12:30

% Moisture: not dec. 8 Date Analyzed: 10/08/09 12:08

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.2	5.4		U
71-43-2	Benzene	0.51	5.4		U
75-27-4	Bromodichloromethane	0.32	11		U
75-25-2	Bromoform	1.1	5.4		U
74-83-9	Bromomethane	0.78	11		U
78-93-3	2-Butanone	1.5	5.4		U
75-15-0	Carbon disulfide	1.4	5.4		U
56-23-5	Carbon tetrachloride	0.95	5.4		U
108-90-7	Chlorobenzene	0.37	5.4		U
75-00-3	Chloroethane	1.2	11		U
67-66-3	Chloroform	0.60	5.4		U
74-87-3	Chloromethane	0.56	11		U
110-82-7	Cyclohexane	0.58	5.4	1.1	J
124-48-1	Dibromochloromethane	0.37	5.4		U
96-12-8	1,2-Dibromo-3-chloropropane	1.3	5.4		U
106-93-4	1,2-Dibromoethane	0.47	5.4		U
95-50-1	1,2-Dichlorobenzene	0.40	5.4		U
541-73-1	1,3-Dichlorobenzene	0.91	5.4		U
106-46-7	1,4-Dichlorobenzene	0.60	5.4		U
75-71-8	Dichlorodifluoromethane	1.2	5.4		U
75-34-3	1,1-Dichloroethane	0.58	5.4		U
107-06-2	1,2-Dichloroethane	0.50	5.4		U
75-35-4	1,1-Dichloroethene	1.3	5.4		U
156-59-2	cis-1,2-Dichloroethene	1.3	11		U
156-60-5	trans-1,2-Dichloroethene	1.2	5.4		U
78-87-5	1,2-Dichloropropane	0.50	5.4		U
10061-01-5	cis-1,3-Dichloropropene	0.54	5.4		U
10061-02-6	trans-1,3-Dichloropropene	0.35	5.4		U
100-41-4	Ethylbenzene	0.81	5.4		U
591-78-6	2-Hexanone	2.5	5.4		U
98-82-8	Isopropylbenzene	0.95	5.4		U
79-20-9	Methyl acetate	1.7	11		U
75-09-2	Methylene chloride	0.67	11	2.2	JB
108-87-2	Methyl cyclohexane	0.32	5.4	1.7	J
1634-04-4	Methyl-tert-butyl-ether	0.35	5.4		U
108-10-1	4-Methyl-2-pentanone	0.63	5.4		U
100-42-5	Styrene	0.38	5.4		U
79-34-5	1,1,2,2-Tetrachloroethane	0.47	5.4		U
127-18-4	Tetrachloroethene	1.0	5.4		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB03
-SO-0204RE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-45RE

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1000645B

Level: (low/med) LOW Date Sampled: 09/28/09 12:30

% Moisture: not dec. 8 Date Analyzed: 10/08/09 12:08

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.93	5.4		U
120-82-1	1,2,4-Trichlorobenzene	0.20	5.4		U
71-55-6	1,1,1-Trichloroethane	0.98	5.4		U
79-00-5	1,1,2-Trichloroethane	0.38	5.4		U
79-01-6	Trichloroethene	0.92	5.4		U
76-13-1	Trichlorotrifluoroethane	0.60	5.4		U
75-69-4	Trichlorofluoromethane	1.0	5.4	3.2	J
75-01-4	Vinyl chloride	1.2	5.4		U
1330-20-7	Xylene(total)	0.76	5.4		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
4-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-21

Sample wt/vol: 5.2 (g/mL) G Lab File ID: 1000621A

Level: (low/med) LOW Date Sampled: 09/27/09 12:50

% Moisture: not dec. 8 Date Analyzed: 10/05/09 19:45

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.1	5.2		U
71-43-2	Benzene	0.49	5.2		U
75-27-4	Bromodichloromethane	0.31	10		U
75-25-2	Bromoform	1.0	5.2		U
74-83-9	Bromomethane	0.76	10		U
78-93-3	2-Butanone	1.5	5.2		U
75-15-0	Carbon disulfide	1.4	5.2	6.7	
56-23-5	Carbon tetrachloride	0.92	5.2		U
108-90-7	Chlorobenzene	0.36	5.2		U
75-00-3	Chloroethane	1.2	10		U
67-66-3	Chloroform	0.58	5.2		U
74-87-3	Chloromethane	0.54	10		U
110-82-7	Cyclohexane	0.57	5.2	0.91	J
124-48-1	Dibromochloromethane	0.36	5.2		U
96-12-8	1,2-Dibromo-3-chloropropane	1.2	5.2		U
106-93-4	1,2-Dibromoethane	0.45	5.2		U
95-50-1	1,2-Dichlorobenzene	0.39	5.2		U
541-73-1	1,3-Dichlorobenzene	0.88	5.2		U
106-46-7	1,4-Dichlorobenzene	0.58	5.2		U
75-71-8	Dichlorodifluoromethane	1.2	5.2		U
75-34-3	1,1-Dichloroethane	0.57	5.2		U
107-06-2	1,2-Dichloroethane	0.48	5.2		U
75-35-4	1,1-Dichloroethene	1.2	5.2		U
156-59-2	cis-1,2-Dichloroethene	1.2	10		U
156-60-5	trans-1,2-Dichloroethene	1.2	5.2		U
78-87-5	1,2-Dichloropropane	0.48	5.2		U
10061-01-5	cis-1,3-Dichloropropene	0.52	5.2		U
10061-02-6	trans-1,3-Dichloropropene	0.34	5.2		U
100-41-4	Ethylbenzene	0.79	5.2		U
591-78-6	2-Hexanone	2.4	5.2		U
98-82-8	Isopropylbenzene	0.92	5.2		U
79-20-9	Methyl acetate	1.7	10		U
75-09-2	Methylene chloride	0.65	10	1.1	JB
108-87-2	Methyl cyclohexane	0.31	5.2	2.1	J
1634-04-4	Methyl-tert-butyl-ether	0.34	5.2		U
108-10-1	4-Methyl-2-pentanone	0.61	5.2		U
100-42-5	Styrene	0.37	5.2		U
79-34-5	1,1,2,2-Tetrachloroethane	0.45	5.2		U
127-18-4	Tetrachloroethene	1.0	5.2		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
4-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-21

Sample wt/vol: 5.2 (g/mL) G Lab File ID: 1000621A

Level: (low/med) LOW Date Sampled: 09/27/09 12:50

% Moisture: not dec. 8 Date Analyzed: 10/05/09 19:45

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.90	5.2		U
120-82-1	1,2,4-Trichlorobenzene	0.19	5.2		U
71-55-6	1,1,1-Trichloroethane	0.94	5.2		U
79-00-5	1,1,2-Trichloroethane	0.37	5.2		U
79-01-6	Trichloroethene	0.89	5.2		U
76-13-1	Trichlorotrifluoroethane	0.58	5.2		U
75-69-4	Trichlorofluoromethane	1.00	5.2		U
75-01-4	Vinyl chloride	1.2	5.2		U
1330-20-7	Xylene(total)	0.73	5.2		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
4-SO-0406

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-22

Sample wt/vol: 6.6 (g/mL) G Lab File ID: 1000622A

Level: (low/med) LOW Date Sampled: 09/27/09 13:00

% Moisture: not dec. 42 Date Analyzed: 10/05/09 20:16

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.6	6.6		U
71-43-2	Benzene	0.62	6.6	1.2	J
75-27-4	Bromodichloromethane	0.39	13		U
75-25-2	Bromoform	1.3	6.6		U
74-83-9	Bromomethane	0.95	13		U
78-93-3	2-Butanone	1.8	6.6	28	
75-15-0	Carbon disulfide	1.7	6.6	8.1	
56-23-5	Carbon tetrachloride	1.2	6.6		U
108-90-7	Chlorobenzene	0.45	6.6		U
75-00-3	Chloroethane	1.4	13		U
67-66-3	Chloroform	0.72	6.6		U
74-87-3	Chloromethane	0.68	13		U
110-82-7	Cyclohexane	0.71	6.6	0.74	J
124-48-1	Dibromochloromethane	0.45	6.6		U
96-12-8	1,2-Dibromo-3-chloropropane	1.6	6.6		U
106-93-4	1,2-Dibromoethane	0.56	6.6		U
95-50-1	1,2-Dichlorobenzene	0.49	6.6		U
541-73-1	1,3-Dichlorobenzene	1.1	6.6		U
106-46-7	1,4-Dichlorobenzene	0.72	6.6		U
75-71-8	Dichlorodifluoromethane	1.4	6.6		U
75-34-3	1,1-Dichloroethane	0.71	6.6		U
107-06-2	1,2-Dichloroethane	0.60	6.6		U
75-35-4	1,1-Dichloroethene	1.6	6.6		U
156-59-2	cis-1,2-Dichloroethene	1.6	13		U
156-60-5	trans-1,2-Dichloroethene	1.4	6.6		U
78-87-5	1,2-Dichloropropane	0.60	6.6		U
10061-01-5	cis-1,3-Dichloropropene	0.66	6.6		U
10061-02-6	trans-1,3-Dichloropropene	0.42	6.6		U
100-41-4	Ethylbenzene	0.99	6.6		U
591-78-6	2-Hexanone	3.0	6.6		U
98-82-8	Isopropylbenzene	1.2	6.6		U
79-20-9	Methyl acetate	2.1	13		U
75-09-2	Methylene chloride	0.82	13	1.3	JB
108-87-2	Methyl cyclohexane	0.39	6.6	1.4	J
1634-04-4	Methyl-tert-butyl-ether	0.42	6.6		U
108-10-1	4-Methyl-2-pentanone	0.76	6.6		U
100-42-5	Styrene	0.46	6.6		U
79-34-5	1,1,2,2-Tetrachloroethane	0.56	6.6		U
127-18-4	Tetrachloroethene	1.3	6.6		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
4-SO-0406

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-22

Sample wt/vol: 6.6 (g/mL) G Lab File ID: 1000622A

Level: (low/med) LOW Date Sampled: 09/27/09 13:00

% Moisture: not dec. 42 Date Analyzed: 10/05/09 20:16

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	1.1	6.6		U
120-82-1	1,2,4-Trichlorobenzene	0.24	6.6		U
71-55-6	1,1,1-Trichloroethane	1.2	6.6		U
79-00-5	1,1,2-Trichloroethane	0.46	6.6		U
79-01-6	Trichloroethene	1.1	6.6		U
76-13-1	Trichlorotrifluoroethane	0.72	6.6		U
75-69-4	Trichlorofluoromethane	1.2	6.6		U
75-01-4	Vinyl chloride	1.4	6.6		U
1330-20-7	Xylene(total)	0.92	6.6		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
5-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-46

Sample wt/vol: 3.8 (g/mL) G Lab File ID: 1000646A

Level: (low/med) LOW Date Sampled: 09/28/09 10:00

% Moisture: not dec. 6 Date Analyzed: 10/06/09 17:33

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.8	7.1	180	B
71-43-2	Benzene	0.67	7.1		U
75-27-4	Bromodichloromethane	0.43	14		U
75-25-2	Bromoform	1.4	7.1		U
74-83-9	Bromomethane	1.0	14		U
78-93-3	2-Butanone	2.0	7.1	30	
75-15-0	Carbon disulfide	1.8	7.1	2.3	J
56-23-5	Carbon tetrachloride	1.2	7.1		U
108-90-7	Chlorobenzene	0.48	7.1		U
75-00-3	Chloroethane	1.6	14		U
67-66-3	Chloroform	0.78	7.1		U
74-87-3	Chloromethane	0.74	14		U
110-82-7	Cyclohexane	0.77	7.1	1.4	J
124-48-1	Dibromochloromethane	0.48	7.1		U
96-12-8	1,2-Dibromo-3-chloropropane	1.7	7.1		U
106-93-4	1,2-Dibromoethane	0.61	7.1		U
95-50-1	1,2-Dichlorobenzene	0.53	7.1		U
541-73-1	1,3-Dichlorobenzene	1.2	7.1		U
106-46-7	1,4-Dichlorobenzene	0.78	7.1		U
75-71-8	Dichlorodifluoromethane	1.6	7.1		U
75-34-3	1,1-Dichloroethane	0.77	7.1		U
107-06-2	1,2-Dichloroethane	0.66	7.1		U
75-35-4	1,1-Dichloroethene	1.7	7.1		U
156-59-2	cis-1,2-Dichloroethene	1.7	14		U
156-60-5	trans-1,2-Dichloroethene	1.6	7.1		U
78-87-5	1,2-Dichloropropane	0.66	7.1		U
10061-01-5	cis-1,3-Dichloropropene	0.71	7.1		U
10061-02-6	trans-1,3-Dichloropropene	0.46	7.1		U
100-41-4	Ethylbenzene	1.1	7.1		U
591-78-6	2-Hexanone	3.3	7.1		U
98-82-8	Isopropylbenzene	1.2	7.1		U
79-20-9	Methyl acetate	2.3	14		U
75-09-2	Methylene chloride	0.88	14	3.2	JB
108-87-2	Methyl cyclohexane	0.43	7.1	2.5	J
1634-04-4	Methyl-tert-butyl-ether	0.46	7.1		U
108-10-1	4-Methyl-2-pentanone	0.83	7.1		U
100-42-5	Styrene	0.50	7.1		U
79-34-5	1,1,2,2-Tetrachloroethane	0.61	7.1		U
127-18-4	Tetrachloroethene	1.4	7.1		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
5-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-46

Sample wt/vol: 3.8 (g/mL) G Lab File ID: 1000646A

Level: (low/med) LOW Date Sampled: 09/28/09 10:00

% Moisture: not dec. 6 Date Analyzed: 10/06/09 17:33

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	1.2	7.1		U
120-82-1	1,2,4-Trichlorobenzene	0.26	7.1		U
71-55-6	1,1,1-Trichloroethane	1.3	7.1		U
79-00-5	1,1,2-Trichloroethane	0.50	7.1		U
79-01-6	Trichloroethene	1.2	7.1		U
76-13-1	Trichlorotrifluoroethane	0.78	7.1		U
75-69-4	Trichlorofluoromethane	1.4	7.1		U
75-01-4	Vinyl chloride	1.6	7.1		U
1330-20-7	Xylene(total)	1.00	7.1		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
5-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-47

Sample wt/vol: 6.4 (g/mL) G Lab File ID: 1000647A

Level: (low/med) LOW Date Sampled: 09/28/09 10:10

% Moisture: not dec. 9 Date Analyzed: 10/06/09 18:05

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	1.7	4.3		U
71-43-2	Benzene	0.40	4.3	0.41	J
75-27-4	Bromodichloromethane	0.26	8.6		U
75-25-2	Bromoform	0.86	4.3		U
74-83-9	Bromomethane	0.62	8.6		U
78-93-3	2-Butanone	1.2	4.3		U
75-15-0	Carbon disulfide	1.1	4.3		U
56-23-5	Carbon tetrachloride	0.76	4.3		U
108-90-7	Chlorobenzene	0.29	4.3		U
75-00-3	Chloroethane	0.95	8.6		U
67-66-3	Chloroform	0.47	4.3		U
74-87-3	Chloromethane	0.45	8.6		U
110-82-7	Cyclohexane	0.46	4.3	1.7	J
124-48-1	Dibromochloromethane	0.29	4.3		U
96-12-8	1,2-Dibromo-3-chloropropane	1.0	4.3		U
106-93-4	1,2-Dibromoethane	0.37	4.3		U
95-50-1	1,2-Dichlorobenzene	0.32	4.3		U
541-73-1	1,3-Dichlorobenzene	0.72	4.3		U
106-46-7	1,4-Dichlorobenzene	0.47	4.3		U
75-71-8	Dichlorodifluoromethane	0.95	4.3		U
75-34-3	1,1-Dichloroethane	0.46	4.3		U
107-06-2	1,2-Dichloroethane	0.40	4.3		U
75-35-4	1,1-Dichloroethene	1.0	4.3		U
156-59-2	cis-1,2-Dichloroethene	1.0	8.6		U
156-60-5	trans-1,2-Dichloroethene	0.95	4.3		U
78-87-5	1,2-Dichloropropane	0.40	4.3		U
10061-01-5	cis-1,3-Dichloropropene	0.43	4.3		U
10061-02-6	trans-1,3-Dichloropropene	0.28	4.3		U
100-41-4	Ethylbenzene	0.64	4.3		U
591-78-6	2-Hexanone	2.0	4.3		U
98-82-8	Isopropylbenzene	0.76	4.3		U
79-20-9	Methyl acetate	1.4	8.6		U
75-09-2	Methylene chloride	0.53	8.6	1.8	JB
108-87-2	Methyl cyclohexane	0.26	4.3	3.1	J
1634-04-4	Methyl-tert-butyl-ether	0.28	4.3		U
108-10-1	4-Methyl-2-pentanone	0.50	4.3		U
100-42-5	Styrene	0.30	4.3		U
79-34-5	1,1,2,2-Tetrachloroethane	0.37	4.3		U
127-18-4	Tetrachloroethene	0.83	4.3		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
5-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-47

Sample wt/vol: 6.4 (g/mL) G Lab File ID: 1000647A

Level: (low/med) LOW Date Sampled: 09/28/09 10:10

% Moisture: not dec. 9 Date Analyzed: 10/06/09 18:05

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.74	4.3		U
120-82-1	1,2,4-Trichlorobenzene	0.15	4.3		U
71-55-6	1,1,1-Trichloroethane	0.77	4.3		U
79-00-5	1,1,2-Trichloroethane	0.30	4.3		U
79-01-6	Trichloroethene	0.73	4.3		U
76-13-1	Trichlorotrifluoroethane	0.47	4.3		U
75-69-4	Trichlorofluoromethane	0.82	4.3		U
75-01-4	Vinyl chloride	0.95	4.3		U
1330-20-7	Xylene(total)	0.60	4.3		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB05
-SO-0204RE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-47RE

Sample wt/vol: 6.0 (g/mL) G Lab File ID: 1000647B

Level: (low/med) LOW Date Sampled: 09/28/09 10:10

% Moisture: not dec. 9 Date Analyzed: 10/10/09 08:34

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	1.8	4.6		U
71-43-2	Benzene	0.43	4.6	0.44	J
75-27-4	Bromodichloromethane	0.27	9.1		U
75-25-2	Bromoform	0.91	4.6		U
74-83-9	Bromomethane	0.66	9.1		U
78-93-3	2-Butanone	1.3	4.6		U
75-15-0	Carbon disulfide	1.2	4.6		U
56-23-5	Carbon tetrachloride	0.80	4.6		U
108-90-7	Chlorobenzene	0.31	4.6		U
75-00-3	Chloroethane	1.0	9.1		U
67-66-3	Chloroform	0.50	4.6		U
74-87-3	Chloromethane	0.47	9.1		U
110-82-7	Cyclohexane	0.49	4.6		U
124-48-1	Dibromochloromethane	0.31	4.6		U
96-12-8	1,2-Dibromo-3-chloropropane	1.1	4.6		U
106-93-4	1,2-Dibromoethane	0.39	4.6		U
95-50-1	1,2-Dichlorobenzene	0.34	4.6		U
541-73-1	1,3-Dichlorobenzene	0.76	4.6		U
106-46-7	1,4-Dichlorobenzene	0.50	4.6		U
75-71-8	Dichlorodifluoromethane	1.0	4.6		U
75-34-3	1,1-Dichloroethane	0.49	4.6		U
107-06-2	1,2-Dichloroethane	0.42	4.6		U
75-35-4	1,1-Dichloroethene	1.1	4.6		U
156-59-2	cis-1,2-Dichloroethene	1.1	9.1		U
156-60-5	trans-1,2-Dichloroethene	1.0	4.6		U
78-87-5	1,2-Dichloropropane	0.42	4.6		U
10061-01-5	cis-1,3-Dichloropropene	0.46	4.6		U
10061-02-6	trans-1,3-Dichloropropene	0.29	4.6		U
100-41-4	Ethylbenzene	0.68	4.6		U
591-78-6	2-Hexanone	2.1	4.6		U
98-82-8	Isopropylbenzene	0.80	4.6		U
79-20-9	Methyl acetate	1.4	9.1		U
75-09-2	Methylene chloride	0.56	9.1	2.3	JB
108-87-2	Methyl cyclohexane	0.27	4.6	3.6	J
1634-04-4	Methyl-tert-butyl-ether	0.29	4.6		U
108-10-1	4-Methyl-2-pentanone	0.53	4.6		U
100-42-5	Styrene	0.32	4.6		U
79-34-5	1,1,2,2-Tetrachloroethane	0.39	4.6		U
127-18-4	Tetrachloroethene	0.88	4.6		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB05
-SO-0204RE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-47RE

Sample wt/vol: 6.0 (g/mL) G Lab File ID: 1000647B

Level: (low/med) LOW Date Sampled: 09/28/09 10:10

% Moisture: not dec. 9 Date Analyzed: 10/10/09 08:34

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.78	4.6	0.99	J
120-82-1	1,2,4-Trichlorobenzene	0.16	4.6		U
71-55-6	1,1,1-Trichloroethane	0.82	4.6		U
79-00-5	1,1,2-Trichloroethane	0.32	4.6		U
79-01-6	Trichloroethene	0.77	4.6		U
76-13-1	Trichlorotrifluoroethane	0.50	4.6		U
75-69-4	Trichlorofluoromethane	0.86	4.6		U
75-01-4	Vinyl chloride	1.0	4.6		U
1330-20-7	Xylene(total)	0.64	4.6		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
6-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-23

Sample wt/vol: 7.1 (g/mL) G Lab File ID: 1000623A

Level: (low/med) LOW Date Sampled: 09/27/09 15:10

% Moisture: not dec. 18 Date Analyzed: 10/05/09 20:47

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	1.7	4.3	14	B
71-43-2	Benzene	0.40	4.3		U
75-27-4	Bromodichloromethane	0.26	8.6		U
75-25-2	Bromoform	0.86	4.3		U
74-83-9	Bromomethane	0.62	8.6		U
78-93-3	2-Butanone	1.2	4.3		U
75-15-0	Carbon disulfide	1.1	4.3	5.0	
56-23-5	Carbon tetrachloride	0.76	4.3		U
108-90-7	Chlorobenzene	0.29	4.3		U
75-00-3	Chloroethane	0.94	8.6		U
67-66-3	Chloroform	0.47	4.3		U
74-87-3	Chloromethane	0.45	8.6		U
110-82-7	Cyclohexane	0.46	4.3		U
124-48-1	Dibromochloromethane	0.29	4.3		U
96-12-8	1,2-Dibromo-3-chloropropane	1.0	4.3		U
106-93-4	1,2-Dibromoethane	0.37	4.3		U
95-50-1	1,2-Dichlorobenzene	0.32	4.3		U
541-73-1	1,3-Dichlorobenzene	0.72	4.3		U
106-46-7	1,4-Dichlorobenzene	0.47	4.3		U
75-71-8	Dichlorodifluoromethane	0.94	4.3		U
75-34-3	1,1-Dichloroethane	0.46	4.3		U
107-06-2	1,2-Dichloroethane	0.39	4.3		U
75-35-4	1,1-Dichloroethene	1.0	4.3		U
156-59-2	cis-1,2-Dichloroethene	1.0	8.6		U
156-60-5	trans-1,2-Dichloroethene	0.94	4.3		U
78-87-5	1,2-Dichloropropane	0.39	4.3		U
10061-01-5	cis-1,3-Dichloropropene	0.43	4.3		U
10061-02-6	trans-1,3-Dichloropropene	0.27	4.3		U
100-41-4	Ethylbenzene	0.64	4.3		U
591-78-6	2-Hexanone	2.0	4.3		U
98-82-8	Isopropylbenzene	0.76	4.3		U
79-20-9	Methyl acetate	1.4	8.6		U
75-09-2	Methylene chloride	0.53	8.6	0.94	JB
108-87-2	Methyl cyclohexane	0.26	4.3		U
1634-04-4	Methyl-tert-butyl-ether	0.27	4.3		U
108-10-1	4-Methyl-2-pentanone	0.50	4.3		U
100-42-5	Styrene	0.30	4.3		U
79-34-5	1,1,2,2-Tetrachloroethane	0.37	4.3		U
127-18-4	Tetrachloroethene	0.83	4.3		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
6-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-23

Sample wt/vol: 7.1 (g/mL) G Lab File ID: 1000623A

Level: (low/med) LOW Date Sampled: 09/27/09 15:10

% Moisture: not dec. 18 Date Analyzed: 10/05/09 20:47

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.74	4.3		U
120-82-1	1,2,4-Trichlorobenzene	0.15	4.3		U
71-55-6	1,1,1-Trichloroethane	0.77	4.3		U
79-00-5	1,1,2-Trichloroethane	0.30	4.3		U
79-01-6	Trichloroethene	0.73	4.3		U
76-13-1	Trichlorotrifluoroethane	0.47	4.3		U
75-69-4	Trichlorofluoromethane	0.82	4.3		U
75-01-4	Vinyl chloride	0.94	4.3		U
1330-20-7	Xylene(total)	0.60	4.3		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
6-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-24

Sample wt/vol: 5.3 (g/mL) G Lab File ID: 1000624A

Level: (low/med) LOW Date Sampled: 09/27/09 15:20

% Moisture: not dec. 23 Date Analyzed: 10/05/09 21:18

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.5	6.2		U
71-43-2	Benzene	0.58	6.2		U
75-27-4	Bromodichloromethane	0.37	12		U
75-25-2	Bromoform	1.2	6.2		U
74-83-9	Bromomethane	0.89	12		U
78-93-3	2-Butanone	1.7	6.2		U
75-15-0	Carbon disulfide	1.6	6.2		U
56-23-5	Carbon tetrachloride	1.1	6.2		U
108-90-7	Chlorobenzene	0.42	6.2		U
75-00-3	Chloroethane	1.4	12		U
67-66-3	Chloroform	0.68	6.2		U
74-87-3	Chloromethane	0.64	12		U
110-82-7	Cyclohexane	0.67	6.2	0.90	J
124-48-1	Dibromochloromethane	0.42	6.2		U
96-12-8	1,2-Dibromo-3-chloropropane	1.5	6.2		U
106-93-4	1,2-Dibromoethane	0.53	6.2		U
95-50-1	1,2-Dichlorobenzene	0.46	6.2		U
541-73-1	1,3-Dichlorobenzene	1.0	6.2		U
106-46-7	1,4-Dichlorobenzene	0.68	6.2		U
75-71-8	Dichlorodifluoromethane	1.4	6.2		U
75-34-3	1,1-Dichloroethane	0.67	6.2		U
107-06-2	1,2-Dichloroethane	0.57	6.2		U
75-35-4	1,1-Dichloroethene	1.5	6.2		U
156-59-2	cis-1,2-Dichloroethene	1.5	12		U
156-60-5	trans-1,2-Dichloroethene	1.4	6.2		U
78-87-5	1,2-Dichloropropane	0.57	6.2		U
10061-01-5	cis-1,3-Dichloropropene	0.62	6.2		U
10061-02-6	trans-1,3-Dichloropropene	0.40	6.2		U
100-41-4	Ethylbenzene	0.93	6.2		U
591-78-6	2-Hexanone	2.8	6.2		U
98-82-8	Isopropylbenzene	1.1	6.2		U
79-20-9	Methyl acetate	2.0	12		U
75-09-2	Methylene chloride	0.76	12	1.1	JB
108-87-2	Methyl cyclohexane	0.37	6.2	2.2	J
1634-04-4	Methyl-tert-butyl-ether	0.40	6.2		U
108-10-1	4-Methyl-2-pentanone	0.72	6.2		U
100-42-5	Styrene	0.43	6.2		U
79-34-5	1,1,2,2-Tetrachloroethane	0.53	6.2		U
127-18-4	Tetrachloroethene	1.2	6.2		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
6-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-24

Sample wt/vol: 5.3 (g/mL) G Lab File ID: 1000624A

Level: (low/med) LOW Date Sampled: 09/27/09 15:20

% Moisture: not dec. 23 Date Analyzed: 10/05/09 21:18

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	1.1	6.2		U
120-82-1	1,2,4-Trichlorobenzene	0.22	6.2		U
71-55-6	1,1,1-Trichloroethane	1.1	6.2		U
79-00-5	1,1,2-Trichloroethane	0.43	6.2		U
79-01-6	Trichloroethene	1.0	6.2		U
76-13-1	Trichlorotrifluoroethane	0.68	6.2		U
75-69-4	Trichlorofluoromethane	1.2	6.2		U
75-01-4	Vinyl chloride	1.4	6.2		U
1330-20-7	Xylene(total)	0.86	6.2		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB06
-SO-0204RE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-24RE

Sample wt/vol: 5.6 (g/mL) G Lab File ID: 1000624B

Level: (low/med) LOW Date Sampled: 09/27/09 15:20

% Moisture: not dec. 23 Date Analyzed: 10/08/09 10:35

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.3	5.8		U
71-43-2	Benzene	0.55	5.8		U
75-27-4	Bromodichloromethane	0.35	12		U
75-25-2	Bromoform	1.2	5.8		U
74-83-9	Bromomethane	0.84	12		U
78-93-3	2-Butanone	1.6	5.8		U
75-15-0	Carbon disulfide	1.5	5.8		U
56-23-5	Carbon tetrachloride	1.0	5.8		U
108-90-7	Chlorobenzene	0.40	5.8		U
75-00-3	Chloroethane	1.3	12		U
67-66-3	Chloroform	0.64	5.8		U
74-87-3	Chloromethane	0.60	12		U
110-82-7	Cyclohexane	0.63	5.8	1.3	J
124-48-1	Dibromochloromethane	0.40	5.8		U
96-12-8	1,2-Dibromo-3-chloropropane	1.4	5.8		U
106-93-4	1,2-Dibromoethane	0.50	5.8		U
95-50-1	1,2-Dichlorobenzene	0.43	5.8		U
541-73-1	1,3-Dichlorobenzene	0.98	5.8		U
106-46-7	1,4-Dichlorobenzene	0.64	5.8		U
75-71-8	Dichlorodifluoromethane	1.3	5.8		U
75-34-3	1,1-Dichloroethane	0.63	5.8		U
107-06-2	1,2-Dichloroethane	0.54	5.8		U
75-35-4	1,1-Dichloroethene	1.4	5.8		U
156-59-2	cis-1,2-Dichloroethene	1.4	12		U
156-60-5	trans-1,2-Dichloroethene	1.3	5.8		U
78-87-5	1,2-Dichloropropane	0.54	5.8		U
10061-01-5	cis-1,3-Dichloropropene	0.58	5.8		U
10061-02-6	trans-1,3-Dichloropropene	0.37	5.8		U
100-41-4	Ethylbenzene	0.87	5.8		U
591-78-6	2-Hexanone	2.7	5.8		U
98-82-8	Isopropylbenzene	1.0	5.8		U
79-20-9	Methyl acetate	1.9	12		U
75-09-2	Methylene chloride	0.72	12	2.5	JB
108-87-2	Methyl cyclohexane	0.35	5.8	2.5	J
1634-04-4	Methyl-tert-butyl-ether	0.37	5.8		U
108-10-1	4-Methyl-2-pentanone	0.68	5.8		U
100-42-5	Styrene	0.41	5.8		U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	5.8		U
127-18-4	Tetrachloroethene	1.1	5.8		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB06
-SO-0204RE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-24RE

Sample wt/vol: 5.6 (g/mL) G Lab File ID: 1000624B

Level: (low/med) LOW Date Sampled: 09/27/09 15:20

% Moisture: not dec. 23 Date Analyzed: 10/08/09 10:35

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	1.0	5.8		U
120-82-1	1,2,4-Trichlorobenzene	0.21	5.8		U
71-55-6	1,1,1-Trichloroethane	1.0	5.8		U
79-00-5	1,1,2-Trichloroethane	0.41	5.8		U
79-01-6	Trichloroethene	0.99	5.8		U
76-13-1	Trichlorotrifluoroethane	0.64	5.8		U
75-69-4	Trichlorofluoromethane	1.1	5.8		U
75-01-4	Vinyl chloride	1.3	5.8		U
1330-20-7	Xylene(total)	0.82	5.8		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
7-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-25

Sample wt/vol: 4.6 (g/mL) G Lab File ID: 1000625A

Level: (low/med) LOW Date Sampled: 09/27/09 10:40

% Moisture: not dec. 8 Date Analyzed: 10/06/09 10:15

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.4	6.0		U
71-43-2	Benzene	0.56	6.0	0.82	J
75-27-4	Bromodichloromethane	0.36	12		U
75-25-2	Bromoform	1.2	6.0		U
74-83-9	Bromomethane	0.86	12		U
78-93-3	2-Butanone	1.7	6.0		U
75-15-0	Carbon disulfide	1.5	6.0	2.4	J
56-23-5	Carbon tetrachloride	1.0	6.0		U
108-90-7	Chlorobenzene	0.40	6.0		U
75-00-3	Chloroethane	1.3	12		U
67-66-3	Chloroform	0.66	6.0		U
74-87-3	Chloromethane	0.62	12		U
110-82-7	Cyclohexane	0.64	6.0	1.4	J
124-48-1	Dibromochloromethane	0.40	6.0		U
96-12-8	1,2-Dibromo-3-chloropropane	1.4	6.0		U
106-93-4	1,2-Dibromoethane	0.51	6.0		U
95-50-1	1,2-Dichlorobenzene	0.44	6.0		U
541-73-1	1,3-Dichlorobenzene	1.0	6.0		U
106-46-7	1,4-Dichlorobenzene	0.66	6.0		U
75-71-8	Dichlorodifluoromethane	1.3	6.0		U
75-34-3	1,1-Dichloroethane	0.64	6.0		U
107-06-2	1,2-Dichloroethane	0.55	6.0		U
75-35-4	1,1-Dichloroethene	1.4	6.0		U
156-59-2	cis-1,2-Dichloroethene	1.4	12		U
156-60-5	trans-1,2-Dichloroethene	1.3	6.0		U
78-87-5	1,2-Dichloropropane	0.55	6.0		U
10061-01-5	cis-1,3-Dichloropropene	0.60	6.0		U
10061-02-6	trans-1,3-Dichloropropene	0.38	6.0		U
100-41-4	Ethylbenzene	0.89	6.0		U
591-78-6	2-Hexanone	2.7	6.0		U
98-82-8	Isopropylbenzene	1.0	6.0		U
79-20-9	Methyl acetate	1.9	12		U
75-09-2	Methylene chloride	0.74	12	1.2	JB
108-87-2	Methyl cyclohexane	0.36	6.0	3.5	J
1634-04-4	Methyl-tert-butyl-ether	0.38	6.0		U
108-10-1	4-Methyl-2-pentanone	0.69	6.0		U
100-42-5	Styrene	0.42	6.0		U
79-34-5	1,1,2,2-Tetrachloroethane	0.51	6.0		U
127-18-4	Tetrachloroethene	1.2	6.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
7-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-25

Sample wt/vol: 4.6 (g/mL) G Lab File ID: 1000625A

Level: (low/med) LOW Date Sampled: 09/27/09 10:40

% Moisture: not dec. 8 Date Analyzed: 10/06/09 10:15

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	1.0	6.0		U
120-82-1	1,2,4-Trichlorobenzene	0.21	6.0		U
71-55-6	1,1,1-Trichloroethane	1.1	6.0		U
79-00-5	1,1,2-Trichloroethane	0.42	6.0		U
79-01-6	Trichloroethene	1.0	6.0		U
76-13-1	Trichlorotrifluoroethane	0.66	6.0		U
75-69-4	Trichlorofluoromethane	1.1	6.0		U
75-01-4	Vinyl chloride	1.3	6.0		U
1330-20-7	Xylene(total)	0.83	6.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
7-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-26

Sample wt/vol: 5.7 (g/mL) G Lab File ID: 1000626A

Level: (low/med) LOW Date Sampled: 09/27/09 10:50

% Moisture: not dec. 14 Date Analyzed: 10/05/09 21:49

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.0	5.1		U
71-43-2	Benzene	0.48	5.1	0.71	J
75-27-4	Bromodichloromethane	0.30	10		U
75-25-2	Bromoform	1.0	5.1		U
74-83-9	Bromomethane	0.73	10		U
78-93-3	2-Butanone	1.4	5.1		U
75-15-0	Carbon disulfide	1.3	5.1	3.1	J
56-23-5	Carbon tetrachloride	0.90	5.1		U
108-90-7	Chlorobenzene	0.35	5.1		U
75-00-3	Chloroethane	1.1	10		U
67-66-3	Chloroform	0.56	5.1		U
74-87-3	Chloromethane	0.53	10		U
110-82-7	Cyclohexane	0.55	5.1	2.2	J
124-48-1	Dibromochloromethane	0.35	5.1		U
96-12-8	1,2-Dibromo-3-chloropropane	1.2	5.1		U
106-93-4	1,2-Dibromoethane	0.44	5.1		U
95-50-1	1,2-Dichlorobenzene	0.38	5.1		U
541-73-1	1,3-Dichlorobenzene	0.86	5.1		U
106-46-7	1,4-Dichlorobenzene	0.56	5.1		U
75-71-8	Dichlorodifluoromethane	1.1	5.1		U
75-34-3	1,1-Dichloroethane	0.55	5.1		U
107-06-2	1,2-Dichloroethane	0.47	5.1		U
75-35-4	1,1-Dichloroethene	1.2	5.1		U
156-59-2	cis-1,2-Dichloroethene	1.2	10		U
156-60-5	trans-1,2-Dichloroethene	1.1	5.1		U
78-87-5	1,2-Dichloropropane	0.47	5.1		U
10061-01-5	cis-1,3-Dichloropropene	0.51	5.1		U
10061-02-6	trans-1,3-Dichloropropene	0.33	5.1		U
100-41-4	Ethylbenzene	0.76	5.1		U
591-78-6	2-Hexanone	2.3	5.1		U
98-82-8	Isopropylbenzene	0.90	5.1		U
79-20-9	Methyl acetate	1.6	10		U
75-09-2	Methylene chloride	0.63	10	1.1	JB
108-87-2	Methyl cyclohexane	0.30	5.1	4.5	J
1634-04-4	Methyl-tert-butyl-ether	0.33	5.1		U
108-10-1	4-Methyl-2-pentanone	0.59	5.1		U
100-42-5	Styrene	0.36	5.1		U
79-34-5	1,1,2,2-Tetrachloroethane	0.44	5.1		U
127-18-4	Tetrachloroethene	0.99	5.1		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
7-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-26

Sample wt/vol: 5.7 (g/mL) G Lab File ID: 1000626A

Level: (low/med) LOW Date Sampled: 09/27/09 10:50

% Moisture: not dec. 14 Date Analyzed: 10/05/09 21:49

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.88	5.1		U
120-82-1	1,2,4-Trichlorobenzene	0.18	5.1		U
71-55-6	1,1,1-Trichloroethane	0.92	5.1		U
79-00-5	1,1,2-Trichloroethane	0.36	5.1		U
79-01-6	Trichloroethene	0.87	5.1		U
76-13-1	Trichlorotrifluoroethane	0.56	5.1		U
75-69-4	Trichlorofluoromethane	0.97	5.1		U
75-01-4	Vinyl chloride	1.1	5.1		U
1330-20-7	Xylene(total)	0.71	5.1		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
8-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-48

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1000648A

Level: (low/med) LOW Date Sampled: 09/28/09 11:55

% Moisture: not dec. 7 Date Analyzed: 10/06/09 18:36

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.2	5.4		U
71-43-2	Benzene	0.51	5.4		U
75-27-4	Bromodichloromethane	0.32	11		U
75-25-2	Bromoform	1.1	5.4		U
74-83-9	Bromomethane	0.78	11		U
78-93-3	2-Butanone	1.5	5.4		U
75-15-0	Carbon disulfide	1.4	5.4		U
56-23-5	Carbon tetrachloride	0.95	5.4		U
108-90-7	Chlorobenzene	0.37	5.4		U
75-00-3	Chloroethane	1.2	11		U
67-66-3	Chloroform	0.59	5.4		U
74-87-3	Chloromethane	0.56	11		U
110-82-7	Cyclohexane	0.58	5.4	1.7	J
124-48-1	Dibromochloromethane	0.37	5.4		U
96-12-8	1,2-Dibromo-3-chloropropane	1.3	5.4		U
106-93-4	1,2-Dibromoethane	0.46	5.4		U
95-50-1	1,2-Dichlorobenzene	0.40	5.4		U
541-73-1	1,3-Dichlorobenzene	0.91	5.4		U
106-46-7	1,4-Dichlorobenzene	0.59	5.4		U
75-71-8	Dichlorodifluoromethane	1.2	5.4		U
75-34-3	1,1-Dichloroethane	0.58	5.4		U
107-06-2	1,2-Dichloroethane	0.50	5.4		U
75-35-4	1,1-Dichloroethene	1.3	5.4		U
156-59-2	cis-1,2-Dichloroethene	1.3	11		U
156-60-5	trans-1,2-Dichloroethene	1.2	5.4		U
78-87-5	1,2-Dichloropropane	0.50	5.4		U
10061-01-5	cis-1,3-Dichloropropene	0.54	5.4		U
10061-02-6	trans-1,3-Dichloropropene	0.34	5.4		U
100-41-4	Ethylbenzene	0.81	5.4		U
591-78-6	2-Hexanone	2.5	5.4		U
98-82-8	Isopropylbenzene	0.95	5.4		U
79-20-9	Methyl acetate	1.7	11		U
75-09-2	Methylene chloride	0.67	11	2.0	JB
108-87-2	Methyl cyclohexane	0.32	5.4	2.6	J
1634-04-4	Methyl-tert-butyl-ether	0.34	5.4		U
108-10-1	4-Methyl-2-pentanone	0.62	5.4		U
100-42-5	Styrene	0.38	5.4		U
79-34-5	1,1,2,2-Tetrachloroethane	0.46	5.4		U
127-18-4	Tetrachloroethene	1.0	5.4		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
8-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-48

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1000648A

Level: (low/med) LOW Date Sampled: 09/28/09 11:55

% Moisture: not dec. 7 Date Analyzed: 10/06/09 18:36

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.93	5.4		U
120-82-1	1,2,4-Trichlorobenzene	0.19	5.4		U
71-55-6	1,1,1-Trichloroethane	0.97	5.4		U
79-00-5	1,1,2-Trichloroethane	0.38	5.4		U
79-01-6	Trichloroethene	0.92	5.4		U
76-13-1	Trichlorotrifluoroethane	0.59	5.4		U
75-69-4	Trichlorofluoromethane	1.0	5.4		U
75-01-4	Vinyl chloride	1.2	5.4		U
1330-20-7	Xylene(total)	0.76	5.4		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB08
-SO-0001RE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-48RE

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1000648B

Level: (low/med) LOW Date Sampled: 09/28/09 11:55

% Moisture: not dec. 7 Date Analyzed: 10/10/09 10:06

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.2	5.4		U
71-43-2	Benzene	0.51	5.4		U
75-27-4	Bromodichloromethane	0.32	11		U
75-25-2	Bromoform	1.1	5.4		U
74-83-9	Bromomethane	0.78	11		U
78-93-3	2-Butanone	1.5	5.4		U
75-15-0	Carbon disulfide	1.4	5.4		U
56-23-5	Carbon tetrachloride	0.95	5.4		U
108-90-7	Chlorobenzene	0.37	5.4		U
75-00-3	Chloroethane	1.2	11		U
67-66-3	Chloroform	0.59	5.4		U
74-87-3	Chloromethane	0.56	11		U
110-82-7	Cyclohexane	0.58	5.4	2.1	J
124-48-1	Dibromochloromethane	0.37	5.4		U
96-12-8	1,2-Dibromo-3-chloropropane	1.3	5.4		U
106-93-4	1,2-Dibromoethane	0.46	5.4		U
95-50-1	1,2-Dichlorobenzene	0.40	5.4		U
541-73-1	1,3-Dichlorobenzene	0.91	5.4		U
106-46-7	1,4-Dichlorobenzene	0.59	5.4		U
75-71-8	Dichlorodifluoromethane	1.2	5.4		U
75-34-3	1,1-Dichloroethane	0.58	5.4		U
107-06-2	1,2-Dichloroethane	0.50	5.4		U
75-35-4	1,1-Dichloroethene	1.3	5.4		U
156-59-2	cis-1,2-Dichloroethene	1.3	11		U
156-60-5	trans-1,2-Dichloroethene	1.2	5.4		U
78-87-5	1,2-Dichloropropane	0.50	5.4		U
10061-01-5	cis-1,3-Dichloropropene	0.54	5.4		U
10061-02-6	trans-1,3-Dichloropropene	0.34	5.4		U
100-41-4	Ethylbenzene	0.81	5.4		U
591-78-6	2-Hexanone	2.5	5.4		U
98-82-8	Isopropylbenzene	0.95	5.4		U
79-20-9	Methyl acetate	1.7	11		U
75-09-2	Methylene chloride	0.67	11	3.0	JB
108-87-2	Methyl cyclohexane	0.32	5.4	3.5	J
1634-04-4	Methyl-tert-butyl-ether	0.34	5.4		U
108-10-1	4-Methyl-2-pentanone	0.62	5.4		U
100-42-5	Styrene	0.38	5.4		U
79-34-5	1,1,2,2-Tetrachloroethane	0.46	5.4		U
127-18-4	Tetrachloroethene	1.0	5.4		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB08
-SO-0001RE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-48RE

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1000648B

Level: (low/med) LOW Date Sampled: 09/28/09 11:55

% Moisture: not dec. 7 Date Analyzed: 10/10/09 10:06

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.93	5.4		U
120-82-1	1,2,4-Trichlorobenzene	0.19	5.4		U
71-55-6	1,1,1-Trichloroethane	0.97	5.4		U
79-00-5	1,1,2-Trichloroethane	0.38	5.4		U
79-01-6	Trichloroethene	0.92	5.4		U
76-13-1	Trichlorotrifluoroethane	0.59	5.4		U
75-69-4	Trichlorofluoromethane	1.0	5.4		U
75-01-4	Vinyl chloride	1.2	5.4		U
1330-20-7	Xylene(total)	0.76	5.4		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
8-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-49

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1000649A

Level: (low/med) LOW Date Sampled: 09/28/09 12:00

% Moisture: not dec. 26 Date Analyzed: 10/06/09 19:07

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.7	6.8		U
71-43-2	Benzene	0.64	6.8	2.6	J
75-27-4	Bromodichloromethane	0.41	14		U
75-25-2	Bromoform	1.4	6.8		U
74-83-9	Bromomethane	0.98	14		U
78-93-3	2-Butanone	1.9	6.8		U
75-15-0	Carbon disulfide	1.8	6.8		U
56-23-5	Carbon tetrachloride	1.2	6.8		U
108-90-7	Chlorobenzene	0.46	6.8		U
75-00-3	Chloroethane	1.5	14		U
67-66-3	Chloroform	0.75	6.8		U
74-87-3	Chloromethane	0.70	14		U
110-82-7	Cyclohexane	0.73	6.8	3.8	J
124-48-1	Dibromochloromethane	0.46	6.8		U
96-12-8	1,2-Dibromo-3-chloropropane	1.6	6.8		U
106-93-4	1,2-Dibromoethane	0.58	6.8		U
95-50-1	1,2-Dichlorobenzene	0.50	6.8		U
541-73-1	1,3-Dichlorobenzene	1.1	6.8		U
106-46-7	1,4-Dichlorobenzene	0.75	6.8		U
75-71-8	Dichlorodifluoromethane	1.5	6.8		U
75-34-3	1,1-Dichloroethane	0.73	6.8		U
107-06-2	1,2-Dichloroethane	0.62	6.8		U
75-35-4	1,1-Dichloroethene	1.6	6.8		U
156-59-2	cis-1,2-Dichloroethene	1.6	14		U
156-60-5	trans-1,2-Dichloroethene	1.5	6.8		U
78-87-5	1,2-Dichloropropane	0.62	6.8		U
10061-01-5	cis-1,3-Dichloropropene	0.68	6.8		U
10061-02-6	trans-1,3-Dichloropropene	0.43	6.8		U
100-41-4	Ethylbenzene	1.0	6.8	1.3	J
591-78-6	2-Hexanone	3.1	6.8		U
98-82-8	Isopropylbenzene	1.2	6.8		U
79-20-9	Methyl acetate	2.2	14		U
75-09-2	Methylene chloride	0.84	14	3.3	JB
108-87-2	Methyl cyclohexane	0.41	6.8	7.1	
1634-04-4	Methyl-tert-butyl-ether	0.43	6.8		U
108-10-1	4-Methyl-2-pentanone	0.79	6.8		U
100-42-5	Styrene	0.47	6.8		U
79-34-5	1,1,2,2-Tetrachloroethane	0.58	6.8		U
127-18-4	Tetrachloroethene	1.3	6.8		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
8-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-49

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1000649A

Level: (low/med) LOW Date Sampled: 09/28/09 12:00

% Moisture: not dec. 26 Date Analyzed: 10/06/09 19:07

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	1.2	6.8	4.3	J
120-82-1	1,2,4-Trichlorobenzene	0.24	6.8		U
71-55-6	1,1,1-Trichloroethane	1.2	6.8		U
79-00-5	1,1,2-Trichloroethane	0.47	6.8		U
79-01-6	Trichloroethene	1.2	6.8		U
76-13-1	Trichlorotrifluoroethane	0.75	6.8		U
75-69-4	Trichlorofluoromethane	1.3	6.8		U
75-01-4	Vinyl chloride	1.5	6.8		U
1330-20-7	Xylene(total)	0.95	6.8		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
9-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-03

Sample wt/vol: 6.2 (g/mL) G Lab File ID: 1000603A

Level: (low/med) LOW Date Sampled: 09/26/09 16:20

% Moisture: not dec. 9 Date Analyzed: 10/04/09 19:03

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	1.8	4.4	23	
71-43-2	Benzene	0.42	4.4		U
75-27-4	Bromodichloromethane	0.27	8.9		U
75-25-2	Bromoform	0.89	4.4		U
74-83-9	Bromomethane	0.64	8.9		U
78-93-3	2-Butanone	1.2	4.4		U
75-15-0	Carbon disulfide	1.2	4.4	7.0	
56-23-5	Carbon tetrachloride	0.78	4.4		U
108-90-7	Chlorobenzene	0.30	4.4		U
75-00-3	Chloroethane	0.98	8.9		U
67-66-3	Chloroform	0.49	4.4		U
74-87-3	Chloromethane	0.46	8.9		U
110-82-7	Cyclohexane	0.48	4.4		U
124-48-1	Dibromochloromethane	0.30	4.4		U
96-12-8	1,2-Dibromo-3-chloropropane	1.1	4.4		U
106-93-4	1,2-Dibromoethane	0.38	4.4		U
95-50-1	1,2-Dichlorobenzene	0.33	4.4		U
541-73-1	1,3-Dichlorobenzene	0.75	4.4		U
106-46-7	1,4-Dichlorobenzene	0.49	4.4		U
75-71-8	Dichlorodifluoromethane	0.98	4.4		U
75-34-3	1,1-Dichloroethane	0.48	4.4		U
107-06-2	1,2-Dichloroethane	0.41	4.4		U
75-35-4	1,1-Dichloroethene	1.1	4.4		U
156-59-2	cis-1,2-Dichloroethene	1.1	8.9		U
156-60-5	trans-1,2-Dichloroethene	0.98	4.4		U
78-87-5	1,2-Dichloropropane	0.41	4.4		U
10061-01-5	cis-1,3-Dichloropropene	0.44	4.4		U
10061-02-6	trans-1,3-Dichloropropene	0.28	4.4		U
100-41-4	Ethylbenzene	0.67	4.4		U
591-78-6	2-Hexanone	2.0	4.4		U
98-82-8	Isopropylbenzene	0.78	4.4		U
79-20-9	Methyl acetate	1.4	8.9		U
75-09-2	Methylene chloride	0.55	8.9	1.8	JB
108-87-2	Methyl cyclohexane	0.27	4.4		U
1634-04-4	Methyl-tert-butyl-ether	0.28	4.4		U
108-10-1	4-Methyl-2-pentanone	0.52	4.4		U
100-42-5	Styrene	0.31	4.4		U
79-34-5	1,1,2,2-Tetrachloroethane	0.38	4.4		U
127-18-4	Tetrachloroethene	0.86	4.4		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
9-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-03

Sample wt/vol: 6.2 (g/mL) G Lab File ID: 1000603A

Level: (low/med) LOW Date Sampled: 09/26/09 16:20

% Moisture: not dec. 9 Date Analyzed: 10/04/09 19:03

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.76	4.4		U
120-82-1	1,2,4-Trichlorobenzene	0.16	4.4		U
71-55-6	1,1,1-Trichloroethane	0.80	4.4		U
79-00-5	1,1,2-Trichloroethane	0.31	4.4		U
79-01-6	Trichloroethene	0.75	4.4		U
76-13-1	Trichlorotrifluoroethane	0.49	4.4		U
75-69-4	Trichlorofluoromethane	0.84	4.4		U
75-01-4	Vinyl chloride	0.98	4.4		U
1330-20-7	Xylene(total)	0.62	4.4		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
9-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-04

Sample wt/vol: 6.7 (g/mL) G Lab File ID: 1000604A

Level: (low/med) LOW Date Sampled: 09/26/09 16:28

% Moisture: not dec. 21 Date Analyzed: 10/04/09 19:34

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	1.9	4.7		U
71-43-2	Benzene	0.44	4.7		U
75-27-4	Bromodichloromethane	0.28	9.4		U
75-25-2	Bromoform	0.94	4.7		U
74-83-9	Bromomethane	0.67	9.4		U
78-93-3	2-Butanone	1.3	4.7	9.0	
75-15-0	Carbon disulfide	1.2	4.7	4.2	J
56-23-5	Carbon tetrachloride	0.82	4.7		U
108-90-7	Chlorobenzene	0.32	4.7		U
75-00-3	Chloroethane	1.0	9.4		U
67-66-3	Chloroform	0.51	4.7		U
74-87-3	Chloromethane	0.49	9.4		U
110-82-7	Cyclohexane	0.50	4.7	0.62	J
124-48-1	Dibromochloromethane	0.32	4.7		U
96-12-8	1,2-Dibromo-3-chloropropane	1.1	4.7		U
106-93-4	1,2-Dibromoethane	0.40	4.7		U
95-50-1	1,2-Dichlorobenzene	0.35	4.7		U
541-73-1	1,3-Dichlorobenzene	0.79	4.7		U
106-46-7	1,4-Dichlorobenzene	0.51	4.7		U
75-71-8	Dichlorodifluoromethane	1.0	4.7		U
75-34-3	1,1-Dichloroethane	0.50	4.7		U
107-06-2	1,2-Dichloroethane	0.43	4.7		U
75-35-4	1,1-Dichloroethene	1.1	4.7		U
156-59-2	cis-1,2-Dichloroethene	1.1	9.4		U
156-60-5	trans-1,2-Dichloroethene	1.0	4.7		U
78-87-5	1,2-Dichloropropane	0.43	4.7		U
10061-01-5	cis-1,3-Dichloropropene	0.47	4.7		U
10061-02-6	trans-1,3-Dichloropropene	0.30	4.7		U
100-41-4	Ethylbenzene	0.70	4.7		U
591-78-6	2-Hexanone	2.2	4.7		U
98-82-8	Isopropylbenzene	0.82	4.7	0.97	J
79-20-9	Methyl acetate	1.5	9.4		U
75-09-2	Methylene chloride	0.58	9.4	1.8	JB
108-87-2	Methyl cyclohexane	0.28	4.7	1.2	J
1634-04-4	Methyl-tert-butyl-ether	0.30	4.7		U
108-10-1	4-Methyl-2-pentanone	0.54	4.7		U
100-42-5	Styrene	0.33	4.7		U
79-34-5	1,1,2,2-Tetrachloroethane	0.40	4.7		U
127-18-4	Tetrachloroethene	0.91	4.7		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
9-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-04

Sample wt/vol: 6.7 (g/mL) G Lab File ID: 1000604A

Level: (low/med) LOW Date Sampled: 09/26/09 16:28

% Moisture: not dec. 21 Date Analyzed: 10/04/09 19:34

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.80	4.7		U
120-82-1	1,2,4-Trichlorobenzene	0.17	4.7		U
71-55-6	1,1,1-Trichloroethane	0.84	4.7		U
79-00-5	1,1,2-Trichloroethane	0.33	4.7		U
79-01-6	Trichloroethene	0.80	4.7		U
76-13-1	Trichlorotrifluoroethane	0.51	4.7		U
75-69-4	Trichlorofluoromethane	0.89	4.7		U
75-01-4	Vinyl chloride	1.0	4.7		U
1330-20-7	Xylene(total)	0.66	4.7		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
0-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-05

Sample wt/vol: 5.3 (g/mL) G Lab File ID: 1000605A

Level: (low/med) LOW Date Sampled: 09/26/09 18:36

% Moisture: not dec. 10 Date Analyzed: 10/04/09 20:05

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.1	5.3		U
71-43-2	Benzene	0.50	5.3	0.56	J
75-27-4	Bromodichloromethane	0.32	10		U
75-25-2	Bromoform	1.0	5.3		U
74-83-9	Bromomethane	0.76	10		U
78-93-3	2-Butanone	1.5	5.3		U
75-15-0	Carbon disulfide	1.4	5.3		U
56-23-5	Carbon tetrachloride	0.93	5.3		U
108-90-7	Chlorobenzene	0.36	5.3		U
75-00-3	Chloroethane	1.2	10		U
67-66-3	Chloroform	0.58	5.3		U
74-87-3	Chloromethane	0.55	10		U
110-82-7	Cyclohexane	0.57	5.3	2.9	J
124-48-1	Dibromochloromethane	0.36	5.3		U
96-12-8	1,2-Dibromo-3-chloropropane	1.3	5.3		U
106-93-4	1,2-Dibromoethane	0.45	5.3		U
95-50-1	1,2-Dichlorobenzene	0.39	5.3		U
541-73-1	1,3-Dichlorobenzene	0.89	5.3		U
106-46-7	1,4-Dichlorobenzene	0.58	5.3		U
75-71-8	Dichlorodifluoromethane	1.2	5.3		U
75-34-3	1,1-Dichloroethane	0.57	5.3		U
107-06-2	1,2-Dichloroethane	0.49	5.3		U
75-35-4	1,1-Dichloroethene	1.3	5.3		U
156-59-2	cis-1,2-Dichloroethene	1.3	10		U
156-60-5	trans-1,2-Dichloroethene	1.2	5.3		U
78-87-5	1,2-Dichloropropane	0.49	5.3		U
10061-01-5	cis-1,3-Dichloropropene	0.53	5.3		U
10061-02-6	trans-1,3-Dichloropropene	0.34	5.3		U
100-41-4	Ethylbenzene	0.79	5.3		U
591-78-6	2-Hexanone	2.4	5.3		U
98-82-8	Isopropylbenzene	0.93	5.3		U
79-20-9	Methyl acetate	1.7	10		U
75-09-2	Methylene chloride	0.66	10	2.1	JB
108-87-2	Methyl cyclohexane	0.32	5.3	3.2	J
1634-04-4	Methyl-tert-butyl-ether	0.34	5.3		U
108-10-1	4-Methyl-2-pentanone	0.61	5.3		U
100-42-5	Styrene	0.37	5.3		U
79-34-5	1,1,2,2-Tetrachloroethane	0.45	5.3		U
127-18-4	Tetrachloroethene	1.0	5.3		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
0-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-05

Sample wt/vol: 5.3 (g/mL) G Lab File ID: 1000605A

Level: (low/med) LOW Date Sampled: 09/26/09 18:36

% Moisture: not dec. 10 Date Analyzed: 10/04/09 20:05

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.91	5.3		U
120-82-1	1,2,4-Trichlorobenzene	0.19	5.3		U
71-55-6	1,1,1-Trichloroethane	0.95	5.3		U
79-00-5	1,1,2-Trichloroethane	0.37	5.3		U
79-01-6	Trichloroethene	0.90	5.3		U
76-13-1	Trichlorotrifluoroethane	0.58	5.3		U
75-69-4	Trichlorofluoromethane	1.0	5.3		U
75-01-4	Vinyl chloride	1.2	5.3		U
1330-20-7	Xylene(total)	0.74	5.3		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
0-SO-0406

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-06

Sample wt/vol: 6.1 (g/mL) G Lab File ID: 1000606A

Level: (low/med) LOW Date Sampled: 09/26/09 18:40

% Moisture: not dec. 17 Date Analyzed: 10/05/09 00:14

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.0	4.9		U
71-43-2	Benzene	0.46	4.9	1.2	J
75-27-4	Bromodichloromethane	0.30	9.8		U
75-25-2	Bromoform	0.98	4.9		U
74-83-9	Bromomethane	0.71	9.8		U
78-93-3	2-Butanone	1.4	4.9		U
75-15-0	Carbon disulfide	1.3	4.9	1.3	J
56-23-5	Carbon tetrachloride	0.86	4.9		U
108-90-7	Chlorobenzene	0.33	4.9		U
75-00-3	Chloroethane	1.1	9.8		U
67-66-3	Chloroform	0.54	4.9		U
74-87-3	Chloromethane	0.51	9.8		U
110-82-7	Cyclohexane	0.53	4.9	3.0	J
124-48-1	Dibromochloromethane	0.33	4.9		U
96-12-8	1,2-Dibromo-3-chloropropane	1.2	4.9		U
106-93-4	1,2-Dibromoethane	0.42	4.9		U
95-50-1	1,2-Dichlorobenzene	0.36	4.9		U
541-73-1	1,3-Dichlorobenzene	0.83	4.9		U
106-46-7	1,4-Dichlorobenzene	0.54	4.9		U
75-71-8	Dichlorodifluoromethane	1.1	4.9		U
75-34-3	1,1-Dichloroethane	0.53	4.9		U
107-06-2	1,2-Dichloroethane	0.45	4.9		U
75-35-4	1,1-Dichloroethene	1.2	4.9		U
156-59-2	cis-1,2-Dichloroethene	1.2	9.8	1.5	J
156-60-5	trans-1,2-Dichloroethene	1.1	4.9		U
78-87-5	1,2-Dichloropropane	0.45	4.9		U
10061-01-5	cis-1,3-Dichloropropene	0.49	4.9		U
10061-02-6	trans-1,3-Dichloropropene	0.31	4.9		U
100-41-4	Ethylbenzene	0.74	4.9		U
591-78-6	2-Hexanone	2.3	4.9		U
98-82-8	Isopropylbenzene	0.86	4.9		U
79-20-9	Methyl acetate	1.6	9.8		U
75-09-2	Methylene chloride	0.61	9.8	1.8	JB
108-87-2	Methyl cyclohexane	0.30	4.9	5.0	
1634-04-4	Methyl-tert-butyl-ether	0.31	4.9		U
108-10-1	4-Methyl-2-pentanone	0.57	4.9		U
100-42-5	Styrene	0.34	4.9		U
79-34-5	1,1,2,2-Tetrachloroethane	0.42	4.9		U
127-18-4	Tetrachloroethene	0.95	4.9		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
0-SO-0406

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-06

Sample wt/vol: 6.1 (g/mL) G Lab File ID: 1000606A

Level: (low/med) LOW Date Sampled: 09/26/09 18:40

% Moisture: not dec. 17 Date Analyzed: 10/05/09 00:14

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.84	4.9	1.6	J
120-82-1	1,2,4-Trichlorobenzene	0.18	4.9		U
71-55-6	1,1,1-Trichloroethane	0.88	4.9		U
79-00-5	1,1,2-Trichloroethane	0.34	4.9		U
79-01-6	Trichloroethene	0.84	4.9		U
76-13-1	Trichlorotrifluoroethane	0.54	4.9		U
75-69-4	Trichlorofluoromethane	0.93	4.9		U
75-01-4	Vinyl chloride	1.1	4.9		U
1330-20-7	Xylene(total)	0.69	4.9		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
1-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-07

Sample wt/vol: 5.2 (g/mL) G Lab File ID: 1000607A

Level: (low/med) LOW Date Sampled: 09/26/09 18:10

% Moisture: not dec. 8 Date Analyzed: 10/05/09 00:45

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.1	5.2		U
71-43-2	Benzene	0.49	5.2		U
75-27-4	Bromodichloromethane	0.31	10		U
75-25-2	Bromoform	1.0	5.2		U
74-83-9	Bromomethane	0.75	10		U
78-93-3	2-Butanone	1.4	5.2		U
75-15-0	Carbon disulfide	1.4	5.2		U
56-23-5	Carbon tetrachloride	0.92	5.2		U
108-90-7	Chlorobenzene	0.35	5.2		U
75-00-3	Chloroethane	1.1	10		U
67-66-3	Chloroform	0.57	5.2		U
74-87-3	Chloromethane	0.54	10		U
110-82-7	Cyclohexane	0.56	5.2		U
124-48-1	Dibromochloromethane	0.35	5.2		U
96-12-8	1,2-Dibromo-3-chloropropane	1.2	5.2		U
106-93-4	1,2-Dibromoethane	0.45	5.2		U
95-50-1	1,2-Dichlorobenzene	0.38	5.2		U
541-73-1	1,3-Dichlorobenzene	0.87	5.2		U
106-46-7	1,4-Dichlorobenzene	0.57	5.2		U
75-71-8	Dichlorodifluoromethane	1.1	5.2		U
75-34-3	1,1-Dichloroethane	0.56	5.2		U
107-06-2	1,2-Dichloroethane	0.48	5.2		U
75-35-4	1,1-Dichloroethene	1.2	5.2		U
156-59-2	cis-1,2-Dichloroethene	1.2	10		U
156-60-5	trans-1,2-Dichloroethene	1.1	5.2		U
78-87-5	1,2-Dichloropropane	0.48	5.2		U
10061-01-5	cis-1,3-Dichloropropene	0.52	5.2		U
10061-02-6	trans-1,3-Dichloropropene	0.33	5.2		U
100-41-4	Ethylbenzene	0.78	5.2	0.90	J
591-78-6	2-Hexanone	2.4	5.2		U
98-82-8	Isopropylbenzene	0.92	5.2		U
79-20-9	Methyl acetate	1.7	10		U
75-09-2	Methylene chloride	0.64	10	14	B
108-87-2	Methyl cyclohexane	0.31	5.2		U
1634-04-4	Methyl-tert-butyl-ether	0.33	5.2		U
108-10-1	4-Methyl-2-pentanone	0.60	5.2		U
100-42-5	Styrene	0.36	5.2		U
79-34-5	1,1,2,2-Tetrachloroethane	0.45	5.2		U
127-18-4	Tetrachloroethene	1.0	5.2		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
1-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-07

Sample wt/vol: 5.2 (g/mL) G Lab File ID: 1000607A

Level: (low/med) LOW Date Sampled: 09/26/09 18:10

% Moisture: not dec. 8 Date Analyzed: 10/05/09 00:45

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.90	5.2		U
120-82-1	1,2,4-Trichlorobenzene	0.19	5.2		U
71-55-6	1,1,1-Trichloroethane	0.94	5.2		U
79-00-5	1,1,2-Trichloroethane	0.36	5.2		U
79-01-6	Trichloroethene	0.88	5.2		U
76-13-1	Trichlorotrifluoroethane	0.57	5.2		U
75-69-4	Trichlorofluoromethane	0.99	5.2		U
75-01-4	Vinyl chloride	1.1	5.2		U
1330-20-7	Xylene(total)	0.73	5.2	1.6	J

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
1-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-08

Sample wt/vol: 5.3 (g/mL) G Lab File ID: 1000608A

Level: (low/med) LOW Date Sampled: 09/26/09 18:12

% Moisture: not dec. 16 Date Analyzed: 10/04/09 20:36

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.2	5.6		U
71-43-2	Benzene	0.52	5.6		U
75-27-4	Bromodichloromethane	0.33	11		U
75-25-2	Bromoform	1.1	5.6		U
74-83-9	Bromomethane	0.80	11		U
78-93-3	2-Butanone	1.6	5.6		U
75-15-0	Carbon disulfide	1.4	5.6	4.6	J
56-23-5	Carbon tetrachloride	0.98	5.6		U
108-90-7	Chlorobenzene	0.38	5.6		U
75-00-3	Chloroethane	1.2	11		U
67-66-3	Chloroform	0.61	5.6		U
74-87-3	Chloromethane	0.58	11		U
110-82-7	Cyclohexane	0.60	5.6	1.0	J
124-48-1	Dibromochloromethane	0.38	5.6		U
96-12-8	1,2-Dibromo-3-chloropropane	1.3	5.6		U
106-93-4	1,2-Dibromoethane	0.48	5.6		U
95-50-1	1,2-Dichlorobenzene	0.41	5.6		U
541-73-1	1,3-Dichlorobenzene	0.94	5.6		U
106-46-7	1,4-Dichlorobenzene	0.61	5.6		U
75-71-8	Dichlorodifluoromethane	1.2	5.6		U
75-34-3	1,1-Dichloroethane	0.60	5.6		U
107-06-2	1,2-Dichloroethane	0.51	5.6		U
75-35-4	1,1-Dichloroethene	1.3	5.6		U
156-59-2	cis-1,2-Dichloroethene	1.3	11		U
156-60-5	trans-1,2-Dichloroethene	1.2	5.6		U
78-87-5	1,2-Dichloropropane	0.51	5.6		U
10061-01-5	cis-1,3-Dichloropropene	0.56	5.6		U
10061-02-6	trans-1,3-Dichloropropene	0.36	5.6		U
100-41-4	Ethylbenzene	0.84	5.6		U
591-78-6	2-Hexanone	2.6	5.6		U
98-82-8	Isopropylbenzene	0.98	5.6		U
79-20-9	Methyl acetate	1.8	11		U
75-09-2	Methylene chloride	0.69	11	1.9	JB
108-87-2	Methyl cyclohexane	0.33	5.6	1.5	J
1634-04-4	Methyl-tert-butyl-ether	0.36	5.6		U
108-10-1	4-Methyl-2-pentanone	0.64	5.6		U
100-42-5	Styrene	0.39	5.6		U
79-34-5	1,1,2,2-Tetrachloroethane	0.48	5.6		U
127-18-4	Tetrachloroethene	1.1	5.6		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
1-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-08

Sample wt/vol: 5.3 (g/mL) G Lab File ID: 1000608A

Level: (low/med) LOW Date Sampled: 09/26/09 18:12

% Moisture: not dec. 16 Date Analyzed: 10/04/09 20:36

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.96	5.6		U
120-82-1	1,2,4-Trichlorobenzene	0.20	5.6		U
71-55-6	1,1,1-Trichloroethane	1.0	5.6		U
79-00-5	1,1,2-Trichloroethane	0.39	5.6		U
79-01-6	Trichloroethene	0.95	5.6		U
76-13-1	Trichlorotrifluoroethane	0.61	5.6		U
75-69-4	Trichlorofluoromethane	1.0	5.6		U
75-01-4	Vinyl chloride	1.2	5.6		U
1330-20-7	Xylene(total)	0.78	5.6		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
2-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-09

Sample wt/vol: 5.2 (g/mL) G Lab File ID: 1000609A

Level: (low/med) LOW Date Sampled: 09/26/09 14:00

% Moisture: not dec. 15 Date Analyzed: 10/04/09 21:07

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.2	5.6		U
71-43-2	Benzene	0.53	5.6	0.63	J
75-27-4	Bromodichloromethane	0.34	11		U
75-25-2	Bromoform	1.1	5.6		U
74-83-9	Bromomethane	0.81	11		U
78-93-3	2-Butanone	1.6	5.6		U
75-15-0	Carbon disulfide	1.5	5.6	2.1	J
56-23-5	Carbon tetrachloride	0.99	5.6		U
108-90-7	Chlorobenzene	0.38	5.6		U
75-00-3	Chloroethane	1.2	11		U
67-66-3	Chloroform	0.62	5.6		U
74-87-3	Chloromethane	0.58	11		U
110-82-7	Cyclohexane	0.61	5.6	2.3	J
124-48-1	Dibromochloromethane	0.38	5.6		U
96-12-8	1,2-Dibromo-3-chloropropane	1.3	5.6		U
106-93-4	1,2-Dibromoethane	0.48	5.6		U
95-50-1	1,2-Dichlorobenzene	0.42	5.6		U
541-73-1	1,3-Dichlorobenzene	0.94	5.6		U
106-46-7	1,4-Dichlorobenzene	0.62	5.6		U
75-71-8	Dichlorodifluoromethane	1.2	5.6		U
75-34-3	1,1-Dichloroethane	0.61	5.6		U
107-06-2	1,2-Dichloroethane	0.52	5.6		U
75-35-4	1,1-Dichloroethene	1.3	5.6		U
156-59-2	cis-1,2-Dichloroethene	1.3	11		U
156-60-5	trans-1,2-Dichloroethene	1.2	5.6		U
78-87-5	1,2-Dichloropropane	0.52	5.6		U
10061-01-5	cis-1,3-Dichloropropene	0.56	5.6		U
10061-02-6	trans-1,3-Dichloropropene	0.36	5.6		U
100-41-4	Ethylbenzene	0.84	5.6		U
591-78-6	2-Hexanone	2.6	5.6		U
98-82-8	Isopropylbenzene	0.99	5.6		U
79-20-9	Methyl acetate	1.8	11		U
75-09-2	Methylene chloride	0.70	11	2.3	JB
108-87-2	Methyl cyclohexane	0.34	5.6	3.7	J
1634-04-4	Methyl-tert-butyl-ether	0.36	5.6		U
108-10-1	4-Methyl-2-pentanone	0.65	5.6		U
100-42-5	Styrene	0.39	5.6		U
79-34-5	1,1,2,2-Tetrachloroethane	0.48	5.6		U
127-18-4	Tetrachloroethene	1.1	5.6		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
2-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-09

Sample wt/vol: 5.2 (g/mL) G Lab File ID: 1000609A

Level: (low/med) LOW Date Sampled: 09/26/09 14:00

% Moisture: not dec. 15 Date Analyzed: 10/04/09 21:07

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.97	5.6		U
120-82-1	1,2,4-Trichlorobenzene	0.20	5.6		U
71-55-6	1,1,1-Trichloroethane	1.0	5.6		U
79-00-5	1,1,2-Trichloroethane	0.39	5.6		U
79-01-6	Trichloroethene	0.96	5.6		U
76-13-1	Trichlorotrifluoroethane	0.62	5.6		U
75-69-4	Trichlorofluoromethane	1.1	5.6		U
75-01-4	Vinyl chloride	1.2	5.6		U
1330-20-7	Xylene(total)	0.79	5.6		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
2-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-10

Sample wt/vol: 4.2 (g/mL) G Lab File ID: 1000610A

Level: (low/med) LOW Date Sampled: 09/26/09 14:10

% Moisture: not dec. 23 Date Analyzed: 10/04/09 21:38

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	3.1	7.7		U
71-43-2	Benzene	0.72	7.7		U
75-27-4	Bromodichloromethane	0.46	15		U
75-25-2	Bromoform	1.5	7.7		U
74-83-9	Bromomethane	1.1	15		U
78-93-3	2-Butanone	2.1	7.7		U
75-15-0	Carbon disulfide	2.0	7.7	2.0	J
56-23-5	Carbon tetrachloride	1.4	7.7		U
108-90-7	Chlorobenzene	0.52	7.7		U
75-00-3	Chloroethane	1.7	15		U
67-66-3	Chloroform	0.84	7.7		U
74-87-3	Chloromethane	0.80	15		U
110-82-7	Cyclohexane	0.83	7.7	2.6	J
124-48-1	Dibromochloromethane	0.52	7.7		U
96-12-8	1,2-Dibromo-3-chloropropane	1.8	7.7		U
106-93-4	1,2-Dibromoethane	0.66	7.7		U
95-50-1	1,2-Dichlorobenzene	0.57	7.7		U
541-73-1	1,3-Dichlorobenzene	1.3	7.7		U
106-46-7	1,4-Dichlorobenzene	0.84	7.7		U
75-71-8	Dichlorodifluoromethane	1.7	7.7		U
75-34-3	1,1-Dichloroethane	0.83	7.7		U
107-06-2	1,2-Dichloroethane	0.71	7.7		U
75-35-4	1,1-Dichloroethene	1.8	7.7		U
156-59-2	cis-1,2-Dichloroethene	1.8	15		U
156-60-5	trans-1,2-Dichloroethene	1.7	7.7		U
78-87-5	1,2-Dichloropropane	0.71	7.7		U
10061-01-5	cis-1,3-Dichloropropene	0.77	7.7		U
10061-02-6	trans-1,3-Dichloropropene	0.49	7.7		U
100-41-4	Ethylbenzene	1.2	7.7		U
591-78-6	2-Hexanone	3.5	7.7		U
98-82-8	Isopropylbenzene	1.4	7.7		U
79-20-9	Methyl acetate	2.4	15		U
75-09-2	Methylene chloride	0.95	15	2.6	JB
108-87-2	Methyl cyclohexane	0.46	7.7	4.8	J
1634-04-4	Methyl-tert-butyl-ether	0.49	7.7		U
108-10-1	4-Methyl-2-pentanone	0.89	7.7		U
100-42-5	Styrene	0.54	7.7		U
79-34-5	1,1,2,2-Tetrachloroethane	0.66	7.7		U
127-18-4	Tetrachloroethene	1.5	7.7		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
2-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-10

Sample wt/vol: 4.2 (g/mL) G Lab File ID: 1000610A

Level: (low/med) LOW Date Sampled: 09/26/09 14:10

% Moisture: not dec. 23 Date Analyzed: 10/04/09 21:38

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	1.3	7.7		U
120-82-1	1,2,4-Trichlorobenzene	0.28	7.7		U
71-55-6	1,1,1-Trichloroethane	1.4	7.7		U
79-00-5	1,1,2-Trichloroethane	0.54	7.7		U
79-01-6	Trichloroethene	1.3	7.7		U
76-13-1	Trichlorotrifluoroethane	0.84	7.7		U
75-69-4	Trichlorofluoromethane	1.4	7.7		U
75-01-4	Vinyl chloride	1.7	7.7		U
1330-20-7	Xylene(total)	1.1	7.7		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
3-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-27

Sample wt/vol: 4.9 (g/mL) G Lab File ID: 1000627A

Level: (low/med) LOW Date Sampled: 09/27/09 09:00

% Moisture: not dec. 22 Date Analyzed: 10/06/09 02:29

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.6	6.5	54	
71-43-2	Benzene	0.61	6.5		U
75-27-4	Bromodichloromethane	0.39	13		U
75-25-2	Bromoform	1.3	6.5		U
74-83-9	Bromomethane	0.94	13		U
78-93-3	2-Butanone	1.8	6.5		U
75-15-0	Carbon disulfide	1.7	6.5		U
56-23-5	Carbon tetrachloride	1.1	6.5		U
108-90-7	Chlorobenzene	0.44	6.5		U
75-00-3	Chloroethane	1.4	13		U
67-66-3	Chloroform	0.72	6.5		U
74-87-3	Chloromethane	0.68	13		U
110-82-7	Cyclohexane	0.70	6.5		U
124-48-1	Dibromochloromethane	0.44	6.5		U
96-12-8	1,2-Dibromo-3-chloropropane	1.6	6.5		U
106-93-4	1,2-Dibromoethane	0.56	6.5		U
95-50-1	1,2-Dichlorobenzene	0.48	6.5		U
541-73-1	1,3-Dichlorobenzene	1.1	6.5		U
106-46-7	1,4-Dichlorobenzene	0.72	6.5		U
75-71-8	Dichlorodifluoromethane	1.4	6.5		U
75-34-3	1,1-Dichloroethane	0.70	6.5		U
107-06-2	1,2-Dichloroethane	0.60	6.5		U
75-35-4	1,1-Dichloroethene	1.6	6.5		U
156-59-2	cis-1,2-Dichloroethene	1.6	13		U
156-60-5	trans-1,2-Dichloroethene	1.4	6.5		U
78-87-5	1,2-Dichloropropane	0.60	6.5		U
10061-01-5	cis-1,3-Dichloropropene	0.65	6.5		U
10061-02-6	trans-1,3-Dichloropropene	0.42	6.5		U
100-41-4	Ethylbenzene	0.98	6.5		U
591-78-6	2-Hexanone	3.0	6.5		U
98-82-8	Isopropylbenzene	1.1	6.5		U
79-20-9	Methyl acetate	2.1	13		U
75-09-2	Methylene chloride	0.81	13	1.5	JB
108-87-2	Methyl cyclohexane	0.39	6.5	0.88	J
1634-04-4	Methyl-tert-butyl-ether	0.42	6.5		U
108-10-1	4-Methyl-2-pentanone	0.76	6.5		U
100-42-5	Styrene	0.46	6.5		U
79-34-5	1,1,2,2-Tetrachloroethane	0.56	6.5		U
127-18-4	Tetrachloroethene	1.3	6.5		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
3-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-27

Sample wt/vol: 4.9 (g/mL) G Lab File ID: 1000627A

Level: (low/med) LOW Date Sampled: 09/27/09 09:00

% Moisture: not dec. 22 Date Analyzed: 10/06/09 02:29

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	1.1	6.5		U
120-82-1	1,2,4-Trichlorobenzene	0.23	6.5		U
71-55-6	1,1,1-Trichloroethane	1.2	6.5		U
79-00-5	1,1,2-Trichloroethane	0.46	6.5		U
79-01-6	Trichloroethene	1.1	6.5		U
76-13-1	Trichlorotrifluoroethane	0.72	6.5		U
75-69-4	Trichlorofluoromethane	1.2	6.5		U
75-01-4	Vinyl chloride	1.4	6.5		U
1330-20-7	Xylene(total)	0.91	6.5		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB13
-SO-0001RE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-27RE

Sample wt/vol: 4.6 (g/mL) G Lab File ID: 1000627B

Level: (low/med) LOW Date Sampled: 09/27/09 09:00

% Moisture: not dec. 22 Date Analyzed: 10/08/09 11:06

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.8	7.1	38	
71-43-2	Benzene	0.66	7.1		U
75-27-4	Bromodichloromethane	0.42	14		U
75-25-2	Bromoform	1.4	7.1		U
74-83-9	Bromomethane	1.0	14		U
78-93-3	2-Butanone	2.0	7.1		U
75-15-0	Carbon disulfide	1.8	7.1		U
56-23-5	Carbon tetrachloride	1.2	7.1		U
108-90-7	Chlorobenzene	0.48	7.1		U
75-00-3	Chloroethane	1.6	14		U
67-66-3	Chloroform	0.78	7.1		U
74-87-3	Chloromethane	0.73	14		U
110-82-7	Cyclohexane	0.76	7.1		U
124-48-1	Dibromochloromethane	0.48	7.1		U
96-12-8	1,2-Dibromo-3-chloropropane	1.7	7.1		U
106-93-4	1,2-Dibromoethane	0.61	7.1		U
95-50-1	1,2-Dichlorobenzene	0.52	7.1		U
541-73-1	1,3-Dichlorobenzene	1.2	7.1		U
106-46-7	1,4-Dichlorobenzene	0.78	7.1		U
75-71-8	Dichlorodifluoromethane	1.6	7.1		U
75-34-3	1,1-Dichloroethane	0.76	7.1		U
107-06-2	1,2-Dichloroethane	0.65	7.1		U
75-35-4	1,1-Dichloroethene	1.7	7.1		U
156-59-2	cis-1,2-Dichloroethene	1.7	14		U
156-60-5	trans-1,2-Dichloroethene	1.6	7.1		U
78-87-5	1,2-Dichloropropane	0.65	7.1		U
10061-01-5	cis-1,3-Dichloropropene	0.71	7.1		U
10061-02-6	trans-1,3-Dichloropropene	0.45	7.1		U
100-41-4	Ethylbenzene	1.0	7.1		U
591-78-6	2-Hexanone	3.2	7.1		U
98-82-8	Isopropylbenzene	1.2	7.1		U
79-20-9	Methyl acetate	2.2	14		U
75-09-2	Methylene chloride	0.88	14	3.1	JB
108-87-2	Methyl cyclohexane	0.42	7.1	0.87	J
1634-04-4	Methyl-tert-butyl-ether	0.45	7.1		U
108-10-1	4-Methyl-2-pentanone	0.82	7.1		U
100-42-5	Styrene	0.49	7.1		U
79-34-5	1,1,2,2-Tetrachloroethane	0.61	7.1		U
127-18-4	Tetrachloroethene	1.4	7.1		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB13
-SO-0001RE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-27RE

Sample wt/vol: 4.6 (g/mL) G Lab File ID: 1000627B

Level: (low/med) LOW Date Sampled: 09/27/09 09:00

% Moisture: not dec. 22 Date Analyzed: 10/08/09 11:06

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	1.2	7.1		U
120-82-1	1,2,4-Trichlorobenzene	0.25	7.1		U
71-55-6	1,1,1-Trichloroethane	1.3	7.1		U
79-00-5	1,1,2-Trichloroethane	0.49	7.1		U
79-01-6	Trichloroethene	1.2	7.1		U
76-13-1	Trichlorotrifluoroethane	0.78	7.1		U
75-69-4	Trichlorofluoromethane	1.3	7.1		U
75-01-4	Vinyl chloride	1.6	7.1		U
1330-20-7	Xylene(total)	0.99	7.1		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
3-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-28

Sample wt/vol: 7.1 (g/mL) G Lab File ID: 1000628A

Level: (low/med) LOW Date Sampled: 09/27/09 09:10

% Moisture: not dec. 16 Date Analyzed: 10/06/09 03:00

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	1.7	4.2		U
71-43-2	Benzene	0.39	4.2	1.6	J
75-27-4	Bromodichloromethane	0.25	8.4		U
75-25-2	Bromoform	0.84	4.2		U
74-83-9	Bromomethane	0.60	8.4		U
78-93-3	2-Butanone	1.2	4.2		U
75-15-0	Carbon disulfide	1.1	4.2	6.3	
56-23-5	Carbon tetrachloride	0.74	4.2		U
108-90-7	Chlorobenzene	0.28	4.2		U
75-00-3	Chloroethane	0.92	8.4		U
67-66-3	Chloroform	0.46	4.2		U
74-87-3	Chloromethane	0.44	8.4		U
110-82-7	Cyclohexane	0.45	4.2	2.5	J
124-48-1	Dibromochloromethane	0.28	4.2		U
96-12-8	1,2-Dibromo-3-chloropropane	1.0	4.2		U
106-93-4	1,2-Dibromoethane	0.36	4.2		U
95-50-1	1,2-Dichlorobenzene	0.31	4.2		U
541-73-1	1,3-Dichlorobenzene	0.70	4.2		U
106-46-7	1,4-Dichlorobenzene	0.46	4.2		U
75-71-8	Dichlorodifluoromethane	0.92	4.2		U
75-34-3	1,1-Dichloroethane	0.45	4.2		U
107-06-2	1,2-Dichloroethane	0.39	4.2		U
75-35-4	1,1-Dichloroethene	1.0	4.2		U
156-59-2	cis-1,2-Dichloroethene	1.0	8.4		U
156-60-5	trans-1,2-Dichloroethene	0.92	4.2		U
78-87-5	1,2-Dichloropropane	0.39	4.2		U
10061-01-5	cis-1,3-Dichloropropene	0.42	4.2		U
10061-02-6	trans-1,3-Dichloropropene	0.27	4.2		U
100-41-4	Ethylbenzene	0.63	4.2	0.70	J
591-78-6	2-Hexanone	1.9	4.2		U
98-82-8	Isopropylbenzene	0.74	4.2		U
79-20-9	Methyl acetate	1.3	8.4		U
75-09-2	Methylene chloride	0.52	8.4	0.86	JB
108-87-2	Methyl cyclohexane	0.25	4.2	4.6	
1634-04-4	Methyl-tert-butyl-ether	0.27	4.2		U
108-10-1	4-Methyl-2-pentanone	0.49	4.2		U
100-42-5	Styrene	0.29	4.2		U
79-34-5	1,1,2,2-Tetrachloroethane	0.36	4.2		U
127-18-4	Tetrachloroethene	0.81	4.2		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
3-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-28

Sample wt/vol: 7.1 (g/mL) G Lab File ID: 1000628A

Level: (low/med) LOW Date Sampled: 09/27/09 09:10

% Moisture: not dec. 16 Date Analyzed: 10/06/09 03:00

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.72	4.2	2.7	J
120-82-1	1,2,4-Trichlorobenzene	0.15	4.2		U
71-55-6	1,1,1-Trichloroethane	0.76	4.2		U
79-00-5	1,1,2-Trichloroethane	0.29	4.2		U
79-01-6	Trichloroethene	0.71	4.2		U
76-13-1	Trichlorotrifluoroethane	0.46	4.2		U
75-69-4	Trichlorofluoromethane	0.80	4.2		U
75-01-4	Vinyl chloride	0.92	4.2		U
1330-20-7	Xylene(total)	0.59	4.2		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
4-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-29

Sample wt/vol: 4.5 (g/mL) G Lab File ID: 1000629A

Level: (low/med) LOW Date Sampled: 09/27/09 09:30

% Moisture: not dec. 18 Date Analyzed: 10/05/09 22:20

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.7	6.8		U
71-43-2	Benzene	0.64	6.8		U
75-27-4	Bromodichloromethane	0.41	14		U
75-25-2	Bromoform	1.4	6.8		U
74-83-9	Bromomethane	0.99	14		U
78-93-3	2-Butanone	1.9	6.8		U
75-15-0	Carbon disulfide	1.8	6.8	6.4	J
56-23-5	Carbon tetrachloride	1.2	6.8		U
108-90-7	Chlorobenzene	0.46	6.8		U
75-00-3	Chloroethane	1.5	14		U
67-66-3	Chloroform	0.75	6.8		U
74-87-3	Chloromethane	0.71	14		U
110-82-7	Cyclohexane	0.74	6.8		U
124-48-1	Dibromochloromethane	0.46	6.8		U
96-12-8	1,2-Dibromo-3-chloropropane	1.6	6.8		U
106-93-4	1,2-Dibromoethane	0.59	6.8		U
95-50-1	1,2-Dichlorobenzene	0.51	6.8		U
541-73-1	1,3-Dichlorobenzene	1.2	6.8		U
106-46-7	1,4-Dichlorobenzene	0.75	6.8		U
75-71-8	Dichlorodifluoromethane	1.5	6.8		U
75-34-3	1,1-Dichloroethane	0.74	6.8		U
107-06-2	1,2-Dichloroethane	0.63	6.8		U
75-35-4	1,1-Dichloroethene	1.6	6.8		U
156-59-2	cis-1,2-Dichloroethene	1.6	14		U
156-60-5	trans-1,2-Dichloroethene	1.5	6.8		U
78-87-5	1,2-Dichloropropane	0.63	6.8		U
10061-01-5	cis-1,3-Dichloropropene	0.68	6.8		U
10061-02-6	trans-1,3-Dichloropropene	0.44	6.8		U
100-41-4	Ethylbenzene	1.0	6.8		U
591-78-6	2-Hexanone	3.2	6.8		U
98-82-8	Isopropylbenzene	1.2	6.8		U
79-20-9	Methyl acetate	2.2	14		U
75-09-2	Methylene chloride	0.85	14	1.5	JB
108-87-2	Methyl cyclohexane	0.41	6.8	0.56	J
1634-04-4	Methyl-tert-butyl-ether	0.44	6.8		U
108-10-1	4-Methyl-2-pentanone	0.79	6.8		U
100-42-5	Styrene	0.48	6.8		U
79-34-5	1,1,2,2-Tetrachloroethane	0.59	6.8		U
127-18-4	Tetrachloroethene	1.3	6.8		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
4-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-29

Sample wt/vol: 4.5 (g/mL) G Lab File ID: 1000629A

Level: (low/med) LOW Date Sampled: 09/27/09 09:30

% Moisture: not dec. 18 Date Analyzed: 10/05/09 22:20

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	1.2	6.8		U
120-82-1	1,2,4-Trichlorobenzene	0.25	6.8		U
71-55-6	1,1,1-Trichloroethane	1.2	6.8		U
79-00-5	1,1,2-Trichloroethane	0.48	6.8		U
79-01-6	Trichloroethene	1.2	6.8		U
76-13-1	Trichlorotrifluoroethane	0.75	6.8		U
75-69-4	Trichlorofluoromethane	1.3	6.8		U
75-01-4	Vinyl chloride	1.5	6.8		U
1330-20-7	Xylene(total)	0.96	6.8		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
4-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-30

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1000630A

Level: (low/med) LOW Date Sampled: 09/27/09 09:40

% Moisture: not dec. 25 Date Analyzed: 10/06/09 03:31

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.7	6.7	58	
71-43-2	Benzene	0.63	6.7		U
75-27-4	Bromodichloromethane	0.40	13		U
75-25-2	Bromoform	1.3	6.7		U
74-83-9	Bromomethane	0.96	13		U
78-93-3	2-Butanone	1.9	6.7	11	
75-15-0	Carbon disulfide	1.7	6.7	3.2	J
56-23-5	Carbon tetrachloride	1.2	6.7		U
108-90-7	Chlorobenzene	0.45	6.7		U
75-00-3	Chloroethane	1.5	13		U
67-66-3	Chloroform	0.73	6.7		U
74-87-3	Chloromethane	0.69	13		U
110-82-7	Cyclohexane	0.72	6.7		U
124-48-1	Dibromochloromethane	0.45	6.7		U
96-12-8	1,2-Dibromo-3-chloropropane	1.6	6.7		U
106-93-4	1,2-Dibromoethane	0.57	6.7		U
95-50-1	1,2-Dichlorobenzene	0.49	6.7		U
541-73-1	1,3-Dichlorobenzene	1.1	6.7		U
106-46-7	1,4-Dichlorobenzene	0.73	6.7		U
75-71-8	Dichlorodifluoromethane	1.5	6.7		U
75-34-3	1,1-Dichloroethane	0.72	6.7		U
107-06-2	1,2-Dichloroethane	0.61	6.7		U
75-35-4	1,1-Dichloroethene	1.6	6.7		U
156-59-2	cis-1,2-Dichloroethene	1.6	13		U
156-60-5	trans-1,2-Dichloroethene	1.5	6.7		U
78-87-5	1,2-Dichloropropane	0.61	6.7		U
10061-01-5	cis-1,3-Dichloropropene	0.67	6.7		U
10061-02-6	trans-1,3-Dichloropropene	0.43	6.7		U
100-41-4	Ethylbenzene	1.0	6.7		U
591-78-6	2-Hexanone	3.1	6.7		U
98-82-8	Isopropylbenzene	1.2	6.7		U
79-20-9	Methyl acetate	2.1	13		U
75-09-2	Methylene chloride	0.83	13	1.7	JB
108-87-2	Methyl cyclohexane	0.40	6.7		U
1634-04-4	Methyl-tert-butyl-ether	0.43	6.7		U
108-10-1	4-Methyl-2-pentanone	0.77	6.7		U
100-42-5	Styrene	0.47	6.7		U
79-34-5	1,1,2,2-Tetrachloroethane	0.57	6.7		U
127-18-4	Tetrachloroethene	1.3	6.7		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
4-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-30

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 1000630A

Level: (low/med) LOW Date Sampled: 09/27/09 09:40

% Moisture: not dec. 25 Date Analyzed: 10/06/09 03:31

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	1.1	6.7		U
120-82-1	1,2,4-Trichlorobenzene	0.24	6.7		U
71-55-6	1,1,1-Trichloroethane	1.2	6.7		U
79-00-5	1,1,2-Trichloroethane	0.47	6.7		U
79-01-6	Trichloroethene	1.1	6.7		U
76-13-1	Trichlorotrifluoroethane	0.73	6.7		U
75-69-4	Trichlorofluoromethane	1.3	6.7		U
75-01-4	Vinyl chloride	1.5	6.7		U
1330-20-7	Xylene(total)	0.93	6.7		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
5-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-31

Sample wt/vol: 5.5 (g/mL) G Lab File ID: 1000631A

Level: (low/med) LOW Date Sampled: 09/27/09 10:00

% Moisture: not dec. 17 Date Analyzed: 10/06/09 04:02

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.2	5.5		U
71-43-2	Benzene	0.51	5.5		U
75-27-4	Bromodichloromethane	0.33	11		U
75-25-2	Bromoform	1.1	5.5		U
74-83-9	Bromomethane	0.79	11		U
78-93-3	2-Butanone	1.5	5.5		U
75-15-0	Carbon disulfide	1.4	5.5	5.6	
56-23-5	Carbon tetrachloride	0.96	5.5		U
108-90-7	Chlorobenzene	0.37	5.5		U
75-00-3	Chloroethane	1.2	11		U
67-66-3	Chloroform	0.60	5.5		U
74-87-3	Chloromethane	0.57	11		U
110-82-7	Cyclohexane	0.59	5.5		U
124-48-1	Dibromochloromethane	0.37	5.5		U
96-12-8	1,2-Dibromo-3-chloropropane	1.3	5.5		U
106-93-4	1,2-Dibromoethane	0.47	5.5		U
95-50-1	1,2-Dichlorobenzene	0.40	5.5		U
541-73-1	1,3-Dichlorobenzene	0.92	5.5		U
106-46-7	1,4-Dichlorobenzene	0.60	5.5		U
75-71-8	Dichlorodifluoromethane	1.2	5.5		U
75-34-3	1,1-Dichloroethane	0.59	5.5		U
107-06-2	1,2-Dichloroethane	0.50	5.5		U
75-35-4	1,1-Dichloroethene	1.3	5.5		U
156-59-2	cis-1,2-Dichloroethene	1.3	11		U
156-60-5	trans-1,2-Dichloroethene	1.2	5.5		U
78-87-5	1,2-Dichloropropane	0.50	5.5		U
10061-01-5	cis-1,3-Dichloropropene	0.55	5.5		U
10061-02-6	trans-1,3-Dichloropropene	0.35	5.5		U
100-41-4	Ethylbenzene	0.82	5.5		U
591-78-6	2-Hexanone	2.5	5.5		U
98-82-8	Isopropylbenzene	0.96	5.5		U
79-20-9	Methyl acetate	1.8	11		U
75-09-2	Methylene chloride	0.68	11	1.3	JB
108-87-2	Methyl cyclohexane	0.33	5.5	0.86	J
1634-04-4	Methyl-tert-butyl-ether	0.35	5.5		U
108-10-1	4-Methyl-2-pentanone	0.64	5.5		U
100-42-5	Styrene	0.38	5.5		U
79-34-5	1,1,2,2-Tetrachloroethane	0.47	5.5		U
127-18-4	Tetrachloroethene	1.1	5.5		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
5-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-31

Sample wt/vol: 5.5 (g/mL) G Lab File ID: 1000631A

Level: (low/med) LOW Date Sampled: 09/27/09 10:00

% Moisture: not dec. 17 Date Analyzed: 10/06/09 04:02

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.94	5.5		U
120-82-1	1,2,4-Trichlorobenzene	0.20	5.5		U
71-55-6	1,1,1-Trichloroethane	0.98	5.5		U
79-00-5	1,1,2-Trichloroethane	0.38	5.5		U
79-01-6	Trichloroethene	0.93	5.5		U
76-13-1	Trichlorotrifluoroethane	0.60	5.5		U
75-69-4	Trichlorofluoromethane	1.0	5.5		U
75-01-4	Vinyl chloride	1.2	5.5		U
1330-20-7	Xylene(total)	0.77	5.5		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
5-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-32

Sample wt/vol: 6.6 (g/mL) G Lab File ID: 1000632A

Level: (low/med) LOW Date Sampled: 09/27/09 10:10

% Moisture: not dec. 23 Date Analyzed: 10/06/09 04:33

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.0	4.9	25	
71-43-2	Benzene	0.46	4.9		U
75-27-4	Bromodichloromethane	0.30	9.9		U
75-25-2	Bromoform	0.99	4.9		U
74-83-9	Bromomethane	0.71	9.9		U
78-93-3	2-Butanone	1.4	4.9		U
75-15-0	Carbon disulfide	1.3	4.9	1.4	J
56-23-5	Carbon tetrachloride	0.87	4.9		U
108-90-7	Chlorobenzene	0.34	4.9		U
75-00-3	Chloroethane	1.1	9.9		U
67-66-3	Chloroform	0.54	4.9		U
74-87-3	Chloromethane	0.51	9.9		U
110-82-7	Cyclohexane	0.53	4.9		U
124-48-1	Dibromochloromethane	0.34	4.9		U
96-12-8	1,2-Dibromo-3-chloropropane	1.2	4.9		U
106-93-4	1,2-Dibromoethane	0.42	4.9		U
95-50-1	1,2-Dichlorobenzene	0.36	4.9		U
541-73-1	1,3-Dichlorobenzene	0.83	4.9		U
106-46-7	1,4-Dichlorobenzene	0.54	4.9		U
75-71-8	Dichlorodifluoromethane	1.1	4.9		U
75-34-3	1,1-Dichloroethane	0.53	4.9		U
107-06-2	1,2-Dichloroethane	0.45	4.9		U
75-35-4	1,1-Dichloroethene	1.2	4.9		U
156-59-2	cis-1,2-Dichloroethene	1.2	9.9		U
156-60-5	trans-1,2-Dichloroethene	1.1	4.9		U
78-87-5	1,2-Dichloropropane	0.45	4.9		U
10061-01-5	cis-1,3-Dichloropropene	0.49	4.9		U
10061-02-6	trans-1,3-Dichloropropene	0.32	4.9		U
100-41-4	Ethylbenzene	0.74	4.9		U
591-78-6	2-Hexanone	2.3	4.9		U
98-82-8	Isopropylbenzene	0.87	4.9		U
79-20-9	Methyl acetate	1.6	9.9		U
75-09-2	Methylene chloride	0.61	9.9	1.3	JB
108-87-2	Methyl cyclohexane	0.30	4.9		U
1634-04-4	Methyl-tert-butyl-ether	0.32	4.9		U
108-10-1	4-Methyl-2-pentanone	0.57	4.9		U
100-42-5	Styrene	0.34	4.9		U
79-34-5	1,1,2,2-Tetrachloroethane	0.42	4.9		U
127-18-4	Tetrachloroethene	0.96	4.9		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
5-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-32

Sample wt/vol: 6.6 (g/mL) G Lab File ID: 1000632A

Level: (low/med) LOW Date Sampled: 09/27/09 10:10

% Moisture: not dec. 23 Date Analyzed: 10/06/09 04:33

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.85	4.9		U
120-82-1	1,2,4-Trichlorobenzene	0.18	4.9		U
71-55-6	1,1,1-Trichloroethane	0.89	4.9		U
79-00-5	1,1,2-Trichloroethane	0.34	4.9		U
79-01-6	Trichloroethene	0.84	4.9		U
76-13-1	Trichlorotrifluoroethane	0.54	4.9		U
75-69-4	Trichlorofluoromethane	0.94	4.9		U
75-01-4	Vinyl chloride	1.1	4.9		U
1330-20-7	Xylene(total)	0.69	4.9		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
6-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-33

Sample wt/vol: 5.3 (g/mL) G Lab File ID: 1000633A

Level: (low/med) LOW Date Sampled: 09/27/09 17:00

% Moisture: not dec. 11 Date Analyzed: 10/06/09 05:04

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.1	5.3		U
71-43-2	Benzene	0.50	5.3		U
75-27-4	Bromodichloromethane	0.32	10		U
75-25-2	Bromoform	1.0	5.3		U
74-83-9	Bromomethane	0.76	10		U
78-93-3	2-Butanone	1.5	5.3		U
75-15-0	Carbon disulfide	1.4	5.3		U
56-23-5	Carbon tetrachloride	0.93	5.3		U
108-90-7	Chlorobenzene	0.36	5.3		U
75-00-3	Chloroethane	1.2	10		U
67-66-3	Chloroform	0.58	5.3		U
74-87-3	Chloromethane	0.55	10		U
110-82-7	Cyclohexane	0.57	5.3		U
124-48-1	Dibromochloromethane	0.36	5.3		U
96-12-8	1,2-Dibromo-3-chloropropane	1.3	5.3		U
106-93-4	1,2-Dibromoethane	0.45	5.3		U
95-50-1	1,2-Dichlorobenzene	0.39	5.3		U
541-73-1	1,3-Dichlorobenzene	0.89	5.3		U
106-46-7	1,4-Dichlorobenzene	0.58	5.3		U
75-71-8	Dichlorodifluoromethane	1.2	5.3		U
75-34-3	1,1-Dichloroethane	0.57	5.3		U
107-06-2	1,2-Dichloroethane	0.49	5.3		U
75-35-4	1,1-Dichloroethene	1.3	5.3		U
156-59-2	cis-1,2-Dichloroethene	1.3	10		U
156-60-5	trans-1,2-Dichloroethene	1.2	5.3		U
78-87-5	1,2-Dichloropropane	0.49	5.3		U
10061-01-5	cis-1,3-Dichloropropene	0.53	5.3		U
10061-02-6	trans-1,3-Dichloropropene	0.34	5.3		U
100-41-4	Ethylbenzene	0.79	5.3		U
591-78-6	2-Hexanone	2.4	5.3		U
98-82-8	Isopropylbenzene	0.93	5.3		U
79-20-9	Methyl acetate	1.7	10		U
75-09-2	Methylene chloride	0.66	10	1.4	JB
108-87-2	Methyl cyclohexane	0.32	5.3	0.72	J
1634-04-4	Methyl-tert-butyl-ether	0.34	5.3		U
108-10-1	4-Methyl-2-pentanone	0.61	5.3		U
100-42-5	Styrene	0.37	5.3		U
79-34-5	1,1,2,2-Tetrachloroethane	0.45	5.3		U
127-18-4	Tetrachloroethene	1.0	5.3		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
6-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-33

Sample wt/vol: 5.3 (g/mL) G Lab File ID: 1000633A

Level: (low/med) LOW Date Sampled: 09/27/09 17:00

% Moisture: not dec. 11 Date Analyzed: 10/06/09 05:04

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.91	5.3		U
120-82-1	1,2,4-Trichlorobenzene	0.19	5.3		U
71-55-6	1,1,1-Trichloroethane	0.95	5.3		U
79-00-5	1,1,2-Trichloroethane	0.37	5.3		U
79-01-6	Trichloroethene	0.90	5.3		U
76-13-1	Trichlorotrifluoroethane	0.58	5.3		U
75-69-4	Trichlorofluoromethane	1.0	5.3		U
75-01-4	Vinyl chloride	1.2	5.3		U
1330-20-7	Xylene(total)	0.74	5.3		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
6-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-34

Sample wt/vol: 6.6 (g/mL) G Lab File ID: 1000634B

Level: (low/med) LOW Date Sampled: 09/27/09 16:50

% Moisture: not dec. 23 Date Analyzed: 10/06/09 05:35

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.0	4.9	79	
71-43-2	Benzene	0.46	4.9		U
75-27-4	Bromodichloromethane	0.29	9.8		U
75-25-2	Bromoform	0.98	4.9		U
74-83-9	Bromomethane	0.70	9.8		U
78-93-3	2-Butanone	1.4	4.9	14	
75-15-0	Carbon disulfide	1.3	4.9		U
56-23-5	Carbon tetrachloride	0.86	4.9		U
108-90-7	Chlorobenzene	0.33	4.9		U
75-00-3	Chloroethane	1.1	9.8		U
67-66-3	Chloroform	0.54	4.9		U
74-87-3	Chloromethane	0.51	9.8	1.0	J
110-82-7	Cyclohexane	0.53	4.9		U
124-48-1	Dibromochloromethane	0.33	4.9		U
96-12-8	1,2-Dibromo-3-chloropropane	1.2	4.9		U
106-93-4	1,2-Dibromoethane	0.42	4.9		U
95-50-1	1,2-Dichlorobenzene	0.36	4.9		U
541-73-1	1,3-Dichlorobenzene	0.82	4.9		U
106-46-7	1,4-Dichlorobenzene	0.54	4.9		U
75-71-8	Dichlorodifluoromethane	1.1	4.9		U
75-34-3	1,1-Dichloroethane	0.53	4.9		U
107-06-2	1,2-Dichloroethane	0.45	4.9		U
75-35-4	1,1-Dichloroethene	1.2	4.9		U
156-59-2	cis-1,2-Dichloroethene	1.2	9.8		U
156-60-5	trans-1,2-Dichloroethene	1.1	4.9		U
78-87-5	1,2-Dichloropropane	0.45	4.9		U
10061-01-5	cis-1,3-Dichloropropene	0.49	4.9		U
10061-02-6	trans-1,3-Dichloropropene	0.31	4.9		U
100-41-4	Ethylbenzene	0.74	4.9		U
591-78-6	2-Hexanone	2.2	4.9		U
98-82-8	Isopropylbenzene	0.86	4.9		U
79-20-9	Methyl acetate	1.6	9.8		U
75-09-2	Methylene chloride	0.61	9.8	1.1	JB
108-87-2	Methyl cyclohexane	0.29	4.9		U
1634-04-4	Methyl-tert-butyl-ether	0.31	4.9		U
108-10-1	4-Methyl-2-pentanone	0.57	4.9		U
100-42-5	Styrene	0.34	4.9		U
79-34-5	1,1,2,2-Tetrachloroethane	0.42	4.9		U
127-18-4	Tetrachloroethene	0.95	4.9		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
6-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-34

Sample wt/vol: 6.6 (g/mL) G Lab File ID: 1000634B

Level: (low/med) LOW Date Sampled: 09/27/09 16:50

% Moisture: not dec. 23 Date Analyzed: 10/06/09 05:35

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.84	4.9		U
120-82-1	1,2,4-Trichlorobenzene	0.18	4.9		U
71-55-6	1,1,1-Trichloroethane	0.88	4.9		U
79-00-5	1,1,2-Trichloroethane	0.34	4.9		U
79-01-6	Trichloroethene	0.83	4.9		U
76-13-1	Trichlorotrifluoroethane	0.54	4.9		U
75-69-4	Trichlorofluoromethane	0.93	4.9		U
75-01-4	Vinyl chloride	1.1	4.9		U
1330-20-7	Xylene(total)	0.69	4.9		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
7-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-11

Sample wt/vol: 3.9 (g/mL) G Lab File ID: 1000611A

Level: (low/med) LOW Date Sampled: 09/26/09 13:26

% Moisture: not dec. 17 Date Analyzed: 10/04/09 22:09

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	3.1	7.8	47	
71-43-2	Benzene	0.73	7.8		U
75-27-4	Bromodichloromethane	0.47	16		U
75-25-2	Bromoform	1.6	7.8		U
74-83-9	Bromomethane	1.1	16		U
78-93-3	2-Butanone	2.2	7.8		U
75-15-0	Carbon disulfide	2.0	7.8	16	
56-23-5	Carbon tetrachloride	1.4	7.8		U
108-90-7	Chlorobenzene	0.53	7.8		U
75-00-3	Chloroethane	1.7	16		U
67-66-3	Chloroform	0.86	7.8		U
74-87-3	Chloromethane	0.81	16		U
110-82-7	Cyclohexane	0.84	7.8		U
124-48-1	Dibromochloromethane	0.53	7.8		U
96-12-8	1,2-Dibromo-3-chloropropane	1.9	7.8		U
106-93-4	1,2-Dibromoethane	0.67	7.8		U
95-50-1	1,2-Dichlorobenzene	0.58	7.8		U
541-73-1	1,3-Dichlorobenzene	1.3	7.8		U
106-46-7	1,4-Dichlorobenzene	0.86	7.8		U
75-71-8	Dichlorodifluoromethane	1.7	7.8		U
75-34-3	1,1-Dichloroethane	0.84	7.8		U
107-06-2	1,2-Dichloroethane	0.72	7.8		U
75-35-4	1,1-Dichloroethene	1.9	7.8		U
156-59-2	cis-1,2-Dichloroethene	1.9	16		U
156-60-5	trans-1,2-Dichloroethene	1.7	7.8		U
78-87-5	1,2-Dichloropropane	0.72	7.8		U
10061-01-5	cis-1,3-Dichloropropene	0.78	7.8		U
10061-02-6	trans-1,3-Dichloropropene	0.50	7.8		U
100-41-4	Ethylbenzene	1.2	7.8		U
591-78-6	2-Hexanone	3.6	7.8		U
98-82-8	Isopropylbenzene	1.4	7.8		U
79-20-9	Methyl acetate	2.5	16		U
75-09-2	Methylene chloride	0.97	16	3.2	JB
108-87-2	Methyl cyclohexane	0.47	7.8	0.78	J
1634-04-4	Methyl-tert-butyl-ether	0.50	7.8		U
108-10-1	4-Methyl-2-pentanone	0.90	7.8		U
100-42-5	Styrene	0.55	7.8		U
79-34-5	1,1,2,2-Tetrachloroethane	0.67	7.8		U
127-18-4	Tetrachloroethene	1.5	7.8		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
7-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-11

Sample wt/vol: 3.9 (g/mL) G Lab File ID: 1000611A

Level: (low/med) LOW Date Sampled: 09/26/09 13:26

% Moisture: not dec. 17 Date Analyzed: 10/04/09 22:09

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	1.3	7.8		U
120-82-1	1,2,4-Trichlorobenzene	0.28	7.8		U
71-55-6	1,1,1-Trichloroethane	1.4	7.8		U
79-00-5	1,1,2-Trichloroethane	0.55	7.8		U
79-01-6	Trichloroethene	1.3	7.8		U
76-13-1	Trichlorotrifluoroethane	0.86	7.8		U
75-69-4	Trichlorofluoromethane	1.5	7.8		U
75-01-4	Vinyl chloride	1.7	7.8		U
1330-20-7	Xylene(total)	1.1	7.8		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
7-SO-0507

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-12

Sample wt/vol: 7.3 (g/mL) G Lab File ID: 1000612A

Level: (low/med) LOW Date Sampled: 09/26/09 13:32

% Moisture: not dec. 10 Date Analyzed: 10/04/09 22:41

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	1.5	3.8		U
71-43-2	Benzene	0.36	3.8	3.0	J
75-27-4	Bromodichloromethane	0.23	7.6		U
75-25-2	Bromoform	0.76	3.8		U
74-83-9	Bromomethane	0.55	7.6		U
78-93-3	2-Butanone	1.1	3.8		U
75-15-0	Carbon disulfide	0.99	3.8		U
56-23-5	Carbon tetrachloride	0.67	3.8		U
108-90-7	Chlorobenzene	0.26	3.8		U
75-00-3	Chloroethane	0.84	7.6		U
67-66-3	Chloroform	0.42	3.8		U
74-87-3	Chloromethane	0.40	7.6		U
110-82-7	Cyclohexane	0.41	3.8	4.4	
124-48-1	Dibromochloromethane	0.26	3.8		U
96-12-8	1,2-Dibromo-3-chloropropane	0.91	3.8		U
106-93-4	1,2-Dibromoethane	0.33	3.8		U
95-50-1	1,2-Dichlorobenzene	0.28	3.8		U
541-73-1	1,3-Dichlorobenzene	0.64	3.8		U
106-46-7	1,4-Dichlorobenzene	0.42	3.8		U
75-71-8	Dichlorodifluoromethane	0.84	3.8		U
75-34-3	1,1-Dichloroethane	0.41	3.8		U
107-06-2	1,2-Dichloroethane	0.35	3.8		U
75-35-4	1,1-Dichloroethene	0.91	3.8		U
156-59-2	cis-1,2-Dichloroethene	0.91	7.6		U
156-60-5	trans-1,2-Dichloroethene	0.84	3.8		U
78-87-5	1,2-Dichloropropane	0.35	3.8		U
10061-01-5	cis-1,3-Dichloropropene	0.38	3.8		U
10061-02-6	trans-1,3-Dichloropropene	0.24	3.8		U
100-41-4	Ethylbenzene	0.57	3.8	1.9	J
591-78-6	2-Hexanone	1.8	3.8		U
98-82-8	Isopropylbenzene	0.67	3.8		U
79-20-9	Methyl acetate	1.2	7.6		U
75-09-2	Methylene chloride	0.47	7.6	1.4	JB
108-87-2	Methyl cyclohexane	0.23	3.8	8.7	
1634-04-4	Methyl-tert-butyl-ether	0.24	3.8		U
108-10-1	4-Methyl-2-pentanone	0.44	3.8		U
100-42-5	Styrene	0.27	3.8		U
79-34-5	1,1,2,2-Tetrachloroethane	0.33	3.8		U
127-18-4	Tetrachloroethene	0.74	3.8		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
7-SO-0507

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-12

Sample wt/vol: 7.3 (g/mL) G Lab File ID: 1000612A

Level: (low/med) LOW Date Sampled: 09/26/09 13:32

% Moisture: not dec. 10 Date Analyzed: 10/04/09 22:41

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.66	3.8	5.6	
120-82-1	1,2,4-Trichlorobenzene	0.14	3.8		U
71-55-6	1,1,1-Trichloroethane	0.69	3.8		U
79-00-5	1,1,2-Trichloroethane	0.27	3.8		U
79-01-6	Trichloroethene	0.65	3.8		U
76-13-1	Trichlorotrifluoroethane	0.42	3.8		U
75-69-4	Trichlorofluoromethane	0.72	3.8		U
75-01-4	Vinyl chloride	0.84	3.8		U
1330-20-7	Xylene(total)	0.53	3.8	2.2	J

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
8-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-13

Sample wt/vol: 5.5 (g/mL) G Lab File ID: 1000613A

Level: (low/med) LOW Date Sampled: 09/26/09 12:47

% Moisture: not dec. 14 Date Analyzed: 10/04/09 23:12

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.1	5.2		U
71-43-2	Benzene	0.49	5.2		U
75-27-4	Bromodichloromethane	0.32	10		U
75-25-2	Bromoform	1.0	5.2		U
74-83-9	Bromomethane	0.76	10		U
78-93-3	2-Butanone	1.5	5.2		U
75-15-0	Carbon disulfide	1.4	5.2		U
56-23-5	Carbon tetrachloride	0.92	5.2		U
108-90-7	Chlorobenzene	0.36	5.2		U
75-00-3	Chloroethane	1.2	10		U
67-66-3	Chloroform	0.58	5.2		U
74-87-3	Chloromethane	0.55	10		U
110-82-7	Cyclohexane	0.57	5.2	0.71	J
124-48-1	Dibromochloromethane	0.36	5.2		U
96-12-8	1,2-Dibromo-3-chloropropane	1.3	5.2		U
106-93-4	1,2-Dibromoethane	0.45	5.2		U
95-50-1	1,2-Dichlorobenzene	0.39	5.2		U
541-73-1	1,3-Dichlorobenzene	0.88	5.2		U
106-46-7	1,4-Dichlorobenzene	0.58	5.2		U
75-71-8	Dichlorodifluoromethane	1.2	5.2		U
75-34-3	1,1-Dichloroethane	0.57	5.2		U
107-06-2	1,2-Dichloroethane	0.48	5.2		U
75-35-4	1,1-Dichloroethene	1.3	5.2		U
156-59-2	cis-1,2-Dichloroethene	1.3	10		U
156-60-5	trans-1,2-Dichloroethene	1.2	5.2		U
78-87-5	1,2-Dichloropropane	0.48	5.2		U
10061-01-5	cis-1,3-Dichloropropene	0.52	5.2		U
10061-02-6	trans-1,3-Dichloropropene	0.34	5.2		U
100-41-4	Ethylbenzene	0.79	5.2		U
591-78-6	2-Hexanone	2.4	5.2		U
98-82-8	Isopropylbenzene	0.92	5.2		U
79-20-9	Methyl acetate	1.7	10		U
75-09-2	Methylene chloride	0.65	10	2.0	JB
108-87-2	Methyl cyclohexane	0.32	5.2	1.2	J
1634-04-4	Methyl-tert-butyl-ether	0.34	5.2		U
108-10-1	4-Methyl-2-pentanone	0.61	5.2		U
100-42-5	Styrene	0.37	5.2		U
79-34-5	1,1,2,2-Tetrachloroethane	0.45	5.2		U
127-18-4	Tetrachloroethene	1.0	5.2		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
8-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-13

Sample wt/vol: 5.5 (g/mL) G Lab File ID: 1000613A

Level: (low/med) LOW Date Sampled: 09/26/09 12:47

% Moisture: not dec. 14 Date Analyzed: 10/04/09 23:12

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.90	5.2		U
120-82-1	1,2,4-Trichlorobenzene	0.19	5.2		U
71-55-6	1,1,1-Trichloroethane	0.94	5.2		U
79-00-5	1,1,2-Trichloroethane	0.37	5.2		U
79-01-6	Trichloroethene	0.89	5.2		U
76-13-1	Trichlorotrifluoroethane	0.58	5.2		U
75-69-4	Trichlorofluoromethane	1.00	5.2		U
75-01-4	Vinyl chloride	1.2	5.2		U
1330-20-7	Xylene(total)	0.74	5.2		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
8-SO-0507

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-14

Sample wt/vol: 6.3 (g/mL) G Lab File ID: 1000614A

Level: (low/med) LOW Date Sampled: 09/26/09 12:59

% Moisture: not dec. 11 Date Analyzed: 10/04/09 23:43

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	1.8	4.5		U
71-43-2	Benzene	0.42	4.5	4.8	
75-27-4	Bromodichloromethane	0.27	8.9		U
75-25-2	Bromoform	0.89	4.5		U
74-83-9	Bromomethane	0.64	8.9		U
78-93-3	2-Butanone	1.2	4.5		U
75-15-0	Carbon disulfide	1.2	4.5	1.2	J
56-23-5	Carbon tetrachloride	0.79	4.5		U
108-90-7	Chlorobenzene	0.30	4.5		U
75-00-3	Chloroethane	0.98	8.9		U
67-66-3	Chloroform	0.49	4.5		U
74-87-3	Chloromethane	0.46	8.9		U
110-82-7	Cyclohexane	0.48	4.5	9.0	
124-48-1	Dibromochloromethane	0.30	4.5		U
96-12-8	1,2-Dibromo-3-chloropropane	1.1	4.5		U
106-93-4	1,2-Dibromoethane	0.38	4.5		U
95-50-1	1,2-Dichlorobenzene	0.33	4.5		U
541-73-1	1,3-Dichlorobenzene	0.75	4.5		U
106-46-7	1,4-Dichlorobenzene	0.49	4.5		U
75-71-8	Dichlorodifluoromethane	0.98	4.5		U
75-34-3	1,1-Dichloroethane	0.48	4.5		U
107-06-2	1,2-Dichloroethane	0.41	4.5		U
75-35-4	1,1-Dichloroethene	1.1	4.5		U
156-59-2	cis-1,2-Dichloroethene	1.1	8.9		U
156-60-5	trans-1,2-Dichloroethene	0.98	4.5		U
78-87-5	1,2-Dichloropropane	0.41	4.5		U
10061-01-5	cis-1,3-Dichloropropene	0.45	4.5		U
10061-02-6	trans-1,3-Dichloropropene	0.29	4.5		U
100-41-4	Ethylbenzene	0.67	4.5	1.0	J
591-78-6	2-Hexanone	2.0	4.5		U
98-82-8	Isopropylbenzene	0.79	4.5		U
79-20-9	Methyl acetate	1.4	8.9		U
75-09-2	Methylene chloride	0.55	8.9	1.8	JB
108-87-2	Methyl cyclohexane	0.27	4.5	11	
1634-04-4	Methyl-tert-butyl-ether	0.29	4.5		U
108-10-1	4-Methyl-2-pentanone	0.52	4.5		U
100-42-5	Styrene	0.31	4.5		U
79-34-5	1,1,2,2-Tetrachloroethane	0.38	4.5		U
127-18-4	Tetrachloroethene	0.87	4.5		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
8-SO-0507

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-14

Sample wt/vol: 6.3 (g/mL) G Lab File ID: 1000614A

Level: (low/med) LOW Date Sampled: 09/26/09 12:59

% Moisture: not dec. 11 Date Analyzed: 10/04/09 23:43

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.77	4.5	5.4	
120-82-1	1,2,4-Trichlorobenzene	0.16	4.5		U
71-55-6	1,1,1-Trichloroethane	0.80	4.5		U
79-00-5	1,1,2-Trichloroethane	0.31	4.5		U
79-01-6	Trichloroethene	0.76	4.5		U
76-13-1	Trichlorotrifluoroethane	0.49	4.5		U
75-69-4	Trichlorofluoromethane	0.85	4.5		U
75-01-4	Vinyl chloride	0.98	4.5		U
1330-20-7	Xylene(total)	0.63	4.5		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
9-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-35

Sample wt/vol: 6.1 (g/mL) G Lab File ID: 1000635A

Level: (low/med) LOW Date Sampled: 09/27/09 17:40

% Moisture: not dec. 8 Date Analyzed: 10/06/09 06:06

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	1.8	4.5		U
71-43-2	Benzene	0.42	4.5		U
75-27-4	Bromodichloromethane	0.27	8.9		U
75-25-2	Bromoform	0.89	4.5		U
74-83-9	Bromomethane	0.64	8.9		U
78-93-3	2-Butanone	1.2	4.5		U
75-15-0	Carbon disulfide	1.2	4.5	2.6	J
56-23-5	Carbon tetrachloride	0.78	4.5		U
108-90-7	Chlorobenzene	0.30	4.5		U
75-00-3	Chloroethane	0.98	8.9		U
67-66-3	Chloroform	0.49	4.5		U
74-87-3	Chloromethane	0.46	8.9		U
110-82-7	Cyclohexane	0.48	4.5	1.3	J
124-48-1	Dibromochloromethane	0.30	4.5		U
96-12-8	1,2-Dibromo-3-chloropropane	1.1	4.5		U
106-93-4	1,2-Dibromoethane	0.38	4.5		U
95-50-1	1,2-Dichlorobenzene	0.33	4.5		U
541-73-1	1,3-Dichlorobenzene	0.75	4.5		U
106-46-7	1,4-Dichlorobenzene	0.49	4.5		U
75-71-8	Dichlorodifluoromethane	0.98	4.5		U
75-34-3	1,1-Dichloroethane	0.48	4.5		U
107-06-2	1,2-Dichloroethane	0.41	4.5		U
75-35-4	1,1-Dichloroethene	1.1	4.5		U
156-59-2	cis-1,2-Dichloroethene	1.1	8.9		U
156-60-5	trans-1,2-Dichloroethene	0.98	4.5		U
78-87-5	1,2-Dichloropropane	0.41	4.5		U
10061-01-5	cis-1,3-Dichloropropene	0.45	4.5		U
10061-02-6	trans-1,3-Dichloropropene	0.28	4.5		U
100-41-4	Ethylbenzene	0.67	4.5		U
591-78-6	2-Hexanone	2.0	4.5		U
98-82-8	Isopropylbenzene	0.78	4.5		U
79-20-9	Methyl acetate	1.4	8.9		U
75-09-2	Methylene chloride	0.55	8.9	1.0	JB
108-87-2	Methyl cyclohexane	0.27	4.5	2.6	J
1634-04-4	Methyl-tert-butyl-ether	0.28	4.5		U
108-10-1	4-Methyl-2-pentanone	0.52	4.5		U
100-42-5	Styrene	0.31	4.5		U
79-34-5	1,1,2,2-Tetrachloroethane	0.38	4.5		U
127-18-4	Tetrachloroethene	0.87	4.5	1.4	J

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
9-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-35

Sample wt/vol: 6.1 (g/mL) G Lab File ID: 1000635A

Level: (low/med) LOW Date Sampled: 09/27/09 17:40

% Moisture: not dec. 8 Date Analyzed: 10/06/09 06:06

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.77	4.5		U
120-82-1	1,2,4-Trichlorobenzene	0.16	4.5		U
71-55-6	1,1,1-Trichloroethane	0.80	4.5		U
79-00-5	1,1,2-Trichloroethane	0.31	4.5		U
79-01-6	Trichloroethene	0.76	4.5		U
76-13-1	Trichlorotrifluoroethane	0.49	4.5		U
75-69-4	Trichlorofluoromethane	0.85	4.5		U
75-01-4	Vinyl chloride	0.98	4.5		U
1330-20-7	Xylene(total)	0.62	4.5		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
9-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-36

Sample wt/vol: 6.0 (g/mL) G Lab File ID: 1000636A

Level: (low/med) LOW Date Sampled: 09/27/09 17:50

% Moisture: not dec. 17 Date Analyzed: 10/06/09 06:37

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.0	5.0	87	
71-43-2	Benzene	0.47	5.0		U
75-27-4	Bromodichloromethane	0.30	10		U
75-25-2	Bromoform	1.0	5.0		U
74-83-9	Bromomethane	0.72	10		U
78-93-3	2-Butanone	1.4	5.0	9.1	
75-15-0	Carbon disulfide	1.3	5.0		U
56-23-5	Carbon tetrachloride	0.88	5.0		U
108-90-7	Chlorobenzene	0.34	5.0		U
75-00-3	Chloroethane	1.1	10		U
67-66-3	Chloroform	0.55	5.0		U
74-87-3	Chloromethane	0.52	10	2.2	J
110-82-7	Cyclohexane	0.54	5.0		U
124-48-1	Dibromochloromethane	0.34	5.0		U
96-12-8	1,2-Dibromo-3-chloropropane	1.2	5.0		U
106-93-4	1,2-Dibromoethane	0.43	5.0		U
95-50-1	1,2-Dichlorobenzene	0.37	5.0		U
541-73-1	1,3-Dichlorobenzene	0.84	5.0		U
106-46-7	1,4-Dichlorobenzene	0.55	5.0		U
75-71-8	Dichlorodifluoromethane	1.1	5.0		U
75-34-3	1,1-Dichloroethane	0.54	5.0		U
107-06-2	1,2-Dichloroethane	0.46	5.0		U
75-35-4	1,1-Dichloroethene	1.2	5.0		U
156-59-2	cis-1,2-Dichloroethene	1.2	10		U
156-60-5	trans-1,2-Dichloroethene	1.1	5.0		U
78-87-5	1,2-Dichloropropane	0.46	5.0		U
10061-01-5	cis-1,3-Dichloropropene	0.50	5.0		U
10061-02-6	trans-1,3-Dichloropropene	0.32	5.0		U
100-41-4	Ethylbenzene	0.75	5.0		U
591-78-6	2-Hexanone	2.3	5.0		U
98-82-8	Isopropylbenzene	0.88	5.0		U
79-20-9	Methyl acetate	1.6	10		U
75-09-2	Methylene chloride	0.62	10	1.4	JB
108-87-2	Methyl cyclohexane	0.30	5.0		U
1634-04-4	Methyl-tert-butyl-ether	0.32	5.0		U
108-10-1	4-Methyl-2-pentanone	0.58	5.0		U
100-42-5	Styrene	0.35	5.0		U
79-34-5	1,1,2,2-Tetrachloroethane	0.43	5.0		U
127-18-4	Tetrachloroethene	0.97	5.0	18	

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
9-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-36

Sample wt/vol: 6.0 (g/mL) G Lab File ID: 1000636A

Level: (low/med) LOW Date Sampled: 09/27/09 17:50

% Moisture: not dec. 17 Date Analyzed: 10/06/09 06:37

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.86	5.0		U
120-82-1	1,2,4-Trichlorobenzene	0.18	5.0		U
71-55-6	1,1,1-Trichloroethane	0.90	5.0		U
79-00-5	1,1,2-Trichloroethane	0.35	5.0		U
79-01-6	Trichloroethene	0.85	5.0		U
76-13-1	Trichlorotrifluoroethane	0.55	5.0		U
75-69-4	Trichlorofluoromethane	0.95	5.0		U
75-01-4	Vinyl chloride	1.1	5.0		U
1330-20-7	Xylene(total)	0.70	5.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB2
0-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-15

Sample wt/vol: 6.1 (g/mL) G Lab File ID: 1000615A

Level: (low/med) LOW Date Sampled: 09/26/09 16:57

% Moisture: not dec. 6 Date Analyzed: 10/05/09 17:09

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	1.8	4.4		U
71-43-2	Benzene	0.41	4.4	0.74	J
75-27-4	Bromodichloromethane	0.26	8.8		U
75-25-2	Bromoform	0.88	4.4		U
74-83-9	Bromomethane	0.63	8.8		U
78-93-3	2-Butanone	1.2	4.4		U
75-15-0	Carbon disulfide	1.1	4.4		U
56-23-5	Carbon tetrachloride	0.77	4.4		U
108-90-7	Chlorobenzene	0.30	4.4		U
75-00-3	Chloroethane	0.96	8.8		U
67-66-3	Chloroform	0.48	4.4		U
74-87-3	Chloromethane	0.46	8.8		U
110-82-7	Cyclohexane	0.47	4.4	0.75	J
124-48-1	Dibromochloromethane	0.30	4.4		U
96-12-8	1,2-Dibromo-3-chloropropane	1.0	4.4		U
106-93-4	1,2-Dibromoethane	0.38	4.4		U
95-50-1	1,2-Dichlorobenzene	0.32	4.4		U
541-73-1	1,3-Dichlorobenzene	0.74	4.4		U
106-46-7	1,4-Dichlorobenzene	0.48	4.4		U
75-71-8	Dichlorodifluoromethane	0.96	4.4		U
75-34-3	1,1-Dichloroethane	0.47	4.4		U
107-06-2	1,2-Dichloroethane	0.40	4.4		U
75-35-4	1,1-Dichloroethene	1.0	4.4		U
156-59-2	cis-1,2-Dichloroethene	1.0	8.8		U
156-60-5	trans-1,2-Dichloroethene	0.96	4.4		U
78-87-5	1,2-Dichloropropane	0.40	4.4		U
10061-01-5	cis-1,3-Dichloropropene	0.44	4.4		U
10061-02-6	trans-1,3-Dichloropropene	0.28	4.4		U
100-41-4	Ethylbenzene	0.66	4.4		U
591-78-6	2-Hexanone	2.0	4.4		U
98-82-8	Isopropylbenzene	0.77	4.4		U
79-20-9	Methyl acetate	1.4	8.8		U
75-09-2	Methylene chloride	0.54	8.8	0.97	JB
108-87-2	Methyl cyclohexane	0.26	4.4	1.1	J
1634-04-4	Methyl-tert-butyl-ether	0.28	4.4		U
108-10-1	4-Methyl-2-pentanone	0.51	4.4		U
100-42-5	Styrene	0.31	4.4		U
79-34-5	1,1,2,2-Tetrachloroethane	0.38	4.4		U
127-18-4	Tetrachloroethene	0.85	4.4		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB2
0-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-15

Sample wt/vol: 6.1 (g/mL) G Lab File ID: 1000615A

Level: (low/med) LOW Date Sampled: 09/26/09 16:57

% Moisture: not dec. 6 Date Analyzed: 10/05/09 17:09

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.75	4.4	1.1	J
120-82-1	1,2,4-Trichlorobenzene	0.16	4.4		U
71-55-6	1,1,1-Trichloroethane	0.79	4.4		U
79-00-5	1,1,2-Trichloroethane	0.31	4.4		U
79-01-6	Trichloroethene	0.74	4.4		U
76-13-1	Trichlorotrifluoroethane	0.48	4.4		U
75-69-4	Trichlorofluoromethane	0.83	4.4		U
75-01-4	Vinyl chloride	0.96	4.4		U
1330-20-7	Xylene(total)	0.61	4.4		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB2
0-SO-0406

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-16

Sample wt/vol: 7.3 (g/mL) G Lab File ID: 1000616A

Level: (low/med) LOW Date Sampled: 09/26/09 17:02

% Moisture: not dec. 13 Date Analyzed: 10/05/09 17:40

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	1.6	4.0		U
71-43-2	Benzene	0.37	4.0	1.2	J
75-27-4	Bromodichloromethane	0.24	8.0		U
75-25-2	Bromoform	0.80	4.0		U
74-83-9	Bromomethane	0.57	8.0		U
78-93-3	2-Butanone	1.1	4.0		U
75-15-0	Carbon disulfide	1.0	4.0	12	
56-23-5	Carbon tetrachloride	0.70	4.0		U
108-90-7	Chlorobenzene	0.27	4.0		U
75-00-3	Chloroethane	0.87	8.0		U
67-66-3	Chloroform	0.44	4.0		U
74-87-3	Chloromethane	0.41	8.0		U
110-82-7	Cyclohexane	0.43	4.0	2.5	J
124-48-1	Dibromochloromethane	0.27	4.0		U
96-12-8	1,2-Dibromo-3-chloropropane	0.95	4.0		U
106-93-4	1,2-Dibromoethane	0.34	4.0		U
95-50-1	1,2-Dichlorobenzene	0.29	4.0		U
541-73-1	1,3-Dichlorobenzene	0.67	4.0		U
106-46-7	1,4-Dichlorobenzene	0.44	4.0		U
75-71-8	Dichlorodifluoromethane	0.87	4.0		U
75-34-3	1,1-Dichloroethane	0.43	4.0		U
107-06-2	1,2-Dichloroethane	0.36	4.0		U
75-35-4	1,1-Dichloroethene	0.95	4.0		U
156-59-2	cis-1,2-Dichloroethene	0.95	8.0		U
156-60-5	trans-1,2-Dichloroethene	0.87	4.0		U
78-87-5	1,2-Dichloropropane	0.36	4.0		U
10061-01-5	cis-1,3-Dichloropropene	0.40	4.0		U
10061-02-6	trans-1,3-Dichloropropene	0.25	4.0		U
100-41-4	Ethylbenzene	0.60	4.0		U
591-78-6	2-Hexanone	1.8	4.0		U
98-82-8	Isopropylbenzene	0.70	4.0		U
79-20-9	Methyl acetate	1.3	8.0		U
75-09-2	Methylene chloride	0.49	8.0	0.72	JB
108-87-2	Methyl cyclohexane	0.24	4.0	5.4	
1634-04-4	Methyl-tert-butyl-ether	0.25	4.0		U
108-10-1	4-Methyl-2-pentanone	0.46	4.0		U
100-42-5	Styrene	0.28	4.0		U
79-34-5	1,1,2,2-Tetrachloroethane	0.34	4.0		U
127-18-4	Tetrachloroethene	0.77	4.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB2
0-SO-0406

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-16

Sample wt/vol: 7.3 (g/mL) G Lab File ID: 1000616A

Level: (low/med) LOW Date Sampled: 09/26/09 17:02

% Moisture: not dec. 13 Date Analyzed: 10/05/09 17:40

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.68	4.0	1.4	J
120-82-1	1,2,4-Trichlorobenzene	0.14	4.0		U
71-55-6	1,1,1-Trichloroethane	0.72	4.0		U
79-00-5	1,1,2-Trichloroethane	0.28	4.0		U
79-01-6	Trichloroethene	0.68	4.0		U
76-13-1	Trichlorotrifluoroethane	0.44	4.0		U
75-69-4	Trichlorofluoromethane	0.76	4.0		U
75-01-4	Vinyl chloride	0.87	4.0		U
1330-20-7	Xylene(total)	0.56	4.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB2
1-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-17

Sample wt/vol: 5.1 (g/mL) G Lab File ID: 1000617A

Level: (low/med) LOW Date Sampled: 09/26/09 15:10

% Moisture: not dec. 7 Date Analyzed: 10/05/09 18:11

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.1	5.2		U
71-43-2	Benzene	0.49	5.2		U
75-27-4	Bromodichloromethane	0.32	10		U
75-25-2	Bromoform	1.0	5.2		U
74-83-9	Bromomethane	0.76	10		U
78-93-3	2-Butanone	1.5	5.2		U
75-15-0	Carbon disulfide	1.4	5.2	4.2	J
56-23-5	Carbon tetrachloride	0.92	5.2		U
108-90-7	Chlorobenzene	0.36	5.2		U
75-00-3	Chloroethane	1.2	10		U
67-66-3	Chloroform	0.58	5.2		U
74-87-3	Chloromethane	0.55	10		U
110-82-7	Cyclohexane	0.57	5.2	0.94	J
124-48-1	Dibromochloromethane	0.36	5.2		U
96-12-8	1,2-Dibromo-3-chloropropane	1.3	5.2		U
106-93-4	1,2-Dibromoethane	0.45	5.2		U
95-50-1	1,2-Dichlorobenzene	0.39	5.2		U
541-73-1	1,3-Dichlorobenzene	0.88	5.2		U
106-46-7	1,4-Dichlorobenzene	0.58	5.2		U
75-71-8	Dichlorodifluoromethane	1.2	5.2		U
75-34-3	1,1-Dichloroethane	0.57	5.2		U
107-06-2	1,2-Dichloroethane	0.48	5.2		U
75-35-4	1,1-Dichloroethene	1.3	5.2		U
156-59-2	cis-1,2-Dichloroethene	1.3	10		U
156-60-5	trans-1,2-Dichloroethene	1.2	5.2		U
78-87-5	1,2-Dichloropropane	0.48	5.2		U
10061-01-5	cis-1,3-Dichloropropene	0.52	5.2		U
10061-02-6	trans-1,3-Dichloropropene	0.34	5.2		U
100-41-4	Ethylbenzene	0.79	5.2		U
591-78-6	2-Hexanone	2.4	5.2		U
98-82-8	Isopropylbenzene	0.92	5.2		U
79-20-9	Methyl acetate	1.7	10		U
75-09-2	Methylene chloride	0.65	10	1.1	JB
108-87-2	Methyl cyclohexane	0.32	5.2	1.2	J
1634-04-4	Methyl-tert-butyl-ether	0.34	5.2		U
108-10-1	4-Methyl-2-pentanone	0.61	5.2		U
100-42-5	Styrene	0.37	5.2		U
79-34-5	1,1,2,2-Tetrachloroethane	0.45	5.2		U
127-18-4	Tetrachloroethene	1.0	5.2		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB2
1-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-17

Sample wt/vol: 5.1 (g/mL) G Lab File ID: 1000617A

Level: (low/med) LOW Date Sampled: 09/26/09 15:10

% Moisture: not dec. 7 Date Analyzed: 10/05/09 18:11

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.90	5.2		U
120-82-1	1,2,4-Trichlorobenzene	0.19	5.2		U
71-55-6	1,1,1-Trichloroethane	0.94	5.2		U
79-00-5	1,1,2-Trichloroethane	0.37	5.2		U
79-01-6	Trichloroethene	0.89	5.2		U
76-13-1	Trichlorotrifluoroethane	0.58	5.2		U
75-69-4	Trichlorofluoromethane	1.00	5.2		U
75-01-4	Vinyl chloride	1.2	5.2		U
1330-20-7	Xylene(total)	0.74	5.2		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB2
1-SO-0608

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-18

Sample wt/vol: 5.5 (g/mL) G Lab File ID: 1000618A

Level: (low/med) LOW Date Sampled: 09/26/09 15:20

% Moisture: not dec. 10 Date Analyzed: 10/05/09 18:42

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.0	5.1		U
71-43-2	Benzene	0.48	5.1	1.6	J
75-27-4	Bromodichloromethane	0.30	10		U
75-25-2	Bromoform	1.0	5.1		U
74-83-9	Bromomethane	0.73	10		U
78-93-3	2-Butanone	1.4	5.1		U
75-15-0	Carbon disulfide	1.3	5.1		U
56-23-5	Carbon tetrachloride	0.89	5.1		U
108-90-7	Chlorobenzene	0.34	5.1		U
75-00-3	Chloroethane	1.1	10		U
67-66-3	Chloroform	0.56	5.1		U
74-87-3	Chloromethane	0.53	10		U
110-82-7	Cyclohexane	0.55	5.1	3.2	J
124-48-1	Dibromochloromethane	0.34	5.1		U
96-12-8	1,2-Dibromo-3-chloropropane	1.2	5.1		U
106-93-4	1,2-Dibromoethane	0.44	5.1		U
95-50-1	1,2-Dichlorobenzene	0.38	5.1		U
541-73-1	1,3-Dichlorobenzene	0.85	5.1		U
106-46-7	1,4-Dichlorobenzene	0.56	5.1		U
75-71-8	Dichlorodifluoromethane	1.1	5.1		U
75-34-3	1,1-Dichloroethane	0.55	5.1		U
107-06-2	1,2-Dichloroethane	0.47	5.1		U
75-35-4	1,1-Dichloroethene	1.2	5.1		U
156-59-2	cis-1,2-Dichloroethene	1.2	10		U
156-60-5	trans-1,2-Dichloroethene	1.1	5.1		U
78-87-5	1,2-Dichloropropane	0.47	5.1		U
10061-01-5	cis-1,3-Dichloropropene	0.51	5.1		U
10061-02-6	trans-1,3-Dichloropropene	0.32	5.1		U
100-41-4	Ethylbenzene	0.76	5.1		U
591-78-6	2-Hexanone	2.3	5.1		U
98-82-8	Isopropylbenzene	0.89	5.1		U
79-20-9	Methyl acetate	1.6	10		U
75-09-2	Methylene chloride	0.63	10	1.0	JB
108-87-2	Methyl cyclohexane	0.30	5.1	4.4	J
1634-04-4	Methyl-tert-butyl-ether	0.32	5.1		U
108-10-1	4-Methyl-2-pentanone	0.59	5.1		U
100-42-5	Styrene	0.36	5.1		U
79-34-5	1,1,2,2-Tetrachloroethane	0.44	5.1		U
127-18-4	Tetrachloroethene	0.98	5.1		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB2
1-SO-0608

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-18

Sample wt/vol: 5.5 (g/mL) G Lab File ID: 1000618A

Level: (low/med) LOW Date Sampled: 09/26/09 15:20

% Moisture: not dec. 10 Date Analyzed: 10/05/09 18:42

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.87	5.1	1.4	J
120-82-1	1,2,4-Trichlorobenzene	0.18	5.1		U
71-55-6	1,1,1-Trichloroethane	0.91	5.1		U
79-00-5	1,1,2-Trichloroethane	0.36	5.1		U
79-01-6	Trichloroethene	0.86	5.1		U
76-13-1	Trichlorotrifluoroethane	0.56	5.1		U
75-69-4	Trichlorofluoromethane	0.96	5.1		U
75-01-4	Vinyl chloride	1.1	5.1		U
1330-20-7	Xylene(total)	0.71	5.1		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB2
2-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-37

Sample wt/vol: 4.7 (g/mL) G Lab File ID: 1000637A

Level: (low/med) LOW Date Sampled: 09/27/09 12:00

% Moisture: not dec. 19 Date Analyzed: 10/06/09 07:08

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.6	6.6	21	
71-43-2	Benzene	0.62	6.6		U
75-27-4	Bromodichloromethane	0.40	13		U
75-25-2	Bromoform	1.3	6.6		U
74-83-9	Bromomethane	0.95	13		U
78-93-3	2-Butanone	1.8	6.6		U
75-15-0	Carbon disulfide	1.7	6.6		U
56-23-5	Carbon tetrachloride	1.2	6.6		U
108-90-7	Chlorobenzene	0.45	6.6		U
75-00-3	Chloroethane	1.4	13		U
67-66-3	Chloroform	0.73	6.6		U
74-87-3	Chloromethane	0.69	13		U
110-82-7	Cyclohexane	0.71	6.6		U
124-48-1	Dibromochloromethane	0.45	6.6		U
96-12-8	1,2-Dibromo-3-chloropropane	1.6	6.6		U
106-93-4	1,2-Dibromoethane	0.57	6.6		U
95-50-1	1,2-Dichlorobenzene	0.49	6.6		U
541-73-1	1,3-Dichlorobenzene	1.1	6.6		U
106-46-7	1,4-Dichlorobenzene	0.73	6.6		U
75-71-8	Dichlorodifluoromethane	1.4	6.6		U
75-34-3	1,1-Dichloroethane	0.71	6.6		U
107-06-2	1,2-Dichloroethane	0.61	6.6		U
75-35-4	1,1-Dichloroethene	1.6	6.6		U
156-59-2	cis-1,2-Dichloroethene	1.6	13		U
156-60-5	trans-1,2-Dichloroethene	1.4	6.6		U
78-87-5	1,2-Dichloropropane	0.61	6.6		U
10061-01-5	cis-1,3-Dichloropropene	0.66	6.6		U
10061-02-6	trans-1,3-Dichloropropene	0.42	6.6		U
100-41-4	Ethylbenzene	0.99	6.6		U
591-78-6	2-Hexanone	3.0	6.6		U
98-82-8	Isopropylbenzene	1.2	6.6		U
79-20-9	Methyl acetate	2.1	13		U
75-09-2	Methylene chloride	0.82	13	1.9	JB
108-87-2	Methyl cyclohexane	0.40	6.6		U
1634-04-4	Methyl-tert-butyl-ether	0.42	6.6		U
108-10-1	4-Methyl-2-pentanone	0.77	6.6		U
100-42-5	Styrene	0.46	6.6		U
79-34-5	1,1,2,2-Tetrachloroethane	0.57	6.6		U
127-18-4	Tetrachloroethene	1.3	6.6		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB2
2-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-37

Sample wt/vol: 4.7 (g/mL) G Lab File ID: 1000637A

Level: (low/med) LOW Date Sampled: 09/27/09 12:00

% Moisture: not dec. 19 Date Analyzed: 10/06/09 07:08

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	1.1	6.6		U
120-82-1	1,2,4-Trichlorobenzene	0.24	6.6		U
71-55-6	1,1,1-Trichloroethane	1.2	6.6		U
79-00-5	1,1,2-Trichloroethane	0.46	6.6		U
79-01-6	Trichloroethene	1.1	6.6		U
76-13-1	Trichlorotrifluoroethane	0.73	6.6		U
75-69-4	Trichlorofluoromethane	1.2	6.6		U
75-01-4	Vinyl chloride	1.4	6.6		U
1330-20-7	Xylene(total)	0.92	6.6		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB2
2-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-38

Sample wt/vol: 5.6 (g/mL) G Lab File ID: 1000638A

Level: (low/med) LOW Date Sampled: 09/27/09 12:10

% Moisture: not dec. 20 Date Analyzed: 10/06/09 07:40

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.2	5.5		U
71-43-2	Benzene	0.52	5.5		U
75-27-4	Bromodichloromethane	0.33	11		U
75-25-2	Bromoform	1.1	5.5		U
74-83-9	Bromomethane	0.79	11		U
78-93-3	2-Butanone	1.5	5.5		U
75-15-0	Carbon disulfide	1.4	5.5	9.0	
56-23-5	Carbon tetrachloride	0.97	5.5		U
108-90-7	Chlorobenzene	0.37	5.5		U
75-00-3	Chloroethane	1.2	11		U
67-66-3	Chloroform	0.61	5.5		U
74-87-3	Chloromethane	0.57	11		U
110-82-7	Cyclohexane	0.60	5.5	0.75	J
124-48-1	Dibromochloromethane	0.37	5.5		U
96-12-8	1,2-Dibromo-3-chloropropane	1.3	5.5		U
106-93-4	1,2-Dibromoethane	0.47	5.5		U
95-50-1	1,2-Dichlorobenzene	0.41	5.5		U
541-73-1	1,3-Dichlorobenzene	0.93	5.5		U
106-46-7	1,4-Dichlorobenzene	0.61	5.5		U
75-71-8	Dichlorodifluoromethane	1.2	5.5		U
75-34-3	1,1-Dichloroethane	0.60	5.5		U
107-06-2	1,2-Dichloroethane	0.51	5.5		U
75-35-4	1,1-Dichloroethene	1.3	5.5		U
156-59-2	cis-1,2-Dichloroethene	1.3	11		U
156-60-5	trans-1,2-Dichloroethene	1.2	5.5		U
78-87-5	1,2-Dichloropropane	0.51	5.5		U
10061-01-5	cis-1,3-Dichloropropene	0.55	5.5		U
10061-02-6	trans-1,3-Dichloropropene	0.35	5.5		U
100-41-4	Ethylbenzene	0.83	5.5		U
591-78-6	2-Hexanone	2.5	5.5		U
98-82-8	Isopropylbenzene	0.97	5.5		U
79-20-9	Methyl acetate	1.8	11		U
75-09-2	Methylene chloride	0.68	11	1.4	JB
108-87-2	Methyl cyclohexane	0.33	5.5	1.4	J
1634-04-4	Methyl-tert-butyl-ether	0.35	5.5		U
108-10-1	4-Methyl-2-pentanone	0.64	5.5		U
100-42-5	Styrene	0.38	5.5		U
79-34-5	1,1,2,2-Tetrachloroethane	0.47	5.5		U
127-18-4	Tetrachloroethene	1.1	5.5		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB2
2-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-38

Sample wt/vol: 5.6 (g/mL) G Lab File ID: 1000638A

Level: (low/med) LOW Date Sampled: 09/27/09 12:10

% Moisture: not dec. 20 Date Analyzed: 10/06/09 07:40

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.95	5.5		U
120-82-1	1,2,4-Trichlorobenzene	0.20	5.5		U
71-55-6	1,1,1-Trichloroethane	0.99	5.5		U
79-00-5	1,1,2-Trichloroethane	0.38	5.5		U
79-01-6	Trichloroethene	0.94	5.5		U
76-13-1	Trichlorotrifluoroethane	0.61	5.5		U
75-69-4	Trichlorofluoromethane	1.0	5.5		U
75-01-4	Vinyl chloride	1.2	5.5		U
1330-20-7	Xylene(total)	0.77	5.5		U

FORM I VOA

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

RB-092909-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) WATER Lab Sample ID: 0910006-51

Sample wt/vol: 1040 (g/mL) ML Lab File ID: 1000651

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 09/29/09 11:26

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:10/01/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/10/09 01:14

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	0.72	4.8		U
1912-24-9	Atrazine	0.66	4.8		U
100-52-7	Benzaldehyde	0.55	4.8		U
111-91-1	bis(2-Chloroethoxy)methane	0.50	4.8		U
92-52-4	1,1'-Biphenyl	0.38	4.8		U
111-44-4	bis(2-Chloroethyl)ether	0.43	4.8		U
108-60-1	2,2-Oxybis(1-chloropropane)	0.82	4.8		U
117-81-7	Bis(2-ethylhexyl)phthalate	1.2	4.8		U
101-55-3	4-Bromophenyl-phenylether	0.55	4.8		U
85-68-7	Butylbenzylphthalate	0.79	4.8		U
105-60-2	Caprolactam	0.35	4.8		U
106-47-8	4-Chloroaniline	0.91	4.8		U
86-74-8	Carbazole	0.66	4.8		U
59-50-7	4-Chloro-3-methylphenol	0.56	4.8		U
91-58-7	2-Chloronaphthalene (beta)	0.56	4.8		U
95-57-8	2-Chlorophenol	0.57	4.8		U
7005-72-3	4-Chlorophenyl-phenylether	0.86	4.8		U
132-64-9	Dibenzofuran	0.62	4.8		U
91-94-1	3,3'-Dichlorobenzidine	0.86	4.8		U
120-83-2	2,4-Dichlorophenol	0.42	4.8		U
84-66-2	Diethylphthalate	0.98	4.8		U
105-67-9	2,4-Dimethylphenol	0.68	19		U
131-11-3	Dimethylphthalate	0.71	4.8		U
84-74-2	Di-n-butylphthalate	1.2	4.8		U
534-52-1	4,6-Dinitro-2-methylphenol	0.71	19		U
51-28-5	2,4-Dinitrophenol	0.82	48		U
121-14-2	2,4-Dinitrotoluene	0.47	4.8		U
606-20-2	2,6-Dinitrotoluene	0.63	4.8		U
117-84-0	Di-n-octylphthalate	0.32	4.8		U
118-74-1	Hexachlorobenzene	0.45	4.8		U
87-68-3	Hexachlorobutadiene	0.89	4.8		U
77-47-4	Hexachlorocyclopentadiene	0.86	4.8		U
67-72-1	Hexachloroethane	0.44	4.8		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

RB-092909-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) WATER Lab Sample ID: 0910006-51

Sample wt/vol: 1040 (g/mL) ML Lab File ID: 1000651

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 09/29/09 11:26

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:10/01/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/10/09 01:14

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	0.53	4.8		U
106-44-5	4-Methylphenol (p-cresol)	0.74	4.8		U
95-48-7	2-Methylphenol (o-cresol)	0.80	4.8		U
88-74-4	2-Nitroaniline	1.1	19		U
99-09-2	3-Nitroaniline	1.0	19		U
100-01-6	4-Nitroaniline	2.0	19		U
98-95-3	Nitrobenzene	0.60	4.8		U
88-75-5	2-Nitrophenol	0.71	4.8		U
100-02-7	4-Nitrophenol	0.80	19		U
86-30-6	N-Nitrosodiphenylamine (1)	0.44	4.8		U
621-64-7	N-Nitroso-di-n-propylamine	0.86	4.8		U
87-86-5	Pentachlorophenol	0.96	19		U
108-95-2	Phenol	0.44	4.8		U
95-95-4	2,4,5-Trichlorophenol	0.48	4.8		U
88-06-2	2,4,6-Trichlorophenol	0.70	4.8		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

RB-092909-02

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) WATER Lab Sample ID: 0910006-52

Sample wt/vol: 1070 (g/mL) ML Lab File ID: 1000652

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 09/29/09 13:02

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:10/01/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/10/09 01:50

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	0.70	4.7		U
1912-24-9	Atrazine	0.64	4.7		U
100-52-7	Benzaldehyde	0.53	4.7		U
111-91-1	bis(2-Chloroethoxy)methane	0.48	4.7		U
92-52-4	1,1'-Biphenyl	0.36	4.7		U
111-44-4	bis(2-Chloroethyl)ether	0.42	4.7		U
108-60-1	2,2-Oxybis(1-chloropropane)	0.79	4.7		U
117-81-7	Bis(2-ethylhexyl)phthalate	1.2	4.7		U
101-55-3	4-Bromophenyl-phenylether	0.53	4.7		U
85-68-7	Butylbenzylphthalate	0.77	4.7		U
105-60-2	Caprolactam	0.34	4.7		U
106-47-8	4-Chloroaniline	0.89	4.7		U
86-74-8	Carbazole	0.64	4.7		U
59-50-7	4-Chloro-3-methylphenol	0.54	4.7		U
91-58-7	2-Chloronaphthalene (beta)	0.54	4.7		U
95-57-8	2-Chlorophenol	0.55	4.7		U
7005-72-3	4-Chlorophenyl-phenylether	0.83	4.7		U
132-64-9	Dibenzofuran	0.61	4.7		U
91-94-1	3,3'-Dichlorobenzidine	0.83	4.7		U
120-83-2	2,4-Dichlorophenol	0.41	4.7		U
84-66-2	Diethylphthalate	0.95	4.7		U
105-67-9	2,4-Dimethylphenol	0.66	19		U
131-11-3	Dimethylphthalate	0.69	4.7		U
84-74-2	Di-n-butylphthalate	1.2	4.7		U
534-52-1	4,6-Dinitro-2-methylphenol	0.69	19		U
51-28-5	2,4-Dinitrophenol	0.79	47		U
121-14-2	2,4-Dinitrotoluene	0.46	4.7		U
606-20-2	2,6-Dinitrotoluene	0.62	4.7		U
117-84-0	Di-n-octylphthalate	0.31	4.7		U
118-74-1	Hexachlorobenzene	0.44	4.7		U
87-68-3	Hexachlorobutadiene	0.87	4.7		U
77-47-4	Hexachlorocyclopentadiene	0.83	4.7		U
67-72-1	Hexachloroethane	0.43	4.7		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

RB-092909-02

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) WATER Lab Sample ID: 0910006-52

Sample wt/vol: 1070 (g/mL) ML Lab File ID: 1000652

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 09/29/09 13:02

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:10/01/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/10/09 01:50

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	0.51	4.7		U
106-44-5	4-Methylphenol (p-cresol)	0.72	4.7		U
95-48-7	2-Methylphenol (o-cresol)	0.78	4.7		U
88-74-4	2-Nitroaniline	1.1	19		U
99-09-2	3-Nitroaniline	0.98	19		U
100-01-6	4-Nitroaniline	1.9	19		U
98-95-3	Nitrobenzene	0.58	4.7		U
88-75-5	2-Nitrophenol	0.69	4.7		U
100-02-7	4-Nitrophenol	0.78	19		U
86-30-6	N-Nitrosodiphenylamine (1)	0.43	4.7		U
621-64-7	N-Nitroso-di-n-propylamine	0.84	4.7		U
87-86-5	Pentachlorophenol	0.93	19		U
108-95-2	Phenol	0.43	4.7		U
95-95-4	2,4,5-Trichlorophenol	0.47	4.7		U
88-06-2	2,4,6-Trichlorophenol	0.68	4.7		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SB-092909-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) WATER Lab Sample ID: 0910006-53

Sample wt/vol: 1080 (g/mL) ML Lab File ID: 1000653

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 09/29/09 10:31

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:10/01/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/10/09 08:36

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	0.69	4.6		U
1912-24-9	Atrazine	0.64	4.6		U
100-52-7	Benzaldehyde	0.53	4.6		U
111-91-1	bis(2-Chloroethoxy)methane	0.48	4.6		U
92-52-4	1,1'-Biphenyl	0.36	4.6		U
111-44-4	bis(2-Chloroethyl)ether	0.42	4.6		U
108-60-1	2,2-Oxybis(1-chloropropane)	0.79	4.6		U
117-81-7	Bis(2-ethylhexyl)phthalate	1.2	4.6		U
101-55-3	4-Bromophenyl-phenylether	0.53	4.6		U
85-68-7	Butylbenzylphthalate	0.76	4.6		U
105-60-2	Caprolactam	0.33	4.6	0.60	J
106-47-8	4-Chloroaniline	0.88	4.6		U
86-74-8	Carbazole	0.64	4.6		U
59-50-7	4-Chloro-3-methylphenol	0.54	4.6		U
91-58-7	2-Chloronaphthalene (beta)	0.54	4.6		U
95-57-8	2-Chlorophenol	0.55	4.6		U
7005-72-3	4-Chlorophenyl-phenylether	0.82	4.6		U
132-64-9	Dibenzofuran	0.60	4.6		U
91-94-1	3,3'-Dichlorobenzidine	0.82	4.6		U
120-83-2	2,4-Dichlorophenol	0.41	4.6		U
84-66-2	Diethylphthalate	0.94	4.6		U
105-67-9	2,4-Dimethylphenol	0.66	18		U
131-11-3	Dimethylphthalate	0.68	4.6		U
84-74-2	Di-n-butylphthalate	1.2	4.6		U
534-52-1	4,6-Dinitro-2-methylphenol	0.68	18		U
51-28-5	2,4-Dinitrophenol	0.79	46		U
121-14-2	2,4-Dinitrotoluene	0.45	4.6		U
606-20-2	2,6-Dinitrotoluene	0.61	4.6		U
117-84-0	Di-n-octylphthalate	0.30	4.6		U
118-74-1	Hexachlorobenzene	0.44	4.6		U
87-68-3	Hexachlorobutadiene	0.86	4.6		U
77-47-4	Hexachlorocyclopentadiene	0.82	4.6		U
67-72-1	Hexachloroethane	0.42	4.6		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SB-092909-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) WATER Lab Sample ID: 0910006-53

Sample wt/vol: 1080 (g/mL) ML Lab File ID: 1000653

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 09/29/09 10:31

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:10/01/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/10/09 08:36

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	0.51	4.6		U
106-44-5	4-Methylphenol (p-cresol)	0.71	4.6		U
95-48-7	2-Methylphenol (o-cresol)	0.77	4.6		U
88-74-4	2-Nitroaniline	1.1	18		U
99-09-2	3-Nitroaniline	0.97	18		U
100-01-6	4-Nitroaniline	1.9	18		U
98-95-3	Nitrobenzene	0.57	4.6		U
88-75-5	2-Nitrophenol	0.68	4.6		U
100-02-7	4-Nitrophenol	0.77	18		U
86-30-6	N-Nitrosodiphenylamine (1)	0.42	4.6		U
621-64-7	N-Nitroso-di-n-propylamine	0.83	4.6		U
87-86-5	Pentachlorophenol	0.92	18		U
108-95-2	Phenol	0.42	4.6		U
95-95-4	2,4,5-Trichlorophenol	0.46	4.6		U
88-06-2	2,4,6-Trichlorophenol	0.68	4.6		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FD-092609-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-01

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000601

% Moisture: 7 decanted: (Y/N) N Date Sampled: 09/26/09 :

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/16/09 18:06

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	44	360		U
1912-24-9	Atrazine	31	360		U
100-52-7	Benzaldehyde	60	360		U
111-91-1	bis(2-Chloroethoxy)methane	33	360		U
92-52-4	1,1'-Biphenyl	32	360		U
111-44-4	bis(2-Chloroethyl)ether	44	360		U
108-60-1	2,2-Oxybis(1-chloropropane)	55	720		U
117-81-7	Bis(2-ethylhexyl)phthalate	39	360		U
101-55-3	4-Bromophenyl-phenylether	28	360		U
85-68-7	Butylbenzylphthalate	32	360		U
105-60-2	Caprolactam	73	360		U
106-47-8	4-Chloroaniline	52	360		U
86-74-8	Carbazole	39	720		U
59-50-7	4-Chloro-3-methylphenol	30	360		U
91-58-7	2-Chloronaphthalene (beta)	34	360		U
95-57-8	2-Chlorophenol	44	360		U
7005-72-3	4-Chlorophenyl-phenylether	33	360		U
132-64-9	Dibenzofuran	26	360		U
91-94-1	3,3'-Dichlorobenzidine	34	360		U
120-83-2	2,4-Dichlorophenol	20	360		U
84-66-2	Diethylphthalate	37	360		U
105-67-9	2,4-Dimethylphenol	23	720		U
131-11-3	Dimethylphthalate	33	360		U
84-74-2	Di-n-butylphthalate	33	360		U
534-52-1	4,6-Dinitro-2-methylphenol	24	1400		U
51-28-5	2,4-Dinitrophenol	140	3600		U
121-14-2	2,4-Dinitrotoluene	26	360		U
606-20-2	2,6-Dinitrotoluene	41	360		U
117-84-0	Di-n-octylphthalate	29	360		U
118-74-1	Hexachlorobenzene	38	360		U
87-68-3	Hexachlorobutadiene	35	360		U
77-47-4	Hexachlorocyclopentadiene	66	360		U
67-72-1	Hexachloroethane	42	720		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FD-092609-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-01

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000601

% Moisture: 7 decanted: (Y/N) N Date Sampled: 09/26/09 :

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/16/09 18:06

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	31	360		U
106-44-5	4-Methylphenol (p-cresol)	29	360		U
95-48-7	2-Methylphenol (o-cresol)	42	360		U
88-74-4	2-Nitroaniline	35	1400		U
99-09-2	3-Nitroaniline	51	1400		U
100-01-6	4-Nitroaniline	110	1400		U
98-95-3	Nitrobenzene	37	360		U
88-75-5	2-Nitrophenol	24	360		U
100-02-7	4-Nitrophenol	87	1400		U
86-30-6	N-Nitrosodiphenylamine (1)	34	360		U
621-64-7	N-Nitroso-di-n-propylamine	59	360		U
87-86-5	Pentachlorophenol	36	1400		U
108-95-2	Phenol	39	360		U
95-95-4	2,4,5-Trichlorophenol	29	360		U
88-06-2	2,4,6-Trichlorophenol	38	360		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FD-092609-02

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-02

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000602

% Moisture: 7 decanted: (Y/N) N Date Sampled: 09/26/09 :

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 03:41

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	44	360		U
1912-24-9	Atrazine	30	360		U
100-52-7	Benzaldehyde	60	360		U
111-91-1	bis(2-Chloroethoxy)methane	33	360		U
92-52-4	1,1'-Biphenyl	32	360		U
111-44-4	bis(2-Chloroethyl)ether	44	360		U
108-60-1	2,2-Oxybis(1-chloropropane)	55	720		U
117-81-7	Bis(2-ethylhexyl)phthalate	39	360	160	J
101-55-3	4-Bromophenyl-phenylether	28	360		U
85-68-7	Butylbenzylphthalate	32	360		U
105-60-2	Caprolactam	73	360		U
106-47-8	4-Chloroaniline	52	360		U
86-74-8	Carbazole	39	720	65	J
59-50-7	4-Chloro-3-methylphenol	30	360		U
91-58-7	2-Chloronaphthalene (beta)	34	360		U
95-57-8	2-Chlorophenol	44	360		U
7005-72-3	4-Chlorophenyl-phenylether	33	360		U
132-64-9	Dibenzofuran	26	360	96	J
91-94-1	3,3'-Dichlorobenzidine	34	360		U
120-83-2	2,4-Dichlorophenol	20	360		U
84-66-2	Diethylphthalate	36	360		U
105-67-9	2,4-Dimethylphenol	23	720		U
131-11-3	Dimethylphthalate	33	360		U
84-74-2	Di-n-butylphthalate	33	360	69	J
534-52-1	4,6-Dinitro-2-methylphenol	24	1400		UY
51-28-5	2,4-Dinitrophenol	140	3600		UY
121-14-2	2,4-Dinitrotoluene	26	360		U
606-20-2	2,6-Dinitrotoluene	41	360		U
117-84-0	Di-n-octylphthalate	29	360		U
118-74-1	Hexachlorobenzene	37	360		U
87-68-3	Hexachlorobutadiene	35	360		U
77-47-4	Hexachlorocyclopentadiene	66	360		UY
67-72-1	Hexachloroethane	42	720		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FD-092609-02

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-02

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000602

% Moisture: 7 decanted: (Y/N) N Date Sampled: 09/26/09 :

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 03:41

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	30	360		U
106-44-5	4-Methylphenol (p-cresol)	28	360		U
95-48-7	2-Methylphenol (o-cresol)	42	360		U
88-74-4	2-Nitroaniline	34	1400		U
99-09-2	3-Nitroaniline	51	1400		U
100-01-6	4-Nitroaniline	110	1400		U
98-95-3	Nitrobenzene	37	360		U
88-75-5	2-Nitrophenol	24	360		U
100-02-7	4-Nitrophenol	87	1400		U
86-30-6	N-Nitrosodiphenylamine (1)	34	360		U
621-64-7	N-Nitroso-di-n-propylamine	59	360		U
87-86-5	Pentachlorophenol	36	1400		U
108-95-2	Phenol	39	360		U
95-95-4	2,4,5-Trichlorophenol	29	360		U
88-06-2	2,4,6-Trichlorophenol	38	360		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FD-092709-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-20

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000620

% Moisture: 24 decanted: (Y/N) N Date Sampled: 09/27/09 :

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/16/09 22:16

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	54	440		U
1912-24-9	Atrazine	38	440		U
100-52-7	Benzaldehyde	73	440		U
111-91-1	bis(2-Chloroethoxy)methane	41	440		U
92-52-4	1,1'-Biphenyl	39	440		U
111-44-4	bis(2-Chloroethyl)ether	54	440		U
108-60-1	2,2-Oxybis(1-chloropropane)	68	880		U
117-81-7	Bis(2-ethylhexyl)phthalate	48	440		U
101-55-3	4-Bromophenyl-phenylether	34	440		U
85-68-7	Butylbenzylphthalate	39	440		U
105-60-2	Caprolactam	89	440		U
106-47-8	4-Chloroaniline	63	440		U
86-74-8	Carbazole	48	880		U
59-50-7	4-Chloro-3-methylphenol	37	440		U
91-58-7	2-Chloronaphthalene (beta)	42	440		U
95-57-8	2-Chlorophenol	54	440		U
7005-72-3	4-Chlorophenyl-phenylether	41	440		U
132-64-9	Dibenzofuran	32	440	42	J
91-94-1	3,3'-Dichlorobenzidine	42	440		U
120-83-2	2,4-Dichlorophenol	25	440		U
84-66-2	Diethylphthalate	45	440		U
105-67-9	2,4-Dimethylphenol	28	880		U
131-11-3	Dimethylphthalate	40	440		U
84-74-2	Di-n-butylphthalate	40	440		U
534-52-1	4,6-Dinitro-2-methylphenol	29	1800		U
51-28-5	2,4-Dinitrophenol	180	4400		U
121-14-2	2,4-Dinitrotoluene	32	440		U
606-20-2	2,6-Dinitrotoluene	50	440		U
117-84-0	Di-n-octylphthalate	36	440		U
118-74-1	Hexachlorobenzene	46	440		U
87-68-3	Hexachlorobutadiene	43	440		U
77-47-4	Hexachlorocyclopentadiene	81	440		U
67-72-1	Hexachloroethane	52	880		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FD-092709-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-20

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000620

% Moisture: 24 decanted: (Y/N) N Date Sampled: 09/27/09 :

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/16/09 22:16

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	38	440		U
106-44-5	4-Methylphenol (p-cresol)	35	440		U
95-48-7	2-Methylphenol (o-cresol)	51	440		U
88-74-4	2-Nitroaniline	42	1800		U
99-09-2	3-Nitroaniline	62	1800		U
100-01-6	4-Nitroaniline	130	1800		U
98-95-3	Nitrobenzene	46	440		U
88-75-5	2-Nitrophenol	29	440		U
100-02-7	4-Nitrophenol	110	1800		U
86-30-6	N-Nitrosodiphenylamine (1)	42	440		U
621-64-7	N-Nitroso-di-n-propylamine	72	440		U
87-86-5	Pentachlorophenol	45	1800		U
108-95-2	Phenol	48	440		U
95-95-4	2,4,5-Trichlorophenol	35	440		U
88-06-2	2,4,6-Trichlorophenol	46	440		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FD-092809-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-40

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000640

% Moisture: 20 decanted: (Y/N) N Date Sampled: 09/28/09 :

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/18/09 02:47

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	51	420		U
1912-24-9	Atrazine	35	420		U
100-52-7	Benzaldehyde	69	420		U
111-91-1	bis(2-Chloroethoxy)methane	39	420		U
92-52-4	1,1'-Biphenyl	37	420		UY
111-44-4	bis(2-Chloroethyl)ether	51	420		U
108-60-1	2,2-Oxybis(1-chloropropane)	64	830		U
117-81-7	Bis(2-ethylhexyl)phthalate	45	420	170	J
101-55-3	4-Bromophenyl-phenylether	32	420		U
85-68-7	Butylbenzylphthalate	37	420		U
105-60-2	Caprolactam	84	420		U
106-47-8	4-Chloroaniline	60	420		U
86-74-8	Carbazole	45	830		UY
59-50-7	4-Chloro-3-methylphenol	35	420		U
91-58-7	2-Chloronaphthalene (beta)	40	420		U
95-57-8	2-Chlorophenol	51	420		U
7005-72-3	4-Chlorophenyl-phenylether	38	420		U
132-64-9	Dibenzofuran	30	420	160	J
91-94-1	3,3'-Dichlorobenzidine	39	420		U
120-83-2	2,4-Dichlorophenol	24	420		U
84-66-2	Diethylphthalate	42	420		U
105-67-9	2,4-Dimethylphenol	27	830		U
131-11-3	Dimethylphthalate	38	420		U
84-74-2	Di-n-butylphthalate	38	420		U
534-52-1	4,6-Dinitro-2-methylphenol	27	1700		UY
51-28-5	2,4-Dinitrophenol	170	4200		UY
121-14-2	2,4-Dinitrotoluene	30	420		U
606-20-2	2,6-Dinitrotoluene	47	420		U
117-84-0	Di-n-octylphthalate	34	420		U
118-74-1	Hexachlorobenzene	43	420		U
87-68-3	Hexachlorobutadiene	41	420		U
77-47-4	Hexachlorocyclopentadiene	76	420		U
67-72-1	Hexachloroethane	49	830		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FD-092809-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-40

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000640

% Moisture: 20 decanted: (Y/N) N Date Sampled: 09/28/09 :

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/18/09 02:47

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	35	420		U
106-44-5	4-Methylphenol (p-cresol)	33	420		U
95-48-7	2-Methylphenol (o-cresol)	48	420		U
88-74-4	2-Nitroaniline	40	1700		U
99-09-2	3-Nitroaniline	59	1700		U
100-01-6	4-Nitroaniline	120	1700		U
98-95-3	Nitrobenzene	43	420		U
88-75-5	2-Nitrophenol	28	420		U
100-02-7	4-Nitrophenol	100	1700		U
86-30-6	N-Nitrosodiphenylamine (1)	40	420		U
621-64-7	N-Nitroso-di-n-propylamine	68	420		U
87-86-5	Pentachlorophenol	42	1700		U
108-95-2	Phenol	45	420		U
95-95-4	2,4,5-Trichlorophenol	33	420		U
88-06-2	2,4,6-Trichlorophenol	44	420		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
1-SO-0102

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-41

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000641

% Moisture: 16 decanted: (Y/N) N Date Sampled: 09/28/09 12:00

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/18/09 03:24

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	49	400		U
1912-24-9	Atrazine	34	400		U
100-52-7	Benzaldehyde	66	400		U
111-91-1	bis(2-Chloroethoxy)methane	37	400		U
92-52-4	1,1'-Biphenyl	35	400	62	J
111-44-4	bis(2-Chloroethyl)ether	48	400		U
108-60-1	2,2-Oxybis(1-chloropropane)	61	790		U
117-81-7	Bis(2-ethylhexyl)phthalate	43	400		U
101-55-3	4-Bromophenyl-phenylether	31	400		U
85-68-7	Butylbenzylphthalate	35	400		U
105-60-2	Caprolactam	80	400		U
106-47-8	4-Chloroaniline	57	400		U
86-74-8	Carbazole	43	790	1000	YY
59-50-7	4-Chloro-3-methylphenol	33	400		U
91-58-7	2-Chloronaphthalene (beta)	38	400		U
95-57-8	2-Chlorophenol	48	400		U
7005-72-3	4-Chlorophenyl-phenylether	36	400		U
132-64-9	Dibenzofuran	29	400	540	
91-94-1	3,3'-Dichlorobenzidine	37	400		U
120-83-2	2,4-Dichlorophenol	22	400		U
84-66-2	Diethylphthalate	40	400		U
105-67-9	2,4-Dimethylphenol	25	790		U
131-11-3	Dimethylphthalate	36	400		U
84-74-2	Di-n-butylphthalate	36	400		U
534-52-1	4,6-Dinitro-2-methylphenol	26	1600		UY
51-28-5	2,4-Dinitrophenol	160	4000		UY
121-14-2	2,4-Dinitrotoluene	28	400		U
606-20-2	2,6-Dinitrotoluene	45	400		U
117-84-0	Di-n-octylphthalate	32	400		U
118-74-1	Hexachlorobenzene	41	400		U
87-68-3	Hexachlorobutadiene	39	400		U
77-47-4	Hexachlorocyclopentadiene	73	400		U
67-72-1	Hexachloroethane	47	790		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
1-SO-0102

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-41

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000641

% Moisture: 16 decanted: (Y/N) N Date Sampled: 09/28/09 12:00

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/18/09 03:24

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	34	400		U
106-44-5	4-Methylphenol (p-cresol)	31	400		U
95-48-7	2-Methylphenol (o-cresol)	46	400		U
88-74-4	2-Nitroaniline	38	1600		U
99-09-2	3-Nitroaniline	56	1600		U
100-01-6	4-Nitroaniline	120	1600		U
98-95-3	Nitrobenzene	41	400		U
88-75-5	2-Nitrophenol	26	400		U
100-02-7	4-Nitrophenol	96	1600		U
86-30-6	N-Nitrosodiphenylamine (1)	38	400		U
621-64-7	N-Nitroso-di-n-propylamine	65	400		U
87-86-5	Pentachlorophenol	40	1600		U
108-95-2	Phenol	43	400		U
95-95-4	2,4,5-Trichlorophenol	32	400		U
88-06-2	2,4,6-Trichlorophenol	41	400		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
2-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-42

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000642

% Moisture: 10 decanted: (Y/N) N Date Sampled: 09/28/09 10:20

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted: 10/07/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 17:15

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	46	370		U
1912-24-9	Atrazine	32	370		U
100-52-7	Benzaldehyde	62	370		U
111-91-1	bis(2-Chloroethoxy)methane	34	370		U
92-52-4	1,1'-Biphenyl	33	370		U
111-44-4	bis(2-Chloroethyl)ether	45	370		U
108-60-1	2,2-Oxybis(1-chloropropane)	57	740		U
117-81-7	Bis(2-ethylhexyl)phthalate	40	370	200	J
101-55-3	4-Bromophenyl-phenylether	29	370		U
85-68-7	Butylbenzylphthalate	33	370		U
105-60-2	Caprolactam	75	370		U
106-47-8	4-Chloroaniline	53	370		U
86-74-8	Carbazole	40	740		U
59-50-7	4-Chloro-3-methylphenol	31	370		U
91-58-7	2-Chloronaphthalene (beta)	36	370		U
95-57-8	2-Chlorophenol	45	370		U
7005-72-3	4-Chlorophenyl-phenylether	34	370		U
132-64-9	Dibenzofuran	27	370	97	J
91-94-1	3,3'-Dichlorobenzidine	35	370		U
120-83-2	2,4-Dichlorophenol	21	370		U
84-66-2	Diethylphthalate	38	370		U
105-67-9	2,4-Dimethylphenol	24	740		U
131-11-3	Dimethylphthalate	34	370		U
84-74-2	Di-n-butylphthalate	34	370		U
534-52-1	4,6-Dinitro-2-methylphenol	24	1500		U
51-28-5	2,4-Dinitrophenol	150	3700		UY
121-14-2	2,4-Dinitrotoluene	27	370		U
606-20-2	2,6-Dinitrotoluene	42	370		U
117-84-0	Di-n-octylphthalate	30	370		U
118-74-1	Hexachlorobenzene	39	370		U
87-68-3	Hexachlorobutadiene	36	370		U
77-47-4	Hexachlorocyclopentadiene	68	370		U
67-72-1	Hexachloroethane	44	740		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
2-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-42

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000642

% Moisture: 10 decanted: (Y/N) N Date Sampled: 09/28/09 10:20

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/07/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 17:15

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	32	370		U
106-44-5	4-Methylphenol (p-cresol)	30	370		U
95-48-7	2-Methylphenol (o-cresol)	43	370		U
88-74-4	2-Nitroaniline	36	1500		U
99-09-2	3-Nitroaniline	53	1500		U
100-01-6	4-Nitroaniline	110	1500		U
98-95-3	Nitrobenzene	38	370		U
88-75-5	2-Nitrophenol	25	370		U
100-02-7	4-Nitrophenol	90	1500		UY
86-30-6	N-Nitrosodiphenylamine (1)	36	370		U
621-64-7	N-Nitroso-di-n-propylamine	61	370		U
87-86-5	Pentachlorophenol	38	1500		U
108-95-2	Phenol	40	370		U
95-95-4	2,4,5-Trichlorophenol	30	370		U
88-06-2	2,4,6-Trichlorophenol	39	370		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
2-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-43

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000643

% Moisture: 11 decanted: (Y/N) N Date Sampled: 09/28/09 10:30

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/07/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 17:54

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	46	380	230	J
1912-24-9	Atrazine	32	380		U
100-52-7	Benzaldehyde	62	380	220	J
111-91-1	bis(2-Chloroethoxy)methane	35	380		U
92-52-4	1,1'-Biphenyl	33	380		U
111-44-4	bis(2-Chloroethyl)ether	46	380		U
108-60-1	2,2-Oxybis(1-chloropropane)	58	750		U
117-81-7	Bis(2-ethylhexyl)phthalate	41	380	230	J
101-55-3	4-Bromophenyl-phenylether	29	380		U
85-68-7	Butylbenzylphthalate	33	380		U
105-60-2	Caprolactam	76	380		U
106-47-8	4-Chloroaniline	54	380		U
86-74-8	Carbazole	41	750		U
59-50-7	4-Chloro-3-methylphenol	31	380		U
91-58-7	2-Chloronaphthalene (beta)	36	380		U
95-57-8	2-Chlorophenol	46	380		U
7005-72-3	4-Chlorophenyl-phenylether	35	380		U
132-64-9	Dibenzofuran	28	380	310	J
91-94-1	3,3'-Dichlorobenzidine	35	380		U
120-83-2	2,4-Dichlorophenol	21	380		U
84-66-2	Diethylphthalate	38	380		U
105-67-9	2,4-Dimethylphenol	24	750		U
131-11-3	Dimethylphthalate	34	380		U
84-74-2	Di-n-butylphthalate	34	380		U
534-52-1	4,6-Dinitro-2-methylphenol	24	1500		U
51-28-5	2,4-Dinitrophenol	150	3800		UY
121-14-2	2,4-Dinitrotoluene	27	380		U
606-20-2	2,6-Dinitrotoluene	43	380		U
117-84-0	Di-n-octylphthalate	30	380		U
118-74-1	Hexachlorobenzene	39	380		U
87-68-3	Hexachlorobutadiene	37	380		U
77-47-4	Hexachlorocyclopentadiene	69	380		U
67-72-1	Hexachloroethane	44	750		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
2-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-43

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000643

% Moisture: 11 decanted: (Y/N) N Date Sampled: 09/28/09 10:30

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/07/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 17:54

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	32	380		U
106-44-5	4-Methylphenol (p-cresol)	30	380		U
95-48-7	2-Methylphenol (o-cresol)	44	380		U
88-74-4	2-Nitroaniline	36	1500		U
99-09-2	3-Nitroaniline	53	1500		U
100-01-6	4-Nitroaniline	110	1500		U
98-95-3	Nitrobenzene	39	380		U
88-75-5	2-Nitrophenol	25	380		U
100-02-7	4-Nitrophenol	91	1500		UY
86-30-6	N-Nitrosodiphenylamine (1)	36	380		U
621-64-7	N-Nitroso-di-n-propylamine	62	380		U
87-86-5	Pentachlorophenol	38	1500		U
108-95-2	Phenol	41	380		U
95-95-4	2,4,5-Trichlorophenol	30	380		U
88-06-2	2,4,6-Trichlorophenol	39	380		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
3-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-44

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000644

% Moisture: 5 decanted: (Y/N) N Date Sampled: 09/28/09 12:20

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/07/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 18:33

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	43	350		U
1912-24-9	Atrazine	30	350		U
100-52-7	Benzaldehyde	58	350		U
111-91-1	bis(2-Chloroethoxy)methane	33	350		U
92-52-4	1,1'-Biphenyl	31	350		U
111-44-4	bis(2-Chloroethyl)ether	43	350		U
108-60-1	2,2-Oxybis(1-chloropropane)	54	700		U
117-81-7	Bis(2-ethylhexyl)phthalate	38	350	240	J
101-55-3	4-Bromophenyl-phenylether	27	350		U
85-68-7	Butylbenzylphthalate	31	350		U
105-60-2	Caprolactam	71	350		U
106-47-8	4-Chloroaniline	50	350		U
86-74-8	Carbazole	38	700		U
59-50-7	4-Chloro-3-methylphenol	29	350		U
91-58-7	2-Chloronaphthalene (beta)	34	350		U
95-57-8	2-Chlorophenol	43	350		U
7005-72-3	4-Chlorophenyl-phenylether	32	350		U
132-64-9	Dibenzofuran	26	350	110	J
91-94-1	3,3'-Dichlorobenzidine	33	350		U
120-83-2	2,4-Dichlorophenol	20	350		U
84-66-2	Diethylphthalate	36	350		U
105-67-9	2,4-Dimethylphenol	22	700		U
131-11-3	Dimethylphthalate	32	350		U
84-74-2	Di-n-butylphthalate	32	350		U
534-52-1	4,6-Dinitro-2-methylphenol	23	1400		U
51-28-5	2,4-Dinitrophenol	140	3500		UY
121-14-2	2,4-Dinitrotoluene	25	350		U
606-20-2	2,6-Dinitrotoluene	40	350		U
117-84-0	Di-n-octylphthalate	28	350		U
118-74-1	Hexachlorobenzene	36	350		U
87-68-3	Hexachlorobutadiene	34	350		U
77-47-4	Hexachlorocyclopentadiene	64	350		U
67-72-1	Hexachloroethane	41	700		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
3-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-44

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000644

% Moisture: 5 decanted: (Y/N) N Date Sampled: 09/28/09 12:20

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/07/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 18:33

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	30	350		U
106-44-5	4-Methylphenol (p-cresol)	28	350		U
95-48-7	2-Methylphenol (o-cresol)	41	350		U
88-74-4	2-Nitroaniline	34	1400		U
99-09-2	3-Nitroaniline	50	1400		U
100-01-6	4-Nitroaniline	100	1400		U
98-95-3	Nitrobenzene	36	350		U
88-75-5	2-Nitrophenol	23	350		U
100-02-7	4-Nitrophenol	85	1400		UY
86-30-6	N-Nitrosodiphenylamine (1)	34	350		U
621-64-7	N-Nitroso-di-n-propylamine	58	350		U
87-86-5	Pentachlorophenol	36	1400		U
108-95-2	Phenol	38	350		U
95-95-4	2,4,5-Trichlorophenol	28	350		U
88-06-2	2,4,6-Trichlorophenol	37	350		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
3-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-45

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000645

% Moisture: 8 decanted: (Y/N) N Date Sampled: 09/28/09 12:30

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/07/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 19:12

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	44	360		U
1912-24-9	Atrazine	31	360		U
100-52-7	Benzaldehyde	60	360		U
111-91-1	bis(2-Chloroethoxy)methane	34	360		U
92-52-4	1,1'-Biphenyl	32	360		U
111-44-4	bis(2-Chloroethyl)ether	44	360		U
108-60-1	2,2-Oxybis(1-chloropropane)	56	720		U
117-81-7	Bis(2-ethylhexyl)phthalate	39	360	280	J
101-55-3	4-Bromophenyl-phenylether	28	360		U
85-68-7	Butylbenzylphthalate	32	360		U
105-60-2	Caprolactam	73	360		U
106-47-8	4-Chloroaniline	52	360		U
86-74-8	Carbazole	39	720		U
59-50-7	4-Chloro-3-methylphenol	30	360		U
91-58-7	2-Chloronaphthalene (beta)	35	360		U
95-57-8	2-Chlorophenol	44	360		U
7005-72-3	4-Chlorophenyl-phenylether	33	360		U
132-64-9	Dibenzofuran	26	360	490	
91-94-1	3,3'-Dichlorobenzidine	34	360		U
120-83-2	2,4-Dichlorophenol	20	360		U
84-66-2	Diethylphthalate	37	360		U
105-67-9	2,4-Dimethylphenol	23	720		U
131-11-3	Dimethylphthalate	33	360		U
84-74-2	Di-n-butylphthalate	33	360		U
534-52-1	4,6-Dinitro-2-methylphenol	24	1400		U
51-28-5	2,4-Dinitrophenol	140	3600		UY
121-14-2	2,4-Dinitrotoluene	26	360		U
606-20-2	2,6-Dinitrotoluene	41	360		U
117-84-0	Di-n-octylphthalate	29	360		U
118-74-1	Hexachlorobenzene	38	360		U
87-68-3	Hexachlorobutadiene	36	360		U
77-47-4	Hexachlorocyclopentadiene	66	360		U
67-72-1	Hexachloroethane	43	720		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
3-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-45

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000645

% Moisture: 8 decanted: (Y/N) N Date Sampled: 09/28/09 12:30

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/07/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 19:12

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	31	360		U
106-44-5	4-Methylphenol (p-cresol)	29	360		U
95-48-7	2-Methylphenol (o-cresol)	42	360		U
88-74-4	2-Nitroaniline	35	1400		U
99-09-2	3-Nitroaniline	51	1400		U
100-01-6	4-Nitroaniline	110	1400		U
98-95-3	Nitrobenzene	38	360		U
88-75-5	2-Nitrophenol	24	360		U
100-02-7	4-Nitrophenol	88	1400		UY
86-30-6	N-Nitrosodiphenylamine (1)	35	360		U
621-64-7	N-Nitroso-di-n-propylamine	60	360		U
87-86-5	Pentachlorophenol	37	1400		U
108-95-2	Phenol	39	360		U
95-95-4	2,4,5-Trichlorophenol	29	360		U
88-06-2	2,4,6-Trichlorophenol	38	360		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
4-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-21

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000621

% Moisture: 8 decanted: (Y/N) N Date Sampled: 09/27/09 12:50

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 18:22

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	44	360		U
1912-24-9	Atrazine	31	360		U
100-52-7	Benzaldehyde	60	360		U
111-91-1	bis(2-Chloroethoxy)methane	34	360		U
92-52-4	1,1'-Biphenyl	32	360		UY
111-44-4	bis(2-Chloroethyl)ether	44	360		U
108-60-1	2,2-Oxybis(1-chloropropane)	56	720		U
117-81-7	Bis(2-ethylhexyl)phthalate	39	360	110	J
101-55-3	4-Bromophenyl-phenylether	28	360		U
85-68-7	Butylbenzylphthalate	32	360		U
105-60-2	Caprolactam	73	360		U
106-47-8	4-Chloroaniline	52	360		U
86-74-8	Carbazole	39	720		UY
59-50-7	4-Chloro-3-methylphenol	30	360		U
91-58-7	2-Chloronaphthalene (beta)	35	360		U
95-57-8	2-Chlorophenol	44	360		U
7005-72-3	4-Chlorophenyl-phenylether	33	360		U
132-64-9	Dibenzofuran	26	360	250	J
91-94-1	3,3'-Dichlorobenzidine	34	360		U
120-83-2	2,4-Dichlorophenol	20	360		U
84-66-2	Diethylphthalate	37	360		U
105-67-9	2,4-Dimethylphenol	23	720		U
131-11-3	Dimethylphthalate	33	360		U
84-74-2	Di-n-butylphthalate	33	360		U
534-52-1	4,6-Dinitro-2-methylphenol	24	1400		UY
51-28-5	2,4-Dinitrophenol	140	3600		UY
121-14-2	2,4-Dinitrotoluene	26	360		U
606-20-2	2,6-Dinitrotoluene	41	360		U
117-84-0	Di-n-octylphthalate	29	360		U
118-74-1	Hexachlorobenzene	38	360		U
87-68-3	Hexachlorobutadiene	36	360		U
77-47-4	Hexachlorocyclopentadiene	66	360		U
67-72-1	Hexachloroethane	43	720		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
4-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-21

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000621

% Moisture: 8 decanted: (Y/N) N Date Sampled: 09/27/09 12:50

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 18:22

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	31	360		U
106-44-5	4-Methylphenol (p-cresol)	29	360		U
95-48-7	2-Methylphenol (o-cresol)	42	360		U
88-74-4	2-Nitroaniline	35	1400		U
99-09-2	3-Nitroaniline	51	1400		U
100-01-6	4-Nitroaniline	110	1400		U
98-95-3	Nitrobenzene	38	360		U
88-75-5	2-Nitrophenol	24	360		U
100-02-7	4-Nitrophenol	88	1400		U
86-30-6	N-Nitrosodiphenylamine (1)	35	360		U
621-64-7	N-Nitroso-di-n-propylamine	60	360		U
87-86-5	Pentachlorophenol	37	1400		U
108-95-2	Phenol	39	360		U
95-95-4	2,4,5-Trichlorophenol	29	360		U
88-06-2	2,4,6-Trichlorophenol	38	360		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
4-SO-0406

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-22

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000622

% Moisture: 42 decanted: (Y/N) N Date Sampled: 09/27/09 13:00

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 18:58

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	71	580		U
1912-24-9	Atrazine	49	580		U
100-52-7	Benzaldehyde	96	580		U
111-91-1	bis(2-Chloroethoxy)methane	54	580		U
92-52-4	1,1'-Biphenyl	51	580		UY
111-44-4	bis(2-Chloroethyl)ether	71	580		U
108-60-1	2,2-Oxybis(1-chloropropane)	89	1200		U
117-81-7	Bis(2-ethylhexyl)phthalate	62	580		U
101-55-3	4-Bromophenyl-phenylether	45	580		U
85-68-7	Butylbenzylphthalate	51	580		U
105-60-2	Caprolactam	120	580		U
106-47-8	4-Chloroaniline	83	580		U
86-74-8	Carbazole	62	1200		UY
59-50-7	4-Chloro-3-methylphenol	48	580		U
91-58-7	2-Chloronaphthalene (beta)	55	580		U
95-57-8	2-Chlorophenol	70	580		U
7005-72-3	4-Chlorophenyl-phenylether	53	580		U
132-64-9	Dibenzofuran	42	580		U
91-94-1	3,3'-Dichlorobenzidine	54	580		U
120-83-2	2,4-Dichlorophenol	33	580		U
84-66-2	Diethylphthalate	59	580		U
105-67-9	2,4-Dimethylphenol	37	1200		U
131-11-3	Dimethylphthalate	53	580		U
84-74-2	Di-n-butylphthalate	52	580		U
534-52-1	4,6-Dinitro-2-methylphenol	38	2300		UY
51-28-5	2,4-Dinitrophenol	230	5800		UY
121-14-2	2,4-Dinitrotoluene	42	580		U
606-20-2	2,6-Dinitrotoluene	66	580		U
117-84-0	Di-n-octylphthalate	46	580		U
118-74-1	Hexachlorobenzene	60	580		U
87-68-3	Hexachlorobutadiene	57	580		U
77-47-4	Hexachlorocyclopentadiene	100	580		U
67-72-1	Hexachloroethane	68	1200		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
4-SO-0406

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-22

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000622

% Moisture: 42 decanted: (Y/N) N Date Sampled: 09/27/09 13:00

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 18:58

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	49	580		U
106-44-5	4-Methylphenol (p-cresol)	46	580		U
95-48-7	2-Methylphenol (o-cresol)	67	580		U
88-74-4	2-Nitroaniline	56	2300		U
99-09-2	3-Nitroaniline	82	2300		U
100-01-6	4-Nitroaniline	170	2300		U
98-95-3	Nitrobenzene	60	580		U
88-75-5	2-Nitrophenol	38	580		U
100-02-7	4-Nitrophenol	140	2300		U
86-30-6	N-Nitrosodiphenylamine (1)	55	580		U
621-64-7	N-Nitroso-di-n-propylamine	95	580		U
87-86-5	Pentachlorophenol	58	2300		U
108-95-2	Phenol	62	580		U
95-95-4	2,4,5-Trichlorophenol	46	580		U
88-06-2	2,4,6-Trichlorophenol	60	580		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
5-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-46

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000646

% Moisture: 6 decanted: (Y/N) N Date Sampled: 09/28/09 10:00

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/07/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 19:50

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	44	360		U
1912-24-9	Atrazine	30	360		U
100-52-7	Benzaldehyde	59	360		U
111-91-1	bis(2-Chloroethoxy)methane	33	360		U
92-52-4	1,1'-Biphenyl	31	360		U
111-44-4	bis(2-Chloroethyl)ether	44	360		U
108-60-1	2,2-Oxybis(1-chloropropane)	55	710		U
117-81-7	Bis(2-ethylhexyl)phthalate	38	360	240	J
101-55-3	4-Bromophenyl-phenylether	28	360		U
85-68-7	Butylbenzylphthalate	32	360		U
105-60-2	Caprolactam	72	360		U
106-47-8	4-Chloroaniline	51	360		U
86-74-8	Carbazole	39	710		U
59-50-7	4-Chloro-3-methylphenol	30	360		U
91-58-7	2-Chloronaphthalene (beta)	34	360		U
95-57-8	2-Chlorophenol	44	360		U
7005-72-3	4-Chlorophenyl-phenylether	33	360		U
132-64-9	Dibenzofuran	26	360	130	J
91-94-1	3,3'-Dichlorobenzidine	34	360		U
120-83-2	2,4-Dichlorophenol	20	360		U
84-66-2	Diethylphthalate	36	360		U
105-67-9	2,4-Dimethylphenol	23	710		U
131-11-3	Dimethylphthalate	32	360		U
84-74-2	Di-n-butylphthalate	32	360		U
534-52-1	4,6-Dinitro-2-methylphenol	23	1400		U
51-28-5	2,4-Dinitrophenol	140	3600		UY
121-14-2	2,4-Dinitrotoluene	26	360		U
606-20-2	2,6-Dinitrotoluene	40	360		U
117-84-0	Di-n-octylphthalate	29	360		U
118-74-1	Hexachlorobenzene	37	360		U
87-68-3	Hexachlorobutadiene	35	360		U
77-47-4	Hexachlorocyclopentadiene	65	360		U
67-72-1	Hexachloroethane	42	710		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
5-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-46

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000646

% Moisture: 6 decanted: (Y/N) N Date Sampled: 09/28/09 10:00

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/07/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 19:50

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	30	360		U
106-44-5	4-Methylphenol (p-cresol)	28	360		U
95-48-7	2-Methylphenol (o-cresol)	41	360		U
88-74-4	2-Nitroaniline	34	1400		U
99-09-2	3-Nitroaniline	50	1400		U
100-01-6	4-Nitroaniline	110	1400		U
98-95-3	Nitrobenzene	37	360		U
88-75-5	2-Nitrophenol	24	360		U
100-02-7	4-Nitrophenol	86	1400		UY
86-30-6	N-Nitrosodiphenylamine (1)	34	360		U
621-64-7	N-Nitroso-di-n-propylamine	59	360		U
87-86-5	Pentachlorophenol	36	1400		U
108-95-2	Phenol	38	360		U
95-95-4	2,4,5-Trichlorophenol	29	360		U
88-06-2	2,4,6-Trichlorophenol	37	360		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
5-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-47

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000647

% Moisture: 9 decanted: (Y/N) N Date Sampled: 09/28/09 10:10

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/07/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 20:29

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	45	370		U
1912-24-9	Atrazine	31	370		U
100-52-7	Benzaldehyde	61	370		U
111-91-1	bis(2-Chloroethoxy)methane	34	370		U
92-52-4	1,1'-Biphenyl	32	370		U
111-44-4	bis(2-Chloroethyl)ether	45	370		U
108-60-1	2,2-Oxybis(1-chloropropane)	56	740		U
117-81-7	Bis(2-ethylhexyl)phthalate	40	370	170	J
101-55-3	4-Bromophenyl-phenylether	28	370		U
85-68-7	Butylbenzylphthalate	33	370		U
105-60-2	Caprolactam	74	370		U
106-47-8	4-Chloroaniline	53	370		U
86-74-8	Carbazole	40	740		U
59-50-7	4-Chloro-3-methylphenol	31	370		U
91-58-7	2-Chloronaphthalene (beta)	35	370		U
95-57-8	2-Chlorophenol	45	370		U
7005-72-3	4-Chlorophenyl-phenylether	34	370		U
132-64-9	Dibenzofuran	27	370	66	J
91-94-1	3,3'-Dichlorobenzidine	35	370		U
120-83-2	2,4-Dichlorophenol	21	370		U
84-66-2	Diethylphthalate	37	370		U
105-67-9	2,4-Dimethylphenol	24	740		U
131-11-3	Dimethylphthalate	34	370		U
84-74-2	Di-n-butylphthalate	34	370		U
534-52-1	4,6-Dinitro-2-methylphenol	24	1500		U
51-28-5	2,4-Dinitrophenol	150	3700		UY
121-14-2	2,4-Dinitrotoluene	26	370		U
606-20-2	2,6-Dinitrotoluene	42	370		U
117-84-0	Di-n-octylphthalate	30	370		U
118-74-1	Hexachlorobenzene	38	370		U
87-68-3	Hexachlorobutadiene	36	370		U
77-47-4	Hexachlorocyclopentadiene	68	370		U
67-72-1	Hexachloroethane	43	740		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
5-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-47

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000647

% Moisture: 9 decanted: (Y/N) N Date Sampled: 09/28/09 10:10

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/07/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 20:29

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	31	370		U
106-44-5	4-Methylphenol (p-cresol)	29	370		U
95-48-7	2-Methylphenol (o-cresol)	42	370		U
88-74-4	2-Nitroaniline	35	1500		U
99-09-2	3-Nitroaniline	52	1500		U
100-01-6	4-Nitroaniline	110	1500		U
98-95-3	Nitrobenzene	38	370		U
88-75-5	2-Nitrophenol	24	370		U
100-02-7	4-Nitrophenol	89	1500		UY
86-30-6	N-Nitrosodiphenylamine (1)	35	370		U
621-64-7	N-Nitroso-di-n-propylamine	60	370		U
87-86-5	Pentachlorophenol	37	1500		U
108-95-2	Phenol	40	370		U
95-95-4	2,4,5-Trichlorophenol	30	370		U
88-06-2	2,4,6-Trichlorophenol	38	370		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
6-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-23

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000623

% Moisture: 18 decanted: (Y/N) N Date Sampled: 09/27/09 15:10

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 19:33

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	50	400		U
1912-24-9	Atrazine	34	400		U
100-52-7	Benzaldehyde	67	400		U
111-91-1	bis(2-Chloroethoxy)methane	38	400		U
92-52-4	1,1'-Biphenyl	36	400		UY
111-44-4	bis(2-Chloroethyl)ether	49	400		U
108-60-1	2,2-Oxybis(1-chloropropane)	62	810		U
117-81-7	Bis(2-ethylhexyl)phthalate	44	400	150	J
101-55-3	4-Bromophenyl-phenylether	31	400		U
85-68-7	Butylbenzylphthalate	36	400		U
105-60-2	Caprolactam	82	400		U
106-47-8	4-Chloroaniline	58	400		U
86-74-8	Carbazole	44	810		UY
59-50-7	4-Chloro-3-methylphenol	34	400		U
91-58-7	2-Chloronaphthalene (beta)	39	400		U
95-57-8	2-Chlorophenol	49	400		U
7005-72-3	4-Chlorophenyl-phenylether	37	400		U
132-64-9	Dibenzofuran	30	400	200	J
91-94-1	3,3'-Dichlorobenzidine	38	400		U
120-83-2	2,4-Dichlorophenol	23	400		U
84-66-2	Diethylphthalate	41	400		U
105-67-9	2,4-Dimethylphenol	26	810		U
131-11-3	Dimethylphthalate	37	400		U
84-74-2	Di-n-butylphthalate	37	400		U
534-52-1	4,6-Dinitro-2-methylphenol	26	1600		UY
51-28-5	2,4-Dinitrophenol	160	4000		UY
121-14-2	2,4-Dinitrotoluene	29	400		U
606-20-2	2,6-Dinitrotoluene	46	400		U
117-84-0	Di-n-octylphthalate	33	400		U
118-74-1	Hexachlorobenzene	42	400		U
87-68-3	Hexachlorobutadiene	40	400		U
77-47-4	Hexachlorocyclopentadiene	74	400		U
67-72-1	Hexachloroethane	48	810		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
6-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-23

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000623

% Moisture: 18 decanted: (Y/N) N Date Sampled: 09/27/09 15:10

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 19:33

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	34	400		U
106-44-5	4-Methylphenol (p-cresol)	32	400		U
95-48-7	2-Methylphenol (o-cresol)	47	400		U
88-74-4	2-Nitroaniline	39	1600		U
99-09-2	3-Nitroaniline	57	1600		U
100-01-6	4-Nitroaniline	120	1600		U
98-95-3	Nitrobenzene	42	400		U
88-75-5	2-Nitrophenol	27	400		U
100-02-7	4-Nitrophenol	98	1600		U
86-30-6	N-Nitrosodiphenylamine (1)	39	400		U
621-64-7	N-Nitroso-di-n-propylamine	66	400		U
87-86-5	Pentachlorophenol	41	1600		U
108-95-2	Phenol	44	400		U
95-95-4	2,4,5-Trichlorophenol	32	400		U
88-06-2	2,4,6-Trichlorophenol	42	400		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
6-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-24

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000624

% Moisture: 23 decanted: (Y/N) N Date Sampled: 09/27/09 15:20

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 20:09

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	54	440		U
1912-24-9	Atrazine	37	440		U
100-52-7	Benzaldehyde	72	440		U
111-91-1	bis(2-Chloroethoxy)methane	40	440		U
92-52-4	1,1'-Biphenyl	38	440		UY
111-44-4	bis(2-Chloroethyl)ether	53	440		U
108-60-1	2,2-Oxybis(1-chloropropane)	67	870		U
117-81-7	Bis(2-ethylhexyl)phthalate	47	440		U
101-55-3	4-Bromophenyl-phenylether	34	440		U
85-68-7	Butylbenzylphthalate	39	440		U
105-60-2	Caprolactam	88	440		U
106-47-8	4-Chloroaniline	62	440		U
86-74-8	Carbazole	47	870		UY
59-50-7	4-Chloro-3-methylphenol	36	440		U
91-58-7	2-Chloronaphthalene (beta)	42	440		U
95-57-8	2-Chlorophenol	53	440		U
7005-72-3	4-Chlorophenyl-phenylether	40	440		U
132-64-9	Dibenzofuran	32	440	180	J
91-94-1	3,3'-Dichlorobenzidine	41	440		U
120-83-2	2,4-Dichlorophenol	25	440		U
84-66-2	Diethylphthalate	44	440		U
105-67-9	2,4-Dimethylphenol	28	870		U
131-11-3	Dimethylphthalate	40	440		U
84-74-2	Di-n-butylphthalate	40	440		U
534-52-1	4,6-Dinitro-2-methylphenol	28	1700		UY
51-28-5	2,4-Dinitrophenol	170	4400		UY
121-14-2	2,4-Dinitrotoluene	31	440		U
606-20-2	2,6-Dinitrotoluene	49	440		U
117-84-0	Di-n-octylphthalate	35	440		U
118-74-1	Hexachlorobenzene	45	440		U
87-68-3	Hexachlorobutadiene	43	440		U
77-47-4	Hexachlorocyclopentadiene	80	440		U
67-72-1	Hexachloroethane	51	870		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
6-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-24

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000624

% Moisture: 23 decanted: (Y/N) N Date Sampled: 09/27/09 15:20

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 20:09

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	37	440		U
106-44-5	4-Methylphenol (p-cresol)	35	440		U
95-48-7	2-Methylphenol (o-cresol)	50	440		U
88-74-4	2-Nitroaniline	42	1700		U
99-09-2	3-Nitroaniline	62	1700		U
100-01-6	4-Nitroaniline	130	1700		U
98-95-3	Nitrobenzene	45	440		U
88-75-5	2-Nitrophenol	29	440		U
100-02-7	4-Nitrophenol	100	1700		U
86-30-6	N-Nitrosodiphenylamine (1)	42	440		U
621-64-7	N-Nitroso-di-n-propylamine	72	440		U
87-86-5	Pentachlorophenol	44	1700		U
108-95-2	Phenol	47	440		U
95-95-4	2,4,5-Trichlorophenol	35	440		U
88-06-2	2,4,6-Trichlorophenol	46	440		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
7-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-25

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000625

% Moisture: 8 decanted: (Y/N) N Date Sampled: 09/27/09 10:40

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 20:46

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	45	360		U
1912-24-9	Atrazine	31	360		U
100-52-7	Benzaldehyde	60	360		U
111-91-1	bis(2-Chloroethoxy)methane	34	360		U
92-52-4	1,1'-Biphenyl	32	360		UY
111-44-4	bis(2-Chloroethyl)ether	44	360		U
108-60-1	2,2-Oxybis(1-chloropropane)	56	730		U
117-81-7	Bis(2-ethylhexyl)phthalate	39	360	150	J
101-55-3	4-Bromophenyl-phenylether	28	360		U
85-68-7	Butylbenzylphthalate	32	360		U
105-60-2	Caprolactam	74	360		U
106-47-8	4-Chloroaniline	52	360		U
86-74-8	Carbazole	39	730	880	Y
59-50-7	4-Chloro-3-methylphenol	30	360		U
91-58-7	2-Chloronaphthalene (beta)	35	360		U
95-57-8	2-Chlorophenol	44	360		U
7005-72-3	4-Chlorophenyl-phenylether	34	360		U
132-64-9	Dibenzofuran	27	360	620	
91-94-1	3,3'-Dichlorobenzidine	34	360		U
120-83-2	2,4-Dichlorophenol	20	360		U
84-66-2	Diethylphthalate	37	360		U
105-67-9	2,4-Dimethylphenol	23	730		U
131-11-3	Dimethylphthalate	33	360		U
84-74-2	Di-n-butylphthalate	33	360		U
534-52-1	4,6-Dinitro-2-methylphenol	24	1400		UY
51-28-5	2,4-Dinitrophenol	140	3600		UY
121-14-2	2,4-Dinitrotoluene	26	360		U
606-20-2	2,6-Dinitrotoluene	41	360		U
117-84-0	Di-n-octylphthalate	29	360		U
118-74-1	Hexachlorobenzene	38	360		U
87-68-3	Hexachlorobutadiene	36	360		U
77-47-4	Hexachlorocyclopentadiene	67	360		U
67-72-1	Hexachloroethane	43	730		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
7-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-25

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000625

% Moisture: 8 decanted: (Y/N) N Date Sampled: 09/27/09 10:40

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 20:46

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	31	360		U
106-44-5	4-Methylphenol (p-cresol)	29	360		U
95-48-7	2-Methylphenol (o-cresol)	42	360		U
88-74-4	2-Nitroaniline	35	1400		U
99-09-2	3-Nitroaniline	52	1400		U
100-01-6	4-Nitroaniline	110	1400		U
98-95-3	Nitrobenzene	38	360		U
88-75-5	2-Nitrophenol	24	360		U
100-02-7	4-Nitrophenol	88	1400		U
86-30-6	N-Nitrosodiphenylamine (1)	35	360		U
621-64-7	N-Nitroso-di-n-propylamine	60	360		U
87-86-5	Pentachlorophenol	37	1400		U
108-95-2	Phenol	39	360		U
95-95-4	2,4,5-Trichlorophenol	29	360		U
88-06-2	2,4,6-Trichlorophenol	38	360		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
7-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-26

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000626

% Moisture: 14 decanted: (Y/N) N Date Sampled: 09/27/09 10:50

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 21:21

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	48	390		U
1912-24-9	Atrazine	33	390		U
100-52-7	Benzaldehyde	64	390		U
111-91-1	bis(2-Chloroethoxy)methane	36	390		U
92-52-4	1,1'-Biphenyl	34	390	96	JY
111-44-4	bis(2-Chloroethyl)ether	47	390		U
108-60-1	2,2-Oxybis(1-chloropropane)	60	780		U
117-81-7	Bis(2-ethylhexyl)phthalate	42	390		U
101-55-3	4-Bromophenyl-phenylether	30	390		U
85-68-7	Butylbenzylphthalate	34	390		U
105-60-2	Caprolactam	78	390		U
106-47-8	4-Chloroaniline	56	390		U
86-74-8	Carbazole	42	780	1000	Y
59-50-7	4-Chloro-3-methylphenol	32	390		U
91-58-7	2-Chloronaphthalene (beta)	37	390		U
95-57-8	2-Chlorophenol	47	390		U
7005-72-3	4-Chlorophenyl-phenylether	36	390		U
132-64-9	Dibenzofuran	28	390	670	
91-94-1	3,3'-Dichlorobenzidine	37	390		U
120-83-2	2,4-Dichlorophenol	22	390		U
84-66-2	Diethylphthalate	39	390		U
105-67-9	2,4-Dimethylphenol	25	780		U
131-11-3	Dimethylphthalate	35	390		U
84-74-2	Di-n-butylphthalate	35	390		U
534-52-1	4,6-Dinitro-2-methylphenol	25	1600		UY
51-28-5	2,4-Dinitrophenol	160	3900		UY
121-14-2	2,4-Dinitrotoluene	28	390		U
606-20-2	2,6-Dinitrotoluene	44	390		U
117-84-0	Di-n-octylphthalate	31	390		U
118-74-1	Hexachlorobenzene	40	390		U
87-68-3	Hexachlorobutadiene	38	390		U
77-47-4	Hexachlorocyclopentadiene	71	390		U
67-72-1	Hexachloroethane	46	780		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
7-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-26

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000626

% Moisture: 14 decanted: (Y/N) N Date Sampled: 09/27/09 10:50

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 21:21

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	33	390		U
106-44-5	4-Methylphenol (p-cresol)	31	390		U
95-48-7	2-Methylphenol (o-cresol)	45	390		U
88-74-4	2-Nitroaniline	37	1600		U
99-09-2	3-Nitroaniline	55	1600		U
100-01-6	4-Nitroaniline	120	1600		U
98-95-3	Nitrobenzene	40	390		U
88-75-5	2-Nitrophenol	26	390		U
100-02-7	4-Nitrophenol	94	1600		U
86-30-6	N-Nitrosodiphenylamine (1)	37	390		U
621-64-7	N-Nitroso-di-n-propylamine	64	390		U
87-86-5	Pentachlorophenol	39	1600		U
108-95-2	Phenol	42	390		U
95-95-4	2,4,5-Trichlorophenol	31	390		U
88-06-2	2,4,6-Trichlorophenol	40	390		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
8-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-48

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000648

% Moisture: 7 decanted: (Y/N) N Date Sampled: 09/28/09 11:55

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/07/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 21:07

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	44	360	48	J
1912-24-9	Atrazine	31	360		U
100-52-7	Benzaldehyde	60	360		U
111-91-1	bis(2-Chloroethoxy)methane	33	360		U
92-52-4	1,1'-Biphenyl	32	360		U
111-44-4	bis(2-Chloroethyl)ether	44	360		U
108-60-1	2,2-Oxybis(1-chloropropane)	55	720		U
117-81-7	Bis(2-ethylhexyl)phthalate	39	360	190	J
101-55-3	4-Bromophenyl-phenylether	28	360		U
85-68-7	Butylbenzylphthalate	32	360	97	J
105-60-2	Caprolactam	73	360		U
106-47-8	4-Chloroaniline	52	360		U
86-74-8	Carbazole	39	720		U
59-50-7	4-Chloro-3-methylphenol	30	360		U
91-58-7	2-Chloronaphthalene (beta)	34	360		U
95-57-8	2-Chlorophenol	44	360		U
7005-72-3	4-Chlorophenyl-phenylether	33	360		U
132-64-9	Dibenzofuran	26	360	76	J
91-94-1	3,3'-Dichlorobenzidine	34	360		U
120-83-2	2,4-Dichlorophenol	20	360		U
84-66-2	Diethylphthalate	36	360		U
105-67-9	2,4-Dimethylphenol	23	720		U
131-11-3	Dimethylphthalate	33	360		U
84-74-2	Di-n-butylphthalate	33	360		U
534-52-1	4,6-Dinitro-2-methylphenol	24	1400		UY
51-28-5	2,4-Dinitrophenol	140	3600		UY
121-14-2	2,4-Dinitrotoluene	26	360		U
606-20-2	2,6-Dinitrotoluene	41	360		U
117-84-0	Di-n-octylphthalate	29	360		U
118-74-1	Hexachlorobenzene	37	360		U
87-68-3	Hexachlorobutadiene	35	360		U
77-47-4	Hexachlorocyclopentadiene	66	360		U
67-72-1	Hexachloroethane	42	720		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
8-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-48

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000648

% Moisture: 7 decanted: (Y/N) N Date Sampled: 09/28/09 11:55

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/07/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 21:07

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	30	360		U
106-44-5	4-Methylphenol (p-cresol)	29	360		U
95-48-7	2-Methylphenol (o-cresol)	42	360		U
88-74-4	2-Nitroaniline	35	1400		U
99-09-2	3-Nitroaniline	51	1400		U
100-01-6	4-Nitroaniline	110	1400		U
98-95-3	Nitrobenzene	37	360		U
88-75-5	2-Nitrophenol	24	360		U
100-02-7	4-Nitrophenol	87	1400		U
86-30-6	N-Nitrosodiphenylamine (1)	34	360		U
621-64-7	N-Nitroso-di-n-propylamine	59	360		U
87-86-5	Pentachlorophenol	36	1400		U
108-95-2	Phenol	39	360		U
95-95-4	2,4,5-Trichlorophenol	29	360		U
88-06-2	2,4,6-Trichlorophenol	38	360		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
8-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-49

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000649

% Moisture: 26 decanted: (Y/N) N Date Sampled: 09/28/09 12:00

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/07/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 21:46

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	56	450		U
1912-24-9	Atrazine	38	450		U
100-52-7	Benzaldehyde	75	450		U
111-91-1	bis(2-Chloroethoxy)methane	42	450		U
92-52-4	1,1'-Biphenyl	40	450		U
111-44-4	bis(2-Chloroethyl)ether	55	450		U
108-60-1	2,2-Oxybis(1-chloropropane)	70	900		U
117-81-7	Bis(2-ethylhexyl)phthalate	49	450	280	J
101-55-3	4-Bromophenyl-phenylether	35	450		U
85-68-7	Butylbenzylphthalate	40	450		U
105-60-2	Caprolactam	91	450		U
106-47-8	4-Chloroaniline	65	450		U
86-74-8	Carbazole	49	900		U
59-50-7	4-Chloro-3-methylphenol	38	450		U
91-58-7	2-Chloronaphthalene (beta)	43	450		U
95-57-8	2-Chlorophenol	55	450		U
7005-72-3	4-Chlorophenyl-phenylether	42	450		U
132-64-9	Dibenzofuran	33	450	36	J
91-94-1	3,3'-Dichlorobenzidine	43	450		U
120-83-2	2,4-Dichlorophenol	26	450		U
84-66-2	Diethylphthalate	46	450		U
105-67-9	2,4-Dimethylphenol	29	900		U
131-11-3	Dimethylphthalate	41	450		U
84-74-2	Di-n-butylphthalate	41	450		U
534-52-1	4,6-Dinitro-2-methylphenol	30	1800		UY
51-28-5	2,4-Dinitrophenol	180	4500		UY
121-14-2	2,4-Dinitrotoluene	33	450		U
606-20-2	2,6-Dinitrotoluene	51	450		U
117-84-0	Di-n-octylphthalate	36	450		U
118-74-1	Hexachlorobenzene	47	450		U
87-68-3	Hexachlorobutadiene	44	450		U
77-47-4	Hexachlorocyclopentadiene	83	450		U
67-72-1	Hexachloroethane	53	900		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
8-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-49

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000649

% Moisture: 26 decanted: (Y/N) N Date Sampled: 09/28/09 12:00

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/07/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 21:46

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	38	450		U
106-44-5	4-Methylphenol (p-cresol)	36	450		U
95-48-7	2-Methylphenol (o-cresol)	52	450		U
88-74-4	2-Nitroaniline	44	1800		U
99-09-2	3-Nitroaniline	64	1800		U
100-01-6	4-Nitroaniline	140	1800		U
98-95-3	Nitrobenzene	47	450		U
88-75-5	2-Nitrophenol	30	450		U
100-02-7	4-Nitrophenol	110	1800		U
86-30-6	N-Nitrosodiphenylamine (1)	43	450		U
621-64-7	N-Nitroso-di-n-propylamine	74	450		U
87-86-5	Pentachlorophenol	46	1800		U
108-95-2	Phenol	49	450		U
95-95-4	2,4,5-Trichlorophenol	36	450		U
88-06-2	2,4,6-Trichlorophenol	47	450		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
9-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-03

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000603

% Moisture: 9 decanted: (Y/N) N Date Sampled: 09/26/09 16:20

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 04:17

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	45	360		U
1912-24-9	Atrazine	31	360		U
100-52-7	Benzaldehyde	61	360		U
111-91-1	bis(2-Chloroethoxy)methane	34	360		U
92-52-4	1,1'-Biphenyl	32	360		U
111-44-4	bis(2-Chloroethyl)ether	45	360		U
108-60-1	2,2-Oxybis(1-chloropropane)	56	730		U
117-81-7	Bis(2-ethylhexyl)phthalate	40	360	130	J
101-55-3	4-Bromophenyl-phenylether	28	360		U
85-68-7	Butylbenzylphthalate	32	360		U
105-60-2	Caprolactam	74	360		U
106-47-8	4-Chloroaniline	52	360		U
86-74-8	Carbazole	40	730		U
59-50-7	4-Chloro-3-methylphenol	30	360		U
91-58-7	2-Chloronaphthalene (beta)	35	360		U
95-57-8	2-Chlorophenol	45	360		U
7005-72-3	4-Chlorophenyl-phenylether	34	360		U
132-64-9	Dibenzofuran	27	360	110	J
91-94-1	3,3'-Dichlorobenzidine	34	360		U
120-83-2	2,4-Dichlorophenol	21	360		U
84-66-2	Diethylphthalate	37	360		U
105-67-9	2,4-Dimethylphenol	23	730		U
131-11-3	Dimethylphthalate	33	360		U
84-74-2	Di-n-butylphthalate	33	360	37	J
534-52-1	4,6-Dinitro-2-methylphenol	24	1500		UY
51-28-5	2,4-Dinitrophenol	150	3600		UY
121-14-2	2,4-Dinitrotoluene	26	360		U
606-20-2	2,6-Dinitrotoluene	42	360		U
117-84-0	Di-n-octylphthalate	30	360		U
118-74-1	Hexachlorobenzene	38	360		U
87-68-3	Hexachlorobutadiene	36	360		U
77-47-4	Hexachlorocyclopentadiene	67	360		UY
67-72-1	Hexachloroethane	43	730		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
9-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-03

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000603

% Moisture: 9 decanted: (Y/N) N Date Sampled: 09/26/09 16:20

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 04:17

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	31	360		U
106-44-5	4-Methylphenol (p-cresol)	29	360		U
95-48-7	2-Methylphenol (o-cresol)	42	360		U
88-74-4	2-Nitroaniline	35	1500		U
99-09-2	3-Nitroaniline	52	1500		U
100-01-6	4-Nitroaniline	110	1500		U
98-95-3	Nitrobenzene	38	360		U
88-75-5	2-Nitrophenol	24	360		U
100-02-7	4-Nitrophenol	89	1500		U
86-30-6	N-Nitrosodiphenylamine (1)	35	360		U
621-64-7	N-Nitroso-di-n-propylamine	60	360		U
87-86-5	Pentachlorophenol	37	1500		U
108-95-2	Phenol	40	360		U
95-95-4	2,4,5-Trichlorophenol	29	360		U
88-06-2	2,4,6-Trichlorophenol	38	360		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
9-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-04

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000604

% Moisture: 21 decanted: (Y/N) N Date Sampled: 09/26/09 16:28

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/16/09 18:42

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	52	420		U
1912-24-9	Atrazine	36	420		U
100-52-7	Benzaldehyde	70	420		U
111-91-1	bis(2-Chloroethoxy)methane	39	420		U
92-52-4	1,1'-Biphenyl	37	420		U
111-44-4	bis(2-Chloroethyl)ether	51	420		U
108-60-1	2,2-Oxybis(1-chloropropane)	64	840		U
117-81-7	Bis(2-ethylhexyl)phthalate	45	420		U
101-55-3	4-Bromophenyl-phenylether	32	420		U
85-68-7	Butylbenzylphthalate	37	420		U
105-60-2	Caprolactam	85	420		U
106-47-8	4-Chloroaniline	60	420		U
86-74-8	Carbazole	46	840		U
59-50-7	4-Chloro-3-methylphenol	35	420		U
91-58-7	2-Chloronaphthalene (beta)	40	420		U
95-57-8	2-Chlorophenol	51	420		U
7005-72-3	4-Chlorophenyl-phenylether	39	420		U
132-64-9	Dibenzofuran	31	420		U
91-94-1	3,3'-Dichlorobenzidine	40	420		U
120-83-2	2,4-Dichlorophenol	24	420		U
84-66-2	Diethylphthalate	43	420		U
105-67-9	2,4-Dimethylphenol	27	840		U
131-11-3	Dimethylphthalate	38	420		U
84-74-2	Di-n-butylphthalate	38	420		U
534-52-1	4,6-Dinitro-2-methylphenol	27	1700		U
51-28-5	2,4-Dinitrophenol	170	4200		U
121-14-2	2,4-Dinitrotoluene	30	420		U
606-20-2	2,6-Dinitrotoluene	48	420		U
117-84-0	Di-n-octylphthalate	34	420		U
118-74-1	Hexachlorobenzene	44	420		U
87-68-3	Hexachlorobutadiene	41	420		U
77-47-4	Hexachlorocyclopentadiene	77	420		U
67-72-1	Hexachloroethane	49	840		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
9-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-04

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000604

% Moisture: 21 decanted: (Y/N) N Date Sampled: 09/26/09 16:28

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/16/09 18:42

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	36	420		U
106-44-5	4-Methylphenol (p-cresol)	33	420		U
95-48-7	2-Methylphenol (o-cresol)	48	420		U
88-74-4	2-Nitroaniline	40	1700		U
99-09-2	3-Nitroaniline	59	1700		U
100-01-6	4-Nitroaniline	130	1700		U
98-95-3	Nitrobenzene	43	420		U
88-75-5	2-Nitrophenol	28	420		U
100-02-7	4-Nitrophenol	100	1700		U
86-30-6	N-Nitrosodiphenylamine (1)	40	420		U
621-64-7	N-Nitroso-di-n-propylamine	69	420		U
87-86-5	Pentachlorophenol	42	1700		U
108-95-2	Phenol	45	420		U
95-95-4	2,4,5-Trichlorophenol	34	420		U
88-06-2	2,4,6-Trichlorophenol	44	420		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
0-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-05

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000605

% Moisture: 10 decanted: (Y/N) N Date Sampled: 09/26/09 18:36

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 04:53

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	46	370		U
1912-24-9	Atrazine	32	370		U
100-52-7	Benzaldehyde	62	370		U
111-91-1	bis(2-Chloroethoxy)methane	34	370		U
92-52-4	1,1'-Biphenyl	33	370		U
111-44-4	bis(2-Chloroethyl)ether	46	370		U
108-60-1	2,2-Oxybis(1-chloropropane)	57	740		U
117-81-7	Bis(2-ethylhexyl)phthalate	40	370	130	J
101-55-3	4-Bromophenyl-phenylether	29	370		U
85-68-7	Butylbenzylphthalate	33	370		U
105-60-2	Caprolactam	75	370		U
106-47-8	4-Chloroaniline	53	370		U
86-74-8	Carbazole	40	740		U
59-50-7	4-Chloro-3-methylphenol	31	370		U
91-58-7	2-Chloronaphthalene (beta)	36	370		U
95-57-8	2-Chlorophenol	46	370		U
7005-72-3	4-Chlorophenyl-phenylether	34	370		U
132-64-9	Dibenzofuran	27	370	90	J
91-94-1	3,3'-Dichlorobenzidine	35	370		U
120-83-2	2,4-Dichlorophenol	21	370		U
84-66-2	Diethylphthalate	38	370		U
105-67-9	2,4-Dimethylphenol	24	740		U
131-11-3	Dimethylphthalate	34	370		U
84-74-2	Di-n-butylphthalate	34	370	190	J
534-52-1	4,6-Dinitro-2-methylphenol	24	1500		UY
51-28-5	2,4-Dinitrophenol	150	3700		UY
121-14-2	2,4-Dinitrotoluene	27	370		U
606-20-2	2,6-Dinitrotoluene	42	370		U
117-84-0	Di-n-octylphthalate	30	370		U
118-74-1	Hexachlorobenzene	39	370		U
87-68-3	Hexachlorobutadiene	36	370		U
77-47-4	Hexachlorocyclopentadiene	68	370		UY
67-72-1	Hexachloroethane	44	740		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
0-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-05

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000605

% Moisture: 10 decanted: (Y/N) N Date Sampled: 09/26/09 18:36

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 04:53

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	32	370		U
106-44-5	4-Methylphenol (p-cresol)	30	370		U
95-48-7	2-Methylphenol (o-cresol)	43	370		U
88-74-4	2-Nitroaniline	36	1500		U
99-09-2	3-Nitroaniline	53	1500		U
100-01-6	4-Nitroaniline	110	1500		U
98-95-3	Nitrobenzene	38	370		U
88-75-5	2-Nitrophenol	25	370		U
100-02-7	4-Nitrophenol	90	1500		U
86-30-6	N-Nitrosodiphenylamine (1)	36	370		U
621-64-7	N-Nitroso-di-n-propylamine	61	370		U
87-86-5	Pentachlorophenol	38	1500		U
108-95-2	Phenol	40	370		U
95-95-4	2,4,5-Trichlorophenol	30	370		U
88-06-2	2,4,6-Trichlorophenol	39	370		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
0-SO-0406

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-06

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000606

% Moisture: 17 decanted: (Y/N) N Date Sampled: 09/26/09 18:40

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/16/09 19:18

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	50	400		U
1912-24-9	Atrazine	34	400		U
100-52-7	Benzaldehyde	67	400		U
111-91-1	bis(2-Chloroethoxy)methane	37	400		U
92-52-4	1,1'-Biphenyl	36	400		U
111-44-4	bis(2-Chloroethyl)ether	49	400		U
108-60-1	2,2-Oxybis(1-chloropropane)	62	800		U
117-81-7	Bis(2-ethylhexyl)phthalate	44	400		U
101-55-3	4-Bromophenyl-phenylether	31	400		U
85-68-7	Butylbenzylphthalate	36	400		U
105-60-2	Caprolactam	81	400		U
106-47-8	4-Chloroaniline	58	400		U
86-74-8	Carbazole	44	800		U
59-50-7	4-Chloro-3-methylphenol	34	400		U
91-58-7	2-Chloronaphthalene (beta)	39	400		U
95-57-8	2-Chlorophenol	49	400		U
7005-72-3	4-Chlorophenyl-phenylether	37	400		U
132-64-9	Dibenzofuran	30	400		U
91-94-1	3,3'-Dichlorobenzidine	38	400		U
120-83-2	2,4-Dichlorophenol	23	400		U
84-66-2	Diethylphthalate	41	400		U
105-67-9	2,4-Dimethylphenol	26	800		U
131-11-3	Dimethylphthalate	37	400		U
84-74-2	Di-n-butylphthalate	37	400		U
534-52-1	4,6-Dinitro-2-methylphenol	26	1600		U
51-28-5	2,4-Dinitrophenol	160	4000		U
121-14-2	2,4-Dinitrotoluene	29	400		U
606-20-2	2,6-Dinitrotoluene	46	400		U
117-84-0	Di-n-octylphthalate	32	400		U
118-74-1	Hexachlorobenzene	42	400		U
87-68-3	Hexachlorobutadiene	40	400		U
77-47-4	Hexachlorocyclopentadiene	74	400		U
67-72-1	Hexachloroethane	47	800		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
0-SO-0406

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-06

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000606

% Moisture: 17 decanted: (Y/N) N Date Sampled: 09/26/09 18:40

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/16/09 19:18

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	34	400		U
106-44-5	4-Methylphenol (p-cresol)	32	400		U
95-48-7	2-Methylphenol (o-cresol)	47	400		U
88-74-4	2-Nitroaniline	39	1600		U
99-09-2	3-Nitroaniline	57	1600		U
100-01-6	4-Nitroaniline	120	1600		U
98-95-3	Nitrobenzene	42	400		U
88-75-5	2-Nitrophenol	27	400		U
100-02-7	4-Nitrophenol	98	1600		U
86-30-6	N-Nitrosodiphenylamine (1)	39	400		U
621-64-7	N-Nitroso-di-n-propylamine	66	400		U
87-86-5	Pentachlorophenol	41	1600		U
108-95-2	Phenol	44	400		U
95-95-4	2,4,5-Trichlorophenol	32	400		U
88-06-2	2,4,6-Trichlorophenol	42	400		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
1-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-07

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000607

% Moisture: 8 decanted: (Y/N) N Date Sampled: 09/26/09 18:10

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 05:29

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	44	360		U
1912-24-9	Atrazine	31	360		U
100-52-7	Benzaldehyde	60	360		U
111-91-1	bis(2-Chloroethoxy)methane	34	360		U
92-52-4	1,1'-Biphenyl	32	360		U
111-44-4	bis(2-Chloroethyl)ether	44	360		U
108-60-1	2,2-Oxybis(1-chloropropane)	56	720		U
117-81-7	Bis(2-ethylhexyl)phthalate	39	360	280	J
101-55-3	4-Bromophenyl-phenylether	28	360		U
85-68-7	Butylbenzylphthalate	32	360		U
105-60-2	Caprolactam	73	360		U
106-47-8	4-Chloroaniline	52	360		U
86-74-8	Carbazole	39	720		U
59-50-7	4-Chloro-3-methylphenol	30	360		U
91-58-7	2-Chloronaphthalene (beta)	35	360		U
95-57-8	2-Chlorophenol	44	360		U
7005-72-3	4-Chlorophenyl-phenylether	33	360		U
132-64-9	Dibenzofuran	26	360	180	J
91-94-1	3,3'-Dichlorobenzidine	34	360		U
120-83-2	2,4-Dichlorophenol	20	360		U
84-66-2	Diethylphthalate	37	360		U
105-67-9	2,4-Dimethylphenol	23	720		U
131-11-3	Dimethylphthalate	33	360		U
84-74-2	Di-n-butylphthalate	33	360		U
534-52-1	4,6-Dinitro-2-methylphenol	24	1400		UY
51-28-5	2,4-Dinitrophenol	140	3600		UY
121-14-2	2,4-Dinitrotoluene	26	360		U
606-20-2	2,6-Dinitrotoluene	41	360		U
117-84-0	Di-n-octylphthalate	29	360		U
118-74-1	Hexachlorobenzene	38	360		U
87-68-3	Hexachlorobutadiene	36	360		U
77-47-4	Hexachlorocyclopentadiene	66	360		UY
67-72-1	Hexachloroethane	43	720		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
1-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-07

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000607

% Moisture: 8 decanted: (Y/N) N Date Sampled: 09/26/09 18:10

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 05:29

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	31	360		U
106-44-5	4-Methylphenol (p-cresol)	29	360		U
95-48-7	2-Methylphenol (o-cresol)	42	360		U
88-74-4	2-Nitroaniline	35	1400		U
99-09-2	3-Nitroaniline	51	1400		U
100-01-6	4-Nitroaniline	110	1400		U
98-95-3	Nitrobenzene	38	360		U
88-75-5	2-Nitrophenol	24	360		U
100-02-7	4-Nitrophenol	88	1400		U
86-30-6	N-Nitrosodiphenylamine (1)	35	360		U
621-64-7	N-Nitroso-di-n-propylamine	60	360		U
87-86-5	Pentachlorophenol	37	1400		U
108-95-2	Phenol	39	360		U
95-95-4	2,4,5-Trichlorophenol	29	360		U
88-06-2	2,4,6-Trichlorophenol	38	360		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
1-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-08

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000608

% Moisture: 16 decanted: (Y/N) N Date Sampled: 09/26/09 18:12

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 01:17

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	49	400		U
1912-24-9	Atrazine	34	400		U
100-52-7	Benzaldehyde	66	400		U
111-91-1	bis(2-Chloroethoxy)methane	37	400		U
92-52-4	1,1'-Biphenyl	35	400		U
111-44-4	bis(2-Chloroethyl)ether	48	400		U
108-60-1	2,2-Oxybis(1-chloropropane)	61	790		U
117-81-7	Bis(2-ethylhexyl)phthalate	43	400		U
101-55-3	4-Bromophenyl-phenylether	31	400		U
85-68-7	Butylbenzylphthalate	35	400		U
105-60-2	Caprolactam	80	400		U
106-47-8	4-Chloroaniline	57	400		U
86-74-8	Carbazole	43	790		U
59-50-7	4-Chloro-3-methylphenol	33	400		U
91-58-7	2-Chloronaphthalene (beta)	38	400		U
95-57-8	2-Chlorophenol	48	400		U
7005-72-3	4-Chlorophenyl-phenylether	36	400		U
132-64-9	Dibenzofuran	29	400	74	J
91-94-1	3,3'-Dichlorobenzidine	37	400		U
120-83-2	2,4-Dichlorophenol	22	400		U
84-66-2	Diethylphthalate	40	400		U
105-67-9	2,4-Dimethylphenol	25	790		U
131-11-3	Dimethylphthalate	36	400		U
84-74-2	Di-n-butylphthalate	36	400		U
534-52-1	4,6-Dinitro-2-methylphenol	26	1600		UY
51-28-5	2,4-Dinitrophenol	160	4000		UY
121-14-2	2,4-Dinitrotoluene	29	400		U
606-20-2	2,6-Dinitrotoluene	45	400		U
117-84-0	Di-n-octylphthalate	32	400		U
118-74-1	Hexachlorobenzene	41	400		U
87-68-3	Hexachlorobutadiene	39	400		U
77-47-4	Hexachlorocyclopentadiene	73	400		UY
67-72-1	Hexachloroethane	47	790		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
1-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-08

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000608

% Moisture: 16 decanted: (Y/N) N Date Sampled: 09/26/09 18:12

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 01:17

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	34	400		U
106-44-5	4-Methylphenol (p-cresol)	32	400		U
95-48-7	2-Methylphenol (o-cresol)	46	400		U
88-74-4	2-Nitroaniline	38	1600		U
99-09-2	3-Nitroaniline	56	1600		U
100-01-6	4-Nitroaniline	120	1600		U
98-95-3	Nitrobenzene	41	400		U
88-75-5	2-Nitrophenol	26	400		U
100-02-7	4-Nitrophenol	96	1600		U
86-30-6	N-Nitrosodiphenylamine (1)	38	400		U
621-64-7	N-Nitroso-di-n-propylamine	65	400		U
87-86-5	Pentachlorophenol	40	1600		U
108-95-2	Phenol	43	400		U
95-95-4	2,4,5-Trichlorophenol	32	400		U
88-06-2	2,4,6-Trichlorophenol	41	400		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
2-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-09

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000609

% Moisture: 15 decanted: (Y/N) N Date Sampled: 09/26/09 14:00

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 02:29

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	48	390		U
1912-24-9	Atrazine	33	390		U
100-52-7	Benzaldehyde	65	390		U
111-91-1	bis(2-Chloroethoxy)methane	36	390		U
92-52-4	1,1'-Biphenyl	35	390		U
111-44-4	bis(2-Chloroethyl)ether	48	390		U
108-60-1	2,2-Oxybis(1-chloropropane)	60	780		U
117-81-7	Bis(2-ethylhexyl)phthalate	42	390		U
101-55-3	4-Bromophenyl-phenylether	30	390		U
85-68-7	Butylbenzylphthalate	35	390		U
105-60-2	Caprolactam	79	390		U
106-47-8	4-Chloroaniline	56	390		U
86-74-8	Carbazole	43	780		U
59-50-7	4-Chloro-3-methylphenol	33	390		U
91-58-7	2-Chloronaphthalene (beta)	38	390		U
95-57-8	2-Chlorophenol	48	390		U
7005-72-3	4-Chlorophenyl-phenylether	36	390		U
132-64-9	Dibenzofuran	29	390	240	J
91-94-1	3,3'-Dichlorobenzidine	37	390		U
120-83-2	2,4-Dichlorophenol	22	390		U
84-66-2	Diethylphthalate	40	390		U
105-67-9	2,4-Dimethylphenol	25	780		U
131-11-3	Dimethylphthalate	36	390		U
84-74-2	Di-n-butylphthalate	36	390		U
534-52-1	4,6-Dinitro-2-methylphenol	26	1600		UY
51-28-5	2,4-Dinitrophenol	160	3900		UY
121-14-2	2,4-Dinitrotoluene	28	390		U
606-20-2	2,6-Dinitrotoluene	44	390		U
117-84-0	Di-n-octylphthalate	32	390		U
118-74-1	Hexachlorobenzene	41	390		U
87-68-3	Hexachlorobutadiene	39	390		U
77-47-4	Hexachlorocyclopentadiene	72	390		UY
67-72-1	Hexachloroethane	46	780		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
2-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-09

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000609

% Moisture: 15 decanted: (Y/N) N Date Sampled: 09/26/09 14:00

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 02:29

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	33	390		U
106-44-5	4-Methylphenol (p-cresol)	31	390		U
95-48-7	2-Methylphenol (o-cresol)	45	390		U
88-74-4	2-Nitroaniline	38	1600		U
99-09-2	3-Nitroaniline	56	1600		U
100-01-6	4-Nitroaniline	120	1600		U
98-95-3	Nitrobenzene	41	390		U
88-75-5	2-Nitrophenol	26	390		U
100-02-7	4-Nitrophenol	95	1600		U
86-30-6	N-Nitrosodiphenylamine (1)	38	390		U
621-64-7	N-Nitroso-di-n-propylamine	65	390		U
87-86-5	Pentachlorophenol	40	1600		U
108-95-2	Phenol	42	390		U
95-95-4	2,4,5-Trichlorophenol	32	390		U
88-06-2	2,4,6-Trichlorophenol	41	390		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
2-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-10

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000610

% Moisture: 23 decanted: (Y/N) N Date Sampled: 09/26/09 14:10

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 01:53

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	53	430		U
1912-24-9	Atrazine	37	430		U
100-52-7	Benzaldehyde	72	430		U
111-91-1	bis(2-Chloroethoxy)methane	40	430		U
92-52-4	1,1'-Biphenyl	38	430		U
111-44-4	bis(2-Chloroethyl)ether	53	430		U
108-60-1	2,2-Oxybis(1-chloropropane)	66	860		U
117-81-7	Bis(2-ethylhexyl)phthalate	47	430		U
101-55-3	4-Bromophenyl-phenylether	34	430		U
85-68-7	Butylbenzylphthalate	38	430		U
105-60-2	Caprolactam	88	430		U
106-47-8	4-Chloroaniline	62	430		U
86-74-8	Carbazole	47	860		U
59-50-7	4-Chloro-3-methylphenol	36	430		U
91-58-7	2-Chloronaphthalene (beta)	42	430		U
95-57-8	2-Chlorophenol	53	430		U
7005-72-3	4-Chlorophenyl-phenylether	40	430		U
132-64-9	Dibenzofuran	32	430	330	J
91-94-1	3,3'-Dichlorobenzidine	41	430		U
120-83-2	2,4-Dichlorophenol	24	430		U
84-66-2	Diethylphthalate	44	430		U
105-67-9	2,4-Dimethylphenol	28	860		U
131-11-3	Dimethylphthalate	40	430		U
84-74-2	Di-n-butylphthalate	39	430		U
534-52-1	4,6-Dinitro-2-methylphenol	28	1700		UY
51-28-5	2,4-Dinitrophenol	170	4300		UY
121-14-2	2,4-Dinitrotoluene	31	430		U
606-20-2	2,6-Dinitrotoluene	49	430		U
117-84-0	Di-n-octylphthalate	35	430		U
118-74-1	Hexachlorobenzene	45	430		U
87-68-3	Hexachlorobutadiene	42	430		U
77-47-4	Hexachlorocyclopentadiene	80	430		UY
67-72-1	Hexachloroethane	51	860		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
2-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-10

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000610

% Moisture: 23 decanted: (Y/N) N Date Sampled: 09/26/09 14:10

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 01:53

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	37	430		U
106-44-5	4-Methylphenol (p-cresol)	34	430		U
95-48-7	2-Methylphenol (o-cresol)	50	430		U
88-74-4	2-Nitroaniline	42	1700		U
99-09-2	3-Nitroaniline	61	1700		U
100-01-6	4-Nitroaniline	130	1700		U
98-95-3	Nitrobenzene	45	430		U
88-75-5	2-Nitrophenol	29	430		U
100-02-7	4-Nitrophenol	100	1700		U
86-30-6	N-Nitrosodiphenylamine (1)	42	430		U
621-64-7	N-Nitroso-di-n-propylamine	71	430		U
87-86-5	Pentachlorophenol	44	1700		U
108-95-2	Phenol	47	430		U
95-95-4	2,4,5-Trichlorophenol	35	430		U
88-06-2	2,4,6-Trichlorophenol	45	430		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
3-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-27

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000627

% Moisture: 22 decanted: (Y/N) N Date Sampled: 09/27/09 09:00

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 21:57

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	53	430		U
1912-24-9	Atrazine	36	430		U
100-52-7	Benzaldehyde	71	430		U
111-91-1	bis(2-Chloroethoxy)methane	40	430		U
92-52-4	1,1'-Biphenyl	38	430		UY
111-44-4	bis(2-Chloroethyl)ether	52	430		U
108-60-1	2,2-Oxybis(1-chloropropane)	66	860		U
117-81-7	Bis(2-ethylhexyl)phthalate	46	430	78	J
101-55-3	4-Bromophenyl-phenylether	33	430		U
85-68-7	Butylbenzylphthalate	38	430		U
105-60-2	Caprolactam	87	430		U
106-47-8	4-Chloroaniline	62	430		U
86-74-8	Carbazole	46	860		UY
59-50-7	4-Chloro-3-methylphenol	36	430		U
91-58-7	2-Chloronaphthalene (beta)	41	430		U
95-57-8	2-Chlorophenol	52	430		U
7005-72-3	4-Chlorophenyl-phenylether	40	430		U
132-64-9	Dibenzofuran	31	430	320	J
91-94-1	3,3'-Dichlorobenzidine	40	430		U
120-83-2	2,4-Dichlorophenol	24	430		U
84-66-2	Diethylphthalate	44	430		U
105-67-9	2,4-Dimethylphenol	27	860		U
131-11-3	Dimethylphthalate	39	430		U
84-74-2	Di-n-butylphthalate	39	430		U
534-52-1	4,6-Dinitro-2-methylphenol	28	1700		UY
51-28-5	2,4-Dinitrophenol	170	4300		UY
121-14-2	2,4-Dinitrotoluene	31	430		U
606-20-2	2,6-Dinitrotoluene	49	430		U
117-84-0	Di-n-octylphthalate	35	430		U
118-74-1	Hexachlorobenzene	45	430		U
87-68-3	Hexachlorobutadiene	42	430		U
77-47-4	Hexachlorocyclopentadiene	79	430		U
67-72-1	Hexachloroethane	50	860		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
3-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-27

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000627

% Moisture: 22 decanted: (Y/N) N Date Sampled: 09/27/09 09:00

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 21:57

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	36	430		U
106-44-5	4-Methylphenol (p-cresol)	34	430		U
95-48-7	2-Methylphenol (o-cresol)	50	430		U
88-74-4	2-Nitroaniline	41	1700		U
99-09-2	3-Nitroaniline	61	1700		U
100-01-6	4-Nitroaniline	130	1700		U
98-95-3	Nitrobenzene	44	430		U
88-75-5	2-Nitrophenol	28	430		U
100-02-7	4-Nitrophenol	100	1700		U
86-30-6	N-Nitrosodiphenylamine (1)	41	430		U
621-64-7	N-Nitroso-di-n-propylamine	71	430		U
87-86-5	Pentachlorophenol	43	1700		U
108-95-2	Phenol	46	430		U
95-95-4	2,4,5-Trichlorophenol	34	430		U
88-06-2	2,4,6-Trichlorophenol	45	430		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
3-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-28

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000628

% Moisture: 16 decanted: (Y/N) N Date Sampled: 09/27/09 09:10

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 12:57

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	49	400		U
1912-24-9	Atrazine	34	400		U
100-52-7	Benzaldehyde	66	400		U
111-91-1	bis(2-Chloroethoxy)methane	37	400		U
92-52-4	1,1'-Biphenyl	35	400		U
111-44-4	bis(2-Chloroethyl)ether	48	400		U
108-60-1	2,2-Oxybis(1-chloropropane)	61	790		U
117-81-7	Bis(2-ethylhexyl)phthalate	43	400		U
101-55-3	4-Bromophenyl-phenylether	31	400		U
85-68-7	Butylbenzylphthalate	35	400		U
105-60-2	Caprolactam	80	400		U
106-47-8	4-Chloroaniline	57	400		U
86-74-8	Carbazole	43	790		U
59-50-7	4-Chloro-3-methylphenol	33	400		U
91-58-7	2-Chloronaphthalene (beta)	38	400		U
95-57-8	2-Chlorophenol	48	400		U
7005-72-3	4-Chlorophenyl-phenylether	36	400		U
132-64-9	Dibenzofuran	29	400		U
91-94-1	3,3'-Dichlorobenzidine	37	400		U
120-83-2	2,4-Dichlorophenol	22	400		U
84-66-2	Diethylphthalate	40	400		U
105-67-9	2,4-Dimethylphenol	25	790		U
131-11-3	Dimethylphthalate	36	400		U
84-74-2	Di-n-butylphthalate	36	400		U
534-52-1	4,6-Dinitro-2-methylphenol	26	1600		UY
51-28-5	2,4-Dinitrophenol	160	4000		UY
121-14-2	2,4-Dinitrotoluene	28	400		U
606-20-2	2,6-Dinitrotoluene	45	400		U
117-84-0	Di-n-octylphthalate	32	400		U
118-74-1	Hexachlorobenzene	41	400		U
87-68-3	Hexachlorobutadiene	39	400		U
77-47-4	Hexachlorocyclopentadiene	73	400		U
67-72-1	Hexachloroethane	47	790		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
3-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-28

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000628

% Moisture: 16 decanted: (Y/N) N Date Sampled: 09/27/09 09:10

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 12:57

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	34	400		U
106-44-5	4-Methylphenol (p-cresol)	31	400		U
95-48-7	2-Methylphenol (o-cresol)	46	400		U
88-74-4	2-Nitroaniline	38	1600		U
99-09-2	3-Nitroaniline	56	1600		U
100-01-6	4-Nitroaniline	120	1600		U
98-95-3	Nitrobenzene	41	400		U
88-75-5	2-Nitrophenol	26	400		U
100-02-7	4-Nitrophenol	96	1600		U
86-30-6	N-Nitrosodiphenylamine (1)	38	400		U
621-64-7	N-Nitroso-di-n-propylamine	65	400		U
87-86-5	Pentachlorophenol	40	1600		U
108-95-2	Phenol	43	400		U
95-95-4	2,4,5-Trichlorophenol	32	400		U
88-06-2	2,4,6-Trichlorophenol	41	400		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
4-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-29

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000629

% Moisture: 18 decanted: (Y/N) N Date Sampled: 09/27/09 09:30

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 22:33

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	50	410		U
1912-24-9	Atrazine	35	410		U
100-52-7	Benzaldehyde	68	410		U
111-91-1	bis(2-Chloroethoxy)methane	38	410		U
92-52-4	1,1'-Biphenyl	36	410		UY
111-44-4	bis(2-Chloroethyl)ether	50	410		U
108-60-1	2,2-Oxybis(1-chloropropane)	63	810		U
117-81-7	Bis(2-ethylhexyl)phthalate	44	410	51	J
101-55-3	4-Bromophenyl-phenylether	32	410		U
85-68-7	Butylbenzylphthalate	36	410		U
105-60-2	Caprolactam	82	410		U
106-47-8	4-Chloroaniline	58	410		U
86-74-8	Carbazole	44	810		UY
59-50-7	4-Chloro-3-methylphenol	34	410		U
91-58-7	2-Chloronaphthalene (beta)	39	410		U
95-57-8	2-Chlorophenol	50	410		U
7005-72-3	4-Chlorophenyl-phenylether	38	410		U
132-64-9	Dibenzofuran	30	410	320	J
91-94-1	3,3'-Dichlorobenzidine	38	410		U
120-83-2	2,4-Dichlorophenol	23	410		U
84-66-2	Diethylphthalate	41	410		U
105-67-9	2,4-Dimethylphenol	26	810		U
131-11-3	Dimethylphthalate	37	410		U
84-74-2	Di-n-butylphthalate	37	410		U
534-52-1	4,6-Dinitro-2-methylphenol	27	1600		UY
51-28-5	2,4-Dinitrophenol	160	4100		UY
121-14-2	2,4-Dinitrotoluene	29	410		U
606-20-2	2,6-Dinitrotoluene	46	410		U
117-84-0	Di-n-octylphthalate	33	410		U
118-74-1	Hexachlorobenzene	42	410		U
87-68-3	Hexachlorobutadiene	40	410		U
77-47-4	Hexachlorocyclopentadiene	75	410		U
67-72-1	Hexachloroethane	48	810		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
4-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-29

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000629

% Moisture: 18 decanted: (Y/N) N Date Sampled: 09/27/09 09:30

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 22:33

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	35	410		U
106-44-5	4-Methylphenol (p-cresol)	32	410		U
95-48-7	2-Methylphenol (o-cresol)	47	410		U
88-74-4	2-Nitroaniline	39	1600		U
99-09-2	3-Nitroaniline	58	1600		U
100-01-6	4-Nitroaniline	120	1600		U
98-95-3	Nitrobenzene	42	410		U
88-75-5	2-Nitrophenol	27	410		U
100-02-7	4-Nitrophenol	99	1600		U
86-30-6	N-Nitrosodiphenylamine (1)	39	410		U
621-64-7	N-Nitroso-di-n-propylamine	67	410		U
87-86-5	Pentachlorophenol	41	1600		U
108-95-2	Phenol	44	410		U
95-95-4	2,4,5-Trichlorophenol	33	410		U
88-06-2	2,4,6-Trichlorophenol	43	410		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
4-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-30

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000630

% Moisture: 25 decanted: (Y/N) N Date Sampled: 09/27/09 09:40

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 13:33

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	54	440		U
1912-24-9	Atrazine	38	440		U
100-52-7	Benzaldehyde	74	440		U
111-91-1	bis(2-Chloroethoxy)methane	41	440		U
92-52-4	1,1'-Biphenyl	39	440		U
111-44-4	bis(2-Chloroethyl)ether	54	440		U
108-60-1	2,2-Oxybis(1-chloropropane)	68	880		U
117-81-7	Bis(2-ethylhexyl)phthalate	48	440		U
101-55-3	4-Bromophenyl-phenylether	34	440		U
85-68-7	Butylbenzylphthalate	39	440		U
105-60-2	Caprolactam	89	440		U
106-47-8	4-Chloroaniline	64	440		U
86-74-8	Carbazole	48	880		U
59-50-7	4-Chloro-3-methylphenol	37	440		U
91-58-7	2-Chloronaphthalene (beta)	42	440		U
95-57-8	2-Chlorophenol	54	440		U
7005-72-3	4-Chlorophenyl-phenylether	41	440		U
132-64-9	Dibenzofuran	32	440		U
91-94-1	3,3'-Dichlorobenzidine	42	440		U
120-83-2	2,4-Dichlorophenol	25	440		U
84-66-2	Diethylphthalate	45	440		U
105-67-9	2,4-Dimethylphenol	28	880		U
131-11-3	Dimethylphthalate	40	440		U
84-74-2	Di-n-butylphthalate	40	440		U
534-52-1	4,6-Dinitro-2-methylphenol	29	1800		UY
51-28-5	2,4-Dinitrophenol	180	4400		UY
121-14-2	2,4-Dinitrotoluene	32	440		U
606-20-2	2,6-Dinitrotoluene	50	440		U
117-84-0	Di-n-octylphthalate	36	440		U
118-74-1	Hexachlorobenzene	46	440		U
87-68-3	Hexachlorobutadiene	44	440		U
77-47-4	Hexachlorocyclopentadiene	81	440		U
67-72-1	Hexachloroethane	52	880		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
4-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-30

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000630

% Moisture: 25 decanted: (Y/N) N Date Sampled: 09/27/09 09:40

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 13:33

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	38	440		U
106-44-5	4-Methylphenol (p-cresol)	35	440		U
95-48-7	2-Methylphenol (o-cresol)	51	440		U
88-74-4	2-Nitroaniline	43	1800		U
99-09-2	3-Nitroaniline	63	1800		U
100-01-6	4-Nitroaniline	130	1800		U
98-95-3	Nitrobenzene	46	440		U
88-75-5	2-Nitrophenol	29	440		U
100-02-7	4-Nitrophenol	110	1800		U
86-30-6	N-Nitrosodiphenylamine (1)	42	440		U
621-64-7	N-Nitroso-di-n-propylamine	73	440		U
87-86-5	Pentachlorophenol	45	1800		U
108-95-2	Phenol	48	440		U
95-95-4	2,4,5-Trichlorophenol	36	440		U
88-06-2	2,4,6-Trichlorophenol	46	440		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
5-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-31

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000631

% Moisture: 17 decanted: (Y/N) N Date Sampled: 09/27/09 10:00

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 23:09

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	49	400		U
1912-24-9	Atrazine	34	400		U
100-52-7	Benzaldehyde	66	400		U
111-91-1	bis(2-Chloroethoxy)methane	37	400		U
92-52-4	1,1'-Biphenyl	35	400		UY
111-44-4	bis(2-Chloroethyl)ether	49	400		U
108-60-1	2,2-Oxybis(1-chloropropane)	62	800		U
117-81-7	Bis(2-ethylhexyl)phthalate	43	400		U
101-55-3	4-Bromophenyl-phenylether	31	400		U
85-68-7	Butylbenzylphthalate	36	400		U
105-60-2	Caprolactam	81	400		U
106-47-8	4-Chloroaniline	57	400		U
86-74-8	Carbazole	43	800		UY
59-50-7	4-Chloro-3-methylphenol	33	400		U
91-58-7	2-Chloronaphthalene (beta)	38	400		U
95-57-8	2-Chlorophenol	49	400		U
7005-72-3	4-Chlorophenyl-phenylether	37	400		U
132-64-9	Dibenzofuran	29	400	250	J
91-94-1	3,3'-Dichlorobenzidine	38	400		U
120-83-2	2,4-Dichlorophenol	23	400		U
84-66-2	Diethylphthalate	41	400		U
105-67-9	2,4-Dimethylphenol	26	800		U
131-11-3	Dimethylphthalate	37	400		U
84-74-2	Di-n-butylphthalate	36	400		U
534-52-1	4,6-Dinitro-2-methylphenol	26	1600		UY
51-28-5	2,4-Dinitrophenol	160	4000		UY
121-14-2	2,4-Dinitrotoluene	29	400		U
606-20-2	2,6-Dinitrotoluene	45	400		U
117-84-0	Di-n-octylphthalate	32	400		U
118-74-1	Hexachlorobenzene	42	400		U
87-68-3	Hexachlorobutadiene	39	400		U
77-47-4	Hexachlorocyclopentadiene	74	400		U
67-72-1	Hexachloroethane	47	800		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
5-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-31

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000631

% Moisture: 17 decanted: (Y/N) N Date Sampled: 09/27/09 10:00

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 23:09

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	34	400		U
106-44-5	4-Methylphenol (p-cresol)	32	400		U
95-48-7	2-Methylphenol (o-cresol)	46	400		U
88-74-4	2-Nitroaniline	38	1600		U
99-09-2	3-Nitroaniline	57	1600		U
100-01-6	4-Nitroaniline	120	1600		U
98-95-3	Nitrobenzene	42	400		U
88-75-5	2-Nitrophenol	26	400		U
100-02-7	4-Nitrophenol	97	1600		U
86-30-6	N-Nitrosodiphenylamine (1)	38	400		U
621-64-7	N-Nitroso-di-n-propylamine	66	400		U
87-86-5	Pentachlorophenol	40	1600		U
108-95-2	Phenol	43	400		U
95-95-4	2,4,5-Trichlorophenol	32	400		U
88-06-2	2,4,6-Trichlorophenol	42	400		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
NTC21SB15
-SO-0001DL

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-31DL

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000631D

% Moisture: 17 decanted: (Y/N) N Date Sampled: 09/27/09 10:00

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/18/09 20:17

Injection Volume: 0.5(uL) Dilution Factor: 5.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	250	2000		UD
1912-24-9	Atrazine	170	2000		UD
100-52-7	Benzaldehyde	330	2000		UD
111-91-1	bis(2-Chloroethoxy)methane	180	2000		UD
92-52-4	1,1'-Biphenyl	180	2000		UDY
111-44-4	bis(2-Chloroethyl)ether	240	2000		UD
108-60-1	2,2-Oxybis(1-chloropropane)	310	4000		UD
117-81-7	Bis(2-ethylhexyl)phthalate	220	2000		UD
101-55-3	4-Bromophenyl-phenylether	160	2000		UD
85-68-7	Butylbenzylphthalate	180	2000		UD
105-60-2	Caprolactam	400	2000		UD
106-47-8	4-Chloroaniline	290	2000		UD
86-74-8	Carbazole	220	4000		UDY
59-50-7	4-Chloro-3-methylphenol	170	2000		UD
91-58-7	2-Chloronaphthalene (beta)	190	2000		UD
95-57-8	2-Chlorophenol	240	2000		UD
7005-72-3	4-Chlorophenyl-phenylether	180	2000		UD
132-64-9	Dibenzofuran	150	2000	260	JD
91-94-1	3,3'-Dichlorobenzidine	190	2000		UD
120-83-2	2,4-Dichlorophenol	110	2000		UD
84-66-2	Diethylphthalate	200	2000		UD
105-67-9	2,4-Dimethylphenol	130	4000		UD
131-11-3	Dimethylphthalate	180	2000		UD
84-74-2	Di-n-butylphthalate	180	2000		UD
534-52-1	4,6-Dinitro-2-methylphenol	130	8000		UDY
51-28-5	2,4-Dinitrophenol	800	20000		UD
121-14-2	2,4-Dinitrotoluene	140	2000		UD
606-20-2	2,6-Dinitrotoluene	230	2000		UD
117-84-0	Di-n-octylphthalate	160	2000		UD
118-74-1	Hexachlorobenzene	210	2000		UD
87-68-3	Hexachlorobutadiene	200	2000		UD
77-47-4	Hexachlorocyclopentadiene	370	2000		UD
67-72-1	Hexachloroethane	240	4000		UD

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB15
-SO-0001DL

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-31DL

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000631D

% Moisture: 17 decanted: (Y/N) N Date Sampled: 09/27/09 10:00

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/18/09 20:17

Injection Volume: 0.5(uL) Dilution Factor: 5.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	170	2000		UD
106-44-5	4-Methylphenol (p-cresol)	160	2000		UD
95-48-7	2-Methylphenol (o-cresol)	230	2000		UD
88-74-4	2-Nitroaniline	190	8000		UD
99-09-2	3-Nitroaniline	280	8000		UD
100-01-6	4-Nitroaniline	600	8000		UD
98-95-3	Nitrobenzene	210	2000		UD
88-75-5	2-Nitrophenol	130	2000		UD
100-02-7	4-Nitrophenol	480	8000		UD
86-30-6	N-Nitrosodiphenylamine (1)	190	2000		UD
621-64-7	N-Nitroso-di-n-propylamine	330	2000		UD
87-86-5	Pentachlorophenol	200	8000		UD
108-95-2	Phenol	220	2000		UD
95-95-4	2,4,5-Trichlorophenol	160	2000		UD
88-06-2	2,4,6-Trichlorophenol	210	2000		UD

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
5-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-32

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000632

% Moisture: 23 decanted: (Y/N) N Date Sampled: 09/27/09 10:10

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 14:09

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	53	430		U
1912-24-9	Atrazine	37	430		U
100-52-7	Benzaldehyde	72	430		U
111-91-1	bis(2-Chloroethoxy)methane	40	430		U
92-52-4	1,1'-Biphenyl	38	430		U
111-44-4	bis(2-Chloroethyl)ether	53	430		U
108-60-1	2,2-Oxybis(1-chloropropane)	66	860		U
117-81-7	Bis(2-ethylhexyl)phthalate	47	430		U
101-55-3	4-Bromophenyl-phenylether	33	430		U
85-68-7	Butylbenzylphthalate	38	430		U
105-60-2	Caprolactam	87	430		U
106-47-8	4-Chloroaniline	62	430		U
86-74-8	Carbazole	47	860		U
59-50-7	4-Chloro-3-methylphenol	36	430		U
91-58-7	2-Chloronaphthalene (beta)	41	430		U
95-57-8	2-Chlorophenol	53	430		U
7005-72-3	4-Chlorophenyl-phenylether	40	430		U
132-64-9	Dibenzofuran	32	430	55	J
91-94-1	3,3'-Dichlorobenzidine	41	430		U
120-83-2	2,4-Dichlorophenol	24	430		U
84-66-2	Diethylphthalate	44	430		U
105-67-9	2,4-Dimethylphenol	28	860		U
131-11-3	Dimethylphthalate	40	430		U
84-74-2	Di-n-butylphthalate	39	430		U
534-52-1	4,6-Dinitro-2-methylphenol	28	1700		UY
51-28-5	2,4-Dinitrophenol	170	4300		UY
121-14-2	2,4-Dinitrotoluene	31	430		U
606-20-2	2,6-Dinitrotoluene	49	430		U
117-84-0	Di-n-octylphthalate	35	430		U
118-74-1	Hexachlorobenzene	45	430		U
87-68-3	Hexachlorobutadiene	42	430		U
77-47-4	Hexachlorocyclopentadiene	79	430		U
67-72-1	Hexachloroethane	51	860		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
5-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-32

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000632

% Moisture: 23 decanted: (Y/N) N Date Sampled: 09/27/09 10:10

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 14:09

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	37	430		U
106-44-5	4-Methylphenol (p-cresol)	34	430		U
95-48-7	2-Methylphenol (o-cresol)	50	430		U
88-74-4	2-Nitroaniline	42	1700		U
99-09-2	3-Nitroaniline	61	1700		U
100-01-6	4-Nitroaniline	130	1700		U
98-95-3	Nitrobenzene	45	430		U
88-75-5	2-Nitrophenol	28	430		U
100-02-7	4-Nitrophenol	100	1700		U
86-30-6	N-Nitrosodiphenylamine (1)	41	430		U
621-64-7	N-Nitroso-di-n-propylamine	71	430		U
87-86-5	Pentachlorophenol	44	1700		U
108-95-2	Phenol	47	430		U
95-95-4	2,4,5-Trichlorophenol	35	430		U
88-06-2	2,4,6-Trichlorophenol	45	430		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
6-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-33

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000633

% Moisture: 11 decanted: (Y/N) N Date Sampled: 09/27/09 17:00

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 23:46

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	46	370		U
1912-24-9	Atrazine	32	370		U
100-52-7	Benzaldehyde	62	370		U
111-91-1	bis(2-Chloroethoxy)methane	35	370		U
92-52-4	1,1'-Biphenyl	33	370		UY
111-44-4	bis(2-Chloroethyl)ether	46	370		U
108-60-1	2,2-Oxybis(1-chloropropane)	58	750		U
117-81-7	Bis(2-ethylhexyl)phthalate	40	370	77	J
101-55-3	4-Bromophenyl-phenylether	29	370		U
85-68-7	Butylbenzylphthalate	33	370		U
105-60-2	Caprolactam	76	370		U
106-47-8	4-Chloroaniline	54	370		U
86-74-8	Carbazole	40	750		UY
59-50-7	4-Chloro-3-methylphenol	31	370		U
91-58-7	2-Chloronaphthalene (beta)	36	370		U
95-57-8	2-Chlorophenol	46	370		U
7005-72-3	4-Chlorophenyl-phenylether	34	370		U
132-64-9	Dibenzofuran	27	370	130	J
91-94-1	3,3'-Dichlorobenzidine	35	370		U
120-83-2	2,4-Dichlorophenol	21	370		U
84-66-2	Diethylphthalate	38	370		U
105-67-9	2,4-Dimethylphenol	24	750		U
131-11-3	Dimethylphthalate	34	370		U
84-74-2	Di-n-butylphthalate	34	370		U
534-52-1	4,6-Dinitro-2-methylphenol	24	1500		UY
51-28-5	2,4-Dinitrophenol	150	3700		UY
121-14-2	2,4-Dinitrotoluene	27	370		U
606-20-2	2,6-Dinitrotoluene	42	370		U
117-84-0	Di-n-octylphthalate	30	370		U
118-74-1	Hexachlorobenzene	39	370		U
87-68-3	Hexachlorobutadiene	37	370		U
77-47-4	Hexachlorocyclopentadiene	69	370		U
67-72-1	Hexachloroethane	44	750		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
6-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-33

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000633

% Moisture: 11 decanted: (Y/N) N Date Sampled: 09/27/09 17:00

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 23:46

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	32	370		U
106-44-5	4-Methylphenol (p-cresol)	30	370		U
95-48-7	2-Methylphenol (o-cresol)	43	370		U
88-74-4	2-Nitroaniline	36	1500		U
99-09-2	3-Nitroaniline	53	1500		U
100-01-6	4-Nitroaniline	110	1500		U
98-95-3	Nitrobenzene	39	370		U
88-75-5	2-Nitrophenol	25	370		U
100-02-7	4-Nitrophenol	91	1500		U
86-30-6	N-Nitrosodiphenylamine (1)	36	370		U
621-64-7	N-Nitroso-di-n-propylamine	62	370		U
87-86-5	Pentachlorophenol	38	1500		U
108-95-2	Phenol	40	370		U
95-95-4	2,4,5-Trichlorophenol	30	370		U
88-06-2	2,4,6-Trichlorophenol	39	370		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
6-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-34

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000634

% Moisture: 23 decanted: (Y/N) N Date Sampled: 09/27/09 16:50

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 14:45

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	53	430		U
1912-24-9	Atrazine	37	430		U
100-52-7	Benzaldehyde	72	430		U
111-91-1	bis(2-Chloroethoxy)methane	40	430		U
92-52-4	1,1'-Biphenyl	38	430		U
111-44-4	bis(2-Chloroethyl)ether	53	430		U
108-60-1	2,2-Oxybis(1-chloropropane)	66	860		U
117-81-7	Bis(2-ethylhexyl)phthalate	47	430		U
101-55-3	4-Bromophenyl-phenylether	33	430		U
85-68-7	Butylbenzylphthalate	38	430		U
105-60-2	Caprolactam	87	430		U
106-47-8	4-Chloroaniline	62	430		U
86-74-8	Carbazole	47	860		U
59-50-7	4-Chloro-3-methylphenol	36	430		U
91-58-7	2-Chloronaphthalene (beta)	41	430		U
95-57-8	2-Chlorophenol	53	430		U
7005-72-3	4-Chlorophenyl-phenylether	40	430		U
132-64-9	Dibenzofuran	32	430		U
91-94-1	3,3'-Dichlorobenzidine	41	430		U
120-83-2	2,4-Dichlorophenol	24	430		U
84-66-2	Diethylphthalate	44	430		U
105-67-9	2,4-Dimethylphenol	28	860		U
131-11-3	Dimethylphthalate	39	430		U
84-74-2	Di-n-butylphthalate	39	430		U
534-52-1	4,6-Dinitro-2-methylphenol	28	1700		UY
51-28-5	2,4-Dinitrophenol	170	4300		UY
121-14-2	2,4-Dinitrotoluene	31	430		U
606-20-2	2,6-Dinitrotoluene	49	430		U
117-84-0	Di-n-octylphthalate	35	430		U
118-74-1	Hexachlorobenzene	45	430		U
87-68-3	Hexachlorobutadiene	42	430		U
77-47-4	Hexachlorocyclopentadiene	79	430		U
67-72-1	Hexachloroethane	51	860		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
6-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-34

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000634

% Moisture: 23 decanted: (Y/N) N Date Sampled: 09/27/09 16:50

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 14:45

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	37	430		U
106-44-5	4-Methylphenol (p-cresol)	34	430		U
95-48-7	2-Methylphenol (o-cresol)	50	430		U
88-74-4	2-Nitroaniline	41	1700		U
99-09-2	3-Nitroaniline	61	1700		U
100-01-6	4-Nitroaniline	130	1700		U
98-95-3	Nitrobenzene	45	430		U
88-75-5	2-Nitrophenol	28	430		U
100-02-7	4-Nitrophenol	100	1700		U
86-30-6	N-Nitrosodiphenylamine (1)	41	430		U
621-64-7	N-Nitroso-di-n-propylamine	71	430		U
87-86-5	Pentachlorophenol	44	1700		U
108-95-2	Phenol	46	430		U
95-95-4	2,4,5-Trichlorophenol	34	430		U
88-06-2	2,4,6-Trichlorophenol	45	430		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
7-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-11

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000611

% Moisture: 17 decanted: (Y/N) N Date Sampled: 09/26/09 13:26

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 06:05

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	50	400		U
1912-24-9	Atrazine	34	400		U
100-52-7	Benzaldehyde	67	400		U
111-91-1	bis(2-Chloroethoxy)methane	37	400		U
92-52-4	1,1'-Biphenyl	36	400		U
111-44-4	bis(2-Chloroethyl)ether	49	400		U
108-60-1	2,2-Oxybis(1-chloropropane)	62	800		U
117-81-7	Bis(2-ethylhexyl)phthalate	44	400		U
101-55-3	4-Bromophenyl-phenylether	31	400		U
85-68-7	Butylbenzylphthalate	36	400		U
105-60-2	Caprolactam	81	400		U
106-47-8	4-Chloroaniline	58	400		U
86-74-8	Carbazole	44	800		U
59-50-7	4-Chloro-3-methylphenol	34	400		U
91-58-7	2-Chloronaphthalene (beta)	39	400		U
95-57-8	2-Chlorophenol	49	400		U
7005-72-3	4-Chlorophenyl-phenylether	37	400		U
132-64-9	Dibenzofuran	30	400	210	J
91-94-1	3,3'-Dichlorobenzidine	38	400		U
120-83-2	2,4-Dichlorophenol	23	400		U
84-66-2	Diethylphthalate	41	400		U
105-67-9	2,4-Dimethylphenol	26	800		U
131-11-3	Dimethylphthalate	37	400		U
84-74-2	Di-n-butylphthalate	37	400		U
534-52-1	4,6-Dinitro-2-methylphenol	26	1600		UY
51-28-5	2,4-Dinitrophenol	160	4000		UY
121-14-2	2,4-Dinitrotoluene	29	400		U
606-20-2	2,6-Dinitrotoluene	46	400		U
117-84-0	Di-n-octylphthalate	32	400		U
118-74-1	Hexachlorobenzene	42	400		U
87-68-3	Hexachlorobutadiene	40	400		U
77-47-4	Hexachlorocyclopentadiene	74	400		UY
67-72-1	Hexachloroethane	47	800		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
7-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-11

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000611

% Moisture: 17 decanted: (Y/N) N Date Sampled: 09/26/09 13:26

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 06:05

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	34	400		U
106-44-5	4-Methylphenol (p-cresol)	32	400		U
95-48-7	2-Methylphenol (o-cresol)	47	400		U
88-74-4	2-Nitroaniline	39	1600		U
99-09-2	3-Nitroaniline	57	1600		U
100-01-6	4-Nitroaniline	120	1600		U
98-95-3	Nitrobenzene	42	400		U
88-75-5	2-Nitrophenol	27	400		U
100-02-7	4-Nitrophenol	98	1600		U
86-30-6	N-Nitrosodiphenylamine (1)	39	400		U
621-64-7	N-Nitroso-di-n-propylamine	66	400		U
87-86-5	Pentachlorophenol	41	1600		U
108-95-2	Phenol	44	400		U
95-95-4	2,4,5-Trichlorophenol	32	400		U
88-06-2	2,4,6-Trichlorophenol	42	400		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
7-SO-0507

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-12

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000612

% Moisture: 10 decanted: (Y/N) N Date Sampled: 09/26/09 13:32

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/16/09 19:53

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	46	370		U
1912-24-9	Atrazine	32	370		U
100-52-7	Benzaldehyde	62	370		U
111-91-1	bis(2-Chloroethoxy)methane	34	370		U
92-52-4	1,1'-Biphenyl	33	370		U
111-44-4	bis(2-Chloroethyl)ether	46	370		U
108-60-1	2,2-Oxybis(1-chloropropane)	57	740		U
117-81-7	Bis(2-ethylhexyl)phthalate	40	370		U
101-55-3	4-Bromophenyl-phenylether	29	370		U
85-68-7	Butylbenzylphthalate	33	370		U
105-60-2	Caprolactam	75	370		U
106-47-8	4-Chloroaniline	53	370		U
86-74-8	Carbazole	40	740		U
59-50-7	4-Chloro-3-methylphenol	31	370		U
91-58-7	2-Chloronaphthalene (beta)	36	370		U
95-57-8	2-Chlorophenol	46	370		U
7005-72-3	4-Chlorophenyl-phenylether	34	370		U
132-64-9	Dibenzofuran	27	370		U
91-94-1	3,3'-Dichlorobenzidine	35	370		U
120-83-2	2,4-Dichlorophenol	21	370		U
84-66-2	Diethylphthalate	38	370		U
105-67-9	2,4-Dimethylphenol	24	740		U
131-11-3	Dimethylphthalate	34	370		U
84-74-2	Di-n-butylphthalate	34	370		U
534-52-1	4,6-Dinitro-2-methylphenol	24	1500		U
51-28-5	2,4-Dinitrophenol	150	3700		U
121-14-2	2,4-Dinitrotoluene	27	370		U
606-20-2	2,6-Dinitrotoluene	42	370		U
117-84-0	Di-n-octylphthalate	30	370		U
118-74-1	Hexachlorobenzene	39	370		U
87-68-3	Hexachlorobutadiene	36	370		U
77-47-4	Hexachlorocyclopentadiene	68	370		U
67-72-1	Hexachloroethane	44	740		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
7-SO-0507

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-12

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000612

% Moisture: 10 decanted: (Y/N) N Date Sampled: 09/26/09 13:32

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/16/09 19:53

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	32	370		U
106-44-5	4-Methylphenol (p-cresol)	30	370		U
95-48-7	2-Methylphenol (o-cresol)	43	370		U
88-74-4	2-Nitroaniline	36	1500		U
99-09-2	3-Nitroaniline	53	1500		U
100-01-6	4-Nitroaniline	110	1500		U
98-95-3	Nitrobenzene	38	370		U
88-75-5	2-Nitrophenol	25	370		U
100-02-7	4-Nitrophenol	90	1500		U
86-30-6	N-Nitrosodiphenylamine (1)	36	370		U
621-64-7	N-Nitroso-di-n-propylamine	61	370		U
87-86-5	Pentachlorophenol	38	1500		U
108-95-2	Phenol	40	370		U
95-95-4	2,4,5-Trichlorophenol	30	370		U
88-06-2	2,4,6-Trichlorophenol	39	370		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
8-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-13

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000613

% Moisture: 14 decanted: (Y/N) N Date Sampled: 09/26/09 12:47

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 03:05

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	48	390		U
1912-24-9	Atrazine	33	390		U
100-52-7	Benzaldehyde	65	390		U
111-91-1	bis(2-Chloroethoxy)methane	36	390		U
92-52-4	1,1'-Biphenyl	34	390		U
111-44-4	bis(2-Chloroethyl)ether	48	390		U
108-60-1	2,2-Oxybis(1-chloropropane)	60	780		U
117-81-7	Bis(2-ethylhexyl)phthalate	42	390		U
101-55-3	4-Bromophenyl-phenylether	30	390		U
85-68-7	Butylbenzylphthalate	35	390		U
105-60-2	Caprolactam	78	390		U
106-47-8	4-Chloroaniline	56	390		U
86-74-8	Carbazole	42	780		U
59-50-7	4-Chloro-3-methylphenol	32	390		U
91-58-7	2-Chloronaphthalene (beta)	37	390		U
95-57-8	2-Chlorophenol	48	390		U
7005-72-3	4-Chlorophenyl-phenylether	36	390		U
132-64-9	Dibenzofuran	28	390	46	J
91-94-1	3,3'-Dichlorobenzidine	37	390		U
120-83-2	2,4-Dichlorophenol	22	390		U
84-66-2	Diethylphthalate	40	390		U
105-67-9	2,4-Dimethylphenol	25	780		U
131-11-3	Dimethylphthalate	36	390		U
84-74-2	Di-n-butylphthalate	35	390		U
534-52-1	4,6-Dinitro-2-methylphenol	25	1600		UY
51-28-5	2,4-Dinitrophenol	160	3900		UY
121-14-2	2,4-Dinitrotoluene	28	390		U
606-20-2	2,6-Dinitrotoluene	44	390		U
117-84-0	Di-n-octylphthalate	31	390		U
118-74-1	Hexachlorobenzene	40	390		U
87-68-3	Hexachlorobutadiene	38	390		U
77-47-4	Hexachlorocyclopentadiene	71	390		UY
67-72-1	Hexachloroethane	46	780		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
8-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-13

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000613

% Moisture: 14 decanted: (Y/N) N Date Sampled: 09/26/09 12:47

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 03:05

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	33	390		U
106-44-5	4-Methylphenol (p-cresol)	31	390		U
95-48-7	2-Methylphenol (o-cresol)	45	390		U
88-74-4	2-Nitroaniline	37	1600		U
99-09-2	3-Nitroaniline	55	1600		U
100-01-6	4-Nitroaniline	120	1600		U
98-95-3	Nitrobenzene	40	390		U
88-75-5	2-Nitrophenol	26	390		U
100-02-7	4-Nitrophenol	94	1600		U
86-30-6	N-Nitrosodiphenylamine (1)	37	390		U
621-64-7	N-Nitroso-di-n-propylamine	64	390		U
87-86-5	Pentachlorophenol	39	1600		U
108-95-2	Phenol	42	390		U
95-95-4	2,4,5-Trichlorophenol	31	390		U
88-06-2	2,4,6-Trichlorophenol	41	390		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
8-SO-0507

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-14

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000614

% Moisture: 11 decanted: (Y/N) N Date Sampled: 09/26/09 12:59

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/16/09 20:29

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	46	370		U
1912-24-9	Atrazine	32	370		U
100-52-7	Benzaldehyde	62	370		U
111-91-1	bis(2-Chloroethoxy)methane	35	370		U
92-52-4	1,1'-Biphenyl	33	370		U
111-44-4	bis(2-Chloroethyl)ether	46	370		U
108-60-1	2,2-Oxybis(1-chloropropane)	57	750		U
117-81-7	Bis(2-ethylhexyl)phthalate	40	370		U
101-55-3	4-Bromophenyl-phenylether	29	370		U
85-68-7	Butylbenzylphthalate	33	370		U
105-60-2	Caprolactam	75	370		U
106-47-8	4-Chloroaniline	54	370		U
86-74-8	Carbazole	40	750		U
59-50-7	4-Chloro-3-methylphenol	31	370		U
91-58-7	2-Chloronaphthalene (beta)	36	370		U
95-57-8	2-Chlorophenol	46	370		U
7005-72-3	4-Chlorophenyl-phenylether	34	370		U
132-64-9	Dibenzofuran	27	370		U
91-94-1	3,3'-Dichlorobenzidine	35	370		U
120-83-2	2,4-Dichlorophenol	21	370		U
84-66-2	Diethylphthalate	38	370		U
105-67-9	2,4-Dimethylphenol	24	750		U
131-11-3	Dimethylphthalate	34	370		U
84-74-2	Di-n-butylphthalate	34	370		U
534-52-1	4,6-Dinitro-2-methylphenol	24	1500		U
51-28-5	2,4-Dinitrophenol	150	3700		U
121-14-2	2,4-Dinitrotoluene	27	370		U
606-20-2	2,6-Dinitrotoluene	42	370		U
117-84-0	Di-n-octylphthalate	30	370		U
118-74-1	Hexachlorobenzene	39	370		U
87-68-3	Hexachlorobutadiene	37	370		U
77-47-4	Hexachlorocyclopentadiene	68	370		U
67-72-1	Hexachloroethane	44	750		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
8-SO-0507

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-14

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000614

% Moisture: 11 decanted: (Y/N) N Date Sampled: 09/26/09 12:59

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/16/09 20:29

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	32	370		U
106-44-5	4-Methylphenol (p-cresol)	30	370		U
95-48-7	2-Methylphenol (o-cresol)	43	370		U
88-74-4	2-Nitroaniline	36	1500		U
99-09-2	3-Nitroaniline	53	1500		U
100-01-6	4-Nitroaniline	110	1500		U
98-95-3	Nitrobenzene	39	370		U
88-75-5	2-Nitrophenol	25	370		U
100-02-7	4-Nitrophenol	91	1500		U
86-30-6	N-Nitrosodiphenylamine (1)	36	370		U
621-64-7	N-Nitroso-di-n-propylamine	61	370		U
87-86-5	Pentachlorophenol	38	1500		U
108-95-2	Phenol	40	370		U
95-95-4	2,4,5-Trichlorophenol	30	370		U
88-06-2	2,4,6-Trichlorophenol	39	370		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
9-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-35

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000635

% Moisture: 8 decanted: (Y/N) N Date Sampled: 09/27/09 17:40

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/18/09 00:22

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	44	360		U
1912-24-9	Atrazine	31	360		U
100-52-7	Benzaldehyde	60	360		U
111-91-1	bis(2-Chloroethoxy)methane	34	360		U
92-52-4	1,1'-Biphenyl	32	360		UY
111-44-4	bis(2-Chloroethyl)ether	44	360		U
108-60-1	2,2-Oxybis(1-chloropropane)	56	720		U
117-81-7	Bis(2-ethylhexyl)phthalate	39	360	110	J
101-55-3	4-Bromophenyl-phenylether	28	360		U
85-68-7	Butylbenzylphthalate	32	360		U
105-60-2	Caprolactam	73	360		U
106-47-8	4-Chloroaniline	52	360		U
86-74-8	Carbazole	39	720		UY
59-50-7	4-Chloro-3-methylphenol	30	360		U
91-58-7	2-Chloronaphthalene (beta)	35	360		U
95-57-8	2-Chlorophenol	44	360		U
7005-72-3	4-Chlorophenyl-phenylether	33	360		U
132-64-9	Dibenzofuran	26	360	39	J
91-94-1	3,3'-Dichlorobenzidine	34	360		U
120-83-2	2,4-Dichlorophenol	20	360		U
84-66-2	Diethylphthalate	37	360		U
105-67-9	2,4-Dimethylphenol	23	720		U
131-11-3	Dimethylphthalate	33	360		U
84-74-2	Di-n-butylphthalate	33	360		U
534-52-1	4,6-Dinitro-2-methylphenol	24	1400		UY
51-28-5	2,4-Dinitrophenol	140	3600		UY
121-14-2	2,4-Dinitrotoluene	26	360		U
606-20-2	2,6-Dinitrotoluene	41	360		U
117-84-0	Di-n-octylphthalate	29	360		U
118-74-1	Hexachlorobenzene	38	360		U
87-68-3	Hexachlorobutadiene	36	360		U
77-47-4	Hexachlorocyclopentadiene	66	360		U
67-72-1	Hexachloroethane	43	720		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
9-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-35

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000635

% Moisture: 8 decanted: (Y/N) N Date Sampled: 09/27/09 17:40

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/18/09 00:22

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	31	360		U
106-44-5	4-Methylphenol (p-cresol)	29	360		U
95-48-7	2-Methylphenol (o-cresol)	42	360		U
88-74-4	2-Nitroaniline	35	1400		U
99-09-2	3-Nitroaniline	51	1400		U
100-01-6	4-Nitroaniline	110	1400		U
98-95-3	Nitrobenzene	38	360		U
88-75-5	2-Nitrophenol	24	360		U
100-02-7	4-Nitrophenol	88	1400		U
86-30-6	N-Nitrosodiphenylamine (1)	35	360		U
621-64-7	N-Nitroso-di-n-propylamine	60	360		U
87-86-5	Pentachlorophenol	37	1400		U
108-95-2	Phenol	39	360		U
95-95-4	2,4,5-Trichlorophenol	29	360		U
88-06-2	2,4,6-Trichlorophenol	38	360		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
9-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-36

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000636

% Moisture: 17 decanted: (Y/N) N Date Sampled: 09/27/09 17:50

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/18/09 00:58

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	49	400		U
1912-24-9	Atrazine	34	400		U
100-52-7	Benzaldehyde	67	400		U
111-91-1	bis(2-Chloroethoxy)methane	37	400		U
92-52-4	1,1'-Biphenyl	35	400		UY
111-44-4	bis(2-Chloroethyl)ether	49	400		U
108-60-1	2,2-Oxybis(1-chloropropane)	62	800		U
117-81-7	Bis(2-ethylhexyl)phthalate	43	400	54	J
101-55-3	4-Bromophenyl-phenylether	31	400		U
85-68-7	Butylbenzylphthalate	36	400		U
105-60-2	Caprolactam	81	400		U
106-47-8	4-Chloroaniline	58	400		U
86-74-8	Carbazole	44	800		UY
59-50-7	4-Chloro-3-methylphenol	33	400		U
91-58-7	2-Chloronaphthalene (beta)	38	400		U
95-57-8	2-Chlorophenol	49	400		U
7005-72-3	4-Chlorophenyl-phenylether	37	400		U
132-64-9	Dibenzofuran	29	400	34	J
91-94-1	3,3'-Dichlorobenzidine	38	400		U
120-83-2	2,4-Dichlorophenol	23	400		U
84-66-2	Diethylphthalate	41	400		U
105-67-9	2,4-Dimethylphenol	26	800		U
131-11-3	Dimethylphthalate	37	400		U
84-74-2	Di-n-butylphthalate	36	400		U
534-52-1	4,6-Dinitro-2-methylphenol	26	1600		UY
51-28-5	2,4-Dinitrophenol	160	4000		UY
121-14-2	2,4-Dinitrotoluene	29	400		U
606-20-2	2,6-Dinitrotoluene	46	400		U
117-84-0	Di-n-octylphthalate	32	400		U
118-74-1	Hexachlorobenzene	42	400		U
87-68-3	Hexachlorobutadiene	39	400		U
77-47-4	Hexachlorocyclopentadiene	74	400		U
67-72-1	Hexachloroethane	47	800		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
9-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-36

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000636

% Moisture: 17 decanted: (Y/N) N Date Sampled: 09/27/09 17:50

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/18/09 00:58

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	34	400		U
106-44-5	4-Methylphenol (p-cresol)	32	400		U
95-48-7	2-Methylphenol (o-cresol)	46	400		U
88-74-4	2-Nitroaniline	39	1600		U
99-09-2	3-Nitroaniline	57	1600		U
100-01-6	4-Nitroaniline	120	1600		U
98-95-3	Nitrobenzene	42	400		U
88-75-5	2-Nitrophenol	26	400		U
100-02-7	4-Nitrophenol	97	1600		U
86-30-6	N-Nitrosodiphenylamine (1)	38	400		U
621-64-7	N-Nitroso-di-n-propylamine	66	400		U
87-86-5	Pentachlorophenol	41	1600		U
108-95-2	Phenol	43	400		U
95-95-4	2,4,5-Trichlorophenol	32	400		U
88-06-2	2,4,6-Trichlorophenol	42	400		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB2
0-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-15

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000615

% Moisture: 6 decanted: (Y/N) N Date Sampled: 09/26/09 16:57

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 06:40

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	44	350		U
1912-24-9	Atrazine	30	350		U
100-52-7	Benzaldehyde	59	350		U
111-91-1	bis(2-Chloroethoxy)methane	33	350		U
92-52-4	1,1'-Biphenyl	31	350		U
111-44-4	bis(2-Chloroethyl)ether	43	350		U
108-60-1	2,2-Oxybis(1-chloropropane)	54	710		U
117-81-7	Bis(2-ethylhexyl)phthalate	38	350	140	J
101-55-3	4-Bromophenyl-phenylether	27	350		U
85-68-7	Butylbenzylphthalate	32	350		U
105-60-2	Caprolactam	72	350		U
106-47-8	4-Chloroaniline	51	350		U
86-74-8	Carbazole	38	710	66	J
59-50-7	4-Chloro-3-methylphenol	30	350		U
91-58-7	2-Chloronaphthalene (beta)	34	350		U
95-57-8	2-Chlorophenol	43	350		U
7005-72-3	4-Chlorophenyl-phenylether	33	350		U
132-64-9	Dibenzofuran	26	350	41	J
91-94-1	3,3'-Dichlorobenzidine	33	350		U
120-83-2	2,4-Dichlorophenol	20	350		U
84-66-2	Diethylphthalate	36	350		U
105-67-9	2,4-Dimethylphenol	23	710		U
131-11-3	Dimethylphthalate	32	350		U
84-74-2	Di-n-butylphthalate	32	350		U
534-52-1	4,6-Dinitro-2-methylphenol	23	1400		UY
51-28-5	2,4-Dinitrophenol	140	3500		UY
121-14-2	2,4-Dinitrotoluene	26	350		U
606-20-2	2,6-Dinitrotoluene	40	350		U
117-84-0	Di-n-octylphthalate	29	350		U
118-74-1	Hexachlorobenzene	37	350		U
87-68-3	Hexachlorobutadiene	35	350		U
77-47-4	Hexachlorocyclopentadiene	65	350		UY
67-72-1	Hexachloroethane	42	710		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB2
0-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-15

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000615

% Moisture: 6 decanted: (Y/N) N Date Sampled: 09/26/09 16:57

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted: 10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 06:40

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	30	350		U
106-44-5	4-Methylphenol (p-cresol)	28	350		U
95-48-7	2-Methylphenol (o-cresol)	41	350		U
88-74-4	2-Nitroaniline	34	1400		U
99-09-2	3-Nitroaniline	50	1400		U
100-01-6	4-Nitroaniline	110	1400		U
98-95-3	Nitrobenzene	37	350		U
88-75-5	2-Nitrophenol	23	350		U
100-02-7	4-Nitrophenol	86	1400		U
86-30-6	N-Nitrosodiphenylamine (1)	34	350		U
621-64-7	N-Nitroso-di-n-propylamine	58	350		U
87-86-5	Pentachlorophenol	36	1400		U
108-95-2	Phenol	38	350		U
95-95-4	2,4,5-Trichlorophenol	28	350		U
88-06-2	2,4,6-Trichlorophenol	37	350		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
NTC21SB20
-SO-0001DL

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-15DL

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000615D

% Moisture: 6 decanted: (Y/N) N Date Sampled: 09/26/09 16:57

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/18/09 19:41

Injection Volume: 0.5(uL) Dilution Factor: 5.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	220	1800		UD
1912-24-9	Atrazine	150	1800		UD
100-52-7	Benzaldehyde	290	1800		UD
111-91-1	bis(2-Chloroethoxy)methane	160	1800		UD
92-52-4	1,1'-Biphenyl	160	1800		UDY
111-44-4	bis(2-Chloroethyl)ether	220	1800		UD
108-60-1	2,2-Oxybis(1-chloropropane)	270	3500		UD
117-81-7	Bis(2-ethylhexyl)phthalate	190	1800		UD
101-55-3	4-Bromophenyl-phenylether	140	1800		UD
85-68-7	Butylbenzylphthalate	160	1800		UD
105-60-2	Caprolactam	360	1800		UD
106-47-8	4-Chloroaniline	250	1800		UD
86-74-8	Carbazole	190	3500		UDY
59-50-7	4-Chloro-3-methylphenol	150	1800		UD
91-58-7	2-Chloronaphthalene (beta)	170	1800		UD
95-57-8	2-Chlorophenol	220	1800		UD
7005-72-3	4-Chlorophenyl-phenylether	160	1800		UD
132-64-9	Dibenzofuran	130	1800		UD
91-94-1	3,3'-Dichlorobenzidine	170	1800		UD
120-83-2	2,4-Dichlorophenol	100	1800		UD
84-66-2	Diethylphthalate	180	1800		UD
105-67-9	2,4-Dimethylphenol	110	3500		UD
131-11-3	Dimethylphthalate	160	1800		UD
84-74-2	Di-n-butylphthalate	160	1800		UD
534-52-1	4,6-Dinitro-2-methylphenol	120	7100		UDY
51-28-5	2,4-Dinitrophenol	710	18000		UD
121-14-2	2,4-Dinitrotoluene	130	1800		UD
606-20-2	2,6-Dinitrotoluene	200	1800		UD
117-84-0	Di-n-octylphthalate	140	1800		UD
118-74-1	Hexachlorobenzene	180	1800		UD
87-68-3	Hexachlorobutadiene	170	1800		UD
77-47-4	Hexachlorocyclopentadiene	320	1800		UD
67-72-1	Hexachloroethane	210	3500		UD

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB20
-SO-0001DL

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-15DL

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000615D

% Moisture: 6 decanted: (Y/N) N Date Sampled: 09/26/09 16:57

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/18/09 19:41

Injection Volume: 0.5(uL) Dilution Factor: 5.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	150	1800		UD
106-44-5	4-Methylphenol (p-cresol)	140	1800		UD
95-48-7	2-Methylphenol (o-cresol)	200	1800		UD
88-74-4	2-Nitroaniline	170	7100		UD
99-09-2	3-Nitroaniline	250	7100		UD
100-01-6	4-Nitroaniline	530	7100		UD
98-95-3	Nitrobenzene	180	1800		UD
88-75-5	2-Nitrophenol	120	1800		UD
100-02-7	4-Nitrophenol	430	7100		UD
86-30-6	N-Nitrosodiphenylamine (1)	170	1800		UD
621-64-7	N-Nitroso-di-n-propylamine	290	1800		UD
87-86-5	Pentachlorophenol	180	7100		UD
108-95-2	Phenol	190	1800		UD
95-95-4	2,4,5-Trichlorophenol	140	1800		UD
88-06-2	2,4,6-Trichlorophenol	180	1800		UD

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB2
0-SO-0406

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-16

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000616

% Moisture: 13 decanted: (Y/N) N Date Sampled: 09/26/09 17:02

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/16/09 21:05

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	47	380		U
1912-24-9	Atrazine	33	380		U
100-52-7	Benzaldehyde	64	380		U
111-91-1	bis(2-Chloroethoxy)methane	36	380		U
92-52-4	1,1'-Biphenyl	34	380		U
111-44-4	bis(2-Chloroethyl)ether	47	380		U
108-60-1	2,2-Oxybis(1-chloropropane)	59	770		U
117-81-7	Bis(2-ethylhexyl)phthalate	42	380		U
101-55-3	4-Bromophenyl-phenylether	30	380		U
85-68-7	Butylbenzylphthalate	34	380		U
105-60-2	Caprolactam	78	380		U
106-47-8	4-Chloroaniline	55	380		U
86-74-8	Carbazole	42	770		U
59-50-7	4-Chloro-3-methylphenol	32	380		U
91-58-7	2-Chloronaphthalene (beta)	37	380		U
95-57-8	2-Chlorophenol	47	380		U
7005-72-3	4-Chlorophenyl-phenylether	36	380		U
132-64-9	Dibenzofuran	28	380		U
91-94-1	3,3'-Dichlorobenzidine	36	380		U
120-83-2	2,4-Dichlorophenol	22	380		U
84-66-2	Diethylphthalate	39	380		U
105-67-9	2,4-Dimethylphenol	25	770		U
131-11-3	Dimethylphthalate	35	380		U
84-74-2	Di-n-butylphthalate	35	380		U
534-52-1	4,6-Dinitro-2-methylphenol	25	1500		U
51-28-5	2,4-Dinitrophenol	150	3800		U
121-14-2	2,4-Dinitrotoluene	28	380		U
606-20-2	2,6-Dinitrotoluene	44	380		U
117-84-0	Di-n-octylphthalate	31	380		U
118-74-1	Hexachlorobenzene	40	380		U
87-68-3	Hexachlorobutadiene	38	380		U
77-47-4	Hexachlorocyclopentadiene	71	380		U
67-72-1	Hexachloroethane	45	770		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB2
0-SO-0406

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-16

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000616

% Moisture: 13 decanted: (Y/N) N Date Sampled: 09/26/09 17:02

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/16/09 21:05

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	33	380		U
106-44-5	4-Methylphenol (p-cresol)	31	380		U
95-48-7	2-Methylphenol (o-cresol)	45	380		U
88-74-4	2-Nitroaniline	37	1500		U
99-09-2	3-Nitroaniline	54	1500		U
100-01-6	4-Nitroaniline	120	1500		U
98-95-3	Nitrobenzene	40	380		U
88-75-5	2-Nitrophenol	25	380		U
100-02-7	4-Nitrophenol	93	1500		U
86-30-6	N-Nitrosodiphenylamine (1)	37	380		U
621-64-7	N-Nitroso-di-n-propylamine	63	380		U
87-86-5	Pentachlorophenol	39	1500		U
108-95-2	Phenol	42	380		U
95-95-4	2,4,5-Trichlorophenol	31	380		U
88-06-2	2,4,6-Trichlorophenol	40	380		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB2
1-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-17

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000617

% Moisture: 7 decanted: (Y/N) N Date Sampled: 09/26/09 15:10

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 07:17

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	44	360		U
1912-24-9	Atrazine	30	360		U
100-52-7	Benzaldehyde	60	360		U
111-91-1	bis(2-Chloroethoxy)methane	33	360		U
92-52-4	1,1'-Biphenyl	32	360		U
111-44-4	bis(2-Chloroethyl)ether	44	360		U
108-60-1	2,2-Oxybis(1-chloropropane)	55	720		U
117-81-7	Bis(2-ethylhexyl)phthalate	39	360	3400	
101-55-3	4-Bromophenyl-phenylether	28	360		U
85-68-7	Butylbenzylphthalate	32	360		U
105-60-2	Caprolactam	72	360		U
106-47-8	4-Chloroaniline	51	360		U
86-74-8	Carbazole	39	720	2400	
59-50-7	4-Chloro-3-methylphenol	30	360		U
91-58-7	2-Chloronaphthalene (beta)	34	360		U
95-57-8	2-Chlorophenol	44	360		U
7005-72-3	4-Chlorophenyl-phenylether	33	360		U
132-64-9	Dibenzofuran	26	360	640	
91-94-1	3,3'-Dichlorobenzidine	34	360		U
120-83-2	2,4-Dichlorophenol	20	360		U
84-66-2	Diethylphthalate	36	360		U
105-67-9	2,4-Dimethylphenol	23	720		U
131-11-3	Dimethylphthalate	33	360		U
84-74-2	Di-n-butylphthalate	33	360		U
534-52-1	4,6-Dinitro-2-methylphenol	23	1400		UY
51-28-5	2,4-Dinitrophenol	140	3600		UY
121-14-2	2,4-Dinitrotoluene	26	360		U
606-20-2	2,6-Dinitrotoluene	41	360		U
117-84-0	Di-n-octylphthalate	29	360		U
118-74-1	Hexachlorobenzene	37	360		U
87-68-3	Hexachlorobutadiene	35	360		U
77-47-4	Hexachlorocyclopentadiene	66	360		UY
67-72-1	Hexachloroethane	42	720		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB2
1-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-17

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000617

% Moisture: 7 decanted: (Y/N) N Date Sampled: 09/26/09 15:10

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 07:17

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	30	360		U
106-44-5	4-Methylphenol (p-cresol)	28	360	50	J
95-48-7	2-Methylphenol (o-cresol)	41	360		U
88-74-4	2-Nitroaniline	34	1400		U
99-09-2	3-Nitroaniline	51	1400		U
100-01-6	4-Nitroaniline	110	1400		U
98-95-3	Nitrobenzene	37	360		U
88-75-5	2-Nitrophenol	24	360		U
100-02-7	4-Nitrophenol	87	1400		U
86-30-6	N-Nitrosodiphenylamine (1)	34	360		U
621-64-7	N-Nitroso-di-n-propylamine	59	360		U
87-86-5	Pentachlorophenol	36	1400		U
108-95-2	Phenol	39	360		U
95-95-4	2,4,5-Trichlorophenol	29	360		U
88-06-2	2,4,6-Trichlorophenol	37	360		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB2
1-SO-0608

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-18

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000618

% Moisture: 10 decanted: (Y/N) N Date Sampled: 09/26/09 15:20

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/16/09 21:40

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	46	370		U
1912-24-9	Atrazine	32	370		U
100-52-7	Benzaldehyde	62	370		U
111-91-1	bis(2-Chloroethoxy)methane	34	370		U
92-52-4	1,1'-Biphenyl	33	370		U
111-44-4	bis(2-Chloroethyl)ether	45	370		U
108-60-1	2,2-Oxybis(1-chloropropane)	57	740		U
117-81-7	Bis(2-ethylhexyl)phthalate	40	370		U
101-55-3	4-Bromophenyl-phenylether	29	370		U
85-68-7	Butylbenzylphthalate	33	370		U
105-60-2	Caprolactam	75	370		U
106-47-8	4-Chloroaniline	53	370		U
86-74-8	Carbazole	40	740		U
59-50-7	4-Chloro-3-methylphenol	31	370		U
91-58-7	2-Chloronaphthalene (beta)	36	370		U
95-57-8	2-Chlorophenol	45	370		U
7005-72-3	4-Chlorophenyl-phenylether	34	370		U
132-64-9	Dibenzofuran	27	370		U
91-94-1	3,3'-Dichlorobenzidine	35	370		U
120-83-2	2,4-Dichlorophenol	21	370		U
84-66-2	Diethylphthalate	38	370		U
105-67-9	2,4-Dimethylphenol	24	740		U
131-11-3	Dimethylphthalate	34	370		U
84-74-2	Di-n-butylphthalate	34	370		U
534-52-1	4,6-Dinitro-2-methylphenol	24	1500		U
51-28-5	2,4-Dinitrophenol	150	3700		U
121-14-2	2,4-Dinitrotoluene	27	370		U
606-20-2	2,6-Dinitrotoluene	42	370		U
117-84-0	Di-n-octylphthalate	30	370		U
118-74-1	Hexachlorobenzene	39	370		U
87-68-3	Hexachlorobutadiene	36	370		U
77-47-4	Hexachlorocyclopentadiene	68	370		U
67-72-1	Hexachloroethane	44	740		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB2
1-SO-0608

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-18

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000618

% Moisture: 10 decanted: (Y/N) N Date Sampled: 09/26/09 15:20

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/16/09 21:40

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	32	370		U
106-44-5	4-Methylphenol (p-cresol)	30	370		U
95-48-7	2-Methylphenol (o-cresol)	43	370		U
88-74-4	2-Nitroaniline	36	1500		U
99-09-2	3-Nitroaniline	53	1500		U
100-01-6	4-Nitroaniline	110	1500		U
98-95-3	Nitrobenzene	38	370		U
88-75-5	2-Nitrophenol	25	370		U
100-02-7	4-Nitrophenol	90	1500		U
86-30-6	N-Nitrosodiphenylamine (1)	36	370		U
621-64-7	N-Nitroso-di-n-propylamine	61	370		U
87-86-5	Pentachlorophenol	38	1500		U
108-95-2	Phenol	40	370		U
95-95-4	2,4,5-Trichlorophenol	30	370		U
88-06-2	2,4,6-Trichlorophenol	39	370		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB2
2-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-37

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000637

% Moisture: 19 decanted: (Y/N) N Date Sampled: 09/27/09 12:00

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/18/09 01:35

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	51	410		U
1912-24-9	Atrazine	35	410		U
100-52-7	Benzaldehyde	68	410		U
111-91-1	bis(2-Chloroethoxy)methane	38	410		U
92-52-4	1,1'-Biphenyl	36	410		UY
111-44-4	bis(2-Chloroethyl)ether	50	410		U
108-60-1	2,2-Oxybis(1-chloropropane)	63	820		U
117-81-7	Bis(2-ethylhexyl)phthalate	45	410		U
101-55-3	4-Bromophenyl-phenylether	32	410		U
85-68-7	Butylbenzylphthalate	37	410		U
105-60-2	Caprolactam	83	410		U
106-47-8	4-Chloroaniline	59	410		U
86-74-8	Carbazole	45	820		UY
59-50-7	4-Chloro-3-methylphenol	34	410		U
91-58-7	2-Chloronaphthalene (beta)	39	410		U
95-57-8	2-Chlorophenol	50	410		U
7005-72-3	4-Chlorophenyl-phenylether	38	410		U
132-64-9	Dibenzofuran	30	410	250	J
91-94-1	3,3'-Dichlorobenzidine	39	410		U
120-83-2	2,4-Dichlorophenol	23	410		U
84-66-2	Diethylphthalate	42	410		U
105-67-9	2,4-Dimethylphenol	26	820		U
131-11-3	Dimethylphthalate	38	410		U
84-74-2	Di-n-butylphthalate	38	410		U
534-52-1	4,6-Dinitro-2-methylphenol	27	1600		UY
51-28-5	2,4-Dinitrophenol	160	4100		UY
121-14-2	2,4-Dinitrotoluene	30	410		U
606-20-2	2,6-Dinitrotoluene	47	410		U
117-84-0	Di-n-octylphthalate	33	410		U
118-74-1	Hexachlorobenzene	43	410		U
87-68-3	Hexachlorobutadiene	40	410		U
77-47-4	Hexachlorocyclopentadiene	76	410		U
67-72-1	Hexachloroethane	48	820		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB2
2-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-37

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000637

% Moisture: 19 decanted: (Y/N) N Date Sampled: 09/27/09 12:00

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/18/09 01:35

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	35	410		U
106-44-5	4-Methylphenol (p-cresol)	33	410		U
95-48-7	2-Methylphenol (o-cresol)	48	410		U
88-74-4	2-Nitroaniline	40	1600		U
99-09-2	3-Nitroaniline	58	1600		U
100-01-6	4-Nitroaniline	120	1600		U
98-95-3	Nitrobenzene	43	410		U
88-75-5	2-Nitrophenol	27	410		U
100-02-7	4-Nitrophenol	100	1600		U
86-30-6	N-Nitrosodiphenylamine (1)	39	410		U
621-64-7	N-Nitroso-di-n-propylamine	68	410		U
87-86-5	Pentachlorophenol	42	1600		U
108-95-2	Phenol	44	410		U
95-95-4	2,4,5-Trichlorophenol	33	410		U
88-06-2	2,4,6-Trichlorophenol	43	410		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB2
2-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-38

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000638

% Moisture: 20 decanted: (Y/N) N Date Sampled: 09/27/09 12:10

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/18/09 02:11

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	51	410		U
1912-24-9	Atrazine	35	410		U
100-52-7	Benzaldehyde	69	410		U
111-91-1	bis(2-Chloroethoxy)methane	38	410		U
92-52-4	1,1'-Biphenyl	37	410		UY
111-44-4	bis(2-Chloroethyl)ether	51	410		U
108-60-1	2,2-Oxybis(1-chloropropane)	64	830		U
117-81-7	Bis(2-ethylhexyl)phthalate	45	410	110	J
101-55-3	4-Bromophenyl-phenylether	32	410		U
85-68-7	Butylbenzylphthalate	37	410		U
105-60-2	Caprolactam	84	410		U
106-47-8	4-Chloroaniline	60	410		U
86-74-8	Carbazole	45	830		UY
59-50-7	4-Chloro-3-methylphenol	34	410		U
91-58-7	2-Chloronaphthalene (beta)	40	410		U
95-57-8	2-Chlorophenol	51	410		U
7005-72-3	4-Chlorophenyl-phenylether	38	410		U
132-64-9	Dibenzofuran	30	410	120	J
91-94-1	3,3'-Dichlorobenzidine	39	410		U
120-83-2	2,4-Dichlorophenol	23	410		U
84-66-2	Diethylphthalate	42	410		U
105-67-9	2,4-Dimethylphenol	26	830		U
131-11-3	Dimethylphthalate	38	410		U
84-74-2	Di-n-butylphthalate	38	410		U
534-52-1	4,6-Dinitro-2-methylphenol	27	1600		UY
51-28-5	2,4-Dinitrophenol	160	4100		UY
121-14-2	2,4-Dinitrotoluene	30	410		U
606-20-2	2,6-Dinitrotoluene	47	410		U
117-84-0	Di-n-octylphthalate	33	410		U
118-74-1	Hexachlorobenzene	43	410		U
87-68-3	Hexachlorobutadiene	41	410		U
77-47-4	Hexachlorocyclopentadiene	76	410		U
67-72-1	Hexachloroethane	49	830		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB2
2-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-38

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000638

% Moisture: 20 decanted: (Y/N) N Date Sampled: 09/27/09 12:10

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/18/09 02:11

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	35	410		U
106-44-5	4-Methylphenol (p-cresol)	33	410		U
95-48-7	2-Methylphenol (o-cresol)	48	410		U
88-74-4	2-Nitroaniline	40	1600		U
99-09-2	3-Nitroaniline	59	1600		U
100-01-6	4-Nitroaniline	120	1600		U
98-95-3	Nitrobenzene	43	410		U
88-75-5	2-Nitrophenol	27	410		U
100-02-7	4-Nitrophenol	100	1600		U
86-30-6	N-Nitrosodiphenylamine (1)	40	410		U
621-64-7	N-Nitroso-di-n-propylamine	68	410		U
87-86-5	Pentachlorophenol	42	1600		U
108-95-2	Phenol	45	410		U
95-95-4	2,4,5-Trichlorophenol	33	410		U
88-06-2	2,4,6-Trichlorophenol	43	410		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
NTC21SB22
-SO-0204DL

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-38DL

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000638D

% Moisture: 20 decanted: (Y/N) N Date Sampled: 09/27/09 12:10

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/18/09 20:53

Injection Volume: 0.5(uL) Dilution Factor: 5.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	260	2100		UD
1912-24-9	Atrazine	180	2100		UD
100-52-7	Benzaldehyde	340	2100		UD
111-91-1	bis(2-Chloroethoxy)methane	190	2100		UD
92-52-4	1,1'-Biphenyl	180	2100		UDY
111-44-4	bis(2-Chloroethyl)ether	250	2100		UD
108-60-1	2,2-Oxybis(1-chloropropane)	320	4100		UD
117-81-7	Bis(2-ethylhexyl)phthalate	220	2100		UD
101-55-3	4-Bromophenyl-phenylether	160	2100		UD
85-68-7	Butylbenzylphthalate	180	2100		UD
105-60-2	Caprolactam	420	2100		UD
106-47-8	4-Chloroaniline	300	2100		UD
86-74-8	Carbazole	220	4100		UDY
59-50-7	4-Chloro-3-methylphenol	170	2100		UD
91-58-7	2-Chloronaphthalene (beta)	200	2100		UD
95-57-8	2-Chlorophenol	250	2100		UD
7005-72-3	4-Chlorophenyl-phenylether	190	2100		UD
132-64-9	Dibenzofuran	150	2100		UD
91-94-1	3,3'-Dichlorobenzidine	200	2100		UD
120-83-2	2,4-Dichlorophenol	120	2100		UD
84-66-2	Diethylphthalate	210	2100		UD
105-67-9	2,4-Dimethylphenol	130	4100		UD
131-11-3	Dimethylphthalate	190	2100		UD
84-74-2	Di-n-butylphthalate	190	2100		UD
534-52-1	4,6-Dinitro-2-methylphenol	140	8300		UDY
51-28-5	2,4-Dinitrophenol	830	21000		UD
121-14-2	2,4-Dinitrotoluene	150	2100		UD
606-20-2	2,6-Dinitrotoluene	240	2100		UD
117-84-0	Di-n-octylphthalate	170	2100		UD
118-74-1	Hexachlorobenzene	220	2100		UD
87-68-3	Hexachlorobutadiene	200	2100		UD
77-47-4	Hexachlorocyclopentadiene	380	2100		UD
67-72-1	Hexachloroethane	240	4100		UD

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB22
-SO-0204DL

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-38DL

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000638D

% Moisture: 20 decanted: (Y/N) N Date Sampled: 09/27/09 12:10

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/18/09 20:53

Injection Volume: 0.5(uL) Dilution Factor: 5.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	180	2100		UD
106-44-5	4-Methylphenol (p-cresol)	160	2100		UD
95-48-7	2-Methylphenol (o-cresol)	240	2100		UD
88-74-4	2-Nitroaniline	200	8300		UD
99-09-2	3-Nitroaniline	290	8300		UD
100-01-6	4-Nitroaniline	620	8300		UD
98-95-3	Nitrobenzene	220	2100		UD
88-75-5	2-Nitrophenol	140	2100		UD
100-02-7	4-Nitrophenol	500	8300		UD
86-30-6	N-Nitrosodiphenylamine (1)	200	2100		UD
621-64-7	N-Nitroso-di-n-propylamine	340	2100		UD
87-86-5	Pentachlorophenol	210	8300		UD
108-95-2	Phenol	220	2100		UD
95-95-4	2,4,5-Trichlorophenol	170	2100		UD
88-06-2	2,4,6-Trichlorophenol	220	2100		UD

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

RB-092909-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) WATER Lab Sample ID: 0910006-51

Sample wt/vol: 1040 (g/mL) ML Lab File ID: 1000651

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 09/29/09 11:26

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:10/01/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/03/09 00:27

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	0.019	0.048		U
208-96-8	Acenaphthylene	0.019	0.048		U
120-12-7	Anthracene	0.019	0.048		U
56-55-3	Benzo(a)anthracene	0.019	0.048		U
205-99-2	Benzo(b)fluoranthene	0.019	0.048		U
207-08-9	Benzo(k)fluoranthene	0.019	0.048		U
191-24-2	Benzo(g,h,i)perylene	0.019	0.048		U
50-32-8	Benzo(a)pyrene	0.019	0.048		U
218-01-9	Chrysene	0.019	0.048		U
53-70-3	Dibenz(a,h)anthracene	0.019	0.048		U
206-44-0	Fluoranthene	0.019	0.048		U
86-73-7	Fluorene	0.019	0.048		U
193-39-5	Indeno(1,2,3-cd)pyrene	0.019	0.048		U
91-57-6	2-Methylnaphthalene	0.019	0.048	0.068	B
91-20-3	Naphthalene	0.019	0.048	0.055	B
85-01-8	Phenanthrene	0.019	0.048		U
129-00-0	Pyrene	0.019	0.048		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

RB-092909-02

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) WATER Lab Sample ID: 0910006-52

Sample wt/vol: 1070 (g/mL) ML Lab File ID: 1000652

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 09/29/09 13:02

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:10/01/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/03/09 01:05

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	0.019	0.047	0.056	B
208-96-8	Acenaphthylene	0.019	0.047	0.049	B
120-12-7	Anthracene	0.019	0.047	0.070	
56-55-3	Benzo(a)anthracene	0.019	0.047	0.034	J
205-99-2	Benzo(b)fluoranthene	0.019	0.047	0.040	J
207-08-9	Benzo(k)fluoranthene	0.019	0.047	0.066	X
191-24-2	Benzo(g,h,i)perylene	0.019	0.047		U
50-32-8	Benzo(a)pyrene	0.019	0.047	0.028	J
218-01-9	Chrysene	0.019	0.047	0.058	
53-70-3	Dibenz(a,h)anthracene	0.019	0.047	0.036	J
206-44-0	Fluoranthene	0.019	0.047	0.058	
86-73-7	Fluorene	0.019	0.047	0.063	
193-39-5	Indeno(1,2,3-cd)pyrene	0.019	0.047		U
91-57-6	2-Methylnaphthalene	0.019	0.047	0.070	B
91-20-3	Naphthalene	0.019	0.047	0.069	B
85-01-8	Phenanthrene	0.019	0.047	0.076	B
129-00-0	Pyrene	0.019	0.047	0.056	

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SB-092909-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) WATER Lab Sample ID: 0910006-53

Sample wt/vol: 1080 (g/mL) ML Lab File ID: 1000653R

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 09/29/09 10:31

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:10/01/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/03/09 09:19

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	0.018	0.046		U
208-96-8	Acenaphthylene	0.018	0.046		U
120-12-7	Anthracene	0.018	0.046		U
56-55-3	Benzo(a)anthracene	0.018	0.046		U
205-99-2	Benzo(b)fluoranthene	0.018	0.046		U
207-08-9	Benzo(k)fluoranthene	0.018	0.046		U
191-24-2	Benzo(g,h,i)perylene	0.018	0.046		U
50-32-8	Benzo(a)pyrene	0.018	0.046		U
218-01-9	Chrysene	0.018	0.046		U
53-70-3	Dibenz(a,h)anthracene	0.018	0.046		U
206-44-0	Fluoranthene	0.018	0.046		U
86-73-7	Fluorene	0.018	0.046		U
193-39-5	Indeno(1,2,3-cd)pyrene	0.018	0.046		U
91-57-6	2-Methylnaphthalene	0.018	0.046		U
91-20-3	Naphthalene	0.018	0.046	0.034	JB
85-01-8	Phenanthrene	0.018	0.046		U
129-00-0	Pyrene	0.018	0.046		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FD-092609-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-01

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000601

% Moisture: 7 decanted: (Y/N) N Date Sampled: 09/26/09 :

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/06/09 20:13

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.4	3.6		U
208-96-8	Acenaphthylene	1.4	3.6		U
120-12-7	Anthracene	1.4	3.6		U
56-55-3	Benzo(a)anthracene	1.4	3.6		U
205-99-2	Benzo(b)fluoranthene	1.4	3.6		U
207-08-9	Benzo(k)fluoranthene	1.4	3.6		U
191-24-2	Benzo(g,h,i)perylene	1.4	3.6		U
50-32-8	Benzo(a)pyrene	1.4	3.6		U
218-01-9	Chrysene	1.4	3.6	1.8	J
53-70-3	Dibenz(a,h)anthracene	1.4	3.6		U
206-44-0	Fluoranthene	1.4	3.6		U
86-73-7	Fluorene	1.4	3.6		U
193-39-5	Indeno(1,2,3-cd)pyrene	1.4	3.6		U
91-57-6	2-Methylnaphthalene	1.4	3.6		U
91-20-3	Naphthalene	1.4	3.6		U
85-01-8	Phenanthrene	1.4	3.6		U
129-00-0	Pyrene	1.4	3.6		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FD-092609-02

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-02

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000602

% Moisture: 7 decanted: (Y/N) N Date Sampled: 09/26/09 :

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/06/09 20:51

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.4	3.6	82	
208-96-8	Acenaphthylene	1.4	3.6		U
120-12-7	Anthracene	1.4	3.6	100	
56-55-3	Benzo(a)anthracene	1.4	3.6	310	
205-99-2	Benzo(b)fluoranthene	1.4	3.6	860	
207-08-9	Benzo(k)fluoranthene	1.4	3.6	440	
191-24-2	Benzo(g,h,i)perylene	1.4	3.6	420	
50-32-8	Benzo(a)pyrene	1.4	3.6	660	
218-01-9	Chrysene	1.4	3.6	450	
53-70-3	Dibenz(a,h)anthracene	1.4	3.6	110	
206-44-0	Fluoranthene	1.4	3.6	1100	
86-73-7	Fluorene	1.4	3.6	63	
193-39-5	Indeno(1,2,3-cd)pyrene	1.4	3.6	480	
91-57-6	2-Methylnaphthalene	1.4	3.6	350	
91-20-3	Naphthalene	1.4	3.6	210	
85-01-8	Phenanthrene	1.4	3.6	870	
129-00-0	Pyrene	1.4	3.6	940	

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FD-092709-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-20

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000620

% Moisture: 24 decanted: (Y/N) N Date Sampled: 09/27/09 :

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/08/09 10:03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.8	4.4		U
208-96-8	Acenaphthylene	1.8	4.4	11	
120-12-7	Anthracene	1.8	4.4		U
56-55-3	Benzo(a)anthracene	1.8	4.4	22	
205-99-2	Benzo(b)fluoranthene	1.8	4.4	38	
207-08-9	Benzo(k)fluoranthene	1.8	4.4	10	
191-24-2	Benzo(g,h,i)perylene	1.8	4.4	14	
50-32-8	Benzo(a)pyrene	1.8	4.4	22	
218-01-9	Chrysene	1.8	4.4	31	
53-70-3	Dibenz(a,h)anthracene	1.8	4.4		U
206-44-0	Fluoranthene	1.8	4.4	57	
86-73-7	Fluorene	1.8	4.4		U
193-39-5	Indeno(1,2,3-cd)pyrene	1.8	4.4	18	
91-57-6	2-Methylnaphthalene	1.8	4.4	110	
91-20-3	Naphthalene	1.8	4.4	49	
85-01-8	Phenanthrene	1.8	4.4	190	
129-00-0	Pyrene	1.8	4.4	55	

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FD-092809-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-40

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000640

% Moisture: 20 decanted: (Y/N) N Date Sampled: 09/28/09 :

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/20/09 21:35

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.7	4.2	60	
208-96-8	Acenaphthylene	1.7	4.2		U
120-12-7	Anthracene	1.7	4.2		U
56-55-3	Benzo(a)anthracene	1.7	4.2	290	
205-99-2	Benzo(b)fluoranthene	1.7	4.2	330	
207-08-9	Benzo(k)fluoranthene	1.7	4.2	370	
191-24-2	Benzo(g,h,i)perylene	1.7	4.2	320	
50-32-8	Benzo(a)pyrene	1.7	4.2	440	
218-01-9	Chrysene	1.7	4.2	400	
53-70-3	Dibenz(a,h)anthracene	1.7	4.2		U
206-44-0	Fluoranthene	1.7	4.2	850	
86-73-7	Fluorene	1.7	4.2		U
193-39-5	Indeno(1,2,3-cd)pyrene	1.7	4.2	310	X
91-57-6	2-Methylnaphthalene	1.7	4.2	490	
91-20-3	Naphthalene	1.7	4.2	150	
85-01-8	Phenanthrene	1.7	4.2	850	
129-00-0	Pyrene	1.7	4.2	700	

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
1-SO-0102

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-41

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000641

% Moisture: 16 decanted: (Y/N) N Date Sampled: 09/28/09 12:00

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/20/09 22:13

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.6	4.0	880	
208-96-8	Acenaphthylene	1.6	4.0	20	
120-12-7	Anthracene	1.6	4.0	1700	
56-55-3	Benzo(a)anthracene	1.6	4.0	2700	E
205-99-2	Benzo(b)fluoranthene	1.6	4.0	8100	E
207-08-9	Benzo(k)fluoranthene	1.6	4.0	7700	E
191-24-2	Benzo(g,h,i)perylene	1.6	4.0	2600	E
50-32-8	Benzo(a)pyrene	1.6	4.0	5000	E
218-01-9	Chrysene	1.6	4.0	3400	E
53-70-3	Dibenz(a,h)anthracene	1.6	4.0	1100	
206-44-0	Fluoranthene	1.6	4.0	9600	E
86-73-7	Fluorene	1.6	4.0	960	
193-39-5	Indeno(1,2,3-cd)pyrene	1.6	4.0	3900	E
91-57-6	2-Methylnaphthalene	1.6	4.0	180	
91-20-3	Naphthalene	1.6	4.0	520	
85-01-8	Phenanthrene	1.6	4.0	7000	E
129-00-0	Pyrene	1.6	4.0	7900	E

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB01
-SO-0102DL

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-41DL

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000641D

% Moisture: 16 decanted: (Y/N) N Date Sampled: 09/28/09 12:00

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/21/09 17:26

Injection Volume: 1.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	16	40	810	D
208-96-8	Acenaphthylene	16	40		UD
120-12-7	Anthracene	16	40	1900	D
56-55-3	Benzo(a)anthracene	16	40	4800	D
205-99-2	Benzo(b)fluoranthene	16	40	6600	D
207-08-9	Benzo(k)fluoranthene	16	40	2500	D
191-24-2	Benzo(g,h,i)perylene	16	40	2200	D
50-32-8	Benzo(a)pyrene	16	40	4200	D
218-01-9	Chrysene	16	40	5900	D
53-70-3	Dibenz(a,h)anthracene	16	40	430	D
206-44-0	Fluoranthene	16	40	14000	D
86-73-7	Fluorene	16	40	840	D
193-39-5	Indeno(1,2,3-cd)pyrene	16	40	3300	D
91-57-6	2-Methylnaphthalene	16	40	140	D
91-20-3	Naphthalene	16	40	440	D
85-01-8	Phenanthrene	16	40	9500	D
129-00-0	Pyrene	16	40	11000	D

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
2-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-42

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000642

% Moisture: 10 decanted: (Y/N) N Date Sampled: 09/28/09 10:20

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/07/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/10/09 16:21

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.5	3.7		U
208-96-8	Acenaphthylene	1.5	3.7	56	
120-12-7	Anthracene	1.5	3.7	59	
56-55-3	Benzo(a)anthracene	1.5	3.7	240	
205-99-2	Benzo(b)fluoranthene	1.5	3.7	540	
207-08-9	Benzo(k)fluoranthene	1.5	3.7	120	
191-24-2	Benzo(g,h,i)perylene	1.5	3.7	340	X
50-32-8	Benzo(a)pyrene	1.5	3.7	360	
218-01-9	Chrysene	1.5	3.7	270	
53-70-3	Dibenz(a,h)anthracene	1.5	3.7	89	X
206-44-0	Fluoranthene	1.5	3.7	420	
86-73-7	Fluorene	1.5	3.7		U
193-39-5	Indeno(1,2,3-cd)pyrene	1.5	3.7	420	X
91-57-6	2-Methylnaphthalene	1.5	3.7	450	
91-20-3	Naphthalene	1.5	3.7	210	
85-01-8	Phenanthrene	1.5	3.7	620	
129-00-0	Pyrene	1.5	3.7	420	

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
2-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-43

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000643

% Moisture: 11 decanted: (Y/N) N Date Sampled: 09/28/09 10:30

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/07/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/10/09 16:59

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.5	3.8	110	
208-96-8	Acenaphthylene	1.5	3.8		U
120-12-7	Anthracene	1.5	3.8	130	
56-55-3	Benzo(a)anthracene	1.5	3.8	280	
205-99-2	Benzo(b)fluoranthene	1.5	3.8	450	
207-08-9	Benzo(k)fluoranthene	1.5	3.8	150	
191-24-2	Benzo(g,h,i)perylene	1.5	3.8	250	X
50-32-8	Benzo(a)pyrene	1.5	3.8	320	
218-01-9	Chrysene	1.5	3.8	290	
53-70-3	Dibenz(a,h)anthracene	1.5	3.8	66	X
206-44-0	Fluoranthene	1.5	3.8	650	
86-73-7	Fluorene	1.5	3.8		U
193-39-5	Indeno(1,2,3-cd)pyrene	1.5	3.8	330	X
91-57-6	2-Methylnaphthalene	1.5	3.8	1000	
91-20-3	Naphthalene	1.5	3.8	470	
85-01-8	Phenanthrene	1.5	3.8	1100	
129-00-0	Pyrene	1.5	3.8	540	

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
3-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-44

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000644

% Moisture: 5 decanted: (Y/N) N Date Sampled: 09/28/09 12:20

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/07/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/10/09 17:37

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.4	3.5	54	
208-96-8	Acenaphthylene	1.4	3.5	680	
120-12-7	Anthracene	1.4	3.5	350	
56-55-3	Benzo(a)anthracene	1.4	3.5	2300	E
205-99-2	Benzo(b)fluoranthene	1.4	3.5	6600	E
207-08-9	Benzo(k)fluoranthene	1.4	3.5	2000	
191-24-2	Benzo(g,h,i)perylene	1.4	3.5	2000	E
50-32-8	Benzo(a)pyrene	1.4	3.5	4300	E
218-01-9	Chrysene	1.4	3.5	2300	E
53-70-3	Dibenz(a,h)anthracene	1.4	3.5	900	X
206-44-0	Fluoranthene	1.4	3.5	3300	
86-73-7	Fluorene	1.4	3.5	55	
193-39-5	Indeno(1,2,3-cd)pyrene	1.4	3.5		NR*
91-57-6	2-Methylnaphthalene	1.4	3.5	330	X
91-20-3	Naphthalene	1.4	3.5	200	
85-01-8	Phenanthrene	1.4	3.5	960	
129-00-0	Pyrene	1.4	3.5	3000	

* NR due to matrix interference.

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
NTC21SB03
-SO-0001DL

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-44DL

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000644D

% Moisture: 5 decanted: (Y/N) N Date Sampled: 09/28/09 12:20

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted: 10/07/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/13/09 14:57

Injection Volume: 1.0(uL) Dilution Factor: 5.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	7.0	18	30	D
208-96-8	Acenaphthylene	7.0	18	340	D
120-12-7	Anthracene	7.0	18	180	D
56-55-3	Benzo(a)anthracene	7.0	18	1100	D
205-99-2	Benzo(b)fluoranthene	7.0	18	3500	D
207-08-9	Benzo(k)fluoranthene	7.0	18	1300	D
191-24-2	Benzo(g,h,i)perylene	7.0	18	1300	D
50-32-8	Benzo(a)pyrene	7.0	18	2400	D
218-01-9	Chrysene	7.0	18	1300	D
53-70-3	Dibenz(a,h)anthracene	7.0	18	380	D
206-44-0	Fluoranthene	7.0	18	2000	D
86-73-7	Fluorene	7.0	18		UD
193-39-5	Indeno(1,2,3-cd)pyrene	7.0	18	1900	D
91-57-6	2-Methylnaphthalene	7.0	18	170	D
91-20-3	Naphthalene	7.0	18	110	D
85-01-8	Phenanthrene	7.0	18	590	D
129-00-0	Pyrene	7.0	18	1800	D

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
NTC21SB0
3-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-45

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000645D

% Moisture: 8 decanted: (Y/N) N Date Sampled: 09/28/09 12:30

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/07/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/13/09 13:41

Injection Volume: 1.0(uL) Dilution Factor: 25.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	36	90	480	D
208-96-8	Acenaphthylene	36	90	2000	D
120-12-7	Anthracene	36	90	5000	D
56-55-3	Benzo(a)anthracene	36	90	32000	D
205-99-2	Benzo(b)fluoranthene	36	90	41000	D
207-08-9	Benzo(k)fluoranthene	36	90	14000	D
191-24-2	Benzo(g,h,i)perylene	36	90	11000	D
50-32-8	Benzo(a)pyrene	36	90	27000	D
218-01-9	Chrysene	36	90	34000	D
53-70-3	Dibenz(a,h)anthracene	36	90	3300	D
206-44-0	Fluoranthene	36	90	56000	D
86-73-7	Fluorene	36	90		UD
193-39-5	Indeno(1,2,3-cd)pyrene	36	90	16000	D
91-57-6	2-Methylnaphthalene	36	90	2100	D
91-20-3	Naphthalene	36	90	1100	D
85-01-8	Phenanthrene	36	90	11000	D
129-00-0	Pyrene	36	90	52000	D

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
4-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-21

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000621

% Moisture: 8 decanted: (Y/N) N Date Sampled: 09/27/09 12:50

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/19/09 15:18

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.4	3.6	87	
208-96-8	Acenaphthylene	1.4	3.6		U
120-12-7	Anthracene	1.4	3.6		U
56-55-3	Benzo(a)anthracene	1.4	3.6	380	
205-99-2	Benzo(b)fluoranthene	1.4	3.6	870	
207-08-9	Benzo(k)fluoranthene	1.4	3.6	820	
191-24-2	Benzo(g,h,i)perylene	1.4	3.6	290	
50-32-8	Benzo(a)pyrene	1.4	3.6		U
218-01-9	Chrysene	1.4	3.6	340	
53-70-3	Dibenz(a,h)anthracene	1.4	3.6		U
206-44-0	Fluoranthene	1.4	3.6	1100	
86-73-7	Fluorene	1.4	3.6		U
193-39-5	Indeno(1,2,3-cd)pyrene	1.4	3.6		U
91-57-6	2-Methylnaphthalene	1.4	3.6	700	
91-20-3	Naphthalene	1.4	3.6	300	
85-01-8	Phenanthrene	1.4	3.6	1200	
129-00-0	Pyrene	1.4	3.6	890	

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
4-SO-0406

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-22

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000622

% Moisture: 42 decanted: (Y/N) N Date Sampled: 09/27/09 13:00

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/19/09 15:56

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	2.3	5.8		U
208-96-8	Acenaphthylene	2.3	5.8	25	
120-12-7	Anthracene	2.3	5.8	8.0	
56-55-3	Benzo(a)anthracene	2.3	5.8	120	
205-99-2	Benzo(b)fluoranthene	2.3	5.8	230	
207-08-9	Benzo(k)fluoranthene	2.3	5.8	220	
191-24-2	Benzo(g,h,i)perylene	2.3	5.8	65	
50-32-8	Benzo(a)pyrene	2.3	5.8		U
218-01-9	Chrysene	2.3	5.8	100	
53-70-3	Dibenz(a,h)anthracene	2.3	5.8		U
206-44-0	Fluoranthene	2.3	5.8	200	
86-73-7	Fluorene	2.3	5.8		U
193-39-5	Indeno(1,2,3-cd)pyrene	2.3	5.8		U
91-57-6	2-Methylnaphthalene	2.3	5.8	7.5	B
91-20-3	Naphthalene	2.3	5.8	10	
85-01-8	Phenanthrene	2.3	5.8	34	
129-00-0	Pyrene	2.3	5.8	200	

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
5-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-46

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000646

% Moisture: 6 decanted: (Y/N) N Date Sampled: 09/28/09 10:00

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/07/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/10/09 18:54

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.4	3.6	81	
208-96-8	Acenaphthylene	1.4	3.6		U
120-12-7	Anthracene	1.4	3.6	180	
56-55-3	Benzo(a)anthracene	1.4	3.6	250	
205-99-2	Benzo(b)fluoranthene	1.4	3.6	480	
207-08-9	Benzo(k)fluoranthene	1.4	3.6	300	
191-24-2	Benzo(g,h,i)perylene	1.4	3.6	260	X
50-32-8	Benzo(a)pyrene	1.4	3.6	390	
218-01-9	Chrysene	1.4	3.6	280	
53-70-3	Dibenz(a,h)anthracene	1.4	3.6	78	X
206-44-0	Fluoranthene	1.4	3.6	790	
86-73-7	Fluorene	1.4	3.6		U
193-39-5	Indeno(1,2,3-cd)pyrene	1.4	3.6	330	X
91-57-6	2-Methylnaphthalene	1.4	3.6	400	
91-20-3	Naphthalene	1.4	3.6	140	
85-01-8	Phenanthrene	1.4	3.6	790	
129-00-0	Pyrene	1.4	3.6	660	

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
5-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-47

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000647

% Moisture: 9 decanted: (Y/N) N Date Sampled: 09/28/09 10:10

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/07/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/10/09 19:32

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.5	3.7	33	
208-96-8	Acenaphthylene	1.5	3.7	19	
120-12-7	Anthracene	1.5	3.7		U
56-55-3	Benzo(a)anthracene	1.5	3.7	140	
205-99-2	Benzo(b)fluoranthene	1.5	3.7	290	
207-08-9	Benzo(k)fluoranthene	1.5	3.7	120	
191-24-2	Benzo(g,h,i)perylene	1.5	3.7	130	X
50-32-8	Benzo(a)pyrene	1.5	3.7	210	
218-01-9	Chrysene	1.5	3.7	170	
53-70-3	Dibenz(a,h)anthracene	1.5	3.7	38	X
206-44-0	Fluoranthene	1.5	3.7	360	
86-73-7	Fluorene	1.5	3.7		U
193-39-5	Indeno(1,2,3-cd)pyrene	1.5	3.7	200	X
91-57-6	2-Methylnaphthalene	1.5	3.7	150	
91-20-3	Naphthalene	1.5	3.7	58	
85-01-8	Phenanthrene	1.5	3.7	380	
129-00-0	Pyrene	1.5	3.7	320	

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
6-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-23

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000623

% Moisture: 18 decanted: (Y/N) N Date Sampled: 09/27/09 15:10

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/19/09 16:35

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.6	4.0	65	
208-96-8	Acenaphthylene	1.6	4.0		U
120-12-7	Anthracene	1.6	4.0		U
56-55-3	Benzo(a)anthracene	1.6	4.0		U
205-99-2	Benzo(b)fluoranthene	1.6	4.0	720	
207-08-9	Benzo(k)fluoranthene	1.6	4.0	690	
191-24-2	Benzo(g,h,i)perylene	1.6	4.0		U
50-32-8	Benzo(a)pyrene	1.6	4.0		U
218-01-9	Chrysene	1.6	4.0		U
53-70-3	Dibenz(a,h)anthracene	1.6	4.0		U
206-44-0	Fluoranthene	1.6	4.0	1000	
86-73-7	Fluorene	1.6	4.0		U
193-39-5	Indeno(1,2,3-cd)pyrene	1.6	4.0		U
91-57-6	2-Methylnaphthalene	1.6	4.0	640	
91-20-3	Naphthalene	1.6	4.0	480	
85-01-8	Phenanthrene	1.6	4.0	810	
129-00-0	Pyrene	1.6	4.0	870	

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
6-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-24

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000624

% Moisture: 23 decanted: (Y/N) N Date Sampled: 09/27/09 15:20

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/20/09 17:45

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.7	4.4	68	
208-96-8	Acenaphthylene	1.7	4.4		U
120-12-7	Anthracene	1.7	4.4		U
56-55-3	Benzo(a)anthracene	1.7	4.4	260	
205-99-2	Benzo(b)fluoranthene	1.7	4.4	860	
207-08-9	Benzo(k)fluoranthene	1.7	4.4	840	
191-24-2	Benzo(g,h,i)perylene	1.7	4.4	320	
50-32-8	Benzo(a)pyrene	1.7	4.4	520	
218-01-9	Chrysene	1.7	4.4	360	
53-70-3	Dibenz(a,h)anthracene	1.7	4.4		U
206-44-0	Fluoranthene	1.7	4.4	930	
86-73-7	Fluorene	1.7	4.4		U
193-39-5	Indeno(1,2,3-cd)pyrene	1.7	4.4	420	X
91-57-6	2-Methylnaphthalene	1.7	4.4	500	
91-20-3	Naphthalene	1.7	4.4	230	
85-01-8	Phenanthrene	1.7	4.4	970	
129-00-0	Pyrene	1.7	4.4	760	

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
7-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-25

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000625

% Moisture: 8 decanted: (Y/N) N Date Sampled: 09/27/09 10:40

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/20/09 22:51

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.4	3.6	840	
208-96-8	Acenaphthylene	1.4	3.6	130	
120-12-7	Anthracene	1.4	3.6	1700	
56-55-3	Benzo(a)anthracene	1.4	3.6	1800	E
205-99-2	Benzo(b)fluoranthene	1.4	3.6	5100	E
207-08-9	Benzo(k)fluoranthene	1.4	3.6	4800	E
191-24-2	Benzo(g,h,i)perylene	1.4	3.6	1400	E
50-32-8	Benzo(a)pyrene	1.4	3.6	3200	
218-01-9	Chrysene	1.4	3.6	2500	E
53-70-3	Dibenz(a,h)anthracene	1.4	3.6		U
206-44-0	Fluoranthene	1.4	3.6	7100	E
86-73-7	Fluorene	1.4	3.6	890	
193-39-5	Indeno(1,2,3-cd)pyrene	1.4	3.6	2200	E
91-57-6	2-Methylnaphthalene	1.4	3.6	800	
91-20-3	Naphthalene	1.4	3.6	370	
85-01-8	Phenanthrene	1.4	3.6	6100	E
129-00-0	Pyrene	1.4	3.6	5400	E

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT ~~SAMPLE~~ NO.
NTC21SB07
-SO-0001DL

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ~~CTO064~~_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-25DL

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000625D

% Moisture: 8 decanted: (Y/N) N Date Sampled: 09/27/09 10:40

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/21/09 18:05

Injection Volume: 1.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	14	36	780	D
208-96-8	Acenaphthylene	14	36	150	D
120-12-7	Anthracene	14	36	2100	D
56-55-3	Benzo(a)anthracene	14	36	4200	D
205-99-2	Benzo(b)fluoranthene	14	36	4400	D
207-08-9	Benzo(k)fluoranthene	14	36	1700	D
191-24-2	Benzo(g,h,i)perylene	14	36	1400	D
50-32-8	Benzo(a)pyrene	14	36	3100	D
218-01-9	Chrysene	14	36	4600	D
53-70-3	Dibenz(a,h)anthracene	14	36		UD
206-44-0	Fluoranthene	14	36	12000	D
86-73-7	Fluorene	14	36	840	D
193-39-5	Indeno(1,2,3-cd)pyrene	14	36	2100	D
91-57-6	2-Methylnaphthalene	14	36	720	D
91-20-3	Naphthalene	14	36	360	D
85-01-8	Phenanthrene	14	36	8400	D
129-00-0	Pyrene	14	36	9400	D

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
7-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-26

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000626

% Moisture: 14 decanted: (Y/N) N Date Sampled: 09/27/09 10:50

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/20/09 23:29

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.6	3.9	880	
208-96-8	Acenaphthylene	1.6	3.9	69	
120-12-7	Anthracene	1.6	3.9	1400	
56-55-3	Benzo(a)anthracene	1.6	3.9	2100	E
205-99-2	Benzo(b)fluoranthene	1.6	3.9	6000	E
207-08-9	Benzo(k)fluoranthene	1.6	3.9	5700	E
191-24-2	Benzo(g,h,i)perylene	1.6	3.9	1400	E
50-32-8	Benzo(a)pyrene	1.6	3.9	3600	
218-01-9	Chrysene	1.6	3.9	2900	E
53-70-3	Dibenz(a,h)anthracene	1.6	3.9		U
206-44-0	Fluoranthene	1.6	3.9	7800	E
86-73-7	Fluorene	1.6	3.9	1200	
193-39-5	Indeno(1,2,3-cd)pyrene	1.6	3.9	2300	E
91-57-6	2-Methylnaphthalene	1.6	3.9	400	
91-20-3	Naphthalene	1.6	3.9	550	
85-01-8	Phenanthrene	1.6	3.9	7700	E
129-00-0	Pyrene	1.6	3.9	6800	E

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
NTC21SB07
-SO-0204DL

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-26DL

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000626D

% Moisture: 14 decanted: (Y/N) N Date Sampled: 09/27/09 10:50

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/21/09 18:43

Injection Volume: 1.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	16	39	990	D
208-96-8	Acenaphthylene	16	39	71	D
120-12-7	Anthracene	16	39	1500	D
56-55-3	Benzo(a)anthracene	16	39	4300	D
205-99-2	Benzo(b)fluoranthene	16	39	4300	D
207-08-9	Benzo(k)fluoranthene	16	39	1700	D
191-24-2	Benzo(g,h,i)perylene	16	39	1600	D
50-32-8	Benzo(a)pyrene	16	39	3000	D
218-01-9	Chrysene	16	39	4900	D
53-70-3	Dibenz(a,h)anthracene	16	39		UD
206-44-0	Fluoranthene	16	39	13000	D
86-73-7	Fluorene	16	39	1200	D
193-39-5	Indeno(1,2,3-cd)pyrene	16	39	2500	D
91-57-6	2-Methylnaphthalene	16	39	440	D
91-20-3	Naphthalene	16	39	700	D
85-01-8	Phenanthrene	16	39	11000	D
129-00-0	Pyrene	16	39	10000	D

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
8-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-48

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000648

% Moisture: 7 decanted: (Y/N) N Date Sampled: 09/28/09 11:55

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/07/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/10/09 20:10

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.4	3.6	42	
208-96-8	Acenaphthylene	1.4	3.6	110	
120-12-7	Anthracene	1.4	3.6	150	
56-55-3	Benzo(a)anthracene	1.4	3.6	520	
205-99-2	Benzo(b)fluoranthene	1.4	3.6	1200	
207-08-9	Benzo(k)fluoranthene	1.4	3.6	560	
191-24-2	Benzo(g,h,i)perylene	1.4	3.6	460	X
50-32-8	Benzo(a)pyrene	1.4	3.6	830	
218-01-9	Chrysene	1.4	3.6	660	
53-70-3	Dibenz(a,h)anthracene	1.4	3.6	140	X
206-44-0	Fluoranthene	1.4	3.6	1200	
86-73-7	Fluorene	1.4	3.6		U
193-39-5	Indeno(1,2,3-cd)pyrene	1.4	3.6	630	X
91-57-6	2-Methylnaphthalene	1.4	3.6	230	
91-20-3	Naphthalene	1.4	3.6	190	
85-01-8	Phenanthrene	1.4	3.6	560	
129-00-0	Pyrene	1.4	3.6	1100	

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
8-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-49

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000649

% Moisture: 26 decanted: (Y/N) N Date Sampled: 09/28/09 12:00

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/07/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/10/09 20:48

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.8	4.5	38	
208-96-8	Acenaphthylene	1.8	4.5	88	
120-12-7	Anthracene	1.8	4.5	150	
56-55-3	Benzo(a)anthracene	1.8	4.5	430	
205-99-2	Benzo(b)fluoranthene	1.8	4.5	1200	
207-08-9	Benzo(k)fluoranthene	1.8	4.5	460	
191-24-2	Benzo(g,h,i)perylene	1.8	4.5	470	X
50-32-8	Benzo(a)pyrene	1.8	4.5	740	
218-01-9	Chrysene	1.8	4.5	580	
53-70-3	Dibenz(a,h)anthracene	1.8	4.5	160	X
206-44-0	Fluoranthene	1.8	4.5	1100	
86-73-7	Fluorene	1.8	4.5	57	
193-39-5	Indeno(1,2,3-cd)pyrene	1.8	4.5	690	X
91-57-6	2-Methylnaphthalene	1.8	4.5	84	
91-20-3	Naphthalene	1.8	4.5	43	
85-01-8	Phenanthrene	1.8	4.5	560	
129-00-0	Pyrene	1.8	4.5	950	

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
9-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-03

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000603

% Moisture: 9 decanted: (Y/N) N Date Sampled: 09/26/09 16:20

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/06/09 21:29

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.5	3.6	67	
208-96-8	Acenaphthylene	1.5	3.6		U
120-12-7	Anthracene	1.5	3.6	110	
56-55-3	Benzo(a)anthracene	1.5	3.6	250	
205-99-2	Benzo(b)fluoranthene	1.5	3.6	670	
207-08-9	Benzo(k)fluoranthene	1.5	3.6	290	
191-24-2	Benzo(g,h,i)perylene	1.5	3.6	350	
50-32-8	Benzo(a)pyrene	1.5	3.6	460	
218-01-9	Chrysene	1.5	3.6	320	
53-70-3	Dibenz(a,h)anthracene	1.5	3.6	81	
206-44-0	Fluoranthene	1.5	3.6	860	
86-73-7	Fluorene	1.5	3.6		U
193-39-5	Indeno(1,2,3-cd)pyrene	1.5	3.6	400	
91-57-6	2-Methylnaphthalene	1.5	3.6	340	
91-20-3	Naphthalene	1.5	3.6	280	
85-01-8	Phenanthrene	1.5	3.6	760	
129-00-0	Pyrene	1.5	3.6	760	

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
9-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-04

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000604

% Moisture: 21 decanted: (Y/N) N Date Sampled: 09/26/09 16:28

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/06/09 22:07

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.7	4.2	38	
208-96-8	Acenaphthylene	1.7	4.2	16	
120-12-7	Anthracene	1.7	4.2	110	
56-55-3	Benzo(a)anthracene	1.7	4.2	81	
205-99-2	Benzo(b)fluoranthene	1.7	4.2	280	
207-08-9	Benzo(k)fluoranthene	1.7	4.2	92	
191-24-2	Benzo(g,h,i)perylene	1.7	4.2	100	
50-32-8	Benzo(a)pyrene	1.7	4.2	170	
218-01-9	Chrysene	1.7	4.2	120	
53-70-3	Dibenz(a,h)anthracene	1.7	4.2	28	
206-44-0	Fluoranthene	1.7	4.2	450	
86-73-7	Fluorene	1.7	4.2	68	
193-39-5	Indeno(1,2,3-cd)pyrene	1.7	4.2	160	
91-57-6	2-Methylnaphthalene	1.7	4.2	22	
91-20-3	Naphthalene	1.7	4.2	180	
85-01-8	Phenanthrene	1.7	4.2	290	
129-00-0	Pyrene	1.7	4.2	340	

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
0-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-05

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000605

% Moisture: 10 decanted: (Y/N) N Date Sampled: 09/26/09 18:36

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/06/09 22:45

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.5	3.7	57	
208-96-8	Acenaphthylene	1.5	3.7	35	
120-12-7	Anthracene	1.5	3.7	170	
56-55-3	Benzo(a)anthracene	1.5	3.7	390	
205-99-2	Benzo(b)fluoranthene	1.5	3.7	970	
207-08-9	Benzo(k)fluoranthene	1.5	3.7	260	
191-24-2	Benzo(g,h,i)perylene	1.5	3.7	480	
50-32-8	Benzo(a)pyrene	1.5	3.7	690	
218-01-9	Chrysene	1.5	3.7	390	
53-70-3	Dibenz(a,h)anthracene	1.5	3.7	150	
206-44-0	Fluoranthene	1.5	3.7	1000	
86-73-7	Fluorene	1.5	3.7	50	
193-39-5	Indeno(1,2,3-cd)pyrene	1.5	3.7	630	
91-57-6	2-Methylnaphthalene	1.5	3.7	280	
91-20-3	Naphthalene	1.5	3.7	210	
85-01-8	Phenanthrene	1.5	3.7	650	
129-00-0	Pyrene	1.5	3.7	920	

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
0-SO-0406

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-06

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000606

% Moisture: 17 decanted: (Y/N) N Date Sampled: 09/26/09 18:40

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/06/09 23:23

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.6	4.0	12	
208-96-8	Acenaphthylene	1.6	4.0	2.8	J
120-12-7	Anthracene	1.6	4.0	16	
56-55-3	Benzo(a)anthracene	1.6	4.0	16	
205-99-2	Benzo(b)fluoranthene	1.6	4.0	52	
207-08-9	Benzo(k)fluoranthene	1.6	4.0	17	
191-24-2	Benzo(g,h,i)perylene	1.6	4.0	23	
50-32-8	Benzo(a)pyrene	1.6	4.0	33	
218-01-9	Chrysene	1.6	4.0	23	
53-70-3	Dibenz(a,h)anthracene	1.6	4.0		U
206-44-0	Fluoranthene	1.6	4.0	78	
86-73-7	Fluorene	1.6	4.0	16	
193-39-5	Indeno(1,2,3-cd)pyrene	1.6	4.0	28	
91-57-6	2-Methylnaphthalene	1.6	4.0	8.8	
91-20-3	Naphthalene	1.6	4.0	8.9	
85-01-8	Phenanthrene	1.6	4.0	67	
129-00-0	Pyrene	1.6	4.0	63	

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
1-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-07

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000607

% Moisture: 8 decanted: (Y/N) N Date Sampled: 09/26/09 18:10

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/07/09 00:01

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.4	3.6	290	
208-96-8	Acenaphthylene	1.4	3.6	25	
120-12-7	Anthracene	1.4	3.6	590	
56-55-3	Benzo(a)anthracene	1.4	3.6	1800	E
205-99-2	Benzo(b)fluoranthene	1.4	3.6	4400	E
207-08-9	Benzo(k)fluoranthene	1.4	3.6	1600	
191-24-2	Benzo(g,h,i)perylene	1.4	3.6	1400	E
50-32-8	Benzo(a)pyrene	1.4	3.6	2900	
218-01-9	Chrysene	1.4	3.6	1900	E
53-70-3	Dibenz(a,h)anthracene	1.4	3.6	470	
206-44-0	Fluoranthene	1.4	3.6	5400	E
86-73-7	Fluorene	1.4	3.6	220	
193-39-5	Indeno(1,2,3-cd)pyrene	1.4	3.6	920	E
91-57-6	2-Methylnaphthalene	1.4	3.6	320	
91-20-3	Naphthalene	1.4	3.6	190	
85-01-8	Phenanthrene	1.4	3.6	3100	
129-00-0	Pyrene	1.4	3.6	4500	E

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
NTC21SB11
-SO-0001DL

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-07DL

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000607D

% Moisture: 8 decanted: (Y/N) N Date Sampled: 09/26/09 18:10

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/08/09 11:57

Injection Volume: 1.0(uL) Dilution Factor: 5.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	7.2	18	260	D
208-96-8	Acenaphthylene	7.2	18	20	D
120-12-7	Anthracene	7.2	18	610	D
56-55-3	Benzo(a)anthracene	7.2	18	1600	D
205-99-2	Benzo(b)fluoranthene	7.2	18	4100	D
207-08-9	Benzo(k)fluoranthene	7.2	18	1500	D
191-24-2	Benzo(g,h,i)perylene	7.2	18	2000	D
50-32-8	Benzo(a)pyrene	7.2	18	2900	D
218-01-9	Chrysene	7.2	18	1900	D
53-70-3	Dibenz(a,h)anthracene	7.2	18	490	D
206-44-0	Fluoranthene	7.2	18	5700	D
86-73-7	Fluorene	7.2	18	220	D
193-39-5	Indeno(1,2,3-cd)pyrene	7.2	18	2700	D
91-57-6	2-Methylnaphthalene	7.2	18	260	D
91-20-3	Naphthalene	7.2	18	160	D
85-01-8	Phenanthrene	7.2	18	3400	D
129-00-0	Pyrene	7.2	18	4800	D

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
1-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-08

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000608

% Moisture: 16 decanted: (Y/N) N Date Sampled: 09/26/09 18:12

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted: 10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/08/09 13:53

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.6	4.0	57	
208-96-8	Acenaphthylene	1.6	4.0	19	
120-12-7	Anthracene	1.6	4.0	76	
56-55-3	Benzo(a)anthracene	1.6	4.0	150	
205-99-2	Benzo(b)fluoranthene	1.6	4.0	380	
207-08-9	Benzo(k)fluoranthene	1.6	4.0	88	
191-24-2	Benzo(g,h,i)perylene	1.6	4.0	120	
50-32-8	Benzo(a)pyrene	1.6	4.0	220	
218-01-9	Chrysene	1.6	4.0	160	
53-70-3	Dibenz(a,h)anthracene	1.6	4.0	34	
206-44-0	Fluoranthene	1.6	4.0	520	
86-73-7	Fluorene	1.6	4.0		U
193-39-5	Indeno(1,2,3-cd)pyrene	1.6	4.0	150	
91-57-6	2-Methylnaphthalene	1.6	4.0	240	
91-20-3	Naphthalene	1.6	4.0	1700	
85-01-8	Phenanthrene	1.6	4.0	470	
129-00-0	Pyrene	1.6	4.0	420	

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
NTC21SB11
-SO-0204DL

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-08DL

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000608D

% Moisture: 16 decanted: (Y/N) N Date Sampled: 09/26/09 18:12

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted: 10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/10/09 23:59

Injection Volume: 1.0(uL) Dilution Factor: 5.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	7.9	20	67	D
208-96-8	Acenaphthylene	7.9	20	21	D
120-12-7	Anthracene	7.9	20	100	D
56-55-3	Benzo(a)anthracene	7.9	20	190	D
205-99-2	Benzo(b)fluoranthene	7.9	20	430	D
207-08-9	Benzo(k)fluoranthene	7.9	20	150	D
191-24-2	Benzo(g,h,i)perylene	7.9	20	200	DX
50-32-8	Benzo(a)pyrene	7.9	20	240	D
218-01-9	Chrysene	7.9	20	240	D
53-70-3	Dibenz(a,h)anthracene	7.9	20	64	DX
206-44-0	Fluoranthene	7.9	20	640	D
86-73-7	Fluorene	7.9	20		UD
193-39-5	Indeno(1,2,3-cd)pyrene	7.9	20	290	DX
91-57-6	2-Methylnaphthalene	7.9	20	240	D
91-20-3	Naphthalene	7.9	20	1900	D
85-01-8	Phenanthrene	7.9	20	560	D
129-00-0	Pyrene	7.9	20	550	D

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
2-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-09

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000609

% Moisture: 15 decanted: (Y/N) N Date Sampled: 09/26/09 14:00

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/08/09 15:09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.6	3.9	49	
208-96-8	Acenaphthylene	1.6	3.9		U
120-12-7	Anthracene	1.6	3.9	150	
56-55-3	Benzo(a)anthracene	1.6	3.9	400	
205-99-2	Benzo(b)fluoranthene	1.6	3.9	740	
207-08-9	Benzo(k)fluoranthene	1.6	3.9	220	
191-24-2	Benzo(g,h,i)perylene	1.6	3.9	210	
50-32-8	Benzo(a)pyrene	1.6	3.9	430	
218-01-9	Chrysene	1.6	3.9	470	
53-70-3	Dibenz(a,h)anthracene	1.6	3.9	66	
206-44-0	Fluoranthene	1.6	3.9	1000	
86-73-7	Fluorene	1.6	3.9		U
193-39-5	Indeno(1,2,3-cd)pyrene	1.6	3.9	300	
91-57-6	2-Methylnaphthalene	1.6	3.9	450	
91-20-3	Naphthalene	1.6	3.9	240	
85-01-8	Phenanthrene	1.6	3.9	890	
129-00-0	Pyrene	1.6	3.9	860	

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
2-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-10

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000610

% Moisture: 23 decanted: (Y/N) N Date Sampled: 09/26/09 14:10

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/08/09 15:47

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.7	4.3		U
208-96-8	Acenaphthylene	1.7	4.3	170	
120-12-7	Anthracene	1.7	4.3	220	
56-55-3	Benzo(a)anthracene	1.7	4.3	420	
205-99-2	Benzo(b)fluoranthene	1.7	4.3	1200	
207-08-9	Benzo(k)fluoranthene	1.7	4.3	380	
191-24-2	Benzo(g,h,i)perylene	1.7	4.3	330	
50-32-8	Benzo(a)pyrene	1.7	4.3	620	
218-01-9	Chrysene	1.7	4.3	530	
53-70-3	Dibenz(a,h)anthracene	1.7	4.3	100	
206-44-0	Fluoranthene	1.7	4.3	1400	
86-73-7	Fluorene	1.7	4.3		U
193-39-5	Indeno(1,2,3-cd)pyrene	1.7	4.3	470	
91-57-6	2-Methylnaphthalene	1.7	4.3	480	
91-20-3	Naphthalene	1.7	4.3	440	
85-01-8	Phenanthrene	1.7	4.3	2100	
129-00-0	Pyrene	1.7	4.3	1000	

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
NTC21SB12
-SO-0204DL

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-10DL

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000610D

% Moisture: 23 decanted: (Y/N) N Date Sampled: 09/26/09 14:10

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/11/09 00:38

Injection Volume: 1.0(uL) Dilution Factor: 5.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	8.6	22		UD
208-96-8	Acenaphthylene	8.6	22	180	D
120-12-7	Anthracene	8.6	22	310	D
56-55-3	Benzo(a)anthracene	8.6	22	490	D
205-99-2	Benzo(b)fluoranthene	8.6	22	1200	D
207-08-9	Benzo(k)fluoranthene	8.6	22	450	D
191-24-2	Benzo(g,h,i)perylene	8.6	22	380	DX
50-32-8	Benzo(a)pyrene	8.6	22	670	D
218-01-9	Chrysene	8.6	22	700	D
53-70-3	Dibenz(a,h)anthracene	8.6	22	120	DX
206-44-0	Fluoranthene	8.6	22	1600	D
86-73-7	Fluorene	8.6	22		UD
193-39-5	Indeno(1,2,3-cd)pyrene	8.6	22	610	DX
91-57-6	2-Methylnaphthalene	8.6	22	490	D
91-20-3	Naphthalene	8.6	22	500	D
85-01-8	Phenanthrene	8.6	22	2400	D
129-00-0	Pyrene	8.6	22	1200	D

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
3-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-27

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000627

% Moisture: 22 decanted: (Y/N) N Date Sampled: 09/27/09 09:00

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/19/09 20:24

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.7	4.3		U
208-96-8	Acenaphthylene	1.7	4.3		U
120-12-7	Anthracene	1.7	4.3		U
56-55-3	Benzo(a)anthracene	1.7	4.3		U
205-99-2	Benzo(b)fluoranthene	1.7	4.3		U
207-08-9	Benzo(k)fluoranthene	1.7	4.3		U
191-24-2	Benzo(g,h,i)perylene	1.7	4.3	410	
50-32-8	Benzo(a)pyrene	1.7	4.3		U
218-01-9	Chrysene	1.7	4.3		U
53-70-3	Dibenz(a,h)anthracene	1.7	4.3		U
206-44-0	Fluoranthene	1.7	4.3	2000	
86-73-7	Fluorene	1.7	4.3		U
193-39-5	Indeno(1,2,3-cd)pyrene	1.7	4.3		U
91-57-6	2-Methylnaphthalene	1.7	4.3	840	
91-20-3	Naphthalene	1.7	4.3	350	
85-01-8	Phenanthrene	1.7	4.3	2900	
129-00-0	Pyrene	1.7	4.3	1700	

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
3-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-28

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000628

% Moisture: 16 decanted: (Y/N) N Date Sampled: 09/27/09 09:10

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/19/09 17:13

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.6	4.0		U
208-96-8	Acenaphthylene	1.6	4.0		U
120-12-7	Anthracene	1.6	4.0		U
56-55-3	Benzo(a)anthracene	1.6	4.0	14	
205-99-2	Benzo(b)fluoranthene	1.6	4.0	6.4	
207-08-9	Benzo(k)fluoranthene	1.6	4.0	7.2	
191-24-2	Benzo(g,h,i)perylene	1.6	4.0		U
50-32-8	Benzo(a)pyrene	1.6	4.0		U
218-01-9	Chrysene	1.6	4.0	8.0	
53-70-3	Dibenz(a,h)anthracene	1.6	4.0		U
206-44-0	Fluoranthene	1.6	4.0	15	
86-73-7	Fluorene	1.6	4.0		U
193-39-5	Indeno(1,2,3-cd)pyrene	1.6	4.0		U
91-57-6	2-Methylnaphthalene	1.6	4.0	3.3	JB
91-20-3	Naphthalene	1.6	4.0		U
85-01-8	Phenanthrene	1.6	4.0	19	
129-00-0	Pyrene	1.6	4.0	14	B

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
4-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-29

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000629

% Moisture: 18 decanted: (Y/N) N Date Sampled: 09/27/09 09:30

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/19/09 21:02

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.6	4.1		U
208-96-8	Acenaphthylene	1.6	4.1		U
120-12-7	Anthracene	1.6	4.1		U
56-55-3	Benzo(a)anthracene	1.6	4.1	280	
205-99-2	Benzo(b)fluoranthene	1.6	4.1		U
207-08-9	Benzo(k)fluoranthene	1.6	4.1		U
191-24-2	Benzo(g,h,i)perylene	1.6	4.1	180	
50-32-8	Benzo(a)pyrene	1.6	4.1	860	
218-01-9	Chrysene	1.6	4.1	410	
53-70-3	Dibenz(a,h)anthracene	1.6	4.1		U
206-44-0	Fluoranthene	1.6	4.1	810	
86-73-7	Fluorene	1.6	4.1		U
193-39-5	Indeno(1,2,3-cd)pyrene	1.6	4.1		U
91-57-6	2-Methylnaphthalene	1.6	4.1	900	
91-20-3	Naphthalene	1.6	4.1	350	
85-01-8	Phenanthrene	1.6	4.1	1300	
129-00-0	Pyrene	1.6	4.1	740	

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
4-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-30

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000630

% Moisture: 25 decanted: (Y/N) N Date Sampled: 09/27/09 09:40

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/19/09 17:51

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.8	4.4		U
208-96-8	Acenaphthylene	1.8	4.4		U
120-12-7	Anthracene	1.8	4.4		U
56-55-3	Benzo(a)anthracene	1.8	4.4		U
205-99-2	Benzo(b)fluoranthene	1.8	4.4		U
207-08-9	Benzo(k)fluoranthene	1.8	4.4		U
191-24-2	Benzo(g,h,i)perylene	1.8	4.4		U
50-32-8	Benzo(a)pyrene	1.8	4.4		U
218-01-9	Chrysene	1.8	4.4		U
53-70-3	Dibenz(a,h)anthracene	1.8	4.4		U
206-44-0	Fluoranthene	1.8	4.4	1.9	JB
86-73-7	Fluorene	1.8	4.4		U
193-39-5	Indeno(1,2,3-cd)pyrene	1.8	4.4		U
91-57-6	2-Methylnaphthalene	1.8	4.4		U
91-20-3	Naphthalene	1.8	4.4		U
85-01-8	Phenanthrene	1.8	4.4		U
129-00-0	Pyrene	1.8	4.4		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
5-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-31

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000631

% Moisture: 17 decanted: (Y/N) N Date Sampled: 09/27/09 10:00

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/19/09 23:35

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.6	4.0		U
208-96-8	Acenaphthylene	1.6	4.0		U
120-12-7	Anthracene	1.6	4.0		U
56-55-3	Benzo(a)anthracene	1.6	4.0	200	
205-99-2	Benzo(b)fluoranthene	1.6	4.0	550	
207-08-9	Benzo(k)fluoranthene	1.6	4.0	540	
191-24-2	Benzo(g,h,i)perylene	1.6	4.0		U
50-32-8	Benzo(a)pyrene	1.6	4.0		U
218-01-9	Chrysene	1.6	4.0	250	
53-70-3	Dibenz(a,h)anthracene	1.6	4.0		U
206-44-0	Fluoranthene	1.6	4.0	670	
86-73-7	Fluorene	1.6	4.0		U
193-39-5	Indeno(1,2,3-cd)pyrene	1.6	4.0		U
91-57-6	2-Methylnaphthalene	1.6	4.0	540	
91-20-3	Naphthalene	1.6	4.0	350	
85-01-8	Phenanthrene	1.6	4.0	1100	
129-00-0	Pyrene	1.6	4.0	570	

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
5-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-32

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000632

% Moisture: 23 decanted: (Y/N) N Date Sampled: 09/27/09 10:10

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/19/09 18:29

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.7	4.3		U
208-96-8	Acenaphthylene	1.7	4.3	12	
120-12-7	Anthracene	1.7	4.3		U
56-55-3	Benzo(a)anthracene	1.7	4.3	47	
205-99-2	Benzo(b)fluoranthene	1.7	4.3		U
207-08-9	Benzo(k)fluoranthene	1.7	4.3		U
191-24-2	Benzo(g,h,i)perylene	1.7	4.3		U
50-32-8	Benzo(a)pyrene	1.7	4.3		U
218-01-9	Chrysene	1.7	4.3	35	
53-70-3	Dibenz(a,h)anthracene	1.7	4.3		U
206-44-0	Fluoranthene	1.7	4.3	80	
86-73-7	Fluorene	1.7	4.3		U
193-39-5	Indeno(1,2,3-cd)pyrene	1.7	4.3		U
91-57-6	2-Methylnaphthalene	1.7	4.3	99	
91-20-3	Naphthalene	1.7	4.3	44	
85-01-8	Phenanthrene	1.7	4.3	190	
129-00-0	Pyrene	1.7	4.3	70	

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
6-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-33

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000633

% Moisture: 11 decanted: (Y/N) N Date Sampled: 09/27/09 17:00

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/20/09 18:24

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.5	3.7		U
208-96-8	Acenaphthylene	1.5	3.7		U
120-12-7	Anthracene	1.5	3.7		U
56-55-3	Benzo(a)anthracene	1.5	3.7	110	
205-99-2	Benzo(b)fluoranthene	1.5	3.7	290	
207-08-9	Benzo(k)fluoranthene	1.5	3.7	270	
191-24-2	Benzo(g,h,i)perylene	1.5	3.7		U
50-32-8	Benzo(a)pyrene	1.5	3.7		U
218-01-9	Chrysene	1.5	3.7	130	
53-70-3	Dibenz(a,h)anthracene	1.5	3.7		U
206-44-0	Fluoranthene	1.5	3.7	260	
86-73-7	Fluorene	1.5	3.7		U
193-39-5	Indeno(1,2,3-cd)pyrene	1.5	3.7	150	X
91-57-6	2-Methylnaphthalene	1.5	3.7	460	
91-20-3	Naphthalene	1.5	3.7	160	
85-01-8	Phenanthrene	1.5	3.7	1300	
129-00-0	Pyrene	1.5	3.7	240	

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
6-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-34

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000634

% Moisture: 23 decanted: (Y/N) N Date Sampled: 09/27/09 16:50

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/19/09 19:08

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.7	4.3		U
208-96-8	Acenaphthylene	1.7	4.3		U
120-12-7	Anthracene	1.7	4.3		U
56-55-3	Benzo(a)anthracene	1.7	4.3	16	
205-99-2	Benzo(b)fluoranthene	1.7	4.3	8.7	
207-08-9	Benzo(k)fluoranthene	1.7	4.3	7.4	
191-24-2	Benzo(g,h,i)perylene	1.7	4.3		U
50-32-8	Benzo(a)pyrene	1.7	4.3		U
218-01-9	Chrysene	1.7	4.3	7.2	
53-70-3	Dibenz(a,h)anthracene	1.7	4.3		U
206-44-0	Fluoranthene	1.7	4.3	12	B
86-73-7	Fluorene	1.7	4.3		U
193-39-5	Indeno(1,2,3-cd)pyrene	1.7	4.3		U
91-57-6	2-Methylnaphthalene	1.7	4.3	17	
91-20-3	Naphthalene	1.7	4.3		U
85-01-8	Phenanthrene	1.7	4.3	2.2	J
129-00-0	Pyrene	1.7	4.3	12	B

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
7-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-11

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000611

% Moisture: 17 decanted: (Y/N) N Date Sampled: 09/26/09 13:26

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/08/09 16:26

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.6	4.0	280	
208-96-8	Acenaphthylene	1.6	4.0	70	
120-12-7	Anthracene	1.6	4.0	300	
56-55-3	Benzo(a)anthracene	1.6	4.0	350	
205-99-2	Benzo(b)fluoranthene	1.6	4.0	940	
207-08-9	Benzo(k)fluoranthene	1.6	4.0	320	
191-24-2	Benzo(g,h,i)perylene	1.6	4.0	360	
50-32-8	Benzo(a)pyrene	1.6	4.0	600	
218-01-9	Chrysene	1.6	4.0	480	
53-70-3	Dibenz(a,h)anthracene	1.6	4.0	100	
206-44-0	Fluoranthene	1.6	4.0	1100	
86-73-7	Fluorene	1.6	4.0	320	
193-39-5	Indeno(1,2,3-cd)pyrene	1.6	4.0	510	
91-57-6	2-Methylnaphthalene	1.6	4.0	94	
91-20-3	Naphthalene	1.6	4.0	53	
85-01-8	Phenanthrene	1.6	4.0	1100	
129-00-0	Pyrene	1.6	4.0	960	

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
7-SO-0507

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-12

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000612

% Moisture: 10 decanted: (Y/N) N Date Sampled: 09/26/09 13:32

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/08/09 07:30

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.5	3.7		U
208-96-8	Acenaphthylene	1.5	3.7		U
120-12-7	Anthracene	1.5	3.7		U
56-55-3	Benzo(a)anthracene	1.5	3.7		U
205-99-2	Benzo(b)fluoranthene	1.5	3.7		U
207-08-9	Benzo(k)fluoranthene	1.5	3.7		U
191-24-2	Benzo(g,h,i)perylene	1.5	3.7	4.1	
50-32-8	Benzo(a)pyrene	1.5	3.7		U
218-01-9	Chrysene	1.5	3.7	3.4	J
53-70-3	Dibenz(a,h)anthracene	1.5	3.7		U
206-44-0	Fluoranthene	1.5	3.7		U
86-73-7	Fluorene	1.5	3.7		U
193-39-5	Indeno(1,2,3-cd)pyrene	1.5	3.7		U
91-57-6	2-Methylnaphthalene	1.5	3.7		U
91-20-3	Naphthalene	1.5	3.7		U
85-01-8	Phenanthrene	1.5	3.7	1.8	J
129-00-0	Pyrene	1.5	3.7		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
8-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-13

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000613

% Moisture: 14 decanted: (Y/N) N Date Sampled: 09/26/09 12:47

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/08/09 17:04

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.6	3.9	13	
208-96-8	Acenaphthylene	1.6	3.9	34	
120-12-7	Anthracene	1.6	3.9	37	
56-55-3	Benzo(a)anthracene	1.6	3.9	140	
205-99-2	Benzo(b)fluoranthene	1.6	3.9	310	
207-08-9	Benzo(k)fluoranthene	1.6	3.9	110	
191-24-2	Benzo(g,h,i)perylene	1.6	3.9	150	
50-32-8	Benzo(a)pyrene	1.6	3.9	200	
218-01-9	Chrysene	1.6	3.9	190	
53-70-3	Dibenz(a,h)anthracene	1.6	3.9	44	
206-44-0	Fluoranthene	1.6	3.9	340	
86-73-7	Fluorene	1.6	3.9	11	
193-39-5	Indeno(1,2,3-cd)pyrene	1.6	3.9	200	
91-57-6	2-Methylnaphthalene	1.6	3.9	100	
91-20-3	Naphthalene	1.6	3.9	49	
85-01-8	Phenanthrene	1.6	3.9	290	
129-00-0	Pyrene	1.6	3.9	290	

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
8-SO-0507

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-14

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000614

% Moisture: 11 decanted: (Y/N) N Date Sampled: 09/26/09 12:59

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/08/09 08:08

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.5	3.7		U
208-96-8	Acenaphthylene	1.5	3.7		U
120-12-7	Anthracene	1.5	3.7		U
56-55-3	Benzo(a)anthracene	1.5	3.7		U
205-99-2	Benzo(b)fluoranthene	1.5	3.7		U
207-08-9	Benzo(k)fluoranthene	1.5	3.7		U
191-24-2	Benzo(g,h,i)perylene	1.5	3.7		U
50-32-8	Benzo(a)pyrene	1.5	3.7		U
218-01-9	Chrysene	1.5	3.7	3.4	J
53-70-3	Dibenz(a,h)anthracene	1.5	3.7		U
206-44-0	Fluoranthene	1.5	3.7		U
86-73-7	Fluorene	1.5	3.7		U
193-39-5	Indeno(1,2,3-cd)pyrene	1.5	3.7		U
91-57-6	2-Methylnaphthalene	1.5	3.7		U
91-20-3	Naphthalene	1.5	3.7		U
85-01-8	Phenanthrene	1.5	3.7	2.3	J
129-00-0	Pyrene	1.5	3.7		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
9-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-35

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000635

% Moisture: 8 decanted: (Y/N) N Date Sampled: 09/27/09 17:40

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/20/09 19:02

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.4	3.6	24	
208-96-8	Acenaphthylene	1.4	3.6		U
120-12-7	Anthracene	1.4	3.6		U
56-55-3	Benzo(a)anthracene	1.4	3.6	150	
205-99-2	Benzo(b)fluoranthene	1.4	3.6	440	
207-08-9	Benzo(k)fluoranthene	1.4	3.6	430	
191-24-2	Benzo(g,h,i)perylene	1.4	3.6	170	
50-32-8	Benzo(a)pyrene	1.4	3.6	250	
218-01-9	Chrysene	1.4	3.6	190	
53-70-3	Dibenz(a,h)anthracene	1.4	3.6		U
206-44-0	Fluoranthene	1.4	3.6	400	
86-73-7	Fluorene	1.4	3.6		U
193-39-5	Indeno(1,2,3-cd)pyrene	1.4	3.6	250	X
91-57-6	2-Methylnaphthalene	1.4	3.6	98	
91-20-3	Naphthalene	1.4	3.6	44	
85-01-8	Phenanthrene	1.4	3.6	250	
129-00-0	Pyrene	1.4	3.6	360	

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB1
9-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-36

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000636

% Moisture: 17 decanted: (Y/N) N Date Sampled: 09/27/09 17:50

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/19/09 19:46

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.6	4.0	12	
208-96-8	Acenaphthylene	1.6	4.0		U
120-12-7	Anthracene	1.6	4.0		U
56-55-3	Benzo(a)anthracene	1.6	4.0	150	
205-99-2	Benzo(b)fluoranthene	1.6	4.0	260	
207-08-9	Benzo(k)fluoranthene	1.6	4.0	250	
191-24-2	Benzo(g,h,i)perylene	1.6	4.0	50	
50-32-8	Benzo(a)pyrene	1.6	4.0		U
218-01-9	Chrysene	1.6	4.0	140	
53-70-3	Dibenz(a,h)anthracene	1.6	4.0		U
206-44-0	Fluoranthene	1.6	4.0	340	
86-73-7	Fluorene	1.6	4.0		U
193-39-5	Indeno(1,2,3-cd)pyrene	1.6	4.0		U
91-57-6	2-Methylnaphthalene	1.6	4.0	33	
91-20-3	Naphthalene	1.6	4.0	30	
85-01-8	Phenanthrene	1.6	4.0	310	
129-00-0	Pyrene	1.6	4.0	260	

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB2
0-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-15

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000615

% Moisture: 6 decanted: (Y/N) N Date Sampled: 09/26/09 16:57

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/08/09 17:42

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.4	3.5	53	
208-96-8	Acenaphthylene	1.4	3.5		U
120-12-7	Anthracene	1.4	3.5	150	
56-55-3	Benzo(a)anthracene	1.4	3.5	200	
205-99-2	Benzo(b)fluoranthene	1.4	3.5	620	
207-08-9	Benzo(k)fluoranthene	1.4	3.5	300	
191-24-2	Benzo(g,h,i)perylene	1.4	3.5	430	
50-32-8	Benzo(a)pyrene	1.4	3.5	560	
218-01-9	Chrysene	1.4	3.5	280	
53-70-3	Dibenz(a,h)anthracene	1.4	3.5		U
206-44-0	Fluoranthene	1.4	3.5	830	
86-73-7	Fluorene	1.4	3.5	52	
193-39-5	Indeno(1,2,3-cd)pyrene	1.4	3.5	350	
91-57-6	2-Methylnaphthalene	1.4	3.5	27	
91-20-3	Naphthalene	1.4	3.5	18	
85-01-8	Phenanthrene	1.4	3.5	720	
129-00-0	Pyrene	1.4	3.5	650	

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
NTC21SB20
-SO-0001DL

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-15DL

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000615D

% Moisture: 6 decanted: (Y/N) N Date Sampled: 09/26/09 16:57

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/13/09 14:19

Injection Volume: 1.0(uL) Dilution Factor: 5.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	7.1	18	67	D
208-96-8	Acenaphthylene	7.1	18		UD
120-12-7	Anthracene	7.1	18	190	D
56-55-3	Benzo(a)anthracene	7.1	18	290	D
205-99-2	Benzo(b)fluoranthene	7.1	18	820	D
207-08-9	Benzo(k)fluoranthene	7.1	18	280	D
191-24-2	Benzo(g,h,i)perylene	7.1	18	560	D
50-32-8	Benzo(a)pyrene	7.1	18	670	D
218-01-9	Chrysene	7.1	18	410	D
53-70-3	Dibenz(a,h)anthracene	7.1	18		UD
206-44-0	Fluoranthene	7.1	18	1200	D
86-73-7	Fluorene	7.1	18	63	D
193-39-5	Indeno(1,2,3-cd)pyrene	7.1	18	490	D
91-57-6	2-Methylnaphthalene	7.1	18	30	D
91-20-3	Naphthalene	7.1	18	22	D
85-01-8	Phenanthrene	7.1	18	990	D
129-00-0	Pyrene	7.1	18	960	D

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB2
0-SO-0406

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-16

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000616

% Moisture: 13 decanted: (Y/N) N Date Sampled: 09/26/09 17:02

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/08/09 08:47

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.5	3.8		U
208-96-8	Acenaphthylene	1.5	3.8		U
120-12-7	Anthracene	1.5	3.8	2.9	J
56-55-3	Benzo(a)anthracene	1.5	3.8	9.4	
205-99-2	Benzo(b)fluoranthene	1.5	3.8	19	
207-08-9	Benzo(k)fluoranthene	1.5	3.8	8.5	
191-24-2	Benzo(g,h,i)perylene	1.5	3.8		U
50-32-8	Benzo(a)pyrene	1.5	3.8	12	
218-01-9	Chrysene	1.5	3.8	14	
53-70-3	Dibenz(a,h)anthracene	1.5	3.8	2.4	J
206-44-0	Fluoranthene	1.5	3.8	33	
86-73-7	Fluorene	1.5	3.8	2.5	J
193-39-5	Indeno(1,2,3-cd)pyrene	1.5	3.8	12	
91-57-6	2-Methylnaphthalene	1.5	3.8	2.4	J
91-20-3	Naphthalene	1.5	3.8	3.8	J
85-01-8	Phenanthrene	1.5	3.8	24	
129-00-0	Pyrene	1.5	3.8	26	

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB2
1-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-17

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000617

% Moisture: 7 decanted: (Y/N) N Date Sampled: 09/26/09 15:10

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/08/09 18:20

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.4	3.6	2200	
208-96-8	Acenaphthylene	1.4	3.6	89	
120-12-7	Anthracene	1.4	3.6	3800	E
56-55-3	Benzo(a)anthracene	1.4	3.6	16000	E
205-99-2	Benzo(b)fluoranthene	1.4	3.6	56000	E
207-08-9	Benzo(k)fluoranthene	1.4	3.6	12000	E
191-24-2	Benzo(g,h,i)perylene	1.4	3.6	31000	E
50-32-8	Benzo(a)pyrene	1.4	3.6	14000	E
218-01-9	Chrysene	1.4	3.6	9500	E
53-70-3	Dibenz(a,h)anthracene	1.4	3.6	690	
206-44-0	Fluoranthene	1.4	3.6	24000	E
86-73-7	Fluorene	1.4	3.6	1600	
193-39-5	Indeno(1,2,3-cd)pyrene	1.4	3.6	950	E
91-57-6	2-Methylnaphthalene	1.4	3.6	260	
91-20-3	Naphthalene	1.4	3.6	210	
85-01-8	Phenanthrene	1.4	3.6	16000	E
129-00-0	Pyrene	1.4	3.6	21000	E

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
NTC21SB21
-SO-0001DL

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-17DL

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000617D1

% Moisture: 7 decanted: (Y/N) N Date Sampled: 09/26/09 15:10

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/10/09 22:42

Injection Volume: 1.0(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	140	360	2400	D
208-96-8	Acenaphthylene	140	360		UD
120-12-7	Anthracene	140	360	7200	D
56-55-3	Benzo(a)anthracene	140	360	22000	D
205-99-2	Benzo(b)fluoranthene	140	360	59000	D
207-08-9	Benzo(k)fluoranthene	140	360	21000	D
191-24-2	Benzo(g,h,i)perylene	140	360	24000	DX
50-32-8	Benzo(a)pyrene	140	360	38000	D
218-01-9	Chrysene	140	360	31000	D
53-70-3	Dibenz(a,h)anthracene	140	360	5400	DX
206-44-0	Fluoranthene	140	360	84000	D
86-73-7	Fluorene	140	360	1700	D
193-39-5	Indeno(1,2,3-cd)pyrene	140	360	36000	DX
91-57-6	2-Methylnaphthalene	140	360		UD
91-20-3	Naphthalene	140	360	190	JD
85-01-8	Phenanthrene	140	360	30000	D
129-00-0	Pyrene	140	360	70000	D

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB2
1-SO-0608

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-18

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000618

% Moisture: 10 decanted: (Y/N) N Date Sampled: 09/26/09 15:20

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/08/09 09:25

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.5	3.7		U
208-96-8	Acenaphthylene	1.5	3.7		U
120-12-7	Anthracene	1.5	3.7		U
56-55-3	Benzo(a)anthracene	1.5	3.7	2.5	J
205-99-2	Benzo(b)fluoranthene	1.5	3.7		U
207-08-9	Benzo(k)fluoranthene	1.5	3.7		U
191-24-2	Benzo(g,h,i)perylene	1.5	3.7	6.2	
50-32-8	Benzo(a)pyrene	1.5	3.7		U
218-01-9	Chrysene	1.5	3.7	8.3	
53-70-3	Dibenz(a,h)anthracene	1.5	3.7		U
206-44-0	Fluoranthene	1.5	3.7	6.8	
86-73-7	Fluorene	1.5	3.7		U
193-39-5	Indeno(1,2,3-cd)pyrene	1.5	3.7		U
91-57-6	2-Methylnaphthalene	1.5	3.7		U
91-20-3	Naphthalene	1.5	3.7		U
85-01-8	Phenanthrene	1.5	3.7	4.2	
129-00-0	Pyrene	1.5	3.7	6.9	

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB2
2-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-37

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000637

% Moisture: 19 decanted: (Y/N) N Date Sampled: 09/27/09 12:00

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/20/09 19:40

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.6	4.1	92	
208-96-8	Acenaphthylene	1.6	4.1		U
120-12-7	Anthracene	1.6	4.1		U
56-55-3	Benzo(a)anthracene	1.6	4.1	320	
205-99-2	Benzo(b)fluoranthene	1.6	4.1	710	
207-08-9	Benzo(k)fluoranthene	1.6	4.1	680	
191-24-2	Benzo(g,h,i)perylene	1.6	4.1		U
50-32-8	Benzo(a)pyrene	1.6	4.1	340	
218-01-9	Chrysene	1.6	4.1	460	
53-70-3	Dibenz(a,h)anthracene	1.6	4.1		U
206-44-0	Fluoranthene	1.6	4.1	970	
86-73-7	Fluorene	1.6	4.1		U
193-39-5	Indeno(1,2,3-cd)pyrene	1.6	4.1	350	X
91-57-6	2-Methylnaphthalene	1.6	4.1	710	
91-20-3	Naphthalene	1.6	4.1	300	
85-01-8	Phenanthrene	1.6	4.1	1100	
129-00-0	Pyrene	1.6	4.1	890	

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB2
2-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-38

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000638

% Moisture: 20 decanted: (Y/N) N Date Sampled: 09/27/09 12:10

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/20/09 20:57

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.6	4.1	62	
208-96-8	Acenaphthylene	1.6	4.1		U
120-12-7	Anthracene	1.6	4.1		U
56-55-3	Benzo(a)anthracene	1.6	4.1	230	
205-99-2	Benzo(b)fluoranthene	1.6	4.1	400	
207-08-9	Benzo(k)fluoranthene	1.6	4.1	350	
191-24-2	Benzo(g,h,i)perylene	1.6	4.1	370	
50-32-8	Benzo(a)pyrene	1.6	4.1	480	
218-01-9	Chrysene	1.6	4.1	360	
53-70-3	Dibenz(a,h)anthracene	1.6	4.1		U
206-44-0	Fluoranthene	1.6	4.1	830	
86-73-7	Fluorene	1.6	4.1		U
193-39-5	Indeno(1,2,3-cd)pyrene	1.6	4.1	340	X
91-57-6	2-Methylnaphthalene	1.6	4.1	410	
91-20-3	Naphthalene	1.6	4.1	3700	E
85-01-8	Phenanthrene	1.6	4.1	740	
129-00-0	Pyrene	1.6	4.1	700	

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB22
-SO-0204DL

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 0910006-38DL

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1000638D

% Moisture: 20 decanted: (Y/N) N Date Sampled: 09/27/09 12:10

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/21/09 16:48

Injection Volume: 1.0(uL) Dilution Factor: 5.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	8.3	21	58	D
208-96-8	Acenaphthylene	8.3	21		UD
120-12-7	Anthracene	8.3	21		UD
56-55-3	Benzo(a)anthracene	8.3	21	430	D
205-99-2	Benzo(b)fluoranthene	8.3	21	590	D
207-08-9	Benzo(k)fluoranthene	8.3	21	190	D
191-24-2	Benzo(g,h,i)perylene	8.3	21	190	D
50-32-8	Benzo(a)pyrene	8.3	21	380	D
218-01-9	Chrysene	8.3	21	500	D
53-70-3	Dibenz(a,h)anthracene	8.3	21		UD
206-44-0	Fluoranthene	8.3	21	1000	D
86-73-7	Fluorene	8.3	21		UD
193-39-5	Indeno(1,2,3-cd)pyrene	8.3	21	280	D
91-57-6	2-Methylnaphthalene	8.3	21	430	D
91-20-3	Naphthalene	8.3	21	4600	D
85-01-8	Phenanthrene	8.3	21	670	D
129-00-0	Pyrene	8.3	21	910	D

FORM I SV

ANALYSIS DATA SHEET

RB-092909-01

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Water	Laboratory ID:	0910006-51	File ID:	025R2501.D
Sampled:	09/29/09 11:26	Prepared:	10/01/09 17:15	Analyzed:	10/06/09 00:52
Solids:		Preparation:	EXT_8151	Dilution:	1

Batch: 9J01019 Sequence: 9J28902 Calibration: 9288002 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
93-76-5	2,4,5-T		0.0163	0.0500	U
93-72-1	2,4,5-TP (Silvex)		0.0163	0.0500	U
94-75-7	2,4-D		0.163	0.500	U
94-82-6	2,4-DB		0.163	0.500	U
75-99-0	Dalapon		0.385	1.20	U
1918-00-9	Dicamba		0.0163	0.0500	UZ
120-36-5	Dichloroprop		0.163	0.500	U
88-85-7	Dinoseb		0.0769	0.250	U
94-74-6	MCPA		16.3	50.0	U
7085-19-0	MCPP		16.3	50.0	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	0.9615	0.6788	70.6	20 - 140	
2,4-Dichlorophenylacetic acid [2C]	0.9615	0.6784	70.6	20 - 140	

* Values outside of QC limits

ANALYSIS DATA SHEET

RB-092909-02

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Water	Laboratory ID:	0910006-52	File ID:	026R2601.D
Sampled:	09/29/09 13:02	Prepared:	10/01/09 17:15	Analyzed:	10/06/09 01:17
Solids:		Preparation:	EXT_8151	Dilution:	1

Batch: 9J01019 Sequence: 9J28902 Calibration: 9288002 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
93-76-5	2,4,5-T		0.0163	0.0500	U
93-72-1	2,4,5-TP (Silvex)		0.0163	0.0500	U
94-75-7	2,4-D		0.163	0.500	U
94-82-6	2,4-DB		0.163	0.500	U
75-99-0	Dalapon		0.385	1.20	U
1918-00-9	Dicamba		0.0163	0.0500	U
120-36-5	Dichloroprop		0.163	0.500	U
88-85-7	Dinoseb		0.0769	0.250	U
94-74-6	MCPA		16.3	50.0	U
7085-19-0	MCPP		16.3	50.0	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	0.9615	0.6689	69.6	20 - 140	
2,4-Dichlorophenylacetic acid [2C]	0.9615	0.6455	67.1	20 - 140	

* Values outside of QC limits

ANALYSIS DATA SHEET

SB-092909-01

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Water	Laboratory ID:	0910006-53	File ID:	027F2701.D
Sampled:	09/29/09 10:31	Prepared:	10/01/09 17:15	Analyzed:	10/06/09 01:43
Solids:		Preparation:	EXT_8151	Dilution:	1

Batch: 9J01019 Sequence: 9J28902 Calibration: 9288002 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
93-76-5	2,4,5-T		0.0157	0.0500	U
93-72-1	2,4,5-TP (Silvex)		0.0157	0.0500	U
94-75-7	2,4-D		0.157	0.500	U
94-82-6	2,4-DB		0.157	0.500	U
75-99-0	Dalapon		0.370	1.20	U
1918-00-9	Dicamba		0.0157	0.0500	U
120-36-5	Dichloroprop		0.157	0.500	U
88-85-7	Dinoseb		0.0741	0.250	U
94-74-6	MCPA		15.7	50.0	U
7085-19-0	MCPP		15.7	50.0	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	0.9259	0.6388	69.0	20 - 140	
2,4-Dichlorophenylacetic acid [2Cl	0.9259	0.6169	66.6	20 - 140	

* Values outside of QC limits

ANALYSIS DATA SHEET

FD-092609-01

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-01	File ID:	032R3201.D
Sampled:	09/26/09 00:00	Prepared:	10/06/09 10:10	Analyzed:	10/16/09 07:11
Solids:	92.62	Preparation:	EXT_8151	Dilution:	1

Batch: 9J02016 Sequence: 9J29608 Calibration: 9290001 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		2.70	5.40	U
93-72-1	2,4,5-TP (Silvex)		2.70	5.40	U
94-75-7	2,4-D		27.0	54.0	U
94-82-6	2,4-DB		27.0	54.0	U
75-99-0	Dalapon		67.5	135	U
1918-00-9	Dicamba		2.70	5.40	U
120-36-5	Dichloroprop		27.0	54.0	U
88-85-7	Dinoseb		13.5	27.0	U
94-74-6	MCPA		2700	5400	U
7085-19-0	MCPP		2700	5400	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	108.0	116.7	108	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	108.0	117.7	109	30 - 120	

* Values outside of QC limits

ANALYSIS DATA SHEET

FD-092609-02

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-02	File ID:	033R3301.D
Sampled:	09/26/09 00:00	Prepared:	10/06/09 10:10	Analyzed:	10/16/09 07:37
Solids:	92.80	Preparation:	EXT_8151	Dilution:	1
Batch:	9J02016	Sequence:	9J29608	Calibration:	9290001
Instrument:	GL-ECD3				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		2.69	5.39	U
93-72-1	2,4,5-TP (Silvex)		2.69	5.39	U
94-75-7	2,4-D		26.9	53.9	U
94-82-6	2,4-DB		26.9	53.9	U
75-99-0	Dalapon		67.3	135	U
1918-00-9	Dicamba		2.69	5.39	U
120-36-5	Dichloroprop		26.9	53.9	U
88-85-7	Dinoseb		13.5	26.9	U
94-74-6	MCPA		2690	5390	U
7085-19-0	MCPP		2690	5390	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	107.8	102.1	94.8	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	107.8	92.91	86.2	30 - 120	

* Values outside of QC limits

ANALYSIS DATA SHEET

FD-092709-01

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Solid	Laboratory ID:	0910006-20	File ID:	051R5101.D
Sampled:	09/27/09 00:00	Prepared:	10/06/09 10:10	Analyzed:	10/16/09 17:34
Solids:	75.55	Preparation:	EXT_8151	Dilution:	1

Batch: 9J02016 Sequence: 9J29608 Calibration: 9290001 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		3.31	6.62	U
93-72-1	2,4,5-TP (Silvex)		3.31	6.62	U
94-75-7	2,4-D		33.1	66.2	U
94-82-6	2,4-DB		33.1	66.2	U
75-99-0	Dalapon		82.7	165	U
1918-00-9	Dicamba		3.31	6.62	U
120-36-5	Dichloroprop		33.1	66.2	U
88-85-7	Dinoseb		16.5	33.1	U
94-74-6	MCPA		3310	6620	U
7085-19-0	MCPP		3310	6620	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	132.4	129.0	97.5	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	132.4	105.1	79.4	30 - 120	

* Values outside of QC limits

ANALYSIS DATA SHEET

FD-092809-01

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-40	File ID:	064R6401.D
Sampled:	09/28/09 00:00	Prepared:	10/06/09 09:40	Analyzed:	10/10/09 19:06
Solids:	79.98	Preparation:	EXT_8151	Dilution:	1
Batch:	9J06005	Sequence:	9J30310	Calibration:	9285002
Instrument:	GL-ECD3				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		3.13	6.25	U
93-72-1	2,4,5-TP (Silvex)		3.13	6.25	U
94-75-7	2,4-D		31.3	62.5	U
94-82-6	2,4-DB		31.3	62.5	U
75-99-0	Dalapon		78.1	156	U
1918-00-9	Dicamba		3.13	6.25	U
120-36-5	Dichloroprop		31.3	62.5	U
88-85-7	Dinoseb		15.6	31.3	U
94-74-6	MCPA		3130	6250	U
7085-19-0	MCPP		3130	6250	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	125.0	110.3	88.2	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	125.0	114.8	91.8	30 - 120	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB01-SO-0102

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-41	File ID:	065R6501.D
Sampled:	09/28/09 12:00	Prepared:	10/06/09 09:40	Analyzed:	10/10/09 19:31
Solids:	84.24	Preparation:	EXT_8151	Dilution:	1

Batch: 9J06005 Sequence: 9J30310 Calibration: 9285002 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		2.97	5.94	U
93-72-1	2,4,5-TP (Silvex)		2.97	5.94	U
94-75-7	2,4-D		29.7	59.4	U
94-82-6	2,4-DB		29.7	59.4	U
75-99-0	Dalapon		74.2	148	U
1918-00-9	Dicamba		2.97	5.94	U
120-36-5	Dichloroprop		29.7	59.4	U
88-85-7	Dinoseb		14.8	29.7	U
94-74-6	MCPA		2970	5940	U
7085-19-0	MCPP		2970	5940	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	118.7	98.39	82.9	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	118.7	102.6	86.5	30 - 120	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB02-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-42	File ID:	069R6901.D
Sampled:	09/28/09 10:20	Prepared:	10/08/09 08:30	Analyzed:	10/10/09 21:13
Solids:	89.66	Preparation:	EXT_8151	Dilution:	1
Batch:	9J07016	Sequence: 9J30310	Calibration:	9285002	Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		2.79	5.58	U
93-72-1	2,4,5-TP (Silvex)		2.79	5.58	U
94-75-7	2,4-D		27.9	55.8	U
94-82-6	2,4-DB		27.9	55.8	U
75-99-0	Dalapon		69.7	139	U
1918-00-9	Dicamba	~~13.7~~ 6.91	2.79	5.58	M ~~BP~~ X
120-36-5	Dichloroprop		27.9	55.8	U
88-85-7	Dinoseb		13.9	27.9	U
94-74-6	MCPA		2790	5580	U
7085-19-0	MCPP		2790	5580	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	111.5	108.1	96.9	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	111.5	96.74	86.7	30 - 120	

* Values outside of QC limits

BM
110209

ANALYSIS DATA SHEET

NTC21SB02-SO-0204

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-43	File ID:	070F7001.D
Sampled:	09/28/09 10:30	Prepared:	10/08/09 08:30	Analyzed:	10/10/09 21:38
Solids:	88.74	Preparation:	EXT_8151	Dilution:	1
Batch:	9J07016	Sequence:	9J30310	Calibration:	9285002
Instrument:	GL-ECD3				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		2.82	5.63	U
93-72-1	2,4,5-TP (Silvex)		2.82	5.63	U
94-75-7	2,4-D		28.2	56.3	U
94-82-6	2,4-DB		28.2	56.3	U
75-99-0	Dalapon		70.4	141	U
1918-00-9	Dicamba	~~17.1~~ 6.89	2.82	5.63	~~B~~PX
120-36-5	Dichloroprop		28.2	56.3	U
88-85-7	Dinoseb		14.1	28.2	U
94-74-6	MCPA		2820	5630	U
7085-19-0	MCPP		2820	5630	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	112.7	96.16	85.3	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	112.7	107.4	95.3	30 - 120	

* Values outside of QC limits

BM
110209

ANALYSIS DATA SHEET

NTC21SB03-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-44	File ID:	073R7301.D
Sampled:	09/28/09 12:20	Prepared:	10/08/09 08:30	Analyzed:	10/10/09 22:54
Solids:	94.89	Preparation:	EXT_8151	Dilution:	1
Batch:	9J07016	Sequence:	9J30310	Calibration:	9285002
Instrument:	GL-ECD3				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		2.63	5.27	U
93-72-1	2,4,5-TP (Silvex)		2.63	5.27	U
94-75-7	2,4-D		26.3	52.7	U
94-82-6	2,4-DB		26.3	52.7	U
75-99-0	Dalapon		65.9	132	U
1918-00-9	Dicamba	~~10.6~~ 5.41	2.63	5.27	M ~~P~~X
120-36-5	Dichloroprop		26.3	52.7	U
88-85-7	Dinoseb		13.2	26.3	U
94-74-6	MCPA		2630	5270	U
7085-19-0	MCPP		2630	5270	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	105.4	90.18	85.6	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	105.4	90.86	86.2	30 - 120	

* Values outside of QC limits

BM 110209

ANALYSIS DATA SHEET

NTC21SB03-SO-0204

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-45	File ID:	074R7401.D
Sampled:	09/28/09 12:30	Prepared:	10/08/09 08:30	Analyzed:	10/10/09 23:20
Solids:	92.18	Preparation:	EXT_8151	Dilution:	1

Batch: 9J07016 Sequence: 9J30310 Calibration: 9285002 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		2.71	5.42	U
93-72-1	2,4,5-TP (Silvex)		2.71	5.42	U
94-75-7	2,4-D		27.1	54.2	U
94-82-6	2,4-DB		27.1	54.2	U
75-99-0	Dalapon		67.8	136	U
1918-00-9	Dicamba	~~13.4~~ 6.81	2.71	5.42	M ~~B~~PX
120-36-5	Dichloroprop		27.1	54.2	U
88-85-7	Dinoseb		13.6	27.1	U
94-74-6	MCPA		2710	5420	U
7085-19-0	MCPP		2710	5420	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	108.5	91.29	84.1	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	108.5	101.4	93.4	30 - 120	

* Values outside of QC limits

BM 110205

ANALYSIS DATA SHEET

NTC21SB04-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-21	File ID:	043F4301.D
Sampled:	09/27/09 12:50	Prepared:	10/06/09 09:40	Analyzed:	10/10/09 10:15
Solids:	92.16	Preparation:	EXT_8151	Dilution:	1
Batch:	9J06005	Sequence:	9J30310	Calibration:	9285002
Instrument:	GL-ECD3				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		2.71	5.43	U
93-72-1	2,4,5-TP (Silvex)		2.71	5.43	U
94-75-7	2,4-D		27.1	54.3	U
94-82-6	2,4-DB		27.1	54.3	U
75-99-0	Dalapon		67.8	136	U
1918-00-9	Dicamba	~~18.7~~ 6.77	2.71	5.43	M ~~BP~~ X
120-36-5	Dichloroprop		27.1	54.3	U
88-85-7	Dinoseb		13.6	27.1	U
94-74-6	MCPA		2710	5430	U
7085-19-0	MCPP		2710	5430	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	108.5	107.8	99.3	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	108.5	99.06	91.3	30 - 120	

* Values outside of QC limits

BM 110209

ANALYSIS DATA SHEET

NTC21SB04-SO-0406

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-22	File ID:	044R4401.D
Sampled:	09/27/09 13:00	Prepared:	10/06/09 09:40	Analyzed:	10/10/09 10:40
Solids:	57.77	Preparation:	EXT_8151	Dilution:	1

Batch: 9J06005 Sequence: 9J30310 Calibration: 9285002 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		4.33	8.66	U
93-72-1	2,4,5-TP (Silvex)		4.33	8.66	U
94-75-7	2,4-D		43.3	86.6	U
94-82-6	2,4-DB		43.3	86.6	U
75-99-0	Dalapon		108	216	U
1918-00-9	Dicamba		4.33	8.66	U
120-36-5	Dichloroprop		43.3	86.6	U
88-85-7	Dinoseb		21.6	43.3	U
94-74-6	MCPA		4330	8660	U
7085-19-0	MCPP		4330	8660	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	173.1	169.6	98.0	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	173.1	142.2	82.1	30 - 120	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB05-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-46	File ID:	075R7501.D
Sampled:	09/28/09 10:00	Prepared:	10/08/09 08:30	Analyzed:	10/10/09 23:45
Solids:	93.64	Preparation:	EXT_8151	Dilution:	1
Batch:	9J07016	Sequence:	9J30310	Calibration:	9285002
Instrument:	GL-ECD3				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		2.67	5.34	U
93-72-1	2,4,5-TP (Silvex)		2.67	5.34	U
94-75-7	2,4-D		26.7	53.4	U
94-82-6	2,4-DB		26.7	53.4	U
75-99-0	Dalapon		66.7	133	U
1918-00-9	Dicamba		2.67	5.34	U
120-36-5	Dichloroprop		26.7	53.4	U
88-85-7	Dinoseb		13.3	26.7	U
94-74-6	MCPA		2670	5340	U
7085-19-0	MCPP		2670	5340	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	106.8	91.00	85.2	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	106.8	99.29	93.0	30 - 120	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB05-SO-0204

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-47	File ID:	076R7601.D
Sampled:	09/28/09 10:10	Prepared:	10/08/09 08:30	Analyzed:	10/11/09 00:10
Solids:	90.70	Preparation:	EXT_8151	Dilution:	1
Batch:	9J07016	Sequence:	9J30310	Calibration:	9285002
Instrument:	GL-ECD3				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		2.76	5.51	U
93-72-1	2,4,5-TP (Silvex)		2.76	5.51	U
94-75-7	2,4-D		27.6	55.1	U
94-82-6	2,4-DB		27.6	55.1	U
75-99-0	Dalapon		68.9	138	U
1918-00-9	Dicamba		2.76	5.51	U
120-36-5	Dichloroprop		27.6	55.1	U
88-85-7	Dinoseb		13.8	27.6	U
94-74-6	MCPA		2760	5510	U
7085-19-0	MCPP		2760	5510	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	110.3	111.5	101	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	110.3	115.1	104	30 - 120	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB06-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-23	File ID:	045R4501.D
Sampled:	09/27/09 15:10	Prepared:	10/06/09 09:40	Analyzed:	10/10/09 11:05
Solids:	82.48	Preparation:	EXT_8151	Dilution:	1
Batch:	9J06005	Sequence:	9J30310	Calibration:	9285002
Instrument:	GL-ECD3				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		3.03	6.06	U
93-72-1	2,4,5-TP (Silvex)		3.03	6.06	U
94-75-7	2,4-D		30.3	60.6	U
94-82-6	2,4-DB		30.3	60.6	U
75-99-0	Dalapon		75.8	152	U
1918-00-9	Dicamba	~~21.1~~ 8.07	3.03	6.06	M ~~BP~~ X
120-36-5	Dichloroprop		30.3	60.6	U
88-85-7	Dinoseb		15.2	30.3	U
94-74-6	MCPA		3030	6060	U
7085-19-0	MCPP		3030	6060	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	121.2	142.0	117	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	121.2	117.4	96.9	30 - 120	

* Values outside of QC limits

BM 110201

ANALYSIS DATA SHEET

NTC21SB06-SO-0204

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-24	File ID:	046R4601.D
Sampled:	09/27/09 15:20	Prepared:	10/06/09 09:40	Analyzed:	10/10/09 11:31
Solids:	76.55	Preparation:	EXT_8151	Dilution:	1

Batch: 9J06005 Sequence: 9J30310 Calibration: 9285002 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		3.27	6.53	U
93-72-1	2,4,5-TP (Silvex)		3.27	6.53	U
94-75-7	2,4-D	54.6	32.7	65.3	MJPY
94-82-6	2,4-DB		32.7	65.3	U
75-99-0	Dalapon		81.6	163	U
1918-00-9	Dicamba	6.13	3.27	6.53	JPM
120-36-5	Dichloroprop		32.7	65.3	U
88-85-7	Dinoseb		16.3	32.7	U
94-74-6	MCPA		3270	6530	U
7085-19-0	MCPP		3270	6530	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	130.6	151.6	116	30 - 120	
2,4-Dichlorophenylacetic acid [2Cl	130.6	118.9	91.0	30 - 120	

* Values outside of QC limits

BM 110201

ANALYSIS DATA SHEET

NTC21SB07-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-25	File ID:	047R4701.D
Sampled:	09/27/09 10:40	Prepared:	10/06/09 09:40	Analyzed:	10/10/09 11:56
Solids:	91.64	Preparation:	EXT_8151	Dilution:	1
Batch:	9J06005	Sequence:	9J30310	Calibration:	9285002
Instrument:	GL-ECD3				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		2.73	5.46	U
93-72-1	2,4,5-TP (Silvex)		2.73	5.46	U
94-75-7	2,4-D		27.3	54.6	U
94-82-6	2,4-DB		27.3	54.6	U
75-99-0	Dalapon		68.2	136	U
1918-00-9	Dicamba	4.86	2.73	5.46	JPM
120-36-5	Dichloroprop		27.3	54.6	U
88-85-7	Dinoseb		13.6	27.3	U
94-74-6	MCPA		2730	5460	U
7085-19-0	MCPP		2730	5460	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	109.1	115.5	106	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	109.1	101.8	93.3	30 - 120	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB07-SO-0204

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-26	File ID:	048R4801.D
Sampled:	09/27/09 10:50	Prepared:	10/06/09 09:40	Analyzed:	10/10/09 12:21
Solids:	85.99	Preparation:	EXT_8151	Dilution:	1
Batch:	9J06005	Sequence:	9J30310	Calibration:	9285002
Instrument:	GL-ECD3				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		2.91	5.81	U
93-72-1	2,4,5-TP (Silvex)		2.91	5.81	U
94-75-7	2,4-D		29.1	58.1	U
94-82-6	2,4-DB		29.1	58.1	U
75-99-0	Dalapon		72.7	145	U
1918-00-9	Dicamba		2.91	5.81	U
120-36-5	Dichloroprop		29.1	58.1	U
88-85-7	Dinoseb		14.5	29.1	U
94-74-6	MCPA		2910	5810	U
7085-19-0	MCPP		2910	5810	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	116.3	118.5	102	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	116.3	105.8	91.0	30 - 120	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB08-SO-0001

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-48	File ID:	077R7701.D
Sampled:	09/28/09 11:55	Prepared:	10/08/09 08:30	Analyzed:	10/11/09 00:36
Solids:	92.71	Preparation:	EXT_8151	Dilution:	1

Batch: 9J07016 Sequence: 9J30310 Calibration: 9285002 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		2.70	5.39	U
93-72-1	2,4,5-TP (Silvex)		2.70	5.39	U
94-75-7	2,4-D		27.0	53.9	U
94-82-6	2,4-DB		27.0	53.9	U
75-99-0	Dalapon		67.4	135	U
1918-00-9	Dicamba		2.70	5.39	U
120-36-5	Dichloroprop		27.0	53.9	U
88-85-7	Dinoseb		13.5	27.0	U
94-74-6	MCPA		2700	5390	U
7085-19-0	MCPP		2700	5390	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	107.9	89.34	82.8	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	107.9	93.19	86.4	30 - 120	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB08-SO-0204

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-49	File ID:	078F7801.D
Sampled:	09/28/09 12:00	Prepared:	10/08/09 08:30	Analyzed:	10/11/09 01:01
Solids:	73.74	Preparation:	EXT_8151	Dilution:	1

Batch: 9J07016 Sequence: 9J30310 Calibration: 9285002 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		3.39	6.78	U
93-72-1	2,4,5-TP (Silvex)		3.39	6.78	U
94-75-7	2,4-D		33.9	67.8	U
94-82-6	2,4-DB		33.9	67.8	U
75-99-0	Dalapon		84.8	170	U
1918-00-9	Dicamba		3.39	6.78	U
120-36-5	Dichloroprop		33.9	67.8	U
88-85-7	Dinoseb		17.0	33.9	U
94-74-6	MCPA		3390	6780	U
7085-19-0	MCPP		3390	6780	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	135.6	121.6	89.7	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	135.6	125.6	92.6	30 - 120	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB09-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-03	File ID:	034R3401.D
Sampled:	09/26/09 16:20	Prepared:	10/06/09 10:10	Analyzed:	10/16/09 08:02
Solids:	91.14	Preparation:	EXT_8151	Dilution:	1

Batch: 9J02016 Sequence: 9J29608 Calibration: 9290001 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		2.74	5.49	U
93-72-1	2,4,5-TP (Silvex)		2.74	5.49	U
94-75-7	2,4-D		27.4	54.9	U
94-82-6	2,4-DB		27.4	54.9	U
75-99-0	Dalapon		68.6	137	U
1918-00-9	Dicamba		2.74	5.49	U
120-36-5	Dichloroprop		27.4	54.9	U
88-85-7	Dinoseb		13.7	27.4	U
94-74-6	MCPA		2740	5490	U
7085-19-0	MCPP		2740	5490	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	109.7	109.4	99.7	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	109.7	100.7	91.8	30 - 120	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB09-SO-0204

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-04	File ID:	003F0301.D
Sampled:	09/26/09 16:28	Prepared:	10/06/09 10:10	Analyzed:	10/24/09 20:36
Solids:	79.45	Preparation:	EXT_8151	Dilution:	1
Batch:	9J02016	Sequence:	9J29901	Calibration:	9290001
Instrument:	GL-ECD3				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		3.15	6.29	U
93-72-1	2,4,5-TP (Silvex)		3.15	6.29	U
94-75-7	2,4-D		31.5	62.9	U
94-82-6	2,4-DB		31.5	62.9	U
75-99-0	Dalapon		78.7	157	U
1918-00-9	Dicamba		3.15	6.29	U
120-36-5	Dichloroprop		31.5	62.9	U
88-85-7	Dinoseb		15.7	31.5	U
94-74-6	MCPA		3150	6290	U
7085-19-0	MCPP		3150	6290	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	125.9	140.0	111	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	125.9	128.9	102	30 - 120	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB10-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-05	File ID:	036R3601.D
Sampled:	09/26/09 18:36	Prepared:	10/06/09 10:10	Analyzed:	10/16/09 08:53
Solids:	89.63	Preparation:	EXT_8151	Dilution:	1
Batch:	9J02016	Sequence:	9J29608	Calibration:	9290001
Instrument:	GL-ECD3				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		2.79	5.58	U
93-72-1	2,4,5-TP (Silvex)		2.79	5.58	U
94-75-7	2,4-D		27.9	55.8	U
94-82-6	2,4-DB		27.9	55.8	U
75-99-0	Dalapon		69.7	139	U
1918-00-9	Dicamba		2.79	5.58	U
120-36-5	Dichloroprop		27.9	55.8	U
88-85-7	Dinoseb		13.9	27.9	U
94-74-6	MCPA		2790	5580	U
7085-19-0	MCPP		2790	5580	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	111.6	121.5	109	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	111.6	100.9	90.4	30 - 120	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB10-SO-0406

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-06	File ID:	037R3701.D
Sampled:	09/26/09 18:40	Prepared:	10/06/09 10:10	Analyzed:	10/16/09 09:18
Solids:	82.84	Preparation:	EXT_8151	Dilution:	1
Batch:	9J02016	Sequence:	9J29608	Calibration:	9290001
Instrument:	GL-ECD3				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		3.02	6.04	U
93-72-1	2,4,5-TP (Silvex)		3.02	6.04	U
94-75-7	2,4-D		30.2	60.4	U
94-82-6	2,4-DB		30.2	60.4	U
75-99-0	Dalapon		75.5	151	U
1918-00-9	Dicamba		3.02	6.04	U
120-36-5	Dichloroprop		30.2	60.4	U
88-85-7	Dinoseb		15.1	30.2	U
94-74-6	MCPA		3020	6040	U
7085-19-0	MCPP		3020	6040	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	120.7	117.5	97.4	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	120.7	117.3	97.2	30 - 120	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB11-SO-0001

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-07	File ID:	038R3801.D
Sampled:	09/26/09 18:10	Prepared:	10/06/09 10:10	Analyzed:	10/16/09 09:43
Solids:	92.03	Preparation:	EXT_8151	Dilution:	1

Batch: 9J02016 Sequence: 9J29608 Calibration: 9290001 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		2.72	5.43	U
93-72-1	2,4,5-TP (Silvex)		2.72	5.43	U
94-75-7	2,4-D		27.2	54.3	U
94-82-6	2,4-DB		27.2	54.3	U
75-99-0	Dalapon		67.9	136	U
1918-00-9	Dicamba		2.72	5.43	U
120-36-5	Dichloroprop		27.2	54.3	U
88-85-7	Dinoseb		13.6	27.2	U
94-74-6	MCPA		2720	5430	U
7085-19-0	MCPP		2720	5430	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	108.7	104.5	96.1	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	108.7	91.85	84.5	30 - 120	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB11-SO-0204

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-08	File ID:	039R3901.D
Sampled:	09/26/09 18:12	Prepared:	10/06/09 10:10	Analyzed:	10/16/09 10:09
Solids:	84.12	Preparation:	EXT_8151	Dilution:	1

Batch: 9J02016 Sequence: 9J29608 Calibration: 9290001 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		2.97	5.94	U
93-72-1	2,4,5-TP (Silvex)		2.97	5.94	U
94-75-7	2,4-D		29.7	59.4	U
94-82-6	2,4-DB		29.7	59.4	U
75-99-0	Dalapon		74.3	149	U
1918-00-9	Dicamba		2.97	5.94	U
120-36-5	Dichloroprop		29.7	59.4	U
88-85-7	Dinoseb		14.9	29.7	U
94-74-6	MCPA		2970	5940	U
7085-19-0	MCPP		2970	5940	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	118.9	147.2	124	30 - 120	*
2,4-Dichlorophenylacetic acid [2C]	118.9	125.5	106	30 - 120	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB12-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-09	File ID:	040F4001.D
Sampled:	09/26/09 14:00	Prepared:	10/06/09 10:10	Analyzed:	10/16/09 10:34
Solids:	84.89	Preparation:	EXT_8151	Dilution:	1
Batch:	9J02016	Sequence:	9J29608	Calibration:	9290001
Instrument:	GL-ECD3				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		2.95	5.89	U
93-72-1	2,4,5-TP (Silvex)		2.95	5.89	U
94-75-7	2,4-D		29.5	58.9	U
94-82-6	2,4-DB		29.5	58.9	U
75-99-0	Dalapon		73.6	147	U
1918-00-9	Dicamba		2.95	5.89	U
120-36-5	Dichloroprop		29.5	58.9	U
88-85-7	Dinoseb		14.7	29.5	U
94-74-6	MCPA		2950	5890	U
7085-19-0	MCPP		2950	5890	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	117.8	99.95	84.8	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	117.8	101.6	86.2	30 - 120	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB12-SO-0204

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-10	File ID:	042R4201.D
Sampled:	09/26/09 14:10	Prepared:	10/06/09 10:10	Analyzed:	10/16/09 11:25
Solids:	77.00	Preparation:	EXT_8151	Dilution:	1

Batch: 9J02016 Sequence: 9J29608 Calibration: 9290001 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		3.25	6.49	U
93-72-1	2,4,5-TP (Silvex)		3.25	6.49	U
94-75-7	2,4-D		32.5	64.9	U
94-82-6	2,4-DB		32.5	64.9	U
75-99-0	Dalapon		81.2	162	U
1918-00-9	Dicamba		3.25	6.49	U
120-36-5	Dichloroprop		32.5	64.9	U
88-85-7	Dinoseb		16.2	32.5	U
94-74-6	MCPA		3250	6490	U
7085-19-0	MCPP		3250	6490	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	129.9	117.1	90.2	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	129.9	112.3	86.4	30 - 120	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB13-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-27	File ID:	049R4901.D
Sampled:	09/27/09 09:00	Prepared:	10/06/09 09:40	Analyzed:	10/10/09 12:47
Solids:	77.65	Preparation:	EXT_8151	Dilution:	1

Batch: 9J06005 Sequence: 9J30310 Calibration: 9285002 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		3.22	6.44	U
93-72-1	2,4,5-TP (Silvex)		3.22	6.44	U
94-75-7	2,4-D	217	32.2	64.4	M PX
94-82-6	2,4-DB		32.2	64.4	U
75-99-0	Dalapon		80.5	161	U
1918-00-9	Dicamba	~~20.5~~ 8.56	3.22	6.44	M ~~B~~PX
120-36-5	Dichloroprop		32.2	64.4	U
88-85-7	Dinoseb		16.1	32.2	U
94-74-6	MCPA		3220	6440	U
7085-19-0	MCPP		3220	6440	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	128.8	118.3	91.9	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	128.8	113.7	88.3	30 - 120	

* Values outside of QC limits

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ANALYSIS DATA SHEET

NTC21SB13-SO-0204

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-28	File ID:	050F5001.D
Sampled:	09/27/09 09:10	Prepared:	10/06/09 09:40	Analyzed:	10/10/09 13:12
Solids:	84.34	Preparation:	EXT_8151	Dilution:	1

Batch: 9J06005 Sequence: 9J30310 Calibration: 9285002 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		2.96	5.93	U
93-72-1	2,4,5-TP (Silvex)		2.96	5.93	U
94-75-7	2,4-D		29.6	59.3	U
94-82-6	2,4-DB		29.6	59.3	U
75-99-0	Dalapon		74.1	148	U
1918-00-9	Dicamba		2.96	5.93	U
120-36-5	Dichloroprop		29.6	59.3	U
88-85-7	Dinoseb		14.8	29.6	U
94-74-6	MCPA		2960	5930	U
7085-19-0	MCPP		2960	5930	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	118.6	106.2	89.5	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	118.6	100.8	85.0	30 - 120	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB14-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-29	File ID:	051R5101.D
Sampled:	09/27/09 09:30	Prepared:	10/06/09 09:40	Analyzed:	10/10/09 13:37
Solids:	81.84	Preparation:	EXT_8151	Dilution:	1

Batch: 9J06005 Sequence: 9J30310 Calibration: 9285002 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		3.05	6.11	U
93-72-1	2,4,5-TP (Silvex)		3.05	6.11	U
94-75-7	2,4-D		30.5	61.1	U
94-82-6	2,4-DB		30.5	61.1	U
75-99-0	Dalapon		76.4	153	U
1918-00-9	Dicamba	~~19.5~~ 9.99	3.05	6.11	M ~~BP~~ X
120-36-5	Dichloroprop		30.5	61.1	U
88-85-7	Dinoseb	17.2	15.3	30.5	J
94-74-6	MCPA		3050	6110	U
7085-19-0	MCPP		3050	6110	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	122.2	115.9	94.8	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	122.2	111.6	91.4	30 - 120	

* Values outside of QC limits

BM
110205

ANALYSIS DATA SHEET

NTC21SB14-SO-0204

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-30	File ID:	054R5401.D
Sampled:	09/27/09 09:40	Prepared:	10/06/09 09:40	Analyzed:	10/10/09 14:53
Solids:	75.25	Preparation:	EXT_8151	Dilution:	1
Batch:	9J06005	Sequence:	9J30310	Calibration:	9285002
Instrument:	GL-ECD3				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		3.32	6.64	U
93-72-1	2,4,5-TP (Silvex)		3.32	6.64	U
94-75-7	2,4-D		33.2	66.4	U
94-82-6	2,4-DB		33.2	66.4	U
75-99-0	Dalapon		83.1	166	U
1918-00-9	Dicamba	8.28	3.32	6.64	PM X
120-36-5	Dichloroprop		33.2	66.4	U
88-85-7	Dinoseb		16.6	33.2	U
94-74-6	MCPA		3320	6640	U
7085-19-0	MCPP		3320	6640	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	132.9	133.7	101	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	132.9	124.8	93.9	30 - 120	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB15-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-31	File ID:	056R5601.D
Sampled:	09/27/09 10:00	Prepared:	10/06/09 09:40	Analyzed:	10/10/09 15:44
Solids:	83.27	Preparation:	EXT_8151	Dilution:	1

Batch: 9J06005 Sequence: 9J30310 Calibration: 9285002 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		3.00	6.00	U
93-72-1	2,4,5-TP (Silvex)		3.00	6.00	U
94-75-7	2,4-D		30.0	60.0	U
94-82-6	2,4-DB		30.0	60.0	U
75-99-0	Dalapon		75.1	150	U
1918-00-9	Dicamba		3.00	6.00	U
120-36-5	Dichloroprop		30.0	60.0	U
88-85-7	Dinoseb		15.0	30.0	U
94-74-6	MCPA		3000	6000	U
7085-19-0	MCPP		3000	6000	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	120.1	109.8	91.5	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	120.1	109.8	91.4	30 - 120	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB15-SO-0204

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-32	File ID:	057R5701.D
Sampled:	09/27/09 10:10	Prepared:	10/06/09 09:40	Analyzed:	10/10/09 16:09
Solids:	77.18	Preparation:	EXT_8151	Dilution:	1
Batch:	9J06005	Sequence:	9J30310	Calibration:	9285002
Instrument:	GL-ECD3				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		3.24	6.48	U
93-72-1	2,4,5-TP (Silvex)		3.24	6.48	U
94-75-7	2,4-D		32.4	64.8	U
94-82-6	2,4-DB		32.4	64.8	U
75-99-0	Dalapon		81.0	162	U
1918-00-9	Dicamba		3.24	6.48	U
120-36-5	Dichloroprop		32.4	64.8	U
88-85-7	Dinoseb		16.2	32.4	U
94-74-6	MCPA		3240	6480	U
7085-19-0	MCPP		3240	6480	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	129.6	127.9	98.7	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	129.6	120.3	92.8	30 - 120	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB16-SO-0001

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-33	File ID:	058R5801.D
Sampled:	09/27/09 17:00	Prepared:	10/06/09 09:40	Analyzed:	10/10/09 16:34
Solids:	89.07	Preparation:	EXT_8151	Dilution:	1
Batch:	9J06005	Sequence:	9J30310	Calibration:	9285002
Instrument:	GL-ECD3				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		2.81	5.61	U
93-72-1	2,4,5-TP (Silvex)		2.81	5.61	U
94-75-7	2,4-D		28.1	56.1	U
94-82-6	2,4-DB		28.1	56.1	U
75-99-0	Dalapon		70.2	140	U
1918-00-9	Dicamba		2.81	5.61	U
120-36-5	Dichloroprop		28.1	56.1	U
88-85-7	Dinoseb		14.0	28.1	U
94-74-6	MCPA		2810	5610	U
7085-19-0	MCPP		2810	5610	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	112.3	96.09	85.6	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	112.3	94.49	84.2	30 - 120	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB16-SO-0204

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-34	File ID:	059R5901.D
Sampled:	09/27/09 16:50	Prepared:	10/06/09 09:40	Analyzed:	10/10/09 17:00
Solids:	77.43	Preparation:	EXT_8151	Dilution:	1
Batch:	9J06005	Sequence:	9J30310	Calibration:	9285002
Instrument:	GL-ECD3				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		3.23	6.46	U
93-72-1	2,4,5-TP (Silvex)		3.23	6.46	U
94-75-7	2,4-D		32.3	64.6	U
94-82-6	2,4-DB		32.3	64.6	U
75-99-0	Dalapon		80.7	161	U
1918-00-9	Dicamba	29.2	3.23	6.46	~~B~~
120-36-5	Dichloroprop		32.3	64.6	U
88-85-7	Dinoseb		16.1	32.3	U
94-74-6	MCPA		3230	6460	U
7085-19-0	MCPP		3230	6460	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	129.2	133.7	104	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	129.2	119.3	92.4	30 - 120	

* Values outside of QC limits

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ANALYSIS DATA SHEET

NTC21SB17-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-11	File ID:	043R4301.D
Sampled:	09/26/09 13:26	Prepared:	10/06/09 10:10	Analyzed:	10/16/09 11:50
Solids:	82.76	Preparation:	EXT_8151	Dilution:	1
Batch:	9J02016	Sequence:	9J29608	Calibration:	9290001
Instrument:	GL-ECD3				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		3.02	6.04	U
93-72-1	2,4,5-TP (Silvex)		3.02	6.04	U
94-75-7	2,4-D		30.2	60.4	U
94-82-6	2,4-DB		30.2	60.4	U
75-99-0	Dalapon		75.5	151	U
1918-00-9	Dicamba		3.02	6.04	U
120-36-5	Dichloroprop		30.2	60.4	U
88-85-7	Dinoseb		15.1	30.2	U
94-74-6	MCPA		3020	6040	U
7085-19-0	MCPP		3020	6040	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	120.8	133.1	110	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	120.8	111.3	92.1	30 - 120	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB17-SO-0507

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-12	File ID:	044R4401.D
Sampled:	09/26/09 13:32	Prepared:	10/06/09 10:10	Analyzed:	10/16/09 12:15
Solids:	89.58	Preparation:	EXT_8151	Dilution:	1

Batch: 9J02016 Sequence: 9J29608 Calibration: 9290001 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		2.79	5.58	U
93-72-1	2,4,5-TP (Silvex)		2.79	5.58	U
94-75-7	2,4-D		27.9	55.8	U
94-82-6	2,4-DB		27.9	55.8	U
75-99-0	Dalapon		69.8	140	U
1918-00-9	Dicamba		2.79	5.58	U
120-36-5	Dichloroprop		27.9	55.8	U
88-85-7	Dinoseb		14.0	27.9	U
94-74-6	MCPA		2790	5580	U
7085-19-0	MCPP		2790	5580	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	111.6	109.2	97.9	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	111.6	110.4	98.9	30 - 120	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB18-SO-0001

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-13	File ID:	045R4501.D
Sampled:	09/26/09 12:47	Prepared:	10/06/09 10:10	Analyzed:	10/16/09 12:41
Solids:	85.82	Preparation:	EXT_8151	Dilution:	1

Batch: 9J02016 Sequence: 9J29608 Calibration: 9290001 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		2.91	5.83	U
93-72-1	2,4,5-TP (Silvex)		2.91	5.83	U
94-75-7	2,4-D		29.1	58.3	U
94-82-6	2,4-DB		29.1	58.3	U
75-99-0	Dalapon		72.8	146	U
1918-00-9	Dicamba		2.91	5.83	U
120-36-5	Dichloroprop		29.1	58.3	U
88-85-7	Dinoseb		14.6	29.1	U
94-74-6	MCPA		2910	5830	U
7085-19-0	MCPP		2910	5830	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	116.5	121.8	105	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	116.5	111.5	95.7	30 - 120	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB18-SO-0507

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-14	File ID:	046R4601.D
Sampled:	09/26/09 12:59	Prepared:	10/06/09 10:10	Analyzed:	10/16/09 13:06
Solids:	89.26	Preparation:	EXT_8151	Dilution:	1

Batch: 9J02016 Sequence: 9J29608 Calibration: 9290001 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		2.80	5.60	U
93-72-1	2,4,5-TP (Silvex)		2.80	5.60	U
94-75-7	2,4-D		28.0	56.0	U
94-82-6	2,4-DB		28.0	56.0	U
75-99-0	Dalapon		70.0	140	U
1918-00-9	Dicamba		2.80	5.60	U
120-36-5	Dichloroprop		28.0	56.0	U
88-85-7	Dinoseb		14.0	28.0	U
94-74-6	MCPA		2800	5600	U
7085-19-0	MCPP		2800	5600	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	112.0	118.7	106	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	112.0	104.6	93.3	30 - 120	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB19-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-35	File ID:	060R6001.D
Sampled:	09/27/09 17:40	Prepared:	10/06/09 09:40	Analyzed:	10/10/09 17:25
Solids:	92.08	Preparation:	EXT_8151	Dilution:	1
Batch:	9J06005	Sequence:	9J30310	Calibration:	9285002
Instrument:	GL-ECD3				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		2.71	5.43	U
93-72-1	2,4,5-TP (Silvex)		2.71	5.43	U
94-75-7	2,4-D		27.1	54.3	U
94-82-6	2,4-DB		27.1	54.3	U
75-99-0	Dalapon		67.9	136	U
1918-00-9	Dicamba		2.71	5.43	U
120-36-5	Dichloroprop		27.1	54.3	U
88-85-7	Dinoseb		13.6	27.1	U
94-74-6	MCPA		2710	5430	U
7085-19-0	MCPP		2710	5430	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	108.6	93.42	86.0	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	108.6	91.20	84.0	30 - 120	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB19-SO-0204

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-36	File ID:	061R6101.D
Sampled:	09/27/09 17:50	Prepared:	10/06/09 09:40	Analyzed:	10/10/09 17:50
Solids:	83.11	Preparation:	EXT_8151	Dilution:	1
Batch:	9J06005	Sequence:	9J30310	Calibration:	9285002
Instrument:	GL-ECD3				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		3.01	6.02	U
93-72-1	2,4,5-TP (Silvex)		3.01	6.02	U
94-75-7	2,4-D		30.1	60.2	U
94-82-6	2,4-DB		30.1	60.2	U
75-99-0	Dalapon		75.2	150	U
1918-00-9	Dicamba		3.01	6.02	U
120-36-5	Dichloroprop		30.1	60.2	U
88-85-7	Dinoseb		15.0	30.1	U
94-74-6	MCPA		3010	6020	U
7085-19-0	MCPP		3010	6020	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	120.3	102.1	84.8	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	120.3	98.50	81.9	30 - 120	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB20-SO-0001

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-15	File ID:	047F4701.D
Sampled:	09/26/09 16:57	Prepared:	10/06/09 10:10	Analyzed:	10/16/09 13:31
Solids:	94.12	Preparation:	EXT_8151	Dilution:	1

Batch: 9J02016 Sequence: 9J29608 Calibration: 9290001 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		2.66	5.31	U
93-72-1	2,4,5-TP (Silvex)		2.66	5.31	U
94-75-7	2,4-D		26.6	53.1	U
94-82-6	2,4-DB		26.6	53.1	U
75-99-0	Dalapon		66.4	133	U
1918-00-9	Dicamba		2.66	5.31	U
120-36-5	Dichloroprop		26.6	53.1	U
88-85-7	Dinoseb		13.3	26.6	U
94-74-6	MCPA		2660	5310	U
7085-19-0	MCPP		2660	5310	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	106.2	106.6	100	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	106.2	105.1	98.9	30 - 120	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB20-SO-0406

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-16	File ID:	048F4801.D
Sampled:	09/26/09 17:02	Prepared:	10/06/09 10:10	Analyzed:	10/16/09 13:57
Solids:	86.65	Preparation:	EXT_8151	Dilution:	1
Batch:	9J02016	Sequence:	9J29608	Calibration:	9290001
Instrument:	GL-ECD3				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		2.89	5.77	U
93-72-1	2,4,5-TP (Silvex)		2.89	5.77	U
94-75-7	2,4-D		28.9	57.7	U
94-82-6	2,4-DB		28.9	57.7	U
75-99-0	Dalapon		72.1	144	U
1918-00-9	Dicamba		2.89	5.77	U
120-36-5	Dichloroprop		28.9	57.7	U
88-85-7	Dinoseb		14.4	28.9	U
94-74-6	MCPA		2890	5770	U
7085-19-0	MCPP		2890	5770	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	115.4	133.2	115	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	115.4	120.4	104	30 - 120	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB21-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-17	File ID:	049R4901.D
Sampled:	09/26/09 15:10	Prepared:	10/06/09 10:10	Analyzed:	10/16/09 14:22
Solids:	93.11	Preparation:	EXT_8151	Dilution:	1

Batch: 9J02016 Sequence: 9J29608 Calibration: 9290001 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		2.69	5.37	U
93-72-1	2,4,5-TP (Silvex)		2.69	5.37	U
94-75-7	2,4-D		26.9	53.7	U
94-82-6	2,4-DB		26.9	53.7	U
75-99-0	Dalapon		67.1	134	U
1918-00-9	Dicamba		2.69	5.37	U
120-36-5	Dichloroprop		26.9	53.7	U
88-85-7	Dinoseb		13.4	26.9	U
94-74-6	MCPA		2690	5370	U
7085-19-0	MCPP		2690	5370	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	107.4	100.9	93.9	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	107.4	90.43	84.2	30 - 120	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB21-SO-0608

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-18	File ID:	050R5001.D
Sampled:	09/26/09 15:20	Prepared:	10/06/09 10:10	Analyzed:	10/16/09 14:47
Solids:	89.66	Preparation:	EXT_8151	Dilution:	1

Batch: 9J02016 Sequence: 9J29608 Calibration: 9290001 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		2.79	5.58	U
93-72-1	2,4,5-TP (Silvex)		2.79	5.58	U
94-75-7	2,4-D		27.9	55.8	U
94-82-6	2,4-DB		27.9	55.8	U
75-99-0	Dalapon		69.7	139	U
1918-00-9	Dicamba		2.79	5.58	U
120-36-5	Dichloroprop		27.9	55.8	U
88-85-7	Dinoseb		13.9	27.9	U
94-74-6	MCPA		2790	5580	U
7085-19-0	MCPP		2790	5580	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	111.5	99.95	89.6	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	111.5	105.9	94.9	30 - 120	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB22-SO-0001

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-37	File ID:	062R6201.D
Sampled:	09/27/09 12:00	Prepared:	10/06/09 09:40	Analyzed:	10/10/09 18:15
Solids:	80.96	Preparation:	EXT_8151	Dilution:	1

Batch: 9J06005 Sequence: 9J30310 Calibration: 9285002 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		3.09	6.18	U
93-72-1	2,4,5-TP (Silvex)		3.09	6.18	U
94-75-7	2,4-D		30.9	61.8	U
94-82-6	2,4-DB		30.9	61.8	U
75-99-0	Dalapon		77.2	154	U
1918-00-9	Dicamba		3.09	6.18	U
120-36-5	Dichloroprop		30.9	61.8	U
88-85-7	Dinoseb		15.4	30.9	U
94-74-6	MCPA		3090	6180	U
7085-19-0	MCPP		3090	6180	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	123.5	106.0	85.8	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	123.5	107.3	86.9	30 - 120	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB22-SO-0204

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-38	File ID:	063R6301.D
Sampled:	09/27/09 12:10	Prepared:	10/06/09 09:40	Analyzed:	10/10/09 18:41
Solids:	80.39	Preparation:	EXT_8151	Dilution:	1

Batch: 9J06005 Sequence: 9J30310 Calibration: 9285002 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		3.11	6.22	U
93-72-1	2,4,5-TP (Silvex)		3.11	6.22	U
94-75-7	2,4-D		31.1	62.2	U
94-82-6	2,4-DB		31.1	62.2	U
75-99-0	Dalapon		77.7	155	U
1918-00-9	Dicamba		3.11	6.22	U
120-36-5	Dichloroprop		31.1	62.2	U
88-85-7	Dinoseb		15.5	31.1	U
94-74-6	MCPA		3110	6220	U
7085-19-0	MCPP		3110	6220	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	124.4	108.9	87.6	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	124.4	109.8	88.3	30 - 120	

* Values outside of QC limits

ANALYSIS DATA SHEET

RB-092909-01

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Water	Laboratory ID:	0910006-51	File ID:	055F5501.D
Sampled:	09/29/09 11:26	Prepared:	10/01/09 14:25	Analyzed:	10/06/09 11:37
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 9J01022 Sequence: 9J28711 Calibration: 9287007 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
72-55-9	4,4'-DDE		0.0049	0.020	U
72-54-8	4,4'-DDD		0.0049	0.020	U
50-29-3	4,4'-DDT		0.0049	0.020	U
309-00-2	Aldrin		0.0032	0.0098	U
319-84-6	alpha-BHC		0.0032	0.0098	U
5103-71-9	alpha-Chlordane		0.0032	0.0098	U
319-85-7	beta-BHC		0.0032	0.0098	U
319-86-8	delta-BHC		0.0032	0.0098	U
60-57-1	Dieldrin		0.0049	0.020	U
959-98-8	Endosulfan I		0.0032	0.0098	U
33213-65-9	Endosulfan II		0.0049	0.020	U
1031-07-8	Endosulfan sulfate		0.0049	0.020	U
72-20-8	Endrin		0.0049	0.020	U
7421-93-4	Endrin aldehyde		0.0049	0.020	U
53494-70-5	Endrin ketone		0.0049	0.020	U
58-89-9	gamma-BHC (Lindane)		0.0032	0.0098	U
5566-34-7	gamma-Chlordane	0.010	0.0032	0.0098	
76-44-8	Heptachlor		0.0032	0.0098	U
1024-57-3	Heptachlor epoxide		0.0032	0.0098	U
72-43-5	Methoxychlor		0.0032	0.0098	U
57-74-9	Chlordane (tech)		0.017	0.049	U
8001-35-2	Toxaphene		0.32	0.98	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	0.4902	0.3422	69.8	25 - 140	
Tetrachloro-m-xylene [2C]	0.4902	0.3585	73.1	25 - 140	
Decachlorobiphenyl	0.4902	0.1624	33.1	40 - 135	*
Decachlorobiphenyl [2C]	0.4902	0.1652	33.7	40 - 135	*

Values outside of QC limits

ANALYSIS DATA SHEET

RB-092909-02

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Water	Laboratory ID:	0910006-52	File ID:	056F5601.D
Sampled:	09/29/09 13:02	Prepared:	10/01/09 14:25	Analyzed:	10/06/09 11:56
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 9J01022 Sequence: 9J28711 Calibration: 9287007 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
72-55-9	4,4'-DDE		0.0047	0.019	U
72-54-8	4,4'-DDD		0.0047	0.019	U
50-29-3	4,4'-DDT		0.0047	0.019	U
309-00-2	Aldrin		0.0031	0.0094	U
319-84-6	alpha-BHC		0.0031	0.0094	U
5103-71-9	alpha-Chlordane		0.0031	0.0094	U
319-85-7	beta-BHC		0.0031	0.0094	U
319-86-8	delta-BHC		0.0031	0.0094	U
60-57-1	Dieldrin		0.0047	0.019	U
959-98-8	Endosulfan I		0.0031	0.0094	U
33213-65-9	Endosulfan II		0.0047	0.019	U
1031-07-8	Endosulfan sulfate		0.0047	0.019	U
72-20-8	Endrin		0.0047	0.019	U
7421-93-4	Endrin aldehyde		0.0047	0.019	U
53494-70-5	Endrin ketone		0.0047	0.019	U
58-89-9	gamma-BHC (Lindane)		0.0031	0.0094	U
5566-34-7	gamma-Chlordane	0.0097	0.0031	0.0094	
76-44-8	Heptachlor		0.0031	0.0094	U
1024-57-3	Heptachlor epoxide		0.0031	0.0094	U
72-43-5	Methoxychlor		0.0031	0.0094	U
57-74-9	Chlordane (tech)		0.016	0.047	U
8001-35-2	Toxaphene		0.31	0.94	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	0.4717	0.3782	80.2	25 - 140	
Tetrachloro-m-xylene [2C]	0.4717	0.3989	84.6	25 - 140	
Decachlorobiphenyl	0.4717	0.2329	49.4	40 - 135	
Decachlorobiphenyl [2C]	0.4717	0.2376	50.4	40 - 135	

Values outside of QC limits

ANALYSIS DATA SHEET

SB-092909-01

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Water	Laboratory ID:	0910006-53	File ID:	057F5701.D
Sampled:	09/29/09 10:31	Prepared:	10/01/09 14:25	Analyzed:	10/06/09 12:14
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 9J01022 Sequence: 9J28711 Calibration: 9287007 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
72-55-9	4,4'-DDE		0.0048	0.019	U
72-54-8	4,4'-DDD		0.0048	0.019	U
50-29-3	4,4'-DDT		0.0048	0.019	U
309-00-2	Aldrin		0.0032	0.0096	U
319-84-6	alpha-BHC		0.0032	0.0096	U
5103-71-9	alpha-Chlordane		0.0032	0.0096	U
319-85-7	beta-BHC		0.0032	0.0096	U
319-86-8	delta-BHC		0.0032	0.0096	U
60-57-1	Dieldrin		0.0048	0.019	U
959-98-8	Endosulfan I		0.0032	0.0096	U
33213-65-9	Endosulfan II		0.0048	0.019	U
1031-07-8	Endosulfan sulfate		0.0048	0.019	U
72-20-8	Endrin		0.0048	0.019	U
7421-93-4	Endrin aldehyde		0.0048	0.019	U
53494-70-5	Endrin ketone		0.0048	0.019	U
58-89-9	gamma-BHC (Lindane)		0.0032	0.0096	U
5566-34-7	gamma-Chlordane	0.0057	0.0032	0.0096	J
76-44-8	Heptachlor		0.0032	0.0096	U
1024-57-3	Heptachlor epoxide		0.0032	0.0096	U
72-43-5	Methoxychlor		0.0032	0.0096	U
57-74-9	Chlordane (tech)		0.016	0.048	U
8001-35-2	Toxaphene		0.32	0.96	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	0.4808	0.3633	75.6	25 - 140	
Tetrachloro-m-xylene [2C]	0.4808	0.3816	79.4	25 - 140	
Decachlorobiphenyl	0.4808	0.2364	49.2	40 - 135	
Decachlorobiphenyl [2C]	0.4808	0.2527	52.6	40 - 135	

Values outside of QC limits

ANALYSIS DATA SHEET

FD-092609-01

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-01	File ID:	046F4601.D
Sampled:	09/26/09 00:00	Prepared:	10/02/09 17:00	Analyzed:	10/10/09 04:40
Solids:	92.62	Preparation:	EXT_3546	Dilution:	1
Batch:	9J02013	Sequence: 9J29207	Calibration:	9292002	Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD		0.18	0.72	U
72-55-9	4,4'-DDE		0.18	0.72	U
50-29-3	4,4'-DDT		0.18	0.72	UY
309-00-2	Aldrin		0.12	0.36	U
319-84-6	alpha-BHC		0.12	0.36	U
5103-71-9	alpha-Chlordane		0.12	0.36	UY
319-85-7	beta-BHC		0.12	0.36	UY
319-86-8	delta-BHC		0.12	0.36	U
60-57-1	Dieldrin		0.18	0.72	U
959-98-8	Endosulfan I		0.12	0.36	U
33213-65-9	Endosulfan II		0.18	0.72	UY
1031-07-8	Endosulfan sulfate		0.18	0.72	UY
72-20-8	Endrin		0.18	0.72	U
7421-93-4	Endrin aldehyde		0.18	0.72	UY
53494-70-5	Endrin ketone		0.18	0.72	UY
58-89-9	gamma-BHC (Lindane)		0.12	0.36	U
5566-34-7	gamma-Chlordane		0.12	0.36	U
76-44-8	Heptachlor		0.12	0.36	UY
1024-57-3	Heptachlor epoxide		0.12	0.36	~~UZ~~
72-43-5	Methoxychlor		0.12	0.36	UY
8001-35-2	Toxaphene		12	36	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	18.00	11.52	64.0	70 - 125	*
Tetrachloro-m-xylene [2C]	18.00	10.87	60.4	70 - 125	*
Decachlorobiphenyl	18.00	11.96	66.5	60 - 125	
Decachlorobiphenyl [2C]	18.00	9.935	55.2	60 - 125	*

Values outside of QC limits

J.H. 11.2.09

ANALYSIS DATA SHEET

FD-092609-02

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-02	File ID:	048F4801.D
Sampled:	09/26/09 00:00	Prepared:	10/02/09 17:00	Analyzed:	10/10/09 05:11
Solids:	92.80	Preparation:	EXT_3546	Dilution:	1
Batch:	9J02013	Sequence:	9J29207	Calibration:	9292002
Instrument:	GL-ECD4				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	130	0.18	0.72	PE
72-55-9	4,4'-DDE	38	0.18	0.72	P
50-29-3	4,4'-DDT	31	0.18	0.72	Y
309-00-2	Aldrin		0.12	0.36	U
319-84-6	alpha-BHC		0.12	0.36	U
5103-71-9	alpha-Chlordane	4.5	0.12	0.36	Y
319-85-7	beta-BHC		0.12	0.36	UY
319-86-8	delta-BHC		0.12	0.36	U
60-57-1	Dieldrin	3.6	0.18	0.72	PM
959-98-8	Endosulfan I		0.12	0.36	UZ
33213-65-9	Endosulfan II	4.0	0.18	0.72	PY
1031-07-8	Endosulfan sulfate	5.7	0.18	0.72	PY
72-20-8	Endrin	9.0	0.18	0.72	PX
7421-93-4	Endrin aldehyde		0.18	0.72	UY
53494-70-5	Endrin ketone		0.18	0.72	UY
58-89-9	gamma-BHC (Lindane)		0.12	0.36	U
5566-34-7	gamma-Chlordane	20	0.12	0.36	
76-44-8	Heptachlor		0.12	0.36	UY
1024-57-3	Heptachlor epoxide	0.91	0.12	0.36	PY, M
72-43-5	Methoxychlor		0.12	0.36	UY
8001-35-2	Toxaphene		12	36	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	17.96	7.931	44.2	70 - 125	*
Tetrachloro-m-xylene [2C]	17.96	9.311	51.8	70 - 125	*
Decachlorobiphenyl	17.96	6.764	37.7	60 - 125	*
Decachlorobiphenyl [2C]	17.96	4.646	25.9	60 - 125	*

Values outside of QC limits

ANALYSIS DATA SHEET

FD-092609-02

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-02RE1	File ID:	086F8601.D
Sampled:	09/26/09 00:00	Prepared:	10/02/09 17:00	Analyzed:	10/16/09 16:40
Solids:	92.80	Preparation:	EXT_3546	Dilution:	10
Batch:	9J02013	Sequence:	9K30603	Calibration:	9295002
Instrument:	GL-ECD4				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	270	1.8	7.2	DP

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	17.96	0.000		70 - 125	*
Tetrachloro-m-xylene [2C]	17.96	0.000		70 - 125	*
Decachlorobiphenyl	17.96	0.000		60 - 125	*
Decachlorobiphenyl [2C]	17.96	0.000		60 - 125	*

* Values outside of QC limits

ANALYSIS DATA SHEET

FD-092709-01

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Solid	Laboratory ID:	0910006-20	File ID:	071F7401.D
Sampled:	09/27/09 00:00	Prepared:	10/03/09 11:10	Analyzed:	10/13/09 16:31
Solids:	75.55	Preparation:	EXT_3546	Dilution:	1
Batch:	9J02014	Sequence:	9J30317	Calibration:	9295002
Instrument:	GL-ECD4				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD		0.23	0.89	U
72-55-9	4,4'-DDE		0.23	0.89	U
50-29-3	4,4'-DDT		0.23	0.89	UY
309-00-2	Aldrin		0.15	0.44	U
319-84-6	alpha-BHC		0.15	0.44	U
5103-71-9	alpha-Chlordane		0.15	0.44	U
319-85-7	beta-BHC		0.15	0.44	U
319-86-8	delta-BHC		0.15	0.44	U
60-57-1	Dieldrin		0.23	0.89	U
959-98-8	Endosulfan I		0.15	0.44	U
33213-65-9	Endosulfan II		0.23	0.89	U
1031-07-8	Endosulfan sulfate		0.23	0.89	U
72-20-8	Endrin		0.23	0.89	UY
7421-93-4	Endrin aldehyde		0.23	0.89	U
53494-70-5	Endrin ketone		0.23	0.89	U
58-89-9	gamma-BHC (Lindane)		0.15	0.44	U
5566-34-7	gamma-Chlordane		0.15	0.44	U
76-44-8	Heptachlor		0.15	0.44	U
1024-57-3	Heptachlor epoxide		0.15	0.44	U
72-43-5	Methoxychlor		0.15	0.44	UY
57-74-9	Chlordane (tech)		0.75	2.3	U
8001-35-2	Toxaphene		15	44	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	22.06	14.89	67.5	70 - 125	*
Tetrachloro-m-xylene [2C]	22.06	15.42	69.9	70 - 125	*
Decachlorobiphenyl	22.06	12.82	58.1	60 - 125	*
Decachlorobiphenyl [2C]	22.06	12.28	55.7	60 - 125	*

* Values outside of QC limits

ANALYSIS DATA SHEET

FD-092809-01

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-40	File ID:	106FA601.D
Sampled:	09/28/09 00:00	Prepared:	10/03/09 11:10	Analyzed:	10/24/09 22:52
Solids:	79.98	Preparation:	EXT_3546	Dilution:	1
Batch:	9J02014	Sequence: 9J30333	Calibration:	9303002	Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	19	0.21	0.84	P
72-55-9	4,4'-DDE	10	0.21	0.84	
50-29-3	4,4'-DDT	6.5	0.21	0.84	PY
309-00-2	Aldrin		0.14	0.41	U
319-84-6	alpha-BHC	0.21	0.14	0.41	JPM
5103-71-9	alpha-Chlordane		0.14	0.41	UZ
319-85-7	beta-BHC		0.14	0.41	U
319-86-8	delta-BHC	0.39	0.14	0.41	J~~B~~P
60-57-1	Dieldrin	1.4	0.21	0.84	PY
959-98-8	Endosulfan I		0.14	0.41	UZ
33213-65-9	Endosulfan II	0.99	0.21	0.84	PY
1031-07-8	Endosulfan sulfate	1.3	0.21	0.84	P
72-20-8	Endrin		0.21	0.84	U
7421-93-4	Endrin aldehyde		0.21	0.84	UY
53494-70-5	Endrin ketone	3.7	0.21	0.84	PY
58-89-9	gamma-BHC (Lindane)		0.14	0.41	UZ
5566-34-7	gamma-Chlordane	3.2	0.14	0.41	P
76-44-8	Heptachlor		0.14	0.41	UY
1024-57-3	Heptachlor epoxide	0.74	0.14	0.41	PM
72-43-5	Methoxychlor	8.3	0.14	0.41	PY
57-74-9	Chlordane (tech)		0.71	2.1	U
8001-35-2	Toxaphene		14	41	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	20.84	12.28	58.9	70 - 125	*
Tetrachloro-m-xylene [2C]	20.84	11.62	55.7	70 - 125	*
Decachlorobiphenyl	20.84	9.032	43.3	60 - 125	*
Decachlorobiphenyl [2C]	20.84	8.421	40.4	60 - 125	*

* Values outside of QC limits

J.H.
11.2.09

ANALYSIS DATA SHEET

NTC21SB01-SO-0102

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-41	File ID:	108FA801.D
Sampled:	09/28/09 12:00	Prepared:	10/07/09 19:25	Analyzed:	10/24/09 23:23
Solids:	84.24	Preparation:	EXT_3546	Dilution:	1
Batch:	9J06028	Sequence: 9J30333	Calibration:	9303002	Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	14	0.20	0.80	P
72-55-9	4,4'-DDE	10	0.20	0.80	
50-29-3	4,4'-DDT	14	0.20	0.80	PY
309-00-2	Aldrin	0.33	0.13	0.39	JPM, Y
319-84-6	alpha-BHC		0.13	0.39	U
5103-71-9	alpha-Chlordane	7.4	0.13	0.39	P
319-85-7	beta-BHC	0.27	0.13	0.39	JPM
319-86-8	delta-BHC	0.51	0.13	0.39	P
60-57-1	Dieldrin		0.20	0.80	UY
959-98-8	Endosulfan I		0.13	0.39	UZ
33213-65-9	Endosulfan II		0.20	0.80	UY
1031-07-8	Endosulfan sulfate	1.8	0.20	0.80	PY
72-20-8	Endrin	0.71	0.20	0.80	JPM
7421-93-4	Endrin aldehyde	0.39	0.20	0.80	JPY
53494-70-5	Endrin ketone	0.85	0.20	0.80	Y
58-89-9	gamma-BHC (Lindane)	0.25	0.13	0.39	JPM
5566-34-7	gamma-Chlordane	11	0.13	0.39	P
76-44-8	Heptachlor		0.13	0.39	UY
1024-57-3	Heptachlor epoxide	0.24	0.13	0.39	JPM
72-43-5	Methoxychlor	3.1	0.13	0.39	PM, Y
57-74-9	Chlordane (tech)		0.68	2.0	U
8001-35-2	Toxaphene		13	39	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	19.78	12.77	64.6	70 - 125	*
Tetrachloro-m-xylene [2C]	19.78	12.26	62.0	70 - 125	*
Decachlorobiphenyl	19.78	13.76	69.6	60 - 125	
Decachlorobiphenyl [2C]	19.78	9.325	47.1	60 - 125	*

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB02-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-42	File ID:	110FAA01.D
Sampled:	09/28/09 10:20	Prepared:	10/07/09 19:25	Analyzed:	10/24/09 23:55
Solids:	89.66	Preparation:	EXT_3546	Dilution:	1
Batch:	9J06028	Sequence: 9J30333	Calibration:	9303002	Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	17	0.19	0.75	P
72-55-9	4,4'-DDE	5.3	0.19	0.75	
50-29-3	4,4'-DDT	20	0.19	0.75	PY
309-00-2	Aldrin		0.12	0.37	U
319-84-6	alpha-BHC	0.28	0.12	0.37	JP
5103-71-9	alpha-Chlordane	0.64	0.12	0.37	PY
319-85-7	beta-BHC		0.12	0.37	U
319-86-8	delta-BHC		0.12	0.37	U
60-57-1	Dieldrin	2.0	0.19	0.75	PY
959-98-8	Endosulfan I		0.12	0.37	UZ
33213-65-9	Endosulfan II	1.5	0.19	0.75	Y
1031-07-8	Endosulfan sulfate	1.3	0.19	0.75	PM, Y
72-20-8	Endrin		0.19	0.75	UZ
7421-93-4	Endrin aldehyde		0.19	0.75	UY
53494-70-5	Endrin ketone		0.19	0.75	UY
58-89-9	gamma-BHC (Lindane)		0.12	0.37	UZ
5566-34-7	gamma-Chlordane	1.7	0.12	0.37	P
76-44-8	Heptachlor		0.12	0.37	UY
1024-57-3	Heptachlor epoxide		0.12	0.37	U
72-43-5	Methoxychlor	3.3	0.12	0.37	PM, Y
57-74-9	Chlordane (tech)		0.64	1.9	U
8001-35-2	Toxaphene		12	37	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	18.59	12.86	69.2	70 - 125	*
Tetrachloro-m-xylene [2C]	18.59	12.21	65.7	70 - 125	*
Decachlorobiphenyl	18.59	10.00	53.8	60 - 125	*
Decachlorobiphenyl [2C]	18.59	9.245	49.7	60 - 125	*

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB02-SO-0204

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-43	File ID:	112FAC01.D
Sampled:	09/28/09 10:30	Prepared:	10/07/09 19:25	Analyzed:	10/25/09 00:26
Solids:	88.74	Preparation:	EXT_3546	Dilution:	1
Batch:	9J06028	Sequence:	9J30333	Calibration:	9303002
Instrument:	GL-ECD4				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	7.9	0.19	0.76	P
72-55-9	4,4'-DDE	8.2	0.19	0.76	
50-29-3	4,4'-DDT	8.0	0.19	0.76	PY
309-00-2	Aldrin		0.12	0.37	U
319-84-6	alpha-BHC	2.8	0.12	0.37	P
5103-71-9	alpha-Chlordane		0.12	0.37	UZ
319-85-7	beta-BHC		0.12	0.37	U
319-86-8	delta-BHC		0.12	0.37	U
60-57-1	Dieldrin	0.87	0.19	0.76	Y
959-98-8	Endosulfan I		0.12	0.37	UZ
33213-65-9	Endosulfan II	0.59	0.19	0.76	JY
1031-07-8	Endosulfan sulfate	1.3	0.19	0.76	P
72-20-8	Endrin	0.82	0.19	0.76	P
7421-93-4	Endrin aldehyde		0.19	0.76	UY
53494-70-5	Endrin ketone		0.19	0.76	UY
58-89-9	gamma-BHC (Lindane)		0.12	0.37	UZ
5566-34-7	gamma-Chlordane	3.5	0.12	0.37	
76-44-8	Heptachlor		0.12	0.37	UY
1024-57-3	Heptachlor epoxide	0.90	0.12	0.37	P
72-43-5	Methoxychlor	1.2	0.12	0.37	PY
57-74-9	Chlordane (tech)		0.64	1.9	U
8001-35-2	Toxaphene		12	37	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	18.78	12.02	64.0	70 - 125	*
Tetrachloro-m-xylene [2C]	18.78	11.54	61.4	70 - 125	*
Decachlorobiphenyl	18.78	8.963	47.7	60 - 125	*
Decachlorobiphenyl [2C]	18.78	8.029	42.7	60 - 125	*

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB03-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-44	File ID:	122FAM01.D
Sampled:	09/28/09 12:20	Prepared:	10/07/09 19:25	Analyzed:	10/25/09 03:01
Solids:	94.89	Preparation:	EXT_3546	Dilution:	1

Batch: 9J06028 Sequence: 9J30333 Calibration: 9303002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	20	0.18	0.71	P
72-55-9	4,4'-DDE	9.4	0.18	0.71	
50-29-3	4,4'-DDT	23	0.18	0.71	PY
309-00-2	Aldrin	0.23	0.12	0.35	JPY
319-84-6	alpha-BHC	5.2	0.12	0.35	P
5103-71-9	alpha-Chlordane	1.1	0.12	0.35	PY
319-85-7	beta-BHC	1.0	0.12	0.35	P
319-86-8	delta-BHC		0.12	0.35	U
60-57-1	Dieldrin	1.9	0.18	0.71	PY
959-98-8	Endosulfan I	0.20	0.12	0.35	JPM, Y
33213-65-9	Endosulfan II	1.7	0.18	0.71	PY
1031-07-8	Endosulfan sulfate	2.7	0.18	0.71	P
72-20-8	Endrin	1.1	0.18	0.71	P
7421-93-4	Endrin aldehyde		0.18	0.71	UY
53494-70-5	Endrin ketone	1.5	0.18	0.71	PM, Y
58-89-9	gamma-BHC (Lindane)	0.49	0.12	0.35	P
5566-34-7	gamma-Chlordane	3.4	0.12	0.35	P
76-44-8	Heptachlor		0.12	0.35	UY
1024-57-3	Heptachlor epoxide	2.0	0.12	0.35	P
72-43-5	Methoxychlor	17	0.12	0.35	PM, Y
57-74-9	Chlordane (tech)		0.60	1.8	U
8001-35-2	Toxaphene		12	35	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	17.56	12.81	72.9	70 - 125	
Tetrachloro-m-xylene [2C]	17.56	11.51	65.5	70 - 125	*
Decachlorobiphenyl	17.56	12.20	69.4	60 - 125	
Decachlorobiphenyl [2C]	17.56	9.490	54.0	60 - 125	*

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB03-SO-0204

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-45	File ID:	124FAO01.D
Sampled:	09/28/09 12:30	Prepared:	10/07/09 19:25	Analyzed:	10/25/09 03:32
Solids:	92.18	Preparation:	EXT_3546	Dilution:	1
Batch:	9J06028	Sequence: 9J30333	Calibration:	9303002	Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	11	0.18	0.73	P
72-55-9	4,4'-DDE	15	0.18	0.73	
50-29-3	4,4'-DDT	16	0.18	0.73	Y
309-00-2	Aldrin		0.12	0.36	U
319-84-6	alpha-BHC	0.37	0.12	0.36	~~J~~PM
5103-71-9	alpha-Chlordane		0.12	0.36	UZ
319-85-7	beta-BHC		0.12	0.36	U
319-86-8	delta-BHC		0.12	0.36	U
60-57-1	Dieldrin	1.1	0.18	0.73	Y
959-98-8	Endosulfan I		0.12	0.36	UZ
33213-65-9	Endosulfan II	0.19	0.18	0.73	JPM, Y
1031-07-8	Endosulfan sulfate	0.72	0.18	0.73	J
72-20-8	Endrin		0.18	0.73	U
7421-93-4	Endrin aldehyde		0.18	0.73	UY
53494-70-5	Endrin ketone	1.5	0.18	0.73	PY
58-89-9	gamma-BHC (Lindane)	0.33	0.12	0.36	JY
5566-34-7	gamma-Chlordane	2.4	0.12	0.36	P
76-44-8	Heptachlor		0.12	0.36	UY
1024-57-3	Heptachlor epoxide	0.39	0.12	0.36	PM
72-43-5	Methoxychlor	4.3	0.12	0.36	PY
57-74-9	Chlordane (tech)		0.62	1.8	U
8001-35-2	Toxaphene		12	36	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	18.08	9.933	54.9	70 - 125	*
Tetrachloro-m-xylene [2C]	18.08	9.200	50.9	70 - 125	*
Decachlorobiphenyl	18.08	11.34	62.7	60 - 125	
Decachlorobiphenyl [2C]	18.08	7.789	43.1	60 - 125	*

Values outside of QC limits

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ANALYSIS DATA SHEET

NTC21SB04-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-21	File ID:	076F7601.D
Sampled:	09/27/09 12:50	Prepared:	10/03/09 11:10	Analyzed:	10/24/09 14:02
Solids:	92.16	Preparation:	EXT_3546	Dilution:	1
Batch:	9J02014	Sequence: 9J30333	Calibration:	9303002	Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	4.7	0.18	0.73	PM
72-55-9	4,4'-DDE	7.9	0.18	0.73	PM
50-29-3	4,4'-DDT	30	0.18	0.73	PM, Y
309-00-2	Aldrin		0.12	0.36	U
319-84-6	alpha-BHC		0.12	0.36	U
5103-71-9	alpha-Chlordane		0.12	0.36	U
319-85-7	beta-BHC		0.12	0.36	U
319-86-8	delta-BHC		0.12	0.36	U
60-57-1	Dieldrin	13	0.18	0.73	PY
959-98-8	Endosulfan I	3.2	0.12	0.36	P
33213-65-9	Endosulfan II		0.18	0.73	U
1031-07-8	Endosulfan sulfate	4.9	0.18	0.73	P
72-20-8	Endrin	72	0.18	0.73	
7421-93-4	Endrin aldehyde	8.6	0.18	0.73	
53494-70-5	Endrin ketone		0.18	0.73	UY
58-89-9	gamma-BHC (Lindane)		0.12	0.36	U
5566-34-7	gamma-Chlordane	71	0.12	0.36	P
76-44-8	Heptachlor		0.12	0.36	UY
1024-57-3	Heptachlor epoxide		0.12	0.36	U
72-43-5	Methoxychlor	37	0.12	0.36	Y
57-74-9	Chlordane (tech)		0.62	1.8	U
8001-35-2	Toxaphene		12	36	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	18.08	11.77	65.1	70 - 125	*
Tetrachloro-m-xylene [2C]	18.08	10.86	60.0	70 - 125	*
Decachlorobiphenyl	18.08	9.470	52.4	60 - 125	*
Decachlorobiphenyl [2C]	18.08	7.970	44.1	60 - 125	*

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB04-SO-0406

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-22	File ID:	073F7601.D
Sampled:	09/27/09 13:00	Prepared:	10/03/09 11:10	Analyzed:	10/13/09 17:02
Solids:	57.77	Preparation:	EXT_3546	Dilution:	1

Batch: 9J02014 Sequence: 9J30317 Calibration: 9295002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD		0.29	1.2	U
72-55-9	4,4'-DDE		0.29	1.2	U
50-29-3	4,4'-DDT		0.29	1.2	UY
309-00-2	Aldrin		0.19	0.57	U
319-84-6	alpha-BHC		0.19	0.57	U
5103-71-9	alpha-Chlordane		0.19	0.57	U
319-85-7	beta-BHC		0.19	0.57	U
319-86-8	delta-BHC		0.19	0.57	U
60-57-1	Dieldrin		0.29	1.2	U
959-98-8	Endosulfan I		0.19	0.57	U
33213-65-9	Endosulfan II		0.29	1.2	U
1031-07-8	Endosulfan sulfate		0.29	1.2	U
72-20-8	Endrin		0.29	1.2	UY
7421-93-4	Endrin aldehyde		0.29	1.2	U
53494-70-5	Endrin ketone		0.29	1.2	U
58-89-9	gamma-BHC (Lindane)		0.19	0.57	U
5566-34-7	gamma-Chlordane		0.19	0.57	U
76-44-8	Heptachlor		0.19	0.57	U
1024-57-3	Heptachlor epoxide		0.19	0.57	U
72-43-5	Methoxychlor		0.19	0.57	UY
57-74-9	Chlordane (tech)		0.99	2.9	U
8001-35-2	Toxaphene		19	57	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	28.85	18.98	65.8	70 - 125	*
Tetrachloro-m-xylene [2C]	28.85	19.97	69.2	70 - 125	*
Decachlorobiphenyl	28.85	15.06	52.2	60 - 125	*
Decachlorobiphenyl [2C]	28.85	15.67	54.3	60 - 125	*

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB05-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-46	File ID:	126FAQ01.D
Sampled:	09/28/09 10:00	Prepared:	10/07/09 19:25	Analyzed:	10/25/09 04:03
Solids:	93.64	Preparation:	EXT_3546	Dilution:	1
Batch:	9J06028	Sequence:	9J30333	Calibration:	9303002
Instrument:	GL-ECD4				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	130	0.18	0.72	E
72-55-9	4,4'-DDE	110	0.18	0.72	E
50-29-3	4,4'-DDT	91	0.18	0.72	PEY
309-00-2	Aldrin		0.12	0.35	U
319-84-6	alpha-BHC	12	0.12	0.35	P
5103-71-9	alpha-Chlordane		0.12	0.35	UZ
319-85-7	beta-BHC		0.12	0.35	U
319-86-8	delta-BHC		0.12	0.35	U
60-57-1	Dieldrin	2.8	0.18	0.72	PY
959-98-8	Endosulfan I		0.12	0.35	UZ
33213-65-9	Endosulfan II		0.18	0.72	UY
1031-07-8	Endosulfan sulfate		0.18	0.72	UZ
72-20-8	Endrin		0.18	0.72	U
7421-93-4	Endrin aldehyde		0.18	0.72	UY
53494-70-5	Endrin ketone		0.18	0.72	UY
58-89-9	gamma-BHC (Lindane)		0.12	0.35	U
5566-34-7	gamma-Chlordane	11	0.12	0.35	
76-44-8	Heptachlor		0.12	0.35	UY
1024-57-3	Heptachlor epoxide	2.3	0.12	0.35	P
72-43-5	Methoxychlor	4.0	0.12	0.35	PY, M
57-74-9	Chlordane (tech)		0.61	1.8	U
8001-35-2	Toxaphene		12	35	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	17.80	13.67	76.8	70 - 125	
Tetrachloro-m-xylene [2C]	17.80	12.44	69.9	70 - 125	*
Decachlorobiphenyl	17.80	11.15	62.6	60 - 125	
Decachlorobiphenyl [2C]	17.80	9.633	54.1	60 - 125	*

Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB05-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-46RE1	File ID:	134FB101.D
Sampled:	09/28/09 10:00	Prepared:	10/07/09 19:25	Analyzed:	10/14/09 09:07
Solids:	93.64	Preparation:	EXT_3546	Dilution:	10
Batch:	9J06028	Sequence:	9J30317	Calibration:	9295002
Instrument:	GL-ECD4				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	130	1.8	7.2	D
72-55-9	4,4'-DDE	130	1.8	7.2	D
50-29-3	4,4'-DDT	160	1.8	7.2	DPY

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	17.80	16.37	92.0	70 - 125	
Tetrachloro-m-xylene [2C]	17.80	16.58	93.1	70 - 125	
Decachlorobiphenyl	17.80	14.27	80.2	60 - 125	
Decachlorobiphenyl [2C]	17.80	14.83	83.3	60 - 125	

Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB05-SO-0204

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-47	File ID:	128FAS01.D
Sampled:	09/28/09 10:10	Prepared:	10/07/09 19:25	Analyzed:	10/25/09 04:34
Solids:	90.70	Preparation:	EXT_3546	Dilution:	1

Batch: 9J06028 Sequence: 9J30333 Calibration: 9303002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	30	0.19	0.74	P
72-55-9	4,4'-DDE	22	0.19	0.74	
50-29-3	4,4'-DDT	14	0.19	0.74	PY
309-00-2	Aldrin		0.12	0.36	U
319-84-6	alpha-BHC		0.12	0.36	U
5103-71-9	alpha-Chlordane	0.62	0.12	0.36	Y
319-85-7	beta-BHC		0.12	0.36	U
319-86-8	delta-BHC		0.12	0.36	U
60-57-1	Dieldrin	1.6	0.19	0.74	PY
959-98-8	Endosulfan I		0.12	0.36	UZ
33213-65-9	Endosulfan II	1.1	0.19	0.74	Y
1031-07-8	Endosulfan sulfate	0.65	0.19	0.74	JPM, Y
72-20-8	Endrin	1.5	0.19	0.74	P
7421-93-4	Endrin aldehyde		0.19	0.74	UY
53494-70-5	Endrin ketone		0.19	0.74	UY
58-89-9	gamma-BHC (Lindane)		0.12	0.36	UZ
5566-34-7	gamma-Chlordane	3.9	0.12	0.36	P
76-44-8	Heptachlor		0.12	0.36	UY
1024-57-3	Heptachlor epoxide	0.53	0.12	0.36	P
72-43-5	Methoxychlor	2.8	0.12	0.36	PM, Y
57-74-9	Chlordane (tech)		0.63	1.9	U
8001-35-2	Toxaphene		12	36	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	18.38	15.10	82.2	70 - 125	
Tetrachloro-m-xylene [2C]	18.38	14.26	77.6	70 - 125	
Decachlorobiphenyl	18.38	11.16	60.7	60 - 125	
Decachlorobiphenyl [2C]	18.38	10.07	54.8	60 - 125	*

Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB06-SO-0001

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-23	File ID:	078F7801.D
Sampled:	09/27/09 15:10	Prepared:	10/03/09 11:10	Analyzed:	10/24/09 14:33
Solids:	82.48	Preparation:	EXT_3546	Dilution:	1

Batch: 9J02014 Sequence: 9J30333 Calibration: 9303002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	280	0.21	0.81	E
72-55-9	4,4'-DDE	210	0.21	0.81	E
50-29-3	4,4'-DDT	130	0.21	0.81	PE
309-00-2	Aldrin		0.13	0.40	U
319-84-6	alpha-BHC	0.30	0.13	0.40	JPM
5103-71-9	alpha-Chlordane	5.1	0.13	0.40	
319-85-7	beta-BHC		0.13	0.40	U
319-86-8	delta-BHC	1.4	0.13	0.40	B
60-57-1	Dieldrin	3.5	0.21	0.81	PM, Y
959-98-8	Endosulfan I	2.3	0.13	0.40	P
33213-65-9	Endosulfan II		0.21	0.81	UY
1031-07-8	Endosulfan sulfate		0.21	0.81	U
72-20-8	Endrin	6.7	0.21	0.81	
7421-93-4	Endrin aldehyde		0.21	0.81	U
53494-70-5	Endrin ketone		0.21	0.81	UY
58-89-9	gamma-BHC (Lindane)		0.13	0.40	U
5566-34-7	gamma-Chlordane	3.8	0.13	0.40	PM
76-44-8	Heptachlor		0.13	0.40	UY
1024-57-3	Heptachlor epoxide	3.0	0.13	0.40	
72-43-5	Methoxychlor	7.5	0.13	0.40	PM, Y
57-74-9	Chlordane (tech)		0.69	2.1	U
8001-35-2	Toxaphene		13	40	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	20.21	12.94	64.0	70 - 125	*
Tetrachloro-m-xylene [2C]	20.21	11.68	57.8	70 - 125	*
Decachlorobiphenyl	20.21	12.07	59.7	60 - 125	*
Decachlorobiphenyl [2C]	20.21	9.688	47.9	60 - 125	*

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB06-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-23RE1	File ID:	094F9401.D
Sampled:	09/27/09 15:10	Prepared:	10/03/09 11:10	Analyzed:	10/16/09 18:44
Solids:	82.48	Preparation:	EXT_3546	Dilution:	10
Batch:	9J02014	Sequence: 9K30603	Calibration:	9295002	Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	290	2.1	8.1	D
72-55-9	4,4'-DDE	220	2.1	8.1	D
50-29-3	4,4'-DDT	110	2.1	8.1	DPY

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	20.21	14.91	73.8	70 - 125	
Tetrachloro-m-xylene [2C]	20.21	16.46	81.5	70 - 125	
Decachlorobiphenyl	20.21	23.34	116	60 - 125	
Decachlorobiphenyl [2C]	20.21	12.23	60.5	60 - 125	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB06-SO-0204

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-24	File ID:	080F8001.D
Sampled:	09/27/09 15:20	Prepared:	10/03/09 11:10	Analyzed:	10/24/09 15:04
Solids:	76.55	Preparation:	EXT_3546	Dilution:	1
Batch:	9J02014	Sequence:	9J30333	Calibration:	9303002
Instrument:	GL-ECD4				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	440	0.22	0.88	E
72-55-9	4,4'-DDE	260	0.22	0.88	E
50-29-3	4,4'-DDT	190	0.22	0.88	PE
309-00-2	Aldrin		0.14	0.43	U
319-84-6	alpha-BHC	0.64	0.14	0.43	PM
5103-71-9	alpha-Chlordane	9.9	0.14	0.43	
319-85-7	beta-BHC	0.57	0.14	0.43	PM
319-86-8	delta-BHC	3.0	0.14	0.43	B
60-57-1	Dieldrin	5.6	0.22	0.88	PM, Y
959-98-8	Endosulfan I		0.14	0.43	U
33213-65-9	Endosulfan II		0.22	0.88	U
1031-07-8	Endosulfan sulfate	8.7	0.22	0.88	P
72-20-8	Endrin		0.22	0.88	U
7421-93-4	Endrin aldehyde		0.22	0.88	U
53494-70-5	Endrin ketone		0.22	0.88	UY
58-89-9	gamma-BHC (Lindane)	2.3	0.14	0.43	
5566-34-7	gamma-Chlordane	4.5	0.14	0.43	PM
76-44-8	Heptachlor		0.14	0.43	UY
1024-57-3	Heptachlor epoxide	6.3	0.14	0.43	
72-43-5	Methoxychlor	11	0.14	0.43	PM, Y
57-74-9	Chlordane (tech)		0.74	2.2	U
8001-35-2	Toxaphene		14	43	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	21.77	12.31	56.6	70 - 125	*
Tetrachloro-m-xylene [2C]	21.77	11.45	52.6	70 - 125	*
Decachlorobiphenyl	21.77	9.655	44.3	60 - 125	*
Decachlorobiphenyl [2C]	21.77	8.296	38.1	60 - 125	*

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB06-SO-0204

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-24RE1	File ID:	096F9601.D
Sampled:	09/27/09 15:20	Prepared:	10/03/09 11:10	Analyzed:	10/16/09 19:15
Solids:	76.55	Preparation:	EXT_3546	Dilution:	10

Batch: 9J02014 Sequence: 9K30603 Calibration: 9295002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	480	2.2	8.8	D
72-55-9	4,4'-DDE	300	2.2	8.8	D
50-29-3	4,4'-DDT	240	2.2	8.8	DY

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	21.77	14.32	65.8	70 - 125	*
Tetrachloro-m-xylene [2C]	21.77	15.26	70.1	70 - 125	
Decachlorobiphenyl	21.77	0.000		60 - 125	*
Decachlorobiphenyl [2C]	21.77	11.91	54.7	60 - 125	*

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB07-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-25	File ID:	082F8201.D
Sampled:	09/27/09 10:40	Prepared:	10/03/09 11:10	Analyzed:	10/24/09 15:36
Solids:	91.64	Preparation:	EXT_3546	Dilution:	1
Batch:	9J02014	Sequence: 9J30333	Calibration:	9303002	Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	30	0.19	0.73	
72-55-9	4,4'-DDE	16	0.19	0.73	
50-29-3	4,4'-DDT	9.1	0.19	0.73	P
309-00-2	Aldrin		0.12	0.36	U
319-84-6	alpha-BHC		0.12	0.36	U
5103-71-9	alpha-Chlordane	1.3	0.12	0.36	
319-85-7	beta-BHC	0.56	0.12	0.36	~~B~~P
319-86-8	delta-BHC		0.12	0.36	U
60-57-1	Dieldrin	3.7	0.19	0.73	P
959-98-8	Endosulfan I		0.12	0.36	U
33213-65-9	Endosulfan II		0.19	0.73	U
1031-07-8	Endosulfan sulfate		0.19	0.73	U
72-20-8	Endrin		0.19	0.73	U
7421-93-4	Endrin aldehyde		0.19	0.73	U
53494-70-5	Endrin ketone		0.19	0.73	UY
58-89-9	gamma-BHC (Lindane)	0.44	0.12	0.36	
5566-34-7	gamma-Chlordane	3.4	0.12	0.36	P
76-44-8	Heptachlor		0.12	0.36	UY
1024-57-3	Heptachlor epoxide	0.51	0.12	0.36	PM
72-43-5	Methoxychlor	3.9	0.12	0.36	Y
57-74-9	Chlordane (tech)		0.62	1.9	U
8001-35-2	Toxaphene		12	36	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	18.19	10.71	58.9	70 - 125	*
Tetrachloro-m-xylene [2C]	18.19	9.990	54.9	70 - 125	*
Decachlorobiphenyl	18.19	10.28	56.5	60 - 125	*
Decachlorobiphenyl [2C]	18.19	7.750	42.6	60 - 125	*

* Values outside of QC limits

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ANALYSIS DATA SHEET

NTC21SB07-SO-0204

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-26	File ID:	075F7801.D
Sampled:	09/27/09 10:50	Prepared:	10/03/09 11:10	Analyzed:	10/13/09 17:33
Solids:	85.99	Preparation:	EXT_3546	Dilution:	1
Batch:	9J02014	Sequence:	9J30317	Calibration:	9295002
Instrument:	GL-ECD4				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD		0.20	0.78	U
72-55-9	4,4'-DDE		0.20	0.78	U
50-29-3	4,4'-DDT		0.20	0.78	UY
309-00-2	Aldrin		0.13	0.38	U
319-84-6	alpha-BHC		0.13	0.38	U
5103-71-9	alpha-Chlordane		0.13	0.38	U
319-85-7	beta-BHC		0.13	0.38	U
319-86-8	delta-BHC		0.13	0.38	U
60-57-1	Dieldrin		0.20	0.78	U
959-98-8	Endosulfan I		0.13	0.38	U
33213-65-9	Endosulfan II		0.20	0.78	U
1031-07-8	Endosulfan sulfate		0.20	0.78	U
72-20-8	Endrin		0.20	0.78	UY
7421-93-4	Endrin aldehyde		0.20	0.78	U
53494-70-5	Endrin ketone		0.20	0.78	U
58-89-9	gamma-BHC (Lindane)		0.13	0.38	U
5566-34-7	gamma-Chlordane		0.13	0.38	U
76-44-8	Heptachlor		0.13	0.38	U
1024-57-3	Heptachlor epoxide		0.13	0.38	U
72-43-5	Methoxychlor	2.7	0.13	0.38	PY
57-74-9	Chlordane (tech)		0.66	2.0	U
8001-35-2	Toxaphene		13	38	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	19.38	13.55	69.9	70 - 125	*
Tetrachloro-m-xylene [2C]	19.38	14.09	72.7	70 - 125	
Decachlorobiphenyl	19.38	11.98	61.8	60 - 125	
Decachlorobiphenyl [2C]	19.38	11.95	61.7	60 - 125	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB08-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-48	File ID:	132FAW01.D
Sampled:	09/28/09 11:55	Prepared:	10/07/09 19:25	Analyzed:	10/25/09 05:42
Solids:	92.71	Preparation:	EXT_3546	Dilution:	1
Batch:	9J06028	Sequence: 9J30333	Calibration:	9303002	Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	51	0.18	0.72	
72-55-9	4,4'-DDE	48	0.18	0.72	
50-29-3	4,4'-DDT	72	0.18	0.72	Y
309-00-2	Aldrin		0.12	0.36	U
319-84-6	alpha-BHC	8.9	0.12	0.36	P
5103-71-9	alpha-Chlordane	3.2	0.12	0.36	
319-85-7	beta-BHC		0.12	0.36	U
319-86-8	delta-BHC		0.12	0.36	U
60-57-1	Dieldrin	3.5	0.18	0.72	PY
959-98-8	Endosulfan I		0.12	0.36	UZ
33213-65-9	Endosulfan II		0.18	0.72	UY
1031-07-8	Endosulfan sulfate	1.8	0.18	0.72	Y
72-20-8	Endrin		0.18	0.72	UY
7421-93-4	Endrin aldehyde		0.18	0.72	UY
53494-70-5	Endrin ketone		0.18	0.72	UY
58-89-9	gamma-BHC (Lindane)		0.12	0.36	U
5566-34-7	gamma-Chlordane	7.0	0.12	0.36	P
76-44-8	Heptachlor		0.12	0.36	UY
1024-57-3	Heptachlor epoxide	1.0	0.12	0.36	PM, Y
72-43-5	Methoxychlor	9.4	0.12	0.36	Y
57-74-9	Chlordane (tech)		0.61	1.8	U
8001-35-2	Toxaphene		12	36	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	17.98	12.42	69.1	70 - 125	*
Tetrachloro-m-xylene [2C]	17.98	11.17	62.2	70 - 125	*
Decachlorobiphenyl	17.98	13.69	76.1	60 - 125	
Decachlorobiphenyl [2C]	17.98	9.399	52.3	60 - 125	*

Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB08-SO-0204

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-49	File ID:	134FAY01.D
Sampled:	09/28/09 12:00	Prepared:	10/07/09 19:25	Analyzed:	10/25/09 06:13
Solids:	73.74	Preparation:	EXT_3546	Dilution:	1
Batch:	9J06028	Sequence:	9J30333	Calibration:	9303002
Instrument:	GL-ECD4				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	31	0.23	0.91	P
72-55-9	4,4'-DDE	20	0.23	0.91	
50-29-3	4,4'-DDT	31	0.23	0.91	PY
309-00-2	Aldrin		0.15	0.45	U
319-84-6	alpha-BHC		0.15	0.45	U
5103-71-9	alpha-Chlordane	2.0	0.15	0.45	
319-85-7	beta-BHC		0.15	0.45	U
319-86-8	delta-BHC		0.15	0.45	U
60-57-1	Dieldrin	1.1	0.23	0.91	Y
959-98-8	Endosulfan I		0.15	0.45	UZ
33213-65-9	Endosulfan II	1.2	0.23	0.91	Y
1031-07-8	Endosulfan sulfate	0.73	0.23	0.91	JPM, Y
72-20-8	Endrin	1.3	0.23	0.91	PY
7421-93-4	Endrin aldehyde		0.23	0.91	UY
53494-70-5	Endrin ketone		0.23	0.91	UY
58-89-9	gamma-BHC (Lindane)		0.15	0.45	U
5566-34-7	gamma-Chlordane	4.2	0.15	0.45	P
76-44-8	Heptachlor		0.15	0.45	UY
1024-57-3	Heptachlor epoxide	1.4	0.15	0.45	P
72-43-5	Methoxychlor	3.7	0.15	0.45	PM, Y
57-74-9	Chlordane (tech)		0.77	2.3	U
8001-35-2	Toxaphene		15	45	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	22.60	15.19	67.2	70 - 125	*
Tetrachloro-m-xylene [2C]	22.60	13.69	60.5	70 - 125	*
Decachlorobiphenyl	22.60	11.78	52.1	60 - 125	*
Decachlorobiphenyl [2C]	22.60	8.719	38.6	60 - 125	*

Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB09-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-03	File ID:	050F5001.D
Sampled:	09/26/09 16:20	Prepared:	10/02/09 17:00	Analyzed:	10/10/09 05:42
Solids:	91.14	Preparation:	EXT_3546	Dilution:	1
Batch:	9J02013	Sequence: 9J29207	Calibration:	9292002	Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	360	0.19	0.74	E
72-55-9	4,4'-DDE	65	0.19	0.74	
50-29-3	4,4'-DDT	62	0.19	0.74	Y
309-00-2	Aldrin		0.12	0.36	U
319-84-6	alpha-BHC		0.12	0.36	U
5103-71-9	alpha-Chlordane	7.3	0.12	0.36	Y
319-85-7	beta-BHC		0.12	0.36	UY
319-86-8	delta-BHC		0.12	0.36	U
60-57-1	Dieldrin	2.5	0.19	0.74	PM
959-98-8	Endosulfan I		0.12	0.36	UZ
33213-65-9	Endosulfan II	4.0	0.19	0.74	PY
1031-07-8	Endosulfan sulfate	6.7	0.19	0.74	PY
72-20-8	Endrin	7.3	0.19	0.74	PX
7421-93-4	Endrin aldehyde	6.8	0.19	0.74	PY
53494-70-5	Endrin ketone		0.19	0.74	UY
58-89-9	gamma-BHC (Lindane)		0.12	0.36	U
5566-34-7	gamma-Chlordane	5.7	0.12	0.36	PM
76-44-8	Heptachlor		0.12	0.36	UY
1024-57-3	Heptachlor epoxide		0.12	0.36	UZ
72-43-5	Methoxychlor		0.12	0.36	UY
8001-35-2	Toxaphene		12	36	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	18.29	7.405	40.5	70 - 125	*
Tetrachloro-m-xylene [2C]	18.29	9.336	51.0	70 - 125	*
Decachlorobiphenyl	18.29	7.330	40.1	60 - 125	*
Decachlorobiphenyl [2C]	18.29	5.134	28.1	60 - 125	*

Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB09-SO-0001

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-03RE1	File ID:	136FB001.D
Sampled:	09/26/09 16:20	Prepared:	10/02/09 17:00	Analyzed:	10/25/09 06:44
Solids:	91.14	Preparation:	EXT_3546	Dilution:	20

Batch: 9J02013 Sequence: 9J30333 Calibration: 9303002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	480	3.7	15	D

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	18.29	12.69	69.4	70 - 125	*
Tetrachloro-m-xylene [2C]	18.29	10.30	56.3	70 - 125	*
Decachlorobiphenyl	18.29	10.81	59.1	60 - 125	*
Decachlorobiphenyl [2C]	18.29	7.450	40.7	60 - 125	*

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB09-SO-0204

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-04	File ID:	052F5201.D
Sampled:	09/26/09 16:28	Prepared:	10/02/09 17:00	Analyzed:	10/10/09 06:13
Solids:	79.45	Preparation:	EXT_3546	Dilution:	1
Batch:	9J02013	Sequence: 9J29207	Calibration:	9292002	Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	0.37	0.21	0.84	JP
72-55-9	4,4'-DDE		0.21	0.84	U
50-29-3	4,4'-DDT		0.21	0.84	UY
309-00-2	Aldrin		0.14	0.42	U
319-84-6	alpha-BHC		0.14	0.42	U
5103-71-9	alpha-Chlordane		0.14	0.42	UY
319-85-7	beta-BHC		0.14	0.42	UY
319-86-8	delta-BHC		0.14	0.42	U
60-57-1	Dieldrin		0.21	0.84	U
959-98-8	Endosulfan I		0.14	0.42	U
33213-65-9	Endosulfan II		0.21	0.84	UY
1031-07-8	Endosulfan sulfate		0.21	0.84	UY
72-20-8	Endrin		0.21	0.84	U
7421-93-4	Endrin aldehyde		0.21	0.84	UY
53494-70-5	Endrin ketone		0.21	0.84	UY
58-89-9	gamma-BHC (Lindane)		0.14	0.42	U
5566-34-7	gamma-Chlordane	0.15	0.14	0.42	JPM
76-44-8	Heptachlor		0.14	0.42	UY
1024-57-3	Heptachlor epoxide		0.14	0.42	U
72-43-5	Methoxychlor	0.80	0.14	0.42	PY
8001-35-2	Toxaphene		14	42	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	20.98	11.96	57.0	70 - 125	*
Tetrachloro-m-xylene [2C]	20.98	10.86	51.7	70 - 125	*
Decachlorobiphenyl	20.98	11.24	53.6	60 - 125	*
Decachlorobiphenyl [2C]	20.98	8.634	41.2	60 - 125	*

Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB10-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-05	File ID:	054F5401.D
Sampled:	09/26/09 18:36	Prepared:	10/02/09 17:00	Analyzed:	10/10/09 06:44
Solids:	89.63	Preparation:	EXT_3546	Dilution:	1
Batch:	9J02013	Sequence: 9J29207	Calibration:	9292002	Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	370	0.19	0.75	PE
72-55-9	4,4'-DDE	260	0.19	0.75	PE
50-29-3	4,4'-DDT	420	0.19	0.75	EY
309-00-2	Aldrin		0.12	0.37	U
319-84-6	alpha-BHC		0.12	0.37	U
5103-71-9	alpha-Chlordane	7.5	0.12	0.37	PM, Y
319-85-7	beta-BHC		0.12	0.37	UY
319-86-8	delta-BHC	3.5	0.12	0.37	
60-57-1	Dieldrin	12	0.19	0.75	PM
959-98-8	Endosulfan I	14	0.12	0.37	PY
33213-65-9	Endosulfan II	4.6	0.19	0.75	PY, M
1031-07-8	Endosulfan sulfate	18	0.19	0.75	PY
72-20-8	Endrin	160	0.19	0.75	EX
7421-93-4	Endrin aldehyde	28	0.19	0.75	PY
53494-70-5	Endrin ketone		0.19	0.75	UY
58-89-9	gamma-BHC (Lindane)		0.12	0.37	U
5566-34-7	gamma-Chlordane	120	0.12	0.37	PE
76-44-8	Heptachlor		0.12	0.37	UY
1024-57-3	Heptachlor epoxide	2.7	0.12	0.37	PY, M
72-43-5	Methoxychlor		0.12	0.37	UY
8001-35-2	Toxaphene		12	37	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	18.60	8.536	45.9	70 - 125	*
Tetrachloro-m-xylene [2C]	18.60	11.16	60.0	70 - 125	*
Decachlorobiphenyl	18.60	10.56	56.8	60 - 125	*
Decachlorobiphenyl [2C]	18.60	6.032	32.4	60 - 125	*

Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB10-SO-0001

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-05RE1	File ID:	074F7401.D
Sampled:	09/26/09 18:36	Prepared:	10/02/09 17:00	Analyzed:	10/16/09 13:29
Solids:	89.63	Preparation:	EXT_3546	Dilution:	10

Batch: 9J02013 Sequence: 9K30603 Calibration: 9295002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	520	1.9	7.5	DP
72-55-9	4,4'-DDE	350	1.9	7.5	DP
50-29-3	4,4'-DDT	740	1.9	7.5	DPY
5566-34-7	gamma-Chlordane	190	1.2	3.7	DP

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	18.60	10.72	57.7	70 - 125	*
Tetrachloro-m-xylene [2C]	18.60	9.783	52.6	70 - 125	*
Decachlorobiphenyl	18.60	0.000		60 - 125	*
Decachlorobiphenyl [2C]	18.60	0.000		60 - 125	*

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB10-SO-0406

aboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
lient:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
latrix:	Soil	Laboratory ID:	0910006-06	File ID:	056F5601.D
ampled:	09/26/09 18:40	Prepared:	10/02/09 17:00	Analyzed:	10/10/09 07:15
olids:	82.84	Preparation:	EXT_3546	Dilution:	1
atch:	9J02013	Sequence:	9J29207	Calibration:	9292002
Instrument:	GL-ECD4				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	1.7	0.21	0.81	
72-55-9	4,4'-DDE	0.69	0.21	0.81	J
50-29-3	4,4'-DDT	1.9	0.21	0.81	PY
309-00-2	Aldrin		0.13	0.40	U
319-84-6	alpha-BHC	0.71	0.13	0.40	
5103-71-9	alpha-Chlordane	0.73	0.13	0.40	Y
319-85-7	beta-BHC	1.1	0.13	0.40	Y
319-86-8	delta-BHC	0.52	0.13	0.40	PM
50-57-1	Dieldrin		0.21	0.81	U
959-98-8	Endosulfan I	0.96	0.13	0.40	P
33213-65-9	Endosulfan II		0.21	0.81	UY
1031-07-8	Endosulfan sulfate		0.21	0.81	UY
72-20-8	Endrin		0.21	0.81	U
7421-93-4	Endrin aldehyde	4.9	0.21	0.81	PY
53494-70-5	Endrin ketone		0.21	0.81	UY
58-89-9	gamma-BHC (Lindane)	0.42	0.13	0.40	P
5566-34-7	gamma-Chlordane	1.7	0.13	0.40	
76-44-8	Heptachlor		0.13	0.40	UY
1024-57-3	Heptachlor epoxide		0.13	0.40	UZ
72-43-5	Methoxychlor		0.13	0.40	UY
8001-35-2	Toxaphene		13	40	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	20.12	13.40	66.6	70 - 125	*
Tetrachloro-m-xylene [2C]	20.12	12.71	63.2	70 - 125	*
Decachlorobiphenyl	20.12	11.05	54.9	60 - 125	*
Decachlorobiphenyl [2C]	20.12	9.264	46.0	60 - 125	*

Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB11-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-07	File ID:	058F5801.D
Sampled:	09/26/09 18:10	Prepared:	10/02/09 17:00	Analyzed:	10/10/09 07:46
Solids:	92.03	Preparation:	EXT_3546	Dilution:	1
Batch:	9J02013	Sequence: 9J29207	Calibration:	9292002	Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	170	0.18	0.73	PE
72-55-9	4,4'-DDE	53	0.18	0.73	
50-29-3	4,4'-DDT	34	0.18	0.73	PY
309-00-2	Aldrin		0.12	0.36	U
319-84-6	alpha-BHC		0.12	0.36	U
5103-71-9	alpha-Chlordane	4.3	0.12	0.36	Y
319-85-7	beta-BHC		0.12	0.36	UY
319-86-8	delta-BHC		0.12	0.36	U
60-57-1	Dieldrin	6.8	0.18	0.73	PM
959-98-8	Endosulfan I	4.1	0.12	0.36	PM
33213-65-9	Endosulfan II		0.18	0.73	UY
1031-07-8	Endosulfan sulfate	13	0.18	0.73	PY
72-20-8	Endrin		0.18	0.73	U
7421-93-4	Endrin aldehyde		0.18	0.73	UY
53494-70-5	Endrin ketone		0.18	0.73	UY
58-89-9	gamma-BHC (Lindane)	4.7	0.12	0.36	P
5566-34-7	gamma-Chlordane	16	0.12	0.36	PY
76-44-8	Heptachlor		0.12	0.36	UY
1024-57-3	Heptachlor epoxide		0.12	0.36	UZ
72-43-5	Methoxychlor		0.12	0.36	UY
8001-35-2	Toxaphene		12	36	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	18.11	8.108	44.8	70 - 125	*
Tetrachloro-m-xylene [2C]	18.11	11.21	61.9	70 - 125	*
Decachlorobiphenyl	18.11	2.465	13.6	60 - 125	*
Decachlorobiphenyl [2C]	18.11	5.986	33.1	60 - 125	*

Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB11-SO-0001

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-07RE1	File ID:	088F8801.D
Sampled:	09/26/09 18:10	Prepared:	10/02/09 17:00	Analyzed:	10/16/09 17:11
Solids:	92.03	Preparation:	EXT_3546	Dilution:	10

Batch: 9J02013 Sequence: 9K30603 Calibration: 9295002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	230	1.8	7.3	DP

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	18.11	10.70	59.1	70 - 125	*
Tetrachloro-m-xylene [2C]	18.11	15.25	84.2	70 - 125	
Decachlorobiphenyl	18.11	0.000		60 - 125	*
Decachlorobiphenyl [2C]	18.11	0.000		60 - 125	*

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB11-SO-0204

aboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
lient:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
latrix:	Soil	Laboratory ID:	0910006-08	File ID:	060F6001.D
ampled:	09/26/09 18:12	Prepared:	10/02/09 17:00	Analyzed:	10/10/09 08:17
olids:	84.12	Preparation:	EXT_3546	Dilution:	1
atch:	9J02013	Sequence: 9J29207	Calibration:	9292002	Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	110	0.20	0.80	E
72-55-9	4,4'-DDE	35	0.20	0.80	
50-29-3	4,4'-DDT	18	0.20	0.80	Y
309-00-2	Aldrin		0.13	0.39	UZ
319-84-6	alpha-BHC		0.13	0.39	U
5103-71-9	alpha-Chlordane	17	0.13	0.39	PY
319-85-7	beta-BHC		0.13	0.39	UY
319-86-8	delta-BHC		0.13	0.39	U
60-57-1	Dieldrin	1.7	0.20	0.80	Y
959-98-8	Endosulfan I		0.13	0.39	U
33213-65-9	Endosulfan II		0.20	0.80	UY
1031-07-8	Endosulfan sulfate	3.1	0.20	0.80	PY
72-20-8	Endrin	3.2	0.20	0.80	X
7421-93-4	Endrin aldehyde		0.20	0.80	UY
53494-70-5	Endrin ketone		0.20	0.80	UY
58-89-9	gamma-BHC (Lindane)		0.13	0.39	U
5566-34-7	gamma-Chlordane	19	0.13	0.39	~~B~~Y
76-44-8	Heptachlor		0.13	0.39	UY
1024-57-3	Heptachlor epoxide		0.13	0.39	UZ
72-43-5	Methoxychlor		0.13	0.39	UY
8001-35-2	Toxaphene		13	39	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	19.81	9.777	49.3	70 - 125	*
Tetrachloro-m-xylene [2C]	19.81	9.167	46.3	70 - 125	*
Decachlorobiphenyl	19.81	8.824	44.5	60 - 125	*
Decachlorobiphenyl [2C]	19.81	6.415	32.4	60 - 125	*

Values outside of QC limits

J.H. 11.2.09

ANALYSIS DATA SHEET

NTC21SB11-SO-0204

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-08RE1	File ID:	068F6801.D
Sampled:	09/26/09 18:12	Prepared:	10/02/09 17:00	Analyzed:	10/24/09 11:58
Solids:	84.12	Preparation:	EXT_3546	Dilution:	20
Batch:	9J02013	Sequence:	9J30333	Calibration:	9303002
Instrument:	GL-ECD4				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	190	4.0	16	D

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	19.81	16.83	84.9	70 - 125	
Tetrachloro-m-xylene [2C]	19.81	14.07	71.0	70 - 125	
Decachlorobiphenyl	19.81	18.88	95.3	60 - 125	
Decachlorobiphenyl [2C]	19.81	14.67	74.1	60 - 125	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB12-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-09	File ID:	064F6401.D
Sampled:	09/26/09 14:00	Prepared:	10/02/09 17:00	Analyzed:	10/10/09 09:24
Solids:	84.89	Preparation:	EXT_3546	Dilution:	1

Batch: 9J02013 Sequence: 9J29207 Calibration: 9292002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	3.9	0.20	0.79	P
72-55-9	4,4'-DDE	7.2	0.20	0.79	Y
50-29-3	4,4'-DDT	7.6	0.20	0.79	Y
309-00-2	Aldrin		0.13	0.39	UY
319-84-6	alpha-BHC		0.13	0.39	U
5103-71-9	alpha-Chlordane		0.13	0.39	UY
319-85-7	beta-BHC		0.13	0.39	UY
319-86-8	delta-BHC	0.56	0.13	0.39	PM
60-57-1	Dieldrin		0.20	0.79	UY
959-98-8	Endosulfan I	0.55	0.13	0.39	PM, Y
33213-65-9	Endosulfan II		0.20	0.79	UY
1031-07-8	Endosulfan sulfate		0.20	0.79	UY
72-20-8	Endrin		0.20	0.79	UY
7421-93-4	Endrin aldehyde	1.6	0.20	0.79	PY
53494-70-5	Endrin ketone		0.20	0.79	UY
58-89-9	gamma-BHC (Lindane)		0.13	0.39	UY
5566-34-7	gamma-Chlordane	1.3	0.13	0.39	~~B~~Y
76-44-8	Heptachlor		0.13	0.39	UY
1024-57-3	Heptachlor epoxide	0.69	0.13	0.39	PY
72-43-5	Methoxychlor	6.6	0.13	0.39	PY
8001-35-2	Toxaphene		13	39	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	19.63	10.89	55.5	70 - 125	*
Tetrachloro-m-xylene [2C]	19.63	10.40	53.0	70 - 125	*
Decachlorobiphenyl	19.63	8.966	45.7	60 - 125	*
Decachlorobiphenyl [2C]	19.63	6.893	35.1	60 - 125	*

Values outside of QC limits

J.H. 11.2.09

ANALYSIS DATA SHEET

NTC21SB12-SO-0204

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-10	File ID:	066F6601.D
Sampled:	09/26/09 14:10	Prepared:	10/02/09 17:00	Analyzed:	10/10/09 09:55
Solids:	77.00	Preparation:	EXT_3546	Dilution:	1
Batch:	9J02013	Sequence: 9J29207	Calibration:	9292002	Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD		0.22	0.87	U
72-55-9	4,4'-DDE	1.7	0.22	0.87	Y
50-29-3	4,4'-DDT	1.2	0.22	0.87	Y
309-00-2	Aldrin		0.14	0.43	UY
319-84-6	alpha-BHC		0.14	0.43	U
5103-71-9	alpha-Chlordane		0.14	0.43	UY
319-85-7	beta-BHC		0.14	0.43	UY
319-86-8	delta-BHC	0.34	0.14	0.43	JPM
60-57-1	Dieldrin		0.22	0.87	UY
959-98-8	Endosulfan I	1.3	0.14	0.43	Y
33213-65-9	Endosulfan II		0.22	0.87	UY
1031-07-8	Endosulfan sulfate		0.22	0.87	UY
72-20-8	Endrin		0.22	0.87	UY
7421-93-4	Endrin aldehyde	1.1	0.22	0.87	Y
53494-70-5	Endrin ketone		0.22	0.87	UY
58-89-9	gamma-BHC (Lindane)		0.14	0.43	UY
5566-34-7	gamma-Chlordane	1.1	0.14	0.43	~~B~~Y
76-44-8	Heptachlor		0.14	0.43	UY
1024-57-3	Heptachlor epoxide		0.14	0.43	UY
72-43-5	Methoxychlor	8.9	0.14	0.43	PY
8001-35-2	Toxaphene		14	43	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	21.65	13.91	64.3	70 - 125	*
Tetrachloro-m-xylene [2C]	21.65	12.95	59.8	70 - 125	*
Decachlorobiphenyl	21.65	14.84	68.5	60 - 125	
Decachlorobiphenyl [2C]	21.65	10.32	47.7	60 - 125	*

Values outside of QC limits

J.H. 11.2.09

ANALYSIS DATA SHEET

NTC21SB13-SO-0001

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-27	File ID:	084F8401.D
Sampled:	09/27/09 09:00	Prepared:	10/03/09 11:10	Analyzed:	10/24/09 16:07
Solids:	77.65	Preparation:	EXT_3546	Dilution:	1

Batch: 9J02014 Sequence: 9J30333 Calibration: 9303002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	1.2	0.22	0.86	PM
72-55-9	4,4'-DDE	1.4	0.22	0.86	P
50-29-3	4,4'-DDT	9.9	0.22	0.86	P
309-00-2	Aldrin		0.14	0.42	U
319-84-6	alpha-BHC		0.14	0.42	U
5103-71-9	alpha-Chlordane		0.14	0.42	U
319-85-7	beta-BHC		0.14	0.42	U
319-86-8	delta-BHC		0.14	0.42	U
60-57-1	Dieldrin	3.1	0.22	0.86	PY
959-98-8	Endosulfan I		0.14	0.42	U
33213-65-9	Endosulfan II	1.5	0.22	0.86	PY
1031-07-8	Endosulfan sulfate	2.7	0.22	0.86	P
72-20-8	Endrin		0.22	0.86	U
7421-93-4	Endrin aldehyde		0.22	0.86	U
53494-70-5	Endrin ketone		0.22	0.86	UY
58-89-9	gamma-BHC (Lindane)	0.96	0.14	0.42	
5566-34-7	gamma-Chlordane	2.2	0.14	0.42	P
76-44-8	Heptachlor		0.14	0.42	UY
1024-57-3	Heptachlor epoxide	1.1	0.14	0.42	PM
72-43-5	Methoxychlor	17	0.14	0.42	PY
57-74-9	Chlordane (tech)		0.73	2.2	U
8001-35-2	Toxaphene		14	42	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	21.46	13.83	64.4	70 - 125	*
Tetrachloro-m-xylene [2C]	21.46	11.72	54.6	70 - 125	*
Decachlorobiphenyl	21.46	13.90	64.8	60 - 125	
Decachlorobiphenyl [2C]	21.46	11.34	52.8	60 - 125	*

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB13-SO-0204

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-28	File ID:	077F8001.D
Sampled:	09/27/09 09:10	Prepared:	10/03/09 11:10	Analyzed:	10/13/09 18:04
Solids:	84.34	Preparation:	EXT_3546	Dilution:	1
Batch:	9J02014	Sequence:	9J30317	Calibration:	9295002
Instrument:	GL-ECD4				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD		0.20	0.79	U
72-55-9	4,4'-DDE		0.20	0.79	U
50-29-3	4,4'-DDT		0.20	0.79	UY
309-00-2	Aldrin		0.13	0.39	U
319-84-6	alpha-BHC		0.13	0.39	U
5103-71-9	alpha-Chlordane		0.13	0.39	U
319-85-7	beta-BHC		0.13	0.39	U
319-86-8	delta-BHC		0.13	0.39	U
60-57-1	Dieldrin		0.20	0.79	U
959-98-8	Endosulfan I		0.13	0.39	U
33213-65-9	Endosulfan II		0.20	0.79	U
1031-07-8	Endosulfan sulfate		0.20	0.79	U
72-20-8	Endrin		0.20	0.79	UY
7421-93-4	Endrin aldehyde		0.20	0.79	U
53494-70-5	Endrin ketone		0.20	0.79	U
58-89-9	gamma-BHC (Lindane)		0.13	0.39	U
5566-34-7	gamma-Chlordane		0.13	0.39	U
76-44-8	Heptachlor		0.13	0.39	U
1024-57-3	Heptachlor epoxide		0.13	0.39	U
72-43-5	Methoxychlor		0.13	0.39	UY
57-74-9	Chlordane (tech)		0.68	2.0	U
8001-35-2	Toxaphene		13	39	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	19.76	13.02	65.9	70 - 125	*
Tetrachloro-m-xylene [2C]	19.76	13.29	67.3	70 - 125	*
Decachlorobiphenyl	19.76	11.80	59.7	60 - 125	*
Decachlorobiphenyl [2C]	19.76	12.19	61.7	60 - 125	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB14-SO-0001

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-29	File ID:	086F8601.D
Sampled:	09/27/09 09:30	Prepared:	10/03/09 11:10	Analyzed:	10/24/09 16:38
Solids:	81.84	Preparation:	EXT_3546	Dilution:	1

Batch: 9J02014 Sequence: 9J30333 Calibration: 9303002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	1.6	0.21	0.82	
72-55-9	4,4'-DDE	1.9	0.21	0.82	
50-29-3	4,4'-DDT	7.1	0.21	0.82	
309-00-2	Aldrin		0.13	0.40	U
319-84-6	alpha-BHC		0.13	0.40	U
5103-71-9	alpha-Chlordane		0.13	0.40	U
319-85-7	beta-BHC		0.13	0.40	U
319-86-8	delta-BHC		0.13	0.40	U
60-57-1	Dieldrin		0.21	0.82	U
959-98-8	Endosulfan I		0.13	0.40	U
33213-65-9	Endosulfan II		0.21	0.82	U
1031-07-8	Endosulfan sulfate		0.21	0.82	U
72-20-8	Endrin		0.21	0.82	U
7421-93-4	Endrin aldehyde		0.21	0.82	U
53494-70-5	Endrin ketone		0.21	0.82	UY
58-89-9	gamma-BHC (Lindane)	0.22	0.13	0.40	J
5566-34-7	gamma-Chlordane		0.13	0.40	U
76-44-8	Heptachlor		0.13	0.40	UY
1024-57-3	Heptachlor epoxide		0.13	0.40	U
72-43-5	Methoxychlor		0.13	0.40	UY
57-74-9	Chlordane (tech)		0.70	2.1	U
8001-35-2	Toxaphene		13	40	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	20.36	12.63	62.0	70 - 125	*
Tetrachloro-m-xylene [2C]	20.36	11.93	58.6	70 - 125	*
Decachlorobiphenyl	20.36	9.933	48.8	60 - 125	*
Decachlorobiphenyl [2C]	20.36	9.049	44.4	60 - 125	*

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB14-SO-0204

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-30	File ID:	079F8201.D
Sampled:	09/27/09 09:40	Prepared:	10/03/09 11:10	Analyzed:	10/13/09 18:35
Solids:	75.25	Preparation:	EXT_3546	Dilution:	1
Batch:	9J02014	Sequence: 9J30317	Calibration:	9295002	Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD		0.23	0.89	U
72-55-9	4,4'-DDE		0.23	0.89	U
50-29-3	4,4'-DDT		0.23	0.89	UY
309-00-2	Aldrin		0.15	0.44	U
319-84-6	alpha-BHC		0.15	0.44	U
5103-71-9	alpha-Chlordane		0.15	0.44	U
319-85-7	beta-BHC		0.15	0.44	U
319-86-8	delta-BHC		0.15	0.44	U
60-57-1	Dieldrin		0.23	0.89	U
959-98-8	Endosulfan I		0.15	0.44	U
33213-65-9	Endosulfan II		0.23	0.89	U
1031-07-8	Endosulfan sulfate		0.23	0.89	U
72-20-8	Endrin		0.23	0.89	UY
7421-93-4	Endrin aldehyde		0.23	0.89	U
53494-70-5	Endrin ketone		0.23	0.89	U
58-89-9	gamma-BHC (Lindane)		0.15	0.44	U
5566-34-7	gamma-Chlordane		0.15	0.44	U
76-44-8	Heptachlor		0.15	0.44	U
1024-57-3	Heptachlor epoxide		0.15	0.44	U
72-43-5	Methoxychlor		0.15	0.44	UY
57-74-9	Chlordane (tech)		0.76	2.3	U
8001-35-2	Toxaphene		15	44	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	22.15	12.72	57.4	70 - 125	*
Tetrachloro-m-xylene [2C]	22.15	13.08	59.1	70 - 125	*
Decachlorobiphenyl	22.15	10.37	46.8	60 - 125	*
Decachlorobiphenyl [2C]	22.15	10.76	48.6	60 - 125	*

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB15-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-31	File ID:	096F9601.D
Sampled:	09/27/09 10:00	Prepared:	10/03/09 11:10	Analyzed:	10/24/09 20:11
Solids:	83.27	Preparation:	EXT_3546	Dilution:	1

Batch: 9J02014 Sequence: 9J30333 Calibration: 9303002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	2.9	0.20	0.80	P
72-55-9	4,4'-DDE	3.5	0.20	0.80	
50-29-3	4,4'-DDT	8.5	0.20	0.80	
309-00-2	Aldrin		0.13	0.40	U
319-84-6	alpha-BHC		0.13	0.40	U
5103-71-9	alpha-Chlordane		0.13	0.40	U
319-85-7	beta-BHC		0.13	0.40	U
319-86-8	delta-BHC		0.13	0.40	U
60-57-1	Dieldrin		0.20	0.80	U
959-98-8	Endosulfan I		0.13	0.40	U
33213-65-9	Endosulfan II		0.20	0.80	U
1031-07-8	Endosulfan sulfate		0.20	0.80	U
72-20-8	Endrin		0.20	0.80	U
7421-93-4	Endrin aldehyde		0.20	0.80	U
53494-70-5	Endrin ketone		0.20	0.80	UY
58-89-9	gamma-BHC (Lindane)		0.13	0.40	U
5566-34-7	gamma-Chlordane	0.67	0.13	0.40	P
76-44-8	Heptachlor		0.13	0.40	UY
1024-57-3	Heptachlor epoxide	0.15	0.13	0.40	JPM
72-43-5	Methoxychlor		0.13	0.40	UY
57-74-9	Chlordane (tech)		0.68	2.0	U
8001-35-2	Toxaphene		13	40	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	20.02	11.87	59.3	70 - 125	*
Tetrachloro-m-xylene [2C]	20.02	10.95	54.7	70 - 125	*
Decachlorobiphenyl	20.02	9.071	45.3	60 - 125	*
Decachlorobiphenyl [2C]	20.02	7.543	37.7	60 - 125	*

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB15-SO-0204

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-32	File ID:	081F8401.D
Sampled:	09/27/09 10:10	Prepared:	10/03/09 11:10	Analyzed:	10/13/09 19:06
Solids:	77.18	Preparation:	EXT_3546	Dilution:	1
Batch:	9J02014	Sequence:	9J30317	Calibration:	9295002
Instrument:	GL-ECD4				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD		0.22	0.87	U
72-55-9	4,4'-DDE		0.22	0.87	U
50-29-3	4,4'-DDT		0.22	0.87	UY
309-00-2	Aldrin		0.14	0.43	U
319-84-6	alpha-BHC		0.14	0.43	U
5103-71-9	alpha-Chlordane		0.14	0.43	U
319-85-7	beta-BHC		0.14	0.43	U
319-86-8	delta-BHC		0.14	0.43	U
60-57-1	Dieldrin		0.22	0.87	U
959-98-8	Endosulfan I		0.14	0.43	U
33213-65-9	Endosulfan II		0.22	0.87	U
1031-07-8	Endosulfan sulfate		0.22	0.87	U
72-20-8	Endrin		0.22	0.87	UY
7421-93-4	Endrin aldehyde		0.22	0.87	U
53494-70-5	Endrin ketone		0.22	0.87	U
58-89-9	gamma-BHC (Lindane)		0.14	0.43	U
5566-34-7	gamma-Chlordane		0.14	0.43	U
76-44-8	Heptachlor		0.14	0.43	U
1024-57-3	Heptachlor epoxide		0.14	0.43	U
72-43-5	Methoxychlor		0.14	0.43	UY
57-74-9	Chlordane (tech)		0.74	2.2	U
8001-35-2	Toxaphene		14	43	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	21.59	10.52	48.7	70 - 125	*
Tetrachloro-m-xylene [2C]	21.59	10.82	50.1	70 - 125	*
Decachlorobiphenyl	21.59	8.953	41.5	60 - 125	*
Decachlorobiphenyl [2C]	21.59	9.141	42.3	60 - 125	*

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB16-SO-0001

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-33	File ID:	083F8601.D
Sampled:	09/27/09 17:00	Prepared:	10/03/09 11:10	Analyzed:	10/13/09 19:37
Solids:	89.07	Preparation:	EXT_3546	Dilution:	1

Batch: 9J02014 Sequence: 9J30317 Calibration: 9295002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	0.75	0.19	0.75	JP
72-55-9	4,4'-DDE	0.61	0.19	0.75	J
50-29-3	4,4'-DDT	1.7	0.19	0.75	Y
309-00-2	Aldrin		0.12	0.37	U
319-84-6	alpha-BHC	0.44	0.12	0.37	
5103-71-9	alpha-Chlordane		0.12	0.37	U
319-85-7	beta-BHC		0.12	0.37	U
319-86-8	delta-BHC		0.12	0.37	U
60-57-1	Dieldrin		0.19	0.75	U
959-98-8	Endosulfan I		0.12	0.37	U
33213-65-9	Endosulfan II		0.19	0.75	U
1031-07-8	Endosulfan sulfate		0.19	0.75	U
72-20-8	Endrin		0.19	0.75	UY
7421-93-4	Endrin aldehyde		0.19	0.75	U
53494-70-5	Endrin ketone		0.19	0.75	U
58-89-9	gamma-BHC (Lindane)		0.12	0.37	U
5566-34-7	gamma-Chlordane		0.12	0.37	U
76-44-8	Heptachlor		0.12	0.37	U
1024-57-3	Heptachlor epoxide		0.12	0.37	U
72-43-5	Methoxychlor	0.35	0.12	0.37	JPM, Y
57-74-9	Chlordane (tech)		0.64	1.9	U
8001-35-2	Toxaphene		12	37	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	18.71	10.63	56.8	70 - 125	*
Tetrachloro-m-xylene [2C]	18.71	10.59	56.6	70 - 125	*
Decachlorobiphenyl	18.71	8.416	45.0	60 - 125	*
Decachlorobiphenyl [2C]	18.71	7.215	38.6	60 - 125	*

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB16-SO-0204

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-34	File ID:	085F8801.D
Sampled:	09/27/09 16:50	Prepared:	10/03/09 11:10	Analyzed:	10/13/09 20:09
Solids:	77.43	Preparation:	EXT_3546	Dilution:	1
Batch:	9J02014	Sequence:	9J30317	Calibration:	9295002
Instrument:	GL-ECD4				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD		0.22	0.87	U
72-55-9	4,4'-DDE		0.22	0.87	U
50-29-3	4,4'-DDT		0.22	0.87	UY
309-00-2	Aldrin		0.14	0.43	U
319-84-6	alpha-BHC		0.14	0.43	U
5103-71-9	alpha-Chlordane		0.14	0.43	U
319-85-7	beta-BHC		0.14	0.43	U
319-86-8	delta-BHC		0.14	0.43	U
60-57-1	Dieldrin		0.22	0.87	U
959-98-8	Endosulfan I		0.14	0.43	U
33213-65-9	Endosulfan II		0.22	0.87	U
1031-07-8	Endosulfan sulfate		0.22	0.87	U
72-20-8	Endrin		0.22	0.87	UY
7421-93-4	Endrin aldehyde		0.22	0.87	U
53494-70-5	Endrin ketone		0.22	0.87	U
58-89-9	gamma-BHC (Lindane)		0.14	0.43	U
5566-34-7	gamma-Chlordane		0.14	0.43	U
76-44-8	Heptachlor		0.14	0.43	U
1024-57-3	Heptachlor epoxide		0.14	0.43	UM
72-43-5	Methoxychlor		0.14	0.43	UM, Y
57-74-9	Chlordane (tech)		0.74	2.2	U
8001-35-2	Toxaphene		14	43	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	21.53	13.09	60.8	70 - 125	*
Tetrachloro-m-xylene [2C]	21.53	13.61	63.2	70 - 125	*
Decachlorobiphenyl	21.53	9.709	45.1	60 - 125	*
Decachlorobiphenyl [2C]	21.53	9.871	45.9	60 - 125	*

* Values outside of QC limits

J.H.
11.2.09

ANALYSIS DATA SHEET

NTC21SB17-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-11	File ID:	068F6801.D
Sampled:	09/26/09 13:26	Prepared:	10/02/09 17:00	Analyzed:	10/10/09 10:26
Solids:	82.76	Preparation:	EXT_3546	Dilution:	1
Batch:	9J02013	Sequence: 9J29207	Calibration:	9292002	Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	9.2	0.21	0.81	P
72-55-9	4,4'-DDE	1.9	0.21	0.81	Y
50-29-3	4,4'-DDT	2.6	0.21	0.81	PY
309-00-2	Aldrin		0.13	0.40	UY
319-84-6	alpha-BHC		0.13	0.40	U
5103-71-9	alpha-Chlordane		0.13	0.40	UY
319-85-7	beta-BHC		0.13	0.40	UY
319-86-8	delta-BHC	0.65	0.13	0.40	PM
60-57-1	Dieldrin		0.21	0.81	UY
959-98-8	Endosulfan I	2.8	0.13	0.40	Y
33213-65-9	Endosulfan II		0.21	0.81	UY
1031-07-8	Endosulfan sulfate		0.21	0.81	UY
72-20-8	Endrin		0.21	0.81	UY
7421-93-4	Endrin aldehyde	2.0	0.21	0.81	Y
53494-70-5	Endrin ketone		0.21	0.81	UY
58-89-9	gamma-BHC (Lindane)		0.13	0.40	UY
5566-34-7	gamma-Chlordane	1.8	0.13	0.40	Y
76-44-8	Heptachlor		0.13	0.40	UY
1024-57-3	Heptachlor epoxide		0.13	0.40	UY
72-43-5	Methoxychlor	15	0.13	0.40	PY
8001-35-2	Toxaphene		13	40	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	20.14	11.29	56.1	70 - 125	*
Tetrachloro-m-xylene [2C]	20.14	11.53	57.3	70 - 125	*
Decachlorobiphenyl	20.14	14.75	73.3	60 - 125	
Decachlorobiphenyl [2C]	20.14	8.594	42.7	60 - 125	*

Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB17-SO-0507

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-12	File ID:	070F7001.D
Sampled:	09/26/09 13:32	Prepared:	10/02/09 17:00	Analyzed:	10/10/09 10:57
Solids:	89.58	Preparation:	EXT_3546	Dilution:	1
Batch:	9J02013	Sequence:	9J29207	Calibration:	9292002
Instrument:	GL-ECD4				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD		0.19	0.75	U
72-55-9	4,4'-DDE		0.19	0.75	UY
50-29-3	4,4'-DDT		0.19	0.75	UY
309-00-2	Aldrin		0.12	0.37	UY
319-84-6	alpha-BHC		0.12	0.37	U
5103-71-9	alpha-Chlordane		0.12	0.37	UY
319-85-7	beta-BHC		0.12	0.37	UY
319-86-8	delta-BHC		0.12	0.37	U
60-57-1	Dieldrin		0.19	0.75	UY
959-98-8	Endosulfan I		0.12	0.37	UY
33213-65-9	Endosulfan II		0.19	0.75	UY
1031-07-8	Endosulfan sulfate		0.19	0.75	UY
72-20-8	Endrin		0.19	0.75	UY
7421-93-4	Endrin aldehyde		0.19	0.75	UY
53494-70-5	Endrin ketone		0.19	0.75	UY
58-89-9	gamma-BHC (Lindane)		0.12	0.37	UY
5566-34-7	gamma-Chlordane		0.12	0.37	UY
76-44-8	Heptachlor		0.12	0.37	UY
1024-57-3	Heptachlor epoxide		0.12	0.37	UY
72-43-5	Methoxychlor		0.12	0.37	UY
8001-35-2	Toxaphene		12	37	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	18.60	11.33	60.9	70 - 125	*
Tetrachloro-m-xylene [2C]	18.60	10.45	56.2	70 - 125	*
Decachlorobiphenyl	18.60	10.44	56.1	60 - 125	*
Decachlorobiphenyl [2C]	18.60	8.068	43.4	60 - 125	*

Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB18-SO-0001

.aboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
'lient:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
'latrix:	Soil	Laboratory ID:	0910006-13	File ID:	072F7201.D
ampled:	09/26/09 12:47	Prepared:	10/02/09 17:00	Analyzed:	10/10/09 11:28
olids:	85.82	Preparation:	EXT_3546	Dilution:	1
'atch:	9J02013	Sequence: 9J29207	Calibration:	9292002	Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	1.1	0.20	0.78	P
72-55-9	4,4'-DDE	0.45	0.20	0.78	JY
50-29-3	4,4'-DDT	0.77	0.20	0.78	JPY
309-00-2	Aldrin		0.13	0.38	UY
319-84-6	alpha-BHC		0.13	0.38	U
5103-71-9	alpha-Chlordane		0.13	0.38	UY
319-85-7	beta-BHC		0.13	0.38	UY
319-86-8	delta-BHC	2.4	0.13	0.38	P
60-57-1	Dieldrin		0.20	0.78	UY
959-98-8	Endosulfan I		0.13	0.38	UY
33213-65-9	Endosulfan II		0.20	0.78	UY
1031-07-8	Endosulfan sulfate		0.20	0.78	UY
72-20-8	Endrin		0.20	0.78	UY
7421-93-4	Endrin aldehyde		0.20	0.78	UY
53494-70-5	Endrin ketone		0.20	0.78	UY
58-89-9	gamma-BHC (Lindane)		0.13	0.38	UY
5566-34-7	gamma-Chlordane	0.64	0.13	0.38	~~J~~PY
76-44-8	Heptachlor		0.13	0.38	UY
1024-57-3	Heptachlor epoxide		0.13	0.38	UY
72-43-5	Methoxychlor	2.0	0.13	0.38	PY
8001-35-2	Toxaphene		13	38	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	19.42	11.56	59.5	70 - 125	*
Tetrachloro-m-xylene [2C]	19.42	11.03	56.8	70 - 125	*
Decachlorobiphenyl	19.42	10.41	53.6	60 - 125	*
Decachlorobiphenyl [2C]	19.42	9.078	46.7	60 - 125	*

Values outside of QC limits

J.H. 11.2.09

ANALYSIS DATA SHEET

NTC21SB18-SO-0507

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-14	File ID:	074F7401.D
Sampled:	09/26/09 12:59	Prepared:	10/02/09 17:00	Analyzed:	10/10/09 11:59
Solids:	89.26	Preparation:	EXT_3546	Dilution:	1
Batch:	9J02013	Sequence: 9J29207	Calibration:	9292002	Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD		0.19	0.75	U
72-55-9	4,4'-DDE		0.19	0.75	UY
50-29-3	4,4'-DDT		0.19	0.75	UY
309-00-2	Aldrin		0.12	0.37	UY
319-84-6	alpha-BHC		0.12	0.37	U
5103-71-9	alpha-Chlordane		0.12	0.37	UY
319-85-7	beta-BHC		0.12	0.37	UY
319-86-8	delta-BHC		0.12	0.37	U
60-57-1	Dieldrin		0.19	0.75	UY
959-98-8	Endosulfan I		0.12	0.37	UY
33213-65-9	Endosulfan II		0.19	0.75	UY
1031-07-8	Endosulfan sulfate		0.19	0.75	UY
72-20-8	Endrin		0.19	0.75	UY
7421-93-4	Endrin aldehyde		0.19	0.75	UY
53494-70-5	Endrin ketone		0.19	0.75	UY
58-89-9	gamma-BHC (Lindane)		0.12	0.37	UY
5566-34-7	gamma-Chlordane		0.12	0.37	UY
76-44-8	Heptachlor		0.12	0.37	UY
1024-57-3	Heptachlor epoxide		0.12	0.37	UY
72-43-5	Methoxychlor		0.12	0.37	UY
8001-35-2	Toxaphene		12	37	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	18.67	10.80	57.8	70 - 125	*
Tetrachloro-m-xylene [2C]	18.67	10.06	53.9	70 - 125	*
Decachlorobiphenyl	18.67	10.21	54.7	60 - 125	*
Decachlorobiphenyl [2C]	18.67	8.198	43.9	60 - 125	*

Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB19-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-35	File ID:	098F9801.D
Sampled:	09/27/09 17:40	Prepared:	10/03/09 11:10	Analyzed:	10/24/09 20:42
Solids:	92.08	Preparation:	EXT_3546	Dilution:	1
Batch:	9J02014	Sequence: 9J30333	Calibration:	9303002	Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	25	0.18	0.73	
72-55-9	4,4'-DDE	12	0.18	0.73	
50-29-3	4,4'-DDT	15	0.18	0.73	P
309-00-2	Aldrin		0.12	0.36	U
319-84-6	alpha-BHC		0.12	0.36	U
5103-71-9	alpha-Chlordane	0.95	0.12	0.36	
319-85-7	beta-BHC		0.12	0.36	U
319-86-8	delta-BHC		0.12	0.36	U
60-57-1	Dieldrin	0.68	0.18	0.73	J
959-98-8	Endosulfan I		0.12	0.36	U
33213-65-9	Endosulfan II	0.58	0.18	0.73	JP
1031-07-8	Endosulfan sulfate	0.96	0.18	0.73	P
72-20-8	Endrin		0.18	0.73	U
7421-93-4	Endrin aldehyde		0.18	0.73	U
53494-70-5	Endrin ketone		0.18	0.73	UY
58-89-9	gamma-BHC (Lindane)		0.12	0.36	U
5566-34-7	gamma-Chlordane	4.1	0.12	0.36	P
76-44-8	Heptachlor		0.12	0.36	UY
1024-57-3	Heptachlor epoxide	0.74	0.12	0.36	
72-43-5	Methoxychlor	0.62	0.12	0.36	PY
57-74-9	Chlordane (tech)		0.62	1.8	U
8001-35-2	Toxaphene		12	36	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	18.10	8.912	49.2	70 - 125	*
Tetrachloro-m-xylene [2C]	18.10	8.191	45.3	70 - 125	*
Decachlorobiphenyl	18.10	6.540	36.1	60 - 125	*
Decachlorobiphenyl [2C]	18.10	5.573	30.8	60 - 125	*

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB20-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-15	File ID:	076F7601.D
Sampled:	09/26/09 16:57	Prepared:	10/02/09 17:00	Analyzed:	10/10/09 12:30
Solids:	94.12	Preparation:	EXT_3546	Dilution:	1
Batch:	9J02013	Sequence: 9J29207	Calibration:	9292002	Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	0.86	0.18	0.71	PM
72-55-9	4,4'-DDE	5.5	0.18	0.71	Y
50-29-3	4,4'-DDT	1.5	0.18	0.71	Y
309-00-2	Aldrin		0.12	0.35	UY
319-84-6	alpha-BHC		0.12	0.35	U
5103-71-9	alpha-Chlordane	1.3	0.12	0.35	PY
319-85-7	beta-BHC		0.12	0.35	UY
319-86-8	delta-BHC		0.12	0.35	U
60-57-1	Dieldrin	0.33	0.18	0.71	JPY, M
959-98-8	Endosulfan I		0.12	0.35	UY
33213-65-9	Endosulfan II		0.18	0.71	UY
1031-07-8	Endosulfan sulfate		0.18	0.71	UY
72-20-8	Endrin	1.0	0.18	0.71	PY
7421-93-4	Endrin aldehyde		0.18	0.71	UY
53494-70-5	Endrin ketone	3.2	0.18	0.71	PY
58-89-9	gamma-BHC (Lindane)	0.70	0.12	0.35	Y
5566-34-7	gamma-Chlordane	2.1	0.12	0.35	Y
76-44-8	Heptachlor		0.12	0.35	UY
1024-57-3	Heptachlor epoxide	0.95	0.12	0.35	PY, M
72-43-5	Methoxychlor		0.12	0.35	UY
8001-35-2	Toxaphene		12	35	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	17.71	9.911	56.0	70 - 125	*
Tetrachloro-m-xylene [2C]	17.71	9.203	52.0	70 - 125	*
Decachlorobiphenyl	17.71	9.722	54.9	60 - 125	*
Decachlorobiphenyl [2C]	17.71	6.506	36.7	60 - 125	*

Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB19-SO-0204

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-36	File ID:	087F9001.D
Sampled:	09/27/09 17:50	Prepared:	10/03/09 11:10	Analyzed:	10/13/09 20:40
Solids:	83.11	Preparation:	EXT_3546	Dilution:	1
Batch:	9J02014	Sequence: 9J30317	Calibration:	9295002	Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD		0.20	0.81	U
72-55-9	4,4'-DDE		0.20	0.81	U
50-29-3	4,4'-DDT		0.20	0.81	UY
309-00-2	Aldrin		0.13	0.40	U
319-84-6	alpha-BHC	0.31	0.13	0.40	JP
5103-71-9	alpha-Chlordane		0.13	0.40	U
319-85-7	beta-BHC		0.13	0.40	U
319-86-8	delta-BHC	0.25	0.13	0.40	~~JB~~P
60-57-1	Dieldrin		0.20	0.81	U
959-98-8	Endosulfan I	0.29	0.13	0.40	J
33213-65-9	Endosulfan II		0.20	0.81	U
1031-07-8	Endosulfan sulfate		0.20	0.81	U
72-20-8	Endrin		0.20	0.81	UY
7421-93-4	Endrin aldehyde		0.20	0.81	U
53494-70-5	Endrin ketone		0.20	0.81	U
58-89-9	gamma-BHC (Lindane)		0.13	0.40	U
5566-34-7	gamma-Chlordane	0.47	0.13	0.40	P
76-44-8	Heptachlor		0.13	0.40	U
1024-57-3	Heptachlor epoxide	0.26	0.13	0.40	JPM
72-43-5	Methoxychlor	0.84	0.13	0.40	PYM
57-74-9	Chlordane (tech)		0.69	2.0	U
8001-35-2	Toxaphene		13	40	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	20.05	12.22	60.9	70 - 125	*
Tetrachloro-m-xylene [2C]	20.05	12.83	64.0	70 - 125	*
Decachlorobiphenyl	20.05	10.01	49.9	60 - 125	*
Decachlorobiphenyl [2C]	20.05	9.404	46.9	60 - 125	*

* Values outside of QC limits

J.H.
11-2-09

ANALYSIS DATA SHEET

NTC21SB20-SO-0406

aboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
lient:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
latrix:	Soil	Laboratory ID:	0910006-16	File ID:	078F7801.D
ampled:	09/26/09 17:02	Prepared:	10/02/09 17:00	Analyzed:	10/10/09 13:01
olids:	86.65	Preparation:	EXT_3546	Dilution:	1
atch:	9J02013	Sequence:	9J29207	Calibration:	9292002
Instrument:	GL-ECD4				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD		0.20	0.77	U
72-55-9	4,4'-DDE		0.20	0.77	UY
50-29-3	4,4'-DDT		0.20	0.77	UY
309-00-2	Aldrin		0.13	0.38	UY
319-84-6	alpha-BHC		0.13	0.38	U
5103-71-9	alpha-Chlordane		0.13	0.38	UY
319-85-7	beta-BHC		0.13	0.38	UY
319-86-8	delta-BHC		0.13	0.38	U
60-57-1	Dieldrin		0.20	0.77	UY
959-98-8	Endosulfan I		0.13	0.38	UY
33213-65-9	Endosulfan II		0.20	0.77	UY
1031-07-8	Endosulfan sulfate		0.20	0.77	UY
72-20-8	Endrin		0.20	0.77	UY
7421-93-4	Endrin aldehyde		0.20	0.77	UY
53494-70-5	Endrin ketone		0.20	0.77	UY
58-89-9	gamma-BHC (Lindane)		0.13	0.38	UY
5566-34-7	gamma-Chlordane		0.13	0.38	UY
76-44-8	Heptachlor		0.13	0.38	UY
1024-57-3	Heptachlor epoxide		0.13	0.38	UY
72-43-5	Methoxychlor		0.13	0.38	UY
8001-35-2	Toxaphene		13	38	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	19.23	11.46	59.6	70 - 125	*
Tetrachloro-m-xylene [2C]	19.23	11.23	58.4	70 - 125	*
Decachlorobiphenyl	19.23	9.515	49.5	60 - 125	*
Decachlorobiphenyl [2C]	19.23	6.611	34.4	60 - 125	*

Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB21-SO-0001

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-17RE1	File ID:	092F9201.D
Sampled:	09/26/09 15:10	Prepared:	10/02/09 17:00	Analyzed:	10/16/09 18:13
Solids:	93.11	Preparation:	EXT_3546	Dilution:	10

Batch: 9J02013 Sequence: 9K30603 Calibration: 9295002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	150	1.8	7.2	DP
72-55-9	4,4'-DDE	190	1.8	7.2	D
50-29-3	4,4'-DDT	390	1.8	7.2	DY

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	17.90	10.73	60.0	70 - 125	*
Tetrachloro-m-xylene [2C]	17.90	16.33	91.2	70 - 125	
Decachlorobiphenyl	17.90	86.24	482	60 - 125	*
Decachlorobiphenyl [2C]	17.90	18.97	106	60 - 125	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB21-SO-0001

.aboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
:lient:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
1atrix:	Soil	Laboratory ID:	0910006-17	File ID:	080F8001.D
ampled:	09/26/09 15:10	Prepared:	10/02/09 17:00	Analyzed:	10/10/09 13:32
olids:	93.11	Preparation:	EXT_3546	Dilution:	1
3atch:	9J02013	Sequence:	9J29207	Calibration:	9292002
Instrument:	GL-ECD4				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	160	0.18	0.72	PE
72-55-9	4,4'-DDE	150	0.18	0.72	EY
50-29-3	4,4'-DDT	170	0.18	0.72	EY
309-00-2	Aldrin		0.12	0.35	UY
319-84-6	alpha-BHC		0.12	0.35	U
5103-71-9	alpha-Chlordane		0.12	0.35	UY
319-85-7	beta-BHC		0.12	0.35	UY
319-86-8	delta-BHC		0.12	0.35	U
60-57-1	Dieldrin	15	0.18	0.72	PY, M
959-98-8	Endosulfan I		0.12	0.35	UY
33213-65-9	Endosulfan II		0.18	0.72	UY
1031-07-8	Endosulfan sulfate	25	0.18	0.72	Y
72-20-8	Endrin		0.18	0.72	UY
7421-93-4	Endrin aldehyde		0.18	0.72	UY
53494-70-5	Endrin ketone	44 ~~110~~	0.18	0.72	~~PEY~~ M
58-89-9	gamma-BHC (Lindane)	20	0.12	0.35	Y
5566-34-7	gamma-Chlordane		0.12	0.35	UY
76-44-8	Heptachlor		0.12	0.35	UY
1024-57-3	Heptachlor epoxide		0.12	0.35	UY
72-43-5	Methoxychlor		0.12	0.35	UY
8001-35-2	Toxaphene		12	35	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	17.90	8.296	46.3	70 - 125	*
Tetrachloro-m-xylene [2C]	17.90	10.34	57.7	70 - 125	*
Decachlorobiphenyl	17.90	31.73	177	60 - 125	*
Decachlorobiphenyl [2C]	17.90	8.563	47.8	60 - 125	*

Values outside of QC limits

J.H. 11.2.09

ANALYSIS DATA SHEET

NTC21SB21-SO-0608

aboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
lient:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
latrix:	Soil	Laboratory ID:	0910006-18	File ID:	082F8201.D
ampled:	09/26/09 15:20	Prepared:	10/02/09 17:00	Analyzed:	10/10/09 14:03
olids:	89.66	Preparation:	EXT_3546	Dilution:	1
atch:	9J02013	Sequence:	9J29207	Calibration:	9292002
Instrument:	GL-ECD4				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD		0.19	0.75	U
72-55-9	4,4'-DDE		0.19	0.75	UY
50-29-3	4,4'-DDT		0.19	0.75	UY
309-00-2	Aldrin		0.12	0.37	UY
319-84-6	alpha-BHC		0.12	0.37	U
5103-71-9	alpha-Chlordane		0.12	0.37	UY
319-85-7	beta-BHC		0.12	0.37	UY
319-86-8	delta-BHC		0.12	0.37	U
60-57-1	Dieldrin		0.19	0.75	UY
959-98-8	Endosulfan I		0.12	0.37	UY
33213-65-9	Endosulfan II		0.19	0.75	UY
1031-07-8	Endosulfan sulfate		0.19	0.75	UY
72-20-8	Endrin		0.19	0.75	UY
7421-93-4	Endrin aldehyde		0.19	0.75	UY
53494-70-5	Endrin ketone		0.19	0.75	UY
58-89-9	gamma-BHC (Lindane)		0.12	0.37	UY
5566-34-7	gamma-Chlordane		0.12	0.37	UY
76-44-8	Heptachlor		0.12	0.37	UY
1024-57-3	Heptachlor epoxide		0.12	0.37	UY
72-43-5	Methoxychlor		0.12	0.37	UY
8001-35-2	Toxaphene		12	37	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	18.59	9.986	53.7	70 - 125	*
Tetrachloro-m-xylene [2C]	18.59	9.540	51.3	70 - 125	*
Decachlorobiphenyl	18.59	7.619	41.0	60 - 125	*
Decachlorobiphenyl [2C]	18.59	5.890	31.7	60 - 125	*

Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB22-SO-0001

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-37	File ID:	102FA201.D
Sampled:	09/27/09 12:00	Prepared:	10/03/09 11:10	Analyzed:	10/24/09 21:50
Solids:	80.96	Preparation:	EXT_3546	Dilution:	1

Batch: 9J02014 Sequence: 9J30333 Calibration: 9303002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	240	0.21	0.83	E
72-55-9	4,4'-DDE	82	0.21	0.83	
50-29-3	4,4'-DDT	71	0.21	0.83	PY
309-00-2	Aldrin		0.14	0.41	UZ
319-84-6	alpha-BHC	0.46	0.14	0.41	PM
5103-71-9	alpha-Chlordane	27	0.14	0.41	
319-85-7	beta-BHC		0.14	0.41	U
319-86-8	delta-BHC	0.42	0.14	0.41	PM
60-57-1	Dieldrin	1.8	0.21	0.83	PM, Y
959-98-8	Endosulfan I		0.14	0.41	UZ
33213-65-9	Endosulfan II		0.21	0.83	UY
1031-07-8	Endosulfan sulfate	3.4	0.21	0.83	P
72-20-8	Endrin	2.2	0.21	0.83	
7421-93-4	Endrin aldehyde		0.21	0.83	UY
53494-70-5	Endrin ketone		0.21	0.83	UY
58-89-9	gamma-BHC (Lindane)	0.53	0.14	0.41	PY
5566-34-7	gamma-Chlordane	44	0.14	0.41	
76-44-8	Heptachlor		0.14	0.41	UY
1024-57-3	Heptachlor epoxide	1.5	0.14	0.41	PM
72-43-5	Methoxychlor	0.71	0.14	0.41	PM, Y
57-74-9	Chlordane (tech)		0.70	2.1	U
8001-35-2	Toxaphene		14	41	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	20.59	10.81	52.5	70 - 125	*
Tetrachloro-m-xylene [2C]	20.59	9.777	47.5	70 - 125	*
Decachlorobiphenyl	20.59	10.18	49.4	60 - 125	*
Decachlorobiphenyl [2C]	20.59	7.996	38.8	60 - 125	*

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB22-SO-0001

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-37RE1	File ID:	112FAF01.D
Sampled:	09/27/09 12:00	Prepared:	10/03/09 11:10	Analyzed:	10/14/09 03:20
Solids:	80.96	Preparation:	EXT_3546	Dilution:	10
Batch:	9J02014	Sequence:	9J30317	Calibration:	9295002
Instrument:	GL-ECD4				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	230	2.1	8.3	D

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	20.59	14.16	68.8	70 - 125	*
Tetrachloro-m-xylene [2C]	20.59	14.27	69.3	70 - 125	*
Decachlorobiphenyl	20.59	12.69	61.7	60 - 125	
Decachlorobiphenyl [2C]	20.59	11.76	57.1	60 - 125	*

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB22-SO-0204

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-38	File ID:	104FA401.D
Sampled:	09/27/09 12:10	Prepared:	10/03/09 11:10	Analyzed:	10/24/09 22:21
Solids:	80.39	Preparation:	EXT_3546	Dilution:	1

Batch: 9J02014 Sequence: 9J30333 Calibration: 9303002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	240	0.21	0.83	E
72-55-9	4,4'-DDE	87	0.21	0.83	E
50-29-3	4,4'-DDT	62	0.21	0.83	PY
309-00-2	Aldrin		0.14	0.41	UZ
319-84-6	alpha-BHC	0.27	0.14	0.41	JPM
5103-71-9	alpha-Chlordane	26	0.14	0.41	
319-85-7	beta-BHC		0.14	0.41	U
319-86-8	delta-BHC		0.14	0.41	U
60-57-1	Dieldrin	3.2	0.21	0.83	PM, Y
959-98-8	Endosulfan I		0.14	0.41	UZ
33213-65-9	Endosulfan II	0.65	0.21	0.83	JPM, Y
1031-07-8	Endosulfan sulfate	5.8	0.21	0.83	P
72-20-8	Endrin		0.21	0.83	U
7421-93-4	Endrin aldehyde		0.21	0.83	UY
53494-70-5	Endrin ketone		0.21	0.83	UY
58-89-9	gamma-BHC (Lindane)		0.14	0.41	U
5566-34-7	gamma-Chlordane	46	0.14	0.41	
76-44-8	Heptachlor		0.14	0.41	UY
1024-57-3	Heptachlor epoxide	6.9	0.14	0.41	P
72-43-5	Methoxychlor		0.14	0.41	UY
57-74-9	Chlordane (tech)		0.71	2.1	U
8001-35-2	Toxaphene		14	41	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	20.73	11.14	53.7	70 - 125	*
Tetrachloro-m-xylene [2C]	20.73	10.31	49.7	70 - 125	*
Decachlorobiphenyl	20.73	9.903	47.8	60 - 125	*
Decachlorobiphenyl [2C]	20.73	7.768	37.5	60 - 125	*

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB22-SO-0204

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-38RE1	File ID:	150FBH01.D
Sampled:	09/27/09 12:10	Prepared:	10/03/09 11:10	Analyzed:	10/14/09 13:21
Solids:	80.39	Preparation:	EXT_3546	Dilution:	100
Batch:	9J02014	Sequence:	9J30317	Calibration:	9295002
Instrument:	GL-ECD4				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD	330	21	83	DX
72-55-9	4,4'-DDE	150	21	83	D

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	20.73	20.07	96.8	70 - 125	D
Tetrachloro-m-xylene [2C]	20.73	22.14	107	70 - 125	D
Decachlorobiphenyl	20.73	18.10	87.3	60 - 125	D
Decachlorobiphenyl [2C]	20.73	16.94	81.7	60 - 125	D

* Values outside of QC limits

ANALYSIS DATA SHEET

RB-092909-01

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Water	Laboratory ID:	0910006-51	File ID:	055F5501.D
Sampled:	09/29/09 11:26	Prepared:	10/01/09 14:25	Analyzed:	10/06/09 11:37
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 9J01022 Sequence: 9J28711 Calibration: 9287007 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
12674-11-2	Aroclor-1016		0.12	0.49	U
11104-28-2	Aroclor-1221		0.12	0.49	U
11141-16-5	Aroclor-1232		0.12	0.49	U
53469-21-9	Aroclor-1242		0.12	0.49	U
12672-29-6	Aroclor-1248		0.12	0.49	U
11097-69-1	Aroclor-1254		0.12	0.49	U
11096-82-5	Aroclor-1260		0.12	0.49	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	0.4902	0.3422	69.8	25 - 140	
Tetrachloro-m-xylene [2C]	0.4902	0.3585	73.1	25 - 140	
Decachlorobiphenyl	0.4902	0.1624	33.1	40 - 135	*
Decachlorobiphenyl [2C]	0.4902	0.1652	33.7	40 - 135	*

Values outside of QC limits

ANALYSIS DATA SHEET

RB-092909-02

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Water	Laboratory ID:	0910006-52	File ID:	056F5601.D
Sampled:	09/29/09 13:02	Prepared:	10/01/09 14:25	Analyzed:	10/06/09 11:56
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 9J01022 Sequence: 9J28711 Calibration: 9287007 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
12674-11-2	Aroclor-1016		0.11	0.47	U
11104-28-2	Aroclor-1221		0.11	0.47	U
11141-16-5	Aroclor-1232		0.11	0.47	U
53469-21-9	Aroclor-1242		0.11	0.47	U
12672-29-6	Aroclor-1248		0.11	0.47	U
11097-69-1	Aroclor-1254		0.11	0.47	U
11096-82-5	Aroclor-1260		0.11	0.47	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	0.4717	0.3782	80.2	25 - 140	
Tetrachloro-m-xylene [2C]	0.4717	0.3989	84.6	25 - 140	
Decachlorobiphenyl	0.4717	0.2329	49.4	40 - 135	
Decachlorobiphenyl [2C]	0.4717	0.2376	50.4	40 - 135	

Values outside of QC limits

ANALYSIS DATA SHEET

SB-092909-01

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Water	Laboratory ID:	0910006-53	File ID:	057F5701.D
Sampled:	09/29/09 10:31	Prepared:	10/01/09 14:25	Analyzed:	10/06/09 12:14
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 9J01022 Sequence: 9J28711 Calibration: 9287007 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
12674-11-2	Aroclor-1016		0.12	0.48	U
11104-28-2	Aroclor-1221		0.12	0.48	U
11141-16-5	Aroclor-1232		0.12	0.48	U
53469-21-9	Aroclor-1242		0.12	0.48	U
12672-29-6	Aroclor-1248		0.12	0.48	U
11097-69-1	Aroclor-1254		0.12	0.48	U
11096-82-5	Aroclor-1260		0.12	0.48	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	0.4808	0.3633	75.6	25 - 140	
Tetrachloro-m-xylene [2C]	0.4808	0.3816	79.4	25 - 140	
Decachlorobiphenyl	0.4808	0.2364	49.2	40 - 135	
Decachlorobiphenyl [2C]	0.4808	0.2527	52.6	40 - 135	

Values outside of QC limits

ANALYSIS DATA SHEET

FD-092609-01

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-01	File ID:	046F4601.D
Sampled:	09/26/09 00:00	Prepared:	10/02/09 17:00	Analyzed:	10/10/09 04:40
Solids:	92.62	Preparation:	EXT_3546	Dilution:	1
Batch:	9J02013	Sequence: 9J29207	Calibration:	9292002	Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		4.5	18	U
11104-28-2	Aroclor-1221		4.5	18	U
11141-16-5	Aroclor-1232		4.5	18	U
53469-21-9	Aroclor-1242		4.5	18	U
12672-29-6	Aroclor-1248		4.5	18	U
11097-69-1	Aroclor-1254		4.5	18	U
11096-82-5	Aroclor-1260		4.5	18	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	18.00	11.52	64.0	70 - 125	*
Tetrachloro-m-xylene [2C]	18.00	10.87	60.4	70 - 125	*
Decachlorobiphenyl	18.00	11.96	66.5	60 - 125	
Decachlorobiphenyl [2C]	18.00	9.935	55.2	60 - 125	*

Values outside of QC limits

ANALYSIS DATA SHEET

FD-092609-02

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-02	File ID:	048F4801.D
Sampled:	09/26/09 00:00	Prepared:	10/02/09 17:00	Analyzed:	10/10/09 05:11
Solids:	92.80	Preparation:	EXT_3546	Dilution:	1
Batch:	9J02013	Sequence: 9J29207	Calibration:	9292002	Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		4.5	18	U
11104-28-2	Aroclor-1221		4.5	18	U
11141-16-5	Aroclor-1232		4.5	18	U
53469-21-9	Aroclor-1242		4.5	18	U
12672-29-6	Aroclor-1248		4.5	18	U
11097-69-1	Aroclor-1254		4.5	18	U
11096-82-5	Aroclor-1260	190 ~~230~~	4.5	18	Y

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	17.96	7.931	44.2	70 - 125	*
Tetrachloro-m-xylene [2C]	17.96	9.311	51.8	70 - 125	*
Decachlorobiphenyl	17.96	6.764	37.7	60 - 125	*
Decachlorobiphenyl [2C]	17.96	4.646	25.9	60 - 125	*

Values outside of QC limits

ANALYSIS DATA SHEET

FD-092709-01

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Solid	Laboratory ID:	0910006-20	File ID:	071F7401.D
Sampled:	09/27/09 00:00	Prepared:	10/03/09 11:10	Analyzed:	10/13/09 16:31
Solids:	75.55	Preparation:	EXT_3546	Dilution:	1

Batch: 9J02014 Sequence: 9J30317 Calibration: 9295002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		5.6	23	U
11104-28-2	Aroclor-1221		5.6	23	U
11141-16-5	Aroclor-1232		5.6	23	U
53469-21-9	Aroclor-1242		5.6	23	U
12672-29-6	Aroclor-1248		5.6	23	U
11097-69-1	Aroclor-1254		5.6	23	U
11096-82-5	Aroclor-1260		5.6	23	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	22.06	14.89	67.5	70 - 125	*
Tetrachloro-m-xylene [2C]	22.06	15.42	69.9	70 - 125	*
Decachlorobiphenyl	22.06	12.82	58.1	60 - 125	*
Decachlorobiphenyl [2C]	22.06	12.28	55.7	60 - 125	*

* Values outside of QC limits

ANALYSIS DATA SHEET

FD-092809-01

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-40	File ID:	106FA601.D
Sampled:	09/28/09 00:00	Prepared:	10/03/09 11:10	Analyzed:	10/24/09 22:52
Solids:	79.98	Preparation:	EXT_3546	Dilution:	1
Batch:	9J02014	Sequence:	9J30333	Calibration:	9303002
Instrument:	GL-ECD4				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		5.3	21	U
11104-28-2	Aroclor-1221		5.3	21	U
11141-16-5	Aroclor-1232		5.3	21	U
53469-21-9	Aroclor-1242		5.3	21	U
12672-29-6	Aroclor-1248		5.3	21	U
11097-69-1	Aroclor-1254		5.3	21	U
11096-82-5	Aroclor-1260	81	5.3	21	PX

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	20.84	12.28	58.9	70 - 125	*
Tetrachloro-m-xylene [2C]	20.84	11.62	55.7	70 - 125	*
Decachlorobiphenyl	20.84	9.032	43.3	60 - 125	*
Decachlorobiphenyl [2C]	20.84	8.421	40.4	60 - 125	*

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB01-SO-0102

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-41	File ID:	108FA801.D
Sampled:	09/28/09 12:00	Prepared:	10/07/09 19:25	Analyzed:	10/24/09 23:23
Solids:	84.24	Preparation:	EXT_3546	Dilution:	1

Batch: 9J06028 Sequence: 9J30333 Calibration: 9303002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		5.0	20	U
11104-28-2	Aroclor-1221		5.0	20	U
11141-16-5	Aroclor-1232		5.0	20	U
53469-21-9	Aroclor-1242		5.0	20	U
12672-29-6	Aroclor-1248		5.0	20	U
11097-69-1	Aroclor-1254		5.0	20	U
11096-82-5	Aroclor-1260		5.0	20	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	19.78	12.77	64.6	70 - 125	*
Tetrachloro-m-xylene [2C]	19.78	12.26	62.0	70 - 125	*
Decachlorobiphenyl	19.78	13.76	69.6	60 - 125	
Decachlorobiphenyl [2C]	19.78	9.325	47.1	60 - 125	*

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB02-SO-0001

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-42	File ID:	110FAA01.D
Sampled:	09/28/09 10:20	Prepared:	10/07/09 19:25	Analyzed:	10/24/09 23:55
Solids:	89.66	Preparation:	EXT_3546	Dilution:	1

Batch: 9J06028 Sequence: 9J30333 Calibration: 9303002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		4.7	19	U
11104-28-2	Aroclor-1221		4.7	19	U
11141-16-5	Aroclor-1232		4.7	19	U
53469-21-9	Aroclor-1242		4.7	19	U
12672-29-6	Aroclor-1248		4.7	19	U
11097-69-1	Aroclor-1254		4.7	19	U
11096-82-5	Aroclor-1260	190	4.7	19	PX

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	18.59	12.86	69.2	70 - 125	*
Tetrachloro-m-xylene [2C]	18.59	12.21	65.7	70 - 125	*
Decachlorobiphenyl	18.59	10.00	53.8	60 - 125	*
Decachlorobiphenyl [2C]	18.59	9.245	49.7	60 - 125	*

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB02-SO-0204

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-43	File ID:	112FAC01.D
Sampled:	09/28/09 10:30	Prepared:	10/07/09 19:25	Analyzed:	10/25/09 00:26
Solids:	88.74	Preparation:	EXT_3546	Dilution:	1

Batch: 9J06028 Sequence: 9J30333 Calibration: 9303002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		4.7	19	U
11104-28-2	Aroclor-1221		4.7	19	U
11141-16-5	Aroclor-1232		4.7	19	U
53469-21-9	Aroclor-1242		4.7	19	U
12672-29-6	Aroclor-1248		4.7	19	U
11097-69-1	Aroclor-1254		4.7	19	U
11096-82-5	Aroclor-1260	69	4.7	19	PX

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	18.78	12.02	64.0	70 - 125	*
Tetrachloro-m-xylene [2C]	18.78	11.54	61.4	70 - 125	*
Decachlorobiphenyl	18.78	8.963	47.7	60 - 125	*
Decachlorobiphenyl [2C]	18.78	8.029	42.7	60 - 125	*

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB03-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-44	File ID:	122FAM01.D
Sampled:	09/28/09 12:20	Prepared:	10/07/09 19:25	Analyzed:	10/25/09 03:01
Solids:	94.89	Preparation:	EXT_3546	Dilution:	1
Batch:	9J06028	Sequence:	9J30333	Calibration:	9303002
Instrument:	GL-ECD4				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		4.4	18	U
11104-28-2	Aroclor-1221		4.4	18	U
11141-16-5	Aroclor-1232		4.4	18	U
53469-21-9	Aroclor-1242		4.4	18	U
12672-29-6	Aroclor-1248		4.4	18	U
11097-69-1	Aroclor-1254		4.4	18	U
11096-82-5	Aroclor-1260	130	4.4	18	PX

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	17.56	12.81	72.9	70 - 125	
Tetrachloro-m-xylene [2C]	17.56	11.51	65.5	70 - 125	*
Decachlorobiphenyl	17.56	12.20	69.4	60 - 125	
Decachlorobiphenyl [2C]	17.56	9.490	54.0	60 - 125	*

* Values outside of QC limits

J.H.
11.2.09

ANALYSIS DATA SHEET

NTC21SB03-SO-0204

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-45	File ID:	124FAO01.D
Sampled:	09/28/09 12:30	Prepared:	10/07/09 19:25	Analyzed:	10/25/09 03:32
Solids:	92.18	Preparation:	EXT_3546	Dilution:	1
Batch:	9J06028	Sequence: 9J30333	Calibration:	9303002	Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		4.6	18	U
11104-28-2	Aroclor-1221		4.6	18	U
11141-16-5	Aroclor-1232		4.6	18	U
53469-21-9	Aroclor-1242		4.6	18	U
12672-29-6	Aroclor-1248		4.6	18	U
11097-69-1	Aroclor-1254		4.6	18	U
11096-82-5	Aroclor-1260	29 ~~46~~	4.6	18	PX

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	18.08	9.933	54.9	70 - 125	*
Tetrachloro-m-xylene [2C]	18.08	9.200	50.9	70 - 125	*
Decachlorobiphenyl	18.08	11.34	62.7	60 - 125	
Decachlorobiphenyl [2C]	18.08	7.789	43.1	60 - 125	*

Values outside of QC limits

J.H.
11.2.09

ANALYSIS DATA SHEET

NTC21SB04-SO-0001

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-21	File ID:	076F7601.D
Sampled:	09/27/09 12:50	Prepared:	10/03/09 11:10	Analyzed:	10/24/09 14:02
Solids:	92.16	Preparation:	EXT_3546	Dilution:	1

Batch: 9J02014 Sequence: 9J30333 Calibration: 9303002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		4.6	18	U
11104-28-2	Aroclor-1221		4.6	18	U
11141-16-5	Aroclor-1232		4.6	18	U
53469-21-9	Aroclor-1242		4.6	18	U
12672-29-6	Aroclor-1248		4.6	18	U
11097-69-1	Aroclor-1254		4.6	18	U
11096-82-5	Aroclor-1260	310 ~~520~~	4.6	18	X

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	18.08	11.77	65.1	70 - 125	*
Tetrachloro-m-xylene [2C]	18.08	10.86	60.0	70 - 125	*
Decachlorobiphenyl	18.08	9.470	52.4	60 - 125	*
Decachlorobiphenyl [2C]	18.08	7.970	44.1	60 - 125	*

* Values outside of QC limits

J.H. 11.2.09

ANALYSIS DATA SHEET

NTC21SB04-SO-0406

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-22	File ID:	073F7601.D
Sampled:	09/27/09 13:00	Prepared:	10/03/09 11:10	Analyzed:	10/13/09 17:02
Solids:	57.77	Preparation:	EXT_3546	Dilution:	1

Batch: 9J02014 Sequence: 9J30317 Calibration: 9295002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		7.3	29	U
11104-28-2	Aroclor-1221		7.3	29	U
11141-16-5	Aroclor-1232		7.3	29	U
53469-21-9	Aroclor-1242		7.3	29	U
12672-29-6	Aroclor-1248		7.3	29	U
11097-69-1	Aroclor-1254		7.3	29	U
11096-82-5	Aroclor-1260		7.3	29	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	28.85	18.98	65.8	70 - 125	*
Tetrachloro-m-xylene [2C]	28.85	19.97	69.2	70 - 125	*
Decachlorobiphenyl	28.85	15.06	52.2	60 - 125	*
Decachlorobiphenyl [2C]	28.85	15.67	54.3	60 - 125	*

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB05-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-46	File ID:	126FAQ01.D
Sampled:	09/28/09 10:00	Prepared:	10/07/09 19:25	Analyzed:	10/25/09 04:03
Solids:	93.64	Preparation:	EXT_3546	Dilution:	1
Batch:	9J06028	Sequence: 9J30333	Calibration:	9303002	Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		4.5	18	U
11104-28-2	Aroclor-1221		4.5	18	U
11141-16-5	Aroclor-1232		4.5	18	U
53469-21-9	Aroclor-1242		4.5	18	U
12672-29-6	Aroclor-1248		4.5	18	U
11097-69-1	Aroclor-1254		4.5	18	U
11096-82-5	Aroclor-1260	210 ~~260~~	4.5	18	XP

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	17.80	13.67	76.8	70 - 125	
Tetrachloro-m-xylene [2C]	17.80	12.44	69.9	70 - 125	*
Decachlorobiphenyl	17.80	11.15	62.6	60 - 125	
Decachlorobiphenyl [2C]	17.80	9.633	54.1	60 - 125	*

Values outside of QC limits

J.H.
11.2.09

ANALYSIS DATA SHEET

NTC21SB05-SO-0204

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-47	File ID:	128FAS01.D
Sampled:	09/28/09 10:10	Prepared:	10/07/09 19:25	Analyzed:	10/25/09 04:34
Solids:	90.70	Preparation:	EXT_3546	Dilution:	1

Batch: 9J06028 Sequence: 9J30333 Calibration: 9303002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		4.6	19	U
11104-28-2	Aroclor-1221		4.6	19	U
11141-16-5	Aroclor-1232		4.6	19	U
53469-21-9	Aroclor-1242		4.6	19	U
12672-29-6	Aroclor-1248		4.6	19	U
11097-69-1	Aroclor-1254		4.6	19	U
11096-82-5	Aroclor-1260	130	4.6	19	PX

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	18.38	15.10	82.2	70 - 125	
Tetrachloro-m-xylene [2C]	18.38	14.26	77.6	70 - 125	
Decachlorobiphenyl	18.38	11.16	60.7	60 - 125	
Decachlorobiphenyl [2C]	18.38	10.07	54.8	60 - 125	*

Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB06-SO-0001

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-23	File ID:	078F7801.D
Sampled:	09/27/09 15:10	Prepared:	10/03/09 11:10	Analyzed:	10/24/09 14:33
Solids:	82.48	Preparation:	EXT_3546	Dilution:	1

Batch: 9J02014 Sequence: 9J30333 Calibration: 9303002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		5.1	21	U
11104-28-2	Aroclor-1221		5.1	21	U
11141-16-5	Aroclor-1232		5.1	21	U
53469-21-9	Aroclor-1242		5.1	21	U
12672-29-6	Aroclor-1248		5.1	21	U
11097-69-1	Aroclor-1254		5.1	21	U
11096-82-5	Aroclor-1260	310 ~~380~~	5.1	21	X P

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	20.21	12.94	64.0	70 - 125	*
Tetrachloro-m-xylene [2C]	20.21	11.68	57.8	70 - 125	*
Decachlorobiphenyl	20.21	12.07	59.7	60 - 125	*
Decachlorobiphenyl [2C]	20.21	9.688	47.9	60 - 125	*

* Values outside of QC limits

J.H.
11.2.09

ANALYSIS DATA SHEET

NTC21SB06-SO-0204

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-24	File ID:	080F8001.D
Sampled:	09/27/09 15:20	Prepared:	10/03/09 11:10	Analyzed:	10/24/09 15:04
Solids:	76.55	Preparation:	EXT_3546	Dilution:	1

Batch: 9J02014 Sequence: 9J30333 Calibration: 9303002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		5.5	22	U
11104-28-2	Aroclor-1221		5.5	22	U
11141-16-5	Aroclor-1232		5.5	22	U
53469-21-9	Aroclor-1242		5.5	22	U
12672-29-6	Aroclor-1248		5.5	22	U
11097-69-1	Aroclor-1254		5.5	22	U
11096-82-5	Aroclor-1260	440 ~~570~~	5.5	22	XP

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	21.77	12.31	56.6	70 - 125	*
Tetrachloro-m-xylene [2C]	21.77	11.45	52.6	70 - 125	*
Decachlorobiphenyl	21.77	9.655	44.3	60 - 125	*
Decachlorobiphenyl [2C]	21.77	8.296	38.1	60 - 125	*

* Values outside of QC limits

J.H.
11.2.09

ANALYSIS DATA SHEET

NTC21SB07-SO-0001

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-25	File ID:	082F8201.D
Sampled:	09/27/09 10:40	Prepared:	10/03/09 11:10	Analyzed:	10/24/09 15:36
Solids:	91.64	Preparation:	EXT_3546	Dilution:	1

Batch: 9J02014 Sequence: 9J30333 Calibration: 9303002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		4.6	19	U
11104-28-2	Aroclor-1221		4.6	19	U
11141-16-5	Aroclor-1232		4.6	19	U
53469-21-9	Aroclor-1242		4.6	19	U
12672-29-6	Aroclor-1248		4.6	19	U
11097-69-1	Aroclor-1254		4.6	19	U
11096-82-5	Aroclor-1260	21 ~~22~~	4.6	19	X

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	18.19	10.71	58.9	70 - 125	*
Tetrachloro-m-xylene [2C]	18.19	9.990	54.9	70 - 125	*
Decachlorobiphenyl	18.19	10.28	56.5	60 - 125	*
Decachlorobiphenyl [2C]	18.19	7.750	42.6	60 - 125	*

* Values outside of QC limits

JH.
11.2.09

ANALYSIS DATA SHEET

NTC21SB07-SO-0204

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-26	File ID:	075F7801.D
Sampled:	09/27/09 10:50	Prepared:	10/03/09 11:10	Analyzed:	10/13/09 17:33
Solids:	85.99	Preparation:	EXT_3546	Dilution:	1

Batch: 9J02014 Sequence: 9J30317 Calibration: 9295002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		4.9	20	U
11104-28-2	Aroclor-1221		4.9	20	U
11141-16-5	Aroclor-1232		4.9	20	U
53469-21-9	Aroclor-1242		4.9	20	U
12672-29-6	Aroclor-1248		4.9	20	U
11097-69-1	Aroclor-1254		4.9	20	U
11096-82-5	Aroclor-1260		4.9	20	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	19.38	13.55	69.9	70 - 125	*
Tetrachloro-m-xylene [2C]	19.38	14.09	72.7	70 - 125	
Decachlorobiphenyl	19.38	11.98	61.8	60 - 125	
Decachlorobiphenyl [2C]	19.38	11.95	61.7	60 - 125	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB08-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-48	File ID:	132FAW01.D
Sampled:	09/28/09 11:55	Prepared:	10/07/09 19:25	Analyzed:	10/25/09 05:42
Solids:	92.71	Preparation:	EXT_3546	Dilution:	1
Batch:	9J06028	Sequence:	9J30333	Calibration:	9303002
Instrument:	GL-ECD4				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		4.5	18	U
11104-28-2	Aroclor-1221		4.5	18	U
11141-16-5	Aroclor-1232		4.5	18	U
53469-21-9	Aroclor-1242		4.5	18	U
12672-29-6	Aroclor-1248		4.5	18	U
11097-69-1	Aroclor-1254		4.5	18	U
11096-82-5	Aroclor-1260	84 ~~170~~	4.5	18	PX

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	17.98	12.42	69.1	70 - 125	*
Tetrachloro-m-xylene [2C]	17.98	11.17	62.2	70 - 125	*
Decachlorobiphenyl	17.98	13.69	76.1	60 - 125	
Decachlorobiphenyl [2C]	17.98	9.399	52.3	60 - 125	*

Values outside of QC limits

JH. 11.2.09

ANALYSIS DATA SHEET

NTC21SB08-SO-0204

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-49	File ID:	134FAY01.D
Sampled:	09/28/09 12:00	Prepared:	10/07/09 19:25	Analyzed:	10/25/09 06:13
Solids:	73.74	Preparation:	EXT_3546	Dilution:	1
Batch:	9J06028	Sequence:	9J30333	Calibration:	9303002
Instrument:	GL-ECD4				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		5.7	23	U
11104-28-2	Aroclor-1221		5.7	23	U
11141-16-5	Aroclor-1232		5.7	23	U
53469-21-9	Aroclor-1242		5.7	23	U
12672-29-6	Aroclor-1248		5.7	23	U
11097-69-1	Aroclor-1254		5.7	23	U
11096-82-5	Aroclor-1260	120	5.7	23	XP

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	22.60	15.19	67.2	70 - 125	*
Tetrachloro-m-xylene [2C]	22.60	13.69	60.5	70 - 125	*
Decachlorobiphenyl	22.60	11.78	52.1	60 - 125	*
Decachlorobiphenyl [2C]	22.60	8.719	38.6	60 - 125	*

Values outside of QC limits

J.H.
11.2.09

ANALYSIS DATA SHEET

NTC21SB09-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-03	File ID:	050F5001.D
Sampled:	09/26/09 16:20	Prepared:	10/02/09 17:00	Analyzed:	10/10/09 05:42
Solids:	91.14	Preparation:	EXT_3546	Dilution:	1
Batch:	9J02013	Sequence:	9J29207	Calibration:	9292002	Instrument:	GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		4.6	19	U
11104-28-2	Aroclor-1221		4.6	19	U
11141-16-5	Aroclor-1232		4.6	19	U
53469-21-9	Aroclor-1242		4.6	19	U
12672-29-6	Aroclor-1248		4.6	19	U
11097-69-1	Aroclor-1254		4.6	19	U
11096-82-5	Aroclor-1260	130 ~~290~~	4.6	19	~~P~~Y

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	18.29	7.405	40.5	70 - 125	*
Tetrachloro-m-xylene [2C]	18.29	9.336	51.0	70 - 125	*
Decachlorobiphenyl	18.29	7.330	40.1	60 - 125	*
Decachlorobiphenyl [2C]	18.29	5.134	28.1	60 - 125	*

Values outside of QC limits

J.H.
11.2.09

ANALYSIS DATA SHEET

NTC21SB09-SO-0204

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-04	File ID:	052F5201.D
Sampled:	09/26/09 16:28	Prepared:	10/02/09 17:00	Analyzed:	10/10/09 06:13
Solids:	79.45	Preparation:	EXT_3546	Dilution:	1

Batch: 9J02013 Sequence: 9J29207 Calibration: 9292002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		5.3	21	U
11104-28-2	Aroclor-1221		5.3	21	U
11141-16-5	Aroclor-1232		5.3	21	U
53469-21-9	Aroclor-1242		5.3	21	U
12672-29-6	Aroclor-1248		5.3	21	U
11097-69-1	Aroclor-1254		5.3	21	U
11096-82-5	Aroclor-1260		5.3	21	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	20.98	11.96	57.0	70 - 125	*
Tetrachloro-m-xylene [2C]	20.98	10.86	51.7	70 - 125	*
Decachlorobiphenyl	20.98	11.24	53.6	60 - 125	*
Decachlorobiphenyl [2C]	20.98	8.634	41.2	60 - 125	*

Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB10-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-05	File ID:	054F5401.D
Sampled:	09/26/09 18:36	Prepared:	10/02/09 17:00	Analyzed:	10/10/09 06:44
Solids:	89.63	Preparation:	EXT_3546	Dilution:	1
Batch:	9J02013	Sequence: 9J29207	Calibration:	9292002	Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		4.7	19	U
11104-28-2	Aroclor-1221		4.7	19	U
11141-16-5	Aroclor-1232		4.7	19	U
53469-21-9	Aroclor-1242		4.7	19	U
12672-29-6	Aroclor-1248		4.7	19	U
11097-69-1	Aroclor-1254		4.7	19	U
11096-82-5	Aroclor-1260	700 ~~620~~	4.7	19	P

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	18.60	8.536	45.9	70 - 125	*
Tetrachloro-m-xylene [2C]	18.60	11.16	60.0	70 - 125	*
Decachlorobiphenyl	18.60	10.56	56.8	60 - 125	*
Decachlorobiphenyl [2C]	18.60	6.032	32.4	60 - 125	*

Values outside of QC limits

D.H.
11.2.09

ANALYSIS DATA SHEET

NTC21SB10-SO-0406

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-06	File ID:	056F5601.D
Sampled:	09/26/09 18:40	Prepared:	10/02/09 17:00	Analyzed:	10/10/09 07:15
Solids:	82.84	Preparation:	EXT_3546	Dilution:	1
Batch:	9J02013	Sequence: 9J29207	Calibration:	9292002	Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		5.1	21	U
11104-28-2	Aroclor-1221		5.1	21	U
11141-16-5	Aroclor-1232		5.1	21	U
53469-21-9	Aroclor-1242		5.1	21	U
12672-29-6	Aroclor-1248		5.1	21	U
11097-69-1	Aroclor-1254		5.1	21	U
11096-82-5	Aroclor-1260		5.1	21	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	20.12	13.40	66.6	70 - 125	*
Tetrachloro-m-xylene [2C]	20.12	12.71	63.2	70 - 125	*
Decachlorobiphenyl	20.12	11.05	54.9	60 - 125	*
Decachlorobiphenyl [2C]	20.12	9.264	46.0	60 - 125	*

Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB11-SO-0001

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-07	File ID:	058F5801.D
Sampled:	09/26/09 18:10	Prepared:	10/02/09 17:00	Analyzed:	10/10/09 07:46
Solids:	92.03	Preparation:	EXT_3546	Dilution:	1

Batch: 9J02013 Sequence: 9J29207 Calibration: 9292002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		4.6	18	U
11104-28-2	Aroclor-1221		4.6	18	U
11141-16-5	Aroclor-1232		4.6	18	U
53469-21-9	Aroclor-1242		4.6	18	U
12672-29-6	Aroclor-1248		4.6	18	U
11097-69-1	Aroclor-1254		4.6	18	U
11096-82-5	Aroclor-1260	390	4.6	18	

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	18.11	8.108	44.8	70 - 125	*
Tetrachloro-m-xylene [2C]	18.11	11.21	61.9	70 - 125	*
Decachlorobiphenyl	18.11	2.465	13.6	60 - 125	*
Decachlorobiphenyl [2C]	18.11	5.986	33.1	60 - 125	*

Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB11-SO-0204

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-08	File ID:	060F6001.D
Sampled:	09/26/09 18:12	Prepared:	10/02/09 17:00	Analyzed:	10/10/09 08:17
Solids:	84.12	Preparation:	EXT_3546	Dilution:	1
Batch:	9J02013	Sequence:	9J29207	Calibration:	9292002
Instrument:	GL-ECD4				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		5.0	20	U
11104-28-2	Aroclor-1221		5.0	20	U
11141-16-5	Aroclor-1232		5.0	20	U
53469-21-9	Aroclor-1242		5.0	20	U
12672-29-6	Aroclor-1248		5.0	20	U
11097-69-1	Aroclor-1254		5.0	20	U
11096-82-5	Aroclor-1260	72 ~~110~~	5.0	20	~~P~~

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	19.81	9.777	49.3	70 - 125	*
Tetrachloro-m-xylene [2C]	19.81	9.167	46.3	70 - 125	*
Decachlorobiphenyl	19.81	8.824	44.5	60 - 125	*
Decachlorobiphenyl [2C]	19.81	6.415	32.4	60 - 125	*

Values outside of QC limits

J.H.
11.2.09

ANALYSIS DATA SHEET

NTC21SB12-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-09	File ID:	064F6401.D
Sampled:	09/26/09 14:00	Prepared:	10/02/09 17:00	Analyzed:	10/10/09 09:24
Solids:	84.89	Preparation:	EXT_3546	Dilution:	1

Batch: 9J02013 Sequence: 9J29207 Calibration: 9292002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		4.9	20	U
11104-28-2	Aroclor-1221		4.9	20	U
11141-16-5	Aroclor-1232		4.9	20	U
53469-21-9	Aroclor-1242		4.9	20	U
12672-29-6	Aroclor-1248		4.9	20	U
11097-69-1	Aroclor-1254		4.9	20	U
11096-82-5	Aroclor-1260		4.9	20	UY

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	19.63	10.89	55.5	70 - 125	*
Tetrachloro-m-xylene [2C]	19.63	10.40	53.0	70 - 125	*
Decachlorobiphenyl	19.63	8.966	45.7	60 - 125	*
Decachlorobiphenyl [2C]	19.63	6.893	35.1	60 - 125	*

Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB12-SO-0204

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-10	File ID:	066F6601.D
Sampled:	09/26/09 14:10	Prepared:	10/02/09 17:00	Analyzed:	10/10/09 09:55
Solids:	77.00	Preparation:	EXT_3546	Dilution:	1

Batch: 9J02013 Sequence: 9J29207 Calibration: 9292002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		5.5	22	U
11104-28-2	Aroclor-1221		5.5	22	U
11141-16-5	Aroclor-1232		5.5	22	U
53469-21-9	Aroclor-1242		5.5	22	U
12672-29-6	Aroclor-1248		5.5	22	U
11097-69-1	Aroclor-1254		5.5	22	U
11096-82-5	Aroclor-1260		5.5	22	UY

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	21.65	13.91	64.3	70 - 125	*
Tetrachloro-m-xylene [2C]	21.65	12.95	59.8	70 - 125	*
Decachlorobiphenyl	21.65	14.84	68.5	60 - 125	
Decachlorobiphenyl [2C]	21.65	10.32	47.7	60 - 125	*

Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB13-SO-0001

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-27	File ID:	084F8401.D
Sampled:	09/27/09 09:00	Prepared:	10/03/09 11:10	Analyzed:	10/24/09 16:07
Solids:	77.65	Preparation:	EXT_3546	Dilution:	1

Batch: 9J02014 Sequence: 9J30333 Calibration: 9303002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		5.4	22	U
11104-28-2	Aroclor-1221		5.4	22	U
11141-16-5	Aroclor-1232		5.4	22	U
53469-21-9	Aroclor-1242		5.4	22	U
12672-29-6	Aroclor-1248		5.4	22	U
11097-69-1	Aroclor-1254		5.4	22	U
11096-82-5	Aroclor-1260	120	5.4	22	PX

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	21.46	13.83	64.4	70 - 125	*
Tetrachloro-m-xylene [2C]	21.46	11.72	54.6	70 - 125	*
Decachlorobiphenyl	21.46	13.90	64.8	60 - 125	
Decachlorobiphenyl [2C]	21.46	11.34	52.8	60 - 125	*

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB13-SO-0204

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-28	File ID:	077F8001.D
Sampled:	09/27/09 09:10	Prepared:	10/03/09 11:10	Analyzed:	10/13/09 18:04
Solids:	84.34	Preparation:	EXT_3546	Dilution:	1

Batch: 9J02014 Sequence: 9J30317 Calibration: 9295002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		5.0	20	U
11104-28-2	Aroclor-1221		5.0	20	U
11141-16-5	Aroclor-1232		5.0	20	U
53469-21-9	Aroclor-1242		5.0	20	U
12672-29-6	Aroclor-1248		5.0	20	U
11097-69-1	Aroclor-1254		5.0	20	U
11096-82-5	Aroclor-1260		5.0	20	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	19.76	13.02	65.9	70 - 125	*
Tetrachloro-m-xylene [2C]	19.76	13.29	67.3	70 - 125	*
Decachlorobiphenyl	19.76	11.80	59.7	60 - 125	*
Decachlorobiphenyl [2C]	19.76	12.19	61.7	60 - 125	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB14-SO-0001

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-29	File ID:	086F8601.D
Sampled:	09/27/09 09:30	Prepared:	10/03/09 11:10	Analyzed:	10/24/09 16:38
Solids:	81.84	Preparation:	EXT_3546	Dilution:	1

Batch: 9J02014 Sequence: 9J30333 Calibration: 9303002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		5.1	21	U
11104-28-2	Aroclor-1221		5.1	21	U
11141-16-5	Aroclor-1232		5.1	21	U
53469-21-9	Aroclor-1242		5.1	21	U
12672-29-6	Aroclor-1248		5.1	21	U
11097-69-1	Aroclor-1254		5.1	21	U
11096-82-5	Aroclor-1260		5.1	21	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	20.36	12.63	62.0	70 - 125	*
Tetrachloro-m-xylene [2C]	20.36	11.93	58.6	70 - 125	*
Decachlorobiphenyl	20.36	9.933	48.8	60 - 125	*
Decachlorobiphenyl [2C]	20.36	9.049	44.4	60 - 125	*

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB14-SO-0204

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-30	File ID:	079F8201.D
Sampled:	09/27/09 09:40	Prepared:	10/03/09 11:10	Analyzed:	10/13/09 18:35
Solids:	75.25	Preparation:	EXT_3546	Dilution:	1

Batch: 9J02014 Sequence: 9J30317 Calibration: 9295002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		5.6	23	U
11104-28-2	Aroclor-1221		5.6	23	U
11141-16-5	Aroclor-1232		5.6	23	U
53469-21-9	Aroclor-1242		5.6	23	U
12672-29-6	Aroclor-1248		5.6	23	U
11097-69-1	Aroclor-1254		5.6	23	U
11096-82-5	Aroclor-1260		5.6	23	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	22.15	12.72	57.4	70 - 125	*
Tetrachloro-m-xylene [2C]	22.15	13.08	59.1	70 - 125	*
Decachlorobiphenyl	22.15	10.37	46.8	60 - 125	*
Decachlorobiphenyl [2C]	22.15	10.76	48.6	60 - 125	*

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB15-SO-0001

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-31	File ID:	096F9601.D
Sampled:	09/27/09 10:00	Prepared:	10/03/09 11:10	Analyzed:	10/24/09 20:11
Solids:	83.27	Preparation:	EXT_3546	Dilution:	1

Batch: 9J02014 Sequence: 9J30333 Calibration: 9303002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		5.0	20	U
11104-28-2	Aroclor-1221		5.0	20	U
11141-16-5	Aroclor-1232		5.0	20	U
53469-21-9	Aroclor-1242		5.0	20	U
12672-29-6	Aroclor-1248		5.0	20	U
11097-69-1	Aroclor-1254		5.0	20	U
11096-82-5	Aroclor-1260		5.0	20	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	20.02	11.87	59.3	70 - 125	*
Tetrachloro-m-xylene [2C]	20.02	10.95	54.7	70 - 125	*
Decachlorobiphenyl	20.02	9.071	45.3	60 - 125	*
Decachlorobiphenyl [2C]	20.02	7.543	37.7	60 - 125	*

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB15-SO-0204

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-32	File ID:	081F8401.D
Sampled:	09/27/09 10:10	Prepared:	10/03/09 11:10	Analyzed:	10/13/09 19:06
Solids:	77.18	Preparation:	EXT_3546	Dilution:	1

Batch: 9J02014 Sequence: 9J30317 Calibration: 9295002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		5.4	22	U
11104-28-2	Aroclor-1221		5.4	22	U
11141-16-5	Aroclor-1232		5.4	22	U
53469-21-9	Aroclor-1242		5.4	22	U
12672-29-6	Aroclor-1248		5.4	22	U
11097-69-1	Aroclor-1254		5.4	22	U
11096-82-5	Aroclor-1260		5.4	22	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	21.59	10.52	48.7	70 - 125	*
Tetrachloro-m-xylene [2C]	21.59	10.82	50.1	70 - 125	*
Decachlorobiphenyl	21.59	8.953	41.5	60 - 125	*
Decachlorobiphenyl [2C]	21.59	9.141	42.3	60 - 125	*

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB16-SO-0001

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-33	File ID:	083F8601.D
Sampled:	09/27/09 17:00	Prepared:	10/03/09 11:10	Analyzed:	10/13/09 19:37
Solids:	89.07	Preparation:	EXT_3546	Dilution:	1

Batch: 9J02014 Sequence: 9J30317 Calibration: 9295002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		4.7	19	U
11104-28-2	Aroclor-1221		4.7	19	U
11141-16-5	Aroclor-1232		4.7	19	U
53469-21-9	Aroclor-1242		4.7	19	U
12672-29-6	Aroclor-1248		4.7	19	U
11097-69-1	Aroclor-1254		4.7	19	U
11096-82-5	Aroclor-1260		4.7	19	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	18.71	10.63	56.8	70 - 125	*
Tetrachloro-m-xylene [2C]	18.71	10.59	56.6	70 - 125	*
Decachlorobiphenyl	18.71	8.416	45.0	60 - 125	*
Decachlorobiphenyl [2C]	18.71	7.215	38.6	60 - 125	*

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB16-SO-0204

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-34	File ID:	085F8801.D
Sampled:	09/27/09 16:50	Prepared:	10/03/09 11:10	Analyzed:	10/13/09 20:09
Solids:	77.43	Preparation:	EXT_3546	Dilution:	1

Batch: 9J02014 Sequence: 9J30317 Calibration: 9295002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		5.4	22	U
11104-28-2	Aroclor-1221		5.4	22	U
11141-16-5	Aroclor-1232		5.4	22	U
53469-21-9	Aroclor-1242		5.4	22	U
12672-29-6	Aroclor-1248		5.4	22	U
11097-69-1	Aroclor-1254		5.4	22	U
11096-82-5	Aroclor-1260		5.4	22	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	21.53	13.09	60.8	70 - 125	*
Tetrachloro-m-xylene [2C]	21.53	13.61	63.2	70 - 125	*
Decachlorobiphenyl	21.53	9.709	45.1	60 - 125	*
Decachlorobiphenyl [2C]	21.53	9.871	45.9	60 - 125	*

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB17-SO-0001

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-11	File ID:	068F6801.D
Sampled:	09/26/09 13:26	Prepared:	10/02/09 17:00	Analyzed:	10/10/09 10:26
Solids:	82.76	Preparation:	EXT_3546	Dilution:	1

Batch: 9J02013 Sequence: 9J29207 Calibration: 9292002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		5.1	21	U
11104-28-2	Aroclor-1221		5.1	21	U
11141-16-5	Aroclor-1232		5.1	21	U
53469-21-9	Aroclor-1242		5.1	21	U
12672-29-6	Aroclor-1248		5.1	21	U
11097-69-1	Aroclor-1254		5.1	21	U
11096-82-5	Aroclor-1260		5.1	21	UY

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	20.14	11.29	56.1	70 - 125	*
Tetrachloro-m-xylene [2C]	20.14	11.53	57.3	70 - 125	*
Decachlorobiphenyl	20.14	14.75	73.3	60 - 125	
Decachlorobiphenyl [2C]	20.14	8.594	42.7	60 - 125	*

Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB17-SO-0507

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-12	File ID:	070F7001.D
Sampled:	09/26/09 13:32	Prepared:	10/02/09 17:00	Analyzed:	10/10/09 10:57
Solids:	89.58	Preparation:	EXT_3546	Dilution:	1
Batch:	9J02013	Sequence: 9J29207	Calibration:	9292002	Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		4.7	19	U
11104-28-2	Aroclor-1221		4.7	19	U
11141-16-5	Aroclor-1232		4.7	19	U
53469-21-9	Aroclor-1242		4.7	19	U
12672-29-6	Aroclor-1248		4.7	19	U
11097-69-1	Aroclor-1254		4.7	19	U
11096-82-5	Aroclor-1260		4.7	19	UY

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	18.60	11.33	60.9	70 - 125	*
Tetrachloro-m-xylene [2C]	18.60	10.45	56.2	70 - 125	*
Decachlorobiphenyl	18.60	10.44	56.1	60 - 125	*
Decachlorobiphenyl [2C]	18.60	8.068	43.4	60 - 125	*

Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB18-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-13	File ID:	072F7201.D
Sampled:	09/26/09 12:47	Prepared:	10/02/09 17:00	Analyzed:	10/10/09 11:28
Solids:	85.82	Preparation:	EXT_3546	Dilution:	1

Batch: 9J02013 Sequence: 9J29207 Calibration: 9292002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		4.9	20	U
11104-28-2	Aroclor-1221		4.9	20	U
11141-16-5	Aroclor-1232		4.9	20	U
53469-21-9	Aroclor-1242		4.9	20	U
12672-29-6	Aroclor-1248		4.9	20	U
11097-69-1	Aroclor-1254		4.9	20	U
11096-82-5	Aroclor-1260		4.9	20	UY

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	19.42	11.56	59.5	70 - 125	*
Tetrachloro-m-xylene [2C]	19.42	11.03	56.8	70 - 125	*
Decachlorobiphenyl	19.42	10.41	53.6	60 - 125	*
Decachlorobiphenyl [2C]	19.42	9.078	46.7	60 - 125	*

Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB18-SO-0507

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-14	File ID:	074F7401.D
Sampled:	09/26/09 12:59	Prepared:	10/02/09 17:00	Analyzed:	10/10/09 11:59
Solids:	89.26	Preparation:	EXT_3546	Dilution:	1

Batch: 9J02013 Sequence: 9J29207 Calibration: 9292002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		4.7	19	U
11104-28-2	Aroclor-1221		4.7	19	U
11141-16-5	Aroclor-1232		4.7	19	U
53469-21-9	Aroclor-1242		4.7	19	U
12672-29-6	Aroclor-1248		4.7	19	U
11097-69-1	Aroclor-1254		4.7	19	U
11096-82-5	Aroclor-1260		4.7	19	UY

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	18.67	10.80	57.8	70 - 125	*
Tetrachloro-m-xylene [2C]	18.67	10.06	53.9	70 - 125	*
Decachlorobiphenyl	18.67	10.21	54.7	60 - 125	*
Decachlorobiphenyl [2C]	18.67	8.198	43.9	60 - 125	*

Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB19-SO-0001

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-35	File ID:	098F9801.D
Sampled:	09/27/09 17:40	Prepared:	10/03/09 11:10	Analyzed:	10/24/09 20:42
Solids:	92.08	Preparation:	EXT_3546	Dilution:	1

Batch: 9J02014 Sequence: 9J30333 Calibration: 9303002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		4.6	18	U
11104-28-2	Aroclor-1221		4.6	18	U
11141-16-5	Aroclor-1232		4.6	18	U
53469-21-9	Aroclor-1242		4.6	18	U
12672-29-6	Aroclor-1248		4.6	18	U
11097-69-1	Aroclor-1254		4.6	18	U
11096-82-5	Aroclor-1260	43.45	4.6	18	XP

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	18.10	8.912	49.2	70 - 125	*
Tetrachloro-m-xylene [2C]	18.10	8.191	45.3	70 - 125	*
Decachlorobiphenyl	18.10	6.540	36.1	60 - 125	*
Decachlorobiphenyl [2C]	18.10	5.573	30.8	60 - 125	*

* Values outside of QC limits

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ANALYSIS DATA SHEET

NTC21SB20-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-15	File ID:	076F7601.D
Sampled:	09/26/09 16:57	Prepared:	10/02/09 17:00	Analyzed:	10/10/09 12:30
Solids:	94.12	Preparation:	EXT_3546	Dilution:	1
Batch:	9J02013	Sequence: 9J29207	Calibration:	9292002	Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		4.5	18	U
11104-28-2	Aroclor-1221		4.5	18	U
11141-16-5	Aroclor-1232		4.5	18	U
53469-21-9	Aroclor-1242		4.5	18	U
12672-29-6	Aroclor-1248		4.5	18	U
11097-69-1	Aroclor-1254		4.5	18	U
11096-82-5	Aroclor-1260		4.5	18	UY

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	17.71	9.911	56.0	70 - 125	*
Tetrachloro-m-xylene [2C]	17.71	9.203	52.0	70 - 125	*
Decachlorobiphenyl	17.71	9.722	54.9	60 - 125	*
Decachlorobiphenyl [2C]	17.71	6.506	36.7	60 - 125	*

Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB19-SO-0204

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-36	File ID:	087F9001.D
Sampled:	09/27/09 17:50	Prepared:	10/03/09 11:10	Analyzed:	10/13/09 20:40
Solids:	83.11	Preparation:	EXT_3546	Dilution:	1

Batch: 9J02014 Sequence: 9J30317 Calibration: 9295002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		5.1	20	U
11104-28-2	Aroclor-1221		5.1	20	U
11141-16-5	Aroclor-1232		5.1	20	U
53469-21-9	Aroclor-1242		5.1	20	U
12672-29-6	Aroclor-1248		5.1	20	U
11097-69-1	Aroclor-1254		5.1	20	U
11096-82-5	Aroclor-1260		5.1	20	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	20.05	12.22	60.9	70 - 125	*
Tetrachloro-m-xylene [2C]	20.05	12.83	64.0	70 - 125	*
Decachlorobiphenyl	20.05	10.01	49.9	60 - 125	*
Decachlorobiphenyl [2C]	20.05	9.404	46.9	60 - 125	*

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB20-SO-0406

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-16	File ID:	078F7801.D
Sampled:	09/26/09 17:02	Prepared:	10/02/09 17:00	Analyzed:	10/10/09 13:01
Solids:	86.65	Preparation:	EXT_3546	Dilution:	1
Batch:	9J02013	Sequence:	9J29207	Calibration:	9292002
Instrument:	GL-ECD4				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		4.8	20	U
11104-28-2	Aroclor-1221		4.8	20	U
11141-16-5	Aroclor-1232		4.8	20	U
53469-21-9	Aroclor-1242		4.8	20	U
12672-29-6	Aroclor-1248		4.8	20	U
11097-69-1	Aroclor-1254		4.8	20	U
11096-82-5	Aroclor-1260		4.8	20	UY

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	19.23	11.46	59.6	70 - 125	*
Tetrachloro-m-xylene [2C]	19.23	11.23	58.4	70 - 125	*
Decachlorobiphenyl	19.23	9.515	49.5	60 - 125	*
Decachlorobiphenyl [2C]	19.23	6.611	34.4	60 - 125	*

Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB21-SO-0001

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-17	File ID:	080F8001.D
Sampled:	09/26/09 15:10	Prepared:	10/02/09 17:00	Analyzed:	10/10/09 13:32
Solids:	93.11	Preparation:	EXT_3546	Dilution:	1
Batch:	9J02013	Sequence:	9J29207	Calibration:	9292002
Instrument:	GL-ECD4				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		4.5	18	U
11104-28-2	Aroclor-1221		4.5	18	U
11141-16-5	Aroclor-1232		4.5	18	U
53469-21-9	Aroclor-1242		4.5	18	U
12672-29-6	Aroclor-1248		4.5	18	U
11097-69-1	Aroclor-1254		4.5	18	U
11096-82-5	Aroclor-1260	450 ~~1000~~	4.5	18	~~P~~EY

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	17.90	8.296	46.3	70 - 125	*
Tetrachloro-m-xylene [2C]	17.90	10.34	57.7	70 - 125	*
Decachlorobiphenyl	17.90	31.73	177	60 - 125	*
Decachlorobiphenyl [2C]	17.90	8.563	47.8	60 - 125	*

Values outside of QC limits

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ANALYSIS DATA SHEET

NTC21SB21-SO-0608

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-18	File ID:	082F8201.D
Sampled:	09/26/09 15:20	Prepared:	10/02/09 17:00	Analyzed:	10/10/09 14:03
Solids:	89.66	Preparation:	EXT_3546	Dilution:	1
Batch:	9J02013	Sequence: 9J29207	Calibration:	9292002	Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		4.7	19	U
11104-28-2	Aroclor-1221		4.7	19	U
11141-16-5	Aroclor-1232		4.7	19	U
53469-21-9	Aroclor-1242		4.7	19	U
12672-29-6	Aroclor-1248		4.7	19	U
11097-69-1	Aroclor-1254		4.7	19	U
11096-82-5	Aroclor-1260		4.7	19	UY

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	18.59	9.986	53.7	70 - 125	*
Tetrachloro-m-xylene [2C]	18.59	9.540	51.3	70 - 125	*
Decachlorobiphenyl	18.59	7.619	41.0	60 - 125	*
Decachlorobiphenyl [2C]	18.59	5.890	31.7	60 - 125	*

Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB22-SO-0001

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0910006-37	File ID:	102FA201.D
Sampled:	09/27/09 12:00	Prepared:	10/03/09 11:10	Analyzed:	10/24/09 21:50
Solids:	80.96	Preparation:	EXT_3546	Dilution:	1

Batch: 9J02014 Sequence: 9J30333 Calibration: 9303002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		5.2	21	U
11104-28-2	Aroclor-1221		5.2	21	U
11141-16-5	Aroclor-1232		5.2	21	U
53469-21-9	Aroclor-1242		5.2	21	U
12672-29-6	Aroclor-1248		5.2	21	U
11097-69-1	Aroclor-1254		5.2	21	U
11096-82-5	Aroclor-1260	110 ~~180~~	5.2	21	PX

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	20.59	10.81	52.5	70 - 125	*
Tetrachloro-m-xylene [2C]	20.59	9.777	47.5	70 - 125	*
Decachlorobiphenyl	20.59	10.18	49.4	60 - 125	*
Decachlorobiphenyl [2C]	20.59	7.996	38.8	60 - 125	*

* Values outside of QC limits

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ANALYSIS DATA SHEET

NTC21SB22-SO-0204

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0910006-38	File ID:	104FA401.D
Sampled:	09/27/09 12:10	Prepared:	10/03/09 11:10	Analyzed:	10/24/09 22:21
Solids:	80.39	Preparation:	EXT_3546	Dilution:	1
Batch:	9J02014	Sequence:	9J30333	Calibration:	9303002
Instrument:	GL-ECD4				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		5.2	21	U
11104-28-2	Aroclor-1221		5.2	21	U
11141-16-5	Aroclor-1232		5.2	21	U
53469-21-9	Aroclor-1242		5.2	21	U
12672-29-6	Aroclor-1248		5.2	21	U
11097-69-1	Aroclor-1254		5.2	21	U
11096-82-5	Aroclor-1260	270	5.2	21	X

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	20.73	11.14	53.7	70 - 125	*
Tetrachloro-m-xylene [2C]	20.73	10.31	49.7	70 - 125	*
Decachlorobiphenyl	20.73	9.903	47.8	60 - 125	*
Decachlorobiphenyl [2C]	20.73	7.768	37.5	60 - 125	*

* Values outside of QC limits

APPENDIX C

SUPPORT DOCUMENTATION

HOLDTIME

SDG CTO064_001

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HERB	%	NTC21SB19-SO-0204	0910006-36	NM	09/27/2009	10/06/2009	10/10/2009	8.66	4.340	13
HERB	%	NTC21SB12-SO-0204	0910006-10	NM	09/26/2009	10/06/2009	10/16/2009	9.833	10.05	19.89
HERB	%	NTC21SB13-SO-0001	0910006-27	NM	09/27/2009	10/06/2009	10/10/2009	9.028	4.13	13.16
HERB	%	NTC21SB13-SO-0204	0910006-28	NM	09/27/2009	10/06/2009	10/10/2009	9.021	4.147	13.17
HERB	%	NTC21SB14-SO-0001	0910006-29	NM	09/27/2009	10/06/2009	10/10/2009	9.007	4.165	13.17
HERB	%	NTC21SB14-SO-0204	0910006-30	NM	09/27/2009	10/06/2009	10/10/2009	9	4.217	13.22
HERB	%	NTC21SB15-SO-0001	0910006-31	NM	09/27/2009	10/06/2009	10/10/2009	8.986	4.253	13.24
HERB	%	NTC21SB15-SO-0204	0910006-32	NM	09/27/2009	10/06/2009	10/10/2009	8.979	4.270	13.25
HERB	%	NTC21SB16-SO-0001	0910006-33	NM	09/27/2009	10/06/2009	10/10/2009	8.694	4.287	12.98
HERB	%	NTC21SB16-SO-0204	0910006-34	NM	09/27/2009	10/06/2009	10/10/2009	8.701	4.306	13.01
HERB	%	NTC21SB17-SO-0507	0910006-12	NM	09/26/2009	10/06/2009	10/16/2009	9.86	10.09	19.95
HERB	%	NTC21SB12-SO-0001	0910006-09	NM	09/26/2009	10/06/2009	10/16/2009	9.840	10.02	19.86
HERB	%	NTC21SB19-SO-0001	0910006-35	NM	09/27/2009	10/06/2009	10/10/2009	8.667	4.323	12.99
HERB	%	NTC21SB17-SO-0001	0910006-11	NM	09/26/2009	10/06/2009	10/16/2009	9.864	10.07	19.93
HERB	%	NTC21SB20-SO-0001	0910006-15	NM	09/26/2009	10/06/2009	10/16/2009	9.717	10.14	19.86

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HERB	%	NTC21SB20-SO-0406	0910006-16	NM	09/26/2009	10/06/2009	10/16/2009	9.714	10.16	19.87
HERB	%	NTC21SB21-SO-0001	0910006-17	NM	09/26/2009	10/06/2009	10/16/2009	9.792	10.18	19.97
HERB	%	NTC21SB21-SO-0608	0910006-18	NM	09/26/2009	10/06/2009	10/16/2009	9.785	10.19	19.98
HERB	%	NTC21SB22-SO-0001	0910006-37	NM	09/27/2009	10/06/2009	10/10/2009	8.903	4.358	13.26
HERB	%	NTC21SB22-SO-0204	0910006-38	NM	09/27/2009	10/06/2009	10/10/2009	8.896	4.376	13.27
HERB	%	RB-092909-01	0910006-51	NM	09/29/2009	10/01/2009	10/06/2009	2.242	4.317	6.56
HERB	%	RB-092909-02	0910006-52	NM	09/29/2009	10/01/2009	10/06/2009	2.176	4.335	6.510
HERB	%	SB-092909-01	0910006-53	NM	09/29/2009	10/01/2009	10/06/2009	2.281	4.353	6.633
HERB	%	FD-092609-01	0910006-01	NM	09/26/2009	10/06/2009	10/16/2009	10.42	10.03	20.46
HERB	%	NTC21SB18-SO-0507	0910006-14	NM	09/26/2009	10/06/2009	10/16/2009	9.883	10.12	20.00
HERB	%	FD-092809-01	0910006-40	NM	09/28/2009	10/06/2009	10/10/2009	8.403	4.393	12.8
HERB	%	NTC21SB18-SO-0001	0910006-13	NM	09/26/2009	10/06/2009	10/16/2009	9.891	10.10	20
HERB	%	FD-092709-01	0910006-20	NM	09/27/2009	10/06/2009	10/16/2009	9.424	10.31	19.73
HERB	%	NTC21SB11-SO-0204	0910006-08	NM	09/26/2009	10/06/2009	10/16/2009	9.665	9.999	19.66
HERB	%	NTC21SB01-SO-0102	0910006-41	NM	09/28/2009	10/06/2009	10/10/2009	7.903	4.410	12.31
HERB	%	NTC21SB02-SO-0001	0910006-42	NM	09/28/2009	10/08/2009	10/10/2009	9.924	2.53	12.45
HERB	%	NTC21SB02-SO-0204	0910006-43	NM	09/28/2009	10/08/2009	10/10/2009	9.917	2.547	12.46
HERB	%	NTC21SB03-SO-0001	0910006-44	NM	09/28/2009	10/08/2009	10/10/2009	9.840	2.600	12.44

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HERB	%	NTC21SB03-SO-0204	0910006-45	NM	09/28/2009	10/08/2009	10/10/2009	9.833	2.618	12.45
HERB	%	NTC21SB04-SO-0001	0910006-21	NM	09/27/2009	10/06/2009	10/10/2009	8.868	4.024	12.89
HERB	%	NTC21SB04-SO-0406	0910006-22	NM	09/27/2009	10/06/2009	10/10/2009	8.861	4.042	12.90
HERB	%	NTC21SB05-SO-0001	0910006-46	NM	09/28/2009	10/08/2009	10/10/2009	9.938	2.635	12.57
HERB	%	NTC21SB05-SO-0204	0910006-47	NM	09/28/2009	10/08/2009	10/11/2009	9.931	2.653	12.58
HERB	%	NTC21SB10-SO-0001	0910006-05	NM	09/26/2009	10/06/2009	10/16/2009	9.649	9.947	19.6
HERB	%	FD-092609-02	0910006-02	NM	09/26/2009	10/06/2009	10/16/2009	10.42	9.894	20.32
HERB	%	NTC21SB06-SO-0001	0910006-23	NM	09/27/2009	10/06/2009	10/10/2009	8.771	4.059	12.83
HERB	%	NTC21SB10-SO-0406	0910006-06	NM	09/26/2009	10/06/2009	10/16/2009	9.646	9.964	19.61
HERB	%	NTC21SB09-SO-0204	0910006-04	NM	09/26/2009	10/06/2009	10/24/2009	9.737	18.43	28.17
HERB	%	NTC21SB09-SO-0001	0910006-03	NM	09/26/2009	10/06/2009	10/16/2009	9.743	9.911	19.65
HERB	%	NTC21SB08-SO-0204	0910006-49	NM	09/28/2009	10/08/2009	10/11/2009	9.854	2.688	12.54
HERB	%	NTC21SB06-SO-0204	0910006-24	NM	09/27/2009	10/06/2009	10/10/2009	8.764	4.077	12.84
HERB	%	NTC21SB07-SO-0204	0910006-26	NM	09/27/2009	10/06/2009	10/10/2009	8.951	4.112	13.06
HERB	%	NTC21SB07-SO-0001	0910006-25	NM	09/27/2009	10/06/2009	10/10/2009	8.958	4.094	13.05
HERB	%	NTC21SB08-SO-0001	0910006-48	NM	09/28/2009	10/08/2009	10/11/2009	9.858	2.671	12.53
HERB	%	NTC21SB11-SO-0001	0910006-07	NM	09/26/2009	10/06/2009	10/16/2009	9.667	9.981	19.65
HERB	UG/KG	NTC21SB15-SO-0204	0910006-32	NM	09/27/2009	10/06/2009	10/10/2009	8.979	4.270	13.25

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HERB	UG/KG	NTC21SB15-SO-0001	0910006-31	NM	09/27/2009	10/06/2009	10/10/2009	8.986	4.253	13.24
HERB	UG/KG	NTC21SB14-SO-0204	0910006-30	NM	09/27/2009	10/06/2009	10/10/2009	9	4.217	13.22
HERB	UG/KG	NTC21SB11-SO-0204	0910006-08	NM	09/26/2009	10/06/2009	10/16/2009	9.665	9.999	19.66
HERB	UG/KG	NTC21SB14-SO-0001	0910006-29	NM	09/27/2009	10/06/2009	10/10/2009	9.007	4.165	13.17
HERB	UG/KG	NTC21SB13-SO-0001	0910006-27	NM	09/27/2009	10/06/2009	10/10/2009	9.028	4.13	13.16
HERB	UG/KG	NTC21SB12-SO-0204	0910006-10	NM	09/26/2009	10/06/2009	10/16/2009	9.833	10.05	19.89
HERB	UG/KG	NTC21SB16-SO-0001	0910006-33	NM	09/27/2009	10/06/2009	10/10/2009	8.694	4.287	12.98
HERB	UG/KG	NTC21SB12-SO-0001	0910006-09	NM	09/26/2009	10/06/2009	10/16/2009	9.840	10.02	19.86
HERB	UG/KG	NTC21SB20-SO-0406	0910006-16	NM	09/26/2009	10/06/2009	10/16/2009	9.714	10.16	19.87
HERB	UG/KG	NTC21SB13-SO-0204	0910006-28	NM	09/27/2009	10/06/2009	10/10/2009	9.021	4.147	13.17
HERB	UG/KG	NTC21SB16-SO-0204	0910006-34	NM	09/27/2009	10/06/2009	10/10/2009	8.701	4.306	13.01
HERB	UG/KG	NTC21SB17-SO-0001	0910006-11	NM	09/26/2009	10/06/2009	10/16/2009	9.864	10.07	19.93
HERB	UG/KG	NTC21SB17-SO-0507	0910006-12	NM	09/26/2009	10/06/2009	10/16/2009	9.86	10.09	19.95
HERB	UG/KG	NTC21SB18-SO-0001	0910006-13	NM	09/26/2009	10/06/2009	10/16/2009	9.891	10.10	20
HERB	UG/KG	NTC21SB18-SO-0507	0910006-14	NM	09/26/2009	10/06/2009	10/16/2009	9.883	10.12	20.00
HERB	UG/KG	NTC21SB19-SO-0204	0910006-36	NM	09/27/2009	10/06/2009	10/10/2009	8.66	4.340	13
HERB	UG/KG	NTC21SB21-SO-0608	0910006-18	NM	09/26/2009	10/06/2009	10/16/2009	9.785	10.19	19.98
HERB	UG/KG	NTC21SB22-SO-0001	0910006-37	NM	09/27/2009	10/06/2009	10/10/2009	8.903	4.358	13.26

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HERB	UG/KG	NTC21SB22-SO-0204	0910006-38	NM	09/27/2009	10/06/2009	10/10/2009	8.896	4.376	13.27
HERB	UG/KG	NTC21SB20-SO-0001	0910006-15	NM	09/26/2009	10/06/2009	10/16/2009	9.717	10.14	19.86
HERB	UG/KG	NTC21SB11-SO-0001	0910006-07	NM	09/26/2009	10/06/2009	10/16/2009	9.667	9.981	19.65
HERB	UG/KG	NTC21SB19-SO-0001	0910006-35	NM	09/27/2009	10/06/2009	10/10/2009	8.667	4.323	12.99
HERB	UG/KG	NTC21SB05-SO-0001	0910006-46	NM	09/28/2009	10/08/2009	10/10/2009	9.938	2.635	12.57
HERB	UG/KG	FD-092609-02	0910006-02	NM	09/26/2009	10/06/2009	10/16/2009	10.42	9.894	20.32
HERB	UG/KG	FD-092709-01	0910006-20	NM	09/27/2009	10/06/2009	10/16/2009	9.424	10.31	19.73
HERB	UG/KG	FD-092809-01	0910006-40	NM	09/28/2009	10/06/2009	10/10/2009	8.403	4.393	12.8
HERB	UG/KG	NTC21SB10-SO-0406	0910006-06	NM	09/26/2009	10/06/2009	10/16/2009	9.646	9.964	19.61
HERB	UG/KG	NTC21SB01-SO-0102	0910006-41	NM	09/28/2009	10/06/2009	10/10/2009	7.903	4.410	12.31
HERB	UG/KG	FD-092609-01	0910006-01	NM	09/26/2009	10/06/2009	10/16/2009	10.42	10.03	20.46
HERB	UG/KG	NTC21SB02-SO-0001	0910006-42	NM	09/28/2009	10/08/2009	10/10/2009	9.924	2.53	12.45
HERB	UG/KG	NTC21SB02-SO-0204	0910006-43	NM	09/28/2009	10/08/2009	10/10/2009	9.917	2.547	12.46
HERB	UG/KG	NTC21SB03-SO-0001	0910006-44	NM	09/28/2009	10/08/2009	10/10/2009	9.840	2.600	12.44
HERB	UG/KG	NTC21SB03-SO-0204	0910006-45	NM	09/28/2009	10/08/2009	10/10/2009	9.833	2.618	12.45
HERB	UG/KG	NTC21SB21-SO-0001	0910006-17	NM	09/26/2009	10/06/2009	10/16/2009	9.792	10.18	19.97
HERB	UG/KG	NTC21SB04-SO-0406	0910006-22	NM	09/27/2009	10/06/2009	10/10/2009	8.861	4.042	12.90
HERB	UG/KG	NTC21SB05-SO-0204	0910006-47	NM	09/28/2009	10/08/2009	10/11/2009	9.931	2.653	12.58

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HERB	UG/KG	NTC21SB06-SO-0001	0910006-23	NM	09/27/2009	10/06/2009	10/10/2009	8.771	4.059	12.83
HERB	UG/KG	NTC21SB06-SO-0204	0910006-24	NM	09/27/2009	10/06/2009	10/10/2009	8.764	4.077	12.84
HERB	UG/KG	NTC21SB07-SO-0001	0910006-25	NM	09/27/2009	10/06/2009	10/10/2009	8.958	4.094	13.05
HERB	UG/KG	NTC21SB07-SO-0204	0910006-26	NM	09/27/2009	10/06/2009	10/10/2009	8.951	4.112	13.06
HERB	UG/KG	NTC21SB08-SO-0001	0910006-48	NM	09/28/2009	10/08/2009	10/11/2009	9.858	2.671	12.53
HERB	UG/KG	NTC21SB08-SO-0204	0910006-49	NM	09/28/2009	10/08/2009	10/11/2009	9.854	2.688	12.54
HERB	UG/KG	NTC21SB09-SO-0001	0910006-03	NM	09/26/2009	10/06/2009	10/16/2009	9.743	9.911	19.65
HERB	UG/KG	NTC21SB09-SO-0204	0910006-04	NM	09/26/2009	10/06/2009	10/24/2009	9.737	18.43	28.17
HERB	UG/KG	NTC21SB10-SO-0001	0910006-05	NM	09/26/2009	10/06/2009	10/16/2009	9.649	9.947	19.6
HERB	UG/KG	NTC21SB04-SO-0001	0910006-21	NM	09/27/2009	10/06/2009	10/10/2009	8.868	4.024	12.89
HERB	UG/L	RB-092909-01	0910006-51	NM	09/29/2009	10/01/2009	10/06/2009	2.242	4.317	6.56
HERB	UG/L	RB-092909-02	0910006-52	NM	09/29/2009	10/01/2009	10/06/2009	2.176	4.335	6.510
HERB	UG/L	SB-092909-01	0910006-53	NM	09/29/2009	10/01/2009	10/06/2009	2.281	4.353	6.633
HG	MG/KG	NTC21SB17-SO-0507	0910006-12	NM	09/26/2009	10/21/2009	10/21/2009	24.77	0.212	24.98
HG	MG/KG	NTC21SB11-SO-0204	0910006-08	NM	09/26/2009	10/09/2009	10/12/2009	12.7	3.102	15.8
HG	MG/KG	NTC21SB12-SO-0001	0910006-09	NM	09/26/2009	10/09/2009	10/12/2009	12.87	3.103	15.97
HG	MG/KG	NTC21SB12-SO-0204	0910006-10	NM	09/26/2009	10/09/2009	10/12/2009	12.86	3.103	15.97
HG	MG/KG	NTC21SB22-SO-0204	0910006-38	NM	09/27/2009	10/21/2009	10/21/2009	23.83	0.265	24.09

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	NTC21SB13-SO-0204	0910006-28	NM	09/27/2009	10/21/2009	10/21/2009	23.95	0.252	24.20
HG	MG/KG	NTC21SB13-SO-0001	0910006-27	NM	09/27/2009	10/21/2009	10/21/2009	23.96	0.251	24.21
HG	MG/KG	NTC21SB14-SO-0204	0910006-30	NM	09/27/2009	10/21/2009	10/21/2009	23.93	0.258	24.19
HG	MG/KG	NTC21SB15-SO-0001	0910006-31	NM	09/27/2009	10/21/2009	10/21/2009	23.92	0.258	24.18
HG	MG/KG	NTC21SB15-SO-0204	0910006-32	NM	09/27/2009	10/21/2009	10/21/2009	23.91	0.259	24.17
HG	MG/KG	NTC21SB16-SO-0001	0910006-33	NM	09/27/2009	10/21/2009	10/21/2009	23.63	0.259	23.89
HG	MG/KG	NTC21SB17-SO-0001	0910006-11	NM	09/26/2009	10/09/2009	10/12/2009	12.89	3.104	16
HG	MG/KG	NTC21SB18-SO-0001	0910006-13RE1	NM	09/26/2009	10/21/2009	10/21/2009	24.80	0.235	25.04
HG	MG/KG	NTC21SB18-SO-0507	0910006-14	NM	09/26/2009	10/21/2009	10/21/2009	24.79	0.214	25.01
HG	MG/KG	NTC21SB19-SO-0001	0910006-35	NM	09/27/2009	10/21/2009	10/21/2009	23.6	0.261	23.86
HG	MG/KG	NTC21SB19-SO-0204	0910006-36	NM	09/27/2009	10/21/2009	10/21/2009	23.59	0.264	23.86
HG	MG/KG	NTC21SB20-SO-0001	0910006-15RE1	NM	09/26/2009	10/21/2009	10/21/2009	24.63	0.236	24.86
HG	MG/KG	NTC21SB20-SO-0406	0910006-16RE1	NM	09/26/2009	10/21/2009	10/21/2009	24.62	0.237	24.86
HG	MG/KG	NTC21SB21-SO-0001	0910006-17	NM	09/26/2009	10/21/2009	10/21/2009	24.70	0.238	24.94
HG	MG/KG	NTC21SB21-SO-0608	0910006-18	NM	09/26/2009	10/21/2009	10/21/2009	24.69	0.239	24.93
HG	MG/KG	NTC21SB22-SO-0001	0910006-37	NM	09/27/2009	10/21/2009	10/21/2009	23.84	0.265	24.10
HG	MG/KG	NTC21SB11-SO-0001	0910006-07	NM	09/26/2009	10/09/2009	10/12/2009	12.7	3.101	15.8
HG	MG/KG	NTC21SB16-SO-0204	0910006-34	NM	09/27/2009	10/21/2009	10/21/2009	23.63	0.260	23.9

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	FD-092609-02	0910006-02	NM	09/26/2009	10/09/2009	10/12/2009	13.45	3.093	16.55
HG	MG/KG	NTC21SB14-SO-0001	0910006-29	NM	09/27/2009	10/21/2009	10/21/2009	23.94	0.253	24.19
HG	MG/KG	NTC21SB10-SO-0406	0910006-06	NM	09/26/2009	10/09/2009	10/12/2009	12.68	3.1	15.78
HG	MG/KG	FD-092609-01	0910006-01	NM	09/26/2009	10/09/2009	10/12/2009	13.45	3.092	16.55
HG	MG/KG	FD-092709-01	0910006-20	NM	09/27/2009	10/21/2009	10/21/2009	24.33	0.245	24.58
HG	MG/KG	FD-092809-01	0910006-40	NM	09/28/2009	10/21/2009	10/21/2009	23.34	0.266	23.60
HG	MG/KG	NTC21SB01-SO-0102	0910006-41	NM	09/28/2009	10/21/2009	10/21/2009	22.84	0.267	23.10
HG	MG/KG	NTC21SB02-SO-0001	0910006-42	NM	09/28/2009	10/21/2009	10/21/2009	22.91	0.268	23.17
HG	MG/KG	NTC21SB02-SO-0204	0910006-43	NM	09/28/2009	10/21/2009	10/21/2009	22.9	0.269	23.17
HG	MG/KG	NTC21SB03-SO-0001	0910006-44	NM	09/28/2009	10/21/2009	10/21/2009	22.82	0.273	23.1
HG	MG/KG	NTC21SB03-SO-0204	0910006-45	NM	09/28/2009	10/21/2009	10/21/2009	22.82	0.276	23.09
HG	MG/KG	NTC21SB04-SO-0001	0910006-21	NM	09/27/2009	10/21/2009	10/21/2009	23.8	0.246	24.04
HG	MG/KG	NTC21SB09-SO-0001	0910006-03	NM	09/26/2009	10/09/2009	10/12/2009	12.77	3.096	15.87
HG	MG/KG	NTC21SB05-SO-0001	0910006-46	NM	09/28/2009	10/21/2009	10/21/2009	22.92	0.276	23.2
HG	MG/KG	NTC21SB05-SO-0204	0910006-47	NM	09/28/2009	10/21/2009	10/21/2009	22.91	0.277	23.19
HG	MG/KG	NTC21SB06-SO-0001	0910006-23	NM	09/27/2009	10/21/2009	10/21/2009	23.70	0.248	23.95
HG	MG/KG	NTC21SB06-SO-0204	0910006-24	NM	09/27/2009	10/21/2009	10/21/2009	23.69	0.249	23.94
HG	MG/KG	NTC21SB07-SO-0001	0910006-25	NM	09/27/2009	10/21/2009	10/21/2009	23.89	0.249	24.14

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	NTC21SB07-SO-0204	0910006-26	NM	09/27/2009	10/21/2009	10/21/2009	23.88	0.251	24.13
HG	MG/KG	NTC21SB08-SO-0001	0910006-48	NM	09/28/2009	10/21/2009	10/21/2009	22.84	0.278	23.12
HG	MG/KG	NTC21SB08-SO-0204	0910006-49	NM	09/28/2009	10/21/2009	10/21/2009	22.84	0.279	23.12
HG	MG/KG	NTC21SB10-SO-0001	0910006-05	NM	09/26/2009	10/09/2009	10/12/2009	12.68	3.116	15.8
HG	MG/KG	NTC21SB09-SO-0204	0910006-04	NM	09/26/2009	10/09/2009	10/12/2009	12.77	3.097	15.86
HG	MG/KG	NTC21SB04-SO-0406	0910006-22	NM	09/27/2009	10/21/2009	10/21/2009	23.79	0.247	24.04
HG	UG/L	SB-092909-01	0910006-53	NM	09/29/2009	10/07/2009	10/12/2009	7.876	4.997	12.87
HG	UG/L	RB-092909-02	0910006-52	NM	09/29/2009	10/07/2009	10/12/2009	7.772	4.994	12.77
HG	UG/L	RB-092909-01	0910006-51	NM	09/29/2009	10/07/2009	10/12/2009	7.838	4.994	12.83
M	MG/KG	NTC21SB15-SO-0204	0910006-32	NM	09/27/2009	10/19/2009	10/21/2009	21.9	1.951	23.85
M	MG/KG	NTC21SB17-SO-0507	0910006-12	NM	09/26/2009	10/19/2009	10/21/2009	22.76	1.855	24.61
M	MG/KG	NTC21SB17-SO-0001	0910006-11	NM	09/26/2009	10/19/2009	10/21/2009	22.76	1.851	24.61
M	MG/KG	NTC21SB16-SO-0204	0910006-34	NM	09/27/2009	10/19/2009	10/21/2009	21.62	1.958	23.58
M	MG/KG	NTC21SB18-SO-0001	0910006-13	NM	09/26/2009	10/19/2009	10/21/2009	22.79	1.858	24.65
M	MG/KG	NTC21SB16-SO-0001	0910006-33	NM	09/27/2009	10/19/2009	10/21/2009	21.61	1.955	23.57
M	MG/KG	NTC21SB15-SO-0204	0910006-32RE1	NM	09/27/2009	10/19/2009	10/21/2009	21.9	2.315	24.21
M	MG/KG	NTC21SB17-SO-0507	0910006-12RE1	NM	09/26/2009	10/19/2009	10/21/2009	22.76	2.264	25.02
M	MG/KG	NTC21SB15-SO-0001	0910006-31	NM	09/27/2009	10/19/2009	10/21/2009	21.91	1.949	23.85

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	MG/KG	NTC21SB14-SO-0204	0910006-30	NM	09/27/2009	10/19/2009	10/21/2009	21.92	1.936	23.86
M	MG/KG	NTC21SB14-SO-0001	0910006-29	NM	09/27/2009	10/19/2009	10/21/2009	21.93	1.919	23.85
M	MG/KG	NTC21SB13-SO-0204	0910006-28RE1	NM	09/27/2009	10/19/2009	10/21/2009	21.94	2.305	24.25
M	MG/KG	NTC21SB12-SO-0204	0910006-10	NM	09/26/2009	10/19/2009	10/21/2009	22.73	1.849	24.58
M	MG/KG	NTC21SB13-SO-0001	0910006-27	NM	09/27/2009	10/19/2009	10/21/2009	21.95	1.913	23.86
M	MG/KG	NTC21SB18-SO-0001	0910006-13RE1	NM	09/26/2009	10/19/2009	10/21/2009	22.79	2.267	25.06
M	MG/KG	NTC21SB22-SO-0001	0910006-37	NM	09/27/2009	10/19/2009	10/21/2009	21.82	1.968	23.79
M	MG/KG	NTC21SB13-SO-0204	0910006-28	NM	09/27/2009	10/19/2009	10/21/2009	21.94	1.915	23.86
M	MG/KG	NTC21SB20-SO-0001	0910006-15RE1	NM	09/26/2009	10/19/2009	10/21/2009	22.61	2.287	24.90
M	MG/KG	NTC21SB11-SO-0204	0910006-08	NM	09/26/2009	10/19/2009	10/21/2009	22.56	1.833	24.4
M	MG/KG	NTC21SB11-SO-0001	0910006-07	NM	09/26/2009	10/19/2009	10/21/2009	22.56	1.829	24.39
M	MG/KG	NTC21SB22-SO-0204	0910006-38	NM	09/27/2009	10/19/2009	10/21/2009	21.82	1.972	23.79
M	MG/KG	NTC21SB21-SO-0608	0910006-18RE1	NM	09/26/2009	10/19/2009	10/21/2009	22.68	2.304	24.99
M	MG/KG	NTC21SB21-SO-0001	0910006-17RE1	NM	09/26/2009	10/19/2009	10/21/2009	22.69	2.297	24.99
M	MG/KG	NTC21SB21-SO-0001	0910006-17	NM	09/26/2009	10/19/2009	10/21/2009	22.69	1.872	24.56
M	MG/KG	NTC21SB21-SO-0608	0910006-18	NM	09/26/2009	10/19/2009	10/21/2009	22.68	1.874	24.56
M	MG/KG	NTC21SB20-SO-0406	0910006-16	NM	09/26/2009	10/19/2009	10/21/2009	22.61	1.868	24.48
M	MG/KG	NTC21SB18-SO-0507	0910006-14	NM	09/26/2009	10/19/2009	10/21/2009	22.78	1.861	24.64

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	MG/KG	NTC21SB20-SO-0001	0910006-15	NM	09/26/2009	10/19/2009	10/21/2009	22.61	1.865	24.48
M	MG/KG	NTC21SB19-SO-0204	0910006-36RE1	NM	09/27/2009	10/19/2009	10/21/2009	21.58	2.338	23.92
M	MG/KG	NTC21SB19-SO-0204	0910006-36	NM	09/27/2009	10/19/2009	10/21/2009	21.58	1.965	23.54
M	MG/KG	NTC21SB19-SO-0001	0910006-35RE1	NM	09/27/2009	10/19/2009	10/21/2009	21.59	2.332	23.92
M	MG/KG	NTC21SB19-SO-0001	0910006-35	NM	09/27/2009	10/19/2009	10/21/2009	21.59	1.962	23.55
M	MG/KG	NTC21SB18-SO-0507	0910006-14RE1	NM	09/26/2009	10/19/2009	10/21/2009	22.78	2.271	25.05
M	MG/KG	NTC21SB20-SO-0406	0910006-16RE1	NM	09/26/2009	10/19/2009	10/21/2009	22.61	2.294	24.90
M	MG/KG	NTC21SB01-SO-0102	0910006-41	NM	09/28/2009	10/19/2009	10/21/2009	20.84	1.981	22.82
M	MG/KG	NTC21SB04-SO-0001	0910006-21	NM	09/27/2009	10/19/2009	10/21/2009	21.79	1.896	23.68
M	MG/KG	NTC21SB03-SO-0204	0910006-45	NM	09/28/2009	10/19/2009	10/21/2009	20.82	2.008	22.82
M	MG/KG	NTC21SB03-SO-0001	0910006-44RE1	NM	09/28/2009	10/19/2009	10/21/2009	20.82	2.340	23.16
M	MG/KG	NTC21SB03-SO-0001	0910006-44	NM	09/28/2009	10/19/2009	10/21/2009	20.82	2.004	22.83
M	MG/KG	NTC21SB02-SO-0204	0910006-43	NM	09/28/2009	10/19/2009	10/21/2009	20.90	1.987	22.89
M	MG/KG	NTC21SB02-SO-0001	0910006-42RE1	NM	09/28/2009	10/19/2009	10/21/2009	20.91	2.337	23.24
M	MG/KG	NTC21SB04-SO-0406	0910006-22	NM	09/27/2009	10/19/2009	10/21/2009	21.78	1.899	23.68
M	MG/KG	NTC21SB01-SO-0102	0910006-41RE1	NM	09/28/2009	10/19/2009	10/21/2009	20.84	2.334	23.17
M	MG/KG	FD-092709-01	0910006-20	NM	09/27/2009	10/19/2009	10/21/2009	22.32	1.893	24.22
M	MG/KG	FD-092809-01	0910006-40RE2	NM	09/28/2009	10/19/2009	10/21/2009	21.32	2.345	23.67

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	MG/KG	FD-092809-01	0910006-40RE1	NM	09/28/2009	10/19/2009	10/21/2009	21.32	2.342	23.66
M	MG/KG	FD-092809-01	0910006-40	NM	09/28/2009	10/19/2009	10/21/2009	21.32	1.974	23.3
M	MG/KG	FD-092609-02	0910006-02RE1	NM	09/26/2009	10/19/2009	10/21/2009	23.32	2.254	25.57
M	MG/KG	FD-092609-01	0910006-01RE1	NM	09/26/2009	10/19/2009	10/21/2009	23.32	2.251	25.57
M	MG/KG	NTC21SB10-SO-0406	0910006-06RE1	NM	09/26/2009	10/19/2009	10/21/2009	22.54	2.260	24.80
M	MG/KG	NTC21SB12-SO-0001	0910006-09	NM	09/26/2009	10/19/2009	10/21/2009	22.74	1.845	24.58
M	MG/KG	NTC21SB02-SO-0001	0910006-42	NM	09/28/2009	10/19/2009	10/21/2009	20.91	1.984	22.89
M	MG/KG	NTC21SB09-SO-0204	0910006-04	NM	09/26/2009	10/19/2009	10/21/2009	22.63	1.819	24.45
M	MG/KG	FD-092609-02	0910006-02	NM	09/26/2009	10/19/2009	10/21/2009	23.32	1.813	25.13
M	MG/KG	NTC21SB05-SO-0001	0910006-46	NM	09/28/2009	10/19/2009	10/21/2009	20.92	2.010	22.93
M	MG/KG	NTC21SB10-SO-0406	0910006-06	NM	09/26/2009	10/19/2009	10/21/2009	22.54	1.826	24.37
M	MG/KG	FD-092609-01	0910006-01	NM	09/26/2009	10/19/2009	10/21/2009	23.32	1.81	25.13
M	MG/KG	NTC21SB10-SO-0001	0910006-05	NM	09/26/2009	10/19/2009	10/21/2009	22.55	1.823	24.37
M	MG/KG	NTC21SB09-SO-0204	0910006-04RE1	NM	09/26/2009	10/19/2009	10/21/2009	22.63	2.258	24.89
M	MG/KG	NTC21SB09-SO-0001	0910006-03	NM	09/26/2009	10/19/2009	10/21/2009	22.64	1.817	24.46
M	MG/KG	NTC21SB08-SO-0204	0910006-49RE1	NM	09/28/2009	10/20/2009	10/21/2009	21.89	1.315	23.20
M	MG/KG	NTC21SB06-SO-0204	0910006-24	NM	09/27/2009	10/20/2009	10/21/2009	22.75	0.979	23.73
M	MG/KG	NTC21SB08-SO-0001	0910006-48RE1	NM	09/28/2009	10/20/2009	10/21/2009	21.89	1.312	23.20

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	MG/KG	NTC21SB08-SO-0001	0910006-48	NM	09/28/2009	10/20/2009	10/21/2009	21.89	0.985	22.88
M	MG/KG	NTC21SB05-SO-0001	0910006-46RE1	NM	09/28/2009	10/19/2009	10/21/2009	20.92	2.344	23.26
M	MG/KG	NTC21SB07-SO-0204	0910006-26	NM	09/27/2009	10/19/2009	10/21/2009	21.87	1.909	23.78
M	MG/KG	NTC21SB05-SO-0204	0910006-47	NM	09/28/2009	10/20/2009	10/21/2009	21.97	0.983	22.95
M	MG/KG	NTC21SB07-SO-0001	0910006-25	NM	09/27/2009	10/19/2009	10/21/2009	21.88	1.906	23.78
M	MG/KG	NTC21SB06-SO-0001	0910006-23	NM	09/27/2009	10/19/2009	10/21/2009	21.69	1.903	23.59
M	MG/KG	NTC21SB08-SO-0204	0910006-49	NM	09/28/2009	10/20/2009	10/21/2009	21.89	0.989	22.88
M	UG/L	SB-092909-01	0910006-53	NM	09/29/2009	10/07/2009	10/09/2009	7.789	2.296	10.08
M	UG/L	RB-092909-02	0910006-52	NM	09/29/2009	10/07/2009	10/09/2009	7.684	2.292	9.976
M	UG/L	RB-092909-01	0910006-51	NM	09/29/2009	10/07/2009	10/09/2009	7.751	2.29	10.04
OS	%	NTC21SB15-SO-0001-DL	0910006-31DL	NM	09/27/2009	10/06/2009	10/18/2009	9.017	12.41	21.43
OS	%	NTC21SB15-SO-0204	0910006-32	NM	09/27/2009	10/06/2009	10/17/2009	9.010	11.16	20.17
OS	%	NTC21SB16-SO-0001	0910006-33	NM	09/27/2009	10/06/2009	10/20/2009	9.142	14.33	23.48
OS	%	NTC21SB16-SO-0204	0910006-34	NM	09/27/2009	10/06/2009	10/17/2009	8.733	11.18	19.91
OS	%	NTC21SB16-SO-0001	0910006-33	NM	09/27/2009	10/06/2009	10/17/2009	8.726	11.56	20.28
OS	%	NTC21SB15-SO-0204	0910006-32	NM	09/27/2009	10/06/2009	10/19/2009	9.010	13.34	22.35
OS	%	NTC21SB16-SO-0204	0910006-34	NM	09/27/2009	10/06/2009	10/19/2009	8.733	13.36	22.1
OS	%	NTC21SB17-SO-0001	0910006-11	NM	09/26/2009	10/03/2009	10/08/2009	7.017	5.108	12.13

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OS	%	NTC21SB17-SO-0001	0910006-11	NM	09/26/2009	10/03/2009	10/17/2009	7.017	13.68	20.69
OS	%	NTC21SB15-SO-0001	0910006-31	NM	09/27/2009	10/06/2009	10/19/2009	9.017	13.55	22.57
OS	%	NTC21SB17-SO-0507	0910006-12	NM	09/26/2009	10/03/2009	10/16/2009	7.013	13.25	20.26
OS	%	NTC21SB12-SO-0204	0910006-10	NM	09/26/2009	10/03/2009	10/17/2009	6.986	13.50	20.49
OS	%	NTC21SB18-SO-0001	0910006-13	NM	09/26/2009	10/03/2009	10/08/2009	7.044	5.135	12.18
OS	%	NTC21SB17-SO-0507	0910006-12	NM	09/26/2009	10/03/2009	10/08/2009	7.013	4.736	11.75
OS	%	NTC21SB15-SO-0001	0910006-31	NM	09/27/2009	10/06/2009	10/17/2009	9.017	11.53	20.55
OS	%	NTC21SB14-SO-0204	0910006-30	NM	09/27/2009	10/06/2009	10/19/2009	9.031	13.31	22.34
OS	%	NTC21SB14-SO-0204	0910006-30	NM	09/27/2009	10/06/2009	10/17/2009	9.031	11.13	20.16
OS	%	NTC21SB14-SO-0001	0910006-29	NM	09/27/2009	10/06/2009	10/19/2009	9.038	13.44	22.48
OS	%	NTC21SB14-SO-0001	0910006-29	NM	09/27/2009	10/06/2009	10/17/2009	9.038	11.51	20.54
OS	%	NTC21SB13-SO-0204	0910006-28	NM	09/27/2009	10/06/2009	10/19/2009	9.052	13.28	22.34
OS	%	NTC21SB13-SO-0204	0910006-28	NM	09/27/2009	10/06/2009	10/17/2009	9.052	11.11	20.16
OS	%	NTC21SB13-SO-0001	0910006-27	NM	09/27/2009	10/06/2009	10/19/2009	9.059	13.42	22.47
OS	%	NTC21SB12-SO-0204-DL	0910006-10DL	NM	09/26/2009	10/03/2009	10/11/2009	6.986	7.45	14.44
OS	%	NTC21SB12-SO-0204	0910006-10	NM	09/26/2009	10/03/2009	10/08/2009	6.986	5.081	12.07
OS	%	NTC21SB12-SO-0001	0910006-09	NM	09/26/2009	10/03/2009	10/17/2009	6.993	13.53	20.52
OS	%	NTC21SB18-SO-0001	0910006-13	NM	09/26/2009	10/03/2009	10/17/2009	7.044	13.55	20.6

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OS	%	NTC21SB22-SO-0204	0910006-38	NM	09/27/2009	10/06/2009	10/18/2009	8.927	11.66	20.58
OS	%	NTC21SB13-SO-0001	0910006-27	NM	09/27/2009	10/06/2009	10/17/2009	9.059	11.48	20.54
OS	%	NTC21SB21-SO-0001	0910006-17	NM	09/26/2009	10/03/2009	10/17/2009	6.944	13.73	20.67
OS	%	SB-092909-01	0910006-53	NM	09/29/2009	10/01/2009	10/10/2009	2.069	8.851	10.92
OS	%	SB-092909-01	0910006-53	NM	09/29/2009	10/01/2009	10/03/2009	2.069	1.881	3.95
OS	%	RB-092909-02	0910006-52	NM	09/29/2009	10/01/2009	10/10/2009	1.964	8.569	10.53
OS	%	RB-092909-02	0910006-52	NM	09/29/2009	10/01/2009	10/03/2009	1.964	1.538	3.502
OS	%	RB-092909-01	0910006-51	NM	09/29/2009	10/01/2009	10/10/2009	2.031	8.544	10.57
OS	%	RB-092909-01	0910006-51	NM	09/29/2009	10/01/2009	10/03/2009	2.031	1.512	3.542
OS	%	NTC21SB22-SO-0204-DL	0910006-38DL	NM	09/27/2009	10/06/2009	10/21/2009	8.927	15.27	24.19
OS	%	NTC21SB22-SO-0204-DL	0910006-38DL	NM	09/27/2009	10/06/2009	10/18/2009	8.927	12.44	21.36
OS	%	NTC21SB22-SO-0204	0910006-38	NM	09/27/2009	10/06/2009	10/20/2009	8.927	14.44	23.37
OS	%	NTC21SB11-SO-0204	0910006-08	NM	09/26/2009	10/03/2009	10/08/2009	6.818	5.002	11.82
OS	%	NTC21SB22-SO-0001	0910006-37	NM	09/27/2009	10/06/2009	10/20/2009	8.934	14.39	23.32
OS	%	NTC21SB21-SO-0608	0910006-18	NM	09/26/2009	10/03/2009	10/16/2009	6.938	13.33	20.26
OS	%	NTC21SB22-SO-0001	0910006-37	NM	09/27/2009	10/06/2009	10/18/2009	8.934	11.63	20.57
OS	%	NTC21SB21-SO-0001-DL	0910006-17DL	NM	09/26/2009	10/03/2009	10/10/2009	6.944	7.369	14.31
OS	%	NTC21SB18-SO-0507	0910006-14	NM	09/26/2009	10/03/2009	10/08/2009	7.035	4.762	11.8

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OS	%	NTC21SB21-SO-0001	0910006-17	NM	09/26/2009	10/03/2009	10/08/2009	6.944	5.188	12.13
OS	%	NTC21SB20-SO-0406	0910006-16	NM	09/26/2009	10/03/2009	10/16/2009	6.867	13.30	20.17
OS	%	NTC21SB20-SO-0406	0910006-16	NM	09/26/2009	10/03/2009	10/08/2009	6.867	4.79	11.66
OS	%	NTC21SB20-SO-0001-DL	0910006-15DL	NM	09/26/2009	10/03/2009	10/18/2009	6.870	15.24	22.11
OS	%	NTC21SB20-SO-0001-DL	0910006-15DL	NM	09/26/2009	10/03/2009	10/13/2009	6.870	10.02	16.89
OS	%	NTC21SB20-SO-0001	0910006-15	NM	09/26/2009	10/03/2009	10/17/2009	6.870	13.70	20.57
OS	%	NTC21SB20-SO-0001	0910006-15	NM	09/26/2009	10/03/2009	10/08/2009	6.870	5.161	12.03
OS	%	NTC21SB19-SO-0204	0910006-36	NM	09/27/2009	10/06/2009	10/19/2009	8.691	13.39	22.08
OS	%	NTC21SB19-SO-0204	0910006-36	NM	09/27/2009	10/06/2009	10/18/2009	8.691	11.61	20.3
OS	%	NTC21SB19-SO-0001	0910006-35	NM	09/27/2009	10/06/2009	10/20/2009	8.698	14.36	23.06
OS	%	NTC21SB19-SO-0001	0910006-35	NM	09/27/2009	10/06/2009	10/18/2009	8.698	11.58	20.28
OS	%	NTC21SB18-SO-0507	0910006-14	NM	09/26/2009	10/03/2009	10/16/2009	7.035	13.28	20.31
OS	%	NTC21SB21-SO-0608	0910006-18	NM	09/26/2009	10/03/2009	10/08/2009	6.938	4.816	11.75
OS	%	NTC21SB02-SO-0001	0910006-42	NM	09/28/2009	10/07/2009	10/17/2009	9.378	9.91	19.29
OS	%	NTC21SB05-SO-0001	0910006-46	NM	09/28/2009	10/07/2009	10/17/2009	9.392	10.02	19.41
OS	%	NTC21SB05-SO-0001	0910006-46	NM	09/28/2009	10/07/2009	10/10/2009	9.392	2.978	12.37
OS	%	NTC21SB04-SO-0406	0910006-22	NM	09/27/2009	10/06/2009	10/19/2009	8.892	13.23	22.12
OS	%	NTC21SB04-SO-0406	0910006-22	NM	09/27/2009	10/06/2009	10/17/2009	8.892	11.36	20.25

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OS	%	NTC21SB04-SO-0001	0910006-21	NM	09/27/2009	10/06/2009	10/19/2009	8.899	13.20	22.10
OS	%	NTC21SB04-SO-0001	0910006-21	NM	09/27/2009	10/06/2009	10/17/2009	8.899	11.33	20.23
OS	%	NTC21SB03-SO-0204	0910006-45	NM	09/28/2009	10/07/2009	10/17/2009	9.288	9.991	19.28
OS	%	NTC21SB03-SO-0204	0910006-45	NM	09/28/2009	10/07/2009	10/13/2009	9.288	5.761	15.05
OS	%	NTC21SB03-SO-0001-DL	0910006-44DL	NM	09/28/2009	10/07/2009	10/13/2009	9.295	5.814	15.11
OS	%	NTC21SB03-SO-0001	0910006-44	NM	09/28/2009	10/07/2009	10/17/2009	9.295	9.964	19.26
OS	%	NTC21SB03-SO-0001	0910006-44	NM	09/28/2009	10/07/2009	10/10/2009	9.295	2.925	12.22
OS	%	NTC21SB05-SO-0204	0910006-47	NM	09/28/2009	10/07/2009	10/10/2009	9.385	3.005	12.39
OS	%	NTC21SB02-SO-0204	0910006-43	NM	09/28/2009	10/07/2009	10/10/2009	9.372	2.899	12.27
OS	%	NTC21SB01-SO-0102-DL	0910006-41DL	NM	09/28/2009	10/06/2009	10/21/2009	7.934	15.29	23.23
OS	%	NTC21SB02-SO-0001	0910006-42	NM	09/28/2009	10/07/2009	10/10/2009	9.378	2.872	12.25
OS	%	NTC21SB12-SO-0001	0910006-09	NM	09/26/2009	10/03/2009	10/08/2009	6.993	5.055	12.05
OS	%	NTC21SB01-SO-0102	0910006-41	NM	09/28/2009	10/06/2009	10/20/2009	7.934	14.49	22.43
OS	%	NTC21SB11-SO-0204-DL	0910006-08DL	NM	09/26/2009	10/03/2009	10/10/2009	6.818	7.423	14.24
OS	%	FD-092809-01	0910006-40	NM	09/28/2009	10/06/2009	10/20/2009	7.934	14.47	22.4
OS	%	FD-092809-01	0910006-40	NM	09/28/2009	10/06/2009	10/18/2009	8.434	11.68	20.12
OS	%	FD-092709-01	0910006-20	NM	09/27/2009	10/03/2009	10/16/2009	6.576	13.35	19.93
OS	%	FD-092709-01	0910006-20	NM	09/27/2009	10/03/2009	10/08/2009	6.576	4.842	11.42

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OS	%	FD-092609-02	0910006-02	NM	09/26/2009	10/03/2009	10/17/2009	7.576	13.58	21.15
OS	%	FD-092609-02	0910006-02	NM	09/26/2009	10/03/2009	10/06/2009	7.576	3.292	10.87
OS	%	FD-092609-01	0910006-01	NM	09/26/2009	10/03/2009	10/16/2009	7.576	13.18	20.75
OS	%	FD-092609-01	0910006-01	NM	09/26/2009	10/03/2009	10/06/2009	7.576	3.266	10.84
OS	%	NTC21SB02-SO-0204	0910006-43	NM	09/28/2009	10/07/2009	10/17/2009	9.372	9.937	19.31
OS	%	NTC21SB10-SO-0406	0910006-06	NM	09/26/2009	10/03/2009	10/16/2009	6.799	13.23	20.03
OS	%	NTC21SB01-SO-0102	0910006-41	NM	09/28/2009	10/06/2009	10/18/2009	7.934	11.71	19.64
OS	%	NTC21SB05-SO-0204	0910006-47	NM	09/28/2009	10/07/2009	10/17/2009	9.385	10.04	19.43
OS	%	NTC21SB11-SO-0204	0910006-08	NM	09/26/2009	10/03/2009	10/17/2009	6.818	13.48	20.3
OS	%	NTC21SB11-SO-0001-DL	0910006-07DL	NM	09/26/2009	10/03/2009	10/08/2009	6.819	4.922	11.74
OS	%	NTC21SB11-SO-0001	0910006-07	NM	09/26/2009	10/03/2009	10/17/2009	6.819	13.65	20.47
OS	%	NTC21SB10-SO-0406-DL	0910006-06DL	NM	09/26/2009	10/03/2009	10/08/2009	6.799	4.895	11.69
OS	%	NTC21SB10-SO-0406	0910006-06	NM	09/26/2009	10/03/2009	10/06/2009	6.799	3.398	10.2
OS	%	NTC21SB10-SO-0001	0910006-05	NM	09/26/2009	10/03/2009	10/17/2009	6.801	13.63	20.43
OS	%	NTC21SB10-SO-0001	0910006-05	NM	09/26/2009	10/03/2009	10/06/2009	6.801	3.372	10.17
OS	%	NTC21SB09-SO-0204	0910006-04	NM	09/26/2009	10/03/2009	10/16/2009	6.890	13.20	20.09
OS	%	NTC21SB09-SO-0204	0910006-04	NM	09/26/2009	10/03/2009	10/06/2009	6.890	3.345	10.24
OS	%	NTC21SB09-SO-0001	0910006-03	NM	09/26/2009	10/03/2009	10/17/2009	6.896	13.60	20.5

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OS	%	NTC21SB09-SO-0001	0910006-03	NM	09/26/2009	10/03/2009	10/06/2009	6.896	3.319	10.21
OS	%	NTC21SB07-SO-0001	0910006-25	NM	09/27/2009	10/06/2009	10/17/2009	8.99	11.43	20.42
OS	%	NTC21SB06-SO-0001	0910006-23	NM	09/27/2009	10/06/2009	10/17/2009	8.802	11.38	20.18
OS	%	NTC21SB11-SO-0001	0910006-07	NM	09/26/2009	10/03/2009	10/07/2009	6.819	3.424	10.24
OS	%	NTC21SB08-SO-0204	0910006-49	NM	09/28/2009	10/07/2009	10/17/2009	9.309	10.1	19.41
OS	%	NTC21SB06-SO-0204	0910006-24	NM	09/27/2009	10/06/2009	10/17/2009	8.795	11.41	20.20
OS	%	NTC21SB06-SO-0204	0910006-24	NM	09/27/2009	10/06/2009	10/20/2009	8.795	14.31	23.10
OS	%	NTC21SB06-SO-0001	0910006-23	NM	09/27/2009	10/06/2009	10/19/2009	8.802	13.26	22.06
OS	%	NTC21SB07-SO-0001	0910006-25	NM	09/27/2009	10/06/2009	10/20/2009	8.99	14.52	23.51
OS	%	NTC21SB07-SO-0001-DL	0910006-25DL	NM	09/27/2009	10/06/2009	10/21/2009	8.99	15.32	24.31
OS	%	NTC21SB07-SO-0204	0910006-26	NM	09/27/2009	10/06/2009	10/17/2009	8.983	11.46	20.44
OS	%	NTC21SB07-SO-0204	0910006-26	NM	09/27/2009	10/06/2009	10/20/2009	8.983	14.54	23.53
OS	%	NTC21SB07-SO-0204-DL	0910006-26DL	NM	09/27/2009	10/06/2009	10/21/2009	8.983	15.35	24.33
OS	%	NTC21SB08-SO-0001	0910006-48	NM	09/28/2009	10/07/2009	10/10/2009	9.313	3.031	12.34
OS	%	NTC21SB08-SO-0001	0910006-48	NM	09/28/2009	10/07/2009	10/17/2009	9.313	10.07	19.38
OS	%	NTC21SB08-SO-0204	0910006-49	NM	09/28/2009	10/07/2009	10/10/2009	9.309	3.058	12.37
OS	UG/KG	NTC21SB04-SO-0001	0910006-21	NM	09/27/2009	10/06/2009	10/17/2009	8.899	11.33	20.23
OS	UG/KG	NTC21SB05-SO-0204	0910006-47	NM	09/28/2009	10/07/2009	10/17/2009	9.385	10.04	19.43

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OS	UG/KG	NTC21SB04-SO-0406	0910006-22	NM	09/27/2009	10/06/2009	10/17/2009	8.892	11.36	20.25
OS	UG/KG	NTC21SB04-SO-0406	0910006-22	NM	09/27/2009	10/06/2009	10/19/2009	8.892	13.23	22.12
OS	UG/KG	NTC21SB05-SO-0001	0910006-46	NM	09/28/2009	10/07/2009	10/10/2009	9.392	2.978	12.37
OS	UG/KG	NTC21SB05-SO-0001	0910006-46	NM	09/28/2009	10/07/2009	10/17/2009	9.392	10.02	19.41
OS	UG/KG	NTC21SB05-SO-0204	0910006-47	NM	09/28/2009	10/07/2009	10/10/2009	9.385	3.005	12.39
OS	UG/KG	NTC21SB04-SO-0001	0910006-21	NM	09/27/2009	10/06/2009	10/19/2009	8.899	13.20	22.10
OS	UG/KG	NTC21SB06-SO-0001	0910006-23	NM	09/27/2009	10/06/2009	10/17/2009	8.802	11.38	20.18
OS	UG/KG	NTC21SB06-SO-0001	0910006-23	NM	09/27/2009	10/06/2009	10/19/2009	8.802	13.26	22.06
OS	UG/KG	NTC21SB06-SO-0204	0910006-24	NM	09/27/2009	10/06/2009	10/17/2009	8.795	11.41	20.20
OS	UG/KG	NTC21SB06-SO-0204	0910006-24	NM	09/27/2009	10/06/2009	10/20/2009	8.795	14.31	23.10
OS	UG/KG	NTC21SB07-SO-0001	0910006-25	NM	09/27/2009	10/06/2009	10/17/2009	8.99	11.43	20.42
OS	UG/KG	NTC21SB07-SO-0001-DL	0910006-25DL	NM	09/27/2009	10/06/2009	10/21/2009	8.99	15.32	24.31
OS	UG/KG	NTC21SB07-SO-0204-DL	0910006-26DL	NM	09/27/2009	10/06/2009	10/21/2009	8.983	15.35	24.33
OS	UG/KG	NTC21SB03-SO-0204	0910006-45	NM	09/28/2009	10/07/2009	10/17/2009	9.288	9.991	19.28
OS	UG/KG	FD-092609-02	0910006-02	NM	09/26/2009	10/03/2009	10/06/2009	7.576	3.292	10.87
OS	UG/KG	NTC21SB07-SO-0001	0910006-25	NM	09/27/2009	10/06/2009	10/20/2009	8.99	14.52	23.51
OS	UG/KG	NTC21SB01-SO-0102	0910006-41	NM	09/28/2009	10/06/2009	10/20/2009	7.934	14.49	22.43
OS	UG/KG	NTC21SB07-SO-0204	0910006-26	NM	09/27/2009	10/06/2009	10/20/2009	8.983	14.54	23.53

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OS	UG/KG	FD-092609-01	0910006-01	NM	09/26/2009	10/03/2009	10/06/2009	7.576	3.266	10.84
OS	UG/KG	FD-092609-01	0910006-01	NM	09/26/2009	10/03/2009	10/16/2009	7.576	13.18	20.75
OS	UG/KG	FD-092609-02	0910006-02	NM	09/26/2009	10/03/2009	10/17/2009	7.576	13.58	21.15
OS	UG/KG	FD-092709-01	0910006-20	NM	09/27/2009	10/03/2009	10/16/2009	6.576	13.35	19.93
OS	UG/KG	FD-092809-01	0910006-40	NM	09/28/2009	10/06/2009	10/18/2009	8.434	11.68	20.12
OS	UG/KG	FD-092709-01	0910006-20	NM	09/27/2009	10/03/2009	10/08/2009	6.576	4.842	11.42
OS	UG/KG	NTC21SB01-SO-0102	0910006-41	NM	09/28/2009	10/06/2009	10/18/2009	7.934	11.71	19.64
OS	UG/KG	NTC21SB03-SO-0204	0910006-45	NM	09/28/2009	10/07/2009	10/13/2009	9.288	5.761	15.05
OS	UG/KG	NTC21SB01-SO-0102-DL	0910006-41DL	NM	09/28/2009	10/06/2009	10/21/2009	7.934	15.29	23.23
OS	UG/KG	NTC21SB02-SO-0001	0910006-42	NM	09/28/2009	10/07/2009	10/10/2009	9.378	2.872	12.25
OS	UG/KG	NTC21SB02-SO-0204	0910006-43	NM	09/28/2009	10/07/2009	10/10/2009	9.372	2.899	12.27
OS	UG/KG	NTC21SB02-SO-0204	0910006-43	NM	09/28/2009	10/07/2009	10/17/2009	9.372	9.937	19.31
OS	UG/KG	NTC21SB03-SO-0001	0910006-44	NM	09/28/2009	10/07/2009	10/10/2009	9.295	2.925	12.22
OS	UG/KG	NTC21SB03-SO-0001	0910006-44	NM	09/28/2009	10/07/2009	10/17/2009	9.295	9.964	19.26
OS	UG/KG	NTC21SB03-SO-0001-DL	0910006-44DL	NM	09/28/2009	10/07/2009	10/13/2009	9.295	5.814	15.11
OS	UG/KG	FD-092809-01	0910006-40	NM	09/28/2009	10/06/2009	10/20/2009	7.934	14.47	22.4
OS	UG/KG	NTC21SB17-SO-0001	0910006-11	NM	09/26/2009	10/03/2009	10/17/2009	7.017	13.68	20.69
OS	UG/KG	NTC21SB19-SO-0001	0910006-35	NM	09/27/2009	10/06/2009	10/20/2009	8.698	14.36	23.06

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OS	UG/KG	NTC21SB19-SO-0001	0910006-35	NM	09/27/2009	10/06/2009	10/18/2009	8.698	11.58	20.28
OS	UG/KG	NTC21SB18-SO-0507	0910006-14	NM	09/26/2009	10/03/2009	10/16/2009	7.035	13.28	20.31
OS	UG/KG	NTC21SB18-SO-0507	0910006-14	NM	09/26/2009	10/03/2009	10/08/2009	7.035	4.762	11.8
OS	UG/KG	NTC21SB18-SO-0001	0910006-13	NM	09/26/2009	10/03/2009	10/17/2009	7.044	13.55	20.6
OS	UG/KG	NTC21SB18-SO-0001	0910006-13	NM	09/26/2009	10/03/2009	10/08/2009	7.044	5.135	12.18
OS	UG/KG	NTC21SB15-SO-0204	0910006-32	NM	09/27/2009	10/06/2009	10/17/2009	9.010	11.16	20.17
OS	UG/KG	NTC21SB17-SO-0507	0910006-12	NM	09/26/2009	10/03/2009	10/08/2009	7.013	4.736	11.75
OS	UG/KG	NTC21SB20-SO-0001-DL	0910006-15DL	NM	09/26/2009	10/03/2009	10/13/2009	6.870	10.02	16.89
OS	UG/KG	NTC21SB17-SO-0001	0910006-11	NM	09/26/2009	10/03/2009	10/08/2009	7.017	5.108	12.13
OS	UG/KG	NTC21SB16-SO-0204	0910006-34	NM	09/27/2009	10/06/2009	10/19/2009	8.733	13.36	22.1
OS	UG/KG	NTC21SB16-SO-0204	0910006-34	NM	09/27/2009	10/06/2009	10/17/2009	8.733	11.18	19.91
OS	UG/KG	NTC21SB16-SO-0001	0910006-33	NM	09/27/2009	10/06/2009	10/17/2009	8.726	11.56	20.28
OS	UG/KG	NTC21SB16-SO-0001	0910006-33	NM	09/27/2009	10/06/2009	10/20/2009	9.142	14.33	23.48
OS	UG/KG	NTC21SB15-SO-0204	0910006-32	NM	09/27/2009	10/06/2009	10/19/2009	9.010	13.34	22.35
OS	UG/KG	NTC21SB17-SO-0507	0910006-12	NM	09/26/2009	10/03/2009	10/16/2009	7.013	13.25	20.26
OS	UG/KG	NTC21SB21-SO-0608	0910006-18	NM	09/26/2009	10/03/2009	10/08/2009	6.938	4.816	11.75
OS	UG/KG	NTC21SB07-SO-0204	0910006-26	NM	09/27/2009	10/06/2009	10/17/2009	8.983	11.46	20.44
OS	UG/KG	NTC21SB22-SO-0204-DL	0910006-38DL	NM	09/27/2009	10/06/2009	10/21/2009	8.927	15.27	24.19

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OS	UG/KG	NTC21SB22-SO-0204-DL	0910006-38DL	NM	09/27/2009	10/06/2009	10/18/2009	8.927	12.44	21.36
OS	UG/KG	NTC21SB22-SO-0204	0910006-38	NM	09/27/2009	10/06/2009	10/20/2009	8.927	14.44	23.37
OS	UG/KG	NTC21SB22-SO-0204	0910006-38	NM	09/27/2009	10/06/2009	10/18/2009	8.927	11.66	20.58
OS	UG/KG	NTC21SB22-SO-0001	0910006-37	NM	09/27/2009	10/06/2009	10/20/2009	8.934	14.39	23.32
OS	UG/KG	NTC21SB19-SO-0204	0910006-36	NM	09/27/2009	10/06/2009	10/18/2009	8.691	11.61	20.3
OS	UG/KG	NTC21SB21-SO-0608	0910006-18	NM	09/26/2009	10/03/2009	10/16/2009	6.938	13.33	20.26
OS	UG/KG	NTC21SB20-SO-0001	0910006-15	NM	09/26/2009	10/03/2009	10/08/2009	6.870	5.161	12.03
OS	UG/KG	NTC21SB21-SO-0001-DL	0910006-17DL	NM	09/26/2009	10/03/2009	10/10/2009	6.944	7.369	14.31
OS	UG/KG	NTC21SB21-SO-0001	0910006-17	NM	09/26/2009	10/03/2009	10/17/2009	6.944	13.73	20.67
OS	UG/KG	NTC21SB21-SO-0001	0910006-17	NM	09/26/2009	10/03/2009	10/08/2009	6.944	5.188	12.13
OS	UG/KG	NTC21SB20-SO-0406	0910006-16	NM	09/26/2009	10/03/2009	10/16/2009	6.867	13.30	20.17
OS	UG/KG	NTC21SB20-SO-0406	0910006-16	NM	09/26/2009	10/03/2009	10/08/2009	6.867	4.79	11.66
OS	UG/KG	NTC21SB20-SO-0001-DL	0910006-15DL	NM	09/26/2009	10/03/2009	10/18/2009	6.870	15.24	22.11
OS	UG/KG	NTC21SB19-SO-0204	0910006-36	NM	09/27/2009	10/06/2009	10/19/2009	8.691	13.39	22.08
OS	UG/KG	NTC21SB22-SO-0001	0910006-37	NM	09/27/2009	10/06/2009	10/18/2009	8.934	11.63	20.57
OS	UG/KG	NTC21SB09-SO-0204	0910006-04	NM	09/26/2009	10/03/2009	10/16/2009	6.890	13.20	20.09
OS	UG/KG	NTC21SB11-SO-0001-DL	0910006-07DL	NM	09/26/2009	10/03/2009	10/08/2009	6.819	4.922	11.74
OS	UG/KG	NTC21SB11-SO-0001	0910006-07	NM	09/26/2009	10/03/2009	10/17/2009	6.819	13.65	20.47

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OS	UG/KG	NTC21SB11-SO-0001	0910006-07	NM	09/26/2009	10/03/2009	10/07/2009	6.819	3.424	10.24
OS	UG/KG	NTC21SB10-SO-0406-DL	0910006-06DL	NM	09/26/2009	10/03/2009	10/08/2009	6.799	4.895	11.69
OS	UG/KG	NTC21SB10-SO-0406	0910006-06	NM	09/26/2009	10/03/2009	10/16/2009	6.799	13.23	20.03
OS	UG/KG	NTC21SB10-SO-0406	0910006-06	NM	09/26/2009	10/03/2009	10/06/2009	6.799	3.398	10.2
OS	UG/KG	NTC21SB11-SO-0204	0910006-08	NM	09/26/2009	10/03/2009	10/08/2009	6.818	5.002	11.82
OS	UG/KG	NTC21SB10-SO-0001	0910006-05	NM	09/26/2009	10/03/2009	10/06/2009	6.801	3.372	10.17
OS	UG/KG	NTC21SB08-SO-0001	0910006-48	NM	09/28/2009	10/07/2009	10/10/2009	9.313	3.031	12.34
OS	UG/KG	NTC21SB09-SO-0204	0910006-04	NM	09/26/2009	10/03/2009	10/06/2009	6.890	3.345	10.24
OS	UG/KG	NTC21SB09-SO-0001	0910006-03	NM	09/26/2009	10/03/2009	10/17/2009	6.896	13.60	20.5
OS	UG/KG	NTC21SB09-SO-0001	0910006-03	NM	09/26/2009	10/03/2009	10/06/2009	6.896	3.319	10.21
OS	UG/KG	NTC21SB08-SO-0204	0910006-49	NM	09/28/2009	10/07/2009	10/17/2009	9.309	10.1	19.41
OS	UG/KG	NTC21SB08-SO-0204	0910006-49	NM	09/28/2009	10/07/2009	10/10/2009	9.309	3.058	12.37
OS	UG/KG	NTC21SB15-SO-0001-DL	0910006-31DL	NM	09/27/2009	10/06/2009	10/18/2009	9.017	12.41	21.43
OS	UG/KG	NTC21SB20-SO-0001	0910006-15	NM	09/26/2009	10/03/2009	10/17/2009	6.870	13.70	20.57
OS	UG/KG	NTC21SB10-SO-0001	0910006-05	NM	09/26/2009	10/03/2009	10/17/2009	6.801	13.63	20.43
OS	UG/KG	NTC21SB13-SO-0001	0910006-27	NM	09/27/2009	10/06/2009	10/17/2009	9.059	11.48	20.54
OS	UG/KG	NTC21SB15-SO-0001	0910006-31	NM	09/27/2009	10/06/2009	10/19/2009	9.017	13.55	22.57
OS	UG/KG	NTC21SB15-SO-0001	0910006-31	NM	09/27/2009	10/06/2009	10/17/2009	9.017	11.53	20.55

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OS	UG/KG	NTC21SB14-SO-0204	0910006-30	NM	09/27/2009	10/06/2009	10/19/2009	9.031	13.31	22.34
OS	UG/KG	NTC21SB14-SO-0204	0910006-30	NM	09/27/2009	10/06/2009	10/17/2009	9.031	11.13	20.16
OS	UG/KG	NTC21SB14-SO-0001	0910006-29	NM	09/27/2009	10/06/2009	10/19/2009	9.038	13.44	22.48
OS	UG/KG	NTC21SB14-SO-0001	0910006-29	NM	09/27/2009	10/06/2009	10/17/2009	9.038	11.51	20.54
OS	UG/KG	NTC21SB13-SO-0204	0910006-28	NM	09/27/2009	10/06/2009	10/19/2009	9.052	13.28	22.34
OS	UG/KG	NTC21SB13-SO-0001	0910006-27	NM	09/27/2009	10/06/2009	10/19/2009	9.059	13.42	22.47
OS	UG/KG	NTC21SB08-SO-0001	0910006-48	NM	09/28/2009	10/07/2009	10/17/2009	9.313	10.07	19.38
OS	UG/KG	NTC21SB12-SO-0204-DL	0910006-10DL	NM	09/26/2009	10/03/2009	10/11/2009	6.986	7.45	14.44
OS	UG/KG	NTC21SB12-SO-0204	0910006-10	NM	09/26/2009	10/03/2009	10/17/2009	6.986	13.50	20.49
OS	UG/KG	NTC21SB12-SO-0204	0910006-10	NM	09/26/2009	10/03/2009	10/08/2009	6.986	5.081	12.07
OS	UG/KG	NTC21SB12-SO-0001	0910006-09	NM	09/26/2009	10/03/2009	10/17/2009	6.993	13.53	20.52
OS	UG/KG	NTC21SB12-SO-0001	0910006-09	NM	09/26/2009	10/03/2009	10/08/2009	6.993	5.055	12.05
OS	UG/KG	NTC21SB11-SO-0204-DL	0910006-08DL	NM	09/26/2009	10/03/2009	10/10/2009	6.818	7.423	14.24
OS	UG/KG	NTC21SB11-SO-0204	0910006-08	NM	09/26/2009	10/03/2009	10/17/2009	6.818	13.48	20.3
OS	UG/KG	NTC21SB13-SO-0204	0910006-28	NM	09/27/2009	10/06/2009	10/17/2009	9.052	11.11	20.16
OS	UG/L	SB-092909-01	0910006-53	NM	09/29/2009	10/01/2009	10/10/2009	2.069	8.851	10.92
OS	UG/L	RB-092909-02	0910006-52	NM	09/29/2009	10/01/2009	10/10/2009	1.964	8.569	10.53
OS	UG/L	SB-092909-01	0910006-53	NM	09/29/2009	10/01/2009	10/03/2009	2.069	1.881	3.95

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OS	UG/L	RB-092909-01	0910006-51	NM	09/29/2009	10/01/2009	10/10/2009	2.031	8.544	10.57
OS	UG/L	NTC21SB02-SO-0001	0910006-42	NM	09/28/2009	10/07/2009	10/17/2009	9.378	9.91	19.29
OS	UG/L	RB-092909-02	0910006-52	NM	09/29/2009	10/01/2009	10/03/2009	1.964	1.538	3.502
OS	UG/L	RB-092909-01	0910006-51	NM	09/29/2009	10/01/2009	10/03/2009	2.031	1.512	3.542
OV	%	NTC21SB15-SO-0001	0910006-31	NM	09/27/2009	10/06/2009	10/06/2009	8.751	0	8.751
OV	%	NTC21SB19-SO-0001	0910006-35	NM	09/27/2009	10/06/2009	10/06/2009	8.518	0	8.518
OV	%	NTC21SB18-SO-0507	0910006-14	NM	09/26/2009	10/04/2009	10/04/2009	8.447	0	8.447
OV	%	NTC21SB18-SO-0001	0910006-13	NM	09/26/2009	10/04/2009	10/04/2009	8.434	0	8.434
OV	%	NTC21SB17-SO-0507	0910006-12	NM	09/26/2009	10/04/2009	10/04/2009	8.381	0	8.381
OV	%	NTC21SB17-SO-0001	0910006-11	NM	09/26/2009	10/04/2009	10/04/2009	8.363	0	8.363
OV	%	NTC21SB16-SO-0204	0910006-34	NM	09/27/2009	10/06/2009	10/06/2009	8.531	0	8.531
OV	%	NTC21SB15-SO-0204	0910006-32	NM	09/27/2009	10/06/2009	10/06/2009	8.766	0	8.766
OV	%	NTC21SB20-SO-0406	0910006-16	NM	09/26/2009	10/05/2009	10/05/2009	9.026	0	9.026
OV	%	NTC21SB14-SO-0204	0910006-30	NM	09/27/2009	10/06/2009	10/06/2009	8.744	0	8.744
OV	%	NTC21SB14-SO-0001	0910006-29	NM	09/27/2009	10/05/2009	10/05/2009	8.535	0	8.535
OV	%	NTC21SB13-SO-0204	0910006-28	NM	09/27/2009	10/06/2009	10/06/2009	8.743	0	8.743
OV	%	NTC21SB13-SO-0001-RE	0910006-27RE	NM	09/27/2009	10/08/2009	10/08/2009	11.09	0	11.09
OV	%	NTC21SB13-SO-0001	0910006-27	NM	09/27/2009	10/06/2009	10/06/2009	8.728	0	8.728

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OV	%	NTC21SB16-SO-0001	0910006-33	NM	09/27/2009	10/06/2009	10/06/2009	8.503	0	8.503
OV	%	NTC21SB20-SO-0001	0910006-15	NM	09/26/2009	10/05/2009	10/05/2009	9.008	0	9.008
OV	%	NTC21SB21-SO-0001	0910006-17	NM	09/26/2009	10/05/2009	10/05/2009	9.126	0	9.126
OV	%	NTC21SB21-SO-0608	0910006-18	NM	09/26/2009	10/05/2009	10/05/2009	9.140	0	9.140
OV	%	NTC21SB22-SO-0001	0910006-37	NM	09/27/2009	10/06/2009	10/06/2009	8.797	0	8.797
OV	%	NTC21SB22-SO-0204	0910006-38	NM	09/27/2009	10/06/2009	10/06/2009	8.813	0	8.813
OV	%	RB-092909-01	0910006-51	NM	09/29/2009	10/03/2009	10/03/2009	4.277	0	4.277
OV	%	RB-092909-02	0910006-52	NM	09/29/2009	10/03/2009	10/03/2009	4.231	0	4.231
OV	%	SB-092909-01	0910006-53	NM	09/29/2009	10/03/2009	10/03/2009	4.357	0	4.357
OV	%	TB-092609-01	0910006-19	NM	09/26/2009	10/09/2009	10/09/2009	13.59	0	13.59
OV	%	TB-092709-01	0910006-39	NM	09/27/2009	10/03/2009	10/03/2009	6.379	0	6.379
OV	%	TB-092809-01	0910006-50	NM	09/28/2009	10/03/2009	10/03/2009	5.4	0	5.4
OV	%	TB-092909-01	0910006-54	NM	09/29/2009	10/09/2009	10/09/2009	10.50	0	10.50
OV	%	FD-092809-01	0910006-40	NM	09/28/2009	10/06/2009	10/06/2009	8.341	0	8.341
OV	%	NTC21SB12-SO-0204	0910006-10	NM	09/26/2009	10/04/2009	10/04/2009	8.311	0	8.311
OV	%	NTC21SB19-SO-0204	0910006-36	NM	09/27/2009	10/06/2009	10/06/2009	8.533	0	8.533
OV	%	FD-092709-01	0910006-20	NM	09/27/2009	10/05/2009	10/05/2009	8.801	0	8.801
OV	%	FD-092609-01	0910006-01	NM	09/26/2009	10/04/2009	10/04/2009	8.448	0	8.448

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OV	%	NTC21SB02-SO-0001	0910006-42	NM	09/28/2009	10/06/2009	10/06/2009	7.953	0	7.953
OV	%	FD-092609-02	0910006-02	NM	09/26/2009	10/05/2009	10/05/2009	9.693	0	9.693
OV	%	NTC21SB12-SO-0001	0910006-09	NM	09/26/2009	10/04/2009	10/04/2009	8.297	0	8.297
OV	%	NTC21SB01-SO-0102	0910006-41	NM	09/28/2009	10/06/2009	10/06/2009	7.863	0	7.863
OV	%	NTC21SB02-SO-0204	0910006-43	NM	09/28/2009	10/06/2009	10/06/2009	8.011	0	8.011
OV	%	NTC21SB02-SO-0204-RE	0910006-43RE	NM	09/28/2009	10/08/2009	10/08/2009	10.05	0	10.05
OV	%	NTC21SB03-SO-0001	0910006-44	NM	09/28/2009	10/06/2009	10/06/2009	7.892	0	7.892
OV	%	NTC21SB03-SO-0204	0910006-45	NM	09/28/2009	10/06/2009	10/06/2009	7.949	0	7.949
OV	%	NTC21SB03-SO-0204-RE	0910006-45RE	NM	09/28/2009	10/08/2009	10/08/2009	9.985	0	9.985
OV	%	NTC21SB04-SO-0001	0910006-21	NM	09/27/2009	10/05/2009	10/05/2009	8.288	0	8.288
OV	%	NTC21SB04-SO-0406	0910006-22	NM	09/27/2009	10/05/2009	10/05/2009	8.303	0	8.303
OV	%	NTC21SB05-SO-0001	0910006-46	NM	09/28/2009	10/06/2009	10/06/2009	8.315	0	8.315
OV	%	NTC21SB05-SO-0204	0910006-47	NM	09/28/2009	10/06/2009	10/06/2009	8.33	0	8.33
OV	%	NTC21SB10-SO-0406	0910006-06	NM	09/26/2009	10/05/2009	10/05/2009	8.232	0	8.232
OV	%	NTC21SB05-SO-0204-RE	0910006-47RE	NM	09/28/2009	10/10/2009	10/10/2009	11.93	0	11.93
OV	%	NTC21SB11-SO-0204	0910006-08	NM	09/26/2009	10/04/2009	10/04/2009	8.1	0	8.1
OV	%	NTC21SB11-SO-0001	0910006-07	NM	09/26/2009	10/05/2009	10/05/2009	8.274	0	8.274
OV	%	NTC21SB10-SO-0001	0910006-05	NM	09/26/2009	10/04/2009	10/04/2009	8.062	0	8.062

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OV	%	NTC21SB09-SO-0204	0910006-04	NM	09/26/2009	10/04/2009	10/04/2009	8.129	0	8.129
OV	%	NTC21SB09-SO-0001	0910006-03	NM	09/26/2009	10/04/2009	10/04/2009	8.113	0	8.113
OV	%	NTC21SB08-SO-0204	0910006-49	NM	09/28/2009	10/06/2009	10/06/2009	8.297	0	8.297
OV	%	NTC21SB06-SO-0204	0910006-24	NM	09/27/2009	10/05/2009	10/05/2009	8.249	0	8.249
OV	%	NTC21SB06-SO-0001	0910006-23	NM	09/27/2009	10/05/2009	10/05/2009	8.234	0	8.234
OV	%	NTC21SB08-SO-0001-RE	0910006-48RE	NM	09/28/2009	10/10/2009	10/10/2009	11.92	0	11.92
OV	%	NTC21SB06-SO-0204-RE	0910006-24RE	NM	09/27/2009	10/08/2009	10/08/2009	10.80	0	10.80
OV	%	NTC21SB07-SO-0204	0910006-26	NM	09/27/2009	10/05/2009	10/05/2009	8.458	0	8.458
OV	%	NTC21SB08-SO-0001	0910006-48	NM	09/28/2009	10/06/2009	10/06/2009	8.278	0	8.278
OV	%	NTC21SB07-SO-0001	0910006-25	NM	09/27/2009	10/06/2009	10/06/2009	8.983	0	8.983
OV	UG/KG	NTC21SB11-SO-0001	0910006-07	NM	09/26/2009	10/05/2009	10/05/2009	8.274	0	8.274
OV	UG/KG	NTC21SB15-SO-0001	0910006-31	NM	09/27/2009	10/06/2009	10/06/2009	8.751	0	8.751
OV	UG/KG	NTC21SB14-SO-0204	0910006-30	NM	09/27/2009	10/06/2009	10/06/2009	8.744	0	8.744
OV	UG/KG	NTC21SB14-SO-0001	0910006-29	NM	09/27/2009	10/05/2009	10/05/2009	8.535	0	8.535
OV	UG/KG	NTC21SB13-SO-0204	0910006-28	NM	09/27/2009	10/06/2009	10/06/2009	8.743	0	8.743
OV	UG/KG	NTC21SB13-SO-0001-RE	0910006-27RE	NM	09/27/2009	10/08/2009	10/08/2009	11.09	0	11.09
OV	UG/KG	NTC21SB12-SO-0001	0910006-09	NM	09/26/2009	10/04/2009	10/04/2009	8.297	0	8.297
OV	UG/KG	NTC21SB12-SO-0204	0910006-10	NM	09/26/2009	10/04/2009	10/04/2009	8.311	0	8.311

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OV	UG/KG	NTC21SB10-SO-0406	0910006-06	NM	09/26/2009	10/05/2009	10/05/2009	8.232	0	8.232
OV	UG/KG	NTC21SB11-SO-0204	0910006-08	NM	09/26/2009	10/04/2009	10/04/2009	8.1	0	8.1
OV	UG/KG	NTC21SB15-SO-0204	0910006-32	NM	09/27/2009	10/06/2009	10/06/2009	8.766	0	8.766
OV	UG/KG	NTC21SB20-SO-0406	0910006-16	NM	09/26/2009	10/05/2009	10/05/2009	9.026	0	9.026
OV	UG/KG	NTC21SB13-SO-0001	0910006-27	NM	09/27/2009	10/06/2009	10/06/2009	8.728	0	8.728
OV	UG/KG	NTC21SB16-SO-0001	0910006-33	NM	09/27/2009	10/06/2009	10/06/2009	8.503	0	8.503
OV	UG/KG	NTC21SB16-SO-0204	0910006-34	NM	09/27/2009	10/06/2009	10/06/2009	8.531	0	8.531
OV	UG/KG	NTC21SB17-SO-0001	0910006-11	NM	09/26/2009	10/04/2009	10/04/2009	8.363	0	8.363
OV	UG/KG	NTC21SB17-SO-0507	0910006-12	NM	09/26/2009	10/04/2009	10/04/2009	8.381	0	8.381
OV	UG/KG	NTC21SB18-SO-0001	0910006-13	NM	09/26/2009	10/04/2009	10/04/2009	8.434	0	8.434
OV	UG/KG	NTC21SB18-SO-0507	0910006-14	NM	09/26/2009	10/04/2009	10/04/2009	8.447	0	8.447
OV	UG/KG	NTC21SB20-SO-0001	0910006-15	NM	09/26/2009	10/05/2009	10/05/2009	9.008	0	9.008
OV	UG/KG	NTC21SB19-SO-0204	0910006-36	NM	09/27/2009	10/06/2009	10/06/2009	8.533	0	8.533
OV	UG/KG	NTC21SB21-SO-0608	0910006-18	NM	09/26/2009	10/05/2009	10/05/2009	9.140	0	9.140
OV	UG/KG	NTC21SB22-SO-0001	0910006-37	NM	09/27/2009	10/06/2009	10/06/2009	8.797	0	8.797
OV	UG/KG	NTC21SB22-SO-0204	0910006-38	NM	09/27/2009	10/06/2009	10/06/2009	8.813	0	8.813
OV	UG/KG	NTC21SB10-SO-0001	0910006-05	NM	09/26/2009	10/04/2009	10/04/2009	8.062	0	8.062
OV	UG/KG	NTC21SB19-SO-0001	0910006-35	NM	09/27/2009	10/06/2009	10/06/2009	8.518	0	8.518

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OV	UG/KG	NTC21SB04-SO-0001	0910006-21	NM	09/27/2009	10/05/2009	10/05/2009	8.288	0	8.288
OV	UG/KG	NTC21SB09-SO-0204	0910006-04	NM	09/26/2009	10/04/2009	10/04/2009	8.129	0	8.129
OV	UG/KG	FD-092609-01	0910006-01	NM	09/26/2009	10/04/2009	10/04/2009	8.448	0	8.448
OV	UG/KG	FD-092609-02	0910006-02	NM	09/26/2009	10/05/2009	10/05/2009	9.693	0	9.693
OV	UG/KG	FD-092709-01	0910006-20	NM	09/27/2009	10/05/2009	10/05/2009	8.801	0	8.801
OV	UG/KG	FD-092809-01	0910006-40	NM	09/28/2009	10/06/2009	10/06/2009	8.341	0	8.341
OV	UG/KG	NTC21SB01-SO-0102	0910006-41	NM	09/28/2009	10/06/2009	10/06/2009	7.863	0	7.863
OV	UG/KG	NTC21SB21-SO-0001	0910006-17	NM	09/26/2009	10/05/2009	10/05/2009	9.126	0	9.126
OV	UG/KG	NTC21SB02-SO-0001	0910006-42	NM	09/28/2009	10/06/2009	10/06/2009	7.953	0	7.953
OV	UG/KG	NTC21SB02-SO-0204	0910006-43	NM	09/28/2009	10/06/2009	10/06/2009	8.011	0	8.011
OV	UG/KG	NTC21SB02-SO-0204-RE	0910006-43RE	NM	09/28/2009	10/08/2009	10/08/2009	10.05	0	10.05
OV	UG/KG	NTC21SB03-SO-0001	0910006-44	NM	09/28/2009	10/06/2009	10/06/2009	7.892	0	7.892
OV	UG/KG	NTC21SB03-SO-0204-RE	0910006-45RE	NM	09/28/2009	10/08/2009	10/08/2009	9.985	0	9.985
OV	UG/KG	NTC21SB06-SO-0204	0910006-24	NM	09/27/2009	10/05/2009	10/05/2009	8.249	0	8.249
OV	UG/KG	NTC21SB09-SO-0001	0910006-03	NM	09/26/2009	10/04/2009	10/04/2009	8.113	0	8.113
OV	UG/KG	NTC21SB08-SO-0204	0910006-49	NM	09/28/2009	10/06/2009	10/06/2009	8.297	0	8.297
OV	UG/KG	NTC21SB08-SO-0001-RE	0910006-48RE	NM	09/28/2009	10/10/2009	10/10/2009	11.92	0	11.92
OV	UG/KG	NTC21SB08-SO-0001	0910006-48	NM	09/28/2009	10/06/2009	10/06/2009	8.278	0	8.278

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OV	UG/KG	NTC21SB07-SO-0204	0910006-26	NM	09/27/2009	10/05/2009	10/05/2009	8.458	0	8.458
OV	UG/KG	NTC21SB03-SO-0204	0910006-45	NM	09/28/2009	10/06/2009	10/06/2009	7.949	0	7.949
OV	UG/KG	NTC21SB06-SO-0204-RE	0910006-24RE	NM	09/27/2009	10/08/2009	10/08/2009	10.80	0	10.80
OV	UG/KG	NTC21SB04-SO-0406	0910006-22	NM	09/27/2009	10/05/2009	10/05/2009	8.303	0	8.303
OV	UG/KG	NTC21SB06-SO-0001	0910006-23	NM	09/27/2009	10/05/2009	10/05/2009	8.234	0	8.234
OV	UG/KG	NTC21SB05-SO-0204-RE	0910006-47RE	NM	09/28/2009	10/10/2009	10/10/2009	11.93	0	11.93
OV	UG/KG	NTC21SB05-SO-0204	0910006-47	NM	09/28/2009	10/06/2009	10/06/2009	8.33	0	8.33
OV	UG/KG	NTC21SB05-SO-0001	0910006-46	NM	09/28/2009	10/06/2009	10/06/2009	8.315	0	8.315
OV	UG/KG	NTC21SB07-SO-0001	0910006-25	NM	09/27/2009	10/06/2009	10/06/2009	8.983	0	8.983
OV	UG/L	TB-092609-01	0910006-19	NM	09/26/2009	10/09/2009	10/09/2009	13.59	0	13.59
OV	UG/L	TB-092709-01	0910006-39	NM	09/27/2009	10/03/2009	10/03/2009	6.379	0	6.379
OV	UG/L	TB-092809-01	0910006-50	NM	09/28/2009	10/03/2009	10/03/2009	5.4	0	5.4
OV	UG/L	RB-092909-01	0910006-51	NM	09/29/2009	10/03/2009	10/03/2009	4.277	0	4.277
OV	UG/L	RB-092909-02	0910006-52	NM	09/29/2009	10/03/2009	10/03/2009	4.231	0	4.231
OV	UG/L	TB-092909-01	0910006-54	NM	09/29/2009	10/09/2009	10/09/2009	10.50	0	10.50
OV	UG/L	SB-092909-01	0910006-53	NM	09/29/2009	10/03/2009	10/03/2009	4.357	0	4.357
PCB	%	NTC21SB04-SO-0001	0910006-21	NM	09/27/2009	10/03/2009	10/24/2009	5.931	21.12	27.05
PCB	%	NTC21SB06-SO-0204	0910006-24	NM	09/27/2009	10/03/2009	10/24/2009	5.826	21.16	26.99

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
PCB	%	NTC21SB07-SO-0204	0910006-26	NM	09/27/2009	10/03/2009	10/13/2009	6.014	10.27	16.28
PCB	%	NTC21SB17-SO-0507	0910006-12	NM	09/26/2009	10/02/2009	10/10/2009	6.144	7.748	13.89
PCB	%	NTC21SB22-SO-0001	0910006-37	NM	09/27/2009	10/03/2009	10/24/2009	5.965	21.44	27.41
PCB	%	SB-092909-01	0910006-53	NM	09/29/2009	10/01/2009	10/06/2009	2.162	4.909	7.072
PCB	UG/KG	NTC21SB16-SO-0204	0910006-34	NM	09/27/2009	10/03/2009	10/13/2009	5.764	10.37	16.14
PCB	UG/KG	NTC21SB16-SO-0001	0910006-33	NM	09/27/2009	10/03/2009	10/13/2009	5.757	10.35	16.11
PCB	UG/KG	NTC21SB15-SO-0204	0910006-32	NM	09/27/2009	10/03/2009	10/13/2009	6.042	10.33	16.37
PCB	UG/KG	NTC21SB15-SO-0001	0910006-31	NM	09/27/2009	10/03/2009	10/24/2009	6.049	21.38	27.42
PCB	UG/KG	NTC21SB14-SO-0204	0910006-30	NM	09/27/2009	10/03/2009	10/13/2009	6.063	10.31	16.37
PCB	UG/KG	NTC21SB14-SO-0001	0910006-29	NM	09/27/2009	10/03/2009	10/24/2009	6.069	21.23	27.3
PCB	UG/KG	NTC21SB17-SO-0001	0910006-11	NM	09/26/2009	10/02/2009	10/10/2009	6.149	7.726	13.88
PCB	UG/KG	NTC21SB13-SO-0001	0910006-27	NM	09/27/2009	10/03/2009	10/24/2009	6.090	21.21	27.3
PCB	UG/KG	NTC21SB20-SO-0001	0910006-15	NM	09/26/2009	10/02/2009	10/10/2009	6.002	7.813	13.81
PCB	UG/KG	NTC21SB12-SO-0204	0910006-10	NM	09/26/2009	10/02/2009	10/10/2009	6.118	7.705	13.82
PCB	UG/KG	NTC21SB12-SO-0001	0910006-09	NM	09/26/2009	10/02/2009	10/10/2009	6.125	7.683	13.81
PCB	UG/KG	NTC21SB13-SO-0204	0910006-28	NM	09/27/2009	10/03/2009	10/13/2009	6.083	10.29	16.37
PCB	UG/KG	NTC21SB17-SO-0507	0910006-12	NM	09/26/2009	10/02/2009	10/10/2009	6.144	7.748	13.89
PCB	UG/KG	NTC21SB18-SO-0001	0910006-13	NM	09/26/2009	10/02/2009	10/10/2009	6.176	7.769	13.95

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
PCB	UG/KG	NTC21SB18-SO-0507	0910006-14	NM	09/26/2009	10/02/2009	10/10/2009	6.167	7.791	13.96
PCB	UG/KG	NTC21SB19-SO-0204	0910006-36	NM	09/27/2009	10/03/2009	10/13/2009	5.722	10.4	16.12
PCB	UG/KG	NTC21SB20-SO-0406	0910006-16	NM	09/26/2009	10/02/2009	10/10/2009	5.999	7.834	13.83
PCB	UG/KG	NTC21SB21-SO-0001	0910006-17	NM	09/26/2009	10/02/2009	10/10/2009	6.076	7.856	13.93
PCB	UG/KG	NTC21SB21-SO-0608	0910006-18	NM	09/26/2009	10/02/2009	10/10/2009	6.069	7.877	13.95
PCB	UG/KG	NTC21SB22-SO-0001	0910006-37	NM	09/27/2009	10/03/2009	10/24/2009	5.965	21.44	27.41
PCB	UG/KG	NTC21SB22-SO-0204	0910006-38	NM	09/27/2009	10/03/2009	10/24/2009	5.958	21.47	27.42
PCB	UG/KG	NTC21SB11-SO-0204	0910006-08	NM	09/26/2009	10/02/2009	10/10/2009	5.950	7.637	13.59
PCB	UG/KG	NTC21SB08-SO-0204	0910006-49	NM	09/28/2009	10/07/2009	10/25/2009	9.309	17.45	26.76
PCB	UG/KG	NTC21SB19-SO-0001	0910006-35	NM	09/27/2009	10/03/2009	10/24/2009	5.729	21.4	27.13
PCB	UG/KG	NTC21SB01-SO-0102	0910006-41	NM	09/28/2009	10/07/2009	10/24/2009	9.309	17.17	26.47
PCB	UG/KG	NTC21SB09-SO-0204	0910006-04	NM	09/26/2009	10/02/2009	10/10/2009	6.022	7.551	13.57
PCB	UG/KG	NTC21SB11-SO-0001	0910006-07	NM	09/26/2009	10/02/2009	10/10/2009	5.951	7.615	13.57
PCB	UG/KG	FD-092609-02	0910006-02	NM	09/26/2009	10/02/2009	10/10/2009	6.708	7.508	14.22
PCB	UG/KG	FD-092609-01	0910006-01	NM	09/26/2009	10/02/2009	10/10/2009	6.708	7.486	14.19
PCB	UG/KG	FD-092809-01	0910006-40	NM	09/28/2009	10/03/2009	10/24/2009	5.465	21.49	26.95
PCB	UG/KG	NTC21SB02-SO-0001	0910006-42	NM	09/28/2009	10/07/2009	10/24/2009	9.378	17.19	26.57
PCB	UG/KG	NTC21SB02-SO-0204	0910006-43	NM	09/28/2009	10/07/2009	10/25/2009	9.372	17.21	26.58

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
PCB	UG/KG	NTC21SB03-SO-0001	0910006-44	NM	09/28/2009	10/07/2009	10/25/2009	9.295	17.32	26.61
PCB	UG/KG	NTC21SB03-SO-0204	0910006-45	NM	09/28/2009	10/07/2009	10/25/2009	9.288	17.34	26.63
PCB	UG/KG	NTC21SB04-SO-0001	0910006-21	NM	09/27/2009	10/03/2009	10/24/2009	5.931	21.12	27.05
PCB	UG/KG	NTC21SB04-SO-0406	0910006-22	NM	09/27/2009	10/03/2009	10/13/2009	5.924	10.24	16.17
PCB	UG/KG	NTC21SB10-SO-0001	0910006-05	NM	09/26/2009	10/02/2009	10/10/2009	5.933	7.572	13.51
PCB	UG/KG	NTC21SB05-SO-0204	0910006-47	NM	09/28/2009	10/07/2009	10/25/2009	9.385	17.38	26.77
PCB	UG/KG	NTC21SB06-SO-0001	0910006-23	NM	09/27/2009	10/03/2009	10/24/2009	5.833	21.14	26.97
PCB	UG/KG	NTC21SB06-SO-0204	0910006-24	NM	09/27/2009	10/03/2009	10/24/2009	5.826	21.16	26.99
PCB	UG/KG	NTC21SB07-SO-0001	0910006-25	NM	09/27/2009	10/03/2009	10/24/2009	6.021	21.18	27.21
PCB	UG/KG	NTC21SB07-SO-0204	0910006-26	NM	09/27/2009	10/03/2009	10/13/2009	6.014	10.27	16.28
PCB	UG/KG	NTC21SB08-SO-0001	0910006-48	NM	09/28/2009	10/07/2009	10/25/2009	9.313	17.43	26.74
PCB	UG/KG	NTC21SB10-SO-0406	0910006-06	NM	09/26/2009	10/02/2009	10/10/2009	5.931	7.594	13.52
PCB	UG/KG	FD-092709-01	0910006-20	NM	09/27/2009	10/03/2009	10/13/2009	6.465	10.22	16.69
PCB	UG/KG	NTC21SB09-SO-0001	0910006-03	NM	09/26/2009	10/02/2009	10/10/2009	6.028	7.529	13.56
PCB	UG/KG	NTC21SB05-SO-0001	0910006-46	NM	09/28/2009	10/07/2009	10/25/2009	9.392	17.36	26.75
PCB	UG/L	SB-092909-01	0910006-53	NM	09/29/2009	10/01/2009	10/06/2009	2.162	4.909	7.072
PCB	UG/L	RB-092909-01	0910006-51	NM	09/29/2009	10/01/2009	10/06/2009	2.124	4.883	7.008
PCB	UG/L	RB-092909-02	0910006-52	NM	09/29/2009	10/01/2009	10/06/2009	2.058	4.897	6.954

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
PEST	%	NTC21SB14-SO-0001	0910006-29	NM	09/27/2009	10/03/2009	10/24/2009	6.069	21.23	27.3
PEST	%	SB-092909-01	0910006-53	NM	09/29/2009	10/01/2009	10/06/2009	2.162	4.909	7.072
PEST	%	NTC21SB17-SO-0001	0910006-11	NM	09/26/2009	10/02/2009	10/10/2009	6.149	7.726	13.88
PEST	%	NTC21SB16-SO-0204	0910006-34	NM	09/27/2009	10/03/2009	10/13/2009	5.764	10.37	16.14
PEST	%	NTC21SB16-SO-0001	0910006-33	NM	09/27/2009	10/03/2009	10/13/2009	5.757	10.35	16.11
PEST	%	NTC21SB15-SO-0204	0910006-32	NM	09/27/2009	10/03/2009	10/13/2009	6.042	10.33	16.37
PEST	%	NTC21SB12-SO-0204	0910006-10	NM	09/26/2009	10/02/2009	10/10/2009	6.118	7.705	13.82
PEST	%	NTC21SB14-SO-0204	0910006-30	NM	09/27/2009	10/03/2009	10/13/2009	6.063	10.31	16.37
PEST	%	NTC21SB13-SO-0204	0910006-28	NM	09/27/2009	10/03/2009	10/13/2009	6.083	10.29	16.37
PEST	%	NTC21SB13-SO-0001	0910006-27	NM	09/27/2009	10/03/2009	10/24/2009	6.090	21.21	27.3
PEST	%	RB-092909-02	0910006-52	NM	09/29/2009	10/01/2009	10/06/2009	2.058	4.897	6.954
PEST	%	NTC21SB12-SO-0001	0910006-09	NM	09/26/2009	10/02/2009	10/10/2009	6.125	7.683	13.81
PEST	%	NTC21SB11-SO-0204-DL	0910006-08RE1	NM	09/26/2009	10/02/2009	10/24/2009	5.950	21.79	27.74
PEST	%	NTC21SB15-SO-0001	0910006-31	NM	09/27/2009	10/03/2009	10/24/2009	6.049	21.38	27.42
PEST	%	NTC21SB17-SO-0507	0910006-12	NM	09/26/2009	10/02/2009	10/10/2009	6.144	7.748	13.89
PEST	%	NTC21SB18-SO-0001	0910006-13	NM	09/26/2009	10/02/2009	10/10/2009	6.176	7.769	13.95
PEST	%	NTC21SB18-SO-0507	0910006-14	NM	09/26/2009	10/02/2009	10/10/2009	6.167	7.791	13.96
PEST	%	NTC21SB19-SO-0001	0910006-35	NM	09/27/2009	10/03/2009	10/24/2009	5.729	21.4	27.13

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
PEST	%	NTC21SB19-SO-0204	0910006-36	NM	09/27/2009	10/03/2009	10/13/2009	5.722	10.4	16.12
PEST	%	NTC21SB20-SO-0001	0910006-15	NM	09/26/2009	10/02/2009	10/10/2009	6.002	7.813	13.81
PEST	%	NTC21SB20-SO-0406	0910006-16	NM	09/26/2009	10/02/2009	10/10/2009	5.999	7.834	13.83
PEST	%	NTC21SB21-SO-0001	0910006-17	NM	09/26/2009	10/02/2009	10/10/2009	6.076	7.856	13.93
PEST	%	NTC21SB21-SO-0001-DL	0910006-17RE1	NM	09/26/2009	10/02/2009	10/16/2009	6.076	14.05	20.13
PEST	%	NTC21SB21-SO-0608	0910006-18	NM	09/26/2009	10/02/2009	10/10/2009	6.069	7.877	13.95
PEST	%	NTC21SB22-SO-0001	0910006-37	NM	09/27/2009	10/03/2009	10/24/2009	5.965	21.44	27.41
PEST	%	RB-092909-01	0910006-51	NM	09/29/2009	10/01/2009	10/06/2009	2.124	4.883	7.008
PEST	%	NTC21SB05-SO-0204	0910006-47	NM	09/28/2009	10/07/2009	10/25/2009	9.385	17.38	26.77
PEST	%	NTC21SB11-SO-0204	0910006-08	NM	09/26/2009	10/02/2009	10/10/2009	5.950	7.637	13.59
PEST	%	NTC21SB22-SO-0204	0910006-38	NM	09/27/2009	10/03/2009	10/24/2009	5.958	21.47	27.42
PEST	%	NTC21SB02-SO-0204	0910006-43	NM	09/28/2009	10/07/2009	10/25/2009	9.372	17.21	26.58
PEST	%	NTC21SB11-SO-0001-DL	0910006-07RE1	NM	09/26/2009	10/02/2009	10/16/2009	5.951	14.01	19.96
PEST	%	NTC21SB06-SO-0001-DL	0910006-23RE1	NM	09/27/2009	10/03/2009	10/16/2009	5.833	13.32	19.15
PEST	%	FD-092609-01	0910006-01	NM	09/26/2009	10/02/2009	10/10/2009	6.708	7.486	14.19
PEST	%	FD-092609-02	0910006-02	NM	09/26/2009	10/02/2009	10/10/2009	6.708	7.508	14.22
PEST	%	FD-092609-02-DL	0910006-02RE1	NM	09/26/2009	10/02/2009	10/16/2009	6.708	13.99	20.69
PEST	%	FD-092709-01	0910006-20	NM	09/27/2009	10/03/2009	10/13/2009	6.465	10.22	16.69

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
PEST	%	FD-092809-01	0910006-40	NM	09/28/2009	10/03/2009	10/24/2009	5.465	21.49	26.95
PEST	%	NTC21SB02-SO-0001	0910006-42	NM	09/28/2009	10/07/2009	10/24/2009	9.378	17.19	26.57
PEST	%	NTC21SB03-SO-0001	0910006-44	NM	09/28/2009	10/07/2009	10/25/2009	9.295	17.32	26.61
PEST	%	NTC21SB03-SO-0204	0910006-45	NM	09/28/2009	10/07/2009	10/25/2009	9.288	17.34	26.63
PEST	%	NTC21SB04-SO-0001	0910006-21	NM	09/27/2009	10/03/2009	10/24/2009	5.931	21.12	27.05
PEST	%	NTC21SB04-SO-0406	0910006-22	NM	09/27/2009	10/03/2009	10/13/2009	5.924	10.24	16.17
PEST	%	NTC21SB05-SO-0001	0910006-46	NM	09/28/2009	10/07/2009	10/25/2009	9.392	17.36	26.75
PEST	%	NTC21SB09-SO-0001	0910006-03	NM	09/26/2009	10/02/2009	10/10/2009	6.028	7.529	13.56
PEST	%	NTC21SB01-SO-0102	0910006-41	NM	09/28/2009	10/07/2009	10/24/2009	9.309	17.17	26.47
PEST	%	NTC21SB10-SO-0406	0910006-06	NM	09/26/2009	10/02/2009	10/10/2009	5.931	7.594	13.52
PEST	%	NTC21SB06-SO-0001	0910006-23	NM	09/27/2009	10/03/2009	10/24/2009	5.833	21.14	26.97
PEST	%	NTC21SB10-SO-0001	0910006-05	NM	09/26/2009	10/02/2009	10/10/2009	5.933	7.572	13.51
PEST	%	NTC21SB09-SO-0001-DL	0910006-03RE1	NM	09/26/2009	10/02/2009	10/25/2009	6.028	22.57	28.6
PEST	%	NTC21SB10-SO-0001-DL	0910006-05RE1	NM	09/26/2009	10/02/2009	10/16/2009	5.933	13.85	19.79
PEST	%	NTC21SB08-SO-0204	0910006-49	NM	09/28/2009	10/07/2009	10/25/2009	9.309	17.45	26.76
PEST	%	NTC21SB11-SO-0001	0910006-07	NM	09/26/2009	10/02/2009	10/10/2009	5.951	7.615	13.57
PEST	%	NTC21SB08-SO-0001	0910006-48	NM	09/28/2009	10/07/2009	10/25/2009	9.313	17.43	26.74
PEST	%	NTC21SB07-SO-0204	0910006-26	NM	09/27/2009	10/03/2009	10/13/2009	6.014	10.27	16.28

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
PEST	%	NTC21SB07-SO-0001	0910006-25	NM	09/27/2009	10/03/2009	10/24/2009	6.021	21.18	27.21
PEST	%	NTC21SB06-SO-0204-DL	0910006-24RE1	NM	09/27/2009	10/03/2009	10/16/2009	5.826	13.34	19.16
PEST	%	NTC21SB06-SO-0204	0910006-24	NM	09/27/2009	10/03/2009	10/24/2009	5.826	21.16	26.99
PEST	%	NTC21SB09-SO-0204	0910006-04	NM	09/26/2009	10/02/2009	10/10/2009	6.022	7.551	13.57
PEST	UG/KG	NTC21SB16-SO-0001	0910006-33	NM	09/27/2009	10/03/2009	10/13/2009	5.757	10.35	16.11
PEST	UG/KG	NTC21SB14-SO-0001	0910006-29	NM	09/27/2009	10/03/2009	10/24/2009	6.069	21.23	27.3
PEST	UG/KG	NTC21SB15-SO-0204	0910006-32	NM	09/27/2009	10/03/2009	10/13/2009	6.042	10.33	16.37
PEST	UG/KG	NTC21SB15-SO-0001	0910006-31	NM	09/27/2009	10/03/2009	10/24/2009	6.049	21.38	27.42
PEST	UG/KG	NTC21SB14-SO-0204	0910006-30	NM	09/27/2009	10/03/2009	10/13/2009	6.063	10.31	16.37
PEST	UG/KG	NTC21SB13-SO-0204	0910006-28	NM	09/27/2009	10/03/2009	10/13/2009	6.083	10.29	16.37
PEST	UG/KG	NTC21SB13-SO-0001	0910006-27	NM	09/27/2009	10/03/2009	10/24/2009	6.090	21.21	27.3
PEST	UG/KG	NTC21SB12-SO-0204	0910006-10	NM	09/26/2009	10/02/2009	10/10/2009	6.118	7.705	13.82
PEST	UG/KG	NTC21SB12-SO-0001	0910006-09	NM	09/26/2009	10/02/2009	10/10/2009	6.125	7.683	13.81
PEST	UG/KG	NTC21SB11-SO-0204	0910006-08	NM	09/26/2009	10/02/2009	10/10/2009	5.950	7.637	13.59
PEST	UG/KG	NTC21SB16-SO-0204	0910006-34	NM	09/27/2009	10/03/2009	10/13/2009	5.764	10.37	16.14
PEST	UG/KG	NTC21SB22-SO-0204-DL	0910006-38RE1	NM	09/27/2009	10/03/2009	10/14/2009	5.958	11.09	17.05
PEST	UG/KG	NTC21SB11-SO-0204-DL	0910006-08RE1	NM	09/26/2009	10/02/2009	10/24/2009	5.950	21.79	27.74
PEST	UG/KG	NTC21SB20-SO-0406	0910006-16	NM	09/26/2009	10/02/2009	10/10/2009	5.999	7.834	13.83

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
PEST	UG/KG	NTC21SB06-SO-0001	0910006-23	NM	09/27/2009	10/03/2009	10/24/2009	5.833	21.14	26.97
PEST	UG/KG	NTC21SB22-SO-0204	0910006-38	NM	09/27/2009	10/03/2009	10/24/2009	5.958	21.47	27.42
PEST	UG/KG	NTC21SB11-SO-0001-DL	0910006-07RE1	NM	09/26/2009	10/02/2009	10/16/2009	5.951	14.01	19.96
PEST	UG/KG	NTC21SB22-SO-0001	0910006-37	NM	09/27/2009	10/03/2009	10/24/2009	5.965	21.44	27.41
PEST	UG/KG	NTC21SB21-SO-0608	0910006-18	NM	09/26/2009	10/02/2009	10/10/2009	6.069	7.877	13.95
PEST	UG/KG	NTC21SB22-SO-0001-DL	0910006-37RE1	NM	09/27/2009	10/03/2009	10/14/2009	5.965	10.67	16.64
PEST	UG/KG	NTC21SB21-SO-0001	0910006-17	NM	09/26/2009	10/02/2009	10/10/2009	6.076	7.856	13.93
PEST	UG/KG	NTC21SB17-SO-0001	0910006-11	NM	09/26/2009	10/02/2009	10/10/2009	6.149	7.726	13.88
PEST	UG/KG	NTC21SB20-SO-0001	0910006-15	NM	09/26/2009	10/02/2009	10/10/2009	6.002	7.813	13.81
PEST	UG/KG	NTC21SB19-SO-0204	0910006-36	NM	09/27/2009	10/03/2009	10/13/2009	5.722	10.4	16.12
PEST	UG/KG	NTC21SB19-SO-0001	0910006-35	NM	09/27/2009	10/03/2009	10/24/2009	5.729	21.4	27.13
PEST	UG/KG	NTC21SB18-SO-0507	0910006-14	NM	09/26/2009	10/02/2009	10/10/2009	6.167	7.791	13.96
PEST	UG/KG	NTC21SB18-SO-0001	0910006-13	NM	09/26/2009	10/02/2009	10/10/2009	6.176	7.769	13.95
PEST	UG/KG	NTC21SB17-SO-0507	0910006-12	NM	09/26/2009	10/02/2009	10/10/2009	6.144	7.748	13.89
PEST	UG/KG	NTC21SB21-SO-0001-DL	0910006-17RE1	NM	09/26/2009	10/02/2009	10/16/2009	6.076	14.05	20.13
PEST	UG/KG	NTC21SB05-SO-0001	0910006-46	NM	09/28/2009	10/07/2009	10/25/2009	9.392	17.36	26.75
PEST	UG/KG	FD-092609-01	0910006-01	NM	09/26/2009	10/02/2009	10/10/2009	6.708	7.486	14.19
PEST	UG/KG	FD-092609-02	0910006-02	NM	09/26/2009	10/02/2009	10/10/2009	6.708	7.508	14.22

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
PEST	UG/KG	FD-092609-02-DL	0910006-02RE1	NM	09/26/2009	10/02/2009	10/16/2009	6.708	13.99	20.69
PEST	UG/KG	FD-092709-01	0910006-20	NM	09/27/2009	10/03/2009	10/13/2009	6.465	10.22	16.69
PEST	UG/KG	FD-092809-01	0910006-40	NM	09/28/2009	10/03/2009	10/24/2009	5.465	21.49	26.95
PEST	UG/KG	NTC21SB01-SO-0102	0910006-41	NM	09/28/2009	10/07/2009	10/24/2009	9.309	17.17	26.47
PEST	UG/KG	NTC21SB02-SO-0001	0910006-42	NM	09/28/2009	10/07/2009	10/24/2009	9.378	17.19	26.57
PEST	UG/KG	NTC21SB02-SO-0204	0910006-43	NM	09/28/2009	10/07/2009	10/25/2009	9.372	17.21	26.58
PEST	UG/KG	NTC21SB03-SO-0001	0910006-44	NM	09/28/2009	10/07/2009	10/25/2009	9.295	17.32	26.61
PEST	UG/KG	NTC21SB03-SO-0204	0910006-45	NM	09/28/2009	10/07/2009	10/25/2009	9.288	17.34	26.63
PEST	UG/KG	NTC21SB06-SO-0204	0910006-24	NM	09/27/2009	10/03/2009	10/24/2009	5.826	21.16	26.99
PEST	UG/KG	NTC21SB04-SO-0406	0910006-22	NM	09/27/2009	10/03/2009	10/13/2009	5.924	10.24	16.17
PEST	UG/KG	NTC21SB11-SO-0001	0910006-07	NM	09/26/2009	10/02/2009	10/10/2009	5.951	7.615	13.57
PEST	UG/KG	NTC21SB09-SO-0001	0910006-03	NM	09/26/2009	10/02/2009	10/10/2009	6.028	7.529	13.56
PEST	UG/KG	NTC21SB10-SO-0406	0910006-06	NM	09/26/2009	10/02/2009	10/10/2009	5.931	7.594	13.52
PEST	UG/KG	NTC21SB10-SO-0001-DL	0910006-05RE1	NM	09/26/2009	10/02/2009	10/16/2009	5.933	13.85	19.79
PEST	UG/KG	NTC21SB10-SO-0001	0910006-05	NM	09/26/2009	10/02/2009	10/10/2009	5.933	7.572	13.51
PEST	UG/KG	NTC21SB04-SO-0001	0910006-21	NM	09/27/2009	10/03/2009	10/24/2009	5.931	21.12	27.05
PEST	UG/KG	NTC21SB09-SO-0001-DL	0910006-03RE1	NM	09/26/2009	10/02/2009	10/25/2009	6.028	22.57	28.6
PEST	UG/KG	NTC21SB05-SO-0001-DL	0910006-46RE1	NM	09/28/2009	10/07/2009	10/14/2009	9.392	6.571	15.96

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
PEST	UG/KG	NTC21SB08-SO-0204	0910006-49	NM	09/28/2009	10/07/2009	10/25/2009	9.309	17.45	26.76
PEST	UG/KG	NTC21SB08-SO-0001	0910006-48	NM	09/28/2009	10/07/2009	10/25/2009	9.313	17.43	26.74
PEST	UG/KG	NTC21SB07-SO-0204	0910006-26	NM	09/27/2009	10/03/2009	10/13/2009	6.014	10.27	16.28
PEST	UG/KG	NTC21SB07-SO-0001	0910006-25	NM	09/27/2009	10/03/2009	10/24/2009	6.021	21.18	27.21
PEST	UG/KG	NTC21SB06-SO-0204-DL	0910006-24RE1	NM	09/27/2009	10/03/2009	10/16/2009	5.826	13.34	19.16
PEST	UG/KG	NTC21SB06-SO-0001-DL	0910006-23RE1	NM	09/27/2009	10/03/2009	10/16/2009	5.833	13.32	19.15
PEST	UG/KG	NTC21SB05-SO-0204	0910006-47	NM	09/28/2009	10/07/2009	10/25/2009	9.385	17.38	26.77
PEST	UG/KG	NTC21SB09-SO-0204	0910006-04	NM	09/26/2009	10/02/2009	10/10/2009	6.022	7.551	13.57
PEST	UG/L	SB-092909-01	0910006-53	NM	09/29/2009	10/01/2009	10/06/2009	2.162	4.909	7.072
PEST	UG/L	RB-092909-01	0910006-51	NM	09/29/2009	10/01/2009	10/06/2009	2.124	4.883	7.008
PEST	UG/L	RB-092909-02	0910006-52	NM	09/29/2009	10/01/2009	10/06/2009	2.058	4.897	6.954

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SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
GRSZ	%	NTC21SB08-SO-0204	0910006-49	NM	09/28/2009	10/13/2009	10/13/2009	15	0	15

CTD057_001 Volatiles

Project No: 12G01797	Facility: GREAT LAKES NTC	Project Manager: Biff Cummings	Carrier: Airborne Express	Laboratory Name: Empirical Laboritories, LLC. 227 French Landing Drive Nashville, TN 37228
Task No: 0064	Turn Around Time: Standard	Field Ops Leader: Shannon Hill	Carrier/Waybill No. 8631 2526 8200	Point of Contact: Janice Shilling 615.345.1115 ext. 256

Date	Sample ID #	Time	Analysis	Loc ID	Matrix	Description	Preservative	Container Count	Container Type	Container Reqs	Comments
											0910006
09/26/2009	FD-092609-01	00:00	SW-846 8270C/8181/8081A/8082/6010B	QC	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-01
09/26/2009	FD-092609-01	00:00	SW-846 8260B	QC	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	terra core
09/26/2009	FD-092609-02	00:00	SW-846 8270C/8181/8081A/8082/6010B	QC	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-02
09/26/2009	FD-092609-02	00:00	SW-846 8260B	QC	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	
09/26/2009	NTC21SB09-SO-0001	16:20	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB09	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-03
09/26/2009	NTC21SB09-SO-0001	16:20	SW-846 8260B	NTC21SB09	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	
09/26/2009	NTC21SB09-SO-0204	16:28	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB09	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-04
09/26/2009	NTC21SB09-SO-0204	16:28	SW-846 8260B	NTC21SB09	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	
09/26/2009	NTC21SB10-SO-0001	18:36	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB10	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-05
09/26/2009	NTC21SB10-SO-0001	18:36	SW-846 8260B	NTC21SB10	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	
09/26/2009	NTC21SB10-SO-0406	18:40	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB10	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-06
09/26/2009	NTC21SB10-SO-0406	18:40	SW-846 8260B	NTC21SB10	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	
09/26/2009	NTC21SB11-SO-0001	18:10	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB11	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-07
09/26/2009	NTC21SB11-SO-0001	18:10	SW-846 8260B	NTC21SB11	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	
09/26/2009	NTC21SB11-SO-0204	18:12	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB11	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-08
09/26/2009	NTC21SB11-SO-0204	18:12	SW-846 8260B	NTC21SB11	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	Terra core
09/26/2009	NTC21SB12-SO-0001	14:00	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB12	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-09

09/26/2009	NTC21SB12-SO-0001	14:00	SW-846 8260B	NTC21SB12	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	Terra core	-09
09/26/2009	NTC21SB12-SO-0204	14:10	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB12	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		-10
09/26/2009	NTC21SB12-SO-0204	14:10	SW-846 8260B	NTC21SB12	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other		↓
09/26/2009	NTC21SB17-SO-0001	13:26	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB17	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4° C/HNaO4S/MeOH	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		-11
09/26/2009	NTC21SB17-SO-0001	13:26	SW-846 8260B	NTC21SB17	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other		↓
09/26/2009	NTC21SB17-SO-0507	13:32	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB17	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		-12
09/26/2009	NTC21SB17-SO-0507	13:32	SW-846 8260B	NTC21SB17	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other		↓
09/26/2009	NTC21SB18-SO-0001	12:47	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB18	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		-13
09/26/2009	NTC21SB18-SO-0001	12:47	SW-846 8260B	NTC21SB18	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	Terra core	↓
09/26/2009	NTC21SB18-SO-0507	12:59	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB18	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		-14
09/26/2009	NTC21SB18-SO-0507	12:59	SW-846 8260B	NTC21SB18	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	terra core	↓
09/26/2009	NTC21SB20-SO-0001	16:57	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB20	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		-15
09/26/2009	NTC21SB20-SO-0001	16:57	SW-846 8260B	NTC21SB20	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other		↓
09/26/2009	NTC21SB20-SO-0406	17:02	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB20	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		-16
09/26/2009	NTC21SB20-SO-0406	17:02	SW-846 8260B	NTC21SB20	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other		↓
09/26/2009	NTC21SB21-SO-0001	15:10	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB21	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		-17
09/26/2009	NTC21SB21-SO-0001	15:10	SW-846 8260B	NTC21SB21	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	Terra core	↓
09/26/2009	NTC21SB21-SO-0608	15:20	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB21	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		-18
09/26/2009	NTC21SB21-SO-0608	15:20	SW-846 8260B	NTC21SB21	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	Terra core	↓
09/26/2009	TB-092609-01	08:00	NONE	QC	AQ		4°C/HCL	2	Glass - Clear	40ml vials	TCL VOC	-19
09/27/2009	FD-092709-01	00:00	SW-846 8270C/8181/8081A/8082/6010B	QC	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		-20
09/27/2009	FD-092709-01	00:00	SW-846 8260B	QC	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	Terra core	↓
09/27/2009	NTC21SB04-SO-0001	12:50	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB04	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		-21
09/27/2009	NTC21SB04-SO-0001	12:50	SW-846 8260B	NTC21SB04	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	Terra core	↓
09/27/2009	NTC21SB04-SO-0406	13:00	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB04	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		-22
09/27/2009	NTC21SB04-SO-0406	13:00	SW-846 8260B	NTC21SB04	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	Terra core	↓
09/27/2009	NTC21SB06-SO-0001	15:10	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB06	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		-23
09/27/2009	NTC21SB06-SO-0001	15:10	SW-846 8260B	NTC21SB06	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other		↓
09/27/2009	NTC21SB06-SO-0204	15:20	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB06	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		-24
09/27/2009	NTC21SB06-SO-0204	15:20	SW-846 8260B	NTC21SB06	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other		↓

	0001		8270C/8181/8081A/8082/6010B			Metals				w/Teflon cap	0910006-25
09/27/2009	NTC21SB07-SO-0001	10:40	SW-846 8260B	NTC21SB07	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	↓
09/27/2009	NTC21SB07-SO-0204	10:50	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB07	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-26
09/27/2009	NTC21SB07-SO-0204	10:50	SW-846 8260B	NTC21SB07	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	↓
09/27/2009	NTC21SB13-SO-0001	09:00	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB13	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-27
09/27/2009	NTC21SB13-SO-0001	09:00	SW-846 8260B	NTC21SB13	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	↓
09/27/2009	NTC21SB13-SO-0204	09:10	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB13	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-28
09/27/2009	NTC21SB13-SO-0204	09:10	SW-846 8260B	NTC21SB13	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	↓
09/27/2009	NTC21SB14-SO-0001	09:30	SW-846 8260B	NTC21SB14	SO	TCL VOCs	4° C/HNaO4S/MeOH	12	Other	Other	-29
09/27/2009	NTC21SB14-SO-0001	09:30	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB14	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	9	Glass - Clear	4 oz. wide-mouth w/Teflon cap	↓
09/27/2009	NTC21SB14-SO-0204	09:40	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB14	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-30
09/27/2009	NTC21SB14-SO-0204	09:40	SW-846 8260B	NTC21SB14	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	↓
09/27/2009	NTC21SB15-SO-0001	10:00	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB15	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-31
09/27/2009	NTC21SB15-SO-0001	10:00	SW-846 8260B	NTC21SB15	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	Terra core ↓
09/27/2009	NTC21SB15-SO-0204	10:10	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB15	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-32
09/27/2009	NTC21SB15-SO-0204	10:10	SW-846 8260B	NTC21SB15	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	Terra core ↓
09/27/2009	NTC21SB16-SO-0001	17:00	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB16	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4° C/HNaO4S/MeOH	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-33
09/27/2009	NTC21SB16-SO-0001	17:00	SW-846 8260B	NTC21SB16	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	↓
09/27/2009	NTC21SB16-SO-0204	16:50	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB16	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-34
09/27/2009	NTC21SB16-SO-0204	16:50	SW-846 8260B	NTC21SB16	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	↓
09/27/2009	NTC21SB19-SO-0001	17:40	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB19	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-35
09/27/2009	NTC21SB19-SO-0001	17:40	SW-846 8260B	NTC21SB19	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	Terra core ↓
09/27/2009	NTC21SB19-SO-0204	17:50	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB19	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-36
09/27/2009	NTC21SB19-SO-0204	17:50	SW-846 8260B	NTC21SB19	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	↓
09/27/2009	NTC21SB22-SO-0001	12:00	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB22	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-37
09/27/2009	NTC21SB22-SO-0001	12:00	SW-846 8260B	NTC21SB22	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	terra core ↓
09/27/2009	NTC21SB22-SO-0204	12:10	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB22	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-38
09/27/2009	NTC21SB22-SO-0204	12:10	SW-846 8260B	NTC21SB22	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	↓
09/27/2009	TB-092709-01	08:00	SW-846 8260B	QC	AQ	TCL VOCs	4°C/H3PO4	2	Glass - Clear	40ml vials	-39 WOC
09/28/2009	FD-092809-01	00:00	SW-846 8270C/8181/8081A/8082/6010B	QC	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-40

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							C/HNaO4S/MeOH				-40
09/28/2009	NTC21SB01-SO-0102	12:00	**SW-846 8270C/8181/8081A/8082/6010B**	NTC21SB01	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-41
09/28/2009	NTC21SB01-SO-0102	12:00	**SW-846 8260B**	NTC21SB01	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	Terra core
09/28/2009	NTC21SB02-SO-0001	10:20	**SW-846 8270C/8181/8081A/8082/6010B**	NTC21SB02	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-42
09/28/2009	NTC21SB02-SO-0001	10:20	**SW-846 8260B**	NTC21SB02	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	
09/28/2009	NTC21SB02-SO-0204	10:30	**SW-846 8270C/8181/8081A/8082/6010B**	NTC21SB02	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	9	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-43
09/28/2009	NTC21SB02-SO-0204	10:30	**SW-846 8260B**	NTC21SB02	SO	TCL VOCs	4° C/HNaO4S/MeOH	12	Other	Other	terra core
09/28/2009	NTC21SB03-SO-0001	12:20	**SW-846 8270C/8181/8081A/8082/6010B**	NTC21SB03	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-44
09/28/2009	NTC21SB03-SO-0001	12:20	**SW-846 8260B**	NTC21SB03	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	Terra core
09/28/2009	NTC21SB03-SO-0204	12:30	**SW-846 8270C/8181/8081A/8082/6010B**	NTC21SB03	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-45
09/28/2009	NTC21SB03-SO-0204	12:30	**SW-846 8260B**	NTC21SB03	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	
09/28/2009	NTC21SB05-SO-0001	10:00	**SW-846 8270C/8181/8081A/8082/6010B**	NTC21SB05	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-46
09/28/2009	NTC21SB05-SO-0001	10:00	**SW-846 8260B**	NTC21SB05	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	
09/28/2009	NTC21SB05-SO-0204	10:10	**SW-846 8270C/8181/8081A/8082/6010B**	NTC21SB05	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-47
09/28/2009	NTC21SB05-SO-0204	10:10	**SW-846 8260B**	NTC21SB05	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	
09/28/2009	NTC21SB08-SO-0001	11:55	**SW-846 8270C/8181/8081A/8082/6010B**	NTC21SB08	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-48
09/28/2009	NTC21SB08-SO-0001	11:55	**SW-846 8260B**	NTC21SB08	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	
09/28/2009	NTC21SB08-SO-0204	12:00	**SW-846 8270C/8181/8081A/8082/6010B**	NTC21SB08	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-49
09/28/2009	NTC21SB08-SO-0204	12:00	**SW-846 8260B**	NTC21SB08	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	Terra core
09/28/2009	NTC21SB08-SO-0204	12:00	**ASTM D422 (or as instructed by TtNUS)**	NTC21SB08	SO	Grain Size	None	1	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
09/28/2009	TB-092809-01	08:00	**SW-846 8260B**	QC	AQ	TCL VOCs	4°C/HCL	2	Glass - Clear	40ml vials	-50
09/29/2009	RB-092909-01	11:26	**SW-846 8270C/8181/8081A/8082**	QC	AQ	TCL SVOCs/Herb/Pest/PCB	4°C	6	Glass - Amber	1L	from deconned shoe of DPT rig -51
09/29/2009	RB-092909-01	11:26	**SW-846 8260B**	QC	AQ	TCL VOCs	4°C/HCL	3	Glass - Clear	40ml vials	
09/29/2009	RB-092909-01	11:26	**SW-846 6010B**	QC	AQ	TAL Metals (Total)	4°C/HNO3	1	Plastic - Bell Arte HDPE	250ml	
09/29/2009	RB-092909-02	13:02	**SW-846 8260B**	QC	AQ	TCL VOCs	4°C/HCL	3	Glass - Clear	40ml vials	-52
09/29/2009	RB-092909-02	13:02	**SW-846 8270C/8181/8081A/8082**	QC	AQ	TCL SVOCs/Herb/Pest/PCB	4°C	6	Glass - Amber	1L	DPT disposible sleeve
09/29/2009	RB-092909-02	13:02	**SW-846 6010B**	QC	AQ	TAL Metals (Total)	4°C/HNO3	1	Plastic - Bell Arte HDPE	250ml	
09/29/2009	SB-092909-01	10:31	**SW-846 8260B**	QC	AQ	TCL VOCs	4°C/HCL	3	Glass - Clear	40ml vials	-53
09/29/2009	SB-092909-01	10:31	**SW-846 6010B**	QC	AQ	TAL Metals (Total)	4°C/HNO3	1	Plastic - Bell Arte HDPE	250ml	
09/29/2009	SB-092909-01	10:31	**SW-846 8270C/8181/8081A/8082**	QC	AQ	TCL SVOCs/Herb/Pest/PCB	4°C	6	Glass - Amber	1L	
09/29/2009	TB-092909-01	10:28	**SW-846 8260B**	QC	AQ	TCL VOCs	4°C/HCL	2	Glass - Clear	40ml vials	-54

STO04_001 Volatiles

1. Relinquished By: **Shannon Hill**	Date: 09/29/2009	Time: 13:11	Received By: **Airborne Express**	Date: 09/29/2009	Time: 14:11
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date: 9/30/09	Time: 08:20

Comments:

CTQ064_001 Volatiles

3.3°C

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0910006 Number of Coolers: 1 of 12

Client: TTNUS Project: Great Lakes

Date/Time Received: **09/30/09 08:30** Date cooler(s) opened: **09/30/09**

Opened By (print): **WILLIAM SCHWAB** (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered

EL Courier Other: _____

If applicable, enter airbill number here: 7110

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 2 Seal date: 9/29/09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A
7. Was project identifiable from custody papers? ..... Yes No N/A
8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 3.3°C

Dates samples were logged-in: 09/30/09

9. Initial this form to acknowledge login of sample(s): (Name): Will Schwab (Initial): WS
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... WS ~~Yes~~ No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A

If Non-Conformance issues were present, list by sample ID: NTC21SB05-S0001 - 1 40L broken in shipment CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: _____ Number of Coolers: _____ of _____

Client: TTNUS Project: Great Lakes

Date/Time Received: **09/30/09 08:30** Date cooler(s) opened: **09/30/09**

Opened By (print): **WILLIAM SCHWAB** (signature): _____

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered

EL Courier Other: _____

If applicable, enter airbill number here: 7201

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 2 Seal date: 9/29/09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A
7. Was project identifiable from custody papers? ..... Yes No N/A
8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 0.9°C

Dates samples were logged-in: 09/30/09

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: _____ Number of Coolers: _____ of _____

Client: TTNUS Project: Great Lakes

Date/Time Received: **09/30/09 08:30** Date cooler(s) opened: **09/30/09**

Opened By (print): **WILLIAM SCHWAB** (signature): _____

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered

EL Courier Other: _____

If applicable, enter airbill number here: 6411

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 2 Seal date: 9/29/09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A
7. Was project identifiable from custody papers? ..... Yes No N/A
8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 2.9°C

Dates samples were logged-in: 09/30/09

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: _____ Number of Coolers: 1 of 3

Client: Tetra Tech NUS Project: Great Lake OU-05/D

Date/Time Received: **09/30/09 08:30** Date cooler(s) opened: **09/30/09**

Opened By (print): **WILLIAM SCHWAB** (signature): _____

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered

EL Courier Other: _____

If applicable, enter airbill number here: 7164

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 2 Seal date: 9/29/09 Seal Initials: _____

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A
7. Was project identifiable from custody papers? ..... Yes No N/A
8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 2.9c

Dates samples were logged-in: **09/30/09**

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: _____ Number of Coolers: _____ of _____

Client: TTNUS Project: Great Lakes

Date/Time Received: **09/30/09 08:30** Date cooler(s) opened: **09/30/09**

Opened By (print): **WILLIAM SCHWAB** (signature): _____

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered

EL Courier Other: _____

If applicable, enter airbill number here: 7120

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 2 Seal date: 9/29/09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A
7. Was project identifiable from custody papers? ..... Yes No N/A
8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 3.6°C

Dates samples were logged-in: 09/30/09

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: _____ Number of Coolers: _____ of _____

Client: TTNUS Project: Great Lakes

Date/Time Received: 09/30/09 ~~08:30~~ 14:15 Date cooler(s) opened: 09/30/09

Opened By (print): WILLIAM SCHWAB (signature): _____

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
   EL Courier Other: _____

If applicable, enter airbill number here: 7197

2. Were custody seals on outside of cooler(s)? ..... (Yes) No

How many: 2 Seal date: 9/29/09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival? ..... (Yes) No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... (Yes) No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... (Yes) No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... (Yes) No N/A
7. Was project identifiable from custody papers? ..... (Yes) No N/A
8. If required, was enough ice present in the cooler(s)? ..... (Yes) No N/A

Type of Coolant: (WET) DRY BLUE NONE Temperature of Samples upon Receipt: 2.6°C

Dates samples were logged-in: 09/30/09

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: _____ Number of Coolers: _____ of _____

Client: TTNUS Project: Great Lakes

Date/Time Received: 09/30/09 08:30 Date cooler(s) opened: 09/30/09

Opened By (print): WILLIAM SCHWAB (signature): _____

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered

EL Courier Other: _____

If applicable, enter airbill number here: 7142

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 2 Seal date: 9/29/09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A
7. Was project identifiable from custody papers? ..... Yes No N/A
8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 3.9°C

Dates samples were logged-in: 09/30/09

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: _____ Number of Coolers: _____ of _____

Client: TTNUS Project: Great Lakes

Date/Time Received: 09/30/09 08:30 Date cooler(s) opened: 09/30/09

Opened By (print): WILLIAM SCHWAB (signature): _____

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered

EL Courier Other: _____

If applicable, enter airbill number here: 7153

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 2 Seal date: 9/29/09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival?	Yes	No	N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler?	Yes	No	N/A
5. Were custody papers filled out properly (ink, signed, etc.)?	Yes	No	N/A
6. Did you sign custody papers in the appropriate place for acceptance?	Yes	No	N/A
7. Was project identifiable from custody papers?	Yes	No	N/A
8. If required, was enough ice present in the cooler(s)?	Yes	No	N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 0.9°C

Dates samples were logged-in: 09/30/09

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____

10. Were all bottle lids intact and sealed tightly?	Yes	No	N/A
11. Did all bottles arrive unbroken?	Yes	No	N/A
12. Was all required bottle label information complete?	Yes	No	N/A
13. Did all bottle labels agree with custody papers?	Yes	No	N/A
14. Were correct containers used for the analyses indicated?	Yes	No	N/A
15. Were preservative levels correct in all applicable sample containers?	Yes	No	N/A
16. Was residual chlorine present in any applicable sample containers?	Yes	No	N/A
17. Was sufficient amount of sample sent for the analyses required?	Yes	No	N/A
18. Was headspace present in any included VOA vials?	Yes	No	N/A

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: _____ Number of Coolers: _____ of _____

Client: TTNUS Project: Great Lakes

Date/Time Received: **09/30/09 08:30** Date cooler(s) opened: **09/30/09**

Opened By (print): **WILLIAM SCHWAB** (signature): _____

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered

EL Courier Other: _____

If applicable, enter airbill number here: 7186

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 2 Seal date: 9/29/09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A
7. Was project identifiable from custody papers? ..... Yes No N/A
8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 2.6°C

Dates samples were logged-in: 09/30/09

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: _____ Number of Coolers: 3 of 3

Client: Tetra Tech NUS Project: Great Lakes CO-0510

Date/Time Received: **09/30/09 08:30** Date cooler(s) opened: **09/30/09**

Opened By (print): **WILLIAM SCHWAB** (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered

EL Courier Other: _____

If applicable, enter airbill number here: 8200

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 2 Seal date: 9/29/09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A
7. Was project identifiable from custody papers? ..... Yes No N/A
8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 1.9°C

Dates samples were logged-in: 09/30/09

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: _____ Number of Coolers: 2 of 3

Client: Tetra Tech NUS Project: Great Lakes CO-0510

Date/Time Received: 09/30/09 08:30 Date cooler(s) opened: 09/30/09

Opened By (print): WILLIAM SCHWAB (signature): _____

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
   EL Courier Other: _____

If applicable, enter airbill number here: 7131

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 2 Seal date: 9/29/09 Seal Initials: _____

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A
7. Was project identifiable from custody papers? ..... Yes No N/A
8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 4.4°C

Dates samples were logged-in: 09/30/09

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: _____ Number of Coolers: _____ of _____

Client: TTNUS Project: Great Lakes

Date/Time Received: **09/30/09 08:30** Date cooler(s) opened: **09/30/09**

Opened By (print): **WILLIAM SCHWAB** (signature): _____

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered

EL Courier Other: _____

If applicable, enter airbill number here: 7175

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 2 Seal date: 9/29/09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A
7. Was project identifiable from custody papers? ..... Yes No N/A
8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 0.1°C

Dates samples were logged-in: 09/30/09

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

Sample Delivery Group Assignment Form

CLIENT: Tetra Tech NUS, Inc. (T010)
PROJECT NAME: Great Lakes CTO 064 (Site 21)
SDG #: CTO064_001
MATRIX: Soil/water

QC LEVEL: EDD/IV
Report Due: - 10/21/2009
Client Sample Count: 46

Sample Type	Sampled	Received	Lab ID	Client ID	Grainsize	TAL Met	8081A	8082A	8151A	8260B	8270
Field Duplicate	09/26/09	10/01/09	0910006-01	FD-092609-01		X	X	X	X	X	X
Field Duplicate	09/26/09	10/01/09	0910006-02	FD-092609-02		X	X	X	X	X	X
Client Sample	09/26/09	10/01/09	0910006-03	NTC21SB09-SO-0001		X	X	X	X	X	X
Client Sample	09/26/09	10/01/09	0910006-04	NTC21SB09-SO-0204		X	X	X	X	X	X
Client Sample	09/26/09	10/01/09	0910006-05	NTC21SB10-SO-0001		X	X	X	X	X	X
Client Sample	09/26/09	10/01/09	0910006-06	NTC21SB10-SO-0406		X	X	X	X	X	X
Client Sample	09/26/09	10/01/09	0910006-07	NTC21SB11-SO-0001		X	X	X	X	X	X
Client Sample	09/26/09	10/01/09	0910006-08	NTC21SB11-SO-0204		X	X	X	X	X	X
Client Sample	09/26/09	10/01/09	0910006-09	NTC21SB12-SO-0001		X	X	X	X	X	X
Client Sample	09/26/09	10/01/09	0910006-10	NTC21SB12-SO-0204		X	X	X	X	X	X
Client Sample	09/26/09	10/01/09	0910006-11	NTC21SB17-SO-0001		X	X	X	X	X	X
Client Sample	09/26/09	10/01/09	0910006-12	NTC21SB17-SO-0507		X	X	X	X	X	X
Client Sample	09/26/09	10/01/09	0910006-13	NTC21SB18-SO-0001		X	X	X	X	X	X
Client Sample	09/26/09	10/01/09	0910006-14	NTC21SB18-SO-0507		X	X	X	X	X	X
Client Sample	09/26/09	10/01/09	0910006-15	NTC21SB20-SO-0001		X	X	X	X	X	X
Client Sample	09/26/09	10/01/09	0910006-16	NTC21SB20-SO-0406		X	X	X	X	X	X
Client Sample	09/26/09	10/01/09	0910006-17	NTC21SB21-SO-0001		X	X	X	X	X	X
Client Sample	09/26/09	10/01/09	0910006-18	NTC21SB21-SO-0608		X	X	X	X	X	X
Trip Blank	09/26/09	09/30/09	0910006-19	TB-092609-01						X	
Field Duplicate	09/27/09	10/01/09	0910006-20	FD-092709-01		X	X	X	X	X	X
Client Sample	09/27/09	10/01/09	0910006-21	NTC21SB04-SO-0001		X	X	X	X	X	X
Client Sample	09/27/09	10/01/09	0910006-22	NTC21SB04-SO-0406		X	X	X	X	X	X
Client Sample	09/27/09	10/01/09	0910006-23	NTC21SB06-SO-0001		X	X	X	X	X	X
Client Sample	09/27/09	10/01/09	0910006-24	NTC21SB06-SO-0204		X	X	X	X	X	X
Client Sample	09/27/09	10/01/09	0910006-25	NTC21SB07-SO-0001		X	X	X	X	X	X
Client Sample	09/27/09	10/01/09	0910006-26	NTC21SB07-SO-0204		X	X	X	X	X	X
Client Sample	09/27/09	10/01/09	0910006-27	NTC21SB13-SO-0001		X	X	X	X	X	X
Client Sample	09/27/09	10/01/09	0910006-28	NTC21SB13-SO-0204		X	X	X	X	X	X
Client Sample	09/27/09	09/30/09	0910006-29	NTC21SB14-SO-0001		MS/MSD	MS/MSD	MS/MSD	MS/MSD	MS/MSD	MS/MSD
Client Sample	09/27/09	10/01/09	0910006-30	NTC21SB14-SO-0204		X	X	X	X	X	X
Client Sample	09/27/09	10/01/09	0910006-31	NTC21SB15-SO-0001		X	X	X	X	X	X
Client Sample	09/27/09	10/01/09	0910006-32	NTC21SB15-SO-0204		X	X	X	X	X	X
Client Sample	09/27/09	10/01/09	0910006-33	NTC21SB16-SO-0001		X	X	X	X	X	X
Client Sample	09/27/09	10/01/09	0910006-34	NTC21SB16-SO-0204		X	X	X	X	X	X
Client Sample	09/27/09	10/01/09	0910006-35	NTC21SB19-SO-0001		X	X	X	X	X	X
Client Sample	09/27/09	10/01/09	0910006-36	NTC21SB19-SO-0204		X	X	X	X	X	X
Client Sample	09/27/09	10/01/09	0910006-37	NTC21SB22-SO-0001		X	X	X	X	X	X
Client Sample	09/27/09	10/01/09	0910006-38	NTC21SB22-SO-0204		X	X	X	X	X	X
Trip Blank	09/27/09	09/30/09	0910006-39	TB-092709-01						X	
Field Duplicate	09/28/09	10/01/09	0910006-40	FD-092809-01		X	X	X	X	X	X
Client Sample	09/28/09	10/01/09	0910006-41	NTC21SB01-SO-0102		X	X	X	X	X	X
Client Sample	09/28/09	10/01/09	0910006-42	NTC21SB02-SO-0001		X	X	X	X	X	X
Client Sample	09/28/09	09/30/09	0910006-43	NTC21SB02-SO-0204		MS/MSD	MS/MSD	MS/MSD	MS/MSD	MS/MSD	MS/MSD
Client Sample	09/28/09	10/01/09	0910006-44	NTC21SB03-SO-0001		X	X	X	X	X	X
Client Sample	09/28/09	10/01/09	0910006-45	NTC21SB03-SO-0204		X	X	X	X	X	X
Client Sample	09/28/09	10/01/09	0910006-46	NTC21SB05-SO-0001		X	X	X	X	X	X
Client Sample	09/28/09	10/01/09	0910006-47	NTC21SB05-SO-0204		X	X	X	X	X	X
Client Sample	09/28/09	10/01/09	0910006-48	NTC21SB08-SO-0001		X	X	X	X	X	X
Client Sample	09/28/09	10/01/09	0910006-49	NTC21SB08-SO-0204	x	X	X	X	X	X	X
Trip Blank	09/28/09	09/30/09	0910006-50	TB-092809-01						X	
Client Sample	09/29/09	09/30/09	0910006-51	RB-092909-01		X	X	X	X	X	X
Client Sample	09/29/09	09/30/09	0910006-52	RB-092909-02		X	X	X	X	X	X
Client Sample	09/29/09	09/30/09	0910006-53	SB-092909-01		X	X	X	X	X	X
Trip Blank	09/29/09	09/30/09	0910006-54	TB-092909-01						X	

Atterberg Limits (ASTM D4318)and Mechanical Grainsize to BEAVER

ORGANIC CASE NARRATIVE
Tetra Tech NUS, Inc./Great Lakes, IL CTO064
Project Manager: B. Cummings
SDG: CTO064_001
Work order: 0910006

VOC

Sampled	Received	Lab ID	Client ID
9/26/2009	10/1/2009	0910006-01	FD-092609-01
9/26/2009	10/1/2009	0910006-02	FD-092609-02
9/26/2009	10/1/2009	0910006-03	NTC21SB09-SO-0001
9/26/2009	10/1/2009	0910006-04	NTC21SB09-SO-0204
9/26/2009	10/1/2009	0910006-05	NTC21SB10-SO-0001
9/26/2009	10/1/2009	0910006-06	NTC21SB10-SO-0406
9/26/2009	10/1/2009	0910006-07	NTC21SB11-SO-0001
9/26/2009	10/1/2009	0910006-08	NTC21SB11-SO-0204
9/26/2009	10/1/2009	0910006-09	NTC21SB12-SO-0001
9/26/2009	10/1/2009	0910006-10	NTC21SB12-SO-0204
9/26/2009	10/1/2009	0910006-11	NTC21SB17-SO-0001
9/26/2009	10/1/2009	0910006-12	NTC21SB17-SO-0507
9/26/2009	10/1/2009	0910006-13	NTC21SB18-SO-0001
9/26/2009	10/1/2009	0910006-14	NTC21SB18-SO-0507
9/26/2009	10/1/2009	0910006-15	NTC21SB20-SO-0001
9/26/2009	10/1/2009	0910006-16	NTC21SB20-SO-0406
9/26/2009	10/1/2009	0910006-17	NTC21SB21-SO-0001
9/26/2009	10/1/2009	0910006-18	NTC21SB21-SO-0608
9/26/2009	9/30/2009	0910006-19	TB-092609-01
9/27/2009	10/1/2009	0910006-20	FD-092709-01
9/27/2009	10/1/2009	0910006-21	NTC21SB04-SO-0001
9/27/2009	10/1/2009	0910006-22	NTC21SB04-SO-0406
9/27/2009	10/1/2009	0910006-23	NTC21SB06-SO-0001
9/27/2009	10/1/2009	0910006-24	NTC21SB06-SO-0204
9/27/2009	10/1/2009	0910006-25	NTC21SB07-SO-0001
9/27/2009	10/1/2009	0910006-26	NTC21SB07-SO-0204
9/27/2009	10/1/2009	0910006-27	NTC21SB13-SO-0001
9/27/2009	10/1/2009	0910006-28	NTC21SB13-SO-0204
9/27/2009	9/30/2009	0910006-29	NTC21SB14-SO-0001
9/27/2009	10/1/2009	0910006-30	NTC21SB14-SO-0204
9/27/2009	10/1/2009	0910006-31	NTC21SB15-SO-0001
9/27/2009	10/1/2009	0910006-32	NTC21SB15-SO-0204
9/27/2009	10/1/2009	0910006-33	NTC21SB16-SO-0001
9/27/2009	10/1/2009	0910006-34	NTC21SB16-SO-0204
9/27/2009	10/1/2009	0910006-35	NTC21SB19-SO-0001
9/27/2009	10/1/2009	0910006-36	NTC21SB19-SO-0204
9/27/2009	10/1/2009	0910006-37	NTC21SB22-SO-0001
9/27/2009	10/1/2009	0910006-38	NTC21SB22-SO-0204
9/27/2009	9/30/2009	0910006-39	TB-092709-01
9/28/2009	10/1/2009	0910006-40	FD-092809-01
9/28/2009	10/1/2009	0910006-41	NTC21SB01-SO-0102
9/28/2009	10/1/2009	0910006-42	NTC21SB02-SO-0001
9/28/2009	9/30/2009	0910006-43	NTC21SB02-SO-0204
9/28/2009	10/1/2009	0910006-44	NTC21SB03-SO-0001
9/28/2009	10/1/2009	0910006-45	NTC21SB03-SO-0204
9/28/2009	10/1/2009	0910006-46	NTC21SB05-SO-0001
9/28/2009	10/1/2009	0910006-47	NTC21SB05-SO-0204
9/28/2009	10/1/2009	0910006-48	NTC21SB08-SO-0001
9/28/2009	10/1/2009	0910006-49	NTC21SB08-SO-0204
9/28/2009	9/30/2009	0910006-50	TB-092809-01
9/29/2009	9/30/2009	0910006-51	RB-092909-01
9/29/2009	9/30/2009	0910006-52	RB-092909-02
9/29/2009	9/30/2009	0910006-53	SB-092909-01
9/29/2009	9/30/2009	0910006-54	TB-092909-01

Volatiles

Method: The samples were extracted/analyzed for a client specified analyte list by USEPA SW-846 Methods 5030B/8260B (purge and trap then capillary column GC/MS) for waters or 5035B/8260B (Encore field sampling followed by laboratory preservation the purge and trap followed by capillary column GC/MS) for solids upon receipt to the laboratory in satisfactory condition.

Comments: The volatile analyses for these samples were satisfactorily completed within sample holding times and met the corresponding specifications with the following note/exceptions:

- BFB Tuning: All method tuning criteria were met.
- Calibration Criteria: All calibration criteria were met.
- Method Blank Results: One or more target analytes were detected in the method blanks. Reported concentrations in the samples are qualified with a "B".
- Surrogate Recoveries: Recoveries of the surrogates toluene-d8 and/or bromfluorobenzene were outside the acceptance limits in samples NTC21SB06-SO-0204, NTC21SB13-SO-0001, NTC21SB03-SO-0204, NTC21SB06-SO-0204RE, NTC21SB03-SO-0204RE, and NTC21SB08-SO-0001RE. All other surrogate recoveries were within limits. See form 2.
- V3BLK1002FLCS/D Results: Of 48 recoveries, 4 exceeded with positive biases without detection in the associated samples. All other recoveries and relative percent differences were within limits.
- V5BLK1003ELCS Results: Dichlorodifluoromethane exceeded the limit of 135% at 136%. All other recoveries were within limits.
- V5BLK1003FLCS/D Results: 1,1-dichloroethane exceeded the upper recovery limit of 125% at (108%)/161% while the relative percent difference exceeded 30 at 39. All other recoveries and relative percent differences were within limits.
- V5BLK1005LCS Results: All recoveries were within limits.
- V5BLK1005ELCS Results: All recoveries were within limits.
- V5BLK1006LCS Results: 1,1-dichloroethane exceeded the limit of 125% at 148%. All other recoveries were within limits.
- V5BLK1008LCS Results: All recoveries were within limits.
- V5BLK1009LCS Results: All recoveries were within limits.
- V5BLK1009ELCS/D Results: 2-butanone and 1,1-dichloroethane exceeded the upper recovery limits of 160% and 125% at 235%/202% and (98%)/148% with 1,1-dichloroethane relative percent difference of 41. All other recoveries and relative percent differences were within limits.
- NTC21SB14-SO-0001MS/MSD Results: Of 96 recoveries, 71 were outside the acceptance limits while all relative percent differences were within limits. See form 3. This is attributed to matrix. Analysis of the MSD was started 12 hours 8 minutes after the associated tuning standard.
- NTC21SB02-SO-0204MS/MSD Results: Of 96 recoveries, 77 were outside the acceptance limits with 9 of 48 relative percent differences exceeding limits. See form 3. This is attributed to matrix. Analyses of the MS/MSD were started 12 hours 39 minutes/13 hours 10 minutes after the associated tuning standard.
- Internal Standard Area Counts: Area counts for the internal standard 1,4-dichlorobenzene-d4 were less than 50% of that found in the associated calibration verification standard in

samples NTC21SB06-SO-0204, NTC21SB13-SO-0001, NTC21SB02-SO-0204, NTC21SB03-SO-0204, NTC21SB05-SO-0204, and NTC21SB06-SO-0001. Reanalyses of these samples from the second low-level vial resulted in similar results. As re-analyses confirmed, this is attributed to matrix. All other area counts were within limits.

- Dilutions: All samples were analyzed without dilution.
- Manual integrations: Quantitation signals were manually integrated in order to accurately reflect the peak areas based on the technical judgment of the analyst. A listing of the manual integrations performed and reason for the integration is included with the logs. Before and after "pictures" are available where manual integrations were performed.

I certify that, to the best of my knowledge and based upon my inquiry of those individuals immediately responsible for obtaining the information, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in the case narrative, as verified by the following signature.

Marcia K. McGinnity
Data Quality Manager

ANALYTICAL REPORT TERMS AND QUALIFIERS (ORGANIC)

MDL: The method detection limit (MDL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The MDL is determined from analysis of a sample containing the analyte in a given matrix.

EQL: The estimated quantitation limit (EQL), also known as the reporting limit (RL), is defined as the estimated concentration above which quantitative results can be obtained with a specific degree of confidence. Empirical Laboratories defines the EQL to be at or near the lowest standard of the calibration curve.

U: The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte quantitated below the MDL.

B: The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the correct sample result might be less than the reported result and, perhaps, zero.

D: When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".

E: The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound.

J: The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The mass spectral data pass the identification criteria showing that the compound is present, but the calculated result is less than the EQL. One should feel confident that the result is greater than zero and less than the EQL.

P: The associated numerical value is an estimated quantity. There is greater than a 40% difference between the two GC columns for the detected concentrations. The higher of the two values is reported.

M: The presence of an "M" to the right of an analytical result indicates that the sample matrix interfered with the quantitation of the analyte. In GC and HPLC, results are reported from the column with the lower concentration.

I: The presence of an "I" to the right of an analytical result that the presence of a qualitative interference could have caused a false positive or over estimation of the analyte. In GC and HPLC, results are reported from the column with the lower concentration.

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA67889

Lab File ID: V3BFB01 BFB Injection Date: 09/17/09

Instrument ID: VOA3 BFB Injection Time: 1941

GC Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	26.8
75	30.0 - 60.0% of mass 95	42.0
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.2
173	Less than 2.0% of mass 174	0.7 (0.7)1
174	Greater than 50.0% of mass 95	98.4
175	5.0 - 9.0% of mass 174	7.3 (7.5)1
176	95.0 - 101.0% of mass 174	95.6 (97.1)1
177	5.0 - 9.0% of mass 176	7.0 (7.3)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01		V3STD0.25PPB	V3STD01	09/17/09	2112
02		V3STD0.5PPB	V3STD02	09/17/09	2142
03		V3STD1PPB	V3STD03	09/17/09	2212
04		V3STD2PPB	V3STD04	09/17/09	2242
05		V3STD10PPB	V3STD05	09/17/09	2312
06		V3STD20PPB	V3STD06	09/17/09	2342
07		V3STD50PPB	V3STD07	09/18/09	0013
08		V3STD100PPB	V3STD08	09/18/09	0113
09		V3STD200PPB	V3STD09	09/18/09	0143
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

page 1 of 1

FORM V VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA67889

Instrument ID: VOA3 Calibration Date(s): 09/17/09 09/18/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 2112 0143

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
Acetone	LINR	0.00000000	0.12545455		0.999
Acrolein	2ORDR	0.00000000	55.6418343	-15.726858	0.998
Acrylonitrile	AVRG		0.10242089		8.1
tert-Amyl Methyl Ether	LINR	0.00000000	0.56037109		1.000
Benzene	AVRG		0.79909059		13.9
Bromobenzene	AVRG		0.60573231		5.9
Bromochloromethane	AVRG		0.11187536		8.8
Bromodichloromethane	AVRG		0.32462645		4.6
Bromoform	AVRG		0.36667630		14.1
Bromomethane	2ORDR	0.00000000	13.8065198	-5.8111164	0.999
2-Butanone	LINR	0.00000000	0.13255801		0.999
~~t-Butyl alcohol~~	~~LINR~~	~~0.00000000~~	~~2.161e-002~~		0.997
n-Butylbenzene	AVRG		1.05630162		11.6
sec-Butylbenzene	AVRG		1.60703167		10.0
tert-Butylbenzene	AVRG		1.35343430		5.5
Carbon disulfide	LINR	0.00000000	0.57730585		0.998
Carbon tetrachloride	AVRG		0.34125914		14.8
Chlorobenzene	AVRG		1.39488504		14.3
Chloroethane	2ORDR	0.00000000	9.05841496	-2.0673247	0.998
2-Chloroethyl vinyl ether	LINR	0.00000000	0.14215162		1.000
Chloroform	AVRG		0.42844940		14.7
Chloromethane	AVRG		0.30276104		5.1
2-Chlorotoluene	AVRG		1.25427731		7.1
4-Chlorotoluene	AVRG		1.33082346		8.9
Cyclohexane	AVRG		0.36161474		14.2
Dibromochloromethane	AVRG		0.42235773		10.9
1,2-Dibromo-3-chloropropane	LINR	0.00000000	0.12878921		0.997
1,2-Dibromoethane	AVRG		0.40746607		9.8
Dibromomethane	AVRG		0.14917625		4.2
1,2-Dichlorobenzene	AVRG		1.04100640		5.9
1,3-Dichlorobenzene	AVRG		1.10461005		10.3
1,4-Dichlorobenzene	AVRG		1.13383373		10.7
Dichlorodifluoromethane	LINR	0.00000000	0.23976053		0.999
1,1-Dichloroethane	LINR	0.00000000	0.43088233		0.999
1,2-Dichloroethane	AVRG		0.42316948		6.2
1,1-Dichloroethene	LINR	0.00000000	0.16605079		0.998
cis-1,2-Dichloroethene	AVRG		0.20202206		8.9

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA67889

Instrument ID: VOA3 Calibration Date(s): 09/17/09 09/18/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 2112 0143

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
1,2-Dichloroethene(total)	AVRG		0.19201604		8.5
trans-1,2-Dichloroethene	AVRG		0.18201002		8.3
1,2-Dichloropropane	AVRG		0.24680135		5.2
1,3-Dichloropropane	AVRG		0.58770733		7.5
2,2-Dichloropropane	AVRG		0.27168982		6.7
1,1-Dichloropropene	AVRG		0.25027072		11.0
cis-1,3-Dichloropropene	AVRG		0.32230287		10.9
trans-1,3-Dichloropropene	AVRG		0.48637669		14.7
Ethylbenzene	AVRG		2.00740064		7.0
Ethyl methacrylate	LINR	0.00000000	0.48352732		0.999
Hexachlorobutadiene	AVRG		0.34423239		6.6
2-Hexanone	LINR	0.00000000	0.36768401		0.998
Iodomethane	2ORDR	0.00000000	4.83977409	-0.5607856	1.000
Isopropylbenzene	LINR	0.00000000	1.78239311		0.997
p-Isopropyltoluene	AVRG		1.14253227		12.3
Methyl acetate	AVRG		0.27144282		6.6
Methylene chloride	LINR	0.00000000	0.21581675		0.999
Methyl cyclohexane	AVRG		0.25970494		13.7
Methyl methacrylate	LINR	0.00000000	0.29268080		1.000
4-Methyl-2-pentanone	LINR	0.00000000	0.29646220		1.000
MTBE	LINR	0.00000000	0.55926864		0.999
Naphthalene	2ORDR	0.00000000	1.09890193	2.257e-002	0.993
n-Propylbenzene	AVRG		1.80882133		9.6
Styrene	AVRG		1.37501763		12.1
1,1,1,2-Tetrachloroethane	AVRG		0.47734126		5.8
1,1,2,2-Tetrachloroethane	AVRG		0.35671057		5.2
Tetrachloroethene	AVRG		0.54494037		3.6
Tetrahydrofuran	AVRG		6.97e-002		13.8
Toluene	AVRG		0.96870547		4.5
1,2,3-Trichlorobenzene	AVRG		0.54302831		10.8
1,2,4-Trichlorobenzene	AVRG		0.60937321		11.1
1,1,1-Trichloroethane	LINR	0.00000000	0.38246523		0.999
1,1,2-Trichloroethane	AVRG		0.29277295		5.4
Trichloroethene	AVRG		0.22513263		5.9
Trichlorofluoromethane	AVRG		0.43729818		7.9
Trichlorotrifluoroethane	AVRG		0.19395405		9.9
1,2,3-Trichloropropane	AVRG		0.17600060		10.0

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA67889

Instrument ID: VOA3 Calibration Date(s): 09/17/09 09/18/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 2112 0143

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
1,2,4-Trimethylbenzene	AVRG		1.42577415		9.9
1,3,5-Trimethylbenzene	AVRG		1.43131475		10.9
Vinyl acetate	LINR	0.00000000	0.52807833		1.000
Vinyl chloride	AVRG		0.21698878		14.9
m,p-Xylene	AVRG		1.63921696		9.0
Xylene(total)	AVRG		5.06962497		8.5
1-Chlorohexane	AVRG		0.48605893		5.8
Di-isopropyl ether	LINR	0.00000000	1.03008711		1.000
ETBE	LINR	0.00000000	0.78435952		0.999
Dibromofluoromethane	AVRG		0.29930599		3.5
1,2-Dichloroethane-d4	AVRG		5.967e-002		2.3
Toluene-d8	AVRG		1.89909388		2.7
Bromofluorobenzene	AVRG		0.97382795		2.7

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: ~~SDGA67889~~

Instrument ID: VOA3 Calibration Date(s): 09/17/09 09/18/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 2112 0143

LAB FILE ID: RF0.25: V3STD01 RF0.5: V3STD02 RF1: V3STD03
RF2: V3STD04 RF10: V3STD05

COMPOUND	RF0.25	RF0.5	RF1	RF2	RF10
Acetone	0.206	0.170	0.166	0.060	0.130
Acrolein			0.020	0.024	0.014
Acrylonitrile		0.087	0.094	0.108	0.100
tert-Amyl Methyl Ether	2.366	1.316	0.923	0.680	0.484
Benzene		1.070	0.722	0.786	0.748
Bromobenzene		0.675	0.582	0.587	0.555
Bromochloromethane		0.112	0.089	0.121	0.110
Bromodichloromethane		0.328	0.298	0.342	0.306
Bromoform		0.289	0.332	0.322	0.344
Bromomethane		0.150	0.050	0.079	0.054
2-Butanone			0.030	0.032	0.106
t-Butyl alcohol		0.011	0.013	0.020	0.017
n-Butylbenzene			0.849	1.014	1.042
sec-Butylbenzene			1.320	1.462	1.600
tert-Butylbenzene			1.235	1.362	1.307
Carbon disulfide	1.054	0.933	0.447	0.522	0.480
Carbon tetrachloride		0.448	0.270	0.324	0.312
Chlorobenzene		1.822	1.452	1.451	1.306
Chloroethane		0.189	0.083	0.144	0.106
2-Chloroethyl vinyl ether		0.095	0.087	0.112	0.121
Chloroform		0.581	0.408	0.426	0.389
Chloromethane			0.323	0.316	0.314
2-Chlorotoluene			1.090	1.219	1.208
4-Chlorotoluene			1.140	1.226	1.268
Cyclohexane		0.329	0.287	0.318	0.335
Dibromochloromethane	0.345	0.365	0.411	0.440	0.398
1,2-Dibromo-3-chloropropane		0.070	0.102	0.102	0.092
1,2-Dibromoethane	0.333	0.349	0.420	0.423	0.422
Dibromomethane	0.149	0.142	0.147	0.164	0.148
1,2-Dichlorobenzene	1.123	1.136	0.964	1.016	0.961
1,3-Dichlorobenzene		1.371	1.031	1.030	1.024
1,4-Dichlorobenzene		1.418	1.089	1.154	1.074
Dichlorodifluoromethane		0.127	0.168	0.245	0.238
1,1-Dichloroethane		0.627	0.427	0.458	0.396
1,2-Dichloroethane	0.416	0.398	0.420	0.486	0.418
1,1-Dichloroethene	0.203	0.222	0.132	0.156	0.134
cis-1,2-Dichloroethene		0.233	0.172	0.200	0.187

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA67889

Instrument ID: VOA3 Calibration Date(s): 09/17/09 09/18/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 2112 0143

LAB FILE ID: RF0.25: V3STD01 RF0.5: V3STD02 RF1: V3STD03
RF2: V3STD04 RF10: V3STD05

COMPOUND	RF0.25	RF0.5	RF1	RF2	RF10
1,2-Dichloroethene(total)		0.221	0.167	0.194	0.176
trans-1,2-Dichloroethene		0.209	0.161	0.189	0.166
1,2-Dichloropropane		0.274	0.229	0.250	0.238
1,3-Dichloropropane	0.502	0.596	0.558	0.647	0.599
2,2-Dichloropropane			0.240	0.294	0.258
1,1-Dichloropropene			0.212	0.246	0.218
cis-1,3-Dichloropropene		0.273	0.287	0.298	0.304
trans-1,3-Dichloropropene		0.427	0.366	0.452	0.459
Ethylbenzene			1.831	2.029	2.001
Ethyl methacrylate			0.270	0.337	0.373
Hexachlorobutadiene			0.331	0.338	0.314
2-Hexanone		0.040	0.230	0.234	0.305
Iodomethane		0.199	0.139	0.132	0.165
Isopropylbenzene		2.818	1.555	1.770	1.779
p-Isopropyltoluene			0.934	0.986	1.081
Methyl acetate			0.238	0.270	0.259
Methylene chloride		0.293	0.320	0.230	0.194
Methyl cyclohexane			0.200	0.237	0.240
Methyl methacrylate		0.098	0.142	0.198	0.223
4-Methyl-2-pentanone		0.055	0.136	0.213	0.243
MTBE	0.273	0.270	0.423	0.425	0.445
Naphthalene	0.702	0.748	0.680	0.854	0.779
n-Propylbenzene			1.490	1.687	1.780
Styrene	1.499	1.257	1.066	1.219	1.353
1,1,1,2-Tetrachloroethane		0.532	0.456	0.486	0.450
1,1,2,2-Tetrachloroethane	0.329	0.343	0.359	0.386	0.356
Tetrachloroethene			0.535	0.576	0.522
Tetrahydrofuran				0.058	0.059
Toluene			0.950	1.024	0.938
1,2,3-Trichlorobenzene		0.611	0.493	0.549	0.491
1,2,4-Trichlorobenzene		0.719	0.563	0.598	0.559
1,1,1-Trichloroethane		0.532	0.338	0.370	0.359
1,1,2-Trichloroethane	0.292	0.280	0.307	0.309	0.282
Trichloroethene			0.200	0.228	0.214
Trichlorofluoromethane	0.467	0.469	0.373	0.483	0.403
Trichlorotrifluoroethane	0.160	0.214	0.173	0.222	0.190
1,2,3-Trichloropropane		0.144	0.201	0.190	0.178

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA67889

Instrument ID: VOA3 Calibration Date(s): 09/17/09 09/18/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 2112 0143

LAB FILE ID: RF0.25: V3STD01 RF0.5: V3STD02 RF1: V3STD03
RF2: V3STD04 RF10: V3STD05

COMPOUND	RF0.25	RF0.5	RF1	RF2	RF10
1,2,4-Trimethylbenzene			1.246	1.288	1.416
1,3,5-Trimethylbenzene			1.152	1.299	1.437
Vinyl acetate		0.325	0.280	0.364	0.403
Vinyl chloride		0.194	0.149	0.232	0.213
m,p-Xylene			1.543	1.655	1.738
Xylene(total)			4.659	5.136	5.351
1-Chlorohexane			0.472	0.480	0.432
Di-isopropyl ether			0.667	0.791	0.851
ETBE		0.488	0.327	0.564	0.599
Dibromofluoromethane	0.313	0.305	0.308	0.310	0.294
1,2-Dichloroethane-d4	0.062	0.060	0.059	0.060	0.059
Toluene-d8	1.984	1.936	1.914	1.922	1.914
Bromofluorobenzene	0.996	0.976	0.997	0.999	0.999

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA67889

Instrument ID: VOA3 Calibration Date(s): 09/17/09 09/18/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 2112 0143

LAB FILE ID: RF20: V3STD06 RF50: V3STD07 RF100: V3STD08
RF200: V3STD09

COMPOUND	RF20	RF50	RF100	RF200
Acetone	0.106	0.130	0.129	0.124
Acrolein	0.022	0.016	0.020	0.023
Acrylonitrile	0.108	0.110	0.108	0.104
tert-Amyl Methyl Ether	0.547	0.544	0.552	0.564
Benzene	0.777	0.765	0.764	0.762
Bromobenzene	0.599	0.606	0.616	0.624
Bromochloromethane	0.117	0.115	0.115	0.115
Bromodichloromethane	0.336	0.330	0.328	0.330
Bromoform	0.384	0.422	0.423	0.417
Bromomethane	0.063	0.069	0.085	0.101
2-Butanone	0.118	0.126	0.131	0.133
t-Butyl alcohol	0.017	0.020	0.020	0.022
n-Butylbenzene	1.208	1.203	1.039	1.038
sec-Butylbenzene	1.735	1.741	1.713	1.678
tert-Butylbenzene	1.457	1.429	1.361	1.322
Carbon disulfide	0.533	0.526	0.543	0.589
Carbon tetrachloride	0.341	0.338	0.337	0.359
Chlorobenzene	1.366	1.351	1.261	1.149
Chloroethane	0.132	0.130	0.114	0.141
2-Chloroethyl vinyl ether	0.138	0.143	0.145	0.141
Chloroform	0.423	0.399	0.397	0.404
Chloromethane	0.300	0.297	0.283	0.286
2-Chlorotoluene	1.350	1.317	1.304	1.291
4-Chlorotoluene	1.400	1.427	1.436	1.417
Cyclohexane	0.389	0.399	0.399	0.437
Dibromochloromethane	0.459	0.482	0.460	0.442
1,2-Dibromo-3-chloropropane	0.102	0.115	0.123	0.131
1,2-Dibromoethane	0.447	0.445	0.425	0.403
Dibromomethane	0.151	0.150	0.144	0.146
1,2-Dichlorobenzene	1.055	1.058	1.039	1.016
1,3-Dichlorobenzene	1.096	1.128	1.085	1.072
1,4-Dichlorobenzene	1.134	1.086	1.086	1.029
Dichlorodifluoromethane	0.241	0.235	0.231	0.242
1,1-Dichloroethane	0.442	0.418	0.414	0.436
1,2-Dichloroethane	0.436	0.422	0.409	0.402
1,1-Dichloroethene	0.157	0.152	0.156	0.169
cis-1,2-Dichloroethene	0.204	0.200	0.205	0.214

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA67889

Instrument ID: VOA3 Calibration Date(s): 09/17/09 09/18/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 2112 0143

LAB FILE ID: RF20: V3STD06 RF50: V3STD07 RF100: V3STD08
RF200: V3STD09

COMPOUND	RF20	RF50	RF100	RF200
1,2-Dichloroethene(total)	0.192	0.189	0.193	0.203
trans-1,2-Dichloroethene	0.179	0.179	0.180	0.192
1,2-Dichloropropane	0.248	0.241	0.246	0.248
1,3-Dichloropropane	0.625	0.619	0.591	0.553
2,2-Dichloropropane	0.275	0.269	0.276	0.290
1,1-Dichloropropene	0.258	0.260	0.269	0.290
cis-1,3-Dichloropropene	0.344	0.356	0.356	0.359
trans-1,3-Dichloropropene	0.524	0.566	0.560	0.537
Ethylbenzene	2.166	2.156	2.052	1.817
Ethyl methacrylate	0.436	0.474	0.495	0.482
Hexachlorobutadiene	0.343	0.342	0.355	0.387
2-Hexanone	0.381	0.397	0.390	0.359
Iodomethane	0.204	0.210	0.230	0.258
Isopropylbenzene	1.963	1.975	1.898	1.735
p-Isopropyltoluene	1.216	1.256	1.261	1.264
Methyl acetate	0.288	0.287	0.282	0.276
Methylene chloride	0.231	0.198	0.214	0.217
Methyl cyclohexane	0.272	0.284	0.281	0.304
Methyl methacrylate	0.253	0.285	0.292	0.294
4-Methyl-2-pentanone	0.280	0.306	0.303	0.294
MTBE	0.491	0.536	0.550	0.564
Naphthalene	1.088	1.060	0.771	0.823
n-Propylbenzene	1.955	1.958	1.942	1.850
Styrene	1.490	1.546	1.540	1.404
1,1,1,2-Tetrachloroethane	0.482	0.494	0.470	0.448
1,1,2,2-Tetrachloroethane	0.379	0.366	0.351	0.341
Tetrachloroethene	0.561	0.556	0.537	0.528
Tetrahydrofuran	0.068	0.076	0.078	0.079
Toluene	1.003	1.005	0.958	0.903
1,2,3-Trichlorobenzene	0.616	0.601	0.486	0.497
1,2,4-Trichlorobenzene	0.669	0.672	0.538	0.557
1,1,1-Trichloroethane	0.374	0.374	0.366	0.387
1,1,2-Trichloroethane	0.313	0.303	0.284	0.266
Trichloroethene	0.235	0.232	0.230	0.236
Trichlorofluoromethane	0.445	0.428	0.428	0.438
Trichlorotrifluoroethane	0.195	0.193	0.191	0.205
1,2,3-Trichloropropane	0.179	0.181	0.172	0.161

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA67889

Instrument ID: VOA3 Calibration Date(s): 09/17/09 09/18/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 2112 0143

LAB FILE ID: RF20: V3STD06 RF50: V3STD07 RF100: V3STD08
RF200: V3STD09

COMPOUND	RF20	RF50	RF100	RF200
1,2,4-Trimethylbenzene	1.627	1.588	1.428	1.388
1,3,5-Trimethylbenzene	1.577	1.578	1.508	1.468
Vinyl acetate	0.495	0.522	0.530	0.529
Vinyl chloride	0.247	0.223	0.237	0.242
m,p-Xylene	1.793	1.747	1.634	1.365
Xylene(total)	5.534	5.381	5.093	4.334
1-Chlorohexane	0.494	0.518	0.507	0.500
Di-isopropyl ether	0.963	1.015	1.023	1.034
ETBE	0.705	0.746	0.780	0.789
Dibromofluoromethane	0.300	0.290	0.284	0.288
1,2-Dichloroethane-d4	0.059	0.059	0.058	0.061
Toluene-d8	1.868	1.895	1.851	1.806
Bromofluorobenzene	0.970	0.960	0.943	0.926

FORM VI VOA

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA83153

Lab File ID: V5BFB01 BFB Injection Date: 10/02/09

Instrument ID: VOA5 BFB Injection Time: 1020

GC Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.7
75	30.0 - 60.0% of mass 95	42.5
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.0
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	100.8
175	5.0 - 9.0% of mass 174	7.7 (7.7)1
176	95.0 - 101.0% of mass 174	98.5 (97.7)1
177	5.0 - 9.0% of mass 176	7.0 (7.1)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01		V5STD2PPB	V5STD01	10/02/09	1051
02		V5STD5PPB	V5STD02	10/02/09	1122
03		V5STD10PPB	V5STD03	10/02/09	1153
04		V5STD20PPB	V5STD04	10/02/09	1224
05		V5STD50PPB	V5STD05	10/02/09	1256
06	V5BLK1002LCS	V5BLK1002LCS	V5ICV01	10/02/09	1327
07		V5STD100PPB	V5STD06	10/02/09	1358
08		V5STD200PPB	V5STD07	10/02/09	1429
09					
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page 1 of 1

FORM V VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5 Calibration Date(s): 10/02/09 10/02/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 1051 1429

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
Acetone	LINR	0.00000000	8.817e-002		0.998
~~Acrolein~~	~~AVRG~~		~~3.143e-002~~		14.3
Acrylonitrile	AVRG		6.189e-002		14.6
Benzene	AVRG		1.15969595		9.2
Bromobenzene	AVRG		0.93913497		5.3
Bromochloromethane	AVRG		0.18430562		8.6
Bromodichloromethane	AVRG		0.38634915		9.0
Bromoform	AVRG		0.47469350		14.9
Bromomethane	AVRG		0.26616532		8.8
2-Butanone	LINR	0.00000000	0.11978584		0.998
n-Butylbenzene	AVRG		2.79599379		7.6
sec-Butylbenzene	AVRG		3.43982164		10.1
tert-Butylbenzene	AVRG		2.15176029		8.3
Carbon disulfide	AVRG		0.83259214		7.5
Carbon tetrachloride	AVRG		0.38767632		8.3
Chlorobenzene	AVRG		2.14944782		10.8
Chloroethane	AVRG		0.17168868		7.3
2-Chloroethyl vinyl ether	LINR	0.00000000	0.10213250		0.999
Chloroform	AVRG		0.60797242		8.9
1-Chlorohexane	AVRG		1.11788394		10.5
Chloromethane	AVRG		0.38328271		9.2
2-Chlorotoluene	AVRG		2.23457226		7.2
4-Chlorotoluene	AVRG		2.15033461		10.1
Cyclohexane	AVRG		0.47956779		6.9
Dibromochloromethane	AVRG		0.80065580		8.2
1,2-Dibromo-3-chloropropane	AVRG		0.13210715		8.4
1,2-Dibromoethane	AVRG		0.66539171		6.3
Dibromomethane	AVRG		0.18730109		5.9
1,2-Dichlorobenzene	AVRG		1.55427247		6.1
1,3-Dichlorobenzene	AVRG		1.71929684		5.2
~~t-Butyl alcohol~~	~~AVRG~~		~~1.703e-002~~		12.8
1,4-Dichlorobenzene	AVRG		1.75615514		15.0
Dichlorodifluoromethane	AVRG		0.35896206		8.5
1,1-Dichloroethane	AVRG		0.45846995		6.2
1,2-Dichloroethane	AVRG		0.34215185		5.1
1,1-Dichloroethene	AVRG		0.23719959		9.4
cis-1,2-Dichloroethene	AVRG		0.36055185		6.8

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5 Calibration Date(s): 10/02/09 10/02/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 1051 1429

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
1,2-Dichloroethene(total)	AVRG		0.30975638		5.9
trans-1,2-Dichloroethene	AVRG		0.25896091		5.2
1,2-Dichloropropane	AVRG		0.30746477		8.4
1,3-Dichloropropane	AVRG		0.92500533		8.0
2,2-Dichloropropane	AVRG		0.41704008		9.2
1,1-Dichloropropene	AVRG		0.40171491		13.6
cis-1,3-Dichloropropene	AVRG		0.42905979		11.2
trans-1,3-Dichloropropene	LINR	0.00000000	0.85487363		0.997
Ethylbenzene	AVRG		3.31658815		12.1
Ethyl methacrylate	LINR	0.00000000	0.70394267		0.998
Hexachlorobutadiene	AVRG		0.67985507		5.4
2-Hexanone	LINR	0.00000000	0.41901345		0.995
Iodomethane	LINR	0.00000000	0.51839912		0.998
Isopropylbenzene	AVRG		2.72467361		11.4
p-Isopropyltoluene	AVRG		2.60106959		9.6
Methyl acetate	AVRG		0.17290943		10.0
Methyl cyclohexane	AVRG		0.46797921		9.5
Methylene chloride	2ORDR	0.00000000	2.94325149	0.63578538	0.998
Methyl methacrylate	LINR	0.00000000	0.19079860		0.999
4-Methyl-2-pentanone	AVRG		0.20599337		11.5
MTBE	AVRG		0.44857601		7.0
Naphthalene	AVRG		1.79270322		11.5
n-Propylbenzene	AVRG		3.67059246		11.5
Styrene	2ORDR	0.00000000	0.43162839	1.456e-002	0.998
1,1,1,2-Tetrachloroethane	AVRG		0.74283743		8.1
1,1,2,2-Tetrachloroethane	AVRG		0.71598392		5.2
Tetrachloroethene	AVRG		0.98088101		11.3
Tetrahydrofuran	LINR	0.00000000	5.376e-002		1.000
Toluene	AVRG		1.76055311		7.5
1,2,3-Trichlorobenzene	AVRG		0.99252560		6.8
1,2,4-Trichlorobenzene	AVRG		1.11556143		7.3
1,1,1-Trichloroethane	AVRG		0.42292084		5.8
1,1,2-Trichloroethane	AVRG		0.52513858		10.2
Trichloroethene	AVRG		0.32005131		6.8
Trichlorotrifluoroethane	AVRG		0.28745575		7.3
Trichlorofluoromethane	AVRG		0.44415423		7.4
1,2,3-Trichloropropane	AVRG		0.16530343		6.1

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5 Calibration Date(s): 10/02/09 10/02/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 1051 1429

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
1,2,4-Trimethylbenzene	AVRG		2.49443663		7.3
1,3,5-Trimethylbenzene	AVRG		2.45476551		8.1
Vinyl acetate	AVRG		0.43517186		14.9
Vinyl chloride	2ORDR	0.00000000	2.46148664	0.80791744	1.000
m,p-Xylene	2ORDR	0.00000000	0.21241081	1.61e-002	0.999
Xylene(total)	2ORDR	0.00000000	8.17e-002	2.704e-003	0.999
Di-Isopropyl Ether	AVRG		1.06658300		9.1
ETBE	AVRG		0.71078471		13.4
tert-Amyl Methyl Ether	AVRG		0.60852190		8.6
Dibromofluoromethane	AVRG		0.33611443		3.5
1,2-Dichloroethane-d4	AVRG		4.804e-002		5.2
Toluene-d8	AVRG		2.22430730		4.3
Bromofluorobenzene	AVRG		0.89721421		3.8

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5 Calibration Date(s): 10/02/09 10/02/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 1051 1429

LAB FILE ID: RF2: V5STD01 RF5: V5STD02 RF10: V5STD03
RF20: V5STD04 RF50: V5STD05

COMPOUND	RF2	RF5	RF10	RF20	RF50
Acetone	0.163	0.102	0.091	0.102	0.094
Acrolein	0.038	0.029	0.027	0.036	0.032
Acrylonitrile	0.080	0.055	0.054	0.068	0.058
Benzene	1.228	1.058	1.082	1.338	1.166
Bromobenzene	0.966	0.844	0.928	1.002	0.920
Bromochloromethane	0.195	0.161	0.166	0.204	0.190
Bromodichloromethane	0.391	0.359	0.340	0.438	0.380
Bromoform	0.422	0.377	0.419	0.487	0.506
Bromomethane	0.290	0.227	0.240	0.278	0.276
2-Butanone	0.144	0.072	0.090	0.122	0.128
n-Butylbenzene	2.684	2.665	2.873	3.030	3.028
sec-Butylbenzene	3.230	3.462	3.571	3.911	3.636
tert-Butylbenzene	2.000	1.986	2.089	2.392	2.379
Carbon disulfide	0.866	0.789	0.718	0.901	0.872
Carbon tetrachloride	0.363	0.352	0.351	0.426	0.406
Chlorobenzene	2.274	2.187	2.158	2.366	2.355
Chloroethane	0.186	0.178	0.160	0.183	0.169
2-Chloroethyl vinyl ether	0.076	0.060	0.072	0.101	0.098
Chloroform	0.707	0.556	0.563	0.641	0.618
1-Chlorohexane	1.126	1.034	1.095	1.305	1.225
Chloromethane	0.437	0.358	0.353	0.426	0.389
2-Chlorotoluene	2.079	2.096	2.317	2.516	2.305
4-Chlorotoluene	2.201	1.860	2.102	2.436	2.346
Cyclohexane	0.468	0.424	0.496	0.522	0.470
Dibromochloromethane	0.790	0.709	0.750	0.878	0.894
1,2-Dibromo-3-chloropropane	0.132	0.120	0.119	0.130	0.132
1,2-Dibromoethane	0.671	0.647	0.612	0.715	0.728
Dibromomethane	0.188	0.183	0.171	0.208	0.186
1,2-Dichlorobenzene	1.638	1.481	1.578	1.656	1.550
1,3-Dichlorobenzene	1.776	1.596	1.655	1.846	1.796
t-Butyl alcohol	0.021	0.014	0.015	0.019	0.016
1,4-Dichlorobenzene	2.174	1.812	1.789	1.916	1.709
Dichlorodifluoromethane	0.386	0.320	0.323	0.402	0.365
1,1-Dichloroethane	0.498	0.427	0.438	0.492	0.470
1,2-Dichloroethane	0.350	0.325	0.315	0.363	0.349
1,1-Dichloroethene	0.270	0.225	0.207	0.258	0.230
cis-1,2-Dichloroethene	0.366	0.332	0.324	0.384	0.367

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5 Calibration Date(s): 10/02/09 10/02/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 1051 1429

LAB FILE ID: RF2: V5STD01 RF5: V5STD02 RF10: V5STD03
RF20: V5STD04 RF50: V5STD05

COMPOUND	RF2	RF5	RF10	RF20	RF50
1,2-Dichloroethene(total)	0.312	0.284	0.289	0.328	0.313
trans-1,2-Dichloroethene	0.258	0.235	0.254	0.272	0.259
1,2-Dichloropropane	0.271	0.294	0.297	0.336	0.338
1,3-Dichloropropane	0.948	0.881	0.887	1.047	0.995
2,2-Dichloropropane	0.422	0.361	0.371	0.466	0.424
1,1-Dichloropropene	0.368	0.323	0.352	0.468	0.428
cis-1,3-Dichloropropene	0.414	0.371	0.376	0.482	0.483
trans-1,3-Dichloropropene	0.641	0.648	0.741	0.938	0.931
Ethylbenzene	3.510	3.271	3.181	3.583	3.856
Ethyl methacrylate	0.524	0.540	0.590	0.685	0.786
Hexachlorobutadiene	0.708	0.610	0.662	0.723	0.696
2-Hexanone	0.313	0.338	0.357	0.439	0.459
Iodomethane	0.391	0.375	0.427	0.556	0.528
Isopropylbenzene	2.703	2.638	2.679	3.106	3.040
p-Isopropyltoluene	2.648	2.639	2.678	2.922	2.760
Methyl acetate	0.208	0.173	0.163	0.176	0.163
Methyl cyclohexane	0.428	0.427	0.439	0.540	0.479
Methylene chloride	0.897	0.418	0.334	0.342	0.274
Methyl methacrylate	0.131	0.108	0.129	0.179	0.194
4-Methyl-2-pentanone	0.202	0.174	0.173	0.229	0.224
MTBE	0.495	0.406	0.426	0.481	0.452
Naphthalene	2.132	1.476	1.624	1.847	1.775
n-Propylbenzene	3.496	3.407	3.780	4.324	4.004
Styrene	1.803	1.741	1.652	2.344	2.285
1,1,1,2-Tetrachloroethane	0.730	0.701	0.717	0.833	0.812
1,1,2,2-Tetrachloroethane	0.746	0.656	0.698	0.747	0.753
Tetrachloroethene	1.121	0.982	0.997	1.058	1.029
Tetrahydrofuran	0.078	0.044	0.050	0.051	0.054
Toluene	1.876	1.761	1.746	1.818	1.910
1,2,3-Trichlorobenzene	1.097	0.878	0.950	1.024	0.998
1,2,4-Trichlorobenzene	1.184	0.952	1.126	1.197	1.131
1,1,1-Trichloroethane	0.430	0.389	0.392	0.450	0.421
1,1,2-Trichloroethane	0.553	0.498	0.497	0.620	0.553
Trichloroethene	0.326	0.301	0.312	0.360	0.319
Trichlorotrifluoroethane	0.302	0.262	0.266	0.318	0.287
Trichlorofluoromethane	0.440	0.398	0.414	0.491	0.466
1,2,3-Trichloropropane	0.177	0.159	0.158	0.174	0.175

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5 Calibration Date(s): 10/02/09 10/02/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 1051 1429

LAB FILE ID: RF2: V5STD01 RF5: V5STD02 RF10: V5STD03
RF20: V5STD04 RF50: V5STD05

COMPOUND	RF2	RF5	RF10	RF20	RF50
1,2,4-Trimethylbenzene	2.543	2.453	2.610	2.771	2.412
1,3,5-Trimethylbenzene	2.344	2.269	2.479	2.715	2.667
Vinyl acetate	0.364	0.345	0.407	0.509	0.468
Vinyl chloride	0.363	0.289	0.246	0.391	0.341
m,p-Xylene	2.916	2.747	2.630	2.832	2.808
Xylene(total)	8.690	8.227	7.925	8.644	8.564
Di-Isopropyl Ether	1.042	0.915	0.973	1.128	1.129
ETBE	0.599	0.583	0.674	0.804	0.772
tert-Amyl Methyl Ether	0.701	0.558	0.540	0.638	0.607
Dibromofluoromethane	0.343	0.327	0.344	0.346	0.330
1,2-Dichloroethane-d4	0.051	0.050	0.049	0.046	0.047
Toluene-d8	2.136	2.303	2.253	2.154	2.381
Bromofluorobenzene	0.884	0.942	0.881	0.877	0.932

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5 Calibration Date(s): 10/02/09 10/02/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 1051 1429

LAB FILE ID: RF100: V5STD06 RF200: V5STD07

COMPOUND	RF100	RF200
Acetone	0.093	0.086
Acrolein	0.031	0.026
Acrylonitrile	0.060	0.059
Benzene	1.204	1.042
Bromobenzene	0.959	0.954
Bromochloromethane	0.192	0.182
Bromodichloromethane	0.425	0.372
Bromoform	0.543	0.568
Bromomethane	0.282	0.269
2-Butanone	0.127	0.117
n-Butylbenzene	2.850	2.443
sec-Butylbenzene	3.459	2.810
tert-Butylbenzene	2.217	1.998
Carbon disulfide	0.866	0.817
Carbon tetrachloride	0.420	0.397
Chlorobenzene	1.991	1.714
Chloroethane	0.172	0.152
2-Chloroethyl vinyl ether	0.106	0.101
Chloroform	0.605	0.565
1-Chlorohexane	1.087	0.952
Chloromethane	0.362	0.358
2-Chlorotoluene	2.244	2.085
4-Chlorotoluene	2.216	1.890
Cyclohexane	0.512	0.464
Dibromochloromethane	0.795	0.788
1,2-Dibromo-3-chloropropane	0.143	0.149
1,2-Dibromoethane	0.646	0.638
Dibromomethane	0.192	0.182
1,2-Dichlorobenzene	1.592	1.384
1,3-Dichlorobenzene	1.690	1.676
t-Butyl alcohol	0.018	0.016
1,4-Dichlorobenzene	1.541	1.352
Dichlorodifluoromethane	0.366	0.350
1,1-Dichloroethane	0.438	0.445
1,2-Dichloroethane	0.358	0.335
1,1-Dichloroethene	0.248	0.222
cis-1,2-Dichloroethene	0.389	0.361

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5 Calibration Date(s): 10/02/09 10/02/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 1051 1429

LAB FILE ID: RF100: V5STD06 RF200: V5STD07

COMPOUND	RF100	RF200
1,2-Dichloroethene(total)	0.334	0.309
trans-1,2-Dichloroethene	0.278	0.258
1,2-Dichloropropane	0.326	0.291
1,3-Dichloropropane	0.876	0.840
2,2-Dichloropropane	0.449	0.426
1,1-Dichloropropene	0.454	0.417
cis-1,3-Dichloropropene	0.467	0.410
trans-1,3-Dichloropropene	0.915	0.832
Ethylbenzene	3.228	2.586
Ethyl methacrylate	0.722	0.694
Hexachlorobutadiene	0.678	0.681
2-Hexanone	0.458	0.405
Iodomethane	0.555	0.508
Isopropylbenzene	2.750	2.157
p-Isopropyltoluene	2.407	2.153
Methyl acetate	0.172	0.154
Methyl cyclohexane	0.513	0.449
Methylene chloride	0.291	0.249
Methyl methacrylate	0.193	0.190
4-Methyl-2-pentanone	0.223	0.216
MTBE	0.448	0.431
Naphthalene	1.877	1.819
n-Propylbenzene	3.658	3.024
Styrene	1.825	1.687
1,1,1,2-Tetrachloroethane	0.742	0.664
1,1,2,2-Tetrachloroethane	0.727	0.685
Tetrachloroethene	0.892	0.788
Tetrahydrofuran	0.053	0.054
Toluene	1.703	1.510
1,2,3-Trichlorobenzene	1.004	0.997
1,2,4-Trichlorobenzene	1.136	1.082
1,1,1-Trichloroethane	0.450	0.428
1,1,2-Trichloroethane	0.492	0.463
Trichloroethene	0.328	0.294
Trichlorotrifluoroethane	0.301	0.275
Trichlorofluoromethane	0.470	0.431
1,2,3-Trichloropropane	0.162	0.151

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5 Calibration Date(s): 10/02/09 10/02/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 1051 1429

LAB FILE ID: RF100: V5STD06 RF200: V5STD07

COMPOUND	RF100	RF200
1,2,4-Trimethylbenzene	2.491	2.181
1,3,5-Trimethylbenzene	2.520	2.188
Vinyl acetate	0.500	0.453
Vinyl chloride	0.306	0.259
m,p-Xylene	2.266	1.712
Xylene(total)	7.002	5.507
Di-Isopropyl Ether	1.195	1.084
ETBE	0.817	0.727
tert-Amyl Methyl Ether	0.608	0.608
Dibromofluoromethane	0.347	0.316
1,2-Dichloroethane-d4	0.048	0.044
Toluene-d8	2.222	2.121
Bromofluorobenzene	0.917	0.846

FORM VI VOA

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: V5BFB01F BFB Injection Date: 10/04/09

Instrument ID: VOA5 BFB Injection Time: 1351

GC Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	21.5
75	30.0 - 60.0% of mass 95	46.2
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.1
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	71.1
175	5.0 - 9.0% of mass 174	5.5 (7.7)1
176	95.0 - 101.0% of mass 174	69.3 (97.5)1
177	5.0 - 9.0% of mass 176	5.0 (7.2)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	V5STD100PPB	V5STD100PPB	V5CCV01F	10/04/09	1422
02	V5BLK1003FLC	9J07013-BS1	V5LCS01F	10/04/09	1453
03	V5BLK1003F	9J07013-BLK1	V5BLK01F	10/04/09	1556
04	NTC21SB09-SO	0910006-03	1000603A	10/04/09	1903
05	NTC21SB09-SO	0910006-04	1000604A	10/04/09	1934
06	NTC21SB10-SO	0910006-05	1000605A	10/04/09	2005
07	NTC21SB11-SO	0910006-08	1000608A	10/04/09	2036
08	NTC21SB12-SO	0910006-09	1000609A	10/04/09	2107
09	NTC21SB12-SO	0910006-10	1000610A	10/04/09	2138
10	NTC21SB17-SO	0910006-11	1000611A	10/04/09	2209
11	NTC21SB17-SO	0910006-12	1000612A	10/04/09	2241
12	NTC21SB18-SO	0910006-13	1000613A	10/04/09	2312
13	NTC21SB18-SO	0910006-14	1000614A	10/04/09	2343
14	NTC21SB10-SO	0910006-06	1000606A	10/05/09	0014
15	NTC21SB11-SO	0910006-07	1000607A	10/05/09	0045
16	V5BLK1003FLC	9J07013-BSD1	V5LCSD01F	10/05/09	0116
17					
18					
19					
20					
21					
22					

page 1 of 1

FORM V VOA

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Instrument ID: VOA5 Calibration Date: 10/04/09 Time: 1422

Lab File ID: V5CCV01F Init. Calib. Date(s): 01/16/09 10/02/09

Heated Purge: (Y/N) Y Init. Calib. Times: 0950 1429

GC Column: RTX-VRX ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF100	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acetone	0.104	0.112	200.0	253.0		LINR	26.5	
Benzene	1.160	1.149	100.0	99.08		AVRG	-0.9	
Bromodichloromethane	0.386	0.453	100.0	117.2		AVRG	17.2	
Bromoform	0.474	0.518	100.0	109.1	0.100	AVRG	9.1	
Bromomethane	0.266	0.317	100.0	119.2		AVRG	19.2	
2-Butanone	0.114	0.158	200.0	264.6		LINR	32.3	
Carbon disulfide	0.833	0.890	100.0	106.9		AVRG	6.9	
Carbon tetrachloride	0.388	0.442	100.0	114.0		AVRG	14.0	
Chlorobenzene	2.149	2.018	100.0	93.88	0.300	AVRG	-6.1	
Chloroethane	0.171	0.191	100.0	111.1		AVRG	11.1	
Chloroform	0.608	0.635	100.0	104.5		AVRG	4.5	20.0
Chloromethane	0.383	0.449	100.0	117.1	0.100	AVRG	17.1	
Cyclohexane	0.479	0.561	100.0	117.0		AVRG	17.0	
Dibromochloromethane	0.800	0.910	100.0	113.7		AVRG	13.7	
1,2-Dibromo-3-chloropropane	0.132	0.142	100.0	107.9		AVRG	7.9	
1,2-Dibromoethane	0.665	0.743	100.0	111.7		AVRG	11.7	
1,2-Dichlorobenzene	1.554	1.571	100.0	101.1		AVRG	1.1	
1,3-Dichlorobenzene	1.719	1.785	100.0	103.8		AVRG	3.8	
1,4-Dichlorobenzene	1.756	1.633	100.0	93.00		AVRG	-7.0	
Dichlorodifluoromethane	0.359	0.412	100.0	114.9		AVRG	14.9	
1,1-Dichloroethane	0.458	0.500	100.0	109.0	0.100	AVRG	9.0	
1,2-Dichloroethane	0.342	0.408	100.0	119.2		AVRG	19.2	
1,1-Dichloroethene	0.237	0.257	100.0	108.4		AVRG	8.4	20.0
cis-1,2-Dichloroethene	0.360	0.364	100.0	101.0		AVRG	1.0	
trans-1,2-Dichloroethene	0.259	0.288	100.0	111.4		AVRG	11.4	
1,2-Dichloropropane	0.308	0.349	100.0	113.4		AVRG	13.4	20.0
cis-1,3-Dichloropropene	0.429	0.486	100.0	113.4		AVRG	13.4	
trans-1,3-Dichloropropene	0.806	1.011	100.0	118.3		LINR	18.3	
Ethylbenzene	3.316	3.234	100.0	97.50		AVRG	-2.5	20.0
2-Hexanone	0.396	0.533	200.0	254.2		LINR	27.1	
Isopropylbenzene	2.725	2.772	100.0	101.7		AVRG	1.7	
Methyl acetate	0.173	0.179	100.0	103.3		AVRG	3.3	
Methylene chloride	0.401	0.277	100.0	97.72		2ORDR	-2.3	
Methyl cyclohexane	0.468	0.490	100.0	104.7		AVRG	4.7	
Methyl-tert-butyl-ether	0.448	0.516	100.0	115.1		AVRG	15.1	
4-Methyl-2-pentanone	0.206	0.267	200.0	259.4		AVRG	29.7	
Styrene	1.905	2.076	100.0	110.5		2ORDR	10.5	

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Instrument ID: VOA5 Calibration Date: 10/04/09 Time: 1422

Lab File ID: V5CCV01F Init. Calib. Date(s): 01/16/09 10/02/09

Heated Purge: (Y/N) Y Init. Calib. Times: 0950 1429

GC Column: RTX-VRX ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF100	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
1,1,2,2-Tetrachloroethane	0.716	0.712	100.0	99.47	0.300	AVRG	-0.5	
Tetrachloroethene	0.981	0.945	100.0	96.36		AVRG	-3.6	
Toluene	1.760	1.765	100.0	100.3		AVRG	0.3	20.0
1,2,4-Trichlorobenzene	1.115	1.050	100.0	94.14		AVRG	-5.9	
1,1,1-Trichloroethane	0.423	0.482	100.0	114.0		AVRG	14.0	
1,1,2-Trichloroethane	0.525	0.552	100.0	105.1		AVRG	5.1	
Trichloroethene	0.320	0.372	100.0	116.1		AVRG	16.1	
Trichlorotrifluoroethane	0.287	0.299	100.0	104.1		AVRG	4.1	
Trichlorofluoromethane	0.444	0.502	100.0	112.9		AVRG	12.9	
Vinyl chloride	0.314	0.322	100.0	107.2		2ORDR	7.2	20.0
Xylene(total)	7.794	7.140	300.0	308.5		2ORDR	2.8	
Dibromofluoromethane	0.336	0.333	30.00	29.74		AVRG	-0.9	
1,2-Dichloroethane-d4	0.048	0.051	30.00	31.70		AVRG	5.7	
Toluene-d8	2.224	2.071	30.00	27.93		AVRG	-6.9	
Bromofluorobenzene	0.897	0.915	30.00	30.59		AVRG	2.0	

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: V5BFB01 BFB Injection Date: 10/05/09

Instrument ID: VOA5 BFB Injection Time: 1210

GC Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	24.4
75	30.0 - 60.0% of mass 95	47.9
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	56.8
175	5.0 - 9.0% of mass 174	4.1 (7.2)1
176	95.0 - 101.0% of mass 174	54.1 (95.3)1
177	5.0 - 9.0% of mass 176	3.9 (7.2)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	V5STD100PPB	V5STD100PPB	V5CCV01	10/05/09	1241
02	V5BLK1005LCS	9J07023-BS1	V5LCS01	10/05/09	1331
03	V5BLK1005	9J07023-BLK1	V5BLK01	10/05/09	1433
04	FD-092609-02	0910006-02	1000602B	10/05/09	1638
05	NTC21SB20-SO	0910006-15	1000615A	10/05/09	1709
06	NTC21SB20-SO	0910006-16	1000616A	10/05/09	1740
07	NTC21SB21-SO	0910006-17	1000617A	10/05/09	1811
08	NTC21SB21-SO	0910006-18	1000618A	10/05/09	1842
09	FD-092709-01	0910006-20	1000620A	10/05/09	1913
10	NTC21SB04-SO	0910006-21	1000621A	10/05/09	1945
11	NTC21SB04-SO	0910006-22	1000622A	10/05/09	2016
12	NTC21SB06-SO	0910006-23	1000623A	10/05/09	2047
13	NTC21SB06-SO	0910006-24	1000624A	10/05/09	2118
14	NTC21SB07-SO	0910006-26	1000626A	10/05/09	2149
15	NTC21SB14-SO	0910006-29	1000629A	10/05/09	2220
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FORM V VOA

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA ~~SDG No.~~: CTO064_001

Instrument ID: VOA5 Calibration Date: 10/05/09 Time: 1241

Lab File ID: V5CCV01 Init. Calib. Date(s): 01/16/09 10/02/09

Heated Purge: (Y/N) Y Init. Calib. Times: 0950 1429

GC Column: RTX-VRX ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF100	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acetone	0.104	0.107	200.0	242.3		LINR	21.1	
Benzene	1.160	1.073	100.0	92.53		AVRG	-7.5	
Bromodichloromethane	0.386	0.414	100.0	107.1		AVRG	7.1	
Bromoform	0.474	0.500	100.0	105.3	0.100	AVRG	5.3	
Bromomethane	0.266	0.251	100.0	94.18		AVRG	-5.8	
2-Butanone	0.114	0.151	200.0	252.6		LINR	26.3	
Carbon disulfide	0.833	0.804	100.0	96.56		AVRG	-3.4	
Carbon tetrachloride	0.388	0.422	100.0	108.9		AVRG	8.9	
Chlorobenzene	2.149	1.894	100.0	88.09	0.300	AVRG	-11.9	
Chloroethane	0.171	0.176	100.0	102.5		AVRG	2.5	
Chloroform	0.608	0.613	100.0	100.8		AVRG	0.8	20.0
Chloromethane	0.383	0.388	100.0	101.1	0.100	AVRG	1.1	
Cyclohexane	0.479	0.544	100.0	113.6		AVRG	13.6	
Dibromochloromethane	0.800	0.767	100.0	95.80		AVRG	-4.2	
1,2-Dibromo-3-chloropropane	0.132	0.133	100.0	101.0		AVRG	1.0	
1,2-Dibromoethane	0.665	0.616	100.0	92.56		AVRG	-7.4	
1,2-Dichlorobenzene	1.554	1.497	100.0	96.32		AVRG	-3.7	
1,3-Dichlorobenzene	1.719	1.648	100.0	95.83		AVRG	-4.2	
1,4-Dichlorobenzene	1.756	1.695	100.0	96.54		AVRG	-3.4	
Dichlorodifluoromethane	0.359	0.380	100.0	105.9		AVRG	5.9	
1,1-Dichloroethane	0.458	0.460	100.0	100.4	0.100	AVRG	0.4	
1,2-Dichloroethane	0.342	0.364	100.0	106.3		AVRG	6.3	
1,1-Dichloroethene	0.237	0.238	100.0	100.6		AVRG	0.6	20.0
cis-1,2-Dichloroethene	0.360	0.354	100.0	98.10		AVRG	-1.9	
trans-1,2-Dichloroethene	0.259	0.263	100.0	101.7		AVRG	1.7	
1,2-Dichloropropane	0.308	0.318	100.0	103.4		AVRG	3.4	20.0
cis-1,3-Dichloropropene	0.429	0.440	100.0	102.5		AVRG	2.5	
trans-1,3-Dichloropropene	0.806	0.851	100.0	99.52		LINR	-0.5	
Ethylbenzene	3.316	2.783	100.0	83.92		AVRG	-16.1	20.0
2-Hexanone	0.396	0.477	200.0	227.5		LINR	13.8	
Isopropylbenzene	2.725	2.484	100.0	91.16		AVRG	-8.8	
Methyl acetate	0.173	0.179	100.0	103.6		AVRG	3.6	
Methylene chloride	0.401	0.270	100.0	94.97		2ORDR	-5.0	
Methyl cyclohexane	0.468	0.487	100.0	104.1		AVRG	4.1	
Methyl-tert-butyl-ether	0.448	0.471	100.0	105.1		AVRG	5.1	
4-Methyl-2-pentanone	0.206	0.253	200.0	245.6		AVRG	22.8	
Styrene	1.905	1.778	100.0	92.12		2ORDR	-7.9	

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Instrument ID: VOA5 Calibration Date: 10/05/09 Time: 1241

Lab File ID: V5CCV01 Init. Calib. Date(s): 01/16/09 10/02/09

Heated Purge: (Y/N) Y Init. Calib. Times: 0950 1429

GC Column: RTX-VRX ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF100	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
1,1,2,2-Tetrachloroethane	0.716	0.752	100.0	105.0	0.300	AVRG	5.0	
Tetrachloroethene	0.981	0.820	100.0	83.64		AVRG	-16.4	
Toluene	1.760	1.603	100.0	91.07		AVRG	-8.9	20.0
1,2,4-Trichlorobenzene	1.115	1.001	100.0	89.77		AVRG	-10.2	
1,1,1-Trichloroethane	0.423	0.436	100.0	103.1		AVRG	3.1	
1,1,2-Trichloroethane	0.525	0.478	100.0	91.02		AVRG	-9.0	
Trichloroethene	0.320	0.345	100.0	107.7		AVRG	7.7	
Trichlorotrifluoroethane	0.287	0.298	100.0	103.8		AVRG	3.8	
Trichlorofluoromethane	0.444	0.458	100.0	103.1		AVRG	3.1	
Vinyl chloride	0.314	0.298	100.0	97.29		2ORDR	-2.7	20.0
Xylene(total)	7.794	6.185	300.0	250.4		2ORDR	-16.5	
Dibromofluoromethane	0.336	0.334	30.00	29.80		AVRG	-0.6	
1,2-Dichloroethane-d4	0.048	0.043	30.00	26.80		AVRG	-10.6	
Toluene-d8	2.224	1.983	30.00	26.75		AVRG	-10.8	
Bromofluorobenzene	0.897	0.824	30.00	27.55		AVRG	-8.2	

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: V5BFB01E BFB Injection Date: 10/05/09

Instrument ID: VOA5 BFB Injection Time: 2353

GC Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	21.8
75	30.0 - 60.0% of mass 95	44.4
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.1
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	75.6
175	5.0 - 9.0% of mass 174	6.1 (8.0)1
176	95.0 - 101.0% of mass 174	73.9 (97.8)1
177	5.0 - 9.0% of mass 176	4.9 (6.6)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	V5STD100PPB	V5STD100PPB	V5CCV01E	10/06/09	0024
02	V5BLK1005ELC	9J08004-BS1	V5LCS01E	10/06/09	0055
03	V5BLK1005E	9J08004-BLK1	V5BLK01E	10/06/09	0157
04	NTC21SB13-SO	0910006-27	1000627A	10/06/09	0229
05	NTC21SB13-SO	0910006-28	1000628A	10/06/09	0300
06	NTC21SB14-SO	0910006-30	1000630A	10/06/09	0331
07	NTC21SB15-SO	0910006-31	1000631A	10/06/09	0402
08	NTC21SB15-SO	0910006-32	1000632A	10/06/09	0433
09	NTC21SB16-SO	0910006-33	1000633A	10/06/09	0504
10	NTC21SB16-SO	0910006-34	1000634B	10/06/09	0535
11	NTC21SB19-SO	0910006-35	1000635A	10/06/09	0606
12	NTC21SB19-SO	0910006-36	1000636A	10/06/09	0637
13	NTC21SB22-SO	0910006-37	1000637A	10/06/09	0708
14	NTC21SB22-SO	0910006-38	1000638A	10/06/09	0740
15	FD-092809-01	0910006-40	1000640A	10/06/09	0811
16	NTC21SB01-SO	0910006-41	1000641A	10/06/09	0842
17	NTC21SB02-SO	0910006-42	1000642A	10/06/09	0913
18	NTC21SB03-SO	0910006-44	1000644A	10/06/09	0944
19	NTC21SB07-SO	0910006-25	1000625A	10/06/09	1015
20	NTC21SB02-SO	0910006-43	1000643A	10/06/09	1046
21	NTC21SB03-SO	0910006-45	1000645A	10/06/09	1117
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FORM V VOA

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Instrument ID: VOA5 Calibration Date: 10/06/09 Time: 0024

Lab File ID: V5CCV01E Init. Calib. Date(s): 01/16/09 10/02/09

Heated Purge: (Y/N) Y Init. Calib. Times: 0950 1429

GC Column: RTX-VRX ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF100	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acetone	0.104	0.079	200.0	180.2		LINR	-9.9	
Benzene	1.160	1.131	100.0	97.52		AVRG	-2.5	
Bromodichloromethane	0.386	0.413	100.0	106.8		AVRG	6.8	
Bromoform	0.474	0.478	100.0	100.7	0.100	AVRG	0.7	
Bromomethane	0.266	0.221	100.0	83.00		AVRG	-17.0	
2-Butanone	0.114	0.122	200.0	204.7		LINR	2.3	
Carbon disulfide	0.833	0.764	100.0	91.74		AVRG	-8.3	
Carbon tetrachloride	0.388	0.398	100.0	102.7		AVRG	2.7	
Chlorobenzene	2.149	1.869	100.0	86.95	0.300	AVRG	-13.0	
Chloroethane	0.171	0.185	100.0	107.7		AVRG	7.7	
Chloroform	0.608	0.572	100.0	94.17		AVRG	-5.8	20.0
Chloromethane	0.383	0.374	100.0	97.67	0.100	AVRG	-2.3	
Cyclohexane	0.479	0.517	100.0	107.7		AVRG	7.7	
Dibromochloromethane	0.800	0.722	100.0	90.13		AVRG	-9.9	
1,2-Dibromo-3-chloropropane	0.132	0.121	100.0	91.87		AVRG	-8.1	
1,2-Dibromoethane	0.665	0.592	100.0	89.05		AVRG	-10.9	
1,2-Dichlorobenzene	1.554	1.451	100.0	93.36		AVRG	-6.6	
1,3-Dichlorobenzene	1.719	1.555	100.0	90.42		AVRG	-9.6	
1,4-Dichlorobenzene	1.756	1.598	100.0	90.99		AVRG	-9.0	
Dichlorodifluoromethane	0.359	0.354	100.0	98.71		AVRG	-1.3	
1,1-Dichloroethane	0.458	0.629	100.0	137.2	0.100	AVRG	37.2	
1,2-Dichloroethane	0.342	0.356	100.0	104.0		AVRG	4.0	
1,1-Dichloroethene	0.237	0.225	100.0	95.01		AVRG	-5.0	20.0
cis-1,2-Dichloroethene	0.360	0.340	100.0	94.25		AVRG	-5.7	
trans-1,2-Dichloroethene	0.259	0.241	100.0	93.24		AVRG	-6.8	
1,2-Dichloropropane	0.308	0.331	100.0	107.6		AVRG	7.6	20.0
cis-1,3-Dichloropropene	0.429	0.451	100.0	105.1		AVRG	5.1	
trans-1,3-Dichloropropene	0.806	0.808	100.0	94.58		LINR	-5.4	
Ethylbenzene	3.316	2.808	100.0	84.66		AVRG	-15.3	20.0
2-Hexanone	0.396	0.430	200.0	205.4		LINR	2.7	
Isopropylbenzene	2.725	2.607	100.0	95.70		AVRG	-4.3	
Methyl acetate	0.173	0.156	100.0	90.18		AVRG	-9.8	
Methylene chloride	0.401	0.254	100.0	88.45		2ORDR	-11.6	
Methyl cyclohexane	0.468	0.461	100.0	98.57		AVRG	-1.4	
Methyl-tert-butyl-ether	0.448	0.428	100.0	95.38		AVRG	-4.6	
4-Methyl-2-pentanone	0.206	0.239	200.0	231.8		AVRG	15.9	
Styrene	1.905	1.837	100.0	95.69		2ORDR	-4.3	

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Instrument ID: VOA5 Calibration Date: 10/06/09 Time: 0024

Lab File ID: V5CCV01E Init. Calib. Date(s): 01/16/09 10/02/09

Heated Purge: (Y/N) Y Init. Calib. Times: 0950 1429

GC Column: RTX-VRX ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF100	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
1,1,2,2-Tetrachloroethane	0.716	0.732	100.0	102.2	0.300	AVRG	2.2	
Tetrachloroethene	0.981	0.783	100.0	79.83		AVRG	-20.2	
Toluene	1.760	1.518	100.0	86.22		AVRG	-13.8	20.0
1,2,4-Trichlorobenzene	1.115	0.947	100.0	84.91		AVRG	-15.1	
1,1,1-Trichloroethane	0.423	0.416	100.0	98.31		AVRG	-1.7	
1,1,2-Trichloroethane	0.525	0.456	100.0	86.79		AVRG	-13.2	
Trichloroethene	0.320	0.304	100.0	94.98		AVRG	-5.0	
Trichlorotrifluoroethane	0.287	0.273	100.0	95.10		AVRG	-4.9	
Trichlorofluoromethane	0.444	0.429	100.0	96.59		AVRG	-3.4	
Vinyl chloride	0.314	0.278	100.0	89.34		2ORDR	-10.7	20.0
Xylene(total)	7.794	6.418	300.0	264.7		2ORDR	-11.8	
Dibromofluoromethane	0.336	0.321	30.00	28.69		AVRG	-4.4	
1,2-Dichloroethane-d4	0.048	0.044	30.00	27.52		AVRG	-8.2	
Toluene-d8	2.224	1.808	30.00	24.39		AVRG	-18.7	
Bromofluorobenzene	0.897	0.817	30.00	27.31		AVRG	-9.0	

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: V5BFB01 BFB Injection Date: 10/06/09

Instrument ID: VOA5 BFB Injection Time: 1412

GC Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.3
75	30.0 - 60.0% of mass 95	44.2
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.0
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	84.1
175	5.0 - 9.0% of mass 174	6.4 (7.6)1
176	95.0 - 101.0% of mass 174	82.0 (97.5)1
177	5.0 - 9.0% of mass 176	5.8 (7.1)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	V5STD100PPB	V5STD100PPB	V5CCV01	10/06/09	1443
02	V5BLK1006LCS	9J10001-BS1	V5LCS01	10/06/09	1529
03	V5BLK1006	9J10001-BLK1	V5BLK01	10/06/09	1702
04	NTC21SB05-SO	0910006-46	1000646A	10/06/09	1733
05	NTC21SB05-SO	0910006-47	1000647A	10/06/09	1805
06	NTC21SB08-SO	0910006-48	1000648A	10/06/09	1836
07	NTC21SB08-SO	0910006-49	1000649A	10/06/09	1907
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FORM V VOA

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Instrument ID: VOA5 Calibration Date: 10/06/09 Time: 1443

Lab File ID: V5CCV01 Init. Calib. Date(s): 01/16/09 10/02/09

Heated Purge: (Y/N) Y Init. Calib. Times: 0950 1429

GC Column: RTX-VRX ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF100	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acetone	0.104	0.102	200.0	231.0		LINR	15.5	
Benzene	1.160	1.125	100.0	96.99		AVRG	-3.0	
Bromodichloromethane	0.386	0.415	100.0	107.3		AVRG	7.3	
Bromoform	0.474	0.496	100.0	104.4	0.100	AVRG	4.4	
Bromomethane	0.266	0.240	100.0	90.31		AVRG	-9.7	
2-Butanone	0.114	0.157	200.0	262.5		LINR	31.2	
Carbon disulfide	0.833	0.778	100.0	93.39		AVRG	-6.6	
Carbon tetrachloride	0.388	0.396	100.0	102.2		AVRG	2.2	
Chlorobenzene	2.149	1.864	100.0	86.72	0.300	AVRG	-13.3	
Chloroethane	0.171	0.181	100.0	105.5		AVRG	5.5	
Chloroform	0.608	0.603	100.0	99.17		AVRG	-0.8	20.0
Chloromethane	0.383	0.372	100.0	97.16	0.100	AVRG	-2.8	
Cyclohexane	0.479	0.552	100.0	115.1		AVRG	15.1	
Dibromochloromethane	0.800	0.780	100.0	97.46		AVRG	-2.5	
1,2-Dibromo-3-chloropropane	0.132	0.131	100.0	99.27		AVRG	-0.7	
1,2-Dibromoethane	0.665	0.664	100.0	99.88		AVRG	-0.1	
1,2-Dichlorobenzene	1.554	1.445	100.0	92.96		AVRG	-7.0	
1,3-Dichlorobenzene	1.719	1.646	100.0	95.71		AVRG	-4.3	
1,4-Dichlorobenzene	1.756	1.580	100.0	90.00		AVRG	-10.0	
Dichlorodifluoromethane	0.359	0.370	100.0	103.1		AVRG	3.1	
1,1-Dichloroethane	0.458	0.456	100.0	99.36	0.100	AVRG	-0.6	
1,2-Dichloroethane	0.342	0.344	100.0	100.6		AVRG	0.6	
1,1-Dichloroethene	0.237	0.231	100.0	97.46		AVRG	-2.5	20.0
cis-1,2-Dichloroethene	0.360	0.348	100.0	96.46		AVRG	-3.5	
trans-1,2-Dichloroethene	0.259	0.241	100.0	93.19		AVRG	-6.8	
1,2-Dichloropropane	0.308	0.339	100.0	110.4		AVRG	10.4	20.0
cis-1,3-Dichloropropene	0.429	0.458	100.0	106.7		AVRG	6.7	
trans-1,3-Dichloropropene	0.806	0.917	100.0	107.3		LINR	7.3	
Ethylbenzene	3.316	3.254	100.0	98.11		AVRG	-1.9	20.0
2-Hexanone	0.396	0.500	200.0	238.7		LINR	19.4	
Isopropylbenzene	2.725	2.502	100.0	91.82		AVRG	-8.2	
Methyl acetate	0.173	0.170	100.0	98.36		AVRG	-1.6	
Methylene chloride	0.401	0.271	100.0	95.38		2ORDR	-4.6	
Methyl cyclohexane	0.468	0.473	100.0	101.2		AVRG	1.2	
Methyl-tert-butyl-ether	0.448	0.440	100.0	98.09		AVRG	-1.9	
4-Methyl-2-pentanone	0.206	0.262	200.0	254.0		AVRG	27.0	
Styrene	1.905	1.762	100.0	91.14		2ORDR	-8.9	

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FORM VII VOA

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Instrument ID: VOA5 Calibration Date: 10/06/09 Time: 1443

Lab File ID: V5CCV01 Init. Calib. Date(s): 01/16/09 10/02/09

Heated Purge: (Y/N) Y Init. Calib. Times: 0950 1429

GC Column: RTX-VRX ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF100	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
1,1,2,2-Tetrachloroethane	0.716	0.746	100.0	104.1	0.300	AVRG	4.1	
Tetrachloroethene	0.981	0.824	100.0	84.05		AVRG	-16.0	
Toluene	1.760	1.587	100.0	90.13		AVRG	-9.9	20.0
1,2,4-Trichlorobenzene	1.115	1.072	100.0	96.09		AVRG	-3.9	
1,1,1-Trichloroethane	0.423	0.435	100.0	103.0		AVRG	3.0	
1,1,2-Trichloroethane	0.525	0.501	100.0	95.46		AVRG	-4.5	
Trichloroethene	0.320	0.328	100.0	102.6		AVRG	2.6	
Trichlorotrifluoroethane	0.287	0.275	100.0	95.73		AVRG	-4.3	
Trichlorofluoromethane	0.444	0.453	100.0	101.9		AVRG	1.9	
Vinyl chloride	0.314	0.323	100.0	107.6		2ORDR	7.6	20.0
Xylene(total)	7.794	6.889	300.0	294.8		2ORDR	-1.7	
Dibromofluoromethane	0.336	0.342	30.00	30.49		AVRG	1.6	
1,2-Dichloroethane-d4	0.048	0.049	30.00	30.45		AVRG	1.5	
Toluene-d8	2.224	2.143	30.00	28.90		AVRG	-3.7	
Bromofluorobenzene	0.897	0.906	30.00	30.28		AVRG	1.0	

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: V5BFB01E BFB Injection Date: 10/03/09

Instrument ID: VOA5 BFB Injection Time: 2352

GC Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	23.3
75	30.0 - 60.0% of mass 95	46.4
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.3
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	68.9
175	5.0 - 9.0% of mass 174	5.4 (7.8)1
176	95.0 - 101.0% of mass 174	66.7 (96.7)1
177	5.0 - 9.0% of mass 176	5.0 (7.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	V5STD100PPB	V5STD100PPB	V5CCV01E	10/04/09	0024
02	V5BLK1003ELC	9J07003-BS1	V5LCS01E	10/04/09	0055
03	V5BLK1003E	9J07003-BLK1	V5BLK01E	10/04/09	0157
04	FD-092609-01	0910006-01	1000601A	10/04/09	1045
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FORM V VOA

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Instrument ID: VOA5 Calibration Date: 10/04/09 Time: 0024

Lab File ID: V5CCV01E Init. Calib. Date(s): 01/16/09 10/02/09

Heated Purge: (Y/N) Y Init. Calib. Times: 0950 1429

GC Column: RTX-VRX ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF100	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acetone	0.104	0.086	200.0	194.6		LINR	-2.7	
Benzene	1.160	1.126	100.0	97.13		AVRG	-2.9	
Bromodichloromethane	0.386	0.406	100.0	105.1		AVRG	5.1	
Bromoform	0.474	0.485	100.0	102.1	0.100	AVRG	2.1	
Bromomethane	0.266	0.264	100.0	99.00		AVRG	-1.0	
2-Butanone	0.114	0.117	200.0	195.3		LINR	-2.3	
Carbon disulfide	0.833	0.863	100.0	103.6		AVRG	3.6	
Carbon tetrachloride	0.388	0.408	100.0	105.4		AVRG	5.4	
Chlorobenzene	2.149	1.798	100.0	83.64	0.300	AVRG	-16.4	
Chloroethane	0.171	0.171	100.0	99.45		AVRG	-0.6	
Chloroform	0.608	0.577	100.0	94.90		AVRG	-5.1	20.0
Chloromethane	0.383	0.391	100.0	102.0	0.100	AVRG	2.0	
Cyclohexane	0.479	0.507	100.0	105.7		AVRG	5.7	
Dibromochloromethane	0.800	0.689	100.0	86.06		AVRG	-13.9	
1,2-Dibromo-3-chloropropane	0.132	0.124	100.0	93.54		AVRG	-6.4	
1,2-Dibromoethane	0.665	0.608	100.0	91.40		AVRG	-8.6	
1,2-Dichlorobenzene	1.554	1.485	100.0	95.55		AVRG	-4.4	
1,3-Dichlorobenzene	1.719	1.617	100.0	94.07		AVRG	-5.9	
1,4-Dichlorobenzene	1.756	1.596	100.0	90.89		AVRG	-9.1	
Dichlorodifluoromethane	0.359	0.386	100.0	107.7		AVRG	7.7	
1,1-Dichloroethane	0.458	0.461	100.0	100.5	0.100	AVRG	0.5	
1,2-Dichloroethane	0.342	0.349	100.0	102.0		AVRG	2.0	
1,1-Dichloroethene	0.237	0.233	100.0	98.27		AVRG	-1.7	20.0
cis-1,2-Dichloroethene	0.360	0.331	100.0	91.78		AVRG	-8.2	
trans-1,2-Dichloroethene	0.259	0.259	100.0	99.92		AVRG	-0.1	
1,2-Dichloropropane	0.308	0.322	100.0	104.7		AVRG	4.7	20.0
cis-1,3-Dichloropropene	0.429	0.457	100.0	106.6		AVRG	6.6	
trans-1,3-Dichloropropene	0.806	0.752	100.0	87.98		LINR	-12.0	
Ethylbenzene	3.316	2.891	100.0	87.17		AVRG	-12.8	20.0
2-Hexanone	0.396	0.441	200.0	210.7		LINR	5.3	
Isopropylbenzene	2.725	2.640	100.0	96.91		AVRG	-3.1	
Methyl acetate	0.173	0.160	100.0	92.57		AVRG	-7.4	
Methylene chloride	0.401	0.261	100.0	91.37		2ORDR	-8.6	
Methyl cyclohexane	0.468	0.418	100.0	89.44		AVRG	-10.6	
Methyl-tert-butyl-ether	0.448	0.430	100.0	95.85		AVRG	-4.2	
4-Methyl-2-pentanone	0.206	0.244	200.0	237.2		AVRG	18.6	
Styrene	1.905	1.798	100.0	93.32		2ORDR	-6.7	

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Instrument ID: VOA5 Calibration Date: 10/04/09 Time: 0024

Lab File ID: V5CCV01E Init. Calib. Date(s): 01/16/09 10/02/09

Heated Purge: (Y/N) Y Init. Calib. Times: 0950 1429

GC Column: RTX-VRX ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF100	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
1,1,2,2-Tetrachloroethane	0.716	0.747	100.0	104.3	0.300	AVRG	4.3	
Tetrachloroethene	0.981	0.785	100.0	79.99		AVRG	-20.0	
Toluene	1.760	1.548	100.0	87.96		AVRG	-12.0	20.0
1,2,4-Trichlorobenzene	1.115	0.992	100.0	88.95		AVRG	-11.0	
1,1,1-Trichloroethane	0.423	0.422	100.0	99.81		AVRG	-0.2	
1,1,2-Trichloroethane	0.525	0.468	100.0	89.10		AVRG	-10.9	
Trichloroethene	0.320	0.326	100.0	101.9		AVRG	1.9	
Trichlorotrifluoroethane	0.287	0.280	100.0	97.60		AVRG	-2.4	
Trichlorofluoromethane	0.444	0.446	100.0	100.5		AVRG	0.5	
Vinyl chloride	0.314	0.310	100.0	102.2		2ORDR	2.2	20.0
Xylene(total)	7.794	6.422	300.0	262.5		2ORDR	-12.5	
Dibromofluoromethane	0.336	0.338	30.00	30.22		AVRG	0.7	
1,2-Dichloroethane-d4	0.048	0.048	30.00	29.69		AVRG	-1.0	
Toluene-d8	2.224	1.948	30.00	26.28		AVRG	-12.4	
Bromofluorobenzene	0.897	0.874	30.00	29.24		AVRG	-2.5	

FORM VII VOA

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: V3BFB01F BFB Injection Date: 10/03/09

Instrument ID: VOA3 BFB Injection Time: 1310

GC Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	31.6
75	30.0 - 60.0% of mass 95	51.8
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.9
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	103.6
175	5.0 - 9.0% of mass 174	7.5 (7.2)1
176	95.0 - 101.0% of mass 174	100.7 (97.3)1
177	5.0 - 9.0% of mass 176	6.5 (6.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	V3STD100PPB	9J27910-CCV1	V3CCV01F	10/03/09	1340
02	V3BLK1002FLC	9J06024-BS1	V3LCS01F	10/03/09	1410
03	V3BLK1002F	9J06024-BLK1	V3BLK01F	10/03/09	1536
04	TB-092709-01	0910006-39	1000639	10/03/09	1706
05	TB-092809-01	0910006-50	1000650	10/03/09	1736
06	RB-092909-01	0910006-51	1000651	10/03/09	1805
07	RB-092909-02	0910006-52	1000652	10/03/09	1835
08	SB-092909-01	0910006-53	1000653	10/03/09	1905
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FORM V VOA

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Instrument ID: VOA3 Calibration Date: 10/03/09 Time: 1340

Lab File ID: V3CCV01F Init. Calib. Date(s): 12/17/08 09/18/09

Heated Purge: (Y/N) N Init. Calib. Times: 1502 0143

GC Column: RTX-VRX ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF100	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acetone	0.136	0.166	200.0	264.3		LINR	32.2	
Benzene	0.799	0.888	100.0	111.2		AVRG	11.2	
Bromodichloromethane	0.325	0.334	100.0	102.9		AVRG	2.9	
Bromoform	0.367	0.406	100.0	110.7	0.100	AVRG	10.7	
Bromomethane	0.081	0.093	100.0	111.6		2ORDR	11.6	
2-Butanone	0.096	0.174	200.0	263.0		LINR	31.5	
Carbon disulfide	0.625	0.654	100.0	113.2		LINR	13.2	
Carbon tetrachloride	0.341	0.318	100.0	93.25		AVRG	-6.8	
Chlorobenzene	1.395	1.304	100.0	93.51	0.300	AVRG	-6.5	
Chloroethane	0.130	0.183	100.0	142.9		2ORDR	42.9	
Chloroform	0.428	0.416	100.0	97.08		AVRG	-2.9	20.0
Chloromethane	0.303	0.325	100.0	107.3	0.100	AVRG	7.3	
Cyclohexane	0.362	0.466	100.0	128.8		AVRG	28.8	
Dibromochloromethane	0.422	0.490	100.0	116.0		AVRG	16.0	
1,2-Dibromo-3-chloropropane	0.105	0.119	100.0	92.14		LINR	-7.9	
1,2-Dibromoethane	0.407	0.447	100.0	109.6		AVRG	9.6	
1,2-Dichlorobenzene	1.041	1.103	100.0	105.9		AVRG	5.9	
1,3-Dichlorobenzene	1.105	1.203	100.0	108.9		AVRG	8.9	
1,4-Dichlorobenzene	1.134	1.150	100.0	101.4		AVRG	1.4	
Dichlorodifluoromethane	0.216	0.226	100.0	94.46		LINR	-5.5	
1,1-Dichloroethane	0.452	0.478	100.0	110.9	0.100	LINR	10.9	
1,2-Dichloroethane	0.423	0.398	100.0	94.09		AVRG	-5.9	
1,1-Dichloroethene	0.164	0.185	100.0	111.4		LINR	11.4	20.0
cis-1,2-Dichloroethene	0.202	0.236	100.0	116.8		AVRG	16.8	
trans-1,2-Dichloroethene	0.182	0.217	100.0	119.4		AVRG	19.4	
1,2-Dichloropropane	0.247	0.290	100.0	117.4		AVRG	17.4	20.0
cis-1,3-Dichloropropene	0.322	0.391	100.0	121.4		AVRG	21.4	
trans-1,3-Dichloropropene	0.486	0.628	100.0	129.2		AVRG	29.2	
Ethylbenzene	2.007	2.131	100.0	106.2		AVRG	6.2	20.0
2-Hexanone	0.292	0.494	200.0	268.8		LINR	34.4	
Isopropylbenzene	1.937	1.877	100.0	105.3		LINR	5.3	
Methyl acetate	0.271	0.337	100.0	124.3		AVRG	24.3	
Methylene chloride	0.237	0.248	100.0	115.0		LINR	15.0	
Methyl cyclohexane	0.260	0.306	100.0	117.8		AVRG	17.8	
Methyl-tert-butyl-ether	0.442	0.546	100.0	97.64		LINR	-2.4	
4-Methyl-2-pentanone	0.229	0.342	200.0	230.7		LINR	15.4	
Styrene	1.375	1.529	100.0	111.2		AVRG	11.2	

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Instrument ID: VOA3 Calibration Date: 10/03/09 Time: 1340

Lab File ID: V3CCV01F Init. Calib. Date(s): 12/17/08 09/18/09

Heated Purge: (Y/N) N Init. Calib. Times: 1502 0143

GC Column: RTX-VRX ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF100	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
1,1,2,2-Tetrachloroethane	0.357	0.459	100.0	128.6	0.300	AVRG	28.6	
Tetrachloroethene	0.545	0.548	100.0	100.6		AVRG	0.6	
Toluene	0.969	1.111	100.0	114.7		AVRG	14.7	20.0
1,2,4-Trichlorobenzene	0.609	0.700	100.0	114.9		AVRG	14.9	
1,1,1-Trichloroethane	0.388	0.349	100.0	91.22		LINR	-8.8	
1,1,2-Trichloroethane	0.293	0.337	100.0	115.3		AVRG	15.3	
Trichloroethene	0.225	0.244	100.0	108.5		AVRG	8.5	
Trichlorotrifluoroethane	0.194	0.202	100.0	104.4		AVRG	4.4	
Trichlorofluoromethane	0.437	0.380	100.0	86.85		AVRG	-13.1	
Vinyl chloride	0.217	0.250	100.0	115.1		AVRG	15.1	20.0
Xylene(total)	5.070	5.032	300.0	297.6		AVRG	-0.8	
Dibromofluoromethane	0.299	0.282	30.00	28.32		AVRG	-5.6	
1,2-Dichloroethane-d4	0.060	0.060	30.00	29.92		AVRG	-0.3	
Toluene-d8	1.899	1.900	30.00	30.02		AVRG	0.1	
Bromofluorobenzene	0.974	0.857	30.00	26.41		AVRG	-12.0	

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMPIRICAL LABS Contract:

Lab Code: ELABN Case No.: NA SAS No.: NA SDG No.: CH2.V10011

Lab File ID: V3BFB01 BFB Injection Date: 10/09/09

Instrument ID: VOA3 BFB Injection Time: 1539

GC Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	16.7
75	30.0 - 60.0% of mass 95	42.3
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.1
173	Less than 2.0% of mass 174	0.3 (0.3)1
174	Greater than 50.0% of mass 95	92.4
175	5.0 - 9.0% of mass 174	6.6 (7.1)1
176	95.0 - 101.0% of mass 174	90.5 (97.9)1
177	5.0 - 9.0% of mass 176	6.1 (6.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	V3STD0.5PPB	V3STD0.5PPB	V3STD02	10/09/09	1609
02	V3STD1PPB	V3STD1PPB	V3STD03	10/09/09	1639
03	V3STD2PPB	V3STD2PPB	V3STD04	10/09/09	1709
04	V3STD10PPB	V3STD10PPB	V3STD05	10/09/09	1739
05	V3STD20PPB	V3STD20PPB	V3STD06	10/09/09	1809
06	V3STD50PPB	V3STD50PPB	V3STD07	10/09/09	1839
07	V3BLK1009LCS	V3BLK1009LCS	V3ICV01	10/09/09	1908
08	V3STD100PPB	V3STD100PPB	V3STD08	10/09/09	1938
09	V3STD200PPB	V3STD200PPB	V3STD09	10/09/09	2008
10	V3BLK1009LCS	9J10002-BS1	V3LCS01	10/09/09	2038
11	V3BLK1009	9J10002-BLK1	V3BLK01	10/09/09	2135

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: ELABN Case No.: NA SAS No.: NA SDG No.: SDGA39369

Instrument ID: VOA3 Calibration Date(s): 09/17/09 10/09/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 2112 2008

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
Acetone	LINR	0.00000000	8.264e-002		0.997
~~Acrolein~~	~~LINR~~	~~0.00000000~~	~~6.448e-003~~		0.998
Acrylonitrile	AVRG		8.81e-002		6.4
tert-Amyl Methyl Ether	LINR	0.00000000	0.55761812		0.999
Benzene	AVRG		0.89902060		5.7
Bromobenzene	AVRG		0.66616760		5.2
Bromochloromethane	AVRG		0.13139926		6.3
Bromodichloromethane	AVRG		0.29369213		6.3
Bromoform	AVRG		0.34252341		14.6
Bromomethane	AVRG		0.13166585		10.5
~~2-Butanone~~	LINR	0.00000000	0.10600469		0.999
~~t-Butyl alcohol~~	~~LINR~~	~~0.00000000~~	~~1.881e-002~~		0.999
~~n-Butylbenzene~~	AVRG		1.48969979		6.7
sec-Butylbenzene	AVRG		1.92251192		7.2
tert-Butylbenzene	AVRG		1.55353292		5.7
Carbon disulfide	AVRG		0.67176483		3.6
Carbon tetrachloride	AVRG		0.25490027		8.7
Chlorobenzene	AVRG		1.44700966		9.7
Chloroethane	LINR	0.00000000	0.13101088		1.000
2-Chloroethyl vinyl ether	AVRG		0.12706398		3.2
Chloroform	AVRG		0.40491667		9.0
Chloromethane	AVRG		0.26464952		7.4
2-Chlorotoluene	AVRG		1.55212964		5.8
4-Chlorotoluene	AVRG		1.60760839		7.3
Cyclohexane	AVRG		0.35827129		4.2
Dibromochloromethane	AVRG		0.48570884		8.2
1,2-Dibromo-3-chloropropane	AVRG		0.11397326		9.0
1,2-Dibromoethane	AVRG		0.53285663		6.2
Dibromomethane	AVRG		0.15985185		3.9
1,2-Dichlorobenzene	AVRG		1.10679977		5.0
1,3-Dichlorobenzene	AVRG		1.13769922		6.1
1,4-Dichlorobenzene	AVRG		1.21173165		7.7
Dichlorodifluoromethane	AVRG		0.20132465		12.9
1,1-Dichloroethane	AVRG		0.41308965		3.6
1,2-Dichloroethane	AVRG		0.29770058		3.8
1,1-Dichloroethene	AVRG		0.20141413		5.8
cis-1,2-Dichloroethene	AVRG		0.24966624		4.1

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: ELABN Case No.: NA SAS No.: NA SDG No.: SDGA39369

Instrument ID: VOA3 Calibration Date(s): 09/17/09 10/09/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 2112 2008

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
1,2-Dichloroethene(total)	AVRG		0.24127808		5.2
trans-1,2-Dichloroethene	AVRG		0.23288585		6.6
1,2-Dichloropropane	AVRG		0.25965522		4.2
1,3-Dichloropropane	AVRG		0.80042857		6.9
2,2-Dichloropropane	AVRG		0.28863575		4.5
1,1-Dichloropropene	AVRG		0.30411053		1.8
cis-1,3-Dichloropropene	AVRG		0.37724182		3.7
trans-1,3-Dichloropropene	AVRG		0.69077480		5.3
Ethylbenzene	AVRG		2.37895265		13.6
Ethyl methacrylate	AVRG		0.68675036		9.3
Hexachlorobutadiene	AVRG		0.30323009		6.0
2-Hexanone	2ORDR	0.00000000	2.27204266	0.18122835	1.000
Iodomethane	LINR	0.00000000	0.31934290		0.999
Isopropylbenzene	AVRG		1.96150799		10.9
p-Isopropyltoluene	AVRG		1.35246223		4.4
Methyl acetate	AVRG		0.22607216		13.2
Methylene chloride	LINR	0.00000000	0.24185939		1.000
Methyl cyclohexane	AVRG		0.30057748		5.3
Methyl methacrylate	AVRG		0.22567425		9.5
4-Methyl-2-pentanone	AVRG		0.23341178		8.8
MTBE	AVRG		0.58112152		3.9
Naphthalene	AVRG		1.44892050		6.4
n-Propylbenzene	AVRG		2.33643343		10.3
Styrene	AVRG		1.62303817		9.1
1,1,1,2-Tetrachloroethane	AVRG		0.48855939		5.5
1,1,2,2-Tetrachloroethane	AVRG		0.56232809		4.8
Tetrachloroethene	AVRG		0.57888389		5.3
Tetrahydrofuran	AVRG		6.849e-002		8.0
Toluene	AVRG		1.24086306		7.7
1,2,3-Trichlorobenzene	AVRG		0.64565200		4.5
1,2,4-Trichlorobenzene	AVRG		0.73602925		5.5
1,1,1-Trichloroethane	AVRG		0.31781468		6.2
1,1,2-Trichloroethane	AVRG		0.42981242		9.9
Trichloroethene	AVRG		0.24646370		4.5
Trichlorofluoromethane	AVRG		0.32359545		7.2
Trichlorotrifluoroethane	AVRG		0.18982558		3.5
1,2,3-Trichloropropane	AVRG		0.18674055		7.6

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: ELABN Case No.: NA SAS No.: NA SDG No.: SDGA39369

Instrument ID: VOA3 Calibration Date(s): 09/17/09 10/09/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 2112 2008

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
1,2,4-Trimethylbenzene	AVRG		1.73751615		7.6
1,3,5-Trimethylbenzene	AVRG		1.67239447		7.3
Vinyl acetate	AVRG		0.43404031		6.4
Vinyl chloride	AVRG		0.23848586		5.6
m,p-Xylene	2ORDR	0.00000000	0.29963610	3.337e-002	0.998
Xylene(total)	AVRG		5.69641522		14.8
1-Chlorohexane	AVRG		0.69265418		10.7
Di-isopropyl ether	AVRG		0.77822201		2.3
ETBE	AVRG		0.63426385		2.6
Dibromofluoromethane	AVRG		0.27356618		5.5
1,2-Dichloroethane-d4	AVRG		5.692e-002		4.0
Toluene-d8	AVRG		2.17190440		4.5
Bromofluorobenzene	AVRG		0.96335955		4.4

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: ELABN Case No.: NA SAS No.: NA SDG No.: SDGA39369

Instrument ID: VOA3 Calibration Date(s): 09/17/09 10/09/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 2112 2008

LAB FILE ID: RF0.25: V3STD01 RF0.5: V3STD02 RF1: V3STD03
RF2: V3STD04 RF10: V3STD05

COMPOUND	RF0.25	RF0.5	RF1	RF2	RF10
Acetone		0.182	0.132	0.041	0.098
Acrolein		0.019	0.018	0.011	0.009
Acrylonitrile		0.097	0.084	0.080	0.095
tert-Amyl Methyl Ether		1.250	0.874	0.705	0.633
Benzene		0.974	0.934	0.913	0.932
Bromobenzene		0.720	0.685	0.661	0.697
Bromochloromethane		0.150	0.131	0.134	0.132
Bromodichloromethane		0.319	0.286	0.259	0.288
Bromoform		0.309	0.279	0.283	0.334
Bromomethane		0.133	0.129	0.112	0.114
2-Butanone			0.004	0.038	0.102
t-Butyl alcohol		0.008	0.016	0.015	0.016
n-Butylbenzene		1.568	1.444	1.609	1.553
sec-Butylbenzene		2.022	2.020	1.986	1.992
tert-Butylbenzene		1.590	1.622	1.605	1.599
Carbon disulfide		0.692	0.644	0.636	0.690
Carbon tetrachloride		0.230	0.230	0.244	0.252
Chlorobenzene		1.572	1.534	1.454	1.580
Chloroethane		0.209	0.199	0.144	0.136
2-Chloroethyl vinyl ether		0.129	0.128	0.119	0.131
Chloroform		0.491	0.416	0.386	0.397
Chloromethane		0.309	0.272	0.255	0.268
2-Chlorotoluene		1.564	1.620	1.603	1.628
4-Chlorotoluene		1.683	1.688	1.655	1.700
Cyclohexane		0.389	0.353	0.350	0.358
Dibromochloromethane		0.459	0.439	0.427	0.501
1,2-Dibromo-3-chloropropane		0.111	0.099	0.101	0.112
1,2-Dibromoethane		0.519	0.541	0.533	0.581
Dibromomethane		0.173	0.161	0.157	0.164
1,2-Dichlorobenzene		1.128	1.126	1.144	1.171
1,3-Dichlorobenzene		1.235	1.173	1.145	1.187
1,4-Dichlorobenzene		1.373	1.236	1.210	1.225
Dichlorodifluoromethane		0.262	0.177	0.190	0.195
1,1-Dichloroethane		0.429	0.420	0.386	0.430
1,2-Dichloroethane		0.316	0.295	0.280	0.312
1,1-Dichloroethene		0.225	0.209	0.200	0.198
cis-1,2-Dichloroethene		0.270	0.259	0.245	0.251

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: ELABN Case No.: NA SAS No.: NA SDG No.: SDGA39369

Instrument ID: VOA3 Calibration Date(s): 09/17/09 10/09/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 2112 2008

LAB FILE ID: RF0.25: V3STD01 RF0.5: V3STD02 RF1: V3STD03
RF2: V3STD04 RF10: V3STD05

COMPOUND	RF0.25	RF0.5	RF1	RF2	RF10
1,2-Dichloroethene(total)		0.267	0.253	0.233	0.239
trans-1,2-Dichloroethene		0.265	0.246	0.221	0.227
1,2-Dichloropropane		0.282	0.259	0.248	0.268
1,3-Dichloropropane		0.767	0.834	0.821	0.870
2,2-Dichloropropane			0.312	0.300	0.286
1,1-Dichloropropene		0.310	0.298	0.308	0.303
cis-1,3-Dichloropropene		0.363	0.375	0.352	0.392
trans-1,3-Dichloropropene		0.690	0.706	0.643	0.740
Ethylbenzene		2.724	2.543	2.485	2.629
Ethyl methacrylate		0.802	0.674	0.631	0.733
Hexachlorobutadiene		0.344	0.308	0.300	0.296
2-Hexanone		0.247	0.314	0.339	0.418
Iodomethane		0.186	0.210	0.220	0.282
Isopropylbenzene		2.251	2.015	1.963	2.120
p-Isopropyltoluene		1.407	1.368	1.374	1.398
Methyl acetate		0.164	0.199	0.234	0.256
Methylene chloride		0.514	0.379	0.316	0.268
Methyl cyclohexane		0.328	0.294	0.309	0.291
Methyl methacrylate		0.264	0.193	0.202	0.230
4-Methyl-2-pentanone		0.191	0.220	0.235	0.251
MTBE		0.624	0.593	0.553	0.598
Naphthalene		1.534	1.540	1.432	1.572
n-Propylbenzene		2.444	2.449	2.539	2.470
Styrene		1.748	1.715	1.628	1.759
1,1,1,2-Tetrachloroethane		0.526	0.472	0.444	0.504
1,1,2,2-Tetrachloroethane		0.578	0.599	0.551	0.589
Tetrachloroethene		0.603	0.590	0.587	0.607
Tetrahydrofuran				0.058	0.069
Toluene		1.356	1.256	1.240	1.330
1,2,3-Trichlorobenzene		0.687	0.634	0.659	0.689
1,2,4-Trichlorobenzene		0.818	0.759	0.729	0.753
1,1,1-Trichloroethane		0.357	0.301	0.298	0.316
1,1,2-Trichloroethane		0.503	0.444	0.428	0.459
Trichloroethene		0.266	0.260	0.242	0.245
Trichlorofluoromethane		0.292	0.296	0.310	0.328
Trichlorotrifluoroethane		0.184	0.185	0.192	0.187
1,2,3-Trichloropropane		0.208	0.193	0.188	0.197

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: ELABN Case No.: NA SAS No.: NA SDG No.: SDGA39369

Instrument ID: VOA3 Calibration Date(s): 09/17/09 10/09/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 2112 2008

LAB FILE ID: RF0.25: V3STD01 RF0.5: V3STD02 RF1: V3STD03
RF2: V3STD04 RF10: V3STD05

COMPOUND	RF0.25	RF0.5	RF1	RF2	RF10
1,2,4-Trimethylbenzene		1.842	1.823	1.806	1.822
1,3,5-Trimethylbenzene		1.778	1.776	1.691	1.752
Vinyl acetate		0.438	0.401	0.383	0.460
Vinyl chloride		0.267	0.241	0.225	0.240
m,p-Xylene		2.047	2.033	1.995	2.066
Xylene(total)		6.172	6.191	6.136	6.366
1-Chlorohexane			0.807	0.754	0.709
Di-isopropyl ether		0.782	0.777	0.751	0.807
ETBE		0.629	0.654	0.609	0.660
Dibromofluoromethane	0.313	0.271	0.270	0.265	0.268
1,2-Dichloroethane-d4	0.062	0.057	0.057	0.055	0.056
Toluene-d8		2.246	2.198	2.235	2.233
Bromofluorobenzene		1.000	0.978	0.987	0.993

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: ELABN Case No.: NA SAS No.: NA SDG No.: SDGA39369

Instrument ID: VOA3 Calibration Date(s): 09/17/09 10/09/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 2112 2008

LAB FILE ID: RF20: V3STD06 RF50: V3STD07 RF100: V3STD08
RF200: V3STD09

COMPOUND	RF20	RF50	RF100	RF200
Acetone	0.073	0.092	0.087	0.081
Acrolein	0.008	0.007	0.006	0.006
Acrylonitrile	0.089	0.089	0.088	0.083
tert-Amyl Methyl Ether	0.588	0.576	0.574	0.551
Benzene	0.874	0.891	0.869	0.806
Bromobenzene	0.659	0.661	0.640	0.606
Bromochloromethane	0.126	0.126	0.126	0.125
Bromodichloromethane	0.286	0.298	0.309	0.304
Bromoform	0.346	0.388	0.404	0.396
Bromomethane	0.132	0.134	0.150	0.149
2-Butanone	0.106	0.112	0.108	0.105
t-Butyl alcohol	0.016	0.018	0.018	0.016
n-Butylbenzene	1.497	1.502	1.458	1.285
sec-Butylbenzene	1.909	1.965	1.882	1.604
tert-Butylbenzene	1.544	1.590	1.532	1.347
Carbon disulfide	0.654	0.694	0.694	0.670
Carbon tetrachloride	0.244	0.270	0.284	0.284
Chlorobenzene	1.485	1.451	1.345	1.156
Chloroethane	0.135	0.134	0.135	0.130
2-Chloroethyl vinyl ether	0.126	0.129	0.130	0.125
Chloroform	0.381	0.396	0.392	0.382
Chloromethane	0.252	0.255	0.255	0.251
2-Chlorotoluene	1.566	1.571	1.517	1.347
4-Chlorotoluene	1.638	1.612	1.540	1.345
Cyclohexane	0.338	0.362	0.365	0.350
Dibromochloromethane	0.487	0.531	0.530	0.511
1,2-Dibromo-3-chloropropane	0.114	0.121	0.126	0.126
1,2-Dibromoethane	0.553	0.548	0.519	0.469
Dibromomethane	0.155	0.157	0.158	0.154
1,2-Dichlorobenzene	1.117	1.102	1.080	0.986
1,3-Dichlorobenzene	1.137	1.127	1.096	1.001
1,4-Dichlorobenzene	1.234	1.212	1.167	1.035
Dichlorodifluoromethane	0.185	0.202	0.201	0.198
1,1-Dichloroethane	0.404	0.410	0.420	0.404
1,2-Dichloroethane	0.294	0.296	0.298	0.290
1,1-Dichloroethene	0.187	0.197	0.202	0.192
cis-1,2-Dichloroethene	0.240	0.246	0.245	0.240

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: ELABN Case No.: NA SAS No.: NA SDG No.: SDGA39369

Instrument ID: VOA3 Calibration Date(s): 09/17/09 10/09/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 2112 2008

LAB FILE ID: RF20: V3STD06 RF50: V3STD07 RF100: V3STD08
RF200: V3STD09

COMPOUND	RF20	RF50	RF100	RF200
1,2-Dichloroethene(total)	0.232	0.234	0.239	0.233
trans-1,2-Dichloroethene	0.224	0.221	0.233	0.226
1,2-Dichloropropane	0.254	0.258	0.259	0.250
1,3-Dichloropropane	0.831	0.815	0.773	0.692
2,2-Dichloropropane	0.276	0.284	0.286	0.277
1,1-Dichloropropene	0.296	0.307	0.310	0.300
cis-1,3-Dichloropropene	0.376	0.387	0.391	0.382
trans-1,3-Dichloropropene	0.703	0.722	0.690	0.632
Ethylbenzene	2.429	2.383	2.130	1.708
Ethyl methacrylate	0.702	0.701	0.655	0.595
Hexachlorobutadiene	0.281	0.293	0.304	0.299
2-Hexanone	0.401	0.403	0.368	0.327
Iodomethane	0.269	0.310	0.328	0.318
Isopropylbenzene	1.988	1.988	1.842	1.523
p-Isopropyltoluene	1.345	1.380	1.329	1.219
Methyl acetate	0.242	0.243	0.238	0.232
Methylene chloride	0.251	0.246	0.247	0.240
Methyl cyclohexane	0.273	0.300	0.311	0.299
Methyl methacrylate	0.228	0.232	0.234	0.223
4-Methyl-2-pentanone	0.249	0.249	0.244	0.229
MTBE	0.571	0.576	0.570	0.564
Naphthalene	1.461	1.361	1.336	1.355
n-Propylbenzene	2.409	2.378	2.214	1.788
Styrene	1.645	1.646	1.540	1.304
1,1,1,2-Tetrachloroethane	0.492	0.508	0.500	0.461
1,1,2,2-Tetrachloroethane	0.562	0.562	0.544	0.513
Tetrachloroethene	0.580	0.589	0.564	0.511
Tetrahydrofuran	0.068	0.074	0.072	0.070
Toluene	1.270	1.248	1.183	1.044
1,2,3-Trichlorobenzene	0.634	0.620	0.627	0.615
1,2,4-Trichlorobenzene	0.720	0.718	0.700	0.691
1,1,1-Trichloroethane	0.299	0.322	0.326	0.322
1,1,2-Trichloroethane	0.428	0.422	0.398	0.357
Trichloroethene	0.234	0.242	0.245	0.236
Trichlorofluoromethane	0.318	0.346	0.350	0.349
Trichlorotrifluoroethane	0.181	0.200	0.198	0.192
1,2,3-Trichloropropane	0.188	0.182	0.174	0.162

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: ELABN Case No.: NA SAS No.: NA SDG No.: SDGA39369

Instrument ID: VOA3 Calibration Date(s): 09/17/09 10/09/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 2112 2008

LAB FILE ID: RF20: V3STD06 RF50: V3STD07 RF100: V3STD08
RF200: V3STD09

COMPOUND	RF20	RF50	RF100	RF200
1,2,4-Trimethylbenzene	1.744	1.741	1.683	1.438
1,3,5-Trimethylbenzene	1.665	1.693	1.620	1.403
Vinyl acetate	0.449	0.452	0.456	0.433
Vinyl chloride	0.230	0.239	0.239	0.227
m,p-Xylene	1.956	1.883	1.615	1.191
Xylene(total)	5.989	5.789	5.059	3.868
1-Chlorohexane	0.672	0.682	0.649	0.576
Di-isopropyl ether	0.764	0.781	0.796	0.768
ETBE	0.631	0.633	0.638	0.619
Dibromofluoromethane	0.267	0.266	0.272	0.268
1,2-Dichloroethane-d4	0.055	0.057	0.056	0.057
Toluene-d8	2.225	2.185	2.084	1.968
Bromofluorobenzene	0.980	0.967	0.927	0.875

FORM VI VOA

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: V3BFB01 BFB Injection Date: 10/09/09

Instrument ID: VOA3 BFB Injection Time: 1539

GC Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	16.7
75	30.0 - 60.0% of mass 95	42.3
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.1
173	Less than 2.0% of mass 174	0.3 (0.3)1
174	Greater than 50.0% of mass 95	92.4
175	5.0 - 9.0% of mass 174	6.6 (7.1)1
176	95.0 - 101.0% of mass 174	90.5 (97.9)1
177	5.0 - 9.0% of mass 176	6.1 (6.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	V3CCV1	V3CCV1	V3CCV1	10/09/09	1938
02	V3BLK1009LCS	9J10002-BS1	V3LCS01	10/09/09	2038
03	V3BLK1009	9J10002-BLK1	V3BLK01	10/09/09	2135
04	TB-092609-01	0910006-19	1000619	10/09/09	2204
05	TB-092909-01	0910006-54	1000654	10/09/09	2234
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FORM V VOA

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Instrument ID: VOA3 Calibration Date: 10/09/09 Time: 1938

Lab File ID: V3CCV1 Init. Calib. Date(s): 12/17/08 10/09/09

Heated Purge: (Y/N) N Init. Calib. Times: 1502 2008

GC Column: RTX-VRX ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF100	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acetone	0.098	0.087	200.0	209.7		LINR	4.9	
Benzene	0.899	0.869	100.0	96.62		AVRG	-3.4	
Bromodichloromethane	0.294	0.309	100.0	105.3		AVRG	5.3	
Bromoform	0.342	0.404	100.0	117.9	0.100	AVRG	17.9	
Bromomethane	0.132	0.150	100.0	114.0		AVRG	14.0	
2-Butanone	0.082	0.108	200.0	204.9		LINR	2.4	
Carbon disulfide	0.672	0.694	100.0	103.3		AVRG	3.3	
Carbon tetrachloride	0.255	0.284	100.0	111.6		AVRG	11.6	
Chlorobenzene	1.447	1.345	100.0	92.96	0.300	AVRG	-7.0	
Chloroethane	0.153	0.135	100.0	103.0		LINR	3.0	
Chloroform	0.405	0.392	100.0	96.73		AVRG	-3.3	20.0
Chloromethane	0.265	0.255	100.0	96.38	0.100	AVRG	-3.6	
Cyclohexane	0.358	0.365	100.0	101.9		AVRG	1.9	
Dibromochloromethane	0.486	0.530	100.0	109.2		AVRG	9.2	
1,2-Dibromo-3-chloropropane	0.114	0.126	100.0	110.7		AVRG	10.7	
1,2-Dibromoethane	0.533	0.519	100.0	97.37		AVRG	-2.6	
1,2-Dichlorobenzene	1.107	1.080	100.0	97.60		AVRG	-2.4	
1,3-Dichlorobenzene	1.138	1.096	100.0	96.36		AVRG	-3.6	
1,4-Dichlorobenzene	1.212	1.167	100.0	96.31		AVRG	-3.7	
Dichlorodifluoromethane	0.201	0.201	100.0	99.90		AVRG	-0.1	
1,1-Dichloroethane	0.413	0.420	100.0	101.7	0.100	AVRG	1.7	
1,2-Dichloroethane	0.298	0.298	100.0	99.99		AVRG	-0.0	
1,1-Dichloroethene	0.201	0.202	100.0	100.1		AVRG	0.1	20.0
cis-1,2-Dichloroethene	0.250	0.245	100.0	98.16		AVRG	-1.8	
trans-1,2-Dichloroethene	0.233	0.233	100.0	100.1		AVRG	0.1	
1,2-Dichloropropane	0.260	0.259	100.0	99.74		AVRG	-0.3	20.0
cis-1,3-Dichloropropene	0.377	0.391	100.0	103.6		AVRG	3.6	
trans-1,3-Dichloropropene	0.691	0.690	100.0	99.88		AVRG	-0.1	
Ethylbenzene	2.379	2.130	100.0	89.54		AVRG	-10.5	20.0
2-Hexanone	0.352	0.368	200.0	199.9		2ORDR	-0.0	
Isopropylbenzene	1.961	1.842	100.0	93.92		AVRG	-6.1	
Methyl acetate	0.226	0.238	100.0	105.4		AVRG	5.4	
Methylene chloride	0.308	0.247	100.0	102.0		LINR	2.0	
Methyl cyclohexane	0.301	0.311	100.0	103.4		AVRG	3.4	
Methyl-tert-butyl-ether	0.581	0.570	100.0	98.15		AVRG	-1.8	
4-Methyl-2-pentanone	0.234	0.244	200.0	208.9		AVRG	4.4	
Styrene	1.623	1.540	100.0	94.89		AVRG	-5.1	

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Instrument ID: VOA3 Calibration Date: 10/09/09 Time: 1938

Lab File ID: V3CCV1 Init. Calib. Date(s): 12/17/08 10/09/09

Heated Purge: (Y/N) N Init. Calib. Times: 1502 2008

GC Column: RTX-VRX ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF100	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
1,1,2,2-Tetrachloroethane	0.562	0.544	100.0	96.81	0.300	AVRG	-3.2	
Tetrachloroethene	0.579	0.564	100.0	97.40		AVRG	-2.6	
Toluene	1.241	1.183	100.0	95.33		AVRG	-4.7	20.0
1,2,4-Trichlorobenzene	0.736	0.700	100.0	95.08		AVRG	-4.9	
1,1,1-Trichloroethane	0.318	0.326	100.0	102.7		AVRG	2.7	
1,1,2-Trichloroethane	0.430	0.398	100.0	92.55		AVRG	-7.4	
Trichloroethene	0.246	0.245	100.0	99.49		AVRG	-0.5	
Trichlorotrifluoroethane	0.190	0.198	100.0	104.2		AVRG	4.2	
Trichlorofluoromethane	0.324	0.350	100.0	108.1		AVRG	8.1	
Vinyl chloride	0.238	0.239	100.0	100.1		AVRG	0.1	20.0
Xylene(total)	5.696	5.059	300.0	304.3		AVRG	-11.2	
Dibromofluoromethane	0.273	0.272	30.00	29.87		AVRG	-0.4	
1,2-Dichloroethane-d4	0.057	0.056	30.00	29.80		AVRG	-0.6	
Toluene-d8	2.172	2.084	30.00	28.79		AVRG	-4.0	
Bromofluorobenzene	0.963	0.927	30.00	28.88		AVRG	-3.7	

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

V3BLK1002F

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: V3BLK01F Lab Sample ID: 9J06024-BLK1

Date Analyzed: 10/03/09 Time Analyzed: 1536

Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) N

Instrument ID: VOA3

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	V3BLK1002FLC	9J06024-BS1	V3LCS01F	1410
02	TB-092709-01	0910006-39	1000639	1706
03	TB-092809-01	0910006-50	1000650	1736
04	RB-092909-01	0910006-51	1000651	1805
05	RB-092909-02	0910006-52	1000652	1835
06	SB-092909-01	0910006-53	1000653	1905
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COMMENTS:

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FORM IV VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V3BLK1002F

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) WATER Lab Sample ID: 9J06024-BLK1

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V3BLK01F

Level: (low/med) LOW Date Sampled: _____

% Moisture: not dec. _____ Date Analyzed: 10/03/09 15:36

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	0.84	10		U
71-43-2	Benzene	0.11	1.0		U
75-27-4	Bromodichloromethane	0.10	1.0		U
75-25-2	Bromoform	0.10	1.0		U
74-83-9	Bromomethane	0.32	2.0		U
78-93-3	2-Butanone	1.0	10		U
75-15-0	Carbon disulfide	0.13	1.0		U
56-23-5	Carbon tetrachloride	0.15	1.0		U
108-90-7	Chlorobenzene	0.10	1.0		U
75-00-3	Chloroethane	0.18	2.0		U
67-66-3	Chloroform	0.11	1.0		U
74-87-3	Chloromethane	0.29	2.0		U
110-82-7	Cyclohexane	0.20	1.0		U
124-48-1	Dibromochloromethane	0.10	1.0		U
96-12-8	1,2-Dibromo-3-chloropropane	0.11	1.0		U
106-93-4	1,2-Dibromoethane	0.10	1.0		U
95-50-1	1,2-Dichlorobenzene	0.10	1.0		U
541-73-1	1,3-Dichlorobenzene	0.13	1.0		U
106-46-7	1,4-Dichlorobenzene	0.10	1.0		U
75-71-8	Dichlorodifluoromethane	0.22	2.0		U
75-34-3	1,1-Dichloroethane	0.12	1.0		U
107-06-2	1,2-Dichloroethane	0.10	1.0		U
75-35-4	1,1-Dichloroethene	0.15	1.0		U
156-59-2	cis-1,2-Dichloroethene	0.13	1.0		U
156-60-5	trans-1,2-Dichloroethene	0.13	1.0		U
78-87-5	1,2-Dichloropropane	0.10	1.0		U
10061-01-5	cis-1,3-Dichloropropene	0.11	1.0		U
10061-02-6	trans-1,3-Dichloropropene	0.10	1.0		U
100-41-4	Ethylbenzene	0.13	1.0		U
591-78-6	2-Hexanone	0.30	5.0		U
98-82-8	Isopropylbenzene	0.15	1.0		U
79-20-9	Methyl acetate	0.30	2.0		U
75-09-2	Methylene chloride	0.14	2.0	0.49	J
108-87-2	Methyl cyclohexane	0.17	1.0		U
1634-04-4	Methyl-tert-butyl-ether	0.10	1.0		U
108-10-1	4-Methyl-2-pentanone	0.29	5.0		U
100-42-5	Styrene	0.10	1.0		U
79-34-5	1,1,2,2-Tetrachloroethane	0.10	1.0		U
127-18-4	Tetrachloroethene	0.15	1.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V3BLK1002F

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) WATER Lab Sample ID: 9J06024-BLK1

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V3BLK01F

Level: (low/med) LOW Date Sampled: _____

% Moisture: not dec. _____ Date Analyzed: 10/03/09 15:36

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.10	1.0		U
120-82-1	1,2,4-Trichlorobenzene	0.10	1.0	0.20	J
71-55-6	1,1,1-Trichloroethane	0.17	1.0		U
79-00-5	1,1,2-Trichloroethane	0.10	1.0		U
79-01-6	Trichloroethene	0.13	1.0		U
76-13-1	Trichlorotrifluoroethane	0.18	2.0		U
75-69-4	Trichlorofluoromethane	0.17	2.0		U
75-01-4	Vinyl chloride	0.18	1.0		U
1330-20-7	Xylene(total)	0.22	1.0		U

FORM I VOA

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

V3BLK1009

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: V3BLK01 Lab Sample ID: 9J10002-BLK1

Date Analyzed: 10/09/09 Time Analyzed: 2135

Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) N

Instrument ID: VOA3

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	V3BLK1009LCS	9J10002-BS1	V3LCS01	2038
02	TB-092609-01	0910006-19	1000619	2204
03	TB-092909-01	0910006-54	1000654	2234
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COMMENTS:

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FORM IV VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V3BLK1009

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) WATER Lab Sample ID: 9J10002-BLK1

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V3BLK01

Level: (low/med) LOW Date Sampled: _____

% Moisture: not dec. _____ Date Analyzed: 10/09/09 21:35

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	0.84	10		U
71-43-2	Benzene	0.11	1.0		U
75-27-4	Bromodichloromethane	0.10	1.0		U
75-25-2	Bromoform	0.10	1.0		U
74-83-9	Bromomethane	0.32	2.0		U
78-93-3	2-Butanone	1.0	10		U
75-15-0	Carbon disulfide	0.13	1.0		U
56-23-5	Carbon tetrachloride	0.15	1.0		U
108-90-7	Chlorobenzene	0.10	1.0		U
75-00-3	Chloroethane	0.18	2.0		U
67-66-3	Chloroform	0.11	1.0		U
74-87-3	Chloromethane	0.29	2.0		U
110-82-7	Cyclohexane	0.20	1.0		U
124-48-1	Dibromochloromethane	0.10	1.0		U
96-12-8	1,2-Dibromo-3-chloropropane	0.11	1.0		U
106-93-4	1,2-Dibromoethane	0.10	1.0		U
95-50-1	1,2-Dichlorobenzene	0.10	1.0		U
541-73-1	1,3-Dichlorobenzene	0.13	1.0		U
106-46-7	1,4-Dichlorobenzene	0.10	1.0		U
75-71-8	Dichlorodifluoromethane	0.22	2.0		U
75-34-3	1,1-Dichloroethane	0.12	1.0		U
107-06-2	1,2-Dichloroethane	0.10	1.0		U
75-35-4	1,1-Dichloroethene	0.15	1.0		U
156-59-2	cis-1,2-Dichloroethene	0.13	1.0		U
156-60-5	trans-1,2-Dichloroethene	0.13	1.0		U
78-87-5	1,2-Dichloropropane	0.10	1.0		U
10061-01-5	cis-1,3-Dichloropropene	0.11	1.0		U
10061-02-6	trans-1,3-Dichloropropene	0.10	1.0		U
100-41-4	Ethylbenzene	0.13	1.0		U
591-78-6	2-Hexanone	0.30	5.0		U
98-82-8	Isopropylbenzene	0.15	1.0		U
79-20-9	Methyl acetate	0.30	2.0		U
75-09-2	Methylene chloride	0.14	2.0	0.76	J
108-87-2	Methyl cyclohexane	0.17	1.0	0.22	J
1634-04-4	Methyl-tert-butyl-ether	0.10	1.0		U
108-10-1	4-Methyl-2-pentanone	0.29	5.0		U
100-42-5	Styrene	0.10	1.0		U
79-34-5	1,1,2,2-Tetrachloroethane	0.10	1.0		U
127-18-4	Tetrachloroethene	0.15	1.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V3BLK1009

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) WATER Lab Sample ID: 9J10002-BLK1

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V3BLK01

Level: (low/med) LOW Date Sampled: _____

% Moisture: not dec. _____ Date Analyzed: 10/09/09 21:35

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.10	1.0		U
120-82-1	1,2,4-Trichlorobenzene	0.10	1.0	0.47	J
71-55-6	1,1,1-Trichloroethane	0.17	1.0		U
79-00-5	1,1,2-Trichloroethane	0.10	1.0		U
79-01-6	Trichloroethene	0.13	1.0		U
76-13-1	Trichlorotrifluoroethane	0.18	2.0		U
75-69-4	Trichlorofluoromethane	0.17	2.0		U
75-01-4	Vinyl chloride	0.18	1.0		U
1330-20-7	Xylene(total)	0.22	1.0		U

FORM I VOA

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

V5BLK1003E

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: V5BLK01E Lab Sample ID: 9J07003-BLK1

Date Analyzed: 10/04/09 Time Analyzed: 0157

Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) Y

Instrument ID: VOA5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	V5BLK1003ELC	9J07003-BS1	V5LCS01E	0055
02	FD-092609-01	0910006-01	1000601A	1045
03				
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COMMENTS:

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FORM IV VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V5BLK1003E

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 9J07003-BLK1

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5BLK01E

Level: (low/med) LOW Date Sampled: _____

% Moisture: not dec. 0 Date Analyzed: 10/04/09 01:57

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.0	5.0		U
71-43-2	Benzene	0.47	5.0		U
75-27-4	Bromodichloromethane	0.30	10		U
75-25-2	Bromoform	1.0	5.0		U
74-83-9	Bromomethane	0.72	10		U
78-93-3	2-Butanone	1.4	5.0		U
75-15-0	Carbon disulfide	1.3	5.0		U
56-23-5	Carbon tetrachloride	0.88	5.0		U
108-90-7	Chlorobenzene	0.34	5.0		U
75-00-3	Chloroethane	1.1	10		U
67-66-3	Chloroform	0.55	5.0		U
74-87-3	Chloromethane	0.52	10		U
110-82-7	Cyclohexane	0.54	5.0		U
124-48-1	Dibromochloromethane	0.34	5.0		U
96-12-8	1,2-Dibromo-3-chloropropane	1.2	5.0		U
106-93-4	1,2-Dibromoethane	0.43	5.0		U
95-50-1	1,2-Dichlorobenzene	0.37	5.0		U
541-73-1	1,3-Dichlorobenzene	0.84	5.0		U
106-46-7	1,4-Dichlorobenzene	0.55	5.0		U
75-71-8	Dichlorodifluoromethane	1.1	5.0		U
75-34-3	1,1-Dichloroethane	0.54	5.0		U
107-06-2	1,2-Dichloroethane	0.46	5.0		U
75-35-4	1,1-Dichloroethene	1.2	5.0		U
156-59-2	cis-1,2-Dichloroethene	1.2	10		U
156-60-5	trans-1,2-Dichloroethene	1.1	5.0		U
78-87-5	1,2-Dichloropropane	0.46	5.0		U
10061-01-5	cis-1,3-Dichloropropene	0.50	5.0		U
10061-02-6	trans-1,3-Dichloropropene	0.32	5.0		U
100-41-4	Ethylbenzene	0.75	5.0		U
591-78-6	2-Hexanone	2.3	5.0		U
98-82-8	Isopropylbenzene	0.88	5.0		U
79-20-9	Methyl acetate	1.6	10		U
75-09-2	Methylene chloride	0.62	10	1.9	J
108-87-2	Methyl cyclohexane	0.30	5.0		U
1634-04-4	Methyl-tert-butyl-ether	0.32	5.0		U
108-10-1	4-Methyl-2-pentanone	0.58	5.0		U
100-42-5	Styrene	0.35	5.0		U
79-34-5	1,1,2,2-Tetrachloroethane	0.43	5.0		U
127-18-4	Tetrachloroethene	0.97	5.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V5BLK1003E

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 9J07003-BLK1

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5BLK01E

Level: (low/med) LOW Date Sampled: _____

% Moisture: not dec. 0 Date Analyzed: 10/04/09 01:57

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.86	5.0		U
120-82-1	1,2,4-Trichlorobenzene	0.18	5.0		U
71-55-6	1,1,1-Trichloroethane	0.90	5.0		U
79-00-5	1,1,2-Trichloroethane	0.35	5.0		U
79-01-6	Trichloroethene	0.85	5.0		U
76-13-1	Trichlorotrifluoroethane	0.55	5.0		U
75-69-4	Trichlorofluoromethane	0.95	5.0		U
75-01-4	Vinyl chloride	1.1	5.0		U
1330-20-7	Xylene(total)	0.70	5.0		U

FORM I VOA

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

V5BLK1003F

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: V5BLK01F Lab Sample ID: 9J07013-BLK1

Date Analyzed: 10/04/09 Time Analyzed: 1556

Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) Y

Instrument ID: VOA5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	V5BLK1003FLC	9J07013-BS1	V5LCS01F	1453
02	NTC21SB09-SO	0910006-03	1000603A	1903
03	NTC21SB09-SO	0910006-04	1000604A	1934
04	NTC21SB10-SO	0910006-05	1000605A	2005
05	NTC21SB11-SO	0910006-08	1000608A	2036
06	NTC21SB12-SO	0910006-09	1000609A	2107
07	NTC21SB12-SO	0910006-10	1000610A	2138
08	NTC21SB17-SO	0910006-11	1000611A	2209
09	NTC21SB17-SO	0910006-12	1000612A	2241
10	NTC21SB18-SO	0910006-13	1000613A	2312
11	NTC21SB18-SO	0910006-14	1000614A	2343
12	NTC21SB10-SO	0910006-06	1000606A	0014
13	NTC21SB11-SO	0910006-07	1000607A	0045
14	V5BLK1003FLC	9J07013-BSD1	V5LCSD01F	0116
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COMMENTS:

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V5BLK1003F

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 9J07013-BLK1

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5BLK01F

Level: (low/med) LOW Date Sampled: _____

% Moisture: not dec. 0 Date Analyzed: 10/04/09 15:56

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.0	5.0		U
71-43-2	Benzene	0.47	5.0		U
75-27-4	Bromodichloromethane	0.30	10		U
75-25-2	Bromoform	1.0	5.0		U
74-83-9	Bromomethane	0.72	10		U
78-93-3	2-Butanone	1.4	5.0		U
75-15-0	Carbon disulfide	1.3	5.0		U
56-23-5	Carbon tetrachloride	0.88	5.0		U
108-90-7	Chlorobenzene	0.34	5.0		U
75-00-3	Chloroethane	1.1	10		U
67-66-3	Chloroform	0.55	5.0		U
74-87-3	Chloromethane	0.52	10		U
110-82-7	Cyclohexane	0.54	5.0		U
124-48-1	Dibromochloromethane	0.34	5.0		U
96-12-8	1,2-Dibromo-3-chloropropane	1.2	5.0		U
106-93-4	1,2-Dibromoethane	0.43	5.0		U
95-50-1	1,2-Dichlorobenzene	0.37	5.0		U
541-73-1	1,3-Dichlorobenzene	0.84	5.0		U
106-46-7	1,4-Dichlorobenzene	0.55	5.0		U
75-71-8	Dichlorodifluoromethane	1.1	5.0		U
75-34-3	1,1-Dichloroethane	0.54	5.0		U
107-06-2	1,2-Dichloroethane	0.46	5.0		U
75-35-4	1,1-Dichloroethene	1.2	5.0		U
156-59-2	cis-1,2-Dichloroethene	1.2	10		U
156-60-5	trans-1,2-Dichloroethene	1.1	5.0		U
78-87-5	1,2-Dichloropropane	0.46	5.0		U
10061-01-5	cis-1,3-Dichloropropene	0.50	5.0		U
10061-02-6	trans-1,3-Dichloropropene	0.32	5.0		U
100-41-4	Ethylbenzene	0.75	5.0		U
591-78-6	2-Hexanone	2.3	5.0		U
98-82-8	Isopropylbenzene	0.88	5.0		U
79-20-9	Methyl acetate	1.6	10		U
75-09-2	Methylene chloride	0.62	10	1.9	J
108-87-2	Methyl cyclohexane	0.30	5.0		U
1634-04-4	Methyl-tert-butyl-ether	0.32	5.0		U
108-10-1	4-Methyl-2-pentanone	0.58	5.0		U
100-42-5	Styrene	0.35	5.0		U
79-34-5	1,1,2,2-Tetrachloroethane	0.43	5.0		U
127-18-4	Tetrachloroethene	0.97	5.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V5BLK1003F

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 9J07013-BLK1

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5BLK01F

Level: (low/med) LOW Date Sampled: _____

% Moisture: not dec. 0 Date Analyzed: 10/04/09 15:56

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.86	5.0		U
120-82-1	1,2,4-Trichlorobenzene	0.18	5.0		U
71-55-6	1,1,1-Trichloroethane	0.90	5.0		U
79-00-5	1,1,2-Trichloroethane	0.35	5.0		U
79-01-6	Trichloroethene	0.85	5.0		U
76-13-1	Trichlorotrifluoroethane	0.55	5.0		U
75-69-4	Trichlorofluoromethane	0.95	5.0		U
75-01-4	Vinyl chloride	1.1	5.0		U
1330-20-7	Xylene(total)	0.70	5.0		U

FORM I VOA

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

V5BLK1005

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: V5BLK01 Lab Sample ID: 9J07023-BLK1

Date Analyzed: 10/05/09 Time Analyzed: 1433

Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) Y

Instrument ID: VOA5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	V5BLK1005LCS	9J07023-BS1	V5LCS01	1331
02	FD-092609-02	0910006-02	1000602B	1638
03	NTC21SB20-SO	0910006-15	1000615A	1709
04	NTC21SB20-SO	0910006-16	1000616A	1740
05	NTC21SB21-SO	0910006-17	1000617A	1811
06	NTC21SB21-SO	0910006-18	1000618A	1842
07	FD-092709-01	0910006-20	1000620A	1913
08	NTC21SB04-SO	0910006-21	1000621A	1945
09	NTC21SB04-SO	0910006-22	1000622A	2016
10	NTC21SB06-SO	0910006-23	1000623A	2047
11	NTC21SB06-SO	0910006-24	1000624A	2118
12	NTC21SB07-SO	0910006-26	1000626A	2149
13	NTC21SB14-SO	0910006-29	1000629A	2220
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COMMENTS:

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FORM IV VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V5BLK1005

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 9J07023-BLK1

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5BLK01

Level: (low/med) LOW Date Sampled: _____

% Moisture: not dec. 0 Date Analyzed: 10/05/09 14:33

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.0	5.0	5.9	
71-43-2	Benzene	0.47	5.0		U
75-27-4	Bromodichloromethane	0.30	10		U
75-25-2	Bromoform	1.0	5.0		U
74-83-9	Bromomethane	0.72	10		U
78-93-3	2-Butanone	1.4	5.0		U
75-15-0	Carbon disulfide	1.3	5.0		U
56-23-5	Carbon tetrachloride	0.88	5.0		U
108-90-7	Chlorobenzene	0.34	5.0		U
75-00-3	Chloroethane	1.1	10		U
67-66-3	Chloroform	0.55	5.0		U
74-87-3	Chloromethane	0.52	10		U
110-82-7	Cyclohexane	0.54	5.0		U
124-48-1	Dibromochloromethane	0.34	5.0		U
96-12-8	1,2-Dibromo-3-chloropropane	1.2	5.0		U
106-93-4	1,2-Dibromoethane	0.43	5.0		U
95-50-1	1,2-Dichlorobenzene	0.37	5.0		U
541-73-1	1,3-Dichlorobenzene	0.84	5.0		U
106-46-7	1,4-Dichlorobenzene	0.55	5.0		U
75-71-8	Dichlorodifluoromethane	1.1	5.0		U
75-34-3	1,1-Dichloroethane	0.54	5.0		U
107-06-2	1,2-Dichloroethane	0.46	5.0		U
75-35-4	1,1-Dichloroethene	1.2	5.0		U
156-59-2	cis-1,2-Dichloroethene	1.2	10		U
156-60-5	trans-1,2-Dichloroethene	1.1	5.0		U
78-87-5	1,2-Dichloropropane	0.46	5.0		U
10061-01-5	cis-1,3-Dichloropropene	0.50	5.0		U
10061-02-6	trans-1,3-Dichloropropene	0.32	5.0		U
100-41-4	Ethylbenzene	0.75	5.0		U
591-78-6	2-Hexanone	2.3	5.0		U
98-82-8	Isopropylbenzene	0.88	5.0		U
79-20-9	Methyl acetate	1.6	10		U
75-09-2	Methylene chloride	0.62	10	2.3	J
108-87-2	Methyl cyclohexane	0.30	5.0		U
1634-04-4	Methyl-tert-butyl-ether	0.32	5.0		U
108-10-1	4-Methyl-2-pentanone	0.58	5.0		U
100-42-5	Styrene	0.35	5.0		U
79-34-5	1,1,2,2-Tetrachloroethane	0.43	5.0		U
127-18-4	Tetrachloroethene	0.97	5.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V5BLK1005

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 9J07023-BLK1

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5BLK01

Level: (low/med) LOW Date Sampled: _____

% Moisture: not dec. 0 Date Analyzed: 10/05/09 14:33

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.86	5.0		U
120-82-1	1,2,4-Trichlorobenzene	0.18	5.0		U
71-55-6	1,1,1-Trichloroethane	0.90	5.0		U
79-00-5	1,1,2-Trichloroethane	0.35	5.0		U
79-01-6	Trichloroethene	0.85	5.0		U
76-13-1	Trichlorotrifluoroethane	0.55	5.0		U
75-69-4	Trichlorofluoromethane	0.95	5.0		U
75-01-4	Vinyl chloride	1.1	5.0		U
1330-20-7	Xylene(total)	0.70	5.0		U

FORM I VOA

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

V5BLK1005E

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: V5BLK01E Lab Sample ID: 9J08004-BLK1

Date Analyzed: 10/06/09 Time Analyzed: 0157

Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) Y

Instrument ID: VOA5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	V5BLK1005ELC	9J08004-BS1	V5LCS01E	0055
02	NTC21SB13-SO	0910006-27	1000627A	0229
03	NTC21SB13-SO	0910006-28	1000628A	0300
04	NTC21SB14-SO	0910006-30	1000630A	0331
05	NTC21SB15-SO	0910006-31	1000631A	0402
06	NTC21SB15-SO	0910006-32	1000632A	0433
07	NTC21SB16-SO	0910006-33	1000633A	0504
08	NTC21SB16-SO	0910006-34	1000634B	0535
09	NTC21SB19-SO	0910006-35	1000635A	0606
10	NTC21SB19-SO	0910006-36	1000636A	0637
11	NTC21SB22-SO	0910006-37	1000637A	0708
12	NTC21SB22-SO	0910006-38	1000638A	0740
13	FD-092809-01	0910006-40	1000640A	0811
14	NTC21SB01-SO	0910006-41	1000641A	0842
15	NTC21SB02-SO	0910006-42	1000642A	0913
16	NTC21SB03-SO	0910006-44	1000644A	0944
17	NTC21SB07-SO	0910006-25	1000625A	1015
18	NTC21SB02-SO	0910006-43	1000643A	1046
19	NTC21SB03-SO	0910006-45	1000645A	1117
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COMMENTS:

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FORM IV VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V5BLK1005E

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 9J08004-BLK1

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5BLK01E

Level: (low/med) LOW Date Sampled: _____

% Moisture: not dec. 0 Date Analyzed: 10/06/09 01:57

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.0	5.0		U
71-43-2	Benzene	0.47	5.0		U
75-27-4	Bromodichloromethane	0.30	10		U
75-25-2	Bromoform	1.0	5.0		U
74-83-9	Bromomethane	0.72	10		U
78-93-3	2-Butanone	1.4	5.0		U
75-15-0	Carbon disulfide	1.3	5.0		U
56-23-5	Carbon tetrachloride	0.88	5.0		U
108-90-7	Chlorobenzene	0.34	5.0		U
75-00-3	Chloroethane	1.1	10		U
67-66-3	Chloroform	0.55	5.0		U
74-87-3	Chloromethane	0.52	10		U
110-82-7	Cyclohexane	0.54	5.0		U
124-48-1	Dibromochloromethane	0.34	5.0		U
96-12-8	1,2-Dibromo-3-chloropropane	1.2	5.0		U
106-93-4	1,2-Dibromoethane	0.43	5.0		U
95-50-1	1,2-Dichlorobenzene	0.37	5.0		U
541-73-1	1,3-Dichlorobenzene	0.84	5.0		U
106-46-7	1,4-Dichlorobenzene	0.55	5.0		U
75-71-8	Dichlorodifluoromethane	1.1	5.0		U
75-34-3	1,1-Dichloroethane	0.54	5.0		U
107-06-2	1,2-Dichloroethane	0.46	5.0		U
75-35-4	1,1-Dichloroethene	1.2	5.0		U
156-59-2	cis-1,2-Dichloroethene	1.2	10		U
156-60-5	trans-1,2-Dichloroethene	1.1	5.0		U
78-87-5	1,2-Dichloropropane	0.46	5.0		U
10061-01-5	cis-1,3-Dichloropropene	0.50	5.0		U
10061-02-6	trans-1,3-Dichloropropene	0.32	5.0		U
100-41-4	Ethylbenzene	0.75	5.0		U
591-78-6	2-Hexanone	2.3	5.0		U
98-82-8	Isopropylbenzene	0.88	5.0		U
79-20-9	Methyl acetate	1.6	10		U
75-09-2	Methylene chloride	0.62	10	2.8	J
108-87-2	Methyl cyclohexane	0.30	5.0		U
1634-04-4	Methyl-tert-butyl-ether	0.32	5.0		U
108-10-1	4-Methyl-2-pentanone	0.58	5.0		U
100-42-5	Styrene	0.35	5.0		U
79-34-5	1,1,2,2-Tetrachloroethane	0.43	5.0		U
127-18-4	Tetrachloroethene	0.97	5.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V5BLK1005E

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 9J08004-BLK1

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5BLK01E

Level: (low/med) LOW Date Sampled: _____

% Moisture: not dec. 0 Date Analyzed: 10/06/09 01:57

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.86	5.0		U
120-82-1	1,2,4-Trichlorobenzene	0.18	5.0		U
71-55-6	1,1,1-Trichloroethane	0.90	5.0		U
79-00-5	1,1,2-Trichloroethane	0.35	5.0		U
79-01-6	Trichloroethene	0.85	5.0		U
76-13-1	Trichlorotrifluoroethane	0.55	5.0		U
75-69-4	Trichlorofluoromethane	0.95	5.0		U
75-01-4	Vinyl chloride	1.1	5.0		U
1330-20-7	Xylene(total)	0.70	5.0		U

FORM I VOA

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

V5BLK1006

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: V5BLK01 Lab Sample ID: 9J10001-BLK1

Date Analyzed: 10/06/09 Time Analyzed: 1702

Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) Y

Instrument ID: VOA5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	V5BLK1006LCS	9J10001-BS1	V5LCS01	1529
02	NTC21SB05-SO	0910006-46	1000646A	1733
03	NTC21SB05-SO	0910006-47	1000647A	1805
04	NTC21SB08-SO	0910006-48	1000648A	1836
05	NTC21SB08-SO	0910006-49	1000649A	1907
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COMMENTS:

page 1 of 1

FORM IV VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V5BLK1006

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 9J10001-BLK1

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5BLK01

Level: (low/med) LOW Date Sampled: _____

% Moisture: not dec. 0 Date Analyzed: 10/06/09 17:02

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.0	5.0	5.2	
71-43-2	Benzene	0.47	5.0		U
75-27-4	Bromodichloromethane	0.30	10		U
75-25-2	Bromoform	1.0	5.0		U
74-83-9	Bromomethane	0.72	10		U
78-93-3	2-Butanone	1.4	5.0		U
75-15-0	Carbon disulfide	1.3	5.0		U
56-23-5	Carbon tetrachloride	0.88	5.0		U
108-90-7	Chlorobenzene	0.34	5.0		U
75-00-3	Chloroethane	1.1	10		U
67-66-3	Chloroform	0.55	5.0		U
74-87-3	Chloromethane	0.52	10		U
110-82-7	Cyclohexane	0.54	5.0		U
124-48-1	Dibromochloromethane	0.34	5.0		U
96-12-8	1,2-Dibromo-3-chloropropane	1.2	5.0		U
106-93-4	1,2-Dibromoethane	0.43	5.0		U
95-50-1	1,2-Dichlorobenzene	0.37	5.0		U
541-73-1	1,3-Dichlorobenzene	0.84	5.0		U
106-46-7	1,4-Dichlorobenzene	0.55	5.0		U
75-71-8	Dichlorodifluoromethane	1.1	5.0		U
75-34-3	1,1-Dichloroethane	0.54	5.0		U
107-06-2	1,2-Dichloroethane	0.46	5.0		U
75-35-4	1,1-Dichloroethene	1.2	5.0		U
156-59-2	cis-1,2-Dichloroethene	1.2	10		U
156-60-5	trans-1,2-Dichloroethene	1.1	5.0		U
78-87-5	1,2-Dichloropropane	0.46	5.0		U
10061-01-5	cis-1,3-Dichloropropene	0.50	5.0		U
10061-02-6	trans-1,3-Dichloropropene	0.32	5.0		U
100-41-4	Ethylbenzene	0.75	5.0		U
591-78-6	2-Hexanone	2.3	5.0		U
98-82-8	Isopropylbenzene	0.88	5.0		U
79-20-9	Methyl acetate	1.6	10		U
75-09-2	Methylene chloride	0.62	10	2.9	J
108-87-2	Methyl cyclohexane	0.30	5.0		U
1634-04-4	Methyl-tert-butyl-ether	0.32	5.0		U
108-10-1	4-Methyl-2-pentanone	0.58	5.0		U
100-42-5	Styrene	0.35	5.0		U
79-34-5	1,1,2,2-Tetrachloroethane	0.43	5.0		U
127-18-4	Tetrachloroethene	0.97	5.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V5BLK1006

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 9J10001-BLK1

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5BLK01

Level: (low/med) LOW Date Sampled: _____

% Moisture: not dec. 0 Date Analyzed: 10/06/09 17:02

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.86	5.0		U
120-82-1	1,2,4-Trichlorobenzene	0.18	5.0		U
71-55-6	1,1,1-Trichloroethane	0.90	5.0		U
79-00-5	1,1,2-Trichloroethane	0.35	5.0		U
79-01-6	Trichloroethene	0.85	5.0		U
76-13-1	Trichlorotrifluoroethane	0.55	5.0		U
75-69-4	Trichlorofluoromethane	0.95	5.0		U
75-01-4	Vinyl chloride	1.1	5.0		U
1330-20-7	Xylene(total)	0.70	5.0		U

FORM I VOA

FORM 2
WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

	CLIENT SAMPLE NO.	SMC1 (DFM) #	SMC2 (DCE) #	SMC3 (TOL) #	SMC4 (BFB) #	TOT OUT
01	V3BLK1002FLC	95	99	104	91	0
02	V3BLK1002F	97	106	110	90	0
03	TB-092709-01	100	110	112	89	0
04	TB-092809-01	102	109	112	87	0
05	RB-092909-01	100	108	113	88	0
06	RB-092909-02	104	108	113	89	0
07	SB-092909-01	105	107	115	89	0
08	V3BLK1009LCS	99	100	101	99	0
09	V3BLK1009	98	97	103	102	0
10	TB-092609-01	100	97	101	98	0
11	TB-092909-01	99	98	106	100	0
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		EL QC LIMITS	SPIKE CONC (ug/L)
SMC1 (DFM)	= Dibromofluoromethane	(85-120)	30
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(80-135)	30
SMC3 (TOL)	= Toluene-d8	(85-115)	30
SMC4 (BFB)	= Bromofluorobenzene	(85-120)	30

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate results reported from a diluted analysis

FORM 2
SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Level:(low/med) LOW

	CLIENT SAMPLE NO.	SMC1 (DFM) #	SMC2 (DCE) #	SMC3 (TOL) #	SMC4 (BFB) #	TOT OUT
01	V5BLK1003ELC	103	98	96	92	0
02	V5BLK1003E	115	120	94	98	0
03	FD-092609-01	103	116	102	98	0
04	V5BLK1003FLC	99	91	100	104	0
05	V5BLK1003F	110	127	92	97	0
06	NTC21SB09-SO	114	126	88	106	0
07	NTC21SB09-SO	111	124	92	99	0
08	NTC21SB10-SO	115	128	100	91	0
09	NTC21SB11-SO	110	107	92	95	0
10	NTC21SB12-SO	109	119	102	103	0
11	NTC21SB12-SO	108	122	93	98	0
12	NTC21SB17-SO	120	125	88	93	0
13	NTC21SB17-SO	113	121	98	106	0
14	NTC21SB18-SO	107	111	105	89	0
15	NTC21SB18-SO	105	114	99	91	0
16	NTC21SB10-SO	111	119	98	91	0
17	NTC21SB11-SO	112	116	100	85	0
18	V5BLK1003FLC	104	94	98	95	0
19	V5BLK1005LCS	99	97	91	97	0
20	V5BLK1005	112	120	97	94	0
21	FD-092609-02	115	129	93	103	0
22	NTC21SB20-SO	114	126	109	110	0
23	NTC21SB20-SO	109	120	101	94	0
24	NTC21SB21-SO	113	132	102	89	0
25	NTC21SB21-SO	110	132	103	95	0
26	FD-092709-01	117	132	100	92	0
27	NTC21SB04-SO	118	131	98	96	0
28	NTC21SB04-SO	108	125	99	93	0
29	NTC21SB06-SO	115	118	90	95	0
30	NTC21SB06-SO	112	128	107	67*	1

		EL QC LIMITS	SPIKE CONC (ug/Kg)
SMC1 (DFM)	= Dibromofluoromethane	(80-125)	30
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(75-140)	30
SMC3 (TOL)	= Toluene-d8	(80-120)	30
SMC4 (BFB)	= Bromofluorobenzene	(80-125)	30

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate results reported from a diluted analysis

FORM 2
SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Level: (low/med) LOW

	CLIENT SAMPLE NO.	SMC1 (DFM) #	SMC2 (DCE) #	SMC3 (TOL) #	SMC4 (BFB) #	TOT OUT
01	NTC21SB07-SO	111	117	100	92	0
02	NTC21SB14-SO	116	129	99	96	0
03	V5BLK1005ELC	102	94	97	95	0
04	V5BLK1005E	109	124	98	97	0
05	NTC21SB13-SO	115	119	106	71*	1
06	NTC21SB13-SO	109	119	107	94	0
07	NTC21SB14-SO	116	122	100	99	0
08	NTC21SB15-SO	110	126	93	91	0
09	NTC21SB15-SO	113	126	92	97	0
10	NTC21SB16-SO	118	134	103	90	0
11	NTC21SB16-SO	110	116	98	95	0
12	NTC21SB19-SO	107	119	96	82	0
13	NTC21SB19-SO	116	130	97	91	0
14	NTC21SB22-SO	122	134	95	86	0
15	NTC21SB22-SO	108	126	98	88	0
16	FD-092809-01	113	124	109	91	0
17	NTC21SB01-SO	103	114	99	92	0
18	NTC21SB02-SO	112	120	85	91	0
19	NTC21SB03-SO	118	126	99	89	0
20	NTC21SB07-SO	115	138	108	99	0
21	NTC21SB02-SO	111	122	101	86	0
22	NTC21SB03-SO	110	127	115	69*	1
23	V5BLK1006LCS	100	99	93	100	0
24	V5BLK1006	104	129	102	95	0
25	NTC21SB05-SO	115	122	101	87	0
26	NTC21SB05-SO	109	130	106	82	0
27	NTC21SB08-SO	104	106	104	80	0
28	NTC21SB08-SO	107	122	103	96	0
29	V5BLK1008LCS	95	104	100	99	0
30	V5BLK1008	110	128	99	104	0

		EL QC LIMITS	SPIKE CONC (ug/Kg)
SMC1 (DFM)	= Dibromofluoromethane	(80-125)	30
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(75-140)	30
SMC3 (TOL)	= Toluene-d8	(80-120)	30
SMC4 (BFB)	= Bromofluorobenzene	(80-125)	30

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate results reported from a diluted analysis

FORM 2
SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Level: (low/med) LOW

Re-analysis not used

	CLIENT SAMPLE NO.	SMC1 (DFM) #	SMC2 (DCE) #	SMC3 (TOL) #	SMC4 (BFB) #	TOT OUT
01	NTC21SB06-SO	117	123	122*	76*	2
02	NTC21SB13-SO	107	116	106	80	0
03	NTC21SB02-SO	111	123	110	84	0
04	NTC21SB03-SO	109	117	121*	71*	2
05	NTC21SB14-SO	101	109	99	98	0
06	NTC21SB14-SO	105	114	104	91	0
07	NTC21SB02-SO	102	112	102	87	0
08	NTC21SB02-SO	107	113	105	85	0
09	V5BLK1009ELC	102	92	95	98	0
10	V5BLK1009E	103	113	99	97	0
11	V5BLK1009ELC	99	94	99	101	0
12	NTC21SB05-SO	110	118	108	84	0
13	NTC21SB08-SO	110	113	105	78*	1
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			EL QC LIMITS	SPIKE CONC (ug/Kg)
SMC1	(DFM)	= Dibromofluoromethane	(80-125)	30
SMC2	(DCE)	= 1,2-Dichloroethane-d4	(75-140)	30
SMC3	(TOL)	= Toluene-d8	(80-120)	30
SMC4	(BFB)	= Bromofluorobenzene	(80-125)	30

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate results reported from a diluted analysis

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: V3BLK1002F

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Acetone	100.0	0.0000	136.5	136	40-140
Benzene	50.00	0.0000	56.74	113	80-120
Bromodichloromethane	50.00	0.0000	50.48	101	75-120
Bromoform	50.00	0.0000	53.13	106	70-130
Bromomethane	50.00	0.0000	57.31	115	30-145
2-Butanone	100.0	0.0000	130.2	130	30-150
Carbon disulfide	50.00	0.0000	61.66	123	35-160
Carbon tetrachloride	50.00	0.0000	45.44	91	65-140
Chlorobenzene	50.00	0.0000	49.46	99	80-120
Chloroethane	50.00	0.0000	63.65	127	60-135
Chloroform	50.00	0.0000	45.20	90	65-135
Chloromethane	50.00	0.0000	55.62	111	40-125
Cyclohexane	50.00	0.0000	67.27	134*	60-130
Dibromochloromethane	50.00	0.0000	60.16	120	60-135
1,2-Dibromo-3-chloropro	50.00	0.0000	40.93	82	50-130
1,2-Dibromoethane	50.00	0.0000	56.18	112	80-120
1,2-Dichlorobenzene	50.00	0.0000	51.32	103	70-120
1,3-Dichlorobenzene	50.00	0.0000	51.63	103	75-125
1,4-Dichlorobenzene	50.00	0.0000	53.35	107	75-125
Dichlorodifluoromethane	50.00	0.0000	55.58	111	30-155
1,1-Dichloroethane	50.00	0.0000	54.78	110	70-135
1,2-Dichloroethane	50.00	0.0000	45.95	92	70-130
1,1-Dichloroethene	50.00	0.0000	55.26	110	70-130
cis-1,2-Dichloroethene	50.00	0.0000	55.01	110	70-125
trans-1,2-Dichloroethen	50.00	0.0000	58.45	117	60-140
1,2-Dichloropropane	50.00	0.0000	57.87	116	75-125
cis-1,3-Dichloropropene	50.00	0.0000	59.77	120	70-130
trans-1,3-Dichloroprope	50.00	0.0000	69.35	139	55-140

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: V3BLK1002F

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Ethylbenzene	50.00	0.0000	57.18	114	75-125
2-Hexanone	100.0	0.0000	145.1	145*	55-130
Isopropylbenzene	50.00	0.0000	64.66	129*	75-125
Methyl acetate	50.00	0.0000	64.22	128	55-150
Methylene chloride	50.00	0.4922	54.42	108	55-140
Methyl cyclohexane	50.00	0.0000	59.09	118	60-125
Methyl-tert-butyl-ether	50.00	0.0000	49.00	98	65-125
4-Methyl-2-pentanone	100.0	0.0000	115.2	115	60-135
Styrene	50.00	0.0000	58.31	117	65-135
1,1,2,2-Tetrachloroetha	50.00	0.0000	64.03	128	65-130
Tetrachloroethene	50.00	0.0000	49.49	99	45-150
Toluene	50.00	0.0000	60.51	121*	75-120
1,2,4-Trichlorobenzene	50.00	0.1963	58.60	117	65-135
1,1,1-Trichloroethane	50.00	0.0000	42.59	85	65-130
1,1,2-Trichloroethane	50.00	0.0000	58.14	116	75-125
Trichloroethene	50.00	0.0000	53.08	106	70-125
Trichlorotrifluoroethan	50.00	0.0000	55.08	110	60-130
Trichlorofluoromethane	50.00	0.0000	45.53	91	60-145
Vinyl chloride	50.00	0.0000	63.17	126	50-145
Xylene(total)	150.0	0.0000	166.3	111	75-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 4 out of 48 outside limits

COMMENTS: _____

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: V3BLK1009

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Acetone	100.0	0.0000	98.26	98	40-140
Benzene	50.00	0.0000	48.46	97	80-120
Bromodichloromethane	50.00	0.0000	49.74	99	75-120
Bromoform	50.00	0.0000	54.70	109	70-130
Bromomethane	50.00	0.0000	54.44	109	30-145
2-Butanone	100.0	0.0000	102.4	102	30-150
Carbon disulfide	50.00	0.0000	54.68	109	35-160
Carbon tetrachloride	50.00	0.0000	52.72	105	65-140
Chlorobenzene	50.00	0.0000	48.10	96	80-120
Chloroethane	50.00	0.0000	52.60	105	60-135
Chloroform	50.00	0.0000	45.08	90	65-135
Chloromethane	50.00	0.0000	51.00	102	40-125
Cyclohexane	50.00	0.0000	51.53	103	60-130
Dibromochloromethane	50.00	0.0000	54.01	108	60-135
1,2-Dibromo-3-chloropro	50.00	0.0000	48.61	97	50-130
1,2-Dibromoethane	50.00	0.0000	46.61	93	80-120
1,2-Dichlorobenzene	50.00	0.0000	48.09	96	70-120
1,3-Dichlorobenzene	50.00	0.0000	48.70	97	75-125
1,4-Dichlorobenzene	50.00	0.0000	48.27	96	75-125
Dichlorodifluoromethane	50.00	0.0000	57.18	114	30-155
1,1-Dichloroethane	50.00	0.0000	48.72	97	70-135
1,2-Dichloroethane	50.00	0.0000	49.11	98	70-130
1,1-Dichloroethene	50.00	0.0000	47.54	95	70-130
cis-1,2-Dichloroethene	50.00	0.0000	44.94	90	70-125
trans-1,2-Dichloroethen	50.00	0.0000	46.73	93	60-140
1,2-Dichloropropane	50.00	0.0000	48.63	97	75-125
cis-1,3-Dichloropropene	50.00	0.0000	51.44	103	70-130
trans-1,3-Dichloroprope	50.00	0.0000	51.91	104	55-140

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: V3BLK1009

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Ethylbenzene	50.00	0.0000	48.97	98	75-125
2-Hexanone	100.0	0.0000	93.00	93	55-130
Isopropylbenzene	50.00	0.0000	55.84	112	75-125
Methyl acetate	50.00	0.0000	53.44	107	55-150
Methylene chloride	50.00	7.642	47.70	80	55-140
Methyl cyclohexane	50.00	2.200	51.11	98	60-125
Methyl-tert-butyl-ether	50.00	0.0000	48.45	97	65-125
4-Methyl-2-pentanone	100.0	0.0000	105.5	106	60-135
Styrene	50.00	0.0000	50.52	101	65-135
1,1,2,2-Tetrachloroetha	50.00	0.0000	48.38	97	65-130
Tetrachloroethene	50.00	0.0000	46.44	93	45-150
Toluene	50.00	0.0000	48.22	96	75-120
1,2,4-Trichlorobenzene	50.00	4.719	49.46	89	65-135
1,1,1-Trichloroethane	50.00	0.0000	47.22	94	65-130
1,1,2-Trichloroethane	50.00	0.0000	43.43	87	75-125
Trichloroethene	50.00	0.0000	47.59	95	70-125
Trichlorotrifluoroethan	50.00	0.0000	54.29	108	60-130
Trichlorofluoromethane	50.00	0.0000	54.45	109	60-145
Vinyl chloride	50.00	0.0000	50.02	100	50-145
Xylene(total)	150.0	1.077	139.7	92	75-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 48 outside limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No. V5BLK1003E Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Acetone	100.0	0.0000	100.5	100	20-160
Benzene	50.00	0.0000	53.78	108	75-125
Bromodichloromethane	50.00	0.0000	54.27	108	70-130
Bromoform	50.00	0.0000	49.13	98	55-135
Bromomethane	50.00	0.0000	56.31	113	30-160
2-Butanone	100.0	0.0000	112.8	113	30-160
Carbon disulfide	50.00	0.0000	58.78	118	45-160
Carbon tetrachloride	50.00	0.0000	55.60	111	65-135
Chlorobenzene	50.00	0.0000	47.91	96	75-125
Chloroethane	50.00	0.0000	55.57	111	40-155
Chloroform	50.00	0.0000	48.18	96	70-125
Chloromethane	50.00	0.0000	60.76	122	50-130
Cyclohexane	50.00	0.0000	57.74	115	65-140
Dibromochloromethane	50.00	0.0000	49.28	98	65-130
1,2-Dibromo-3-chloropro	50.00	0.0000	43.16	86	40-135
1,2-Dibromoethane	50.00	0.0000	46.74	93	70-125
1,2-Dichlorobenzene	50.00	0.0000	49.24	98	75-120
1,3-Dichlorobenzene	50.00	0.0000	49.83	100	70-125
1,4-Dichlorobenzene	50.00	0.0000	48.16	96	70-125
Dichlorodifluoromethane	50.00	0.0000	68.04	136*	35-135
1,1-Dichloroethane	50.00	0.0000	52.93	106	75-125
1,2-Dichloroethane	50.00	0.0000	52.89	106	70-125
1,1-Dichloroethene	50.00	0.0000	53.43	107	65-135
cis-1,2-Dichloroethene	50.00	0.0000	46.09	92	65-125
trans-1,2-Dichloroethen	50.00	0.0000	52.30	105	65-135
1,2-Dichloropropane	50.00	0.0000	55.11	110	70-120
cis-1,3-Dichloropropene	50.00	0.0000	53.91	108	70-125
trans-1,3-Dichloroprope	50.00	0.0000	48.12	96	65-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: V5BLK1003E Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Ethylbenzene	50.00	0.0000	52.78	106	75-125
2-Hexanone	100.0	0.0000	113.6	114	45-145
Isopropylbenzene	50.00	0.0000	61.69	123	75-130
Methyl acetate	50.00	0.0000	53.34	107	45-265
Methylene chloride	50.00	1.905	46.40	89	55-140
Methyl cyclohexane	50.00	0.0000	56.24	112	65-135
Methyl-tert-butyl-ether	50.00	0.0000	51.87	104	55-150
4-Methyl-2-pentanone	100.0	0.0000	125.4	125	45-145
Styrene	50.00	0.0000	49.58	99	75-125
1,1,2,2-Tetrachloroetha	50.00	0.0000	50.79	102	55-130
Tetrachloroethene	50.00	0.0000	42.66	85	65-140
Toluene	50.00	0.0000	48.25	96	70-125
1,2,4-Trichlorobenzene	50.00	0.0000	44.55	89	65-130
1,1,1-Trichloroethane	50.00	0.0000	49.55	99	70-135
1,1,2-Trichloroethane	50.00	0.0000	46.14	92	60-125
Trichloroethene	50.00	0.0000	54.61	109	75-125
Trichlorotrifluoroethan	50.00	0.0000	56.88	114	60-140
Trichlorofluoromethane	50.00	0.0000	57.76	116	25-185
Vinyl chloride	50.00	0.0000	56.42	113	60-125
Xylene(total)	150.0	0.0000	140.2	93	70-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 1 out of 48 outside limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: V5BLK1003F Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Acetone	100.0	0.0000	96.89	97	20-160
Benzene	50.00	0.0000	50.05	100	75-125
Bromodichloromethane	50.00	0.0000	51.42	103	70-130
Bromoform	50.00	0.0000	48.45	97	55-135
Bromomethane	50.00	0.0000	51.76	104	30-160
2-Butanone	100.0	0.0000	88.70	89	30-160
Carbon disulfide	50.00	0.0000	49.82	100	45-160
Carbon tetrachloride	50.00	0.0000	51.62	103	65-135
Chlorobenzene	50.00	0.0000	47.36	95	75-125
Chloroethane	50.00	0.0000	49.67	99	40-155
Chloroform	50.00	0.0000	45.99	92	70-125
Chloromethane	50.00	0.0000	54.99	110	50-130
Cyclohexane	50.00	0.0000	54.65	109	65-140
Dibromochloromethane	50.00	0.0000	48.82	98	65-130
1,2-Dibromo-3-chloropro	50.00	0.0000	42.21	84	40-135
1,2-Dibromoethane	50.00	0.0000	46.66	93	70-125
1,2-Dichlorobenzene	50.00	0.0000	48.71	97	75-120
1,3-Dichlorobenzene	50.00	0.0000	50.12	100	70-125
1,4-Dichlorobenzene	50.00	0.0000	48.27	96	70-125
Dichlorodifluoromethane	50.00	0.0000	58.22	116	35-135
1,1-Dichloroethane	50.00	0.0000	54.14	108	75-125
1,2-Dichloroethane	50.00	0.0000	49.82	100	70-125
1,1-Dichloroethene	50.00	0.0000	47.71	95	65-135
cis-1,2-Dichloroethene	50.00	0.0000	46.26	92	65-125
trans-1,2-Dichloroethen	50.00	0.0000	48.62	97	65-135
1,2-Dichloropropane	50.00	0.0000	51.59	103	70-120
cis-1,3-Dichloropropene	50.00	0.0000	50.42	101	70-125
trans-1,3-Dichloroprope	50.00	0.0000	50.96	102	65-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: V5BLK1003F Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Ethylbenzene	50.00	0.0000	51.52	103	75-125
2-Hexanone	100.0	0.0000	101.2	101	45-145
Isopropylbenzene	50.00	0.0000	64.12	128	75-130
Methyl acetate	50.00	0.0000	43.38	87	45-265
Methylene chloride	50.00	1.876	38.78	74	55-140
Methyl cyclohexane	50.00	0.0000	52.26	104	65-135
Methyl-tert-butyl-ether	50.00	0.0000	46.85	94	55-150
4-Methyl-2-pentanone	100.0	0.0000	102.6	103	45-145
Styrene	50.00	0.0000	49.55	99	75-125
1,1,2,2-Tetrachloroetha	50.00	0.0000	48.89	98	55-130
Tetrachloroethene	50.00	0.0000	42.50	85	65-140
Toluene	50.00	0.0000	47.33	95	70-125
1,2,4-Trichlorobenzene	50.00	0.0000	47.45	95	65-130
1,1,1-Trichloroethane	50.00	0.0000	50.14	100	70-135
1,1,2-Trichloroethane	50.00	0.0000	43.68	87	60-125
Trichloroethene	50.00	0.0000	48.98	98	75-125
Trichlorotrifluoroethan	50.00	0.0000	50.06	100	60-140
Trichlorofluoromethane	50.00	0.0000	52.60	105	25-185
Vinyl chloride	50.00	0.0000	50.28	100	60-125
Xylene(total)	150.0	0.0000	134.8	90	70-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: V5BLK1003F Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Acetone	100.0	94.16	94	3	30	20-160
Benzene	50.00	58.84	118	16	30	75-125
Bromodichloromethane	50.00	58.31	117	12	30	70-130
Bromoform	50.00	49.61	99	2	30	55-135
Bromomethane	50.00	49.49	99	4	30	30-160
2-Butanone	100.0	102.2	102	14	30	30-160
Carbon disulfide	50.00	57.05	114	14	30	45-160
Carbon tetrachloride	50.00	59.88	120	15	30	65-135
Chlorobenzene	50.00	50.08	100	6	30	75-125
Chloroethane	50.00	62.07	124	22	30	40-155
Chloroform	50.00	51.20	102	11	30	70-125
Chloromethane	50.00	63.35	127	14	30	50-130
Cyclohexane	50.00	66.34	133	19	30	65-140
Dibromochloromethane	50.00	48.67	97	0	30	65-130
1,2-Dibromo-3-chloropro	50.00	41.65	83	1	30	40-135
1,2-Dibromoethane	50.00	48.08	96	3	30	70-125
1,2-Dichlorobenzene	50.00	48.69	97	0	30	75-120
1,3-Dichlorobenzene	50.00	51.84	104	3	30	70-125
1,4-Dichlorobenzene	50.00	48.80	98	1	30	70-125
Dichlorodifluoromethane	50.00	66.96	134	14	30	35-135
1,1-Dichloroethane	50.00	80.60	161*	39*	30	75-125
1,2-Dichloroethane	50.00	60.14	120	19	30	70-125
1,1-Dichloroethene	50.00	51.45	103	8	30	65-135
cis-1,2-Dichloroethene	50.00	50.03	100	8	30	65-125
trans-1,2-Dichloroethen	50.00	48.39	97	0	30	65-135
1,2-Dichloropropane	50.00	60.24	120	15	30	70-120
cis-1,3-Dichloropropene	50.00	57.94	116	14	30	70-125
trans-1,3-Dichloroprope	50.00	49.67	99	2	30	65-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: V5BLK1003F Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Ethylbenzene	50.00	52.44	105	2	30	75-125
2-Hexanone	100.0	102.2	102	1	30	45-145
Isopropylbenzene	50.00	63.84	128	0	30	75-130
Methyl acetate	50.00	47.69	95	9	30	45-265
Methylene chloride	50.00	44.00	84	13	30	55-140
Methyl cyclohexane	50.00	59.14	118	12	30	65-135
Methyl-tert-butyl-ether	50.00	50.66	101	8	30	55-150
4-Methyl-2-pentanone	100.0	115.4	115	12	30	45-145
Styrene	50.00	52.98	106	7	30	75-125
1,1,2,2-Tetrachloroetha	50.00	53.82	108	10	30	55-130
Tetrachloroethene	50.00	43.88	88	3	30	65-140
Toluene	50.00	50.35	101	6	30	70-125
1,2,4-Trichlorobenzene	50.00	45.53	91	4	30	65-130
1,1,1-Trichloroethane	50.00	55.75	112	10	30	70-135
1,1,2-Trichloroethane	50.00	46.53	93	6	30	60-125
Trichloroethene	50.00	60.83	122	22	30	75-125
Trichlorotrifluoroethan	50.00	56.25	112	12	30	60-140
Trichlorofluoromethane	50.00	59.43	119	12	30	25-185
Vinyl chloride	50.00	58.92	118	16	30	60-125
Xylene(total)	150.0	144.0	96	6	30	70-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 48 outside limits
Spike Recovery: 1 out of 96 outside limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: V5BLK1005 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Acetone	100.0	5.920	118.1	112	20-160
Benzene	50.00	0.0000	50.84	102	75-125
Bromodichloromethane	50.00	0.0000	54.78	110	70-130
Bromoform	50.00	0.0000	49.72	99	55-135
Bromomethane	50.00	0.0000	49.76	100	30-160
2-Butanone	100.0	0.0000	120.4	120	30-160
Carbon disulfide	50.00	0.0000	55.64	111	45-160
Carbon tetrachloride	50.00	0.0000	53.03	106	65-135
Chlorobenzene	50.00	0.0000	48.30	97	75-125
Chloroethane	50.00	0.0000	57.90	116	40-155
Chloroform	50.00	0.0000	47.09	94	70-125
Chloromethane	50.00	0.0000	56.37	113	50-130
Cyclohexane	50.00	0.0000	56.40	113	65-140
Dibromochloromethane	50.00	0.0000	50.07	100	65-130
1,2-Dibromo-3-chloropro	50.00	0.0000	46.08	92	40-135
1,2-Dibromoethane	50.00	0.0000	47.54	95	70-125
1,2-Dichlorobenzene	50.00	0.0000	48.25	96	75-120
1,3-Dichlorobenzene	50.00	0.0000	49.08	98	70-125
1,4-Dichlorobenzene	50.00	0.0000	51.43	103	70-125
Dichlorodifluoromethane	50.00	0.0000	64.00	128	35-135
1,1-Dichloroethane	50.00	0.0000	53.41	107	75-125
1,2-Dichloroethane	50.00	0.0000	53.54	107	70-125
1,1-Dichloroethene	50.00	0.0000	48.01	96	65-135
cis-1,2-Dichloroethene	50.00	0.0000	46.68	93	65-125
trans-1,2-Dichloroethen	50.00	0.0000	49.26	98	65-135
1,2-Dichloropropane	50.00	0.0000	53.18	106	70-120
cis-1,3-Dichloropropene	50.00	0.0000	52.90	106	70-125
trans-1,3-Dichloroprope	50.00	0.0000	47.10	94	65-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: V5BLK1005 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Ethylbenzene	50.00	0.0000	49.93	100	75-125
2-Hexanone	100.0	0.0000	119.6	120	45-145
Isopropylbenzene	50.00	0.0000	61.81	124	75-130
Methyl acetate	50.00	0.0000	50.42	101	45-265
Methylene chloride	50.00	2.308	43.92	83	55-140
Methyl cyclohexane	50.00	0.0000	50.37	101	65-135
Methyl-tert-butyl-ether	50.00	0.0000	52.74	105	55-150
4-Methyl-2-pentanone	100.0	0.0000	120.8	121	45-145
Styrene	50.00	0.0000	48.76	98	75-125
1,1,2,2-Tetrachloroetha	50.00	0.0000	53.80	108	55-130
Tetrachloroethene	50.00	0.0000	42.38	85	65-140
Toluene	50.00	0.0000	48.46	97	70-125
1,2,4-Trichlorobenzene	50.00	0.0000	47.78	96	65-130
1,1,1-Trichloroethane	50.00	0.0000	50.71	101	70-135
1,1,2-Trichloroethane	50.00	0.0000	43.77	88	60-125
Trichloroethene	50.00	0.0000	52.75	106	75-125
Trichlorotrifluoroethan	50.00	0.0000	51.87	104	60-140
Trichlorofluoromethane	50.00	0.0000	56.16	112	25-185
Vinyl chloride	50.00	0.0000	52.49	105	60-125
Xylene(total)	150.0	0.0000	128.8	86	70-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 48 outside limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: V5BLK1005E Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Acetone	100.0	0.0000	92.02	92	20-160
Benzene	50.00	0.0000	46.04	92	75-125
Bromodichloromethane	50.00	0.0000	49.50	99	70-130
Bromoform	50.00	0.0000	45.21	90	55-135
Bromomethane	50.00	0.0000	38.59	77	30-160
2-Butanone	100.0	0.0000	97.67	98	30-160
Carbon disulfide	50.00	0.0000	51.62	103	45-160
Carbon tetrachloride	50.00	0.0000	49.48	99	65-135
Chlorobenzene	50.00	0.0000	44.39	89	75-125
Chloroethane	50.00	0.0000	52.80	106	40-155
Chloroform	50.00	0.0000	42.98	86	70-125
Chloromethane	50.00	0.0000	49.27	98	50-130
Cyclohexane	50.00	0.0000	55.65	111	65-140
Dibromochloromethane	50.00	0.0000	42.26	84	65-130
1,2-Dibromo-3-chloropro	50.00	0.0000	41.26	82	40-135
1,2-Dibromoethane	50.00	0.0000	40.46	81	70-125
1,2-Dichlorobenzene	50.00	0.0000	43.00	86	75-120
1,3-Dichlorobenzene	50.00	0.0000	47.13	94	70-125
1,4-Dichlorobenzene	50.00	0.0000	42.94	86	70-125
Dichlorodifluoromethane	50.00	0.0000	51.03	102	35-135
1,1-Dichloroethane	50.00	0.0000	46.03	92	75-125
1,2-Dichloroethane	50.00	0.0000	47.35	95	70-125
1,1-Dichloroethene	50.00	0.0000	46.09	92	65-135
cis-1,2-Dichloroethene	50.00	0.0000	42.27	84	65-125
trans-1,2-Dichloroethen	50.00	0.0000	44.86	90	65-135
1,2-Dichloropropane	50.00	0.0000	48.94	98	70-120
cis-1,3-Dichloropropene	50.00	0.0000	51.12	102	70-125
trans-1,3-Dichloroprope	50.00	0.0000	45.90	92	65-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: V5BLK1005E Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Ethylbenzene	50.00	0.0000	43.65	87	75-125
2-Hexanone	100.0	0.0000	100.8	101	45-145
Isopropylbenzene	50.00	0.0000	50.26	100	75-130
Methyl acetate	50.00	0.0000	46.42	93	45-265
Methylene chloride	50.00	2.777	37.49	69	55-140
Methyl cyclohexane	50.00	0.0000	49.77	100	65-135
Methyl-tert-butyl-ether	50.00	0.0000	43.97	88	55-150
4-Methyl-2-pentanone	100.0	0.0000	116.4	116	45-145
Styrene	50.00	0.0000	45.01	90	75-125
1,1,2,2-Tetrachloroetha	50.00	0.0000	49.67	99	55-130
Tetrachloroethene	50.00	0.0000	35.82	72	65-140
Toluene	50.00	0.0000	43.65	87	70-125
1,2,4-Trichlorobenzene	50.00	0.0000	39.90	80	65-130
1,1,1-Trichloroethane	50.00	0.0000	44.32	89	70-135
1,1,2-Trichloroethane	50.00	0.0000	40.28	80	60-125
Trichloroethene	50.00	0.0000	49.21	98	75-125
Trichlorotrifluoroethan	50.00	0.0000	49.69	99	60-140
Trichlorofluoromethane	50.00	0.0000	49.18	98	25-185
Vinyl chloride	50.00	0.0000	47.40	95	60-125
Xylene(total)	150.0	0.0000	122.2	81	70-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 48 outside limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: V5BLK1006 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Acetone	100.0	5.245	111.5	106	20-160
Benzene	50.00	0.0000	48.07	96	75-125
Bromodichloromethane	50.00	0.0000	50.50	101	70-130
Bromoform	50.00	0.0000	48.30	97	55-135
Bromomethane	50.00	0.0000	44.70	89	30-160
2-Butanone	100.0	0.0000	122.6	123	30-160
Carbon disulfide	50.00	0.0000	51.02	102	45-160
Carbon tetrachloride	50.00	0.0000	50.56	101	65-135
Chlorobenzene	50.00	0.0000	44.60	89	75-125
Chloroethane	50.00	0.0000	47.41	95	40-155
Chloroform	50.00	0.0000	46.96	94	70-125
Chloromethane	50.00	0.0000	51.66	103	50-130
Cyclohexane	50.00	0.0000	53.65	107	65-140
Dibromochloromethane	50.00	0.0000	48.13	96	65-130
1,2-Dibromo-3-chloropro	50.00	0.0000	47.18	94	40-135
1,2-Dibromoethane	50.00	0.0000	47.58	95	70-125
1,2-Dichlorobenzene	50.00	0.0000	45.98	92	75-120
1,3-Dichlorobenzene	50.00	0.0000	47.60	95	70-125
1,4-Dichlorobenzene	50.00	0.0000	48.85	98	70-125
Dichlorodifluoromethane	50.00	0.0000	53.34	107	35-135
1,1-Dichloroethane	50.00	0.0000	74.25	148*	75-125
1,2-Dichloroethane	50.00	0.0000	53.73	107	70-125
1,1-Dichloroethene	50.00	0.0000	48.34	97	65-135
cis-1,2-Dichloroethene	50.00	0.0000	46.90	94	65-125
trans-1,2-Dichloroethen	50.00	0.0000	49.16	98	65-135
1,2-Dichloropropane	50.00	0.0000	53.84	108	70-120
cis-1,3-Dichloropropene	50.00	0.0000	51.73	103	70-125
trans-1,3-Dichloroprope	50.00	0.0000	50.53	101	65-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: V5BLK1006 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Ethylbenzene	50.00	0.0000	49.71	99	75-125
2-Hexanone	100.0	0.0000	123.9	124	45-145
Isopropylbenzene	50.00	0.0000	58.17	116	75-130
Methyl acetate	50.00	0.0000	52.56	105	45-265
Methylene chloride	50.00	2.895	43.99	82	55-140
Methyl cyclohexane	50.00	0.0000	52.99	106	65-135
Methyl-tert-butyl-ether	50.00	0.0000	49.85	100	55-150
4-Methyl-2-pentanone	100.0	0.0000	135.0	135	45-145
Styrene	50.00	0.0000	48.49	97	75-125
1,1,2,2-Tetrachloroetha	50.00	0.0000	51.84	104	55-130
Tetrachloroethene	50.00	0.0000	39.01	78	65-140
Toluene	50.00	0.0000	46.30	93	70-125
1,2,4-Trichlorobenzene	50.00	0.0000	45.19	90	65-130
1,1,1-Trichloroethane	50.00	0.0000	46.74	93	70-135
1,1,2-Trichloroethane	50.00	0.0000	47.68	95	60-125
Trichloroethene	50.00	0.0000	50.29	100	75-125
Trichlorotrifluoroethan	50.00	0.0000	50.93	102	60-140
Trichlorofluoromethane	50.00	0.0000	49.51	99	25-185
Vinyl chloride	50.00	0.0000	47.32	95	60-125
Xylene(total)	150.0	0.0000	127.5	85	70-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 1 out of 48 outside limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: V5BLK1008 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Acetone	100.0	0.0000	113.7	114	20-160
Benzene	50.00	0.0000	47.86	96	75-125
Bromodichloromethane	50.00	0.0000	48.28	96	70-130
Bromoform	50.00	0.0000	47.27	94	55-135
Bromomethane	50.00	0.0000	44.86	90	30-160
2-Butanone	100.0	0.0000	125.6	126	30-160
Carbon disulfide	50.00	0.0000	47.43	95	45-160
Carbon tetrachloride	50.00	0.0000	45.09	90	65-135
Chlorobenzene	50.00	0.0000	44.18	88	75-125
Chloroethane	50.00	0.0000	47.94	96	40-155
Chloroform	50.00	0.0000	40.61	81	70-125
Chloromethane	50.00	0.0000	47.34	95	50-130
Cyclohexane	50.00	0.0000	49.26	98	65-140
Dibromochloromethane	50.00	0.0000	47.24	94	65-130
1,2-Dibromo-3-chloropro	50.00	0.0000	47.11	94	40-135
1,2-Dibromoethane	50.00	0.0000	46.85	94	70-125
1,2-Dichlorobenzene	50.00	0.0000	43.07	86	75-120
1,3-Dichlorobenzene	50.00	0.0000	41.89	84	70-125
1,4-Dichlorobenzene	50.00	0.0000	43.37	87	70-125
Dichlorodifluoromethane	50.00	0.0000	53.50	107	35-135
1,1-Dichloroethane	50.00	0.0000	44.30	89	75-125
1,2-Dichloroethane	50.00	0.0000	45.75	92	70-125
1,1-Dichloroethene	50.00	0.0000	43.62	87	65-135
cis-1,2-Dichloroethene	50.00	0.0000	44.90	90	65-125
trans-1,2-Dichloroethen	50.00	0.0000	43.71	87	65-135
1,2-Dichloropropane	50.00	0.0000	47.53	95	70-120
cis-1,3-Dichloropropene	50.00	0.0000	49.74	99	70-125
trans-1,3-Dichloroprope	50.00	0.0000	47.92	96	65-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: V5BLK1008 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Ethylbenzene	50.00	0.0000	47.11	94	75-125
2-Hexanone	100.0	0.0000	127.4	127	45-145
Isopropylbenzene	50.00	0.0000	52.82	106	75-130
Methyl acetate	50.00	0.0000	46.98	94	45-265
Methylene chloride	50.00	2.973	44.06	82	55-140
Methyl cyclohexane	50.00	0.0000	49.73	99	65-135
Methyl-tert-butyl-ether	50.00	0.0000	47.65	95	55-150
4-Methyl-2-pentanone	100.0	0.0000	110.1	110	45-145
Styrene	50.00	0.0000	41.94	84	75-125
1,1,2,2-Tetrachloroetha	50.00	0.0000	46.23	92	55-130
Tetrachloroethene	50.00	0.0000	43.96	88	65-140
Toluene	50.00	0.0000	46.99	94	70-125
1,2,4-Trichlorobenzene	50.00	0.0000	47.01	94	65-130
1,1,1-Trichloroethane	50.00	0.0000	41.31	83	70-135
1,1,2-Trichloroethane	50.00	0.0000	44.19	88	60-125
Trichloroethene	50.00	0.0000	46.99	94	75-125
Trichlorotrifluoroethan	50.00	0.0000	46.34	93	60-140
Trichlorofluoromethane	50.00	0.0000	43.43	87	25-185
Vinyl chloride	50.00	0.0000	43.12	86	60-125
Xylene(total)	150.0	0.0000	122.0	81	70-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 48 outside limits

COMMENTS: _____

FORM 3
SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: NTC21SB14-SO-000 Lab Sample ID: 0910006-29

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Acetone	140.2	0.0000	79.68	57	20-160
Benzene	70.10	0.0000	34.18	49*	75-125
Bromodichloromethane	70.10	0.0000	27.02	38*	70-130
Bromoform	70.10	0.0000	18.84	27*	55-135
Bromomethane	70.10	0.0000	28.56	41	30-160
2-Butanone	140.2	0.0000	94.32	67	30-160
Carbon disulfide	70.10	6.416	36.50	43*	45-160
Carbon tetrachloride	70.10	0.0000	37.30	53*	65-135
Chlorobenzene	70.10	0.0000	17.77	25*	75-125
Chloroethane	70.10	0.0000	48.56	69	40-155
Chloroform	70.10	0.0000	31.59	45*	70-125
Chloromethane	70.10	0.0000	49.15	70	50-130
Cyclohexane	70.10	0.0000	45.21	64*	65-140
Dibromochloromethane	70.10	0.0000	22.34	32*	65-130
1,2-Dibromo-3-chloropro	70.10	0.0000	16.85	24*	40-135
1,2-Dibromoethane	70.10	0.0000	19.64	28*	70-125
1,2-Dichlorobenzene	70.10	0.0000	10.50	15*	75-120
1,3-Dichlorobenzene	70.10	0.0000	10.44	15*	70-125
1,4-Dichlorobenzene	70.10	0.0000	9.071	13*	70-125
Dichlorodifluoromethane	70.10	0.0000	50.84	72	35-135
1,1-Dichloroethane	70.10	0.0000	35.79	51*	75-125
1,2-Dichloroethane	70.10	0.0000	30.20	43*	70-125
1,1-Dichloroethene	70.10	0.0000	36.71	52*	65-135
cis-1,2-Dichloroethene	70.10	0.0000	26.74	38*	65-125
trans-1,2-Dichloroethen	70.10	0.0000	28.26	40*	65-135
1,2-Dichloropropane	70.10	0.0000	34.99	50*	70-120
cis-1,3-Dichloropropene	70.10	0.0000	18.43	26*	70-125
trans-1,3-Dichloroprope	70.10	0.0000	13.68	20*	65-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS:

FORM 3
SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: NTC21SB14-SO-000 Lab Sample ID: 0910006-29

Level:(low/med) LOW

	COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
	Ethylbenzene	70.10	0.0000	25.23	36*	75-125
2	2-Hexanone	140.2	0.0000	55.65	40*	45-145
	Isopropylbenzene	70.10	0.0000	32.58	46*	75-130
	Methyl acetate	70.10	0.0000	48.88	70	45-265
	Methylene chloride	70.10	1.523	27.03	36*	55-140
2	Methyl cyclohexane	70.10	0.5650	36.87	52*	65-135
	Methyl-tert-butyl-ether	70.10	0.0000	49.31	70	55-150
	4-Methyl-2-pentanone	140.2	0.0000	93.13	66	45-145
	Styrene	70.10	0.0000	6.891	10*	75-125
	1,1,2,2-Tetrachloroetha	70.10	0.0000	30.71	44*	55-130
	Tetrachloroethene	70.10	0.0000	27.21	39*	65-140
	Toluene	70.10	0.0000	29.73	42*	70-125
2	1,2,4-Trichlorobenzene	70.10	0.0000	4.972	7*	65-130
	1,1,1-Trichloroethane	70.10	0.0000	37.44	53*	70-135
	1,1,2-Trichloroethane	70.10	0.0000	27.69	40*	60-125
	Trichloroethene	70.10	0.0000	26.27	37*	75-125
	Trichlorotrifluoroethan	70.10	0.0000	43.47	62	60-140
	Trichlorofluoromethane	70.10	0.0000	40.66	58	25-185
1	Vinyl chloride	70.10	0.0000	36.40	52*	60-125
2	Xylene(total)	210.3	0.0000	55.77	26*	70-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: NTC21SB14-SO-000 Lab Sample ID: 0910006-29

Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Acetone	130.3	72.45	56	10	30	20-160
Benzene	65.16	36.96	57*	8	30	75-125
Bromodichloromethane	65.16	27.17	42*	0	30	70-130
Bromoform	65.16	17.63	27*	7	30	55-135
Bromomethane	65.16	30.12	46	5	30	30-160
2-Butanone	130.3	81.67	63	14	30	30-160
Carbon disulfide	65.16	37.28	47	2	30	45-160
Carbon tetrachloride	65.16	39.97	61*	7	30	65-135
Chlorobenzene	65.16	17.50	27*	2	30	75-125
Chloroethane	65.16	48.08	74	1	30	40-155
Chloroform	65.16	30.62	47*	3	30	70-125
Chloromethane	65.16	48.62	75	1	30	50-130
Cyclohexane	65.16	45.49	70	1	30	65-140
Dibromochloromethane	65.16	19.55	30*	13	30	65-130
1,2-Dibromo-3-chloropro	65.16	13.52	21*	22	30	40-135
1,2-Dibromoethane	65.16	15.82	24*	22	30	70-125
1,2-Dichlorobenzene	65.16	10.47	16*	0	30	75-120
1,3-Dichlorobenzene	65.16	9.810	15*	6	30	70-125
1,4-Dichlorobenzene	65.16	10.62	16*	16	30	70-125
Dichlorodifluoromethane	65.16	51.96	80	2	30	35-135
1,1-Dichloroethane	65.16	35.94	55*	0	30	75-125
1,2-Dichloroethane	65.16	27.90	43*	8	30	70-125
1,1-Dichloroethene	65.16	38.75	59*	5	30	65-135
cis-1,2-Dichloroethene	65.16	28.26	43*	6	30	65-125
trans-1,2-Dichloroethen	65.16	29.29	45*	4	30	65-135
1,2-Dichloropropane	65.16	35.00	54*	0	30	70-120
cis-1,3-Dichloropropene	65.16	18.73	29*	2	30	70-125
trans-1,3-Dichloroprope	65.16	12.69	19*	8	30	65-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: NTC21SB14-SO-000 Lab Sample ID: 0910006-29

Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Ethylbenzene	65.16	24.67	38*	2	30	75-125
2-Hexanone	130.3	44.82	34*	22	30	45-145
Isopropylbenzene	65.16	30.27	46*	7	30	75-130
Methyl acetate	65.16	41.79	64	16	30	45-265
Methylene chloride	65.16	29.17	42*	8	30	55-140
Methyl cyclohexane	65.16	36.11	54*	2	30	65-135
Methyl-tert-butyl-ether	65.16	49.00	75	1	30	55-150
4-Methyl-2-pentanone	130.3	80.45	62	15	30	45-145
Styrene	65.16	6.950	11*	1	30	75-125
1,1,2,2-Tetrachloroetha	65.16	25.42	39*	19	30	55-130
Tetrachloroethene	65.16	24.97	38*	8	30	65-140
Toluene	65.16	27.78	43*	7	30	70-125
1,2,4-Trichlorobenzene	65.16	4.582	7*	8	30	65-130
1,1,1-Trichloroethane	65.16	38.92	60*	4	30	70-135
1,1,2-Trichloroethane	65.16	23.80	36*	15	30	60-125
Trichloroethene	65.16	28.70	44*	9	30	75-125
Trichlorotrifluoroethan	65.16	41.70	64	4	30	60-140
Trichlorofluoromethane	65.16	43.04	66	6	30	25-185
Vinyl chloride	65.16	39.58	61	8	30	60-125
Xylene(total)	195.5	52.39	27*	6	30	70-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 48 outside limits
Spike Recovery: 71 out of 96 outside limits

COMMENTS: _____

FORM 3
SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA ~~SAS No.: NA~~ SDG No.: CTO064_001

Matrix Spike - Client Sample No.: NTC21SB02-SO-020 Lab Sample ID: 0910006-43

Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Acetone	135.8	0.0000	95.83	70	20-160
Benzene	67.88	0.0000	30.33	45*	75-125
Bromodichloromethane	67.88	0.0000	25.62	38*	70-130
Bromoform	67.88	0.0000	15.86	23*	55-135
Bromomethane	67.88	0.0000	34.82	51	30-160
2-Butanone	135.8	0.0000	86.94	64	30-160
Carbon disulfide	67.88	0.0000	29.50	43*	45-160
Carbon tetrachloride	67.88	0.0000	32.98	48*	65-135
Chlorobenzene	67.88	0.0000	14.59	21*	75-125
Chloroethane	67.88	0.0000	42.91	63	40-155
Chloroform	67.88	0.0000	28.98	43*	70-125
Chloromethane	67.88	0.0000	47.92	70	50-130
Cyclohexane	67.88	1.077	40.79	58*	65-140
Dibromochloromethane	67.88	0.0000	18.03	26*	65-130
1,2-Dibromo-3-chloropro	67.88	0.0000	10.12	15*	40-135
1,2-Dibromoethane	67.88	0.0000	15.18	22*	70-125
1,2-Dichlorobenzene	67.88	0.0000	8.470	12*	75-120
1,3-Dichlorobenzene	67.88	0.0000	8.841	13*	70-125
1,4-Dichlorobenzene	67.88	0.0000	9.113	13*	70-125
Dichlorodifluoromethane	67.88	0.0000	54.90	81	35-135
1,1-Dichloroethane	67.88	0.0000	32.03	47*	75-125
1,2-Dichloroethane	67.88	0.0000	29.85	44*	70-125
1,1-Dichloroethene	67.88	0.0000	30.70	45*	65-135
cis-1,2-Dichloroethene	67.88	0.0000	26.14	38*	65-125
trans-1,2-Dichloroethen	67.88	0.0000	27.85	41*	65-135
1,2-Dichloropropane	67.88	0.0000	29.34	43*	70-120
cis-1,3-Dichloropropene	67.88	0.0000	18.27	27*	70-125
trans-1,3-Dichloroprope	67.88	0.0000	14.03	21*	65-125

~~Column to be used~~ to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS:

FORM 3
SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: NTC21SB02-SO-020 Lab Sample ID: 0910006-43

Level:(low/med) LOW

	COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
	Ethylbenzene	67.88	0.0000	20.66	30*	75-125
2	2-Hexanone	135.8	0.0000	40.18	30*	45-145
	Isopropylbenzene	67.88	0.0000	23.21	34*	75-130
	Methyl acetate	67.88	0.0000	59.41	88	45-265
2	Methylene chloride	67.88	1.323	27.15	38*	55-140
2	Methyl cyclohexane	67.88	1.858	32.55	45*	65-135
1	Methyl-tert-butyl-ether	67.88	0.0000	44.73	66	55-150
1	4-Methyl-2-pentanone	135.8	0.0000	73.13	54	45-145
2	Styrene	67.88	0.0000	9.698	14*	75-125
2	1,1,2,2-Tetrachloroetha	67.88	0.0000	21.58	32*	55-130
2	Tetrachloroethene	67.88	0.0000	19.85	29*	65-140
2	Toluene	67.88	0.0000	23.43	34*	70-125
2	1,2,4-Trichlorobenzene	67.88	0.0000	3.425	5*	65-130
2	1,1,1-Trichloroethane	67.88	0.0000	32.07	47*	70-135
2	1,1,2-Trichloroethane	67.88	0.0000	21.92	32*	60-125
2	Trichloroethene	67.88	0.0000	25.10	37*	75-125
1	Trichlorotrifluoroethan	67.88	0.0000	39.89	59*	60-140
	Trichlorofluoromethane	67.88	2.828	41.15	56	25-185
	Vinyl chloride	67.88	0.0000	37.58	55*	60-125
2	Xylene(total)	203.6	0.0000	43.18	21*	70-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: NTC21SB02-SO-020 Lab Sample ID: 0910006-43

Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Acetone	127.5	72.49	57	28	30	20-160
Benzene	63.74	25.76	40*	16	30	75-125
Bromodichloromethane	63.74	19.55	31*	27	30	70-130
Bromoform	63.74	13.05	20*	19	30	55-135
Bromomethane	63.74	31.29	49	11	30	30-160
2-Butanone	127.5	60.74	48	35*	30	30-160
Carbon disulfide	63.74	25.72	40*	14	30	45-160
Carbon tetrachloride	63.74	33.72	53*	2	30	65-135
Chlorobenzene	63.74	11.99	19*	20	30	75-125
Chloroethane	63.74	40.01	63	7	30	40-155
Chloroform	63.74	23.36	37*	21	30	70-125
Chloromethane	63.74	43.88	69	9	30	50-130
Cyclohexane	63.74	40.43	62*	1	30	65-140
Dibromochloromethane	63.74	13.77	22*	27	30	65-130
1,2-Dibromo-3-chloropro	63.74	8.241	13*	20	30	40-135
1,2-Dibromoethane	63.74	11.64	18*	26	30	70-125
1,2-Dichlorobenzene	63.74	5.896	9*	36*	30	75-120
1,3-Dichlorobenzene	63.74	6.304	10*	34*	30	70-125
1,4-Dichlorobenzene	63.74	6.922	11*	27	30	70-125
Dichlorodifluoromethane	63.74	56.12	88	2	30	35-135
1,1-Dichloroethane	63.74	29.33	46*	9	30	75-125
1,2-Dichloroethane	63.74	22.02	34*	30	30	70-125
1,1-Dichloroethene	63.74	30.38	48*	1	30	65-135
cis-1,2-Dichloroethene	63.74	20.24	32*	25	30	65-125
trans-1,2-Dichloroethen	63.74	24.23	38*	14	30	65-135
1,2-Dichloropropane	63.74	22.96	36*	24	30	70-120
cis-1,3-Dichloropropene	63.74	11.46	18*	46*	30	70-125
trans-1,3-Dichloroprope	63.74	10.06	16*	33*	30	65-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS:

FORM 3
SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EMPIRICAL LABS . Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: NTC21SB02-SO-020 Lab Sample ID: 0910006-43

Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Ethylbenzene	63.74	16.23	25*	24	30	75-125
2-Hexanone	127.5	32.06	25*	22	30	45-145
Isopropylbenzene	63.74	19.15	30*	19	30	75-130
Methyl acetate	63.74	45.58	72	26	30	45-265
Methylene chloride	63.74	21.64	32*	22	30	55-140
Methyl cyclohexane	63.74	34.67	51*	6	30	65-135
Methyl-tert-butyl-ether	63.74	33.52	52*	29	30	55-150
4-Methyl-2-pentanone	127.5	48.12	38*	41*	30	45-145
Styrene	63.74	6.180	10*	44*	30	75-125
1,1,2,2-Tetrachloroetha	63.74	17.66	28*	20	30	55-130
Tetrachloroethene	63.74	19.07	30*	4	30	65-140
Toluene	63.74	22.12	35*	6	30	70-125
1,2,4-Trichlorobenzene	63.74	1.946	3*	55*	30	65-130
1,1,1-Trichloroethane	63.74	32.32	51*	1	30	70-135
1,1,2-Trichloroethane	63.74	15.90	25*	32*	30	60-125
Trichloroethene	63.74	20.86	33*	18	30	75-125
Trichlorotrifluoroethan	63.74	39.42	62	1	30	60-140
Trichlorofluoromethane	63.74	40.86	60	1	30	25-185
Vinyl chloride	63.74	36.80	58*	2	30	60-125
Xylene(total)	191.2	34.62	18*	22	30	70-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 9 out of 48 outside limits
Spike Recovery: 77 out of 96 outside limits

COMMENTS: _____

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID (Standard): V3CCV01F Date Analyzed: 10/03/09

Instrument ID: VOA3 Time Analyzed: 1340

GC Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) N

		IS1(FLB) AREA #	RT #	IS2(CBZ) AREA #	RT #	IS3(DCB) AREA #	RT #
	12 HOUR STD	1303045	12.92	715815	16.44	794324	18.46
	UPPER LIMIT	2606090	13.42	1431630	16.94	1588648	18.96
	LOWER LIMIT	651523	12.42	357908	15.94	397162	17.96
	CLIENT SAMPLE NO.						
01	V3BLK1002FLC	1328514	12.92	683633	16.44	808199	18.45
02	V3BLK1002F	1164425	12.92	570838	16.44	650565	18.46
03	TB-092709-01	1027726	12.92	489081	16.44	561394	18.46
04	TB-092809-01	994919	12.92	476666	16.44	554425	18.46
05	RB-092909-01	986704	12.92	460588	16.44	532387	18.46
06	RB-092909-02	940393	12.92	448442	16.44	536243	18.45
07	SB-092909-01	925253	12.92	437982	16.44	517598	18.46
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IS1 (FLB) = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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FORM VIII VOA

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID (Standard): V5CCV01E Date Analyzed: 10/04/09

Instrument ID: VOA5 Time Analyzed: 0024

GC Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) Y

		IS1 (FLB) AREA #	RT #	IS2 (CBZ) AREA #	RT #	IS3 (DCB) AREA #	RT #
	12 HOUR STD	1331540	12.06	567912	15.66	513806	17.52
	UPPER LIMIT	2663080	12.56	1135824	16.16	1027612	18.02
	LOWER LIMIT	665770	11.56	283956	15.16	256903	17.02
	CLIENT SAMPLE NO.						
01	V5BLK1003ELC	1236430	12.06	495543	15.66	488780	17.52
02	V5BLK1003E	1074942	12.06	461784	15.66	427904	17.53
03	FD-092609-01	1090573	12.06	424456	15.65	357318	17.52
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IS1 (FLB) = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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FORM VIII VOA

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID (Standard): V5CCV01F Date Analyzed: 10/04/09

Instrument ID: VOA5 Time Analyzed: 1422

GC Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) Y

		IS1 (FLB) AREA #	RT #	IS2 (CBZ) AREA #	RT #	IS3 (DCB) AREA #	RT #
	12 HOUR STD	1117492	12.07	451945	15.66	473027	17.52
	UPPER LIMIT	2234984	12.57	903890	16.16	946054	18.02
	LOWER LIMIT	558746	11.57	225973	15.16	236514	17.02
	CLIENT SAMPLE NO.						
01	V5BLK1003FLC	1148672	12.06	459911	15.66	459471	17.52
02	V5BLK1003F	1042796	12.06	453905	15.66	454417	17.52
03	NTC21SB09-SO	941216	12.06	420600	15.66	420932	17.51
04	NTC21SB09-SO	949815	12.07	411883	15.66	353367	17.52
05	NTC21SB10-SO	983230	12.07	379281	15.66	271170	17.52
06	NTC21SB11-SO	884995	12.06	361905	15.66	285534	17.52
07	NTC21SB12-SO	944960	12.07	367367	15.66	341709	17.52
08	NTC21SB12-SO	917817	12.07	364101	15.66	320098	17.52
09	NTC21SB17-SO	870832	12.07	392071	15.66	377418	17.51
10	NTC21SB17-SO	931187	12.07	398460	15.66	368866	17.52
11	NTC21SB18-SO	899539	12.07	317916	15.66	237935	17.52
12	NTC21SB18-SO	968577	12.06	397070	15.66	352207	17.52
13	NTC21SB10-SO	916038	12.07	379862	15.67	294883	17.52
14	NTC21SB11-SO	907729	12.07	351351	15.67	279440	17.52
15	V5BLK1003FLC	1018870	12.07	435552	15.66	419478	17.52
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22							

IS1 (FLB) = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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FORM VIII VOA

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID (Standard): V5CCV01 Date Analyzed: 10/05/09

Instrument ID: VOA5 Time Analyzed: 1241

GC Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) Y

		IS1 (FLB) AREA #	RT #	IS2 (CBZ) AREA #	RT #	IS3 (DCB) AREA #	RT #
	12 HOUR STD	1211684	12.07	532446	15.66	487955	17.53
	UPPER LIMIT	2423368	12.57	1064892	16.16	975910	18.03
	LOWER LIMIT	605842	11.57	266223	15.16	243978	17.03
	CLIENT SAMPLE NO.						
01	V5BLK1005LCS	1156941	12.07	481067	15.67	455783	17.53
02	V5BLK1005	1012369	12.07	424239	15.66	433669	17.53
03	FD-092609-02	1021983	12.07	452694	15.66	451352	17.52
04	NTC21SB20-SO	1013056	12.07	378614	15.67	366809	17.52
05	NTC21SB20-SO	967436	12.07	397151	15.66	337994	17.53
06	NTC21SB21-SO	876085	12.07	357344	15.66	275673	17.53
07	NTC21SB21-SO	1005430	12.08	433860	15.67	374302	17.52
08	FD-092709-01	923061	12.07	393179	15.67	361826	17.52
09	NTC21SB04-SO	871679	12.08	376551	15.67	315004	17.52
10	NTC21SB04-SO	944697	12.08	353517	15.67	281747	17.53
11	NTC21SB06-SO	979273	12.08	412844	15.67	378569	17.53
12	NTC21SB06-SO	926616	12.08	357814	15.67	170287*	17.52
13	NTC21SB07-SO	1000579	12.07	411185	15.66	329655	17.53
14	NTC21SB14-SO	895453	12.07	366373	15.67	301762	17.52
15							
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IS1 (FLB) = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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FORM VIII VOA

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID (Standard): V5CCV01E Date Analyzed: 10/06/09

Instrument ID: VOA5 Time Analyzed: 0024

GC Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) Y

		IS1 (FLB) AREA #	RT #	IS2 (CBZ) AREA #	RT #	IS3 (DCB) AREA #	RT #
	12 HOUR STD	1182503	12.07	524940	15.66	469681	17.53
	UPPER LIMIT	2365006	12.57	1049880	16.16	939362	18.03
	LOWER LIMIT	591252	11.57	262470	15.16	234841	17.03
	CLIENT SAMPLE NO.						
01	V5BLK1005ELC	1214636	12.07	516204	15.66	483831	17.53
02	V5BLK1005E	945863	12.07	386321	15.66	361442	17.53
03	NTC21SB13-SO	860658	12.08	326646	15.67	181619*	17.52
04	NTC21SB13-SO	925264	12.07	359752	15.67	276870	17.52
05	NTC21SB14-SO	939712	12.08	371468	15.67	342806	17.52
06	NTC21SB15-SO	946391	12.07	399973	15.66	306766	17.53
07	NTC21SB15-SO	1007760	12.07	425643	15.66	407390	17.53
08	NTC21SB16-SO	876654	12.07	339837	15.66	274863	17.53
09	NTC21SB16-SO	974293	12.07	401395	15.66	421078	17.53
10	NTC21SB19-SO	924116	12.07	370508	15.66	267805	17.53
11	NTC21SB19-SO	931720	12.08	404992	15.66	369718	17.53
12	NTC21SB22-SO	829195	12.08	361707	15.67	275249	17.53
13	NTC21SB22-SO	926051	12.07	347625	15.66	253602	17.53
14	FD-092809-01	879652	12.07	332680	15.66	238921	17.53
15	NTC21SB01-SO	975420	12.08	366605	15.67	287913	17.53
16	NTC21SB02-SO	920504	12.07	455517	15.67	380718	17.52
17	NTC21SB03-SO	854289	12.07	349623	15.67	293135	17.52
18	NTC21SB07-SO	791470	12.07	311163	15.66	245943	17.52
19	NTC21SB02-SO	840726	12.08	318680	15.67	223118*	17.53
20	NTC21SB03-SO	805581	12.07	284704	15.67	154365*	17.54
21							
22							

IS1 (FLB) = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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FORM VIII VOA

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID (Standard): V5CCV01 Date Analyzed: 10/06/09

Instrument ID: VOA5 Time Analyzed: 1443

GC Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) Y

		IS1(FLB) AREA #	RT #	IS2(CBZ) AREA #	RT #	IS3(DCB) AREA #	RT #
	12 HOUR STD	1145475	12.08	472670	15.67	465012	17.53
	UPPER LIMIT	2290950	12.58	945340	16.17	930024	18.03
	LOWER LIMIT	572738	11.58	236335	15.17	232506	17.03
	CLIENT SAMPLE NO.						
01	V5BLK1006LCS	1166965	12.07	488236	15.67	478086	17.53
02	V5BLK1006	993391	12.08	394157	15.67	378000	17.53
03	NTC21SB05-SO	892616	12.08	347472	15.67	270125	17.53
04	NTC21SB05-SO	893346	12.08	350580	15.67	230436*	17.53
05	NTC21SB08-SO	1002526	12.09	349078	15.67	230199*	17.53
06	NTC21SB08-SO	958849	12.08	373897	15.67	351413	17.53
07							
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IS1 (FLB) = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

page 1 of 1

FORM VIII VOA

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID (Standard): V3CCV1 Date Analyzed: 10/09/09

Instrument ID: VOA3 Time Analyzed: 1938

GC Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) N

		IS1 (FLB) AREA #	RT #	IS2 (CBZ) AREA #	RT #	IS3 (DCB) AREA #	RT #
	12 HOUR STD	1309364	12.78	644192	16.33	704043	18.33
	UPPER LIMIT	2618728	13.28	1288384	16.83	1408086	18.83
	LOWER LIMIT	654682	12.28	322096	15.83	352022	17.83
	CLIENT SAMPLE NO.						
01	V3BLK1009LCS	1302748	12.77	618797	16.33	689475	18.33
02	V3BLK1009	1278712	12.77	565378	16.33	629777	18.33
03	TB-092609-01	1238719	12.77	556066	16.33	603944	18.33
04	TB-092909-01	1209613	12.77	536518	16.33	578269	18.33
05							
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22							

IS1 (FLB) = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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FORM VIII VOA

NTC GREAT LAKES
SOIL DATA
CTO064_001

FRACTION	CHEMICAL	FD-092609-01	UNITS	NTC21SB18-SO-0507	RPD	D
OV	BENZENE	2.1 J	UG/KG	4.8	78.26	2.70 N/A <2XR.L
OV	CARBON DISULFIDE	ND	UG/KG	1.2 J	200.00	1.20 N/A <2XR.L
OV	CYCLOHEXANE	3.4 J	UG/KG	9	90.32	5.60 N/A <2XR.L
OV	ETHYLBENZENE	ND	UG/KG	1 J	200.00	1.00 N/A <2XR.L
OV	METHYL CYCLOHEXANE	5.4	UG/KG	11	68.29	5.60 N/A <2XR.L
OV	TOLUENE	2.6 J	UG/KG	5.4	70.00	2.80 N/A <2XR.L

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NTC GREAT LAKES
SOIL DATA
CTO064_001

FRACTION	CHEMICAL	FD-092609-02	UNITS	NTC21SB09-SO-0001	RPD	D
OV	ACETONE	ND	UG/KG	23 J	200.00	23.00
OV	CARBON DISULFIDE	4.1 J	UG/KG	7	52.25	2.90 N/A <2xR.L.
OV	METHYL CYCLOHEXANE	0.91 J	UG/KG	ND	200.00	0.91 N/A <2xR.L.

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NTC GREAT LAKES
SOIL DATA
CTO064_001

FRACTION	CHEMICAL	FD-092709-01	UNITS	NTC21SB15-SO-0204	RPD	D
OV	ACETONE	ND	UG/KG	25	200.00	25.00
OV	CARBON DISULFIDE	3.8 J	UG/KG	1.4 J	92.31	2.40 N/A <2x R.L.

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NTC GREAT LAKES
SOIL DATA
CTO064_001

FRACTION	CHEMICAL	FD-092809-01	UNITS	NTC21SB05-SO-0001	RPD	D
OV	2-BUTANONE	ND	UG/KG	30 J	200.00	30.00
OV	ACETONE	ND	UG/KG	180	200.00	180.00
OV	CARBON DISULFIDE	ND	UG/KG	2.3 J	200.00	2.30 NA<2XR.L.
OV	CYCLOHEXANE	1.4 J	UG/KG	1.4 J	0.00	0.00
OV	METHYL CYCLOHEXANE	2.7 J	UG/KG	2.5 J	7.69	0.20

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

SVOC

ORGANIC CASE NARRATIVE
Tetra Tech NUS, Inc./Great Lakes, IL CTO064
Project Manager: B. Cummings
SDG: CTO064_001
Work order: 0910006

Sampled	Received	Lab ID	Client ID
9/26/2009	10/1/2009	0910006-01	FD-092609-01
9/26/2009	10/1/2009	0910006-02	FD-092609-02
9/26/2009	10/1/2009	0910006-03	NTC21SB09-SO-0001
9/26/2009	10/1/2009	0910006-04	NTC21SB09-SO-0204
9/26/2009	10/1/2009	0910006-05	NTC21SB10-SO-0001
9/26/2009	10/1/2009	0910006-06	NTC21SB10-SO-0406
9/26/2009	10/1/2009	0910006-07	NTC21SB11-SO-0001
9/26/2009	10/1/2009	0910006-08	NTC21SB11-SO-0204
9/26/2009	10/1/2009	0910006-09	NTC21SB12-SO-0001
9/26/2009	10/1/2009	0910006-10	NTC21SB12-SO-0204
9/26/2009	10/1/2009	0910006-11	NTC21SB17-SO-0001
9/26/2009	10/1/2009	0910006-12	NTC21SB17-SO-0507
9/26/2009	10/1/2009	0910006-13	NTC21SB18-SO-0001
9/26/2009	10/1/2009	0910006-14	NTC21SB18-SO-0507
9/26/2009	10/1/2009	0910006-15	NTC21SB20-SO-0001
9/26/2009	10/1/2009	0910006-16	NTC21SB20-SO-0406
9/26/2009	10/1/2009	0910006-17	NTC21SB21-SO-0001
9/26/2009	10/1/2009	0910006-18	NTC21SB21-SO-0608
9/27/2009	10/1/2009	0910006-20	FD-092709-01
9/27/2009	10/1/2009	0910006-21	NTC21SB04-SO-0001
9/27/2009	10/1/2009	0910006-22	NTC21SB04-SO-0406
9/27/2009	10/1/2009	0910006-23	NTC21SB06-SO-0001
9/27/2009	10/1/2009	0910006-24	NTC21SB06-SO-0204
9/27/2009	10/1/2009	0910006-25	NTC21SB07-SO-0001
9/27/2009	10/1/2009	0910006-26	NTC21SB07-SO-0204
9/27/2009	10/1/2009	0910006-27	NTC21SB13-SO-0001
9/27/2009	10/1/2009	0910006-28	NTC21SB13-SO-0204
9/27/2009	9/30/2009	0910006-29	NTC21SB14-SO-0001
9/27/2009	10/1/2009	0910006-30	NTC21SB14-SO-0204
9/27/2009	10/1/2009	0910006-31	NTC21SB15-SO-0001
9/27/2009	10/1/2009	0910006-32	NTC21SB15-SO-0204
9/27/2009	10/1/2009	0910006-33	NTC21SB16-SO-0001
9/27/2009	10/1/2009	0910006-34	NTC21SB16-SO-0204
9/27/2009	10/1/2009	0910006-35	NTC21SB19-SO-0001
9/27/2009	10/1/2009	0910006-36	NTC21SB19-SO-0204
9/27/2009	10/1/2009	0910006-37	NTC21SB22-SO-0001
9/27/2009	10/1/2009	0910006-38	NTC21SB22-SO-0204
9/28/2009	10/1/2009	0910006-40	FD-092809-01
9/28/2009	10/1/2009	0910006-41	NTC21SB01-SO-0102
9/28/2009	10/1/2009	0910006-42	NTC21SB02-SO-0001
9/28/2009	9/30/2009	0910006-43	NTC21SB02-SO-0204
9/28/2009	10/1/2009	0910006-44	NTC21SB03-SO-0001
9/28/2009	10/1/2009	0910006-45	NTC21SB03-SO-0204
9/28/2009	10/1/2009	0910006-46	NTC21SB05-SO-0001
9/28/2009	10/1/2009	0910006-47	NTC21SB05-SO-0204
9/28/2009	10/1/2009	0910006-48	NTC21SB08-SO-0001
9/28/2009	10/1/2009	0910006-49	NTC21SB08-SO-0204
9/29/2009	9/30/2009	0910006-51	RB-092909-01
9/29/2009	9/30/2009	0910006-52	RB-092909-02
9/29/2009	9/30/2009	0910006-53	SB-092909-01

Semi-Volatiles

Method: The samples were analyzed by USEPA SW-846 Methods 3510C/8270C or 3546/8270C (separatory funnel or microwave extraction followed by capillary column GC/MS) for waters or solids upon receipt to the laboratory in satisfactory condition.

Comments: The volatile analyses for these samples were satisfactorily completed within sample holding times and met the corresponding specifications with the following note/exceptions:

- DFTPP Tuning: All method tuning criteria were met.
- Calibration Criteria: In the initial calibration verification, 2-chlorophenol and 2,4-dimethylphenol

exceeded 25% difference with positive biases of 31.9% and 43.1%. These analytes were not detected in the associated samples. All other initial calibration criteria were met.

- Continuing Calibration Exceedences:
  1. The continuing calibration compound (CCC) 4-chloro-3-methylphenol exceeded method criteria of 20% difference with a positive bias of 24.9%D in the continuing calibration verification (CCV) analyzed on 101009 at 0756. Evaluating all other compounds against the 20%D criteria, Evaluating all other compounds against the 20%D criteria, several compounds exceeded with positive biases with no reported concentrations for these compounds above the quantitation limit in the associated samples while none exceeded with negative biases.
  2. The continuing calibration compound (CCC) di-n-octylphthalate exceeded method criteria of 20% difference with a positive bias of 68%D in the continuing calibration verification (CCV) analyzed on 101709 at 0041. Evaluating all other compounds against the 20%D criteria, several compounds exceeded with positive biases with no reported concentrations for these compounds above the quantitation limit in the associated samples while the following exceeded with negative biases: 4,6-dinitro-2-methylphenol, 2,4-dinitrophenol and hexachlorocyclopentadiene.
  3. The CCC 4-chloro-3-methylphenol exceeded method criteria of 20% difference with a positive bias of 21%D in the continuing calibration verification (CCV) analyzed on 101709 at 1108. Evaluating all other compounds against the 20%D criteria, several compounds exceeded with positive biases with no reported concentrations for these compounds above the quantitation limit in the associated samples while the following exceeded with negative biases: 4,6-dinitro-2-methylphenol and 2,4-dinitrophenol.
  4. The CCC di-n-octylphthalate exceeded method criteria of 20% difference with a positive bias of 116.2%D in the continuing calibration verification (CCV) analyzed on 101709 at 1519. Evaluating all other compounds against the 20%D criteria, several compounds exceeded with positive biases with no reported concentrations for these compounds above the quantitation limit in the associated samples while the following exceeded with negative biases: 2,4-dinitrophenol and 4-nitrophenol.
  5. The CCC 4-chloro-3-methylphenol exceeded method criteria of 20% difference with a positive bias of 30.6%D in the continuing calibration verification (CCV) analyzed on 101709 at 1746. Evaluating all other compounds against the 20%D criteria, several compounds exceeded with positive biases with no reported concentrations for these compounds above the quantitation limit in the associated samples while the following exceeded with negative biases: 1,1'-biphenyl, carbazole, 4,6-dinitro-2-methylphenol and 2,4-dinitrophenol.
  6. The CCC 4-chloro-3-methylphenol exceeded method criteria of 20% difference with a positive bias of 21.7%D in the continuing calibration verification (CCV) analyzed on 101809 at 1025. Evaluating all other compounds against the 20%D criteria, several compounds exceeded with positive biases with no reported concentrations for these compounds above the quantitation limit in the associated samples while the following exceeded with negative biases: 1,1'-biphenyl, carbazole, and 4,6-dinitro-2-methylphenol.

Note: All compounds that recovered outside of 20%D with negative biases were qualified with a "Y" in the associated samples to indicate a potential negative bias. All other method criteria were met.

- Method Blank Result s: No target analytes were detected in the method blanks.
- Surrogate Recoveries: One or more of the acid surrogates recovered below limits in samples NTC21SB09-SO-0001, NTC21SB10-SO-0001, NTC21SB11-SO-0001, NTC21SB20-SO-0001 and NTC21SB02-SO-0204/MS/MSD. All base/neutral surrogate recoveries were within limits. See form 2. Note – phenol-d6 recoveries are not evaluated in water samples.
- SBLK1001BW1LCS/LCSD Results: Of 96 recoveries, 5 exceeded limits with positive biases while caprolactam recoveries were below the limit of 20% at 13%/12%. All relative percent differences were within limits. None of the exceeding analytes were detected in the associated samples. See form 3.
- 9J01037-BLK1LCS Results: Recovery of 2,4-dimethylphenol exceeded the limit of 105% at 126% while all other recoveries were within limits.

- 9J02015-BLK1LCS Results: Recovery of 2,4-dimethylphenol exceeded the limit of 105% at 112% while all other recoveries were within limits.
- 9J05025-BLK1LCS Results: Recoveries of 4-chloroaniline and 2,4-dimethylphenol exceeded the limits of 95% and 105% at 97% and 124% while benzaldehyde recovery was 0%. All other recoveries were within limits.
- 9J07018-BLK1LCS Results: All recoveries were within limits.
- NTC21SB02-SO-0204MS/MSD Results: Out of 96 recoveries, 29 were outside the acceptance limits while 1 of 48 relative percent differences exceeded the limits. See form 3.
- NTC21SB14-SO-0001MS/MSD Results: Out of 96 recoveries, 31 were outside the acceptance limits while 1 of 48 relative percent differences exceeded the limits. See form 3.
- Internal Standard Area Counts: Due to the sample matrix, area counts for the internal standard d12-chrysene and/or d12-perylene were less than 50% of that found in the associated calibration verification standard as low as 10% in many of the soil samples. Samples with % recoveries less than 25% were analyzed at a dilution. See form 8.
- Dilutions: All samples were analyzed without dilution. Samples with internal standard recoveries less than 25% were analyzed at a dilution.
- Manual integrations: Quantitation signals were manually integrated in order to accurately reflect the peak areas based on the technical judgment of the analyst. A listing of the manual integrations performed and reason for the integration is included with the logs. Before and after "pictures" are available where manual integrations were performed.

I certify that, to the best of my knowledge and based upon my inquiry of those individuals immediately responsible for obtaining the information, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in the case narrative, as verified by the following signature.

Marcia K. McGinnity
Senior Project Manager

ANALYTICAL REPORT TERMS AND QUALIFIERS (ORGANIC)

MDL: The method detection limit (MDL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The MDL is determined from analysis of a sample containing the analyte in a given matrix.

EQL: The estimated quantitation limit (EQL), also known as the reporting limit (RL), is defined as the estimated concentration above which quantitative results can be obtained with a specific degree of confidence. Empirical Laboratories defines the EQL to be at or near the lowest standard of the calibration curve.

U: The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte quantitated below the MDL.

B: The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the correct sample result might be less than the reported result and, perhaps, zero.

D: When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".

E: The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound.

J: The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The mass spectral data pass the identification criteria showing that the compound is present, but the calculated result is less than the EQL. One should feel confident that the result is greater than zero and less than the EQL.

P: The associated numerical value is an estimated quantity. There is greater than a 40% difference between the two GC columns for the detected concentrations. The higher of the two values is reported.

M: The presence of an "M" to the right of an analytical result indicates that the sample matrix interfered with the quantitation of the analyte. In GC and HPLC, results are reported from the column with the lower concentration.

I: The presence of an "I" to the right of an analytical result that the presence of a qualitative interference could have caused a false positive or over estimation of the analyte. In GC and HPLC, results are reported from the column with the lower concentration.

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA39085

Lab File ID: DF0602B1 DFTPP Injection Date: 06/02/09

Instrument ID: BNA3 DFTPP Injection Time: 0706

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	48.3
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	53.2
70	Less than 2.0% of mass 69	0.3 (0.6)1
127	40.0 - 60.0% of mass 198	55.9
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.7
275	10.0 - 30.0% of mass 198	22.3
365	Greater than 1.0% of mass 198	2.38
441	Present, but less than mass 443	6.5
442	Greater than 40.0% of mass 198	46.6
443	17.0 - 23.0% of mass 442	9.2 (19.8)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01		STD0.5PPM	CAL1H	06/02/09	0729
02		STD1PPM	CAL1-2	06/02/09	0809
03		STD2PPM	CAL1-3	06/02/09	0849
04		STD5PPM	CAL1-4	06/02/09	0929
05		STD10PPM	CAL1-5	06/02/09	1010
06		STD20PPM	CAL1-6	06/02/09	1051
07		STD50PPM	CAL1-8	06/02/09	1217
08		STD80PPM	CAL1-9	06/02/09	1300
09		STD80PPM	CAL1-10	06/02/09	1345
10		STD100PPM	CAL1-11	06/02/09	1430
11		STD1PPM	CAL2-2	06/02/09	1525
12		STD2PPM	CAL2-3	06/02/09	1610
13		STD5PPM	CAL2-4	06/02/09	1653
14		STD10PPM	CAL2-5	06/02/09	1736
15		STD20PPM	CAL2-6	06/02/09	1818
16		STD50PPM	CAL2-9	06/02/09	1900
17		STD80PPM	CAL2-12	06/02/09	1941
18					
19					
20					
21					
22					

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA57889A

Instrument ID: BNA3 Calibration Date(s): 06/02/09 06/02/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0729 1430

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
Acenaphthene	AVRG		1.11382604		2.5
Acenaphthylene	AVRG		1.45952380		9.5
Acetophenone	AVRG		1.62975219		6.1
Aniline	AVRG		1.58873012		8.3
Anthracene	AVRG		0.95908823		10.7
Benzoic acid	2ORDR	0.13115984	3.84201266	0.27528685	0.994
Benzo(a)anthracene	AVRG		1.02208613		8.0
Benzo(b)fluoranthene	LINR	1.988e-002	1.31531718		0.999
Benzo(k)fluoranthene	LINR	0.00000000	1.25213363		0.999
Benzo(g,h,i)perylene	LINR	3.752e-002	0.78727452		0.996
Benzo(a)pyrene	LINR	2.989e-002	1.12459219		1.000
Benzyl alcohol	AVRG		0.80488395		10.5
1,1'-Biphenyl	AVRG		1.41649917		4.8
bis(2-Chloroethoxy)methane	AVRG		0.39901865		7.6
bis(2-Chloroethyl)ether	AVRG		1.34527327		5.8
bis(2-Chloroisopropyl)ether	AVRG		1.68042587		7.8
Bis(2-ethylhexyl)phthalate	LINR	3.234e-002	0.79005646		0.999
4-Bromophenyl-phenylether	AVRG		0.21917553		13.0
Butylbenzylphthalate	LINR	1.981e-002	0.62838543		0.999
Caprolactam	AVRG		8.703e-002		14.3
Carbazole	AVRG		0.78698379		10.3
4-Chloroaniline	AVRG		0.35909326		7.8
4-Chloro-3-methylphenol	AVRG		0.27639976		14.5
2-Chloronaphthalene	AVRG		1.14442989		6.2
2-Chlorophenol	AVRG		1.30393119		7.8
4-Chlorophenyl-phenylether	AVRG		0.61583808		5.5
Chrysene	AVRG		1.00689325		5.7
Dibenz(a,h)anthracene	LINR	5.984e-002	0.79544334		0.996
Dibenzofuran	AVRG		1.56749754		6.9
1,4-Dichlorobenzene	AVRG		1.52994271		3.3
1,2-Dichlorobenzene	AVRG		1.40924941		4.2
1,3-Dichlorobenzene	AVRG		1.49589649		6.2
2,4-Dichlorophenol	AVRG		0.29113377		12.4
Diethylphthalate	AVRG		1.15892136		10.2
2,4-Dimethylphenol	AVRG		0.31759003		7.8
Dimethylphthalate	AVRG		1.26094655		5.5
Di-n-butylphthalate	LINR	0.00000000	1.15658382		0.997

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA57889A

Instrument ID: BNA3 Calibration Date(s): 06/02/09 06/02/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0729 1430

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
4,6-Dinitro-2-methylphenol	LINR	7.94e-002	0.15220968		0.998
2,4-Dinitrophenol	2ORDR	0.17636778	4.99477187	2.71744172	0.990
2,4-Dinitrotoluene	LINR	0.00000000	0.37436041		0.996
2,6-Dinitrotoluene	LINR	4.826e-003	0.29524990		0.999
1,2-Diphenylhydrazine	AVRG		0.80728776		9.2
Di-n-octylphthalate	2ORDR	9.676e-002	0.53888014	1.178e-002	0.992
Fluoranthene	AVRG		0.92905025		14.9
Fluorene	AVRG		1.22178164		8.0
Hexachlorobenzene	AVRG		0.23820934		4.6
Hexachlorobutadiene	AVRG		0.20741705		2.8
Hexachlorocyclopentadiene	LINR	6.469e-002	0.25885306		0.998
Hexachloroethane	AVRG		0.60276355		4.2
Indeno(1,2,3-cd)pyrene	LINR	6.3e-002	0.74167215		0.995
Isophorone	AVRG		0.63556137		5.3
2-Methylnaphthalene	AVRG		0.55602087		7.8
1-Methylnaphthalene	AVRG		0.54172340		4.8
Naphthalene	AVRG		1.01337341		2.4
4-Methylphenol	AVRG		1.06619691		9.2
3-Methylphenol	AVRG		1.07265077		8.6
2-Methylphenol	AVRG		1.13009389		5.5
2-Nitroaniline	LINR	8.86e-003	0.35295207		0.999
3-Nitroaniline	LINR	5.889e-003	0.27555471		0.996
4-Nitroaniline	2ORDR	1.422e-002	5.89310086	-5.0038125	0.999
Nitrobenzene	AVRG		0.38818443		8.7
2-Nitrophenol	LINR	1.444e-002	0.20307522		1.000
4-Nitrophenol	2ORDR	0.18521668	2.62258704	2.54114001	0.993
N-Nitroso-di-methylamine	AVRG		0.58654075		14.4
N-Nitrosodiphenylamine	AVRG		0.49774537		12.7
N-Nitroso-di-n-propylamine	AVRG		0.87879819		8.1
Pentachlorophenol	LINR	0.12089530	0.15114186		0.998
Phenanthrene	AVRG		1.05899029		3.6
Phenol	AVRG		1.72787183		5.6
Pyrene	LINR	0.00000000	1.46047357		0.997
Pyridine	AVRG		1.35908987		12.7
1,2,4,5-Tetrachlorobenzene	AVRG		0.32061233		4.2
1,2,4-Trichlorobenzene	AVRG		0.34474504		1.8
2,4,5-Trichlorophenol	AVRG		0.39207779		14.7

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA57889A

Instrument ID: BNA3 Calibration Date(s): 06/02/09 06/02/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0729 1430

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
2,4,6-Trichlorophenol	LINR	1.958e-002	0.41724630		1.000
1,4-Dioxane	AVRG		0.57961864		4.1
2-Fluorophenol	AVRG		1.23814162		12.0
Phenol-d6	AVRG		1.58593524		5.4
Nitrobenzene-d5	AVRG		0.39802529		9.5
2-Fluorobiphenyl	AVRG		1.33382819		5.8
2,4,6-Tribromophenol	LINR	7.683e-002	0.12003539		0.999
Terphenyl-d14	AVRG		0.98016326		11.6

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract: 1XBN4.m (ppbna3.sub)

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA57889A

Instrument ID: BNA3 Calibration Date(s): 06/02/09 06/02/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0729 1430

LAB FILE ID: RF0.5: CAL1H RF1: CAL1-2 RF2: CAL1-3
RF5: CAL1-4 RF10: CAL1-5

COMPOUND	RF0.5	RF1	RF2	RF5	RF10
Acenaphthene	1.056	1.111	1.114	1.147	1.146
Acenaphthylene	1.160	1.293	1.374	1.523	1.562
Acetophenone	1.568	1.494	1.665	1.679	1.823
Aniline	1.438	1.499	1.506	1.751	1.841
Anthracene	0.782	0.796	0.865	0.999	1.020
Benzoic acid				0.082	0.132
Benzo(a)anthracene	1.017	0.874	0.915	0.953	1.040
Benzo(b)fluoranthene	0.585	0.638	0.809	1.018	1.196
Benzo(k)fluoranthene	0.802	0.979	0.829	1.126	1.261
Benzo(g,h,i)perylene	0.554	0.598	0.651	0.533	0.562
Benzo(a)pyrene	0.439	0.584	0.562	0.818	0.941
Benzyl alcohol		0.693	0.636	0.805	0.851
1,1'-Biphenyl	1.265	1.394	1.346	1.482	1.460
bis(2-Chloroethoxy)methane	0.339	0.354	0.388	0.425	0.426
bis(2-Chloroethyl)ether	1.188	1.352	1.418	1.440	1.435
bis(2-Chloroisopropyl)ether	1.684	1.778	1.767	1.827	1.838
Bis(2-ethylhexyl)phthalate	0.201	0.181	0.265	0.431	0.660
4-Bromophenyl-phenylether	0.161	0.191	0.189	0.230	0.234
Butylbenzylphthalate	0.203	0.191	0.302	0.427	0.578
Caprolactam			0.059	0.081	0.097
Carbazole		0.628	0.682	0.832	0.871
4-Chloroaniline	0.320	0.324	0.320	0.378	0.390
4-Chloro-3-methylphenol	0.226	0.210	0.231	0.275	0.306
2-Chloronaphthalene	0.985	1.124	1.060	1.205	1.188
2-Chlorophenol	1.079	1.189	1.268	1.400	1.386
4-Chlorophenyl-phenylether	0.550	0.564	0.640	0.631	0.652
Chrysene	0.908	0.918	0.952	1.045	1.047
Dibenz(a,h)anthracene	0.463	0.466	0.454	0.491	0.476
Dibenzofuran	1.322	1.439	1.595	1.662	1.665
1,4-Dichlorobenzene	1.552	1.509	1.628	1.568	1.549
1,2-Dichlorobenzene	1.298	1.423	1.450	1.467	1.478
1,3-Dichlorobenzene	1.274	1.484	1.611	1.564	1.558
2,4-Dichlorophenol	0.252	0.219	0.251	0.302	0.311
Diethylphthalate	0.953	0.945	1.175	1.207	1.265
2,4-Dimethylphenol	0.264	0.296	0.298	0.346	0.339
Dimethylphthalate	1.100	1.211	1.235	1.291	1.338
Di-n-butylphthalate	0.604	0.640	0.818	1.018	1.194

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA57889A

Instrument ID: BNA3 Calibration Date(s): 06/02/09 06/02/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0729 1430

LAB FILE ID: RF0.5: CAL1H RF1: CAL1-2 RF2: CAL1-3
RF5: CAL1-4 RF10: CAL1-5

COMPOUND	RF0.5	RF1	RF2	RF5	RF10
4,6-Dinitro-2-methylphenol			0.020	0.053	0.100
2,4-Dinitrophenol				0.023	0.065
2,4-Dinitrotoluene		0.160	0.221	0.318	0.371
2,6-Dinitrotoluene		0.158	0.176	0.259	0.288
1,2-Diphenylhydrazine		0.710	0.662	0.840	0.839
Di-n-octylphthalate				0.688	1.133
Fluoranthene	0.736	0.673	0.884	0.896	1.019
Fluorene	1.057	1.032	1.230	1.257	1.306
Hexachlorobenzene	0.221	0.217	0.247	0.247	0.246
Hexachlorobutadiene	0.211	0.201	0.212	0.219	0.205
Hexachlorocyclopentadiene		0.093	0.052	0.140	0.176
Hexachloroethane	0.559	0.585	0.636	0.627	0.628
Indeno(1,2,3-cd)pyrene	0.516	0.587	0.550	0.335	0.434
Isophorone	0.584	0.575	0.639	0.653	0.676
2-Methylnaphthalene	0.466	0.492	0.584	0.571	0.592
1-Methylnaphthalene	0.546	0.489	0.581	0.552	0.564
Naphthalene	1.026	1.000	1.026	1.053	1.036
4-Methylphenol	0.912	0.952	0.943	1.098	1.182
3-Methylphenol	0.890	0.984	0.997	1.098	1.182
2-Methylphenol	1.073	1.065	1.030	1.133	1.238
2-Nitroaniline		0.191	0.200	0.299	0.334
3-Nitroaniline		0.127	0.154	0.222	0.260
4-Nitroaniline		0.119	0.095	0.172	0.167
Nitrobenzene	0.329	0.342	0.351	0.409	0.415
2-Nitrophenol		0.117	0.128	0.174	0.187
4-Nitrophenol				0.107	0.030
N-Nitroso-di-methylamine	0.478	0.475	0.449	0.592	0.635
N-Nitrosodiphenylamine	0.387	0.418	0.425	0.534	0.542
N-Nitroso-di-n-propylamine	0.796	0.788	0.948	0.916	0.997
Pentachlorophenol					0.083
Phenanthrene	0.976	1.040	1.094	1.105	1.090
Phenol	1.574	1.640	1.639	1.847	1.860
Pyrene	0.977	1.119	1.544	1.448	1.563
Pyridine		0.981	1.153	1.398	1.438
1,2,4,5-Tetrachlorobenzene	0.319	0.296	0.340	0.326	0.332
1,2,4-Trichlorobenzene	0.338	0.344	0.358	0.353	0.342
2,4,5-Trichlorophenol		0.308	0.303	0.349	0.396

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA57889A

Instrument ID: BNA3 Calibration Date(s): 06/02/09 06/02/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0729 1430

LAB FILE ID: RF0.5: CAL1H RF1: CAL1-2 RF2: CAL1-3
RF5: CAL1-4 RF10: CAL1-5

COMPOUND	RF0.5	RF1	RF2	RF5	RF10
2,4,6-Trichlorophenol		0.241	0.235	0.346	0.378
1,4-Dioxane	0.563	0.560	0.609	0.607	0.587
2-Fluorophenol	0.918	1.073	1.140	1.318	1.356
Phenol-d6	1.460	1.469	1.530	1.682	1.710
Nitrobenzene-d5	0.321	0.356	0.360	0.412	0.424
2-Fluorobiphenyl	1.171	1.276	1.263	1.382	1.376
2,4,6-Tribromophenol		0.061	0.058	0.093	0.104
Terphenyl-d14		0.740	0.952	0.937	1.063

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA57889A

Instrument ID: BNA3 Calibration Date(s): 06/02/09 06/02/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0729 1430

LAB FILE ID: RF20: CAL1-6 RF30: RF40:
RF50: CAL1-8 RF60: CAL1-9

COMPOUND	RF20	RF30	RF40	RF50	RF60
Acenaphthene	1.138			1.124	1.106
Acenaphthylene	1.571			1.547	1.542
Acetophenone	1.641			1.678	1.686
Aniline	1.671			1.586	1.618
Anthracene	1.040			1.036	1.024
Benzoic acid	0.149			0.229	0.249
Benzo(a)anthracene	1.064			1.110	1.100
Benzo(b)fluoranthene	1.196			1.343	1.285
Benzo(k)fluoranthene	1.266			1.331	1.276
Benzo(g,h,i)perylene	0.721			0.767	0.690
Benzo(a)pyrene	0.991			1.093	1.100
Benzyl alcohol	0.826			0.876	0.891
1,1'-Biphenyl	1.481			1.449	1.398
bis(2-Chloroethoxy)methane	0.411			0.422	0.415
bis(2-Chloroethyl)ether	1.361			1.364	1.325
bis(2-Chloroisopropyl)ether	1.720			1.626	1.604
Bis(2-ethylhexyl)phthalate	0.735			0.770	0.785
4-Bromophenyl-phenylether	0.225			0.242	0.230
Butylbenzylphthalate	0.638			0.634	0.610
Caprolactam	0.089			0.093	0.098
Carbazole	0.845			0.824	0.833
4-Chloroaniline	0.367			0.380	0.388
4-Chloro-3-methylphenol	0.289			0.316	0.321
2-Chloronaphthalene	1.212			1.177	1.144
2-Chlorophenol	1.376			1.368	1.348
4-Chlorophenyl-phenylether	0.634			0.636	0.636
Chrysene	1.047			1.053	1.039
Dibenz(a,h)anthracene	0.574			0.736	0.720
Dibenzofuran	1.640			1.627	1.602
1,4-Dichlorobenzene	1.542			1.529	1.493
1,2-Dichlorobenzene	1.465			1.409	1.393
1,3-Dichlorobenzene	1.558			1.508	1.478
2,4-Dichlorophenol	0.314			0.321	0.316
Diethylphthalate	1.250			1.233	1.263
2,4-Dimethylphenol	0.335			0.325	0.326
Dimethylphthalate	1.295			1.313	1.320
Di-n-butylphthalate	1.265			1.212	1.223

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA57889A

Instrument ID: BNA3 Calibration Date(s): 06/02/09 06/02/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0729 1430

LAB FILE ID: RF20: CAL1-6 RF30: RF40:
RF50: CAL1-8 RF60: CAL1-9

COMPOUND	RF20	RF30	RF40	RF50	RF60
4,6-Dinitro-2-methylphenol	0.112			0.143	0.150
2,4-Dinitrophenol	0.087			0.154	0.172
2,4-Dinitrotoluene	0.380			0.387	0.406
2,6-Dinitrotoluene	0.290			0.302	0.308
1,2-Diphenylhydrazine	0.805			0.860	0.804
Di-n-octylphthalate	1.293			1.798	1.668
Fluoranthene	1.082			0.995	1.099
Fluorene	1.283			1.288	1.306
Hexachlorobenzene	0.236			0.242	0.235
Hexachlorobutadiene	0.212			0.206	0.199
Hexachlorocyclopentadiene	0.210			0.246	0.230
Hexachloroethane	0.620			0.612	0.594
Indeno(1,2,3-cd)pyrene	0.558			0.683	0.649
Isophorone	0.638			0.665	0.667
2-Methylnaphthalene	0.567			0.585	0.589
1-Methylnaphthalene	0.539			0.551	0.556
Naphthalene	1.031			1.009	0.986
4-Methylphenol	1.107			1.159	1.160
3-Methylphenol	1.107			1.159	1.160
2-Methylphenol	1.160			1.174	1.186
2-Nitroaniline	0.344			0.360	0.363
3-Nitroaniline	0.263			0.288	0.297
4-Nitroaniline	0.169			0.223	0.241
Nitrobenzene	0.420			0.412	0.402
2-Nitrophenol	0.197			0.204	0.202
4-Nitrophenol	0.170			0.247	0.262
N-Nitroso-di-methylamine	0.664			0.658	0.641
N-Nitrosodiphenylamine	0.508			0.547	0.517
N-Nitroso-di-n-propylamine	0.883			0.909	0.919
Pentachlorophenol	0.105			0.138	0.145
Phenanthrene	1.083			1.067	1.042
Phenol	1.807			1.778	1.754
Pyrene	1.745			1.518	1.389
Pyridine	1.482			1.461	1.431
1,2,4,5-Tetrachlorobenzene	0.311			0.328	0.332
1,2,4-Trichlorobenzene	0.348			0.344	0.337
2,4,5-Trichlorophenol	0.407			0.442	0.438

FORM VI SV

FORM 6

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA57889A

Instrument ID: BNA3 Calibration Date(s): 06/02/09 06/02/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0729 1430

LAB FILE ID: RF20: CAL1-6 RF30: RF40:

RF50: CAL1-8 RF60: CAL1-9

COMPOUND	RF20	RF30	RF40	RF50	RF60
2,4,6-Trichlorophenol	0.400			0.413	0.407
1,4-Dioxane	0.616			0.568	0.545
2-Fluorophenol	1.395			1.323	1.289
Phenol-d6	1.659			1.629	1.613
Nitrobenzene-d5	0.429			0.425	0.416
2-Fluorobiphenyl	1.426			1.367	1.318
2,4,6-Tribromophenol	0.105			0.116	0.112
Terphenyl-d14	1.156			1.039	0.964

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA57889A

Instrument ID: BNA3 Calibration Date(s): 06/02/09 06/02/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0729 1430

LAB FILE ID: RF70: RF80: CAL1-10 RF100: CAL1-11

COMPOUND	RF70	RF80	RF100
Acenaphthene		1.102	1.092
Acenaphthylene		1.520	1.504
Acetophenone		1.535	1.528
Aniline		1.483	1.495
Anthracene		1.010	1.019
Benzoic acid		0.223	0.238
Benzo(a)anthracene		1.064	1.083
Benzo(b)fluoranthene		1.286	1.310
Benzo(k)fluoranthene		1.219	1.242
Benzo(g,h,i)perylene		0.796	0.785
Benzo(a)pyrene		1.101	1.120
Benzyl alcohol		0.826	0.839
1,1'-Biphenyl		1.443	1.447
bis(2-Chloroethoxy)methane		0.403	0.406
bis(2-Chloroethyl)ether		1.294	1.275
bis(2-Chloroisopropyl)ether		1.499	1.462
Bis(2-ethylhexyl)phthalate		0.760	0.787
4-Bromophenyl-phenylether		0.243	0.246
Butylbenzylphthalate		0.603	0.634
Caprolactam		0.093	0.086
Carbazole		0.789	0.779
4-Chloroaniline		0.359	0.365
4-Chloro-3-methylphenol		0.291	0.299
2-Chloronaphthalene		1.177	1.173
2-Chlorophenol		1.314	1.310
4-Chlorophenyl-phenylether		0.611	0.605
Chrysene		1.025	1.035
Dibenz(a,h)anthracene		0.789	0.789
Dibenzofuran		1.571	1.551
1,4-Dichlorobenzene		1.462	1.467
1,2-Dichlorobenzene		1.353	1.356
1,3-Dichlorobenzene		1.461	1.463
2,4-Dichlorophenol		0.310	0.315
Diethylphthalate		1.152	1.145
2,4-Dimethylphenol		0.321	0.325
Dimethylphthalate		1.256	1.250
Di-n-butylphthalate		1.115	1.138

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA57889A

Instrument ID: BNA3 Calibration Date(s): 06/02/09 06/02/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0729 1430

LAB FILE ID: RF70: RF80: CAL1-10 RF100: CAL1-11

COMPOUND	RF70	RF80	RF100
4,6-Dinitro-2-methylphenol		0.143	0.148
2,4-Dinitrophenol		0.148	0.154
2,4-Dinitrotoluene		0.365	0.364
2,6-Dinitrotoluene		0.291	0.290
1,2-Diphenylhydrazine		0.875	0.870
Di-n-octylphthalate		1.532	1.661
Fluoranthene		0.947	0.960
Fluorene		1.233	1.226
Hexachlorobenzene		0.244	0.246
Hexachlorobutadiene		0.204	0.205
Hexachlorocyclopentadiene		0.253	0.257
Hexachloroethane		0.584	0.584
Indeno(1,2,3-cd)pyrene		0.733	0.741
Isophorone		0.623	0.635
2-Methylnaphthalene		0.554	0.559
1-Methylnaphthalene		0.516	0.523
Naphthalene		0.983	0.983
4-Methylphenol		1.077	1.072
3-Methylphenol		1.077	1.072
2-Methylphenol		1.120	1.122
2-Nitroaniline		0.350	0.346
3-Nitroaniline		0.269	0.266
4-Nitroaniline			
Nitrobenzene		0.401	0.400
2-Nitrophenol		0.200	0.202
4-Nitrophenol		0.229	0.228
N-Nitroso-di-methylamine		0.640	0.633
N-Nitrosodiphenylamine		0.550	0.550
N-Nitroso-di-n-propylamine		0.817	0.815
Pentachlorophenol		0.138	0.144
Phenanthrene		1.045	1.047
Phenol		1.694	1.684
Pyrene		1.423	1.478
Pyridine		1.437	1.451
1,2,4,5-Tetrachlorobenzene		0.306	0.317
1,2,4-Trichlorobenzene		0.342	0.342
2,4,5-Trichlorophenol		0.438	0.445

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA57889A

Instrument ID: BNA3 Calibration Date(s): 06/02/09 06/02/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0729 1430

LAB FILE ID: RF70: RF80: CAL1-10 RF100: CAL1-11

COMPOUND	RF70	RF80	RF100
2,4,6-Trichlorophenol		0.416	0.413
1,4-Dioxane		0.571	0.569
2-Fluorophenol		1.288	1.280
Phenol-d6		1.550	1.557
Nitrobenzene-d5		0.418	0.420
2-Fluorobiphenyl		1.384	1.374
2,4,6-Tribromophenol		0.117	0.121
Terphenyl-d14		0.962	1.008

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract: /X6N4.m (scomp.sh6)

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA57889B

Instrument ID: BNA3 Calibration Date(s): 06/02/09 06/02/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0729 2041

LAB FILE ID: RF1: CAL2-2 RF2: CAL2-3 RF5: CAL2-4
RF10: CAL2-5 RF20: CAL2-6

COMPOUND	RF1	RF2	RF5	RF10	RF20
Atrazine	0.149	0.144	0.180	0.185	0.199
Benzaldehyde	0.826	0.811	0.934	0.957	0.960
Benzidine			0.241	0.373	0.410
3,3'-Dichlorobenzidine	0.129	0.116	0.195	0.253	0.250
2,3,4,6-Tetrachlorophenol		0.038	0.085	0.122	0.157

FORM VI SV

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: SEQ-TUN1 DFTPP Injection Date: 10/17/09

Instrument ID: BNA3 DFTPP Injection Time: 1456

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	44.9
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	48.1
70	Less than 2.0% of mass 69	0.2 (0.5)1
127	40.0 - 60.0% of mass 198	56.7
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.0
275	10.0 - 30.0% of mass 198	23.5
365	Greater than 1.0% of mass 198	2.28
441	Present, but less than mass 443	6.4
442	Greater than 40.0% of mass 198	44.9
443	17.0 - 23.0% of mass 442	9.0 (19.9)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV50PPM	SEQ-CCV1	SEQ-CCV1	10/17/09	1519
02	9J07018-BLK1	9J07018-BLK1	S1BS1007	10/17/09	1558
03	9J07018-BLK1	9J07018-BS1	S1LS1007	10/17/09	1637
04	NTC21SB02-SO	0910006-42	1000642	10/17/09	1715
05	NTC21SB02-SO	0910006-43	1000643	10/17/09	1754
06	NTC21SB03-SO	0910006-44	1000644	10/17/09	1833
07	NTC21SB03-SO	0910006-45	1000645	10/17/09	1912
08	NTC21SB05-SO	0910006-46	1000646	10/17/09	1950
09	NTC21SB05-SO	0910006-47	1000647	10/17/09	2029
10	NTC21SB08-SO	0910006-48	1000648	10/17/09	2107
11	NTC21SB08-SO	0910006-49	1000649	10/17/09	2146
12	NTC21SB02-SO	0910006-43MS	1000643M	10/17/09	2225
13	NTC21SB02-SO	0910006-43MSD	1000643S	10/17/09	2304
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page 1 of 1

FORM V SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Instrument ID: BNA3 Calibration Date: 10/17/09 Time: 1519

Lab File ID: SEQ-CCV1 Init. Calib. Date(s): 06/02/09 06/02/09

Init. Calib. Times: 0729 2041

COMPOUND	$\overline{RRF}$	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D	
Acetophenone	1.630	1.551	50.00	47.59		AVRG	-4.8		
Atrazine	0.185	0.266	50.00	71.71		AVRG	43.4		
Benzaldehyde	0.899	0.989	50.00	55.00		AVRG	10.0		
bis(2-Chloroethoxy)methane	0.399	0.396	50.00	49.64		AVRG	-0.7		
1,1'-Biphenyl	1.416	1.462	50.00	51.59		AVRG	3.2		
bis(2-Chloroethyl)ether	1.345	1.295	50.00	48.14		AVRG	-3.7		
2,2-Oxybis(1-chloropropane)	1.680	1.366	50.00	40.64		AVRG	-18.7		
Bis(2-ethylhexyl)phthalate	0.558	1.292	50.00	83.03		LINR	66.1		
4-Bromophenyl-phenylether	0.219	0.254	50.00	57.96		AVRG	15.9		
Butylbenzylphthalate	0.482	0.962	50.00	77.38		LINR	54.8		
Caprolactam	0.087	0.088	50.00	50.79		AVRG	1.6		
4-Chloroaniline	0.359	0.361	50.00	50.28		AVRG	0.6		
Carbazole	0.787	0.880	50.00	55.92		AVRG	11.8		
4-Chloro-3-methylphenol	0.276	0.280	50.00	50.62		AVRG	1.2	20.0	
2-Chloronaphthalene (beta)	1.144	1.190	50.00	51.99		AVRG	4.0		
2-Chlorophenol	1.304	1.334	50.00	51.17		AVRG	2.3		
4-Chlorophenyl-phenylether	0.616	0.650	50.00	52.81		AVRG	5.6		
Dibenzofuran	1.567	1.564	50.00	49.91		AVRG	-0.2		
3,3'-Dichlorobenzidine	0.250	0.305	50.00	44.91		LINR	-10.2		
2,4-Dichlorophenol	0.291	0.309	50.00	53.02		AVRG	6.0	20.0	
Diethylphthalate	1.159	1.357	50.00	58.55		AVRG	17.1		
2,4-Dimethylphenol	0.318	0.288	50.00	45.28		AVRG	-9.4		
Dimethylphthalate	1.261	1.433	50.00	56.81		AVRG	13.6		
Di-n-butylphthalate	1.023	1.492	50.00	64.50		LINR	29.0		
4,6-Dinitro-2-methylphenol	0.109	0.130	50.00	46.08		LINR	-7.8		
2,4-Dinitrophenol	0.115	0.119	50.00	39.23	0.050	2ORDR	-21.5		
2,4-Dinitrotoluene	0.330	0.422	50.00	56.30		LINR	12.6		
2,6-Dinitrotoluene	0.262	0.329	50.00	55.89		LINR	11.8		
Di-n-octylphthalate	1.396	3.529	50.00	108.1		2ORDR	116.2	20.0	<
Hexachlorobenzene	0.238	0.245	50.00	51.45		AVRG	2.9		
Hexachlorobutadiene	0.207	0.238	50.00	57.38		AVRG	14.8	20.0	
Hexachlorocyclopentadiene	0.184	0.271	50.00	54.98	0.050	LINR	10.0		
Hexachloroethane	0.603	0.672	50.00	55.77		AVRG	11.5		
Isophorone	0.636	0.660	50.00	51.88		AVRG	3.8		
4-Methylphenol (p-cresol)	1.066	1.092	50.00	51.22		AVRG	2.4		
2-Methylphenol (o-cresol)	1.130	1.060	50.00	46.91		AVRG	-6.2		
2-Nitroaniline	0.310	0.316	50.00	45.06		LINR	-9.9		

FORM VII SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Instrument ID: BNA3 Calibration Date: 10/17/09 Time: 1519

Lab File ID: SEQ-CCV1 Init. Calib. Date(s): 06/02/09 06/02/09

Init. Calib. Times: 0729 2041

COMPOUND	$\overline{RRF}$	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
3-Nitroaniline	0.238	0.260	50.00	47.46		LINR	-5.1	
4-Nitroaniline	0.169	0.224	50.00	50.93		2ORDR	1.9	
Nitrobenzene	0.388	0.402	50.00	51.76		AVRG	3.5	
2-Nitrophenol	0.179	0.204	50.00	50.71		LINR	1.4	20.0
4-Nitrophenol	0.182	0.186	50.00	37.29	0.050	2ORDR	-25.4	
N-Nitrosodiphenylamine(1)	0.498	0.592	50.00	59.43		AVRG	18.8	20.0
N-Nitroso-di-n-propylamine	0.879	0.933	50.00	53.10	0.050	AVRG	6.2	
Pentachlorophenol	0.126	0.154	50.00	55.82		LINR	11.6	20.0
Phenol	1.728	1.457	50.00	42.17		AVRG	-15.6	20.0
2,4,5-Trichlorophenol	0.392	0.436	50.00	55.66		AVRG	11.3	
2,4,6-Trichlorophenol	0.361	0.405	50.00	49.31		LINR	-1.4	20.0
2-Fluorophenol	1.238	1.184	100.0	95.64		AVRG	-4.4	
Phenol-d6	1.586	1.407	100.0	88.72		AVRG	-11.3	
Nitrobenzene-d5	0.398	0.369	50.00	46.33		AVRG	-7.3	
2-Fluorobiphenyl	1.334	1.411	50.00	52.90		AVRG	5.8	
2,4,6-Tribromophenol	0.098	0.109	100.0	94.21		LINR	-5.8	
Terphenyl-d14	0.980	1.348	50.00	68.78		AVRG	37.6	

(1) Cannot be separated from Diphenylamine

FORM VII SV

FORM 4
SEMIVOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

9J07018-BLK1

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: S1BS1007 Lab Sample ID: 9J07018-BLK1

Instrument ID: BNA3 Date Extracted: 10/07/09

Matrix: (soil/water) SOIL Date Analyzed: 10/17/09

Level:(low/med) LOW GPC Cleanup: (Y/N) N Time Analyzed: 1558

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	9J07018-BLK1	9J07018-BS1	S1LS1007	10/17/09
02	NTC21SB02-SO	0910006-42	1000642	10/17/09
03	NTC21SB02-SO	0910006-43	1000643	10/17/09
04	NTC21SB03-SO	0910006-44	1000644	10/17/09
05	NTC21SB03-SO	0910006-45	1000645	10/17/09
06	NTC21SB05-SO	0910006-46	1000646	10/17/09
07	NTC21SB05-SO	0910006-47	1000647	10/17/09
08	NTC21SB08-SO	0910006-48	1000648	10/17/09
09	NTC21SB08-SO	0910006-49	1000649	10/17/09
10	NTC21SB02-SO	0910006-43MS	1000643M	10/17/09
11	NTC21SB02-SO	0910006-43MSD	1000643S	10/17/09
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COMMENTS:

FORM IV SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

9J07018-BLK1

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 9J07018-BLK1

Sample wt/vol: 15.0 (g/mL) G Lab File ID: S1BS1007

% Moisture: 0 decanted: (Y/N) N Date Sampled: _____

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/07/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 15:58

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	41	330		U
1912-24-9	Atrazine	28	330		U
100-52-7	Benzaldehyde	55	330		U
111-91-1	bis(2-Chloroethoxy)methane	31	330		U
92-52-4	1,1'-Biphenyl	29	330		U
111-44-4	bis(2-Chloroethyl)ether	41	330		U
108-60-1	2,2-Oxybis(1-chloropropane)	51	670		U
117-81-7	Bis(2-ethylhexyl)phthalate	36	330		U
101-55-3	4-Bromophenyl-phenylether	26	330		U
85-68-7	Butylbenzylphthalate	30	330		U
105-60-2	Caprolactam	67	330		U
106-47-8	4-Chloroaniline	48	330		U
86-74-8	Carbazole	36	670		U
59-50-7	4-Chloro-3-methylphenol	28	330		U
91-58-7	2-Chloronaphthalene (beta)	32	330		U
95-57-8	2-Chlorophenol	41	330		U
7005-72-3	4-Chlorophenyl-phenylether	31	330		U
132-64-9	Dibenzofuran	24	330		U
91-94-1	3,3'-Dichlorobenzidine	31	330		U
120-83-2	2,4-Dichlorophenol	19	330		U
84-66-2	Diethylphthalate	34	330		U
105-67-9	2,4-Dimethylphenol	21	670		U
131-11-3	Dimethylphthalate	30	330		U
84-74-2	Di-n-butylphthalate	30	330		U
534-52-1	4,6-Dinitro-2-methylphenol	22	1300		U
51-28-5	2,4-Dinitrophenol	130	3300		UY
121-14-2	2,4-Dinitrotoluene	24	330		U
606-20-2	2,6-Dinitrotoluene	38	330		U
117-84-0	Di-n-octylphthalate	27	330		U
118-74-1	Hexachlorobenzene	35	330		U
87-68-3	Hexachlorobutadiene	33	330		U
77-47-4	Hexachlorocyclopentadiene	61	330		U
67-72-1	Hexachloroethane	39	670		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

9J07018-BLK1

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 9J07018-BLK1

Sample wt/vol: 15.0 (g/mL) G Lab File ID: S1BS1007

% Moisture: 0 decanted: (Y/N) N Date Sampled: _____

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/07/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 15:58

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	28	330		U
106-44-5	4-Methylphenol (p-cresol)	26	330		U
95-48-7	2-Methylphenol (o-cresol)	39	330		U
88-74-4	2-Nitroaniline	32	1300		U
99-09-2	3-Nitroaniline	47	1300		U
100-01-6	4-Nitroaniline	100	1300		U
98-95-3	Nitrobenzene	34	330		U
88-75-5	2-Nitrophenol	22	330		U
100-02-7	4-Nitrophenol	81	1300		UY
86-30-6	N-Nitrosodiphenylamine (1)	32	330		U
621-64-7	N-Nitroso-di-n-propylamine	55	330		U
87-86-5	Pentachlorophenol	34	1300		U
108-95-2	Phenol	36	330		U
95-95-4	2,4,5-Trichlorophenol	27	330		U
88-06-2	2,4,6-Trichlorophenol	35	330		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA23827

Lab File ID: DF0303B1 DFTPP Injection Date: 03/03/09

Instrument ID: BNA1 DFTPP Injection Time: 1649

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	35.3
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	60.7
70	Less than 2.0% of mass 69	0.2 (0.4)1
127	40.0 - 60.0% of mass 198	44.9
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.7
275	10.0 - 30.0% of mass 198	18.0
365	Greater than 1.0% of mass 198	1.67
441	Present, but less than mass 443	8.3
442	Greater than 40.0% of mass 198	50.0
443	17.0 - 23.0% of mass 442	10.0 (20.1)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01		BNACAL001PPM	CAL001	03/03/09	1711
02		BNACAL002PPM	CAL002	03/03/09	1747
03		BNACAL005PPM	CAL005	03/03/09	1823
04		BNACAL010PPM	CAL010	03/03/09	1859
05		BNACAL020PPM	CAL020	03/03/09	1935
06		BNACAL040PPM	CAL040	03/03/09	2011
07		BNACAL050PPM	CAL050	03/03/09	2047
08		BNACAL060PPM	CAL060	03/03/09	2122
09		BNACAL080PPM	CAL080	03/03/09	2158
10		BNACAL100PPM	CAL100	03/03/09	2234
11		BNACAL001PPM	CALB001	03/03/09	2310
12		BNACAL002PPM	CALB002	03/03/09	2346
13		BNACAL005PPM	CALB005	03/04/09	0022
14		BNACAL010PPM	CALB010	03/04/09	0058
15		BNACAL020PPM	CALB020	03/04/09	0134
16		BNACAL040PPM	CALB040	03/04/09	0209
17		BNACAL050PPM	CALB050	03/04/09	0245
18		BNACAL060PPM	CALB060	03/04/09	0321
19		BNACAL080PPM	CALB080	03/04/09	0357
20					
21					
22					

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA75453

Instrument ID: BNA1 Calibration Date(s): 07/24/08 03/03/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 1610 2234

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
Acenaphthene	AVRG		1.12476844		12.2
Acenaphthylene	AVRG		1.54330785		13.0
Acetophenone	AVRG		1.49376744		14.6
Aniline	2ORDR	1.796e-002	0.43995798	0.67369863	0.993
Anthracene	AVRG		1.05199860		11.5
Benzoic acid	LINR	4.394e-002	0.31171568		0.995
Benzo(a)anthracene	AVRG		1.07248148		4.4
Benzo(b)fluoranthene	AVRG		1.14106649		5.2
Benzo(k)fluoranthene	AVRG		1.17725805		3.5
Benzo(g,h,i)perylene	AVRG		0.58035905		13.3
Benzo(a)pyrene	AVRG		0.95336952		4.2
Benzyl alcohol	AVRG		0.79351577		11.4
bis(2-Chloroethoxy)methane	AVRG		0.53756629		13.9
1,1'-Biphenyl	AVRG		1.52744255		12.5
bis(2-Chloroethyl)ether	AVRG		1.71941904		13.5
bis(2-Chloroisopropyl)ether	2ORDR	1.737e-002	0.32529054	9.786e-002	0.996
Bis(2-ethylhexyl)phthalate	AVRG		1.34666770		6.4
4-Bromophenyl-phenylether	AVRG		0.26327168		9.3
Butylbenzylphthalate	AVRG		1.03408471		5.2
Carbazole	AVRG		1.03242714		9.9
4-Chloroaniline	AVRG		0.39118261		12.2
Caprolactam	AVRG		0.12943445		12.9
4-Chloro-3-methylphenol	AVRG		0.30812941		5.9
2-Chloronaphthalene	AVRG		1.14254719		13.7
2-Chlorophenol	2ORDR	0.00000000	0.58868509	0.26467485	0.998
4-Chlorophenyl-phenylether	AVRG		0.55684664		10.0
Chrysene	AVRG		0.99090535		4.1
Dibenz(a,h)anthracene	AVRG		0.56002636		8.1
Dibenzofuran	AVRG		1.59882057		14.8
1,4-Dichlorobenzene	AVRG		1.51369077		14.3
1,2-Dichlorobenzene	2ORDR	2.281e-002	0.40546438	0.28555008	0.998
1,3-Dichlorobenzene	AVRG		1.67402954		14.3
2,4-Dichlorophenol	AVRG		0.33184302		11.9
Diethylphthalate	AVRG		1.62680916		14.5
2,4-Dimethylphenol	AVRG		0.24694694		4.6
Dimethylphthalate	AVRG		1.61518286		14.4
Di-n-butylphthalate	AVRG		1.88673550		14.0

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA75453

Instrument ID: BNA1 Calibration Date(s): 07/24/08 03/03/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 1610 2234

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
4,6-Dinitro-2-methylphenol	LINR	9.622e-002	0.21403517		0.998
2,4-Dinitrophenol	LINR	0.17583436	0.26934481		0.997
2,4-Dinitrotoluene	AVRG		0.48856655		4.3
2,6-Dinitrotoluene	AVRG		0.41586497		4.9
Di-n-octylphthalate	AVRG		3.01882180		14.5
1,2-Diphenylhydrazine	AVRG		1.14519372		13.9
Fluoranthene	AVRG		1.11690314		9.6
Fluorene	AVRG		1.27313975		11.8
Hexachlorobenzene	AVRG		0.26360346		9.9
Hexachlorobutadiene	AVRG		0.19263365		13.5
Hexachlorocyclopentadiene	LINR	-1.56e-002	0.22822564		0.995
Hexachloroethane	AVRG		0.68390330		14.3
Indeno(1,2,3-cd)pyrene	AVRG		0.54510111		8.3
Isophorone	AVRG		0.85552403		14.9
2-Methylnaphthalene	AVRG		0.62990110		13.8
1-Methylnaphthalene	AVRG		0.59565811		13.3
4-Methylphenol	AVRG		1.09263185		11.4
2-Methylphenol	AVRG		1.09901017		11.0
Naphthalene	2ORDR	3.941e-002	0.44567284	0.71673462	0.998
3-Methylphenol	AVRG		1.08726860		11.0
2-Nitroaniline	AVRG		0.36290545		6.1
3-Nitroaniline	AVRG		0.38875625		6.2
4-Nitroaniline	2ORDR	1.817e-002	2.98757028	-0.4619996	0.996
Nitrobenzene	2ORDR	1.85e-002	1.57529040	2.17158771	0.996
2-Nitrophenol	AVRG		0.27528396		9.2
4-Nitrophenol	LINR	4.713e-002	0.23543788		0.999
N-Nitroso-di-methylamine	AVRG		0.81111877		8.5
N-Nitrosodiphenylamine	AVRG		0.64569708		9.5
N-Nitroso-di-n-propylamine	2ORDR	2.857e-002	0.57342267	0.75939788	0.994
Pentachlorophenol	LINR	0.19891481	0.19167337		0.999
Phenanthrene	AVRG		1.06166124		11.6
Phenol	2ORDR	1.993e-003	0.41982898	0.13462245	0.999
Pyrene	AVRG		1.38025498		3.6
Pyridine	AVRG		1.79414105		6.9
1,2,4,5-Tetrachlorobenzene	AVRG		0.29602625		14.1
1,2,4-Trichlorobenzene	AVRG		0.38099771		14.8
2,4,5-Trichlorophenol	AVRG		0.39980127		6.5

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA75453

Instrument ID: BNA1 Calibration Date(s): 07/24/08 03/03/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 1610 2234

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
2,4,6-Trichlorophenol	AVRG		0.38314696		6.5
2-Fluorophenol	2ORDR	4.245e-002	0.40612717	0.14105971	0.994
Phenol-d6	2ORDR	4.229e-003	0.45763171	7.987e-002	1.000
Nitrobenzene-d5	AVRG		0.43528444		14.4
2-Fluorobiphenyl	AVRG		1.31527146		14.2
2,4,6-Tribromophenol	AVRG		0.12846058		7.6
Terphenyl-d14	AVRG		0.91359863		4.6

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FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA75453

Instrument ID: BNA1 Calibration Date(s): 07/24/08 03/03/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 1610 2234

LAB FILE ID: RF1: CAL001 RF2: CAL002 RF5: CAL005
RF10: CAL010 RF20: CAL020

COMPOUND	RF1	RF2	RF5	RF10	RF20
Acenaphthene	1.311	1.267	1.258	1.192	1.158
Acenaphthylene	1.832	1.754	1.690	1.656	1.603
Acetophenone	1.683	1.835	1.598	1.589	1.448
Aniline	2.065	2.004	1.639	1.334	0.994
Anthracene	1.219	1.222	1.177	1.072	1.004
Benzoic acid		0.180	0.224	0.246	0.271
Benzo(a)anthracene	1.160	1.084	1.123	1.090	1.040
Benzo(b)fluoranthene	1.084	1.072	1.094	1.210	1.084
Benzo(k)fluoranthene	1.222	1.130	1.230	1.176	1.157
Benzo(g,h,i)perylene	0.674	0.678	0.644	0.623	0.499
Benzo(a)pyrene	0.971	0.962	0.982	0.999	0.893
Benzyl alcohol	0.816	0.818	0.833	0.923	0.867
bis(2-Chloroethoxy)methane	0.590	0.600	0.624	0.591	0.531
1,1'-Biphenyl	1.839	1.666	1.654	1.502	1.543
bis(2-Chloroethyl)ether	2.034	1.988	1.831	1.834	1.608
bis(2-Chloroisopropyl)ether	2.653	2.580	2.380	2.368	2.068
Bis(2-ethylhexyl)phthalate	1.317	1.370	1.411	1.502	1.300
4-Bromophenyl-phenylether	0.286	0.275	0.302	0.279	0.237
Butylbenzylphthalate	1.009	0.927	1.015	1.094	1.012
Carbazole	1.169	1.141	1.180	1.037	1.013
4-Chloroaniline	0.436	0.438	0.435	0.420	0.380
Caprolactam	0.142	0.139	0.148	0.152	0.134
4-Chloro-3-methylphenol	0.309	0.334	0.310	0.326	0.314
2-Chloronaphthalene	1.410	1.294	1.249	1.171	1.190
2-Chlorophenol	1.548	1.597	1.446	1.559	1.313
4-Chlorophenyl-phenylether	0.648	0.606	0.621	0.538	0.573
Chrysene	1.013	1.041	1.008	1.007	0.991
Dibenz(a,h)anthracene	0.555	0.531	0.618	0.572	0.499
Dibenzofuran	1.994	1.827	1.823	1.679	1.633
1,4-Dichlorobenzene	1.760	1.720	1.676	1.639	1.495
1,2-Dichlorobenzene	1.968	1.779	1.650	1.688	1.391
1,3-Dichlorobenzene	1.897	1.897	1.865	1.858	1.641
2,4-Dichlorophenol	0.311	0.348	0.395	0.386	0.339
Diethylphthalate	1.980	1.829	1.904	1.640	1.617
2,4-Dimethylphenol	0.263	0.239	0.246	0.250	0.249
Dimethylphthalate	2.005	1.887	1.800	1.609	1.543
Di-n-butylphthalate	2.169	2.074	2.256	2.066	1.828

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FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA75453

Instrument ID: BNA1 Calibration Date(s): 07/24/08 03/03/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 1610 2234

LAB FILE ID: RF1: CAL001 RF2: CAL002 RF5: CAL005
RF10: CAL010 RF20: CAL020

COMPOUND	RF1	RF2	RF5	RF10	RF20
4,6-Dinitro-2-methylphenol			0.115	0.146	0.169
2,4-Dinitrophenol			0.058	0.097	0.153
2,4-Dinitrotoluene	0.484	0.487	0.524	0.504	0.500
2,6-Dinitrotoluene	0.453	0.422	0.424	0.413	0.432
Di-n-octylphthalate	2.330	2.515	2.800	3.087	2.990
1,2-Diphenylhydrazine	1.310	1.293	1.322	1.217	1.086
Fluoranthene	1.223	1.199	1.288	1.158	1.119
Fluorene	1.511	1.437	1.435	1.304	1.298
Hexachlorobenzene	0.314	0.279	0.296	0.258	0.258
Hexachlorobutadiene	0.229	0.216	0.212	0.210	0.185
Hexachlorocyclopentadiene	0.184	0.197	0.217	0.218	0.237
Hexachloroethane	0.837	0.738	0.745	0.755	0.635
Indeno(1,2,3-cd)pyrene	0.573	0.585	0.592	0.580	0.491
Isophorone	0.962	0.980	0.958	1.008	0.852
2-Methylnaphthalene	0.701	0.703	0.721	0.703	0.615
1-Methylnaphthalene	0.697	0.643	0.659	0.657	0.560
4-Methylphenol	1.217	1.135	1.177	1.193	1.103
2-Methylphenol	1.308	1.195	1.155	1.245	1.059
Naphthalene	1.249	1.207	1.226	1.101	0.985
3-Methylphenol	1.173	1.134	1.177	1.193	1.103
2-Nitroaniline	0.391	0.363	0.387	0.362	0.391
3-Nitroaniline	0.342	0.360	0.391	0.385	0.417
4-Nitroaniline	0.291	0.260	0.246	0.272	0.335
Nitrobenzene	0.542	0.551	0.476	0.510	0.405
2-Nitrophenol	0.270	0.260	0.304	0.313	0.292
4-Nitrophenol		0.138	0.163	0.202	0.210
N-Nitroso-di-methylamine	0.911	0.877	0.856	0.859	0.834
N-Nitrosodiphenylamine	0.727	0.710	0.700	0.704	0.628
N-Nitroso-di-n-propylamine	1.164	1.189	1.122	1.042	0.947
Pentachlorophenol				0.072	0.101
Phenanthrene	1.253	1.168	1.175	1.151	1.058
Phenol	2.306	2.220	2.091	2.122	1.779
Pyrene	1.336	1.412	1.456	1.419	1.345
Pyridine	2.022	1.878	1.945	1.838	1.761
1,2,4,5-Tetrachlorobenzene	0.350	0.321	0.339	0.332	0.307
1,2,4-Trichlorobenzene	0.452	0.438	0.414	0.425	0.387
2,4,5-Trichlorophenol	0.355	0.359	0.425	0.399	0.431

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FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA75453

Instrument ID: BNA1 Calibration Date(s): 07/24/08 03/03/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 1610 2234

LAB FILE ID: RF1: CAL001 RF2: CAL002 RF5: CAL005
RF10: CAL010 RF20: CAL020

COMPOUND	RF1	RF2	RF5	RF10	RF20
2,4,6-Trichlorophenol	0.367	0.379	0.413	0.399	0.399
2-Fluorophenol	1.751	1.698	1.606	1.659	1.477
Phenol-d6	2.020	2.033	1.933	1.953	1.626
Nitrobenzene-d5	0.502	0.502	0.478	0.505	0.408
2-Fluorobiphenyl	1.650	1.442	1.421	1.322	1.266
2,4,6-Tribromophenol	0.104	0.120	0.133	0.135	0.131
Terphenyl-d14	0.864	0.867	0.947	0.980	0.876

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FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA75453

Instrument ID: BNA1 Calibration Date(s): 07/24/08 03/03/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 1610 2234

LAB FILE ID: RF30: RF40: CAL040 RF50: CAL050
RF60: CAL060 RF70: CAL070

COMPOUND	RF30	RF40	RF50	RF60	RF70
Acenaphthene		1.109	1.080	1.003	
Acenaphthylene		1.535	1.448	1.363	
Acetophenone		1.296	1.263	1.238	
Aniline		0.930	0.886	0.812	
Anthracene		1.028	1.016	0.988	
Benzoic acid		0.282	0.289	0.332	
Benzo(a)anthracene		1.082	1.068	1.060	
Benzo(b)fluoranthene		1.099	1.178	1.163	
Benzo(k)fluoranthene		1.135	1.196	1.138	
Benzo(g,h,i)perylene		0.617	0.536	0.475	
Benzo(a)pyrene		0.938	1.004	0.889	
Benzyl alcohol		0.809	0.756	0.699	
bis(2-Chloroethoxy)methane		0.491	0.446	0.428	
1,1'-Biphenyl		1.410	1.365	1.241	
bis(2-Chloroethyl)ether		1.433	1.546	1.479	
bis(2-Chloroisopropyl)ether		1.937	1.820	1.686	
Bis(2-ethylhexyl)phthalate		1.446	1.336	1.245	
4-Bromophenyl-phenylether		0.275	0.253	0.250	
Butylbenzylphthalate		1.106	0.998	1.079	
Carbazole		1.046	0.976	0.936	
4-Chloroaniline		0.398	0.390	0.384	
Caprolactam		0.131	0.118	0.121	
4-Chloro-3-methylphenol		0.320	0.302	0.308	
2-Chloronaphthalene		1.102	1.138	1.023	
2-Chlorophenol		1.142	1.034	1.021	
4-Chlorophenyl-phenylether		0.545	0.545	0.530	
Chrysene		1.042	0.987	0.960	
Dibenz(a,h)anthracene		0.646	0.560	0.517	
Dibenzofuran		1.503	1.523	1.362	
1,4-Dichlorobenzene		1.346	1.256	1.218	
1,2-Dichlorobenzene		1.282	1.229	1.109	
1,3-Dichlorobenzene		1.501	1.440	1.293	
2,4-Dichlorophenol		0.332	0.323	0.333	
Diethylphthalate		1.512	1.492	1.349	
2,4-Dimethylphenol		0.260	0.244	0.258	
Dimethylphthalate		1.484	1.502	1.379	
Di-n-butylphthalate		1.726	1.754	1.604	

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FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA75453

Instrument ID: BNA1 Calibration Date(s): 07/24/08 03/03/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 1610 2234

LAB FILE ID: RF30: RF40: CAL040 RF50: CAL050
RF60: CAL060 RF70: CAL070

COMPOUND	RF30	RF40	RF50	RF60	RF70
4,6-Dinitro-2-methylphenol		0.188	0.197	0.195	
2,4-Dinitrophenol		0.203	0.232	0.232	
2,4-Dinitrotoluene		0.466	0.509	0.459	
2,6-Dinitrotoluene		0.413	0.426	0.399	
Di-n-octylphthalate		2.918	3.498	3.613	
1,2-Diphenylhydrazine		1.020	0.964	0.948	
Fluoranthene		1.138	1.074	1.029	
Fluorene		1.226	1.209	1.123	
Hexachlorobenzene		0.258	0.253	0.248	
Hexachlorobutadiene		0.184	0.171	0.179	
Hexachlorocyclopentadiene		0.251	0.240	0.234	
Hexachloroethane		0.606	0.596	0.559	
Indeno(1,2,3-cd)pyrene		0.584	0.540	0.485	
Isophorone		0.818	0.740	0.714	
2-Methylnaphthalene		0.546	0.524	0.526	
1-Methylnaphthalene		0.563	0.512	0.474	
4-Methylphenol		1.142	1.080	1.104	
2-Methylphenol		1.058	1.049	0.958	
Naphthalene		0.890	0.845	0.781	
3-Methylphenol		1.142	1.080	1.094	
2-Nitroaniline		0.352	0.372	0.339	
3-Nitroaniline		0.404	0.421	0.391	
4-Nitroaniline		0.348	0.394	0.350	
Nitrobenzene		0.418	0.378	0.371	
2-Nitrophenol		0.284	0.284	0.269	
4-Nitrophenol		0.218	0.229	0.218	
N-Nitroso-di-methylamine		0.796	0.777	0.712	
N-Nitrosodiphenylamine		0.636	0.613	0.616	
N-Nitroso-di-n-propylamine		0.787	0.749	0.742	
Pentachlorophenol		0.151	0.163	0.166	
Phenanthrene		1.035	1.026	0.952	
Phenol		1.580	1.509	1.404	
Pyrene		1.391	1.322	1.416	
Pyridine		1.719	1.655	1.686	
1,2,4,5-Tetrachlorobenzene		0.299	0.271	0.272	
1,2,4-Trichlorobenzene		0.356	0.338	0.329	
2,4,5-Trichlorophenol		0.419	0.422	0.394	

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FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA75453

Instrument ID: BNA1 Calibration Date(s): 07/24/08 03/03/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 1610 2234

LAB FILE ID: RF30: RF40: CAL040 RF50: CAL050
RF60: CAL060 RF70: CAL070

COMPOUND	RF30	RF40	RF50	RF60	RF70
2,4,6-Trichlorophenol		0.406	0.405	0.371	
2-Fluorophenol		1.309	1.232	1.081	
Phenol-d6		1.456	1.377	1.292	
Nitrobenzene-d5		0.410	0.377	0.400	
2-Fluorobiphenyl		1.177	1.184	1.061	
2,4,6-Tribromophenol		0.137	0.132	0.133	
Terphenyl-d14		0.908	0.878	0.945	

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FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA75453

Instrument ID: BNA1 Calibration Date(s): 07/24/08 03/03/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 1610 2234

LAB FILE ID: RF80: CAL080 RF90: CAL090 RF100: CAL100

COMPOUND	RF80	RF90	RF100
Acenaphthene	0.964		0.905
Acenaphthylene	1.346		1.206
Acetophenone			
Aniline	0.691		
Anthracene	0.863		0.931
Benzoic acid	0.309		0.298
Benzo(a)anthracene	1.006		1.012
Benzo(b)fluoranthene	1.214		1.212
Benzo(k)fluoranthene	1.151		1.235
Benzo(g,h,i)perylene	0.565		0.491
Benzo(a)pyrene	0.928		0.967
Benzyl alcohol	0.621		
bis(2-Chloroethoxy)methane			
1,1'-Biphenyl			
bis(2-Chloroethyl)ether			
bis(2-Chloroisopropyl)ether	1.635		1.419
Bis(2-ethylhexyl)phthalate	1.235		1.305
4-Bromophenyl-phenylether	0.224		0.250
Butylbenzylphthalate	1.031		1.071
Carbazole	0.900		0.926
4-Chloroaniline	0.343		0.286
Caprolactam	0.103		0.107
4-Chloro-3-methylphenol	0.274		0.284
2-Chloronaphthalene	0.942		0.907
2-Chlorophenol			
4-Chlorophenyl-phenylether	0.472		0.492
Chrysene	0.932		0.927
Dibenz(a,h)anthracene	0.571		0.530
Dibenzofuran	1.399		1.246
1,4-Dichlorobenzene			
1,2-Dichlorobenzene	0.998		
1,3-Dichlorobenzene			
2,4-Dichlorophenol	0.283		0.270
Diethylphthalate	1.318		
2,4-Dimethylphenol	0.231		0.229
Dimethylphthalate	1.327		
Di-n-butylphthalate	1.504		

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA75453

Instrument ID: BNA1 Calibration Date(s): 07/24/08 03/03/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 1610 2234

LAB FILE ID: RF80: CAL080 RF90: CAL090 RF100: CAL100

COMPOUND	RF80	RF90	RF100
4,6-Dinitro-2-methylphenol	0.198		0.212
2,4-Dinitrophenol	0.248		0.253
2,4-Dinitrotoluene	0.482		0.469
2,6-Dinitrotoluene	0.394		0.381
Di-n-octylphthalate	3.420		
1,2-Diphenylhydrazine			
Fluoranthene	0.939		1.002
Fluorene	1.100		1.088
Hexachlorobenzene	0.225		0.246
Hexachlorobutadiene	0.147		
Hexachlorocyclopentadiene	0.237		0.218
Hexachloroethane			
Indeno(1,2,3-cd)pyrene	0.544		0.476
Isophorone	0.668		
2-Methylnaphthalene			
1-Methylnaphthalene			
4-Methylphenol	0.983		0.792
2-Methylphenol	1.000		0.964
Naphthalene	0.678		0.625
3-Methylphenol	0.982		0.794
2-Nitroaniline	0.342		0.330
3-Nitroaniline	0.400		0.378
4-Nitroaniline	0.354		0.398
Nitrobenzene	0.318		0.308
2-Nitrophenol	0.241		0.236
4-Nitrophenol	0.229		0.235
N-Nitroso-di-methylamine	0.786		0.703
N-Nitrosodiphenylamine	0.560		0.563
N-Nitroso-di-n-propylamine	0.659		0.568
Pentachlorophenol	0.170		0.178
Phenanthrene	0.912		0.887
Phenol			
Pyrene	1.303		1.404
Pyridine	1.773		1.664
1,2,4,5-Tetrachlorobenzene	0.239		0.230
1,2,4-Trichlorobenzene	0.288		
2,4,5-Trichlorophenol	0.401		0.393

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA75453

Instrument ID: BNA1 Calibration Date(s): 07/24/08 03/03/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 1610 2234

LAB FILE ID: RF80: CAL080 RF90: CAL090 RF100: CAL100

COMPOUND	RF80	RF90	RF100
2,4,6-Trichlorophenol	0.350		0.342
2-Fluorophenol			
Phenol-d6			
Nitrobenzene-d5	0.335		
2-Fluorobiphenyl			
2,4,6-Tribromophenol	0.127		0.131
Terphenyl-d14	0.915		0.956

FORM VI SV

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA23827

Lab File ID: DF0303B2 DFTPP Injection Date: 03/04/09

Instrument ID: BNA1 DFTPP Injection Time: 0429

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	35.2
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	58.4
70	Less than 2.0% of mass 69	0.2 (0.4)1
127	40.0 - 60.0% of mass 198	44.6
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.3
275	10.0 - 30.0% of mass 198	17.3
365	Greater than 1.0% of mass 198	1.67
441	Present, but less than mass 443	6.8
442	Greater than 40.0% of mass 198	49.6
443	17.0 - 23.0% of mass 442	9.7 (19.6)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01		BNACAL100PPM	CALB100	03/04/09	0451
02		BNAICV050PPM	ICV01	03/04/09	0527
03		BNAICV050PPM	ICV03	03/04/09	0639
04		BNAICV050PPM	ICV01A	03/04/09	0715
05		BNAICV050PPM	ICV02A	03/04/09	0751
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page 1 of 1 FORM V SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA75453X

Instrument ID: BNA1 Calibration Date(s): 01/21/09 03/04/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 2030 0451

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
Atrazine	AVRG		0.23562876		6.0
Benzaldehyde	AVRG		1.17752713		11.4
Benzidine	AVRG		0.59068011		12.9
3,3'-Dichlorobenzidine	LINR	8.142e-003	0.35947172		0.998
2,3,4,6-Tetrachlorophenol	2ORDR	8.191e-002	3.31685216	1.01478033	0.992

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA75453X

Instrument ID: BNA1 Calibration Date(s): 01/21/09 03/04/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 2030 0451

LAB FILE ID: RF1: CALB001 RF2: CALB002 RF5: CALB005
RF10: CALB010 RF20: CALB020

COMPOUND	RF1	RF2	RF5	RF10	RF20
Atrazine	0.256	0.238	0.246	0.252	0.236
Benzaldehyde	1.372	1.255	1.210	1.291	1.105
Benzidine			0.429	0.572	0.683
3,3'-Dichlorobenzidine	0.217	0.223	0.298	0.316	0.343
2,3,4,6-Tetrachlorophenol			0.115	0.185	0.230

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FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA75453X

Instrument ID: BNA1 Calibration Date(s): 01/21/09 03/04/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 2030 0451

LAB FILE ID: RF30: CALB030 RF40: CALB040 RF50: CALB050
RF60: CALB060 RF70: CALB070

COMPOUND	RF30	RF40	RF50	RF60	RF70
Atrazine		0.244	0.218	0.228	
Benzaldehyde		1.176	1.049	0.962	
Benzidine		0.624	0.623	0.646	
3,3'-Dichlorobenzidine		0.357	0.383	0.368	
2,3,4,6-Tetrachlorophenol		0.271	0.281	0.243	

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA75453X

Instrument ID: BNA1 Calibration Date(s): 01/21/09 03/04/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 2030 0451

LAB FILE ID: RF80: CALB080 RF90: RF100: CALB100

COMPOUND	RF80	RF90	RF100
Atrazine	0.220		0.217
Benzaldehyde	0.567		0.581
Benzidine	0.358		0.348
3,3'-Dichlorobenzidine	0.237		0.249
2,3,4,6-Tetrachlorophenol			

FORM VI SV

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA39085

Lab File ID: DF0602B2 DFTPP Injection Date: 06/02/09

Instrument ID: BNA3 DFTPP Injection Time: 2014

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	51.7
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	55.4
70	Less than 2.0% of mass 69	0.2 (0.3)1
127	40.0 - 60.0% of mass 198	57.3
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.9
275	10.0 - 30.0% of mass 198	22.5
365	Greater than 1.0% of mass 198	2.20
441	Present, but less than mass 443	7.4
442	Greater than 40.0% of mass 198	45.2
443	17.0 - 23.0% of mass 442	9.4 (20.7)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01		STD100PPM	CAL2-13	06/02/09	2041
02		ICV50PPM	ICV1	06/02/09	2121
03		ICV50PPM	ICV2	06/02/09	2203
04		ICV50PPM	ICV3	06/02/09	2244
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FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA57889B

Instrument ID: BNA3 Calibration Date(s): 06/02/09 06/02/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0729 2041

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
Atrazine	AVRG		0.18511409		14.0
Benzaldehyde	AVRG		0.89894420		6.7
Benzidine	2ORDR	0.12820822	1.36489148	0.22744721	0.997
3,3'-Dichlorobenzidine	LINR	5.182e-002	0.35564153		0.996
2,3,4,6-Tetrachlorophenol	LINR	0.12000114	0.25989125		0.996

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA57889B

Instrument ID: BNA3 Calibration Date(s): 06/02/09 06/02/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0729 2041

LAB FILE ID: RF30: RF40: RF50: CAL2-9
RF60: RF70:

COMPOUND	RF30	RF40	RF50	RF60	RF70
Atrazine			0.206		
Benzaldehyde			0.951		
Benzidine			0.613		
3,3'-Dichlorobenzidine			0.373		
2,3,4,6-Tetrachlorophenol			0.226		

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA57889B

Instrument ID: BNA3 Calibration Date(s): 06/02/09 06/02/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0729 2041

LAB FILE ID: RF80: CAL2-12 RF100: CAL2-13

COMPOUND	RF80	RF100
Atrazine	0.209	0.208
Benzaldehyde	0.887	0.866
Benzidine	0.566	0.564
3,3'-Dichlorobenzidine	0.347	0.341
2,3,4,6-Tetrachlorophenol	0.239	0.254

FORM VI SV

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: DF1009B1 DFTPP Injection Date: 10/09/09

Instrument ID: BNA1 DFTPP Injection Time: 1436

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	40.4
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	49.2
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	47.1
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.0
275	10.0 - 30.0% of mass 198	26.9
365	Greater than 1.0% of mass 198	3.34
441	Present, but less than mass 443	15.8
442	Greater than 40.0% of mass 198	101.6
443	17.0 - 23.0% of mass 442	17.5 (17.2)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV050PPMW	CCV050PPMW	CCV050W	10/09/09	1458
02	SBLK1001BW1	9J01008-BLK1	S1BW1001	10/09/09	1535
03	SBLK1001BW1L	9J01008-BS1	S1LW1001	10/09/09	1611
04	SBLK1001BW1L	9J01008-BSD1	S1DW1001	10/09/09	1648
05	RB-092909-01	0910006-51	1000651	10/10/09	0114
06	RB-092909-02	0910006-52	1000652	10/10/09	0150
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FORM V SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Instrument ID: BNA1 Calibration Date: 10/09/09 Time: 1458

Lab File ID: CCV050W Init. Calib. Date(s): 07/24/08 03/04/09

Init. Calib. Times: 1046 0451

COMPOUND	$\overline{RRF}$	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acetophenone	1.494	1.694	50.00	56.72		AVRG	13.4	
Atrazine	0.236	0.217	50.00	46.00		AVRG	-8.0	
Benzaldehyde	1.178	0.972	50.00	41.30		AVRG	-17.4	
bis(2-Chloroethoxy)methane	0.538	0.506	50.00	47.07		AVRG	-5.9	
1,1'-Biphenyl	1.528	1.408	50.00	46.11		AVRG	-7.8	
bis(2-Chloroethyl)ether	1.719	1.589	50.00	46.22		AVRG	-7.6	
2,2-Oxybis(1-chloropropane)	2.055	2.298	50.00	70.35		2ORDR	40.7	
Bis(2-ethylhexyl)phthalate	1.347	1.513	50.00	56.18		AVRG	12.4	
4-Bromophenyl-phenylether	0.263	0.237	50.00	45.02		AVRG	-10.0	
Butylbenzylphthalate	1.034	1.245	50.00	60.22		AVRG	20.4	
Caprolactam	0.130	0.118	50.00	45.72		AVRG	-8.6	
4-Chloroaniline	0.391	0.407	50.00	51.99		AVRG	4.0	
Carbazole	1.032	0.873	50.00	42.29		AVRG	-15.4	
4-Chloro-3-methylphenol	0.308	0.357	50.00	57.92		AVRG	15.8	20.0
2-Chloronaphthalene (beta)	1.143	1.178	50.00	51.56		AVRG	3.1	
2-Chlorophenol	1.332	1.333	50.00	68.64		2ORDR	37.3	
4-Chlorophenyl-phenylether	0.557	0.554	50.00	49.79		AVRG	-0.4	
Dibenzofuran	1.599	1.629	50.00	50.94		AVRG	1.9	
3,3'-Dichlorobenzidine	0.321	0.394	50.00	55.18		LINR	10.4	
2,4-Dichlorophenol	0.332	0.311	50.00	46.81		AVRG	-6.4	20.0
Diethylphthalate	1.627	1.842	50.00	56.63		AVRG	13.2	
2,4-Dimethylphenol	0.247	0.361	50.00	73.05		AVRG	46.1	
Dimethylphthalate	1.615	1.683	50.00	52.10		AVRG	4.2	
Di-n-butylphthalate	1.887	1.801	50.00	47.74		AVRG	-4.5	
4,6-Dinitro-2-methylphenol	0.178	0.161	50.00	41.42		LINR	-17.2	
2,4-Dinitrophenol	0.184	0.201	50.00	44.40	0.050	LINR	-11.2	
2,4-Dinitrotoluene	0.488	0.546	50.00	55.90		AVRG	11.8	
2,6-Dinitrotoluene	0.416	0.430	50.00	51.73		AVRG	3.5	
Di-n-octylphthalate	3.019	3.006	50.00	49.79		AVRG	-0.4	20.0
Hexachlorobenzene	0.264	0.234	50.00	44.36		AVRG	-11.3	
Hexachlorobutadiene	0.192	0.197	50.00	51.09		AVRG	2.2	20.0
Hexachlorocyclopentadiene	0.223	0.266	50.00	57.70	0.050	LINR	15.4	
Hexachloroethane	0.684	0.745	50.00	54.46		AVRG	8.9	
Isophorone	0.856	0.974	50.00	56.93		AVRG	13.8	
4-Methylphenol (p-cresol)	1.093	1.161	50.00	53.11		AVRG	6.2	
2-Methylphenol (o-cresol)	1.099	1.158	50.00	52.71		AVRG	5.4	
2-Nitroaniline	0.363	0.546	50.00	75.19		AVRG	50.4	

FORM VII SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Instrument ID: BNA1 Calibration Date: 10/09/09 Time: 1458

Lab File ID: CCV050W Init. Calib. Date(s): 07/24/08 03/04/09

Init. Calib. Times: 1046 0451

COMPOUND	$\overline{RRF}$	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
3-Nitroaniline	0.389	0.368	50.00	47.31		AVRG	-5.4	
4-Nitroaniline	0.325	0.320	50.00	45.64		2ORDR	-8.7	
Nitrobenzene	0.428	0.499	50.00	73.83		2ORDR	47.7	
2-Nitrophenol	0.275	0.251	50.00	45.55		AVRG	-8.9	20.0
4-Nitrophenol	0.205	0.362	50.00	78.75	0.050	LINR	57.5	
N-Nitrosodiphenylamine(1)	0.646	0.558	50.00	43.17		AVRG	-13.6	20.0
N-Nitroso-di-n-propylamine	0.897	1.189	50.00	102.3	0.050	2ORDR	104.6	
Pentachlorophenol	0.143	0.155	50.00	48.40		LINR	-3.2	20.0
Phenol	1.876	1.611	50.00	55.73		2ORDR	11.5	20.0
2,4,5-Trichlorophenol	0.400	0.421	50.00	52.65		AVRG	5.3	
2,4,6-Trichlorophenol	0.383	0.383	50.00	50.02		AVRG	0.0	20.0
2-Fluorophenol	1.477	1.463	100.0	136.6		2ORDR	36.6	
Phenol-d6	1.711	1.543	100.0	118.3		2ORDR	18.3	
Nitrobenzene-d5	0.435	0.506	50.00	58.07		AVRG	16.1	
2-Fluorobiphenyl	1.315	1.273	50.00	48.40		AVRG	-3.2	
2,4,6-Tribromophenol	0.128	0.116	100.0	90.54		AVRG	-9.4	
Terphenyl-d14	0.914	0.930	50.00	50.88		AVRG	1.8	

(1) Cannot be separated from Diphenylamine

FORM VII SV

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: DF1009B2 DFTPP Injection Date: 10/10/09

Instrument ID: BNA1 DFTPP Injection Time: 0734

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	55.8
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	91.6
70	Less than 2.0% of mass 69	0.2 (0.2)1
127	40.0 - 60.0% of mass 198	53.6
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	5.6
275	10.0 - 30.0% of mass 198	20.3
365	Greater than 1.0% of mass 198	2.61
441	Present, but less than mass 443	7.1
442	Greater than 40.0% of mass 198	45.7
443	17.0 - 23.0% of mass 442	8.3 (18.3)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV050PPMWE	CCV050PPMWE	CCV050E	10/10/09	0756
02	SB-092909-01	0910006-53	1000653	10/10/09	0836
03					
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FORM V SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Instrument ID: BNA1 Calibration Date: 10/10/09 Time: 0756

Lab File ID: CCV050E Init. Calib. Date(s): 07/24/08 03/04/09

Init. Calib. Times: 1046 0451

COMPOUND	$\overline{RRF}$	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D	
Acetophenone	1.494	1.735	50.00	58.06		AVRG	16.1		
Atrazine	0.236	0.192	50.00	40.74		AVRG	-18.5		
Benzaldehyde	1.178	0.972	50.00	41.29		AVRG	-17.4		
bis(2-Chloroethoxy)methane	0.538	0.525	50.00	48.80		AVRG	-2.4		
1,1'-Biphenyl	1.528	1.295	50.00	42.38		AVRG	-15.2		
bis(2-Chloroethyl)ether	1.719	1.657	50.00	48.19		AVRG	-3.6		
2,2-Oxybis(1-chloropropane)	2.055	2.430	50.00	76.35		2ORDR	52.7		
Bis(2-ethylhexyl)phthalate	1.347	1.570	50.00	58.27		AVRG	16.5		
4-Bromophenyl-phenylether	0.263	0.252	50.00	47.77		AVRG	-4.4		
Butylbenzylphthalate	1.034	1.250	50.00	60.44		AVRG	20.9		
Caprolactam	0.130	0.121	50.00	46.74		AVRG	-6.5		
4-Chloroaniline	0.391	0.441	50.00	56.32		AVRG	12.6		
Carbazole	1.032	0.952	50.00	46.10		AVRG	-7.8		
4-Chloro-3-methylphenol	0.308	0.385	50.00	62.46		AVRG	24.9	20.0	<
2-Chloronaphthalene (beta)	1.143	1.049	50.00	45.91		AVRG	-8.2		
2-Chlorophenol	1.332	1.329	50.00	68.36		2ORDR	36.7		
4-Chlorophenyl-phenylether	0.557	0.519	50.00	46.57		AVRG	-6.8		
Dibenzofuran	1.599	1.538	50.00	48.10		AVRG	-3.8		
3,3'-Dichlorobenzidine	0.321	0.365	50.00	51.10		LINR	2.2		
2,4-Dichlorophenol	0.332	0.312	50.00	47.01		AVRG	-6.0	20.0	
Diethylphthalate	1.627	1.666	50.00	51.20		AVRG	2.4		
2,4-Dimethylphenol	0.247	0.353	50.00	71.51		AVRG	43.0		
Dimethylphthalate	1.615	1.569	50.00	48.56		AVRG	-2.9		
Di-n-butylphthalate	1.887	1.973	50.00	52.28		AVRG	4.6		
4,6-Dinitro-2-methylphenol	0.178	0.171	50.00	43.71		LINR	-12.6		
2,4-Dinitrophenol	0.184	0.206	50.00	45.36	0.050	LINR	-9.3		
2,4-Dinitrotoluene	0.488	0.520	50.00	53.26		AVRG	6.5		
2,6-Dinitrotoluene	0.416	0.389	50.00	46.78		AVRG	-6.4		
Di-n-octylphthalate	3.019	3.400	50.00	56.31		AVRG	12.6	20.0	
Hexachlorobenzene	0.264	0.243	50.00	46.06		AVRG	-7.9		
Hexachlorobutadiene	0.192	0.194	50.00	50.25		AVRG	0.5	20.0	
Hexachlorocyclopentadiene	0.223	0.243	50.00	52.58	0.050	LINR	5.2		
Hexachloroethane	0.684	0.756	50.00	55.30		AVRG	10.6		
Isophorone	0.856	1.015	50.00	59.34		AVRG	18.7		
4-Methylphenol (p-cresol)	1.093	1.214	50.00	55.58		AVRG	11.2		
2-Methylphenol (o-cresol)	1.099	1.170	50.00	53.23		AVRG	6.5		
2-Nitroaniline	0.363	0.519	50.00	71.54		AVRG	43.1		

FORM VII SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Instrument ID: BNA1 Calibration Date: 10/10/09 Time: 0756

Lab File ID: CCV050E Init. Calib. Date(s): 07/24/08 03/04/09

Init. Calib. Times: 1046 0451

COMPOUND	$\overline{RRF}$	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
3-Nitroaniline	0.389	0.368	50.00	47.32		AVRG	-5.4	
4-Nitroaniline	0.325	0.317	50.00	45.21		2ORDR	-9.6	
Nitrobenzene	0.428	0.527	50.00	79.90		2ORDR	59.8	
2-Nitrophenol	0.275	0.272	50.00	49.49		AVRG	-1.0	20.0
4-Nitrophenol	0.205	0.362	50.00	78.80	0.050	LINR	57.6	
N-Nitrosodiphenylamine(1)	0.646	0.620	50.00	48.00		AVRG	-4.0	20.0
N-Nitroso-di-n-propylamine	0.897	1.244	50.00	110.2	0.050	2ORDR	120.4	
Pentachlorophenol	0.143	0.157	50.00	48.95		LINR	-2.1	20.0
Phenol	1.876	1.432	50.00	47.38		2ORDR	-5.2	20.0
2,4,5-Trichlorophenol	0.400	0.367	50.00	45.91		AVRG	-8.2	
2,4,6-Trichlorophenol	0.383	0.332	50.00	43.26		AVRG	-13.5	20.0
2-Fluorophenol	1.477	1.549	100.0	149.2		2ORDR	49.2	
Phenol-d6	1.711	1.591	100.0	123.5		2ORDR	23.5	
Nitrobenzene-d5	0.435	0.538	50.00	61.82		AVRG	23.6	
2-Fluorobiphenyl	1.315	1.190	50.00	45.22		AVRG	-9.6	
2,4,6-Tribromophenol	0.128	0.121	100.0	94.23		AVRG	-5.8	
Terphenyl-d14	0.914	0.869	50.00	47.56		AVRG	-4.9	

(1) Cannot be separated from Diphenylamine

FORM VII SV

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: SEQ-TUN1 DFTPP Injection Date: 10/16/09

Instrument ID: BNA1 DFTPP Injection Time: 1520

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	53.2
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	83.0
70	Less than 2.0% of mass 69	0.5 (0.5)1
127	40.0 - 60.0% of mass 198	50.7
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.8
275	10.0 - 30.0% of mass 198	19.5
365	Greater than 1.0% of mass 198	1.94
441	Present, but less than mass 443	7.0
442	Greater than 40.0% of mass 198	50.0
443	17.0 - 23.0% of mass 442	10.4 (20.8)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV050PPM	SEQ-CCV1	SEQ-CCV1	10/16/09	1542
02	9J02015-BLK1	9J02015-BLK1	S1BS1003	10/16/09	1618
03	9J02015-BLK1	9J02015-BS1	S1LS1003	10/16/09	1654
04	FD-092609-01	0910006-01	1000601	10/16/09	1806
05	NTC21SB09-SO	0910006-04	1000604	10/16/09	1842
06	NTC21SB10-SO	0910006-06	1000606	10/16/09	1918
07	NTC21SB17-SO	0910006-12	1000612	10/16/09	1953
08	NTC21SB18-SO	0910006-14	1000614	10/16/09	2029
09	NTC21SB20-SO	0910006-16	1000616	10/16/09	2105
10	NTC21SB21-SO	0910006-18	1000618	10/16/09	2140
11	FD-092709-01	0910006-20	1000620	10/16/09	2216
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FORM V SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Instrument ID: BNA1 Calibration Date: 10/16/09 Time: 1542

Lab File ID: SEQ-CCV1 Init. Calib. Date(s): 07/24/08 03/04/09

Init. Calib. Times: 1046 0451

COMPOUND	$\overline{RRF}$	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acetophenone	1.494	1.584	50.00	53.02		AVRG	6.0	
Atrazine	0.236	0.305	50.00	64.64		AVRG	29.3	
Benzaldehyde	1.178	1.274	50.00	54.08		AVRG	8.2	
bis(2-Chloroethoxy)methane	0.538	0.509	50.00	47.34		AVRG	-5.3	
1,1'-Biphenyl	1.528	1.279	50.00	41.87		AVRG	-16.2	
bis(2-Chloroethyl)ether	1.719	1.478	50.00	42.98		AVRG	-14.0	
2,2-Oxybis(1-chloropropane)	2.055	2.013	50.00	58.23		2ORDR	16.4	
Bis(2-ethylhexyl)phthalate	1.347	1.600	50.00	59.41		AVRG	18.8	
4-Bromophenyl-phenylether	0.263	0.256	50.00	48.56		AVRG	-2.9	
Butylbenzylphthalate	1.034	1.260	50.00	60.95		AVRG	21.9	
Caprolactam	0.130	0.119	50.00	46.09		AVRG	-7.8	
4-Chloroaniline	0.391	0.456	50.00	58.23		AVRG	16.4	
Carbazole	1.032	0.848	50.00	41.09		AVRG	-17.8	
4-Chloro-3-methylphenol	0.308	0.368	50.00	59.68		AVRG	19.4	20.0
2-Chloronaphthalene (beta)	1.143	1.119	50.00	48.98		AVRG	-2.0	
2-Chlorophenol	1.332	1.193	50.00	58.69		2ORDR	17.4	
4-Chlorophenyl-phenylether	0.557	0.557	50.00	50.01		AVRG	0.0	
Dibenzofuran	1.599	1.555	50.00	48.63		AVRG	-2.7	
3,3'-Dichlorobenzidine	0.321	0.337	50.00	47.22		LINR	-5.6	
2,4-Dichlorophenol	0.332	0.324	50.00	48.87		AVRG	-2.3	20.0
Diethylphthalate	1.627	1.682	50.00	51.69		AVRG	3.4	
2,4-Dimethylphenol	0.247	0.369	50.00	74.76		AVRG	49.5	
Dimethylphthalate	1.615	1.617	50.00	50.06		AVRG	0.1	
Di-n-butylphthalate	1.887	1.797	50.00	47.62		AVRG	-4.8	
4,6-Dinitro-2-methylphenol	0.178	0.175	50.00	44.70		LINR	-10.6	
2,4-Dinitrophenol	0.184	0.218	50.00	47.48	0.050	LINR	-5.0	
2,4-Dinitrotoluene	0.488	0.548	50.00	56.08		AVRG	12.2	
2,6-Dinitrotoluene	0.416	0.418	50.00	50.24		AVRG	0.5	
Di-n-octylphthalate	3.019	3.091	50.00	51.20		AVRG	2.4	20.0
Hexachlorobenzene	0.264	0.270	50.00	51.21		AVRG	2.4	
Hexachlorobutadiene	0.192	0.220	50.00	57.16		AVRG	14.3	20.0
Hexachlorocyclopentadiene	0.223	0.231	50.00	49.91	0.050	LINR	-0.2	
Hexachloroethane	0.684	0.692	50.00	50.63		AVRG	1.2	
Isophorone	0.856	0.963	50.00	56.26		AVRG	12.5	
4-Methylphenol (p-cresol)	1.093	1.112	50.00	50.90		AVRG	1.8	
2-Methylphenol (o-cresol)	1.099	1.201	50.00	54.64		AVRG	9.3	
2-Nitroaniline	0.363	0.504	50.00	69.48		AVRG	39.0	

FORM VII SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Instrument ID: BNA1 Calibration Date: 10/16/09 Time: 1542

Lab File ID: SEQ-CCV1 Init. Calib. Date(s): 07/24/08 03/04/09

Init. Calib. Times: 1046 0451

COMPOUND	$\overline{RRF}$	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
3-Nitroaniline	0.389	0.342	50.00	44.04		AVRG	-11.9	
4-Nitroaniline	0.325	0.293	50.00	42.00		2ORDR	-16.0	
Nitrobenzene	0.428	0.491	50.00	72.24		2ORDR	44.5	
2-Nitrophenol	0.275	0.276	50.00	50.07		AVRG	0.1	20.0
4-Nitrophenol	0.205	0.311	50.00	67.93	0.050	LINR	35.9	
N-Nitrosodiphenylamine(1)	0.646	0.592	50.00	45.86		AVRG	-8.3	20.0
N-Nitroso-di-n-propylamine	0.897	1.132	50.00	94.36	0.050	2ORDR	88.7	
Pentachlorophenol	0.143	0.190	50.00	57.40		LINR	14.8	20.0
Phenol	1.876	1.604	50.00	55.40		2ORDR	10.8	20.0
2,4,5-Trichlorophenol	0.400	0.406	50.00	50.83		AVRG	1.6	
2,4,6-Trichlorophenol	0.383	0.391	50.00	50.98		AVRG	2.0	20.0
2-Fluorophenol	1.477	1.396	100.0	127.1		2ORDR	27.1	
Phenol-d6	1.711	1.402	100.0	103.5		2ORDR	3.5	
Nitrobenzene-d5	0.435	0.498	50.00	57.18		AVRG	14.4	
2-Fluorobiphenyl	1.315	1.177	50.00	44.76		AVRG	-10.5	
2,4,6-Tribromophenol	0.128	0.143	100.0	111.6		AVRG	11.6	
Terphenyl-d14	0.914	1.168	50.00	63.93		AVRG	27.9	

(1) Cannot be separated from Diphenylamine

FORM VII SV

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: SEQ-TUN2 DFTPP Injection Date: 10/17/09

Instrument ID: BNA1 DFTPP Injection Time: 0019

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	40.9
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	65.0
70	Less than 2.0% of mass 69	0.3 (0.5)1
127	40.0 - 60.0% of mass 198	48.0
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	5.6
275	10.0 - 30.0% of mass 198	22.1
365	Greater than 1.0% of mass 198	3.46
441	Present, but less than mass 443	12.3
442	Greater than 40.0% of mass 198	73.2
443	17.0 - 23.0% of mass 442	13.3 (18.2)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV050PPM	SEQ-CCV2	SEQ-CCV2	10/17/09	0041
02	NTC21SB11-SO	0910006-08	1000608	10/17/09	~~0117~~
03	NTC21SB12-SO	0910006-10	1000610	10/17/09	0153
04	NTC21SB12-SO	0910006-09	1000609	10/17/09	0229
05	NTC21SB18-SO	0910006-13	1000613	10/17/09	0305
06	FD-092609-02	0910006-02	1000602	10/17/09	0341
07	NTC21SB09-SO	0910006-03	1000603	10/17/09	0417
08	NTC21SB10-SO	0910006-05	1000605	10/17/09	0453
09	NTC21SB11-SO	0910006-07	1000607	10/17/09	0529
10	NTC21SB17-SO	0910006-11	1000611	10/17/09	0605
11	NTC21SB20-SO	0910006-15	1000615	10/17/09	0640
12	NTC21SB21-SO	0910006-17	1000617	10/17/09	0717
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FORM V SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Instrument ID: BNA1 Calibration Date: 10/17/09 Time: 0041

Lab File ID: SEQ-CCV2 Init. Calib. Date(s): 07/24/08 03/04/09

Init. Calib. Times: 1046 0451

COMPOUND	$\overline{RRF}$	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D	
Acetophenone	1.494	1.584	50.00	53.01		AVRG	6.0		
Atrazine	0.236	0.273	50.00	57.90		AVRG	15.8		
Benzaldehyde	1.178	1.352	50.00	57.40		AVRG	14.8		
bis(2-Chloroethoxy)methane	0.538	0.471	50.00	43.85		AVRG	-12.3		
1,1'-Biphenyl	1.528	1.245	50.00	40.76		AVRG	-18.5		
bis(2-Chloroethyl)ether	1.719	1.440	50.00	41.88		AVRG	-16.2		
2,2-Oxybis(1-chloropropane)	2.055	2.094	50.00	61.56		2ORDR	23.1		
Bis(2-ethylhexyl)phthalate	1.347	1.540	50.00	57.19		AVRG	14.4		
4-Bromophenyl-phenylether	0.263	0.238	50.00	45.20		AVRG	-9.6		
Butylbenzylphthalate	1.034	1.354	50.00	65.47		AVRG	30.9		
Caprolactam	0.130	0.137	50.00	52.89		AVRG	5.8		
4-Chloroaniline	0.391	0.443	50.00	56.66		AVRG	13.3		
Carbazole	1.032	0.972	50.00	47.05		AVRG	-5.9		
4-Chloro-3-methylphenol	0.308	0.352	50.00	57.12		AVRG	14.2	20.0	
2-Chloronaphthalene (beta)	1.143	1.078	50.00	47.19		AVRG	-5.6		
2-Chlorophenol	1.332	1.287	50.00	65.29		2ORDR	30.6		
4-Chlorophenyl-phenylether	0.557	0.532	50.00	47.79		AVRG	-4.4		
Dibenzofuran	1.599	1.533	50.00	47.95		AVRG	-4.1		
3,3'-Dichlorobenzidine	0.321	0.323	50.00	45.32		LINR	-9.4		
2,4-Dichlorophenol	0.332	0.332	50.00	50.06		AVRG	0.1	20.0	
Diethylphthalate	1.627	1.662	50.00	51.08		AVRG	2.2		
2,4-Dimethylphenol	0.247	0.339	50.00	68.68		AVRG	37.4		
Dimethylphthalate	1.615	1.488	50.00	46.07		AVRG	-7.8		
Di-n-butylphthalate	1.887	1.699	50.00	45.04		AVRG	-9.9		
4,6-Dinitro-2-methylphenol	0.178	0.142	50.00	37.12		LINR	-25.8		
2,4-Dinitrophenol	0.184	0.177	50.00	39.96	0.050	LINR	-20.1		
2,4-Dinitrotoluene	0.488	0.539	50.00	55.15		AVRG	10.3		
2,6-Dinitrotoluene	0.416	0.402	50.00	48.30		AVRG	-3.4		
Di-n-octylphthalate	3.019	5.072	50.00	84.00		AVRG	68.0	20.0	<
Hexachlorobenzene	0.264	0.248	50.00	47.14		AVRG	-5.7		
Hexachlorobutadiene	0.192	0.200	50.00	51.93		AVRG	3.9	20.0	
Hexachlorocyclopentadiene	0.223	0.150	50.00	32.25	0.050	LINR	-35.5		
Hexachloroethane	0.684	0.646	50.00	47.23		AVRG	-5.5		
Isophorone	0.856	0.861	50.00	50.33		AVRG	0.6		
4-Methylphenol (p-cresol)	1.093	1.105	50.00	50.58		AVRG	1.2		
2-Methylphenol (o-cresol)	1.099	1.232	50.00	56.06		AVRG	12.1		
2-Nitroaniline	0.363	0.486	50.00	67.02		AVRG	34.0		

FORM VII SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Instrument ID: BNA1 Calibration Date: 10/17/09 Time: 0041

Lab File ID: SEQ-CCV2 Init. Calib. Date(s): 07/24/08 03/04/09

Init. Calib. Times: 1046 0451

COMPOUND	$\overline{RRF}$	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
3-Nitroaniline	0.389	0.371	50.00	47.76		AVRG	-4.5	
4-Nitroaniline	0.325	0.368	50.00	51.76		2ORDR	3.5	
Nitrobenzene	0.428	0.482	50.00	70.14		2ORDR	40.3	
2-Nitrophenol	0.275	0.266	50.00	48.23		AVRG	-3.5	20.0
4-Nitrophenol	0.205	0.339	50.00	73.89	0.050	LINR	47.8	
N-Nitrosodiphenylamine(1)	0.646	0.579	50.00	44.87		AVRG	-10.2	20.0
N-Nitroso-di-n-propylamine	0.897	1.107	50.00	91.04	0.050	2ORDR	82.1	
Pentachlorophenol	0.143	0.173	50.00	53.19		LINR	6.4	20.0
Phenol	1.876	1.512	50.00	51.05		2ORDR	2.1	20.0
2,4,5-Trichlorophenol	0.400	0.423	50.00	52.87		AVRG	5.7	
2,4,6-Trichlorophenol	0.383	0.378	50.00	49.32		AVRG	-1.4	20.0
2-Fluorophenol	1.477	1.381	100.0	125.0		2ORDR	25.0	
Phenol-d6	1.711	1.404	100.0	103.8		2ORDR	3.8	
Nitrobenzene-d5	0.435	0.469	50.00	53.85		AVRG	7.7	
2-Fluorobiphenyl	1.315	1.262	50.00	47.96		AVRG	-4.1	
2,4,6-Tribromophenol	0.128	0.140	100.0	108.6		AVRG	8.6	
Terphenyl-d14	0.914	1.182	50.00	64.66		AVRG	29.3	

(1) Cannot be separated from Diphenylamine

FORM VII SV

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: SEQ-TUN1 DFTPP Injection Date: 10/17/09

Instrument ID: BNA1 DFTPP Injection Time: 1046

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	48.4
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	76.5
70	Less than 2.0% of mass 69	0.3 (0.4)1
127	40.0 - 60.0% of mass 198	50.2
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.1
275	10.0 - 30.0% of mass 198	18.6
365	Greater than 1.0% of mass 198	3.44
441	Present, but less than mass 443	7.8
442	Greater than 40.0% of mass 198	49.0
443	17.0 - 23.0% of mass 442	10.0 (20.4)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV050PPM	SEQ-CCV1	SEQ-CCV1	10/17/09	1108
02	9J05025-BLK1	9J05025-BLK1	S1BS1006	10/17/09	1145
03	9J05025-BLK1	9J05025-BS1	S1LS1006	10/17/09	1221
04	NTC21SB13-SO	0910006-28	1000628	10/17/09	1257
05	NTC21SB14-SO	0910006-30	1000630	10/17/09	1333
06	NTC21SB15-SO	0910006-32	1000632	10/17/09	1409
07	NTC21SB16-SO	0910006-34	1000634	10/17/09	1445
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FORM V SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Instrument ID: BNA1 Calibration Date: 10/17/09 Time: 1108

Lab File ID: SEQ-CCV1 Init. Calib. Date(s): 07/24/08 03/04/09

Init. Calib. Times: 1046 0451

COMPOUND	$\overline{RRF}$	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D	
Acetophenone	1.494	1.579	50.00	52.85		AVRG	5.7		
Atrazine	0.236	0.296	50.00	62.77		AVRG	25.5		
Benzaldehyde	1.178	1.130	50.00	47.97		AVRG	-4.0		
bis(2-Chloroethoxy)methane	0.538	0.483	50.00	44.91		AVRG	-10.2		
1,1'-Biphenyl	1.528	1.229	50.00	40.24		AVRG	-19.5		
bis(2-Chloroethyl)ether	1.719	1.406	50.00	40.89		AVRG	-18.2		
2,2-Oxybis(1-chloropropane)	2.055	2.004	50.00	57.85		2ORDR	15.7		
Bis(2-ethylhexyl)phthalate	1.347	1.445	50.00	53.66		AVRG	7.3		
4-Bromophenyl-phenylether	0.263	0.269	50.00	51.06		AVRG	2.1		
Butylbenzylphthalate	1.034	1.233	50.00	59.62		AVRG	19.2		
Caprolactam	0.130	0.132	50.00	51.19		AVRG	2.4		
4-Chloroaniline	0.391	0.441	50.00	56.42		AVRG	12.8		
Carbazole	1.032	0.840	50.00	40.68		AVRG	-18.6		
4-Chloro-3-methylphenol	0.308	0.373	50.00	60.51		AVRG	21.0	20.0	<
2-Chloronaphthalene (beta)	1.143	1.065	50.00	46.59		AVRG	-6.8		
2-Chlorophenol	1.332	1.195	50.00	58.83		2ORDR	17.6		
4-Chlorophenyl-phenylether	0.557	0.548	50.00	49.24		AVRG	-1.5		
Dibenzofuran	1.599	1.456	50.00	45.52		AVRG	-9.0		
3,3'-Dichlorobenzidine	0.321	0.366	50.00	51.28		LINR	2.6		
2,4-Dichlorophenol	0.332	0.322	50.00	48.52		AVRG	-3.0	20.0	
Diethylphthalate	1.627	1.632	50.00	50.16		AVRG	0.3		
2,4-Dimethylphenol	0.247	0.339	50.00	68.58		AVRG	37.2		
Dimethylphthalate	1.615	1.411	50.00	43.69		AVRG	-12.6		
Di-n-butylphthalate	1.887	1.843	50.00	48.85		AVRG	-2.3		
4,6-Dinitro-2-methylphenol	0.178	0.135	50.00	35.42		LINR	-29.2		
2,4-Dinitrophenol	0.184	0.142	50.00	33.47	0.050	LINR	-33.0		
2,4-Dinitrotoluene	0.488	0.475	50.00	48.65		AVRG	-2.7		
2,6-Dinitrotoluene	0.416	0.355	50.00	42.68		AVRG	-14.6		
Di-n-octylphthalate	3.019	2.719	50.00	45.04		AVRG	-9.9	20.0	
Hexachlorobenzene	0.264	0.272	50.00	51.53		AVRG	3.1		
Hexachlorobutadiene	0.192	0.200	50.00	51.92		AVRG	3.8	20.0	
Hexachlorocyclopentadiene	0.223	0.225	50.00	48.73	0.050	LINR	-2.5		
Hexachloroethane	0.684	0.656	50.00	47.92		AVRG	-4.2		
Isophorone	0.856	0.872	50.00	50.97		AVRG	1.9		
4-Methylphenol (p-cresol)	1.093	1.123	50.00	51.37		AVRG	2.7		
2-Methylphenol (o-cresol)	1.099	1.142	50.00	51.95		AVRG	3.9		
2-Nitroaniline	0.363	0.480	50.00	66.11		AVRG	32.2		

FORM VII SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Instrument ID: BNA1 Calibration Date: 10/17/09 Time: 1108

Lab File ID: SEQ-CCV1 Init. Calib. Date(s): 07/24/08 03/04/09

Init. Calib. Times: 1046 0451

COMPOUND	$\overline{RRF}$	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
3-Nitroaniline	0.389	0.328	50.00	42.16		AVRG	-15.7	
4-Nitroaniline	0.325	0.281	50.00	40.43		2ORDR	-19.1	
Nitrobenzene	0.428	0.489	50.00	71.73		2ORDR	43.4	
2-Nitrophenol	0.275	0.257	50.00	46.67		AVRG	-6.6	20.0
4-Nitrophenol	0.205	0.263	50.00	57.69	0.050	LINR	15.4	
N-Nitrosodiphenylamine(1)	0.646	0.662	50.00	51.28		AVRG	2.6	20.0
N-Nitroso-di-n-propylamine	0.897	1.120	50.00	92.84	0.050	2ORDR	85.7	
Pentachlorophenol	0.143	0.144	50.00	45.67		LINR	-8.7	20.0
Phenol	1.876	1.500	50.00	50.48		2ORDR	1.0	20.0
2,4,5-Trichlorophenol	0.400	0.384	50.00	47.97		AVRG	-4.0	
2,4,6-Trichlorophenol	0.383	0.392	50.00	51.16		AVRG	2.3	20.0
2-Fluorophenol	1.477	1.367	100.0	123.1		2ORDR	23.1	
Phenol-d6	1.711	1.370	100.0	100.4		2ORDR	0.4	
Nitrobenzene-d5	0.435	0.484	50.00	55.59		AVRG	11.2	
2-Fluorobiphenyl	1.315	1.180	50.00	44.87		AVRG	-10.3	
2,4,6-Tribromophenol	0.128	0.140	100.0	109.3		AVRG	9.3	
Terphenyl-d14	0.914	1.036	50.00	56.68		AVRG	13.4	

(1) Cannot be separated from Diphenylamine

FORM VII SV

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: SEQ-TUN2 DFTPP Injection Date: 10/17/09

Instrument ID: BNA1 DFTPP Injection Time: 1724

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	46.5
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	73.5
70	Less than 2.0% of mass 69	0.2 (0.3)1
127	40.0 - 60.0% of mass 198	49.5
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.4
275	10.0 - 30.0% of mass 198	20.6
365	Greater than 1.0% of mass 198	2.81
441	Present, but less than mass 443	6.1
442	Greater than 40.0% of mass 198	54.5
443	17.0 - 23.0% of mass 442	10.9 (19.9)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV050PPM	SEQ-CCV2	SEQ-CCV2	10/17/09	1746
02	NTC21SB04-SO	0910006-21	1000621	10/17/09	1822
03	NTC21SB04-SO	0910006-22	1000622	10/17/09	1858
04	NTC21SB06-SO	0910006-23	1000623	10/17/09	1933
05	NTC21SB06-SO	0910006-24	1000624	10/17/09	2009
06	NTC21SB07-SO	0910006-25	1000625	10/17/09	2046
07	NTC21SB07-SO	0910006-26	1000626	10/17/09	2121
08	NTC21SB13-SO	0910006-27	1000627	10/17/09	2157
09	NTC21SB14-SO	0910006-29	1000629	10/17/09	2233
10	NTC21SB15-SO	0910006-31	1000631	10/17/09	2309
11	NTC21SB16-SO	0910006-33	1000633	10/17/09	2346
12	NTC21SB19-SO	0910006-35	1000635	10/18/09	0022
13	NTC21SB19-SO	0910006-36	1000636	10/18/09	0058
14	NTC21SB22-SO	0910006-37	1000637	10/18/09	0135
15	NTC21SB22-SO	0910006-38	1000638	10/18/09	0211
16	FD-092809-01	0910006-40	1000640	10/18/09	0247
17	NTC21SB01-SO	0910006-41	1000641	10/18/09	0324
18	NTC21SB14-SO	0910006-29MS	1000629M	10/18/09	0400
19	NTC21SB14-SO	0910006-29MSD	1000629S	10/18/09	0436
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FORM V SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Instrument ID: BNA1 Calibration Date: 10/17/09 Time: 1746

Lab File ID: SEQ-CCV2 Init. Calib. Date(s): 07/24/08 03/04/09

Init. Calib. Times: 1046 0451

COMPOUND	$\overline{RRF}$	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D	
Acetophenone	1.494	1.526	50.00	51.08		AVRG	2.2		
Atrazine	0.236	0.288	50.00	61.04		AVRG	22.1		
Benzaldehyde	1.178	1.236	50.00	52.46		AVRG	4.9		
bis(2-Chloroethoxy)methane	0.538	0.508	50.00	47.28		AVRG	-5.4		
1,1'-Biphenyl	1.528	1.179	50.00	38.58		AVRG	-22.8		
bis(2-Chloroethyl)ether	1.719	1.464	50.00	42.57		AVRG	-14.9		
2,2-Oxybis(1-chloropropane)	2.055	1.960	50.00	56.06		2ORDR	12.1		
Bis(2-ethylhexyl)phthalate	1.347	1.488	50.00	55.26		AVRG	10.5		
4-Bromophenyl-phenylether	0.263	0.246	50.00	46.69		AVRG	-6.6		
Butylbenzylphthalate	1.034	1.228	50.00	59.37		AVRG	18.7		
Caprolactam	0.130	0.159	50.00	61.32		AVRG	22.6		
4-Chloroaniline	0.391	0.470	50.00	60.06		AVRG	20.1		
Carbazole	1.032	0.794	50.00	38.45		AVRG	-23.1		
4-Chloro-3-methylphenol	0.308	0.402	50.00	65.32		AVRG	30.6	20.0	<
2-Chloronaphthalene (beta)	1.143	1.046	50.00	45.78		AVRG	-8.4		
2-Chlorophenol	1.332	1.155	50.00	56.05		2ORDR	12.1		
4-Chlorophenyl-phenylether	0.557	0.546	50.00	49.01		AVRG	-2.0		
Dibenzofuran	1.599	1.468	50.00	45.92		AVRG	-8.1		
3,3'-Dichlorobenzidine	0.321	0.316	50.00	44.36		LINR	-11.3		
2,4-Dichlorophenol	0.332	0.351	50.00	52.91		AVRG	5.8	20.0	
Diethylphthalate	1.627	1.596	50.00	49.06		AVRG	-1.9		
2,4-Dimethylphenol	0.247	0.388	50.00	78.66		AVRG	57.3		
Dimethylphthalate	1.615	1.464	50.00	45.30		AVRG	-9.4		
Di-n-butylphthalate	1.887	1.718	50.00	45.53		AVRG	-8.9		
4,6-Dinitro-2-methylphenol	0.178	0.130	50.00	34.28		LINR	-31.4		
2,4-Dinitrophenol	0.184	0.144	50.00	33.72	0.050	LINR	-32.6		
2,4-Dinitrotoluene	0.488	0.505	50.00	51.71		AVRG	3.4		
2,6-Dinitrotoluene	0.416	0.397	50.00	47.78		AVRG	-4.4		
Di-n-octylphthalate	3.019	3.144	50.00	52.07		AVRG	4.1	20.0	
Hexachlorobenzene	0.264	0.246	50.00	46.58		AVRG	-6.8		
Hexachlorobutadiene	0.192	0.205	50.00	53.29		AVRG	6.6	20.0	
Hexachlorocyclopentadiene	0.223	0.192	50.00	41.39	0.050	LINR	-17.2		
Hexachloroethane	0.684	0.666	50.00	48.69		AVRG	-2.6		
Isophorone	0.856	1.006	50.00	58.82		AVRG	17.6		
4-Methylphenol (p-cresol)	1.093	1.134	50.00	51.91		AVRG	3.8		
2-Methylphenol (o-cresol)	1.099	1.171	50.00	53.26		AVRG	6.5		
2-Nitroaniline	0.363	0.481	50.00	66.22		AVRG	32.4		

FORM VII SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Instrument ID: BNA1 Calibration Date: 10/17/09 Time: 1746

Lab File ID: SEQ-CCV2 Init. Calib. Date(s): 07/24/08 03/04/09

Init. Calib. Times: 1046 0451

COMPOUND	$\overline{RRF}$	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
3-Nitroaniline	0.389	0.336	50.00	43.28		AVRG	-13.4	
4-Nitroaniline	0.325	0.291	50.00	41.80		2ORDR	-16.4	
Nitrobenzene	0.428	0.484	50.00	70.65		2ORDR	41.3	
2-Nitrophenol	0.275	0.270	50.00	49.03		AVRG	-1.9	20.0
4-Nitrophenol	0.205	0.270	50.00	59.13	0.050	LINR	18.2	
N-Nitrosodiphenylamine(1)	0.646	0.585	50.00	45.31		AVRG	-9.4	20.0
N-Nitroso-di-n-propylamine	0.897	1.078	50.00	87.16	0.050	2ORDR	-74.3	
Pentachlorophenol	0.143	0.147	50.00	46.20		LINR	-7.6	20.0
Phenol	1.876	1.589	50.00	54.68		2ORDR	9.4	20.0
2,4,5-Trichlorophenol	0.400	0.393	50.00	49.16		AVRG	-1.7	
2,4,6-Trichlorophenol	0.383	0.380	50.00	49.62		AVRG	-0.8	20.0
2-Fluorophenol	1.477	1.348	100.0	120.5		2ORDR	20.5	
Phenol-d6	1.711	1.460	100.0	109.6		2ORDR	9.6	
Nitrobenzene-d5	0.435	0.516	50.00	59.33		AVRG	18.6	
2-Fluorobiphenyl	1.315	1.213	50.00	46.12		AVRG	-7.8	
2,4,6-Tribromophenol	0.128	0.127	100.0	98.86		AVRG	-1.1	
Terphenyl-d14	0.914	1.015	50.00	55.56		AVRG	11.1	

(1) Cannot be separated from Diphenylamine

FORM VII SV

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: SEQ-TUN1 DFTPP Injection Date: 10/18/09

Instrument ID: BNA1 DFTPP Injection Time: 1003

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	48.2
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	73.2
70	Less than 2.0% of mass 69	0.2 (0.3)1
127	40.0 - 60.0% of mass 198	50.5
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.8
275	10.0 - 30.0% of mass 198	21.4
365	Greater than 1.0% of mass 198	2.95
441	Present, but less than mass 443	5.4
442	Greater than 40.0% of mass 198	61.2
443	17.0 - 23.0% of mass 442	12.1 (19.8)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SEQ-CCV1	SEQ-CCV1	SEQ-CCV1	10/18/09	1025
02	NTC21SB20-SO	0910006-15DL	1000615D	10/18/09	1941
03	NTC21SB15-SO	0910006-31DL	1000631D	10/18/09	2017
04	NTC21SB22-SO	0910006-38DL	1000638D	10/18/09	2053
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FORM V SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Instrument ID: BNA1 Calibration Date: 10/18/09 Time: 1025

Lab File ID: SEQ-CCV1 Init. Calib. Date(s): 07/24/08 03/04/09

Init. Calib. Times: 1046 0451

COMPOUND	$\overline{RRF}$	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D	
Acetophenone	1.494	1.577	50.00	52.77		AVRG	5.5		
Atrazine	0.236	0.266	50.00	56.38		AVRG	12.8		
Benzaldehyde	1.178	1.060	50.00	45.01		AVRG	-10.0		
bis(2-Chloroethoxy)methane	0.538	0.481	50.00	44.75		AVRG	-10.5		
1,1'-Biphenyl	1.528	1.145	50.00	37.48		AVRG	-25.0		
bis(2-Chloroethyl)ether	1.719	1.487	50.00	43.24		AVRG	-13.5		
2,2-Oxybis(1-chloropropane)	2.055	2.005	50.00	57.88		2ORDR	15.8		
Bis(2-ethylhexyl)phthalate	1.347	1.361	50.00	50.53		AVRG	1.0		
4-Bromophenyl-phenylether	0.263	0.248	50.00	47.09		AVRG	-5.8		
Butylbenzylphthalate	1.034	1.142	50.00	55.24		AVRG	10.5		
Caprolactam	0.130	0.119	50.00	45.88		AVRG	-8.2		
4-Chloroaniline	0.391	0.473	50.00	60.42		AVRG	20.8		
Carbazole	1.032	0.803	50.00	38.91		AVRG	-22.2		
4-Chloro-3-methylphenol	0.308	0.375	50.00	60.84		AVRG	21.7	20.0	<
2-Chloronaphthalene (beta)	1.143	1.002	50.00	43.86		AVRG	-12.3		
2-Chlorophenol	1.332	1.273	50.00	64.28		2ORDR	28.6		
4-Chlorophenyl-phenylether	0.557	0.542	50.00	48.68		AVRG	-2.6		
Dibenzofuran	1.599	1.473	50.00	46.08		AVRG	-7.8		
3,3'-Dichlorobenzidine	0.321	0.328	50.00	46.01		LINR	-8.0		
2,4-Dichlorophenol	0.332	0.332	50.00	50.06		AVRG	0.1	20.0	
Diethylphthalate	1.627	1.495	50.00	45.95		AVRG	-8.1		
2,4-Dimethylphenol	0.247	0.358	50.00	72.56		AVRG	45.1		
Dimethylphthalate	1.615	1.599	50.00	49.51		AVRG	-1.0		
Di-n-butylphthalate	1.887	1.749	50.00	46.35		AVRG	-7.3		
4,6-Dinitro-2-methylphenol	0.178	0.150	50.00	38.81		LINR	-22.4		
2,4-Dinitrophenol	0.184	0.191	50.00	42.51	0.050	LINR	-15.0		
2,4-Dinitrotoluene	0.488	0.523	50.00	53.50		AVRG	7.0		
2,6-Dinitrotoluene	0.416	0.397	50.00	47.74		AVRG	-4.5		
Di-n-octylphthalate	3.019	2.866	50.00	47.47		AVRG	-5.1	20.0	
Hexachlorobenzene	0.264	0.264	50.00	50.18		AVRG	0.4		)
Hexachlorobutadiene	0.192	0.215	50.00	55.84		AVRG	11.7	20.0	
Hexachlorocyclopentadiene	0.223	0.233	50.00	50.48	0.050	LINR	1.0		
Hexachloroethane	0.684	0.694	50.00	50.77		AVRG	1.5		
Isophorone	0.856	0.936	50.00	54.71		AVRG	9.4		
4-Methylphenol (p-cresol)	1.093	1.112	50.00	50.87		AVRG	1.7		
2-Methylphenol (o-cresol)	1.099	1.193	50.00	54.26		AVRG	8.5		
2-Nitroaniline	0.363	0.492	50.00	67.86		AVRG	35.7		

FORM VII SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Instrument ID: BNA1 Calibration Date: 10/18/09 Time: 1025

Lab File ID: SEQ-CCV1 Init. Calib. Date(s): 07/24/08 03/04/09

Init. Calib. Times: 1046 0451

COMPOUND	$\overline{RRF}$	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
3-Nitroaniline	0.389	0.349	50.00	44.88		AVRG	-10.2	
4-Nitroaniline	0.325	0.300	50.00	42.92		2ORDR	-14.2	
Nitrobenzene	0.428	0.472	50.00	68.12		2ORDR	36.2	
2-Nitrophenol	0.275	0.256	50.00	46.58		AVRG	-6.8	20.0
4-Nitrophenol	0.205	0.314	50.00	68.50	0.050	LINR	37.0	
N-Nitrosodiphenylamine(1)	0.646	0.538	50.00	41.68		AVRG	-16.6	20.0
N-Nitroso-di-n-propylamine	0.897	1.104	50.00	90.58	0.050	2ORDR	81.2	
Pentachlorophenol	0.143	0.166	50.00	51.31		LINR	2.6	20.0
Phenol	1.876	1.591	50.00	54.78		2ORDR	9.6	20.0
2,4,5-Trichlorophenol	0.400	0.398	50.00	49.76		AVRG	-0.5	
2,4,6-Trichlorophenol	0.383	0.382	50.00	49.84		AVRG	-0.3	20.0
2-Fluorophenol	1.477	1.417	100.0	130.1		2ORDR	30.1	
Phenol-d6	1.711	1.489	100.0	112.5		2ORDR	12.5	
Nitrobenzene-d5	0.435	0.475	50.00	54.58		AVRG	9.2	
2-Fluorobiphenyl	1.315	1.136	50.00	43.17		AVRG	-13.7	
2,4,6-Tribromophenol	0.128	0.138	100.0	107.8		AVRG	7.8	
Terphenyl-d14	0.914	0.993	50.00	54.33		AVRG	8.7	

(1) Cannot be separated from Diphenylamine

FORM VII SV

FORM 4
SEMIVOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

SBLK1001BW1

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: S1BW1001 Lab Sample ID: 9J01008-BLK1

Instrument ID: BNA1 Date Extracted: 10/01/09

Matrix: (soil/water) WATER Date Analyzed: 10/09/09

Level:(low/med) LOW GPC Cleanup: (Y/N) N Time Analyzed: 1535

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	SBLK1001BW1L	9J01008-BS1	S1LW1001	10/09/09
02	SBLK1001BW1L	9J01008-BSD1	S1DW1001	10/09/09
03	RB-092909-01	0910006-51	1000651	10/10/09
04	RB-092909-02	0910006-52	1000652	10/10/09
05	SB-092909-01	0910006-53	1000653	10/10/09
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COMMENTS:

page 1 of 1

FORM IV SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SBLK1001BW1

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) WATER Lab Sample ID: 9J01008-BLK1

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1BW1001

% Moisture: _____ decanted: (Y/N)___ Date Sampled: _____

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:10/01/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/09/09 15:35

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	0.75	5.0		U
1912-24-9	Atrazine	0.69	5.0		U
100-52-7	Benzaldehyde	0.57	5.0		U
111-91-1	bis(2-Chloroethoxy)methane	0.52	5.0		U
92-52-4	1,1'-Biphenyl	0.39	5.0		U
111-44-4	bis(2-Chloroethyl)ether	0.45	5.0		U
108-60-1	2,2-Oxybis(1-chloropropane)	0.85	5.0		U
117-81-7	Bis(2-ethylhexyl)phthalate	1.3	5.0		U
101-55-3	4-Bromophenyl-phenylether	0.57	5.0		U
85-68-7	Butylbenzylphthalate	0.82	5.0		U
105-60-2	Caprolactam	0.36	5.0		U
106-47-8	4-Chloroaniline	0.95	5.0		U
86-74-8	Carbazole	0.69	5.0		U
59-50-7	4-Chloro-3-methylphenol	0.58	5.0		U
91-58-7	2-Chloronaphthalene (beta)	0.58	5.0		U
95-57-8	2-Chlorophenol	0.59	5.0		U
7005-72-3	4-Chlorophenyl-phenylether	0.89	5.0		U
132-64-9	Dibenzofuran	0.65	5.0		U
91-94-1	3,3'-Dichlorobenzidine	0.89	5.0		U
120-83-2	2,4-Dichlorophenol	0.44	5.0		U
84-66-2	Diethylphthalate	1.0	5.0		U
105-67-9	2,4-Dimethylphenol	0.71	20		U
131-11-3	Dimethylphthalate	0.74	5.0		U
84-74-2	Di-n-butylphthalate	1.3	5.0		U
534-52-1	4,6-Dinitro-2-methylphenol	0.74	20		U
51-28-5	2,4-Dinitrophenol	0.85	50		U
121-14-2	2,4-Dinitrotoluene	0.49	5.0		U
606-20-2	2,6-Dinitrotoluene	0.66	5.0		U
117-84-0	Di-n-octylphthalate	0.33	5.0		U
118-74-1	Hexachlorobenzene	0.47	5.0		U
87-68-3	Hexachlorobutadiene	0.93	5.0		U
77-47-4	Hexachlorocyclopentadiene	0.89	5.0		U
67-72-1	Hexachloroethane	0.46	5.0		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SBLK1001BW1

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) WATER Lab Sample ID: 9J01008-BLK1

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1BW1001

% Moisture: _____ decanted: (Y/N)___ Date Sampled: _____

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:10/01/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/09/09 15:35

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	0.55	5.0		U
106-44-5	4-Methylphenol (p-cresol)	0.77	5.0		U
95-48-7	2-Methylphenol (o-cresol)	0.83	5.0		U
88-74-4	2-Nitroaniline	1.2	20		U
99-09-2	3-Nitroaniline	1.0	20		U
100-01-6	4-Nitroaniline	2.0	20		U
98-95-3	Nitrobenzene	0.62	5.0		U
88-75-5	2-Nitrophenol	0.74	5.0		U
100-02-7	4-Nitrophenol	0.83	20		U
86-30-6	N-Nitrosodiphenylamine (1)	0.46	5.0		U
621-64-7	N-Nitroso-di-n-propylamine	0.90	5.0		U
87-86-5	Pentachlorophenol	1.0	20		U
108-95-2	Phenol	0.46	5.0		U
95-95-4	2,4,5-Trichlorophenol	0.50	5.0		U
88-06-2	2,4,6-Trichlorophenol	0.73	5.0		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 4
SEMIVOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

9J02015-BLK1

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: S1BS1003 Lab Sample ID: 9J02015-BLK1

Instrument ID: BNA1 Date Extracted: 10/03/09

Matrix: (soil/water) SOIL Date Analyzed: 10/16/09

Level:(low/med) LOW GPC Cleanup: (Y/N) N Time Analyzed: 1618

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	9J02015-BLK1	9J02015-BS1	S1LS1003	10/16/09
02	FD-092609-01	0910006-01	1000601	10/16/09
03	NTC21SB09-SO	0910006-04	1000604	10/16/09
04	NTC21SB10-SO	0910006-06	1000606	10/16/09
05	NTC21SB17-SO	0910006-12	1000612	10/16/09
06	NTC21SB18-SO	0910006-14	1000614	10/16/09
07	NTC21SB20-SO	0910006-16	1000616	10/16/09
08	NTC21SB21-SO	0910006-18	1000618	10/16/09
09	FD-092709-01	0910006-20	1000620	10/16/09
10	NTC21SB11-SO	0910006-08	1000608	10/17/09
11	NTC21SB12-SO	0910006-10	1000610	10/17/09
12	NTC21SB12-SO	0910006-09	1000609	10/17/09
13	NTC21SB18-SO	0910006-13	1000613	10/17/09
14	FD-092609-02	0910006-02	1000602	10/17/09
15	NTC21SB09-SO	0910006-03	1000603	10/17/09
16	NTC21SB10-SO	0910006-05	1000605	10/17/09
17	NTC21SB11-SO	0910006-07	1000607	10/17/09
18	NTC21SB17-SO	0910006-11	1000611	10/17/09
19	NTC21SB20-SO	0910006-15	1000615	10/17/09
20	NTC21SB21-SO	0910006-17	1000617	10/17/09
21	NTC21SB20-SO	0910006-15DL	1000615D	10/18/09
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COMMENTS:

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FORM IV SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

9J02015-BLK1

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 9J02015-BLK1

Sample wt/vol: 15.0 (g/mL) G Lab File ID: S1BS1003

% Moisture: 0 decanted: (Y/N) N Date Sampled: _____

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/16/09 16:18

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	41	330		U
1912-24-9	Atrazine	28	330		U
100-52-7	Benzaldehyde	55	330		U
111-91-1	bis(2-Chloroethoxy)methane	31	330		U
92-52-4	1,1'-Biphenyl	29	330		U
111-44-4	bis(2-Chloroethyl)ether	41	330		U
108-60-1	2,2-Oxybis(1-chloropropane)	51	670		U
117-81-7	Bis(2-ethylhexyl)phthalate	36	330		U
101-55-3	4-Bromophenyl-phenylether	26	330		U
85-68-7	Butylbenzylphthalate	30	330		U
105-60-2	Caprolactam	67	330		U
106-47-8	4-Chloroaniline	48	330		U
86-74-8	Carbazole	36	670		U
59-50-7	4-Chloro-3-methylphenol	28	330		U
91-58-7	2-Chloronaphthalene (beta)	32	330		U
95-57-8	2-Chlorophenol	41	330		U
7005-72-3	4-Chlorophenyl-phenylether	31	330		U
132-64-9	Dibenzofuran	24	330		U
91-94-1	3,3'-Dichlorobenzidine	31	330		U
120-83-2	2,4-Dichlorophenol	19	330		U
84-66-2	Diethylphthalate	34	330		U
105-67-9	2,4-Dimethylphenol	21	670		U
131-11-3	Dimethylphthalate	30	330		U
84-74-2	Di-n-butylphthalate	30	330		U
534-52-1	4,6-Dinitro-2-methylphenol	22	1300		U
51-28-5	2,4-Dinitrophenol	130	3300		U
121-14-2	2,4-Dinitrotoluene	24	330		U
606-20-2	2,6-Dinitrotoluene	38	330		U
117-84-0	Di-n-octylphthalate	27	330		U
118-74-1	Hexachlorobenzene	35	330		U
87-68-3	Hexachlorobutadiene	33	330		U
77-47-4	Hexachlorocyclopentadiene	61	330		U
67-72-1	Hexachloroethane	39	670		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

9J02015-BLK1

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 9J02015-BLK1

Sample wt/vol: 15.0 (g/mL) G Lab File ID: S1BS1003

% Moisture: 0 decanted: (Y/N) N Date Sampled: _____

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/16/09 16:18

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	28	330		U
106-44-5	4-Methylphenol (p-cresol)	26	330		U
95-48-7	2-Methylphenol (o-cresol)	39	330		U
88-74-4	2-Nitroaniline	32	1300		U
99-09-2	3-Nitroaniline	47	1300		U
100-01-6	4-Nitroaniline	100	1300		U
98-95-3	Nitrobenzene	34	330		U
88-75-5	2-Nitrophenol	22	330		U
100-02-7	4-Nitrophenol	81	1300		U
86-30-6	N-Nitrosodiphenylamine (1)	32	330		U
621-64-7	N-Nitroso-di-n-propylamine	55	330		U
87-86-5	Pentachlorophenol	34	1300		U
108-95-2	Phenol	36	330		U
95-95-4	2,4,5-Trichlorophenol	27	330		U
88-06-2	2,4,6-Trichlorophenol	35	330		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 4
SEMIVOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

9J05025-BLK1

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: S1BS1006 Lab Sample ID: 9J05025-BLK1

Instrument ID: BNA1 Date Extracted: 10/06/09

Matrix: (soil/water) SOIL Date Analyzed: 10/17/09

Level:(low/med) LOW GPC Cleanup: (Y/N) N Time Analyzed: 1145

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	9J05025-BLK1	9J05025-BS1	S1LS1006	10/17/09
02	NTC21SB13-SO	0910006-28	1000628	10/17/09
03	NTC21SB14-SO	0910006-30	1000630	10/17/09
04	NTC21SB15-SO	0910006-32	1000632	10/17/09
05	NTC21SB16-SO	0910006-34	1000634	10/17/09
06	NTC21SB04-SO	0910006-21	1000621	10/17/09
07	NTC21SB04-SO	0910006-22	1000622	10/17/09
08	NTC21SB06-SO	0910006-23	1000623	10/17/09
09	NTC21SB06-SO	0910006-24	1000624	10/17/09
10	NTC21SB07-SO	0910006-25	1000625	10/17/09
11	NTC21SB07-SO	0910006-26	1000626	10/17/09
12	NTC21SB13-SO	0910006-27	1000627	10/17/09
13	NTC21SB14-SO	0910006-29	1000629	10/17/09
14	NTC21SB15-SO	0910006-31	1000631	10/17/09
15	NTC21SB16-SO	0910006-33	1000633	10/17/09
16	NTC21SB19-SO	0910006-35	1000635	10/18/09
17	NTC21SB19-SO	0910006-36	1000636	10/18/09
18	NTC21SB22-SO	0910006-37	1000637	10/18/09
19	NTC21SB22-SO	0910006-38	1000638	10/18/09
20	FD-092809-01	0910006-40	1000640	10/18/09
21	NTC21SB01-SO	0910006-41	1000641	10/18/09
22	NTC21SB14-SO	0910006-29MS	1000629M	10/18/09
23	NTC21SB14-SO	0910006-29MSD	1000629S	10/18/09
24	NTC21SB15-SO	0910006-31DL	1000631D	10/18/09
25	NTC21SB22-SO	0910006-38DL	1000638D	10/18/09
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COMMENTS:

FORM IV SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

9J05025-BLK1

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 9J05025-BLK1

Sample wt/vol: 15.0 (g/mL) G Lab File ID: S1BS1006

% Moisture: 0 decanted: (Y/N) N Date Sampled: _____

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 11:45

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	41	330		U
1912-24-9	Atrazine	28	330		U
100-52-7	Benzaldehyde	55	330		U
111-91-1	bis(2-Chloroethoxy)methane	31	330		U
92-52-4	1,1'-Biphenyl	29	330		U
111-44-4	bis(2-Chloroethyl)ether	41	330		U
108-60-1	2,2-Oxybis(1-chloropropane)	51	670		U
117-81-7	Bis(2-ethylhexyl)phthalate	36	330		U
101-55-3	4-Bromophenyl-phenylether	26	330		U
85-68-7	Butylbenzylphthalate	30	330		U
105-60-2	Caprolactam	67	330		U
106-47-8	4-Chloroaniline	48	330		U
86-74-8	Carbazole	36	670		U
59-50-7	4-Chloro-3-methylphenol	28	330		U
91-58-7	2-Chloronaphthalene (beta)	32	330		U
95-57-8	2-Chlorophenol	41	330		U
7005-72-3	4-Chlorophenyl-phenylether	31	330		U
132-64-9	Dibenzofuran	24	330		U
91-94-1	3,3'-Dichlorobenzidine	31	330		U
120-83-2	2,4-Dichlorophenol	19	330		U
84-66-2	Diethylphthalate	34	330		U
105-67-9	2,4-Dimethylphenol	21	670		U
131-11-3	Dimethylphthalate	30	330		U
84-74-2	Di-n-butylphthalate	30	330		U
534-52-1	4,6-Dinitro-2-methylphenol	22	1300		UY
51-28-5	2,4-Dinitrophenol	130	3300		UY
121-14-2	2,4-Dinitrotoluene	24	330		U
606-20-2	2,6-Dinitrotoluene	38	330		U
117-84-0	Di-n-octylphthalate	27	330		U
118-74-1	Hexachlorobenzene	35	330		U
87-68-3	Hexachlorobutadiene	33	330		U
77-47-4	Hexachlorocyclopentadiene	61	330		U
67-72-1	Hexachloroethane	39	670		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

9J05025-BLK1

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 9J05025-BLK1

Sample wt/vol: 15.0 (g/mL) G Lab File ID: S1BS1006

% Moisture: 0 decanted: (Y/N) N Date Sampled: _____

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/17/09 11:45

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	28	330		U
106-44-5	4-Methylphenol (p-cresol)	26	330		U
95-48-7	2-Methylphenol (o-cresol)	39	330		U
88-74-4	2-Nitroaniline	32	1300		U
99-09-2	3-Nitroaniline	47	1300		U
100-01-6	4-Nitroaniline	100	1300		U
98-95-3	Nitrobenzene	34	330		U
88-75-5	2-Nitrophenol	22	330		U
100-02-7	4-Nitrophenol	81	1300		U
86-30-6	N-Nitrosodiphenylamine (1)	32	330		U
621-64-7	N-Nitroso-di-n-propylamine	55	330		U
87-86-5	Pentachlorophenol	34	1300		U
108-95-2	Phenol	36	330		U
95-95-4	2,4,5-Trichlorophenol	27	330		U
88-06-2	2,4,6-Trichlorophenol	35	330		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 2
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Level: (low/med) LOW

	CLIENT SAMPLE NO.	S1 (2FP) #	S2 (PHL) #	S3 (NBZ) #	S4 (FBP) #	S5 (TBP) #	S6 (TPH) #	S7 #	S8 #	TOT OUT
01	9J02015-BLK1	62	69	82	70	71	69			0
02	9J02015-BLK1	68	65	76	63	76	65			0
03	FD-092609-01	45	59	72	62	69	65			0
04	NTC21SB09-SO	54	58	72	58	76	61			0
05	NTC21SB10-SO	43	51	72	57	64	60			0
06	NTC21SB17-SO	50	59	76	62	74	71			0
07	NTC21SB18-SO	58	64	83	68	78	83			0
08	NTC21SB20-SO	49	60	66	56	76	74			0
09	NTC21SB21-SO	56	62	80	66	76	90			0
10	FD-092709-01	58	64	83	70	85	89			0
11	NTC21SB11-SO	36	39	57	46	62	77			0
12	NTC21SB12-SO	36	46	63	52	58	76			0
13	NTC21SB12-SO	35	44	55	51	57	105			0
14	NTC21SB18-SO	49	62	73	65	79	114			0
15	FD-092609-02	34	43	58	50	48	64			0
16	NTC21SB09-SO	23*	35	44	41	45	63			1
17	NTC21SB10-SO	23*	29*	38	41	43	52			2
18	NTC21SB11-SO	20*	32	39	42	33	70			1
19	NTC21SB17-SO	48	66	68	62	80	101			0
20	NTC21SB20-SO	16*	34	48	44	5*	116			2
21	NTC21SB21-SO	29	41	54	57	59	113			0
22	9J05025-BLK1	67	73	82	70	76	78			0
23	9J05025-BLK1	68	62	82	62	69	74			0
24	NTC21SB13-SO	42	52	67	54	60	72			0
25	NTC21SB14-SO	51	60	63	56	62	65			0
26	NTC21SB15-SO	62	67	73	66	80	79			0
27	NTC21SB16-SO	59	65	79	59	64	68			0
28	9J07018-BLK1	62	63	63	70	70	87			0
29	9J07018-BLK1	53	53	52	61	64	69			0
30	NTC21SB02-SO	37	44	54	62	18*	94			1
	NTC21SB02-SO-0001	46	49	61	71	59	99			
	EL QC LIMITS	(25-110)	(30-110)	(30-110)	(35-110)	(30-115)	(40-120)			
	SPIKE CONC (UG/KG)	6700	6700	3300	3300	6700	3300			

-0001 ← 16
-0001 ← 17
-0001 ← 18
-0001 ← 20
-0204 ← 30

11/2/09

S1 (2FP) = 2-Fluorophenol
S2 (PHL) = Phenol-d6
S3 (NBZ) = Nitrobenzene-d5
S4 (FBP) = 2-Fluorobiphenyl
S5 (TBP) = 2,4,6-Tribromophenol
S6 (TPH) = Terphenyl-d14

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate results reported from a diluted analysis

FORM 2
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Level: (low/med) LOW

	CLIENT SAMPLE NO.	S1 (2FP) #	S2 (PHL) #	S3 (NBZ) #	S4 (FBP) #	S5 (TBP) #	S6 (TPH) #	S7 #	S8 #	TOT OUT
01	NTC21SB04-SO	40	50	69	56	56	78			0
02	NTC21SB03-SO	39	42	49	56	51	80			0
03	NTC21SB04-SO	61	73	71	65	80	86			0
04	NTC21SB03-SO	36	40	49	56	50	98			0
05	NTC21SB06-SO	53	62	75	62	73	85			0
06	NTC21SB05-SO	41	44	48	58	44	102			0
07	NTC21SB06-SO	35	50	62	55	39	68			0
08	NTC21SB05-SO	52	56	55	66	67	101			0
09	NTC21SB07-SO	43	53	63	60	61	90			0
10	NTC21SB08-SO	42	51	52	61	35	98			0
11	NTC21SB07-SO	50	69	71	61	79	92			0
12	NTC21SB08-SO	54	58	62	72	69	114			0
13	NTC21SB13-SO	36	42	61	56	61	71			0
MS 14	NTC21SB02-SO	28	39	46	56	16*	87			1
15	NTC21SB14-SO	47	54	66	59	68	79			0
MSD 16	NTC21SB02-SO	32	43	48	59	20*	96			1
17	NTC21SB15-SO	54	73	65	66	79	113			0
18	NTC21SB16-SO	44	52	66	60	67	87			0
19	NTC21SB19-SO	48	64	75	66	74	98			0
20	NTC21SB19-SO	46	57	66	58	64	83			0
21	NTC21SB22-SO	35	39	53	58	55	75			0
22	NTC21SB22-SO	55	68	69	72	77	109			0
23	FD-092809-01	49	56	60	70	74	93			0
24	NTC21SB01-SO	44	50	53	65	68	85			0
25	NTC21SB14-SO	40	42	52	50	58	83			0
26	NTC21SB14-SO	40	49	53	52	63	76			0
27	NTC21SB20-SO	27D	52D	73D	76D	0D	88D			0
28	NTC21SB15-SO	40D	46D	68D	68D	82D	97D			0
29	NTC21SB22-SO	46D	57D	75D	70D	77D	92D			0
30										

		EL QC LIMITS	SPIKE CONC (UG/KG)
S1 (2FP)	= 2-Fluorophenol	(25-110)	6700
S2 (PHL)	= Phenol-d6	(30-110)	6700
S3 (NBZ)	= Nitrobenzene-d5	(30-110)	3300
S4 (FBP)	= 2-Fluorobiphenyl	(35-110)	3300
S5 (TBP)	= 2,4,6-Tribromophenol	(30-115)	6700
S6 (TPH)	= Terphenyl-d14	(40-120)	3300

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate results reported from a diluted analysis

FORM 2
WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

	CLIENT SAMPLE NO.	S1 (2FP) #	S2 (PHL) #	S3 (NBZ) #	S4 (FBP) #	S5 (TBP) #	S6 (TPH) #	S7 #	S8 #	TOT OUT
01	SBLK1001BW1	34	22	80	66	69	82			0
02	SBLK1001BW1L	33	20	91	78	76	92			0
03	SBLK1001BW1L	30	19	85	73	70	83			0
04	RB-092909-01	20	14*	72	68	54	72			1
05	RB-092909-02	24	17	87	77	60	72			0
06	SB-092909-01	30	19	86	70	68	77			0
07										
08										
09										
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		EL QC LIMITS	SPIKE CONC (UG/L)
S1 (2FP)	= 2-Fluorophenol	(15-110)	100
S2 (PHL)	= Phenol-d6	(15-110)	100
S3 (NBZ)	= Nitrobenzene-d5	(30-110)	50
S4 (FBP)	= 2-Fluorobiphenyl	(35-110)	50
S5 (TBP)	= 2,4,6-Tribromophenol	(45-125)	100
S6 (TPH)	= Terphenyl-d14	(55-125)	50

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate results reported from a diluted analysis

FORM 3
SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: NTC21SB02-SO-020 Lab Sample ID: 0910006-43

Level:(low/med) LOW

COMPOUND	SPIKE ADDED (UG/KG)	SAMPLE CONCENTRATION (UG/KG)	MS CONCENTRATION (UG/KG)	MS % REC #	QC. LIMITS REC.
Acetophenone	3758	229.6	1825	42	35-110
Atrazine	3758	0.0000	2508	67	55-105
Benzaldehyde	3758	218.8	352.9	4*	10-160
bis(2-Chloroethoxy)meth	3758	0.0000	2408	64	45-110
1,1'-Biphenyl	3758	0.0000	2263	60	45-110
bis(2-Chloroethyl)ether	3758	0.0000	1900	50	40-105
2,2-Oxybis(1-chloroprop	3758	0.0000	2059	55	20-115
Bis(2-ethylhexyl)phthal	3758	230.0	4167	105	45-125
4-Bromophenyl-phenyleth	3758	0.0000	2423	64	45-115
Butylbenzylphthalate	3758	0.0000	4086	109	50-125
Caprolactam	3758	0.0000	1837	49*	50-110
4-Chloroaniline	3758	0.0000	442.8	12	10- 95
Carbazole	3758	0.0000	2370	63	45-115
4-Chloro-3-methylphenol	3758	0.0000	2095	56	45-115
2-Chloronaphthalene (be	3758	0.0000	2339	62	45-105
2-Chlorophenol	3758	0.0000	1562	42*	45-105
4-Chlorophenyl-phenylet	3758	0.0000	2492	66	45-110
Dibenzofuran	3758	306.5	2890	69	50-105
3,3'-Dichlorobenzidine	3758	0.0000	0.0000	0*	19-130
2,4-Dichlorophenol	3758	0.0000	1492	40*	45-110
Diethylphthalate	3758	0.0000	2641	70	50-115
2,4-Dimethylphenol	3758	0.0000	2139	57	30-105
Dimethylphthalate	3758	0.0000	2493	66	50-110
Di-n-butylphthalate	3758	0.0000	2751	73	55-110
4,6-Dinitro-2-methylphe	3758	0.0000	0.0000	0*	30-135
2,4-Dinitrophenol	3758	0.0000	0.0000	0*	15-130
2,4-Dinitrotoluene	3758	0.0000	2246	60	50-115
2,6-Dinitrotoluene	3758	0.0000	2267	60	50-110

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: NTC21SB02-SO-020 Lab Sample ID: 0910006-43

Level:(low/med) LOW

COMPOUND	SPIKE ADDED (UG/KG)	SAMPLE CONCENTRATION (UG/KG)	MS CONCENTRATION (UG/KG)	MS % REC #	QC. LIMITS REC.
Di-n-octylphthalate	3758	0.0000	3771	100	40-130
Hexachlorobenzene	3758	0.0000	2506	67	45-120
Hexachlorobutadiene	3758	0.0000	2469	66	30-110
Hexachlorocyclopentadie	3758	0.0000	251.2	7*	10-110
Hexachloroethane	3758	0.0000	1784	47	35-110
Isophorone	3758	0.0000	2252	60	45-110
4-Methylphenol (p-creso	3758	0.0000	2228	59	40-105
2-Methylphenol (o-creso	3758	0.0000	1961	52	40-105
2-Nitroaniline	3758	0.0000	1875	50	45-120
3-Nitroaniline	3758	0.0000	899.0	24*	25-110
4-Nitroaniline	3758	0.0000	1014	27*	35-115
Nitrobenzene	3758	0.0000	2013	54	40-115
2-Nitrophenol	3758	0.0000	916.4	24*	40-110
4-Nitrophenol	3758	0.0000	0.0000	0*	15-140
N-Nitrosodiphenylamine	3758	0.0000	2956	79	50-115
N-Nitroso-di-n-prop.(1)	3758	0.0000	2279	61	40-115
Pentachlorophenol	3758	0.0000	532.5	14*	25-120
Phenol	3758	0.0000	1560	42	40-100
2,4,5-Trichlorophenol	3758	0.0000	936.2	25*	50-110
2,4,6-Trichlorophenol	3758	0.0000	636.0	17*	45-110

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: NTC21SB02-SO-020 Lab Sample ID: 0910006-43

Level:(low/med) LOW

COMPOUND	SPIKE ADDED (UG/KG)	MSD CONCENTRATION (UG/KG)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Acetophenone	3758	1960	46	7	30	35-110
Atrazine	3758	2794	74	11	30	55-105
Benzaldehyde	3758	387.6	4*	9	30	10-160
bis(2-Chloroethoxy)meth	3758	2508	67	4	30	45-110
1,1'-Biphenyl	3758	2294	61	1	30	45-110
bis(2-Chloroethyl)ether	3758	1996	53	5	30	40-105
2,2-Oxybis(1-chloroprop	3758	2218	59	7	30	20-115
Bis(2-ethylhexyl)phthal	3758	4660	118	11	30	45-125
4-Bromophenyl-phenyleth	3758	2433	65	0	30	45-115
Butylbenzylphthalate	3758	4467	119	9	30	50-125
Caprolactam	3758	1955	52	6	30	50-110
4-Chloroaniline	3758	480.3	13	8	30	10- 95
Carbazole	3758	2560	68	8	30	45-115
4-Chloro-3-methylphenol	3758	2142	57	2	30	45-115
2-Chloronaphthalene (be	3758	2399	64	2	30	45-105
2-Chlorophenol	3758	1703	45	9	30	45-105
4-Chlorophenyl-phenylet	3758	2544	68	2	30	45-110
Dibenzofuran	3758	3030	72	5	30	50-105
3,3'-Dichlorobenzidine	3758	0.0000	0*		30	19-130
2,4-Dichlorophenol	3758	1632	43*	9	30	45-110
Diethylphthalate	3758	2617	70	1	30	50-115
2,4-Dimethylphenol	3758	2146	57	0	30	30-105
Dimethylphthalate	3758	2578	69	3	30	50-110
Di-n-butylphthalate	3758	2862	76	4	30	55-110
4,6-Dinitro-2-methylphe	3758	0.0000	0*		30	30-135
2,4-Dinitrophenol	3758	0.0000	0*		30	15-130
2,4-Dinitrotoluene	3758	2361	63	5	30	50-115
2,6-Dinitrotoluene	3758	2297	61	1	30	50-110

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: NTC21SB02-SO-020 Lab Sample ID: 0910006-43

Level:(low/med) LOW

COMPOUND	SPIKE ADDED (UG/KG)	MSD CONCENTRATION (UG/KG)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Di-n-octylphthalate	3758	4352	116	14	30	40-130
Hexachlorobenzene	3758	74.35	2*	188*	30	45-120
Hexachlorobutadiene	3758	2621	70	6	30	30-110
Hexachlorocyclopentadie	3758	227.2	6*	10	30	10-110
Hexachloroethane	3758	1882	50	5	30	35-110
Isophorone	3758	2354	63	4	30	45-110
4-Methylphenol (p-creso	3758	2337	62	5	30	40-105
2-Methylphenol (o-creso	3758	2034	54	4	30	40-105
2-Nitroaniline	3758	1939	52	3	30	45-120
3-Nitroaniline	3758	847.2	22*	6	30	25-110
4-Nitroaniline	3758	887.6	24*	13	30	35-115
Nitrobenzene	3758	2084	55	3	30	40-115
2-Nitrophenol	3758	1035	28*	12	30	40-110
4-Nitrophenol	3758	0.0000	0*		30	15-140
N-Nitrosodiphenylamine	3758	2993	80	1	30	50-115
N-Nitroso-di-n-prop.(1)	3758	2398	64	5	30	40-115
Pentachlorophenol	3758	490.3	13*	8	30	25-120
Phenol	3758	1662	44	6	30	40-100
2,4,5-Trichlorophenol	3758	981.5	26*	5	30	50-110
2,4,6-Trichlorophenol	3758	733.7	20*	14	30	45-110

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 1 out of 48 outside limits
Spike Recovery: 29 out of 96 outside limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: NTC21SB14-SO-000 Lab Sample ID: 0910006-29

Level:(low/med) LOW

COMPOUND	SPIKE ADDED (UG/KG)	SAMPLE CONCENTRATION (UG/KG)	MS CONCENTRATION (UG/KG)	MS % REC #	QC. LIMITS REC.
Acetophenone	4075	0.0000	1939	48	35-110
Atrazine	4075	0.0000	2122	52*	55-105
Benzaldehyde	4075	0.0000	346.2	8*	10-160
bis(2-Chloroethoxy)meth	4075	0.0000	2081	51	45-110
1,1'-Biphenyl	4075	0.0000	1843	45	45-110
bis(2-Chloroethyl)ether	4075	0.0000	1867	46	40-105
2,2-Oxybis(1-chloroprop	4075	0.0000	2679	66	20-115
Bis(2-ethylhexyl)phthal	4075	50.78	3163	76	45-125
4-Bromophenyl-phenyleth	4075	0.0000	1890	46	45-115
Butylbenzylphthalate	4075	0.0000	3358	82	50-125
Caprolactam	4075	0.0000	2033	50	50-110
4-Chloroaniline	4075	0.0000	812.5	20	10- 95
Carbazole	4075	0.0000	1807	44*	45-115
4-Chloro-3-methylphenol	4075	0.0000	2271	56	45-115
2-Chloronaphthalene (be	4075	0.0000	2088	51	45-105
2-Chlorophenol	4075	0.0000	2117	52	45-105
4-Chlorophenyl-phenylet	4075	0.0000	2226	55	45-110
Dibenzofuran	4075	323.6	2422	51	50-105
3,3'-Dichlorobenzidine	4075	0.0000	0.0000	0*	19-130
2,4-Dichlorophenol	4075	0.0000	1767	43*	45-110
Diethylphthalate	4075	0.0000	2264	56	50-115
2,4-Dimethylphenol	4075	0.0000	3352	82	30-105
Dimethylphthalate	4075	0.0000	1921	47*	50-110
Di-n-butylphthalate	4075	0.0000	2173	53*	55-110
4,6-Dinitro-2-methylphe	4075	0.0000	0.0000	0*	30-135
2,4-Dinitrophenol	4075	0.0000	0.0000	0*	15-130
2,4-Dinitrotoluene	4075	0.0000	1678	41*	50-115
2,6-Dinitrotoluene	4075	0.0000	1606	39*	50-110

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: NTC21SB14-SO-000 Lab Sample ID: 0910006-29

Level:(low/med) LOW

COMPOUND	SPIKE ADDED (UG/KG)	SAMPLE CONCENTRATION (UG/KG)	MS CONCENTRATION (UG/KG)	MS % REC #	QC. LIMITS REC.
Di-n-octylphthalate	4075	0.0000	3514	86	40-130
Hexachlorobenzene	4075	0.0000	2177	53	45-120
Hexachlorobutadiene	4075	0.0000	2170	53	30-110
Hexachlorocyclopentadie	4075	0.0000	0.0000	0*	10-110
Hexachloroethane	4075	0.0000	1554	38	35-110
Isophorone	4075	0.0000	2073	51	45-110
4-Methylphenol (p-creso	4075	0.0000	2505	61	40-105
2-Methylphenol (o-creso	4075	0.0000	2218	54	40-105
2-Nitroaniline	4075	0.0000	2561	63	45-120
3-Nitroaniline	4075	0.0000	331.5	8*	25-110
4-Nitroaniline	4075	0.0000	653.3	16*	35-115
Nitrobenzene	4075	0.0000	1943	48	40-115
2-Nitrophenol	4075	0.0000	1301	32*	40-110
4-Nitrophenol	4075	0.0000	1700	42	15-140
N-Nitrosodiphenylamine	4075	0.0000	2500	61	50-115
N-Nitroso-di-n-prop.(1)	4075	0.0000	3158	77	40-115
Pentachlorophenol	4075	0.0000	1730	42	25-120
Phenol	4075	0.0000	1899	47	40-100
2,4,5-Trichlorophenol	4075	0.0000	1846	45*	50-110
2,4,6-Trichlorophenol	4075	0.0000	1982	49	45-110

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: NTC21SB14-SO-000 Lab Sample ID: 0910006-29

Level:(low/med) LOW

COMPOUND	SPIKE ADDED (UG/KG)	MSD CONCENTRATION (UG/KG)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Acetophenone	4075	2313	57	18	30	35-110
Atrazine	4075	2009	49*	5	30	55-105
Benzaldehyde	4075	291.0	7*	17	30	10-160
bis(2-Chloroethoxy)meth	4075	2197	54	5	30	45-110
1,1'-Biphenyl	4075	2083	51	12	30	45-110
bis(2-Chloroethyl)ether	4075	1758	43	6	30	40-105
2,2-Oxybis(1-chloroprop	4075	2473	61	8	30	20-115
Bis(2-ethylhexyl)phthal	4075	3087	74	2	30	45-125
4-Bromophenyl-phenyleth	4075	2046	50	8	30	45-115
Butylbenzylphthalate	4075	3235	79	4	30	50-125
Caprolactam	4075	1891	46*	7	30	50-110
4-Chloroaniline	4075	1353	33	50*	30	10- 95
Carbazole	4075	1861	46	3	30	45-115
4-Chloro-3-methylphenol	4075	2482	61	9	30	45-115
2-Chloronaphthalene (be	4075	2271	56	8	30	45-105
2-Chlorophenol	4075	2168	53	2	30	45-105
4-Chlorophenyl-phenylet	4075	2148	53	4	30	45-110
Dibenzofuran	4075	2375	50	2	30	50-105
3,3'-Dichlorobenzidine	4075	0.0000	0*		30	19-130
2,4-Dichlorophenol	4075	1957	48	10	30	45-110
Diethylphthalate	4075	2103	52	7	30	50-115
2,4-Dimethylphenol	4075	3640	89	8	30	30-105
Dimethylphthalate	4075	1837	45*	4	30	50-110
Di-n-butylphthalate	4075	2145	53*	1	30	55-110
4,6-Dinitro-2-methylphe	4075	571.8	14*		30	30-135
2,4-Dinitrophenol	4075	0.0000	0*		30	15-130
2,4-Dinitrotoluene	4075	1543	38*	8	30	50-115
2,6-Dinitrotoluene	4075	1659	41*	3	30	50-110

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: NTC21SB14-SO-000 Lab Sample ID: 0910006-29

Level:(low/med) LOW

COMPOUND	SPIKE ADDED (UG/KG)	MSD CONCENTRATION (UG/KG)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Di-n-octylphthalate	4075	3590	88	2	30	40-130
Hexachlorobenzene	4075	2321	57	6	30	45-120
Hexachlorobutadiene	4075	2190	54	1	30	30-110
Hexachlorocyclopentadie	4075	148.2	4*		30	10-110
Hexachloroethane	4075	1506	37	3	30	35-110
Isophorone	4075	1977	48	5	30	45-110
4-Methylphenol (p-creso	4075	2130	52	16	30	40-105
2-Methylphenol (o-creso	4075	2304	56	4	30	40-105
2-Nitroaniline	4075	2742	67	7	30	45-120
3-Nitroaniline	4075	436.2	11*	27	30	25-110
4-Nitroaniline	4075	583.1	14*	11	30	35-115
Nitrobenzene	4075	2251	55	15	30	40-115
2-Nitrophenol	4075	1575	39*	19	30	40-110
4-Nitrophenol	4075	2267	56	28	30	15-140
N-Nitrosodiphenylamine	4075	2520	62	1	30	50-115
N-Nitroso-di-n-prop.(1)	4075	2986	73	6	30	40-115
Pentachlorophenol	4075	1913	47	10	30	25-120
Phenol	4075	1795	44	6	30	40-100
2,4,5-Trichlorophenol	4075	2002	49*	8	30	50-110
2,4,6-Trichlorophenol	4075	2241	55	12	30	45-110

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 1 out of 48 outside limits
Spike Recovery: 31 out of 96 outside limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: 9J02015-BLK1 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (UG/KG)	SAMPLE CONCENTRATION (UG/KG)	LCS CONCENTRATION (UG/KG)	LCS % REC #	QC. LIMITS REC.
Acetophenone	3333	0.0000	2399	72	35-110
Atrazine	3333	0.0000	2519	76	55-105
Benzaldehyde	3333	0.0000	338.8	10	10-160
bis(2-Chloroethoxy)meth	3333	0.0000	2322	70	45-110
1,1'-Biphenyl	3333	0.0000	1958	59	45-110
bis(2-Chloroethyl)ether	3333	0.0000	1780	53	40-105
2,2-Oxybis(1-chloroprop	3333	0.0000	2465	74	20-115
Bis(2-ethylhexyl)phthal	3333	0.0000	2381	71	45-125
4-Bromophenyl-phenyleth	3333	0.0000	1895	57	45-115
Butylbenzylphthalate	3333	0.0000	2634	79	50-125
Caprolactam	3333	0.0000	2561	77	50-110
4-Chloroaniline	3333	0.0000	2951	88	10- 95
Carbazole	3333	0.0000	2068	62	45-115
4-Chloro-3-methylphenol	3333	0.0000	2942	88	45-115
2-Chloronaphthalene (be	3333	0.0000	2358	71	45-105
2-Chlorophenol	3333	0.0000	2558	77	45-105
4-Chlorophenyl-phenylet	3333	0.0000	2382	71	45-110
Dibenzofuran	3333	0.0000	2425	73	50-105
3,3'-Dichlorobenzidine	3333	0.0000	2287	69	19-130
2,4-Dichlorophenol	3333	0.0000	2445	73	45-110
Diethylphthalate	3333	0.0000	2555	77	50-115
2,4-Dimethylphenol	3333	0.0000	3718	112*	30-105
Dimethylphthalate	3333	0.0000	2138	64	50-110
Di-n-butylphthalate	3333	0.0000	2272	68	55-110
4,6-Dinitro-2-methylphe	3333	0.0000	2265	68	30-135
2,4-Dinitrophenol	3333	0.0000	2481	74	15-130
2,4-Dinitrotoluene	3333	0.0000	2465	74	50-115
2,6-Dinitrotoluene	3333	0.0000	2378	71	50-110

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: 9J02015-BLK1 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (UG/KG)	SAMPLE CONCENTRATION (UG/KG)	LCS CONCENTRATION (UG/KG)	LCS % REC #	QC. LIMITS REC.
Di-n-octylphthalate	3333	0.0000	2202	66	40-130
Hexachlorobenzene	3333	0.0000	2603	78	45-120
Hexachlorobutadiene	3333	0.0000	2666	80	30-110
Hexachlorocyclopentadie	3333	0.0000	1892	57	10-110
Hexachloroethane	3333	0.0000	1978	59	35-110
Isophorone	3333	0.0000	2543	76	45-110
4-Methylphenol (p-creso	3333	0.0000	2366	71	40-105
2-Methylphenol (o-creso	3333	0.0000	2350	70	40-105
2-Nitroaniline	3333	0.0000	3192	96	45-120
3-Nitroaniline	3333	0.0000	2436	73	25-110
4-Nitroaniline	3333	0.0000	2531	76	35-115
Nitrobenzene	3333	0.0000	3004	90	40-115
2-Nitrophenol	3333	0.0000	2256	68	40-110
4-Nitrophenol	3333	0.0000	3091	93	15-140
N-Nitrosodiphenylamine	3333	0.0000	1886	56	50-115
N-Nitroso-di-n-prop.(1)	3333	0.0000	3063	92	40-115
Pentachlorophenol	3333	0.0000	2647	79	25-120
Phenol	3333	0.0000	2380	71	40-100
2,4,5-Trichlorophenol	3333	0.0000	2431	73	50-110
2,4,6-Trichlorophenol	3333	0.0000	2355	71	45-110

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 1 out of 48 outside limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: SBLK1001BW1

COMPOUND	SPIKE ADDED (UG/L)	SAMPLE CONCENTRATION (UG/L)	LCS CONCENTRATION (UG/L)	LCS % REC #	QC. LIMITS REC.
Acetophenone	50.00	0.0000	50.46	101	50-110
Atrazine	50.00	0.0000	45.90	92	70-115
Benzaldehyde	50.00	0.0000	41.15	82	10-180
bis(2-Chloroethoxy)meth	50.00	0.0000	44.96	90	45-105
1,1'-Biphenyl	50.00	0.0000	37.23	74	50-110
bis(2-Chloroethyl)ether	50.00	0.0000	31.48	63	35-110
2,2-Oxybis(1-chloroprop	50.00	0.0000	53.46	107	25-130
Bis(2-ethylhexyl)phthal	50.00	0.0000	52.16	104	40-125
4-Bromophenyl-phenyleth	50.00	0.0000	32.66	65	50-115
Butylbenzylphthalate	50.00	0.0000	51.96	104	45-115
Caprolactam	50.00	0.0000	6.418	13*	20-110
4-Chloroaniline	50.00	0.0000	34.55	69	15-110
Carbazole	50.00	0.0000	41.05	82	50-115
4-Chloro-3-methylphenol	50.00	0.0000	50.18	100	45-110
2-Chloronaphthalene (be	50.00	0.0000	40.98	82	50-105
2-Chlorophenol	50.00	0.0000	36.45	73	35-105
4-Chlorophenyl-phenylet	50.00	0.0000	43.98	88	50-110
Dibenzofuran	50.00	0.0000	44.12	88	55-105
3,3'-Dichlorobenzidine	50.00	0.0000	41.95	84	20-110
2,4-Dichlorophenol	50.00	0.0000	38.75	78	50-105
Diethylphthalate	50.00	0.0000	45.78	92	40-120
2,4-Dimethylphenol	50.00	0.0000	56.76	114*	30-110
Dimethylphthalate	50.00	0.0000	43.86	88	25-125
Di-n-butylphthalate	50.00	0.0000	44.31	89	55-115
4,6-Dinitro-2-methylphe	50.00	0.0000	40.73	81	40-130
2,4-Dinitrophenol	50.00	0.0000	44.48	89	15-140
2,4-Dinitrotoluene	50.00	0.0000	43.52	87	50-120
2,6-Dinitrotoluene	50.00	0.0000	43.99	88	50-115

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: SBLK1001BW1

COMPOUND	SPIKE ADDED (UG/L)	SAMPLE CONCENTRATION (UG/L)	LCS CONCENTRATION (UG/L)	LCS % REC #	QC. LIMITS REC.
Di-n-octylphthalate	50.00	0.0000	42.49	85	35-135
Hexachlorobenzene	50.00	0.0000	40.72	81	50-110
Hexachlorobutadiene	50.00	0.0000	35.35	71	25-105
Hexachlorocyclopentadie	50.00	0.0000	42.28	84	10-110
Hexachloroethane	50.00	0.0000	35.19	70	30- 95
Isophorone	50.00	0.0000	44.99	90	50-110
4-Methylphenol (p-creso	50.00	0.0000	29.88	60	30-110
2-Methylphenol (o-creso	50.00	0.0000	30.99	62	40-110
2-Nitroaniline	50.00	0.0000	66.68	133*	50-115
3-Nitroaniline	50.00	0.0000	35.75	72	20-125
4-Nitroaniline	50.00	0.0000	40.21	80	35-120
Nitrobenzene	50.00	0.0000	55.21	110	45-110
2-Nitrophenol	50.00	0.0000	36.96	74	40-115
4-Nitrophenol	50.00	0.0000	23.02	46	0-125
N-Nitrosodiphenylamine	50.00	0.0000	36.83	74	50-110
N-Nitroso-di-n-prop. (1)	50.00	0.0000	70.11	140*	35-130
Pentachlorophenol	50.00	0.0000	42.04	84	40-115
Phenol	50.00	0.0000	10.27	20	0-115
2,4,5-Trichlorophenol	50.00	0.0000	42.88	86	50-110
2,4,6-Trichlorophenol	50.00	0.0000	43.98	88	50-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: SBLK1001BW1

COMPOUND	SPIKE ADDED (UG/L)	LCSD CONCENTRATION (UG/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Acetophenone	50.00	47.84	96	5	30	50-110
Atrazine	50.00	43.36	87	6	30	70-115
Benzaldehyde	50.00	40.88	82	1	30	10-180
bis(2-Chloroethoxy)meth	50.00	38.60	77	15	30	45-105
1,1'-Biphenyl	50.00	39.22	78	5	30	50-110
bis(2-Chloroethyl)ether	50.00	30.40	61	3	30	35-110
2,2-Oxybis(1-chloroprop	50.00	50.55	101	6	30	25-130
Bis(2-ethylhexyl)phthal	50.00	53.43	107	2	30	40-125
4-Bromophenyl-phenyleth	50.00	28.40	57	14	30	50-115
Butylbenzylphthalate	50.00	52.76	106	2	30	45-115
Caprolactam	50.00	5.961	12*	7	30	20-110
4-Chloroaniline	50.00	21.89	44	45*	30	15-110
Carbazole	50.00	35.34	71	15	30	50-115
4-Chloro-3-methylphenol	50.00	44.91	90	11	30	45-110
2-Chloronaphthalene (be	50.00	41.38	83	1	30	50-105
2-Chlorophenol	50.00	34.24	68	6	30	35-105
4-Chlorophenyl-phenylet	50.00	39.81	80	10	30	50-110
Dibenzofuran	50.00	42.52	85	4	30	55-105
3,3'-Dichlorobenzidine	50.00	33.08	66	24	30	20-110
2,4-Dichlorophenol	50.00	34.55	69	11	30	50-105
Diethylphthalate	50.00	43.62	87	5	30	40-120
2,4-Dimethylphenol	50.00	51.83	104	9	30	30-110
Dimethylphthalate	50.00	39.07	78	12	30	25-125
Di-n-butylphthalate	50.00	39.33	79	12	30	55-115
4,6-Dinitro-2-methylphe	50.00	32.53	65	22	30	40-130
2,4-Dinitrophenol	50.00	39.04	78	13	30	15-140
2,4-Dinitrotoluene	50.00	41.32	83	5	30	50-120
2,6-Dinitrotoluene	50.00	38.65	77	13	30	50-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS:

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: SBLK1001BW1

COMPOUND	SPIKE ADDED (UG/L)	LCSD CONCENTRATION (UG/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Di-n-octylphthalate	50.00	52.55	105	21	30	35-135
Hexachlorobenzene	50.00	37.35	75	9	30	50-110
Hexachlorobutadiene	50.00	35.87	72	1	30	25-105
Hexachlorocyclopentadie	50.00	38.68	77	9	30	10-110
Hexachloroethane	50.00	33.89	68	4	30	30- 95
Isophorone	50.00	41.84	84	7	30	50-110
4-Methylphenol (p-creso	50.00	27.80	56	7	30	30-110
2-Methylphenol (o-creso	50.00	29.00	58	7	30	40-110
2-Nitroaniline	50.00	63.39	127*	5	30	50-115
3-Nitroaniline	50.00	29.39	59	20	30	20-125
4-Nitroaniline	50.00	34.28	68	16	30	35-120
Nitrobenzene	50.00	48.51	97	13	30	45-110
2-Nitrophenol	50.00	31.75	64	15	30	40-115
4-Nitrophenol	50.00	20.12	40	13	30	0-125
N-Nitrosodiphenylamine	50.00	31.47	63	16	30	50-110
N-Nitroso-di-n-prop.(1)	50.00	69.18	138*	1	30	35-130
Pentachlorophenol	50.00	38.74	77	8	30	40-115
Phenol	50.00	9.358	19	9	30	0-115
2,4,5-Trichlorophenol	50.00	39.54	79	8	30	50-110
2,4,6-Trichlorophenol	50.00	41.70	83	5	30	50-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 1 out of 48 outside limits
Spike Recovery: 7 out of 96 outside limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: 9J05025-BLK1 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (UG/KG)	SAMPLE CONCENTRATION (UG/KG)	LCS CONCENTRATION (UG/KG)	LCS % REC #	QC. LIMITS REC.
Acetophenone	3333	0.0000	2156	65	35-110
Atrazine	3333	0.0000	2516	75	55-105
Benzaldehyde	3333	0.0000	0.0000	0*	10-160
bis(2-Chloroethoxy)meth	3333	0.0000	2526	76	45-110
1,1'-Biphenyl	3333	0.0000	1915	57	45-110
bis(2-Chloroethyl)ether	3333	0.0000	1844	55	40-105
2,2-Oxybis(1-chloroprop	3333	0.0000	2644	79	20-115
Bis(2-ethylhexyl)phthal	3333	0.0000	2674	80	45-125
4-Bromophenyl-phenyleth	3333	0.0000	2026	61	45-115
Butylbenzylphthalate	3333	0.0000	2686	80	50-125
Caprolactam	3333	0.0000	2650	80	50-110
4-Chloroaniline	3333	0.0000	3246	97*	10- 95
Carbazole	3333	0.0000	1903	57	45-115
4-Chloro-3-methylphenol	3333	0.0000	3252	98	45-115
2-Chloronaphthalene (be	3333	0.0000	2377	71	45-105
2-Chlorophenol	3333	0.0000	2577	77	45-105
4-Chlorophenyl-phenylet	3333	0.0000	2625	79	45-110
Dibenzofuran	3333	0.0000	2504	75	50-105
3,3'-Dichlorobenzidine	3333	0.0000	2262	68	19-130
2,4-Dichlorophenol	3333	0.0000	2448	73	45-110
Diethylphthalate	3333	0.0000	2547	76	50-115
2,4-Dimethylphenol	3333	0.0000	4144	124*	30-105
Dimethylphthalate	3333	0.0000	2261	68	50-110
Di-n-butylphthalate	3333	0.0000	2247	67	55-110
4,6-Dinitro-2-methylphe	3333	0.0000	1658	50	30-135
2,4-Dinitrophenol	3333	0.0000	1749	52	15-130
2,4-Dinitrotoluene	3333	0.0000	2413	72	50-115
2,6-Dinitrotoluene	3333	0.0000	2302	69	50-110

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: 9J05025-BLK1 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (UG/KG)	SAMPLE CONCENTRATION (UG/KG)	LCS CONCENTRATION (UG/KG)	LCS % REC #	QC. LIMITS REC.
Di-n-octylphthalate	3333	0.0000	2338	70	40-130
Hexachlorobenzene	3333	0.0000	2352	70	45-120
Hexachlorobutadiene	3333	0.0000	2591	78	30-110
Hexachlorocyclopentadie	3333	0.0000	1648	49	10-110
Hexachloroethane	3333	0.0000	2123	64	35-110
Isophorone	3333	0.0000	2764	83	45-110
4-Methylphenol (p-creso	3333	0.0000	2801	84	40-105
2-Methylphenol (o-creso	3333	0.0000	2520	76	40-105
2-Nitroaniline	3333	0.0000	3430	103	45-120
3-Nitroaniline	3333	0.0000	2186	66	25-110
4-Nitroaniline	3333	0.0000	2105	63	35-115
Nitrobenzene	3333	0.0000	3088	93	40-115
2-Nitrophenol	3333	0.0000	2326	70	40-110
4-Nitrophenol	3333	0.0000	2709	81	15-140
N-Nitrosodiphenylamine	3333	0.0000	2043	61	50-115
N-Nitroso-di-n-prop.(1)	3333	0.0000	3297	99	40-115
Pentachlorophenol	3333	0.0000	2335	70	25-120
Phenol	3333	0.0000	2165	65	40-100
2,4,5-Trichlorophenol	3333	0.0000	2491	75	50-110
2,4,6-Trichlorophenol	3333	0.0000	2480	74	45-110

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 3 out of 48 outside limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA ~~SAS No.~~: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: 9J07018-BLK1 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (UG/KG)	SAMPLE CONCENTRATION (UG/KG)	LCS CONCENTRATION (UG/KG)	LCS % REC #	QC. LIMITS REC.
Acetophenone	3333	0.0000	1836	55	35-110
Atrazine	3333	0.0000	1951	58	55-105
Benzaldehyde	3333	0.0000	850.6	26	10-160
bis(2-Chloroethoxy)meth	3333	0.0000	2210	66	45-110
1,1'-Biphenyl	3333	0.0000	2013	60	45-110
bis(2-Chloroethyl)ether	3333	0.0000	1792	54	40-105
2,2-Oxybis(1-chloroprop	3333	0.0000	1765	53	20-115
Bis(2-ethylhexyl)phthal	3333	0.0000	3147	94	45-125
4-Bromophenyl-phenyleth	3333	0.0000	2134	64	45-115
Butylbenzylphthalate	3333	0.0000	2959	89	50-125
Caprolactam	3333	0.0000	2353	70	50-110
4-Chloroaniline	3333	0.0000	2130	64	10- 95
Carbazole	3333	0.0000	2228	67	45-115
4-Chloro-3-methylphenol	3333	0.0000	2216	66	45-115
2-Chloronaphthalene (be	3333	0.0000	2231	67	45-105
2-Chlorophenol	3333	0.0000	2004	60	45-105
4-Chlorophenyl-phenylet	3333	0.0000	2280	68	45-110
Dibenzofuran	3333	0.0000	2252	68	50-105
3,3'-Dichlorobenzidine	3333	0.0000	953.8	29	19-130
2,4-Dichlorophenol	3333	0.0000	2127	64	45-110
Diethylphthalate	3333	0.0000	2372	71	50-115
2,4-Dimethylphenol	3333	0.0000	2277	68	30-105
Dimethylphthalate	3333	0.0000	2282	68	50-110
Di-n-butylphthalate	3333	0.0000	2418	72	55-110
4,6-Dinitro-2-methylphe	3333	0.0000	2196	66	30-135
2,4-Dinitrophenol	3333	0.0000	2184	66	15-130
2,4-Dinitrotoluene	3333	0.0000	2267	68	50-115
2,6-Dinitrotoluene	3333	0.0000	2294	69	50-110

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: 9J07018-BLK1 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (UG/KG)	SAMPLE CONCENTRATION (UG/KG)	LCS CONCENTRATION (UG/KG)	LCS % REC #	QC. LIMITS REC.
Di-n-octylphthalate	3333	0.0000	3440	103	40-130
Hexachlorobenzene	3333	0.0000	2383	71	45-120
Hexachlorobutadiene	3333	0.0000	2215	66	30-110
Hexachlorocyclopentadie	3333	0.0000	1683	50	10-110
Hexachloroethane	3333	0.0000	2005	60	35-110
Isophorone	3333	0.0000	2113	63	45-110
4-Methylphenol (p-creso	3333	0.0000	2297	69	40-105
2-Methylphenol (o-creso	3333	0.0000	1964	59	40-105
2-Nitroaniline	3333	0.0000	2008	60	45-120
3-Nitroaniline	3333	0.0000	2101	63	25-110
4-Nitroaniline	3333	0.0000	2382	71	35-115
Nitrobenzene	3333	0.0000	1935	58	40-115
2-Nitrophenol	3333	0.0000	1983	59	40-110
4-Nitrophenol	3333	0.0000	1734	52	15-140
N-Nitrosodiphenylamine	3333	0.0000	2400	72	50-115
N-Nitroso-di-n-prop.(1)	3333	0.0000	2118	64	40-115
Pentachlorophenol	3333	0.0000	2558	77	25-120
Phenol	3333	0.0000	1712	51	40-100
2,4,5-Trichlorophenol	3333	0.0000	2336	70	50-110
2,4,6-Trichlorophenol	3333	0.0000	2077	62	45-110

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 48 outside limits

COMMENTS: _____

FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID (Standard): CCV050W Date Analyzed: 10/09/09

Instrument ID: BNA1 Time Analyzed: 1458

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	472420	4.36	1554781	5.37	779148	7.78
	UPPER LIMIT	944840	4.86	3109562	5.87	1558296	8.28
	LOWER LIMIT	236210	3.86	777391	4.87	389574	7.28
	CLIENT SAMPLE NO.						
01	SBLK1001BW1	525000	4.36	1694103	5.36	893024	7.77
02	SBLK1001BW1L	504848	4.36	1545070	5.37	817129	7.78
03	SBLK1001BW1L	497517	4.36	1583033	5.37	815328	7.78
04	RB-092909-01	567256	4.36	1797517	5.36	893006	7.77
05	RB-092909-02	479638	4.36	1581319	5.36	772187	7.76
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IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

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FORM VIII SV

FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID (Standard): CCV050W Date Analyzed: 10/09/09

Instrument ID: BNA1 Time Analyzed: 1458

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	1251811	11.12	831573	18.50	687706	22.28
	UPPER LIMIT	2503622	11.62	1663146	19.00	1375412	22.78
	LOWER LIMIT	625906	10.62	415787	18.00	343853	21.78
	CLIENT SAMPLE NO.						
01	SBLK1001BW1	1234673	11.11	808132	18.47	669921	22.28
02	SBLK1001BW1L	1275843	11.12	833965	18.49	721033	22.29
03	SBLK1001BW1L	1335266	11.12	774834	18.49	476461	22.28
04	RB-092909-01	1325490	11.10	878393	18.46	772459	22.27
05	RB-092909-02	1108249	11.09	720991	18.46	526492	22.27
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IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

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* Values outside of QC limits.

FORM VIII SV

FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID (Standard): CCV050E Date Analyzed: 10/10/09

Instrument ID: BNA1 Time Analyzed: 0756

		IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA #	RT #
	12 HOUR STD	558034	4.36	1808189	5.35	988553	7.77
	UPPER LIMIT	1116068	4.86	3616378	5.85	1977106	8.27
	LOWER LIMIT	279017	3.86	904095	4.85	494277	7.27
	CLIENT SAMPLE NO.						
01	SB-092909-01	634953	4.35	2136014	5.35	1136719	7.77
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IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

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FORM VIII SV

FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID (Standard): CCV050E Date Analyzed: 10/10/09

Instrument ID: BNA1 Time Analyzed: 0756

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	1458873	11.10	1044769	18.48	780918	22.28
	UPPER LIMIT	2917746	11.60	2089538	18.98	1561836	22.78
	LOWER LIMIT	729437	10.60	522385	17.98	390459	21.78
	CLIENT SAMPLE NO.						
01	SB-092909-01	1649108	11.09	1010007	18.46	734222	22.26
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IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
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FORM VIII SV

FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID (Standard): SEQ-CCV1 Date Analyzed: 10/16/09

Instrument ID: BNA1 Time Analyzed: 1542

		IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA #	RT #
	12 HOUR STD	1146120	4.32	3360874	5.30	1888045	7.68
	UPPER LIMIT	2292240	4.82	6721748	5.80	3776090	8.18
	LOWER LIMIT	573060	3.82	1680437	4.80	944023	7.18
	CLIENT SAMPLE NO.						
01	9J02015-BLK1	1303045	4.31	3716701	5.30	2160843	7.68
02	9J02015-BLK1	1262632	4.31	3535772	5.30	2110825	7.68
03	FD-092609-01	1401555	4.31	4052279	5.30	2223721	7.67
04	NTC21SB09-SO	1462653	4.31	4190040	5.30	2558080	7.67
05	NTC21SB10-SO	1528871	4.31	4145642	5.30	2234764	7.67
06	NTC21SB17-SO	1374019	4.31	3866071	5.30	2102297	7.67
07	NTC21SB18-SO	1397612	4.31	3946202	5.30	2252353	7.67
08	NTC21SB20-SO	1300889	4.31	3999987	5.29	2232167	7.67
09	NTC21SB21-SO	1375564	4.31	3988709	5.30	2140160	7.67
10	FD-092709-01	1299034	4.31	3566254	5.30	2046254	7.67
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IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
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FORM VIII SV

FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID (Standard): SEQ-CCV1 Date Analyzed: 10/16/09

Instrument ID: BNA1 Time Analyzed: 1542

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	2997950	11.00	1700636	18.35	1133696	22.14
	UPPER LIMIT	5995900	11.50	3401272	18.85	2267392	22.64
	LOWER LIMIT	1498975	10.50	850318	17.85	566848	21.64
	CLIENT SAMPLE NO.						
01	9J02015-BLK1	3138431	10.98	2411731	18.33	2071925	22.14
02	9J02015-BLK1	3401982	11.00	2524253	18.35	1954230	22.15
03	FD-092609-01	3291619	10.98	2544689	18.33	1875524	22.13
04	NTC21SB09-SO	3682198	10.99	2695784	18.34	1319998	22.13
05	NTC21SB10-SO	3348599	10.98	2170850	18.33	1196380	22.13
06	NTC21SB17-SO	3032430	10.98	2226734	18.34	1059557	22.12
07	NTC21SB18-SO	3176353	10.99	2194472	18.33	1163392	22.12
08	NTC21SB20-SO	3426443	10.99	2175335	18.33	1315679	22.13
09	NTC21SB21-SO	3242218	10.99	1847269	18.33	886747	22.12
10	FD-092709-01	3154137	10.98	1774590	18.33	760016	22.12
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IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

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FORM VIII SV

FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID (Standard): SEQ-CCV2 Date Analyzed: 10/17/09

Instrument ID: BNA1 Time Analyzed: 0041

		IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA #	RT #
	12 HOUR STD	1131431	4.31	3378210	5.30	1922042	7.67
	UPPER LIMIT	2262862	4.81	6756420	5.80	3844084	8.17
	LOWER LIMIT	565716	3.81	1689105	4.80	961021	7.17
	CLIENT SAMPLE NO.						
01	NTC21SB11-SO	1502958	4.31	4129661	5.30	2510123	7.68
02	NTC21SB12-SO	1324991	4.31	3751274	5.30	2244896	7.68
03	NTC21SB12-SO	1113129	4.31	3487875	5.30	1898908	7.67
04	NTC21SB18-SO	1255336	4.31	3821334	5.30	2035882	7.67
05	FD-092609-02	1444514	4.31	4257372	5.30	2268766	7.68
06	NTC21SB09-SO	1387101	4.31	4501647	5.30	2300916	7.68
07	NTC21SB10-SO	1109850	4.31	3771307	5.30	1880259	7.68
08	NTC21SB11-SO	1251987	4.31	4080637	5.30	1971016	7.68
09	NTC21SB17-SO	1071242	4.31	3595283	5.30	1873454	7.68
10	NTC21SB20-SO	1349741	4.31	4380615	5.30	2397403	7.68
11	NTC21SB21-SO	1189638	4.31	3883274	5.30	1898428	7.68
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IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

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FORM VIII SV

FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID (Standard): SEQ-CCV2 Date Analyzed: 10/17/09

Instrument ID: BNA1 Time Analyzed: 0041

		IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
	12 HOUR STD	3034725	10.99	1661731	18.34	643772	22.13
	UPPER LIMIT	6069450	11.49	3323462	18.84	1287544	22.63
	LOWER LIMIT	1517363	10.49	830866	17.84	321886	21.63
	CLIENT SAMPLE NO.						
01	NTC21SB11-SO	3774652	11.00	1229806	18.35	552114	22.14
02	NTC21SB12-SO	3374081	10.99	1622632	18.35	774234	22.14
03	NTC21SB12-SO	2814781	10.99	798003*	18.33	326966	22.13
04	NTC21SB18-SO	2899200	10.99	948782	18.33	376410	22.12
05	FD-092609-02	2949172	10.99	1184915	18.35	378835	22.17
06	NTC21SB09-SO	3280363	11.00	1334702	18.37	438937	22.19
07	NTC21SB10-SO	2607068	11.00	1179184	18.37	389021	22.18
08	NTC21SB11-SO	2837908	11.01	992061	18.40	321921	22.22
09	NTC21SB17-SO	2524328	11.00	1062495	18.36	350215	22.17
10	NTC21SB20-SO	3259189	11.00	630885*	18.38	154068*	22.20
11	NTC21SB21-SO	2584772	11.02	577552*	18.44	191538*	22.22
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IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

FORM VIII SV

FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID (Standard): SEQ-CCV1 Date Analyzed: 10/17/09

Instrument ID: BNA1 Time Analyzed: 1108

		IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA #	RT #
	12 HOUR STD	1164957	4.27	3554431	5.26	2072372	7.61
	UPPER LIMIT	2329914	4.77	7108862	5.76	4144744	8.11
	LOWER LIMIT	582479	3.77	1777216	4.76	1036186	7.11
	CLIENT SAMPLE NO.						
01	9J05025-BLK1	1277006	4.27	3844524	5.25	2175070	7.60
02	9J05025-BLK1	1229897	4.27	3444649	5.26	2139581	7.61
03	NTC21SB13-SO	1250582	4.27	3834655	5.25	2150211	7.59
04	NTC21SB14-SO	1236593	4.27	4016696	5.25	2221257	7.60
05	NTC21SB15-SO	1277531	4.27	4020615	5.25	2120994	7.59
06	NTC21SB16-SO	1252317	4.27	3671514	5.25	2248845	7.59
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IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
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FORM VIII SV

FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID (Standard): SEQ-CCV1 Date Analyzed: 10/17/09

Instrument ID: BNA1 Time Analyzed: 1108

		IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
	12 HOUR STD	2926530	10.89	1871161	18.23	1549828	22.03
	UPPER LIMIT	5853060	11.39	3742322	18.73	3099656	22.53
	LOWER LIMIT	1463265	10.39	935581	17.73	774914	21.53
	CLIENT SAMPLE NO.						
01	9J05025-BLK1	3019370	10.88	1801764	18.21	1407216	22.01
02	9J05025-BLK1	3514347	10.89	2141732	18.24	1630158	22.02
03	NTC21SB13-SO	3266051	10.88	2059510	18.22	1715935	22.01
04	NTC21SB14-SO	3266277	10.88	1817882	18.21	1314664	22.01
05	NTC21SB15-SO	3113162	10.88	1605578	18.21	1056167	22.01
06	NTC21SB16-SO	3361636	10.88	2177170	18.23	1820554	22.02
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IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

FORM VIII SV

FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID (Standard): SEQ-CCV1 Date Analyzed: 10/17/09

Instrument ID: BNA3 Time Analyzed: 1519

		IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA #	RT #
	12 HOUR STD	929883	4.15	3267075	5.13	1686303	7.46
	UPPER LIMIT	1859766	4.65	6534150	5.63	3372606	7.96
	LOWER LIMIT	464942	3.65	1633538	4.63	843152	6.96
	CLIENT SAMPLE NO.						
01	9J07018-BLK1	1227621	4.14	4253955	5.13	2372344	7.46
02	9J07018-BLK1	1217822	4.15	4341605	5.13	2407401	7.46
03	NTC21SB02-SO	1210929	4.14	4063548	5.13	2140844	7.46
04	NTC21SB02-SO	1270671	4.14	4320742	5.13	2328991	7.46
05	NTC21SB03-SO	1391559	4.14	4941728	5.13	2692531	7.46
06	NTC21SB03-SO	1543712	4.14	5795737	5.13	3351289	7.47
07	NTC21SB05-SO	1328967	4.14	4932530	5.13	2800714	7.47
08	NTC21SB05-SO	1351892	4.14	4963408	5.13	2787798	7.47
09	NTC21SB08-SO	1332848	4.14	5081423	5.13	2970729	7.47
10	NTC21SB08-SO	1355413	4.14	5032627	5.13	2833462	7.47
11	NTC21SB02-SO	1463078	4.15	5390669	5.14	3186100	7.48
12	NTC21SB02-SO	1225825	4.15	4565824	5.13	2734260	7.48
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IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

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FORM VIII SV

FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID (Standard): SEQ-CCV1 Date Analyzed: 10/17/09

Instrument ID: BNA3 Time Analyzed: 1519

		IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
	12 HOUR STD	2726433	10.77	1694908	18.19	782314	22.01
	UPPER LIMIT	5452866	11.27	3389816	18.69	1564628	22.51
	LOWER LIMIT	1363217	10.27	847454	17.69	391157	21.51
	CLIENT SAMPLE NO.						
01	9J07018-BLK1	3627731	10.76	1847734	18.18	1062305	22.02
02	9J07018-BLK1	3685458	10.77	2264064	18.20	1219390	22.02
03	NTC21SB02-SO	3174629	10.77	1334329	18.19	811228	22.03
04	NTC21SB02-SO	3275865	10.78	1220795	18.19	616257	22.03
05	NTC21SB03-SO	3860582	10.77	1437581	18.20	699662	22.04
06	NTC21SB03-SO	4755237	10.80	1232089	18.27	563798	22.08
07	NTC21SB05-SO	4057218	10.78	1149784	18.21	511179	22.06
08	NTC21SB05-SO	4196164	10.78	1575064	18.21	863907	22.06
09	NTC21SB08-SO	4539444	10.79	1592286	18.21	900078	22.07
10	NTC21SB08-SO	3978803	10.79	1223143	18.24	690183	22.11
11	NTC21SB02-SO	4656730	10.81	1523713	18.25	882412	22.09
12	NTC21SB02-SO	3935365	10.81	1237358	18.25	643743	22.09
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IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID (Standard): SEQ-CCV2 Date Analyzed: 10/17/09

Instrument ID: BNA1 Time Analyzed: 1746

		IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA #	RT #
	12 HOUR STD	1237291	4.28	3470702	5.25	2159187	7.60
	UPPER LIMIT	2474582	4.78	6941404	5.75	4318374	8.10
	LOWER LIMIT	618646	3.78	1735351	4.75	1079594	7.10
	CLIENT SAMPLE NO.						
01	NTC21SB04-SO	1397161	4.27	4037746	5.25	2268698	7.60
02	NTC21SB04-SO	1182346	4.27	3759469	5.25	2167731	7.60
03	NTC21SB06-SO	1261974	4.27	3757469	5.25	2080207	7.60
04	NTC21SB06-SO	1229942	4.27	3761102	5.25	2029435	7.60
05	NTC21SB07-SO	1217781	4.27	3697799	5.26	1996352	7.61
06	NTC21SB07-SO	1138341	4.27	3776122	5.25	2067938	7.60
07	NTC21SB13-SO	1068653	4.28	3580866	5.26	1814969	7.61
08	NTC21SB14-SO	1048308	4.27	3596355	5.25	1846836	7.60
09	NTC21SB15-SO	1052166	4.28	3722981	5.26	1850890	7.60
10	NTC21SB16-SO	982964	4.27	3464723	5.25	1708476	7.61
11	NTC21SB19-SO	1095479	4.28	3718178	5.25	1773550	7.61
12	NTC21SB19-SO	1043282	4.28	3574411	5.25	1897967	7.61
13	NTC21SB22-SO	1010072	4.28	3549301	5.26	1595838	7.61
14	NTC21SB22-SO	981571	4.27	3606378	5.26	1735064	7.61
15	FD-092809-01	971149	4.27	3575729	5.25	1663077	7.61
16	NTC21SB01-SO	1005994	4.27	3526362	5.26	1631949	7.60
17	NTC21SB14-SO	973518	4.28	3469204	5.26	1803151	7.61
18	NTC21SB14-SO	1531683	4.28	5062746	5.26	2562994	7.63
19							
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IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID (Standard): SEQ-CCV2 Date Analyzed: 10/17/09

Instrument ID: BNA1 Time Analyzed: 1746

		IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
	12 HOUR STD	3331999	10.89	2032599	18.23	1416345	22.02
	UPPER LIMIT	6663998	11.39	4065198	18.73	2832690	22.52
	LOWER LIMIT	1666000	10.39	1016300	17.73	708173	21.52
	CLIENT SAMPLE NO.						
01	NTC21SB04-SO	2756184	10.90	917375*	18.23	505684*	22.03
02	NTC21SB04-SO	3084616	10.89	1387510	18.21	727940	22.02
03	NTC21SB06-SO	3001882	10.90	1197802	18.24	606317*	22.02
04	NTC21SB06-SO	2473087	10.89	1016883	18.25	453731*	22.06
05	NTC21SB07-SO	3035359	10.91	1093630	18.26	445532*	22.05
06	NTC21SB07-SO	2850482	10.90	1189451	18.26	647442*	22.05
07	NTC21SB13-SO	2475842	10.91	999566*	18.27	479319*	22.07
08	NTC21SB14-SO	2691683	10.91	1249749	18.27	609854*	22.08
09	NTC21SB15-SO	2369380	10.90	648607*	18.25	297211*	22.06
10	NTC21SB16-SO	2343132	10.91	921569*	18.26	463816*	22.07
11	NTC21SB19-SO	2456503	10.91	951530*	18.27	514456*	22.09
12	NTC21SB19-SO	2586108	10.91	1033197	18.27	454721*	22.08
13	NTC21SB22-SO	2074698	10.92	772089*	18.29	358331*	22.12
14	NTC21SB22-SO	2357486	10.92	801604*	18.29	146652*	22.10
15	FD-092809-01	2327967	10.92	913401*	18.28	390815*	22.10
16	NTC21SB01-SO	2268379	10.91	818949*	18.28	427430*	22.10
17	NTC21SB14-SO	2275344	10.93	762191*	18.30	378810*	22.12
18	NTC21SB14-SO	3072757	10.94	1077737	18.31	539667*	22.14
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20							
21							
22							

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

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FORM VIII SV

FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID (Standard): SEQ-CCV1 Date Analyzed: 10/18/09

Instrument ID: BNA1 Time Analyzed: 1025

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	1034642	4.23	3138586	5.20	1800168	7.51
	UPPER LIMIT	2069284	4.73	6277172	5.70	3600336	8.01
	LOWER LIMIT	517321	3.73	1569293	4.70	900084	7.01
	CLIENT SAMPLE NO.						
01	NTC21SB20-SO	931400	4.23	3129402	5.20	1513092	7.50
02	NTC21SB15-SO	1100941	4.23	3303129	5.20	1687595	7.50
03	NTC21SB22-SO	1075125	4.23	3385091	5.20	1789736	7.51
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IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

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FORM VIII SV

ORGANIC CASE NARRATIVE
Tetra Tech NUS, Inc./Great Lakes, IL CTO064
Project Manager: B. Cummings
SDG: CTO064_001
Work order: 0910006

PAH

Sampled	Received	Lab ID	Client ID
9/26/2009	10/1/2009	0910006-01	FD-092609-01
9/26/2009	10/1/2009	0910006-02	FD-092609-02
9/26/2009	10/1/2009	0910006-03	NTC21SB09-SO-0001
9/26/2009	10/1/2009	0910006-04	NTC21SB09-SO-0204
9/26/2009	10/1/2009	0910006-05	NTC21SB10-SO-0001
9/26/2009	10/1/2009	0910006-06	NTC21SB10-SO-0406
9/26/2009	10/1/2009	0910006-07	NTC21SB11-SO-0001
9/26/2009	10/1/2009	0910006-08	NTC21SB11-SO-0204
9/26/2009	10/1/2009	0910006-09	NTC21SB12-SO-0001
9/26/2009	10/1/2009	0910006-10	NTC21SB12-SO-0204
9/26/2009	10/1/2009	0910006-11	NTC21SB17-SO-0001
9/26/2009	10/1/2009	0910006-12	NTC21SB17-SO-0507
9/26/2009	10/1/2009	0910006-13	NTC21SB18-SO-0001
9/26/2009	10/1/2009	0910006-14	NTC21SB18-SO-0507
9/26/2009	10/1/2009	0910006-15	NTC21SB20-SO-0001
9/26/2009	10/1/2009	0910006-16	NTC21SB20-SO-0406
9/26/2009	10/1/2009	0910006-17	NTC21SB21-SO-0001
9/26/2009	10/1/2009	0910006-18	NTC21SB21-SO-0608
9/27/2009	10/1/2009	0910006-20	FD-092709-01
9/27/2009	10/1/2009	0910006-21	NTC21SB04-SO-0001
9/27/2009	10/1/2009	0910006-22	NTC21SB04-SO-0406
9/27/2009	10/1/2009	0910006-23	NTC21SB06-SO-0001
9/27/2009	10/1/2009	0910006-24	NTC21SB06-SO-0204
9/27/2009	10/1/2009	0910006-25	NTC21SB07-SO-0001
9/27/2009	10/1/2009	0910006-26	NTC21SB07-SO-0204
9/27/2009	10/1/2009	0910006-27	NTC21SB13-SO-0001
9/27/2009	10/1/2009	0910006-28	NTC21SB13-SO-0204
9/27/2009	9/30/2009	0910006-29	NTC21SB14-SO-0001
9/27/2009	10/1/2009	0910006-30	NTC21SB14-SO-0204
9/27/2009	10/1/2009	0910006-31	NTC21SB15-SO-0001
9/27/2009	10/1/2009	0910006-32	NTC21SB15-SO-0204
9/27/2009	10/1/2009	0910006-33	NTC21SB16-SO-0001
9/27/2009	10/1/2009	0910006-34	NTC21SB16-SO-0204
9/27/2009	10/1/2009	0910006-35	NTC21SB19-SO-0001
9/27/2009	10/1/2009	0910006-36	NTC21SB19-SO-0204
9/27/2009	10/1/2009	0910006-37	NTC21SB22-SO-0001
9/27/2009	10/1/2009	0910006-38	NTC21SB22-SO-0204
9/28/2009	10/1/2009	0910006-40	FD-092809-01
9/28/2009	10/1/2009	0910006-41	NTC21SB01-SO-0102
9/28/2009	10/1/2009	0910006-42	NTC21SB02-SO-0001
9/28/2009	9/30/2009	0910006-43	NTC21SB02-SO-0204
9/28/2009	10/1/2009	0910006-44	NTC21SB03-SO-0001
9/28/2009	10/1/2009	0910006-45	NTC21SB03-SO-0204
9/28/2009	10/1/2009	0910006-46	NTC21SB05-SO-0001
9/28/2009	10/1/2009	0910006-47	NTC21SB05-SO-0204
9/28/2009	10/1/2009	0910006-48	NTC21SB08-SO-0001
9/28/2009	10/1/2009	0910006-49	NTC21SB08-SO-0204
9/29/2009	9/30/2009	0910006-51	RB-092909-01
9/29/2009	9/30/2009	0910006-52	RB-092909-02
9/29/2009	9/30/2009	0910006-53	SB-092909-01

Low Concentration PAH Samples

Method: The samples were analyzed by USEPA SW-846 Methods 3510C/8270C or 3546/8270C (separatory funnel or microwave extraction followed by capillary column GC/MS) for waters or solids upon receipt to the laboratory in satisfactory condition.

Comments: The analyses for these samples were satisfactorily completed within sample holding times and met the corresponding specifications with the following exceptions:

- Note: These samples were analyzed for full-scan, low-concentration PAHs by employing a combination of sensitivity enhancing techniques in the extraction and analysis processes. AFCEE 4.02 Table 7.2.3.1-2 limits were applied for LCS/MS/MSD and surrogate.
- DFTPP Tuning: All method tuning criteria were met.
- Initial Calibration Criteria: All calibration criteria were met.
- Continuing Calibration Criteria: In the continuing calibration verification analyzed 100209 1337, benzo(k)fluoranthene exceeded 20% difference with a positive bias of 34%. In the continuing calibration verification analyzed 100309 0802, benzo(k)fluoranthene and indeno(1,2,3-cd)pyrene exceeded 20% difference with positive biases of 62.1% and 29,4%. In the continuing calibration verification analyzed 101009 1426, benzo(g,h,i)perylene, dibenz(a,h)anthracene and indeno(1,2,3-cd)pyrene exceeded 20% difference with positive biases of 41.9%, 45.1% and 58.8%. In the continuing calibration verification analyzed 102009 1355, indeno(1,2,3-cd)pyrene exceeded 20% difference with a positive bias of 24.7%. Reported concentrations for these compounds above the quantitation limit in the associated samples were qualified with an "X" to indicate a potential positive bias. All other calibration criteria were within limits.
- Method Blank Results: Several compounds were detected in SBLK1001BW1 with 2-methylnaphthalene and naphthalene above the quantitation limit. Reported concentrations in the associated samples are qualified with a "B". The soil method blanks had no target analytes detected above ½ the quantitation limits.
- Surrogate Recoveries: All surrogate recoveries were within limits.
- SBLK1001BW1LCS/LCSD Results: Recoveries of benzo(a)anthracene were below the limit of 58% at (64%)/57% while all other recoveries and relative percent differences were within limits.
- SBLK1003BS1LCS Results: All recoveries were within limits.
- SBLK1007BS2LCS Results: All recoveries were within limits.
- 9J05025-BLK1LCS Results: All recoveries were within limits.
- NTC21SB02-SO-0204MS/MSD Results: Recoveries of 2-methylnaphthalene exceeded the limit of 111% at 132%/138% while all other recoveries and relative percent differences were within limits.
- NTC21SB14-SO-0001MS/MSD Results: Recoveries of benzo(b)fluoranthene, benzo(k)fluoranthene and benzo(a)pyrene exceeded the limits of 146%, 129% and 128% at 161%/158%, 155%/152% and 186%/183%. All other recoveries and relative percent differences were within limits.
- Internal Standard Area Counts: Due to the sample matrix, area counts for the internal standard d12-perylene were less than 50% of that found in the associated calibration standard for many of the samples. Some samples were analyzed at dilution with improved results. This internal standard is associated to benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenz(a,h)anthracene and

benzo(g,h,i)perylene.

- Dilutions: Samples were analyzed at appropriate dilutions based on screening results and matrix. Some samples were not analyzed without dilution.
- Matrix: Due to sample matrix interference, indeno(1,2,3-cd)pyrene is not reported in the undiluted analysis of sample NTC21SB03-SO-0001. It is reported in the 5x dilution.
- Manual integrations: Quantitation signals were manually integrated in order to accurately reflect the peak areas based on the technical judgment of the analyst. A listing of the manual integrations performed and reason for the integration is included with the logs. Before and after "pictures" are available where manual integrations were performed.

I certify that, to the best of my knowledge and based upon my inquiry of those individuals immediately responsible for obtaining the information, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in the case narrative, as verified by the following signature.

Marcia K. McGinnity
Senior Project Manager

ANALYTICAL REPORT TERMS AND QUALIFIERS (ORGANIC)

MDL: The method detection limit (MDL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The MDL is determined from analysis of a sample containing the analyte in a given matrix.

EQL: The estimated quantitation limit (EQL), also known as the reporting limit (RL), is defined as the estimated concentration above which quantitative results can be obtained with a specific degree of confidence. Empirical Laboratories defines the EQL to be at or near the lowest standard of the calibration curve.

U: The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte quantitated below the MDL.

B: The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the correct sample result might be less than the reported result and, perhaps, zero.

D: When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".

E: The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound.

J: The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The mass spectral data pass the identification criteria showing that the compound is present, but the calculated result is less than the EQL. One should feel confident that the result is greater than zero and less than the EQL.

P: The associated numerical value is an estimated quantity. There is greater than a 40% difference between the two GC columns for the detected concentrations. The higher of the two values is reported.

M: The presence of an "M" to the right of an analytical result indicates that the sample matrix interfered with the quantitation of the analyte. In GC and HPLC, results are reported from the column with the lower concentration.

I: The presence of an "I" to the right of an analytical result that the presence of a qualitative interference could have caused a false positive or over estimation of the analyte. In GC and HPLC, results are reported from the column with the lower concentration.

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA89545

Lab File ID: DF0818B1 DFTPP Injection Date: 08/18/09

Instrument ID: BNA3 DFTPP Injection Time: 1201

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	35.7
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	41.8
70	Less than 2.0% of mass 69	0.2 (0.5)1
127	40.0 - 60.0% of mass 198	49.9
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.7
275	10.0 - 30.0% of mass 198	24.9
365	Greater than 1.0% of mass 198	2.98
441	Present, but less than mass 443	10.2
442	Greater than 40.0% of mass 198	66.1
443	17.0 - 23.0% of mass 442	13.0 (19.7)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CAL0.05PPM	CAL0.05PPM	CAL1	08/18/09	1221
02	CAL0.1PPM	CAL0.1PPM	CAL2	08/18/09	1259
03	CAL0.25PPM	CAL0.25PPM	CAL3	08/18/09	1338
04	CAL0.5PPM	CAL0.5PPM	CAL4	08/18/09	1416
05	CAL1.0PPM	CAL1.0PPM	CAL5	08/18/09	1454
06	CAL2.0PPM	CAL2.0PPM	CAL6	08/18/09	1533
07	CAL5.0PPM	CAL5.0PPM	CAL7	08/18/09	1611
08	CAL10PPM	CAL10PPM	CAL8	08/18/09	1649
09	CAL20PPM	CAL20PPM	CAL9	08/18/09	1727
10	CAL40PPM	CAL40PPM	CAL10	08/18/09	1805
11	CAL50PPM	CAL50PPM	CAL11	08/18/09	1844
12	ICV-5.0PPM	ICV-5.0PPM	ICV01	08/18/09	1922
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FORM V SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA89545

Instrument ID: BNA3 Calibration Date(s): 08/18/09 08/18/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 1221 1844

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
Acenaphthene	AVRG		0.63598873		8.1
Acenaphthylene	AVRG		0.81147428		8.2
Anthracene	AVRG		0.95672641		13.3
Benzo(a)anthracene	LINR	0.00000000	1.06425824		0.998
Benzo(b)fluoranthene	LINR	0.00000000	1.39414201		0.996
Benzo(k)fluoranthene	LINR	0.00000000	1.46299520		0.995
Benzo(g,h,i)perylene	2ORDR	0.00000000	1.26197011	-1.26e-002	0.999
Benzo(a)pyrene	LINR	0.00000000	1.17607625		0.998
Chrysene	AVRG		0.98074541		13.0
Dibenz(a,h)anthracene	2ORDR	0.00000000	1.40975310	-1.49e-002	1.000
Fluoranthene	LINR	0.00000000	1.15719596		1.000
Fluorene	AVRG		0.73449200		6.0
Indeno(1,2,3-cd)pyrene	2ORDR	0.00000000	1.79015588	-5.6e-002	0.998
1-Methylnaphthalene	AVRG		0.63049837		12.8
2-Methylnaphthalene	AVRG		0.68638739		14.1
Naphthalene	AVRG		1.03600286		13.1
Phenanthrene	AVRG		1.08579349		4.4
Pyrene	LINR	0.00000000	1.17861846		0.999
2-Fluorobiphenyl	AVRG		0.76789447		11.2
Terphenyl-d14	AVRG		0.77719900		12.2

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA89545

Instrument ID: BNA3 Calibration Date(s): 08/18/09 08/18/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 1221 1844

LAB FILE ID: RF0.05: CAL1 RF0.1: CAL2 RF0.25: CAL3
RF0.5: CAL4 RF1: CAL5

COMPOUND	RF0.05	RF0.1	RF0.25	RF0.5	RF1
Acenaphthene	0.620	0.667	0.674	0.690	0.649
Acenaphthylene	0.741	0.775	0.760	0.810	0.810
Anthracene	0.735	0.733	0.885	0.930	0.957
Benzo(a)anthracene	0.558	0.528	0.711	0.742	0.717
Benzo(b)fluoranthene	0.774	0.713	0.875	0.957	1.086
Benzo(k)fluoranthene	0.832	0.913	1.266	1.416	1.559
Benzo(g,h,i)perylene	0.241	0.428	0.603	0.563	0.563
Benzo(a)pyrene	0.528	0.523	0.633	0.733	0.867
Chrysene	0.774	0.888	1.081	1.094	0.927
Dibenz(a,h)anthracene	0.209	0.332	0.378	0.413	0.388
Fluoranthene	0.851	0.762	0.908	1.037	1.069
Fluorene	0.658	0.714	0.712	0.744	0.756
Indeno(1,2,3-cd)pyrene	0.177	0.327	0.307	0.311	0.341
1-Methylnaphthalene	0.587	0.752	0.711	0.680	0.637
2-Methylnaphthalene	0.551	0.851	0.737	0.737	0.711
Naphthalene	1.079	1.265	1.131	1.099	1.032
Phenanthrene	1.025	1.064	1.138	1.139	1.089
Pyrene	0.757	0.766	1.025	1.100	1.142
2-Fluorobiphenyl	0.731	0.874	0.868	0.822	0.765
Terphenyl-d14	0.642	0.600	0.764	0.859	0.752

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA89545

Instrument ID: BNA3 Calibration Date(s): 08/18/09 08/18/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 1221 1844

LAB FILE ID: RF2: CAL6 RF5: CAL7 RF10: CAL8
RF20: CAL9 RF40: CAL10

COMPOUND	RF2	RF5	RF10	RF20	RF40
Acenaphthene	0.707	0.654	0.602	0.615	0.594
Acenaphthylene	0.946	0.888	0.821	0.852	0.809
Anthracene	1.039	1.111	1.073	1.030	1.031
Benzo(a)anthracene	0.752	1.090	1.041	1.071	
Benzo(b)fluoranthene	1.170	1.324	1.464	1.342	1.484
Benzo(k)fluoranthene	1.514	1.597	1.607	1.289	1.488
Benzo(g,h,i)perylene	0.838	0.834	0.866		
Benzo(a)pyrene	0.999	1.186	1.198	1.128	1.238
Chrysene	0.852	1.160	1.033	1.016	
Dibenz(a,h)anthracene	0.686	0.746	0.777	0.869	
Fluoranthene	1.080	1.325	1.257	1.167	1.155
Fluorene	0.809	0.787	0.747	0.741	0.739
Indeno(1,2,3-cd)pyrene	0.559	0.637	0.719		
1-Methylnaphthalene	0.720	0.628	0.571	0.610	0.559
2-Methylnaphthalene	0.798	0.704	0.618	0.674	0.633
Naphthalene	1.131	0.999	0.862	0.955	0.808
Phenanthrene	1.129	1.142	1.103	1.037	1.055
Pyrene	1.126	1.378	1.309	1.205	1.167
2-Fluorobiphenyl	0.864	0.770	0.700	0.759	0.694
Terphenyl-d14	0.733	0.914	0.880	0.810	0.788

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA89545

Instrument ID: BNA3 Calibration Date(s): 08/18/09 08/18/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 1221 1844

RF50: CAL11

COMPOUND	RF50
Acenaphthene	0.525
Acenaphthylene	0.714
Anthracene	1.000
Benzo(a)anthracene	
Benzo(b)fluoranthene	1.337
Benzo(k)fluoranthene	
Benzo(g,h,i)perylene	
Benzo(a)pyrene	1.140
Chrysene	
Dibenz(a,h)anthracene	
Fluoranthene	1.151
Fluorene	0.672
Indeno(1,2,3-cd)pyrene	
1-Methylnaphthalene	0.480
2-Methylnaphthalene	0.536
Naphthalene	
Phenanthrene	1.024
Pyrene	1.174
2-Fluorobiphenyl	0.599
Terphenyl-d14	0.805

FORM VI SV

SEMIVOLATILE INITIAL CALIBRATION VERIFICATION

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA89545

Instrument ID: BNA3 Calibration Date: 08/18/09 Time: 1922

Lab File ID: ICV01 Init. Calib. Date(s): 08/18/09 08/18/09

Init. Calib. Times: 1221 1844

COMPOUND	$\overline{RRF}$	RRF5	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acenaphthene	0.636	0.620	5.000	4.875		AVRG	-2.5	25.0
Acenaphthylene	0.811	0.834	5.000	5.139		AVRG	2.8	25.0
Anthracene	0.957	1.098	5.000	5.740		AVRG	14.8	25.0
Benzo(a)anthracene	0.801	1.067	5.000	5.011		LINR	0.2	25.0
Benzo(b)fluoranthene	1.139	1.456	5.000	5.223		LINR	4.5	25.0
Benzo(k)fluoranthene	1.348	1.586	5.000	5.419		LINR	8.4	25.0
Benzo(g,h,i)perylene	0.617	0.618	5.000	3.778		2ORDR	-24.4	25.0
Benzo(a)pyrene	0.925	1.191	5.000	5.064		LINR	1.3	25.0
Chrysene	0.980	1.105	5.000	5.635		AVRG	12.7	25.0
Dibenz(a,h)anthracene	0.533	0.569	5.000	3.892		2ORDR	-22.2	25.0
Fluoranthene	1.069	1.297	5.000	5.603		LINR	12.0	25.0
Fluorene	0.734	0.757	5.000	5.156		AVRG	3.1	25.0
Indeno(1,2,3-cd)pyrene	0.422	0.531	5.000	4.360		2ORDR	-12.8	25.0
1-Methylnaphthalene	0.630	0.578	5.000	4.584		AVRG	-8.3	25.0
2-Methylnaphthalene	0.686	0.640	5.000	4.666		AVRG	-6.7	25.0
Naphthalene	1.036	0.873	5.000	4.212		AVRG	-15.7	25.0
Phenanthrene	1.086	1.136	5.000	5.232		AVRG	4.6	25.0
Pyrene	1.104	1.345	5.000	5.704		LINR	14.1	25.0

ICV SV

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: DF1002B1 DFTPP Injection Date: 10/02/09

Instrument ID: BNA3 DFTPP Injection Time: 1317

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
51	30.0 - 60.0% of mass 198	30.6	
68	Less than 2.0% of mass 69	0.0	(0.0)1
69	Mass 69 relative abundance	35.1	
70	Less than 2.0% of mass 69	0.2	(0.5)1
127	40.0 - 60.0% of mass 198	47.1	
197	Less than 1.0% of mass 198	0.0	
198	Base Peak, 100% relative abundance	100.0	
199	5.0 to 9.0% of mass 198	6.9	
275	10.0 - 30.0% of mass 198	27.5	
365	Greater than 1.0% of mass 198	3.25	
441	Present, but less than mass 443	10.8	
442	Greater than 40.0% of mass 198	73.0	
443	17.0 - 23.0% of mass 442	14.0	(19.2)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV5.0PPM	CCV5.0PPM	CCV01	10/02/09	1337
02	SBLK1001BW1	9J01008-BLK1	S1BW1001	10/02/09	1415
03	SBLK1001BW1L	9J01008-BS1	S1LW1001	10/02/09	1453
04	SBLK1001BW1L	9J01008-BSD1	S1DW1001	10/02/09	1532
05	RB-092909-01	0910006-51	1000651	10/03/09	0027
06	RB-092909-02	0910006-52	1000652	10/03/09	0105
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FORM V SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Instrument ID: BNA3 Calibration Date: 10/02/09 Time: 1337

Lab File ID: CCV01 Init. Calib. Date(s): 08/18/09 08/18/09

Init. Calib. Times: 1221 1844

COMPOUND	$\overline{RRF}$	RRF5	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acenaphthene	0.636	0.722	5.000	5.675		AVRG	13.5	20.0
Acenaphthylene	0.811	0.890	5.000	5.481		AVRG	9.6	20.0
Anthracene	0.957	1.109	5.000	5.798		AVRG	16.0	20.0
Benzo(a)anthracene	0.801	0.916	5.000	4.303		LINR	-13.9	20.0
Benzo(b)fluoranthene	1.139	1.349	5.000	4.838		LINR	-3.2	20.0
Benzo(k)fluoranthene	1.348	1.960	5.000	6.700		LINR	34.0	20.0
Benzo(g,h,i)perylene	0.617	0.663	5.000	4.044		2ORDR	-19.1	20.0
Benzo(a)pyrene	0.925	1.197	5.000	5.090		LINR	1.8	20.0
Chrysene	0.980	0.974	5.000	4.969		AVRG	-0.6	20.0
Dibenz(a,h)anthracene	0.533	0.725	5.000	4.914		2ORDR	-1.7	20.0
Fluoranthene	1.069	1.193	5.000	5.156		LINR	3.1	20.0
Fluorene	0.734	0.827	5.000	5.632		AVRG	12.6	20.0
Indeno(1,2,3-cd)pyrene	0.422	0.577	5.000	4.700		2ORDR	-6.0	20.0
2-Methylnaphthalene	0.686	0.764	5.000	5.566		AVRG	11.3	20.0
Naphthalene	1.036	1.064	5.000	5.136		AVRG	2.7	20.0
Phenanthrene	1.086	1.121	5.000	5.161		AVRG	3.2	20.0
Pyrene	1.104	1.196	5.000	5.072		LINR	1.4	20.0
2-Fluorobiphenyl	0.768	0.845	5.000	5.501		AVRG	10.0	
Terphenyl-d14	0.777	0.847	5.000	5.447		AVRG	8.9	

FORM VII SV

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: DF1002B2 DFTPP Injection Date: 10/03/09

Instrument ID: BNA3 DFTPP Injection Time: 0218

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	30.3
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	35.2
70	Less than 2.0% of mass 69	0.2 (0.5)1
127	40.0 - 60.0% of mass 198	48.2
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.7
275	10.0 - 30.0% of mass 198	27.8
365	Greater than 1.0% of mass 198	3.44
441	Present, but less than mass 443	11.6
442	Greater than 40.0% of mass 198	75.1
443	17.0 - 23.0% of mass 442	14.3 (19.0)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV5.0PPME	CCV5.0PPME	CCV01E	10/03/09	0802
02	SB-092909-01	0910006-53	1000653R	10/03/09	0919
03					
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FORM V SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Instrument ID: BNA3 Calibration Date: 10/03/09 Time: 0802

Lab File ID: CCV01E Init. Calib. Date(s): 08/18/09 08/18/09

Init. Calib. Times: 1221 1844

COMPOUND	$\overline{RRF}$	RRF5	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acenaphthene	0.636	0.693	5.000	5.446		AVRG	8.9	20.0
Acenaphthylene	0.811	0.857	5.000	5.283		AVRG	5.6	20.0
Anthracene	0.957	1.091	5.000	5.701		AVRG	14.0	20.0
Benzo(a)anthracene	0.801	0.885	5.000	4.156		LINR	-16.9	20.0
Benzo(b)fluoranthene	1.139	1.262	5.000	4.526		LINR	-9.5	20.0
Benzo(k)fluoranthene	1.348	2.372	5.000	8.106		LINR	62.1	20.0
Benzo(g,h,i)perylene	0.617	0.664	5.000	4.051		2ORDR	-19.0	20.0
Benzo(a)pyrene	0.925	1.234	5.000	5.246		LINR	4.9	20.0
Chrysene	0.980	1.004	5.000	5.118		AVRG	2.4	20.0
Dibenz(a,h)anthracene	0.533	0.714	5.000	4.844		2ORDR	-3.1	20.0
Fluoranthene	1.069	1.198	5.000	5.177		LINR	3.5	20.0
Fluorene	0.734	0.799	5.000	5.442		AVRG	8.8	20.0
Indeno(1,2,3-cd)pyrene	0.422	0.831	5.000	6.470		2ORDR	29.4	20.0
2-Methylnaphthalene	0.686	0.736	5.000	5.365		AVRG	7.3	20.0
Naphthalene	1.036	1.010	5.000	4.877		AVRG	-2.4	20.0
Phenanthrene	1.086	1.125	5.000	5.180		AVRG	3.6	20.0
Pyrene	1.104	1.215	5.000	5.155		LINR	3.1	20.0
2-Fluorobiphenyl	0.768	0.794	5.000	5.167		AVRG	3.3	
Terphenyl-d14	0.777	0.858	5.000	5.521		AVRG	10.4	

FORM VII SV

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: DF1006B1 DFTPP Injection Date: 10/06/09

Instrument ID: BNA3 DFTPP Injection Time: 1330

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	35.5
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	41.2
70	Less than 2.0% of mass 69	0.2 (0.4)1
127	40.0 - 60.0% of mass 198	51.8
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.0
275	10.0 - 30.0% of mass 198	24.2
365	Greater than 1.0% of mass 198	2.46
441	Present, but less than mass 443	7.5
442	Greater than 40.0% of mass 198	48.2
443	17.0 - 23.0% of mass 442	10.0 (20.7)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV5.0PPM	CCV5.0PPM	CCV01	10/06/09	1350
02	SBLK1003BS1	9J02015-BLK2	S1BS1003	10/06/09	1818
03	SBLK1003BS1L	9J02015-BS2	S1LS1003	10/06/09	1856
04	FD-092609-01	0910006-01	1000601	10/06/09	2013
05	FD-092609-02	0910006-02	1000602	10/06/09	2051
06	NTC21SB09-SO	0910006-03	1000603	10/06/09	2129
07	NTC21SB09-SO	0910006-04	1000604	10/06/09	2207
08	NTC21SB10-SO	0910006-05	1000605	10/06/09	2245
09	NTC21SB10-SO	0910006-06	1000606	10/06/09	2323
10	NTC21SB11-SO	0910006-07	1000607	10/07/09	0001
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FORM V SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Instrument ID: BNA3 Calibration Date: 10/06/09 Time: 1350

Lab File ID: CCV01 Init. Calib. Date(s): 08/18/09 08/18/09

Init. Calib. Times: 1221 1844

COMPOUND	$\overline{RRF}$	RRF5	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acenaphthene	0.636	0.684	5.000	5.374		AVRG	7.5	20.0
Acenaphthylene	0.811	0.839	5.000	5.172		AVRG	3.4	20.0
Anthracene	0.957	1.109	5.000	5.794		AVRG	15.9	20.0
Benzo(a)anthracene	0.801	1.003	5.000	4.710		LINR	-5.8	20.0
Benzo(b)fluoranthene	1.139	1.552	5.000	5.567		LINR	11.3	20.0
Benzo(k)fluoranthene	1.348	1.690	5.000	5.778		LINR	15.6	20.0
Benzo(g,h,i)perylene	0.617	0.796	5.000	4.824		2ORDR	-3.5	20.0
Benzo(a)pyrene	0.925	1.200	5.000	5.102		LINR	2.0	20.0
Chrysene	0.980	0.989	5.000	5.042		AVRG	0.8	20.0
Dibenz(a,h)anthracene	0.533	0.793	5.000	5.358		2ORDR	7.2	20.0
Fluoranthene	1.069	1.232	5.000	5.324		LINR	6.5	20.0
Fluorene	0.734	0.788	5.000	5.367		AVRG	7.3	20.0
Indeno(1,2,3-cd)pyrene	0.422	0.700	5.000	5.580		2ORDR	11.6	20.0
2-Methylnaphthalene	0.686	0.716	5.000	5.214		AVRG	4.3	20.0
Naphthalene	1.036	0.979	5.000	4.725		AVRG	-5.5	20.0
Phenanthrene	1.086	1.142	5.000	5.260		AVRG	5.2	20.0
Pyrene	1.104	1.256	5.000	5.330		LINR	6.6	20.0
2-Fluorobiphenyl	0.768	0.789	5.000	5.135		AVRG	2.7	
Terphenyl-d14	0.777	0.894	5.000	5.754		AVRG	15.1	

FORM VII SV

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: DF1008B1 DFTPP Injection Date: 10/08/09

Instrument ID: BNA3 DFTPP Injection Time: 0630

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	31.7
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	36.3
70	Less than 2.0% of mass 69	0.2 (0.6)1
127	40.0 - 60.0% of mass 198	48.8
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.7
275	10.0 - 30.0% of mass 198	27.2
365	Greater than 1.0% of mass 198	3.21
441	Present, but less than mass 443	10.6
442	Greater than 40.0% of mass 198	69.9
443	17.0 - 23.0% of mass 442	13.7 (19.6)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV5.0PPM	CCV5.0PPM	CCV01	10/08/09	0650
02	NTC21SB17-SO	0910006-12	1000612	10/08/09	0730
03	NTC21SB18-SO	0910006-14	1000614	10/08/09	0808
04	NTC21SB20-SO	0910006-16	1000616	10/08/09	0847
05	NTC21SB21-SO	0910006-18	1000618	10/08/09	0925
06	FD-092709-01	0910006-20	1000620	10/08/09	1003
07	NTC21SB09-SO	0910006-04DL	1000604D	10/08/09	1041
08	NTC21SB10-SO	0910006-06DL	1000606D	10/08/09	1119
09	NTC21SB11-SO	0910006-07DL	1000607D	10/08/09	1157
10	NTC21SB11-SO	0910006-08	1000608	10/08/09	1353
11	NTC21SB12-SO	0910006-09	1000609	10/08/09	1509
12	NTC21SB12-SO	0910006-10	1000610	10/08/09	1547
13	NTC21SB17-SO	0910006-11	1000611	10/08/09	1626
14	NTC21SB18-SO	0910006-13	1000613	10/08/09	1704
15	NTC21SB20-SO	0910006-15	1000615	10/08/09	1742
16	NTC21SB21-SO	0910006-17	1000617	10/08/09	1820
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FORM V SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Instrument ID: BNA3 Calibration Date: 10/08/09 Time: 0650

Lab File ID: CCV01 Init. Calib. Date(s): 08/18/09 08/18/09

Init. Calib. Times: 1221 1844

COMPOUND	$\overline{RRF}$	RRF5	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acenaphthene	0.636	0.699	5.000	5.495		AVRG	9.9	20.0
Acenaphthylene	0.811	0.875	5.000	5.390		AVRG	7.8	20.0
Anthracene	0.957	1.067	5.000	5.575		AVRG	11.5	20.0
Benzo(a)anthracene	0.801	1.012	5.000	4.755		LINR	-4.9	20.0
Benzo(b)fluoranthene	1.139	1.401	5.000	5.026		LINR	0.5	20.0
Benzo(k)fluoranthene	1.348	1.357	5.000	4.638		LINR	-7.2	20.0
Benzo(g,h,i)perylene	0.617	0.766	5.000	4.651		2ORDR	-7.0	20.0
Benzo(a)pyrene	0.925	1.170	5.000	4.974		LINR	-0.5	20.0
Chrysene	0.980	1.039	5.000	5.299		AVRG	6.0	20.0
Dibenz(a,h)anthracene	0.533	0.706	5.000	4.788		2ORDR	-4.2	20.0
Fluoranthene	1.069	1.188	5.000	5.133		LINR	2.6	20.0
Fluorene	0.734	0.807	5.000	5.493		AVRG	9.9	20.0
Indeno(1,2,3-cd)pyrene	0.422	0.709	5.000	5.642		2ORDR	12.8	20.0
2-Methylnaphthalene	0.686	0.754	5.000	5.493		AVRG	9.8	20.0
Naphthalene	1.036	1.046	5.000	5.046		AVRG	0.9	20.0
Phenanthrene	1.086	1.123	5.000	5.170		AVRG	3.4	20.0
Pyrene	1.104	1.219	5.000	5.172		LINR	3.4	20.0
2-Fluorobiphenyl	0.768	0.819	5.000	5.335		AVRG	6.7	
Terphenyl-d14	0.777	0.844	5.000	5.428		AVRG	8.6	

FORM VII SV

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: DF1010B1 DFTPP Injection Date: 10/10/09

Instrument ID: BNA3 DFTPP Injection Time: 1407

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	33.0
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	38.3
70	Less than 2.0% of mass 69	0.2 (0.5)1
127	40.0 - 60.0% of mass 198	50.0
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.7
275	10.0 - 30.0% of mass 198	26.4
365	Greater than 1.0% of mass 198	2.90
441	Present, but less than mass 443	9.6
442	Greater than 40.0% of mass 198	61.9
443	17.0 - 23.0% of mass 442	12.4 (20.1)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV5.0PPM	CCV5.0PPM	CCV01	10/10/09	1426
02	SBLK1007BS2	9J07018-BLK2	S1BS1007	10/10/09	1505
03	SBLK1007BS2L	9J07018-BS2	S1LS1007	10/10/09	1543
04	NTC21SB02-SO	0910006-42	1000642	10/10/09	1621
05	NTC21SB02-SO	0910006-43	1000643	10/10/09	1659
06	NTC21SB03-SO	0910006-44	1000644	10/10/09	1737
07	NTC21SB05-SO	0910006-46	1000646	10/10/09	1854
08	NTC21SB05-SO	0910006-47	1000647	10/10/09	1932
09	NTC21SB08-SO	0910006-48	1000648	10/10/09	2010
10	NTC21SB08-SO	0910006-49	1000649	10/10/09	2048
11	NTC21SB02-SO	0910006-43MS	1000643M	10/10/09	2126
12	NTC21SB02-SO	0910006-43MSD	1000643S	10/10/09	2204
13	NTC21SB21-SO	0910006-17DL	1000617D1	10/10/09	2242
14	NTC21SB11-SO	0910006-08DL	1000608D	10/10/09	2359
15	NTC21SB12-SO	0910006-10DL	1000610D	10/11/09	0038
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FORM V SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Instrument ID: BNA3 Calibration Date: 10/10/09 Time: 1426

Lab File ID: CCV01 Init. Calib. Date(s): 08/18/09 08/18/09

Init. Calib. Times: 1221 1844

COMPOUND	$\overline{RRF}$	RRF5	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acenaphthene	0.636	0.725	5.000	5.703		AVRG	14.0	20.0
Acenaphthylene	0.811	0.895	5.000	5.516		AVRG	10.3	20.0
Anthracene	0.957	1.116	5.000	5.832		AVRG	16.6	20.0
Benzo(a)anthracene	0.801	0.943	5.000	4.431		LINR	-11.4	20.0
Benzo(b)fluoranthene	1.139	1.290	5.000	4.628		LINR	-7.4	20.0
Benzo(k)fluoranthene	1.348	1.484	5.000	5.070		LINR	1.4	20.0
Benzo(g,h,i)perylene	0.617	1.196	5.000	7.096		2ORDR	41.9	20.0
Benzo(a)pyrene	0.925	1.170	5.000	4.972		LINR	-0.6	20.0
Chrysene	0.980	0.957	5.000	4.879		AVRG	-2.4	20.0
Dibenz(a,h)anthracene	0.533	1.092	5.000	7.254		2ORDR	45.1	20.0
Fluoranthene	1.069	1.143	5.000	4.937		LINR	-1.2	20.0
Fluorene	0.734	0.824	5.000	5.607		AVRG	12.1	20.0
Indeno(1,2,3-cd)pyrene	0.422	1.064	5.000	7.940		2ORDR	58.8	20.0
2-Methylnaphthalene	0.686	0.792	5.000	5.769		AVRG	15.4	20.0
Naphthalene	1.036	1.099	5.000	5.303		AVRG	6.0	20.0
Phenanthrene	1.086	1.147	5.000	5.284		AVRG	5.7	20.0
Pyrene	1.104	1.166	5.000	4.945		LINR	-1.1	20.0
2-Fluorobiphenyl	0.768	0.836	5.000	5.445		AVRG	8.9	
Terphenyl-d14	0.777	0.792	5.000	5.097		AVRG	1.9	

FORM VII SV

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: DF1013B1 DFTPP Injection Date: 10/13/09

Instrument ID: BNA3 DFTPP Injection Time: 1224

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	33.8
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	38.5
70	Less than 2.0% of mass 69	0.2 (0.5)1
127	40.0 - 60.0% of mass 198	49.5
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.9
275	10.0 - 30.0% of mass 198	26.4
365	Greater than 1.0% of mass 198	3.27
441	Present, but less than mass 443	10.5
442	Greater than 40.0% of mass 198	67.2
443	17.0 - 23.0% of mass 442	13.2 (19.6)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV5.0PPM	SEQ-CCV1	CCV01	10/13/09	1248
02	NTC21SB03-SO	0910006-45	1000645D	10/13/09	1341
03	NTC21SB20-SO	0910006-15DL	1000615D	10/13/09	1419
04	NTC21SB03-SO	0910006-44DL	1000644D	10/13/09	1457
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FORM V SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Instrument ID: BNA3 Calibration Date: 10/13/09 Time: 1248

Lab File ID: CCV01 Init. Calib. Date(s): 08/18/09 08/18/09

Init. Calib. Times: 1221 1844

COMPOUND	$\overline{RRF}$	RRF5	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acenaphthene	0.636	0.699	5.000	5.495		AVRG	9.9	20.0
Acenaphthylene	0.811	0.852	5.000	5.248		AVRG	5.0	20.0
Anthracene	0.957	1.109	5.000	5.794		AVRG	15.9	20.0
Benzo(a)anthracene	0.801	0.953	5.000	4.478		LINR	-10.4	20.0
Benzo(b)fluoranthene	1.139	1.543	5.000	5.534		LINR	10.7	20.0
Benzo(k)fluoranthene	1.348	1.395	5.000	4.767		LINR	-4.7	20.0
Benzo(g,h,i)perylene	0.617	0.822	5.000	4.973		2ORDR	-0.5	20.0
Benzo(a)pyrene	0.925	1.167	5.000	4.961		LINR	-0.8	20.0
Chrysene	0.980	0.992	5.000	5.058		AVRG	1.2	20.0
Dibenz(a,h)anthracene	0.533	0.680	5.000	4.619		2ORDR	-7.6	20.0
Fluoranthene	1.069	1.204	5.000	5.201		LINR	4.0	20.0
Fluorene	0.734	0.815	5.000	5.551		AVRG	11.0	20.0
Indeno(1,2,3-cd)pyrene	0.422	0.702	5.000	5.594		2ORDR	11.9	20.0
2-Methylnaphthalene	0.686	0.743	5.000	5.411		AVRG	8.2	20.0
Naphthalene	1.036	0.979	5.000	4.727		AVRG	-5.5	20.0
Phenanthrene	1.086	1.144	5.000	5.267		AVRG	5.3	20.0
Pyrene	1.104	1.243	5.000	5.274		LINR	5.5	20.0
2-Fluorobiphenyl	0.768	0.802	5.000	5.225		AVRG	4.5	
Terphenyl-d14	0.777	0.840	5.000	5.404		AVRG	8.1	

FORM VII SV

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: SEQ-TUN1 DFTPP Injection Date: 10/19/09

Instrument ID: BNA3 DFTPP Injection Time: 1302

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	36.5
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	41.6
70	Less than 2.0% of mass 69	0.2 (0.4)1
127	40.0 - 60.0% of mass 198	50.9
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.6
275	10.0 - 30.0% of mass 198	25.9
365	Greater than 1.0% of mass 198	3.01
441	Present, but less than mass 443	9.7
442	Greater than 40.0% of mass 198	63.3
443	17.0 - 23.0% of mass 442	12.6 (19.9)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV5.0PPM	SEQ-CCV1	SEQ-CCV1	10/19/09	1322
02	9J05025-BLK1	9J05025-BLK1	S2BS1006	10/19/09	1401
03	9J05025-BLK1	9J05025-BS1	S2LS1006	10/19/09	1439
04	NTC21SB04-SO	0910006-21	1000621	10/19/09	1518
05	NTC21SB04-SO	0910006-22	1000622	10/19/09	1556
06	NTC21SB06-SO	0910006-23	1000623	10/19/09	1635
07	NTC21SB13-SO	0910006-28	1000628	10/19/09	1713
08	NTC21SB14-SO	0910006-30	1000630	10/19/09	1751
09	NTC21SB15-SO	0910006-32	1000632	10/19/09	1829
10	NTC21SB16-SO	0910006-34	1000634	10/19/09	1908
11	NTC21SB19-SO	0910006-36	1000636	10/19/09	1946
12	NTC21SB13-SO	0910006-27	1000627	10/19/09	2024
13	NTC21SB14-SO	0910006-29	1000629	10/19/09	2102
14	NTC21SB15-SO	0910006-31	1000631	10/19/09	2335
15	NTC21SB14-SO	0910006-29MS	1000629M	10/20/09	0013
16	NTC21SB14-SO	0910006-29MSD	1000629S	10/20/09	0051
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FORM V SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Instrument ID: ~~BNA3~~ Calibration Date: 10/19/09 Time: 1322

Lab File ID: SEQ-CCV1 Init. Calib. Date(s): 08/18/09 08/18/09

Init. Calib. Times: 1221 1844

COMPOUND	$\overline{RRF}$	RRF5	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acenaphthene	0.636	0.715	5.000	5.623		AVRG	12.5	20.0
Acenaphthylene	0.811	0.862	5.000	5.312		AVRG	6.2	20.0
Anthracene	0.957	1.091	5.000	5.703		AVRG	14.1	20.0
Benzo(a)anthracene	0.801	1.020	5.000	4.791		LINR	-4.2	20.0
Benzo(b)fluoranthene	1.139	1.500	5.000	5.381		LINR	7.6	20.0
Benzo(k)fluoranthene	1.348	1.690	5.000	5.776		LINR	15.5	20.0
Benzo(g,h,i)perylene	0.617	0.840	5.000	5.081		2ORDR	1.6	20.0
Benzo(a)pyrene	0.925	1.196	5.000	5.085		LINR	1.7	20.0
Chrysene	0.980	1.069	5.000	5.452		AVRG	9.0	20.0
Dibenz(a,h)anthracene	0.533	0.779	5.000	5.263		2ORDR	5.3	20.0
Fluoranthene	1.069	1.179	5.000	5.093		LINR	1.9	20.0
Fluorene	0.734	0.809	5.000	5.505		AVRG	10.1	20.0
Indeno(1,2,3-cd)pyrene	0.422	0.761	5.000	6.000		2ORDR	20.0	20.0
2-Methylnaphthalene	0.686	0.781	5.000	5.692		AVRG	13.8	20.0
Naphthalene	1.036	1.033	5.000	4.987		AVRG	-0.3	20.0
Phenanthrene	1.086	1.134	5.000	5.222		AVRG	4.4	20.0
Pyrene	1.104	1.226	5.000	5.203		LINR	4.1	20.0
2-Fluorobiphenyl	0.768	0.824	5.000	5.364		AVRG	7.3	
Terphenyl-d14	0.777	0.847	5.000	5.446		AVRG	8.9	

FORM VII SV

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: SEQ-TUN1 DFTPP Injection Date: 10/20/09

Instrument ID: BNA3 DFTPP Injection Time: 1333

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	34.1
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	38.3
70	Less than 2.0% of mass 69	0.2 (0.5)1
127	40.0 - 60.0% of mass 198	49.7
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.9
275	10.0 - 30.0% of mass 198	27.0
365	Greater than 1.0% of mass 198	3.14
441	Present, but less than mass 443	10.8
442	Greater than 40.0% of mass 198	67.9
443	17.0 - 23.0% of mass 442	13.1 (19.3)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV5.0PPM	SEQ-CCV1	SEQ-CCV1	10/20/09	1355
02	NTC21SB06-SO	0910006-24	1000624	10/20/09	1745
03	NTC21SB16-SO	0910006-33	1000633	10/20/09	1824
04	NTC21SB19-SO	0910006-35	1000635	10/20/09	1902
05	NTC21SB22-SO	0910006-37	1000637	10/20/09	1940
06	NTC21SB22-SO	0910006-38	1000638	10/20/09	2057
07	FD-092809-01	0910006-40	1000640	10/20/09	2135
08	NTC21SB01-SO	0910006-41	1000641	10/20/09	2213
09	NTC21SB07-SO	0910006-25	1000625	10/20/09	2251
10	NTC21SB07-SO	0910006-26	1000626	10/20/09	2329
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FORM V SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Instrument ID: BNA3 Calibration Date: 10/20/09 Time: 1355

Lab File ID: SEQ-CCV1 Init. Calib. Date(s): 08/18/09 08/18/09

Init. Calib. Times: 1221 1844

COMPOUND	$\overline{RRF}$	RRF5	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acenaphthene	0.636	0.686	5.000	5.396		AVRG	7.9	20.0
Acenaphthylene	0.811	0.820	5.000	5.050		AVRG	1.0	20.0
Anthracene	0.957	1.091	5.000	5.703		AVRG	14.1	20.0
Benzo(a)anthracene	0.801	0.989	5.000	4.648		LINR	-7.0	20.0
Benzo(b)fluoranthene	1.139	1.482	5.000	5.316		LINR	6.3	20.0
Benzo(k)fluoranthene	1.348	1.652	5.000	5.645		LINR	12.9	20.0
Benzo(g,h,i)perylene	0.617	0.928	5.000	5.586		2ORDR	11.7	20.0
Benzo(a)pyrene	0.925	1.195	5.000	5.082		LINR	1.6	20.0
Chrysene	0.980	1.040	5.000	5.300		AVRG	6.0	20.0
Dibenz(a,h)anthracene	0.533	0.821	5.000	5.535		2ORDR	10.7	20.0
Fluoranthene	1.069	1.214	5.000	5.245		LINR	4.9	20.0
Fluorene	0.734	0.780	5.000	5.312		AVRG	6.2	20.0
Indeno(1,2,3-cd)pyrene	0.422	0.795	5.000	6.234		2ORDR	24.7	20.0
2-Methylnaphthalene	0.686	0.785	5.000	5.720		AVRG	14.4	20.0
Naphthalene	1.036	1.091	5.000	5.265		AVRG	5.3	20.0
Phenanthrene	1.086	1.131	5.000	5.207		AVRG	4.1	20.0
Pyrene	1.104	1.245	5.000	5.283		LINR	5.7	20.0
2-Fluorobiphenyl	0.768	0.784	5.000	5.103		AVRG	2.1	
Terphenyl-d14	0.777	0.856	5.000	5.511		AVRG	10.2	

FORM VII SV

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: SEQ-TUN1 DFTPP Injection Date: 10/21/09

Instrument ID: BNA3 DFTPP Injection Time: 1431

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	34.5
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	39.4
70	Less than 2.0% of mass 69	0.2 (0.5)1
127	40.0 - 60.0% of mass 198	49.4
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.8
275	10.0 - 30.0% of mass 198	26.7
365	Greater than 1.0% of mass 198	3.11
441	Present, but less than mass 443	10.0
442	Greater than 40.0% of mass 198	66.1
443	17.0 - 23.0% of mass 442	12.9 (19.5)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV5.0PPM	SEQ-CCV1	SEQ-CCV1	10/21/09	1451
02	NTC21SB22-SO	0910006-38DL	1000638D	10/21/09	1648
03	NTC21SB01-SO	0910006-41DL	1000641D	10/21/09	1726
04	NTC21SB07-SO	0910006-25DL	1000625D	10/21/09	1805
05	NTC21SB07-SO	0910006-26DL	1000626D	10/21/09	1843
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FORM V SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Instrument ID: BNA3 Calibration Date: 10/21/09 Time: 1451

Lab File ID: SEQ-CCV1 Init. Calib. Date(s): 08/18/09 08/18/09

Init. Calib. Times: 1221 1844

COMPOUND	$\overline{RRF}$	RRF5	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acenaphthene	0.636	0.710	5.000	5.578		AVRG	11.6	20.0
Acenaphthylene	0.811	0.856	5.000	5.273		AVRG	5.5	20.0
Anthracene	0.957	1.098	5.000	5.740		AVRG	14.8	20.0
Benzo(a)anthracene	0.801	0.871	5.000	4.091		LINR	-18.2	20.0
Benzo(b)fluoranthene	1.139	1.439	5.000	5.162		LINR	3.2	20.0
Benzo(k)fluoranthene	1.348	1.531	5.000	5.234		LINR	4.7	20.0
Benzo(g,h,i)perylene	0.617	0.792	5.000	4.798		2ORDR	-4.0	20.0
Benzo(a)pyrene	0.925	1.158	5.000	4.922		LINR	-1.6	20.0
Chrysene	0.980	0.883	5.000	4.501		AVRG	-10.0	20.0
Dibenz(a,h)anthracene	0.533	0.718	5.000	4.867		2ORDR	-2.6	20.0
Fluoranthene	1.069	1.155	5.000	4.990		LINR	-0.2	20.0
Fluorene	0.734	0.806	5.000	5.488		AVRG	9.8	20.0
Indeno(1,2,3-cd)pyrene	0.422	0.733	5.000	5.808		2ORDR	16.2	20.0
2-Methylnaphthalene	0.686	0.818	5.000	5.956		AVRG	19.1	20.0
Naphthalene	1.036	0.965	5.000	4.656		AVRG	-6.9	20.0
Phenanthrene	1.086	1.150	5.000	5.297		AVRG	5.9	20.0
Pyrene	1.104	1.181	5.000	5.008		LINR	0.2	20.0
2-Fluorobiphenyl	0.768	0.794	5.000	5.172		AVRG	3.4	
Terphenyl-d14	0.777	0.803	5.000	5.168		AVRG	3.4	

FORM VII SV

FORM 4
SEMIVOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

SBLK1001BW1

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: S1BW1001 Lab Sample ID: 9J01008-BLK1

Instrument ID: BNA3 Date Extracted: 10/01/09

Matrix: (soil/water) WATER Date Analyzed: 10/02/09

Level:(low/med) LOW GPC Cleanup: (Y/N) N Time Analyzed: 1415

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	SBLK1001BW1L	9J01008-BS1	S1LW1001	10/02/09
02	SBLK1001BW1L	9J01008-BSD1	S1DW1001	10/02/09
03	RB-092909-01	0910006-51	1000651	10/03/09
04	RB-092909-02	0910006-52	1000652	10/03/09
05	SB-092909-01	0910006-53	1000653R	10/03/09
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COMMENTS:

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FORM IV SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SBLK1001BW1

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) WATER Lab Sample ID: 9J01008-BLK1

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1BW1001

% Moisture: _____ decanted: (Y/N)___ Date Sampled: _____

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:10/01/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/02/09 14:15

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	0.020	0.050	0.024	J
208-96-8	Acenaphthylene	0.020	0.050	0.020	J
120-12-7	Anthracene	0.020	0.050		U
56-55-3	Benzo(a)anthracene	0.020	0.050		U
205-99-2	Benzo(b)fluoranthene	0.020	0.050		U
207-08-9	Benzo(k)fluoranthene	0.020	0.050		U
191-24-2	Benzo(g,h,i)perylene	0.020	0.050		U
50-32-8	Benzo(a)pyrene	0.020	0.050		U
218-01-9	Chrysene	0.020	0.050		U
53-70-3	Dibenz(a,h)anthracene	0.020	0.050		U
206-44-0	Fluoranthene	0.020	0.050		U
86-73-7	Fluorene	0.020	0.050		U
193-39-5	Indeno(1,2,3-cd)pyrene	0.020	0.050		U
91-57-6	2-Methylnaphthalene	0.020	0.050	0.065	
91-20-3	Naphthalene	0.020	0.050	0.081	
85-01-8	Phenanthrene	0.020	0.050	0.031	J
129-00-0	Pyrene	0.020	0.050		U

FORM I SV

FORM 4
SEMIVOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

SBLK1003BS1

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: S1BS1003 Lab Sample ID: 9J02015-BLK2

Instrument ID: BNA3 Date Extracted: 10/03/09

Matrix: (soil/water) SOIL Date Analyzed: 10/06/09

Level:(low/med) LOW GPC Cleanup: (Y/N) N Time Analyzed: 1818

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	SBLK1003BS1L	9J02015-BS2	S1LS1003	10/06/09
02	FD-092609-01	0910006-01	1000601	10/06/09
03	FD-092609-02	0910006-02	1000602	10/06/09
04	NTC21SB09-SO	0910006-03	1000603	10/06/09
05	NTC21SB09-SO	0910006-04	1000604	10/06/09
06	NTC21SB10-SO	0910006-05	1000605	10/06/09
07	NTC21SB10-SO	0910006-06	1000606	10/06/09
08	NTC21SB11-SO	0910006-07	1000607	10/07/09
09	NTC21SB17-SO	0910006-12	1000612	10/08/09
10	NTC21SB18-SO	0910006-14	1000614	10/08/09
11	NTC21SB20-SO	0910006-16	1000616	10/08/09
12	NTC21SB21-SO	0910006-18	1000618	10/08/09
13	FD-092709-01	0910006-20	1000620	10/08/09
14	NTC21SB09-SO	0910006-04DL	1000604D	10/08/09
15	NTC21SB10-SO	0910006-06DL	1000606D	10/08/09
16	NTC21SB11-SO	0910006-07DL	1000607D	10/08/09
17	NTC21SB11-SO	0910006-08	1000608	10/08/09
18	NTC21SB12-SO	0910006-09	1000609	10/08/09
19	NTC21SB12-SO	0910006-10	1000610	10/08/09
20	NTC21SB17-SO	0910006-11	1000611	10/08/09
21	NTC21SB18-SO	0910006-13	1000613	10/08/09
22	NTC21SB20-SO	0910006-15	1000615	10/08/09
23	NTC21SB21-SO	0910006-17	1000617	10/08/09
24	NTC21SB21-SO	0910006-17DL	1000617D1	10/10/09
25	NTC21SB11-SO	0910006-08DL	1000608D	10/10/09
26	NTC21SB12-SO	0910006-10DL	1000610D	10/11/09
27	NTC21SB20-SO	0910006-15DL	1000615D	10/13/09
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COMMENTS:

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FORM IV SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SBLK1003BS1

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 9J02015-BLK2

Sample wt/vol: 15.0 (g/mL) G Lab File ID: S1BS1003

% Moisture: 0 decanted: (Y/N) N Date Sampled: _____

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/03/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/06/09 18:18

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.3	3.3		U
208-96-8	Acenaphthylene	1.3	3.3		U
120-12-7	Anthracene	1.3	3.3		U
56-55-3	Benzo(a)anthracene	1.3	3.3		U
205-99-2	Benzo(b)fluoranthene	1.3	3.3		U
207-08-9	Benzo(k)fluoranthene	1.3	3.3		U
191-24-2	Benzo(g,h,i)perylene	1.3	3.3		U
50-32-8	Benzo(a)pyrene	1.3	3.3		U
218-01-9	Chrysene	1.3	3.3		U
53-70-3	Dibenz(a,h)anthracene	1.3	3.3		U
206-44-0	Fluoranthene	1.3	3.3		U
86-73-7	Fluorene	1.3	3.3		U
193-39-5	Indeno(1,2,3-cd)pyrene	1.3	3.3		U
91-57-6	2-Methylnaphthalene	1.3	3.3		U
91-20-3	Naphthalene	1.3	3.3		U
85-01-8	Phenanthrene	1.3	3.3		U
129-00-0	Pyrene	1.3	3.3		U

FORM I SV

FORM 4
SEMIVOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

9J05025-BLK1

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: S2BS1006 Lab Sample ID: 9J05025-BLK1

Instrument ID: BNA3 Date Extracted: 10/06/09

Matrix: (soil/water) SOIL Date Analyzed: 10/19/09

Level:(low/med) LOW GPC Cleanup: (Y/N) N Time Analyzed: 1401

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	9J05025-BLK1	9J05025-BS1	S2LS1006	10/19/09
02	NTC21SB04-SO	0910006-21	1000621	10/19/09
03	NTC21SB04-SO	0910006-22	1000622	10/19/09
04	NTC21SB06-SO	0910006-23	1000623	10/19/09
05	NTC21SB13-SO	0910006-28	1000628	10/19/09
06	NTC21SB14-SO	0910006-30	1000630	10/19/09
07	NTC21SB15-SO	0910006-32	1000632	10/19/09
08	NTC21SB16-SO	0910006-34	1000634	10/19/09
09	NTC21SB19-SO	0910006-36	1000636	10/19/09
10	NTC21SB13-SO	0910006-27	1000627	10/19/09
11	NTC21SB14-SO	0910006-29	1000629	10/19/09
12	NTC21SB15-SO	0910006-31	1000631	10/19/09
13	NTC21SB14-SO	0910006-29MS	1000629M	10/20/09
14	NTC21SB14-SO	0910006-29MSD	1000629S	10/20/09
15	NTC21SB06-SO	0910006-24	1000624	10/20/09
16	NTC21SB16-SO	0910006-33	1000633	10/20/09
17	NTC21SB19-SO	0910006-35	1000635	10/20/09
18	NTC21SB22-SO	0910006-37	1000637	10/20/09
19	NTC21SB22-SO	0910006-38	1000638	10/20/09
20	FD-092809-01	0910006-40	1000640	10/20/09
21	NTC21SB01-SO	0910006-41	1000641	10/20/09
22	NTC21SB07-SO	0910006-25	1000625	10/20/09
23	NTC21SB07-SO	0910006-26	1000626	10/20/09
24	NTC21SB22-SO	0910006-38DL	1000638D	10/21/09
25	NTC21SB01-SO	0910006-41DL	1000641D	10/21/09
26	NTC21SB07-SO	0910006-25DL	1000625D	10/21/09
27	NTC21SB07-SO	0910006-26DL	1000626D	10/21/09
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COMMENTS:

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FORM IV SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

9J05025-BLK1

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 9J05025-BLK1

Sample wt/vol: 15.0 (g/mL) G Lab File ID: S2BS1006

% Moisture: 0 decanted: (Y/N) N Date Sampled: _____

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:10/06/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/19/09 14:01

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.3	3.3		U
208-96-8	Acenaphthylene	1.3	3.3		U
120-12-7	Anthracene	1.3	3.3		U
56-55-3	Benzo(a)anthracene	1.3	3.3		U
205-99-2	Benzo(b)fluoranthene	1.3	3.3		U
207-08-9	Benzo(k)fluoranthene	1.3	3.3		U
191-24-2	Benzo(g,h,i)perylene	1.3	3.3		U
50-32-8	Benzo(a)pyrene	1.3	3.3		U
218-01-9	Chrysene	1.3	3.3		U
53-70-3	Dibenz(a,h)anthracene	1.3	3.3		U
206-44-0	Fluoranthene	1.3	3.3	1.4	J
86-73-7	Fluorene	1.3	3.3		U
193-39-5	Indeno(1,2,3-cd)pyrene	1.3	3.3		U
91-57-6	2-Methylnaphthalene	1.3	3.3	1.4	J
91-20-3	Naphthalene	1.3	3.3		U
85-01-8	Phenanthrene	1.3	3.3		U
129-00-0	Pyrene	1.3	3.3	1.4	J

FORM I SV

FORM 4
SEMIVOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

SBLK1007BS2

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID: S1BS1007 Lab Sample ID: 9J07018-BLK2

Instrument ID: BNA3 Date Extracted: 10/07/09

Matrix: (soil/water) SOIL Date Analyzed: 10/10/09

Level:(low/med) LOW GPC Cleanup: (Y/N) N Time Analyzed: 1505

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	SBLK1007BS2L	9J07018-BS2	S1LS1007	10/10/09
02	NTC21SB02-SO	0910006-42	1000642	10/10/09
03	NTC21SB02-SO	0910006-43	1000643	10/10/09
04	NTC21SB03-SO	0910006-44	1000644	10/10/09
05	NTC21SB05-SO	0910006-46	1000646	10/10/09
06	NTC21SB05-SO	0910006-47	1000647	10/10/09
07	NTC21SB08-SO	0910006-48	1000648	10/10/09
08	NTC21SB08-SO	0910006-49	1000649	10/10/09
09	NTC21SB02-SO	0910006-43MS	1000643M	10/10/09
10	NTC21SB02-SO	0910006-43MSD	1000643S	10/10/09
11	NTC21SB03-SO	0910006-45	1000645D	10/13/09
12	NTC21SB03-SO	0910006-44DL	1000644D	10/13/09
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FORM IV SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SBLK1007BS2

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix: (soil/water) SOIL Lab Sample ID: 9J07018-BLK2

Sample wt/vol: 15.0 (g/mL) G Lab File ID: S1BS1007

% Moisture: 0 decanted: (Y/N) N Date Sampled: _____

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted: 10/07/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 10/10/09 15:05

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.3	3.3		U
208-96-8	Acenaphthylene	1.3	3.3		U
120-12-7	Anthracene	1.3	3.3		U
56-55-3	Benzo(a)anthracene	1.3	3.3		U
205-99-2	Benzo(b)fluoranthene	1.3	3.3		U
207-08-9	Benzo(k)fluoranthene	1.3	3.3		U
191-24-2	Benzo(g,h,i)perylene	1.3	3.3		U
50-32-8	Benzo(a)pyrene	1.3	3.3		U
218-01-9	Chrysene	1.3	3.3		U
53-70-3	Dibenz(a,h)anthracene	1.3	3.3		U
206-44-0	Fluoranthene	1.3	3.3		U
86-73-7	Fluorene	1.3	3.3		U
193-39-5	Indeno(1,2,3-cd)pyrene	1.3	3.3		U
91-57-6	2-Methylnaphthalene	1.3	3.3		U
91-20-3	Naphthalene	1.3	3.3		U
85-01-8	Phenanthrene	1.3	3.3		U
129-00-0	Pyrene	1.3	3.3		U

FORM I SV

FORM 2
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Level: (low/med) LOW

	CLIENT SAMPLE NO.	S1 (FBP) #	S2 (TPH) #	S3 #	S4 #	S5 #	S6 #	S7 #	S8 #	TOT OUT
01	SBLK1003BS1	64	72							0
02	SBLK1003BS1L	63	75							0
03	FD-092609-01	52	64							0
04	FD-092609-02	59	41							0
05	NTC21SB09-SO	52	40							0
06	NTC21SB09-SO	63	56							0
07	NTC21SB10-SO	34	31							0
08	NTC21SB10-SO	58	52							0
09	NTC21SB11-SO	42	36							0
10	NTC21SB17-SO	57	44							0
11	NTC21SB18-SO	75	87							0
12	NTC21SB20-SO	37	66							0
13	NTC21SB21-SO	63	73							0
14	FD-092709-01	56	68							0
15	NTC21SB09-SO	61D	69D							0
16	NTC21SB10-SO	50D	74D							0
17	NTC21SB11-SO	37D	33D							0
18	NTC21SB11-SO	47	43							0
19	NTC21SB12-SO	45	57							0
20	NTC21SB12-SO	56	54							0
21	NTC21SB17-SO	55	56							0
22	NTC21SB18-SO	58	58							0
23	NTC21SB20-SO	54	36							0
24	NTC21SB21-SO	54	39							0
25	SBLK1007BS2	68	69							0
26	SBLK1007BS2L	83	79							0
27	NTC21SB02-SO	64	60							0
28	NTC21SB02-SO	63	53							0
29	NTC21SB03-SO	63	53							0
30	NTC21SB05-SO	65	54							0

	EL QC LIMITS	SPIKE CONC (UG/KG)
S1 (FBP) = 2-Fluorobiphenyl	(14-129)	3300
S2 (TPH) = Terphenyl-d14	(14-129)	3300

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate results reported from a diluted analysis

FORM 2
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Level:(low/med) LOW

	CLIENT SAMPLE NO.	S1 (FBP)#	S2 (TPH)#	S3 #	S4 #	S5 #	S6 #	S7 #	S8 #	TOT OUT
01	NTC21SB05-SO	70	66							0
02	NTC21SB08-SO	70	62							0
03	NTC21SB08-SO	87	70							0
04	NTC21SB02-SO	81D	74D							0
05	NTC21SB02-SO	81D	66D							0
06	NTC21SB21-SO	43D	60D							0
07	NTC21SB11-SO	54D	56D							0
08	NTC21SB12-SO	68D	62D							0
09	NTC21SB03-SO	92D	95D							0
10	NTC21SB20-SO	69D	49D							0
11	NTC21SB03-SO	35D	29D							0
12	9J05025-BLK1	77	85							0
13	9J05025-BLK1	52	76							0
14	NTC21SB04-SO	62	51							0
15	NTC21SB04-SO	67	69							0
16	NTC21SB06-SO	70	70							0
17	NTC21SB13-SO	54	69							0
18	NTC21SB14-SO	62	57							0
19	NTC21SB15-SO	67	72							0
20	NTC21SB16-SO	65	65							0
21	NTC21SB19-SO	62	65							0
22	NTC21SB13-SO	62	61							0
23	NTC21SB14-SO	63	65							0
24	NTC21SB15-SO	72	68							0
25	NTC21SB14-SO	59D	66D							0
26	NTC21SB14-SO	62D	68D							0
27	NTC21SB06-SO	56	39							0
28	NTC21SB16-SO	70	60							0
29	NTC21SB19-SO	69	63							0
30	NTC21SB22-SO	62	55							0

		EL QC LIMITS	SPIKE CONC (UG/KG)
S1 (FBP)	= 2-Fluorobiphenyl	(14-129)	3300
S2 (TPH)	= Terphenyl-d14	(14-129)	3300

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate results reported from a diluted analysis

FORM 2
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Level:(low/med) LOW

	CLIENT SAMPLE NO.	S1 (FBP)#	S2 (TPH)#	S3 #	S4 #	S5 #	S6 #	S7 #	S8 #	TOT OUT
01	NTC21SB22-SO	77	65							0
02	FD-092809-01	74	69							0
03	NTC21SB01-SO	66	56							0
04	NTC21SB07-SO	63	54							0
05	NTC21SB07-SO	67	61							0
06	NTC21SB22-SO	81D	78D							0
07	NTC21SB01-SO	55D	69D							0
08	NTC21SB07-SO	59D	85D							0
09	NTC21SB07-SO	77D	78D							0
10										
11										
12										
13										
14										
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27										
28										
29										
30										

	EL QC LIMITS	SPIKE CONC (UG/KG)
S1 (FBP) = 2-Fluorobiphenyl	(14-129)	3300
S2 (TPH) = Terphenyl-d14	(14-129)	3300

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate results reported from a diluted analysis

FORM 2
WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

	CLIENT SAMPLE NO.	S1 (FBP) #	S2 (TPH) #	S3 #	S4 #	S5 #	S6 #	S7 #	S8 #	TOT OUT
01	SBLK1001BW1	72	89							0
02	SBLK1001BW1L	69	81							0
03	SBLK1001BW1L	64	79							0
04	RB-092909-01	60	70							0
05	RB-092909-02	72	65							0
06	SB-092909-01	68	68							0
07										
08										
09										
10										
11										
12										
13										
14										
15										
16										
17										
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25										
26										
27										
28										
29										
30										

	EL QC LIMITS	SPIKE CONC (UG/L)
S1 (FBP) = 2-Fluorobiphenyl	(34-167)	50
S2 (TPH) = Terphenyl-d14	(34-167)	50

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate results reported from a diluted analysis

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: SBLK1001BW1

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Acenaphthene	1.000	0.02350	0.7374	71	41-132
Acenaphthylene	1.000	0.02024	0.8181	80	43-140
Anthracene	1.000	0.0000	0.8631	86	50-139
Benzo(a)anthracene	1.000	0.0000	0.6416	64	58-141
Benzo(b)fluoranthene	1.000	0.0000	0.6573	66	42-156
Benzo(k)fluoranthene	1.000	0.0000	0.9110	91	49-165
Benzo(g,h,i)perylene	1.000	0.0000	0.6935	69	12-171
Benzo(a)pyrene	1.000	0.0000	0.6943	69	31-142
Chrysene	1.000	0.0000	0.8464	85	51-155
Dibenz(a,h)anthracene	1.000	0.0000	0.7780	78	28-153
Fluoranthene	1.000	0.0000	0.7772	78	47-158
Fluorene	1.000	0.0000	0.7541	75	40-140
Indeno(1,2,3-cd)pyrene	1.000	0.0000	0.7662	77	20-167
2-Methylnaphthalene	1.000	0.06472	0.6481	58	36-121
Naphthalene	1.000	0.08110	0.6119	53	39-125
Phenanthrene	1.000	0.03068	0.7537	72	46-144
Pyrene	1.000	0.0000	0.7814	78	39-158

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: SBLK1001BW1

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Acenaphthene	1.000	0.6807	66	8	40	41-132
Acenaphthylene	1.000	0.7578	74	8	40	43-140
Anthracene	1.000	0.7941	79	8	40	50-139
Benzo(a)anthracene	1.000	0.5706	57*	12	40	58-141
Benzo(b)fluoranthene	1.000	0.6063	61	8	40	42-156
Benzo(k)fluoranthene	1.000	0.8523	85	7	40	49-165
Benzo(g,h,i)perylene	1.000	0.4967	50	33	40	12-171
Benzo(a)pyrene	1.000	0.6364	64	9	40	31-142
Chrysene	1.000	0.7469	75	12	40	51-155
Dibenz(a,h)anthracene	1.000	0.5952	60	27	40	28-153
Fluoranthene	1.000	0.7137	71	8	40	47-158
Fluorene	1.000	0.7026	70	7	40	40-140
Indeno(1,2,3-cd)pyrene	1.000	0.5927	59	26	40	20-167
2-Methylnaphthalene	1.000	0.6562	59	1	40	36-121
Naphthalene	1.000	0.5791	50	6	40	39-125
Phenanthrene	1.000	0.7133	68	6	40	46-144
Pyrene	1.000	0.7219	72	8	40	39-158

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 17 outside limits
Spike Recovery: 1 out of 34 outside limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: SBLK1003BS1 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (UG/KG)	SAMPLE CONCENTRATION (UG/KG)	LCS CONCENTRATION (UG/KG)	LCS % REC #	QC. LIMITS REC.
Acenaphthene	66.67	0.0000	41.83	63	28-110
Acenaphthylene	66.67	0.0000	47.34	71	23-126
Anthracene	66.67	0.0000	47.22	71	28-136
Benzo(a)anthracene	66.67	0.0000	34.24	51	31-146
Benzo(b)fluoranthene	66.67	0.0000	39.01	58	30-139
Benzo(k)fluoranthene	66.67	0.0000	49.88	75	42-129
Benzo(g,h,i)perylene	66.67	0.0000	37.42	56	21-149
Benzo(a)pyrene	66.67	0.0000	37.43	56	28-128
Chrysene	66.67	0.0000	40.77	61	39-134
Dibenz(a,h)anthracene	66.67	0.0000	40.85	61	30-138
Fluoranthene	66.67	0.0000	42.71	64	30-142
Fluorene	66.67	0.0000	42.15	63	27-116
Indeno(1,2,3-cd)pyrene	66.67	0.0000	46.54	70	17-164
2-Methylnaphthalene	66.67	0.0000	34.31	51	30-111
Naphthalene	66.67	0.0000	37.60	56	29-106
Phenanthrene	66.67	0.0000	43.21	65	32-127
Pyrene	66.67	0.0000	44.09	66	28-130

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 17 outside limits

COMMENTS:

FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: 9J05025-BLK1 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (UG/KG)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (UG/KG)	LCS % REC #	QC. LIMITS REC.
Acenaphthene	3333	0.0000	2123	64	28-110
Acenaphthylene	3333	0.0000	2365	71	23-126
Anthracene	3333	0.0000	2741	82	28-136
Benzo(a)anthracene	3333	0.0000	2468	74	31-146
Benzo(b)fluoranthene	3333	0.0000	3248	97	30-139
Benzo(k)fluoranthene	3333	0.0000	2270	68	42-129
Benzo(g,h,i)perylene	3333	0.0000	2289	69	21-149
Benzo(a)pyrene	3333	0.0000	2408	72	28-128
Chrysene	3333	0.0000	2479	74	39-134
Dibenz(a,h)anthracene	3333	0.0000	2495	75	30-138
Fluoranthene	3333	1.387	2688	81	30-142
Fluorene	3333	0.0000	2363	71	27-116
Indeno(1,2,3-cd)pyrene	3333	0.0000	3819	114	17-164
2-Methylnaphthalene	3333	1.366	2333	70	30-111
Naphthalene	3333	0.0000	1462	44	29-106
Phenanthrene	3333	0.0000	2511	75	32-127
Pyrene	3333	1.440	2726	82	28-130

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 17 outside limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: SBLK1007BS2 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (UG/KG)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (UG/KG)	LCS % REC #	QC. LIMITS REC.
Acenaphthene	66.67	0.0000	54.59	82	28-110
Acenaphthylene	66.67	0.0000	62.17	93	23-126
Anthracene	66.67	0.0000	53.02	80	28-136
Benzo(a)anthracene	66.67	0.0000	37.94	57	31-146
Benzo(b)fluoranthene	66.67	0.0000	40.34	60	30-139
Benzo(k)fluoranthene	66.67	0.0000	52.76	79	42-129
Benzo(g,h,i)perylene	66.67	0.0000	65.86	99	21-149
Benzo(a)pyrene	66.67	0.0000	45.02	68	28-128
Chrysene	66.67	0.0000	47.85	72	39-134
Dibenz(a,h)anthracene	66.67	0.0000	65.47	98	30-138
Fluoranthene	66.67	0.0000	47.24	71	30-142
Fluorene	66.67	0.0000	54.17	81	27-116
Indeno(1,2,3-cd)pyrene	66.67	0.0000	73.19	110	17-164
2-Methylnaphthalene	66.67	0.0000	54.09	81	30-111
Naphthalene	66.67	0.0000	49.52	74	29-106
Phenanthrene	66.67	0.0000	51.29	77	32-127
Pyrene	66.67	0.0000	46.53	70	28-130

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 17 outside limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: NTC21SB02-SO-020 Lab Sample ID: 0910006-43

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (UG/KG)	SAMPLE CONCENTRATION (UG/KG)	MS CONCENTRATION (UG/KG)	MS % REC #	QC. LIMITS REC.
Acenaphthene	3758	109.2	3439	89	28-110
Acenaphthylene	3758	0.0000	3932	105	23-126
Anthracene	3758	127.2	3837	99	28-136
Benzo(a)anthracene	3758	282.6	2999	72	31-146
Benzo(b)fluoranthene	3758	446.2	3494	81	30-139
Benzo(k)fluoranthene	3758	153.0	3482	88	42-129
Benzo(g,h,i)perylene	3758	251.3	2086	49	21-149
Benzo(a)pyrene	3758	320.3	3031	72	28-128
Chrysene	3758	290.2	3102	75	39-134
Dibenz(a,h)anthracene	3758	66.13	2536	66	30-138
Fluoranthene	3758	650.8	4577	104	30-142
Fluorene	3758	0.0000	3442	92	27-116
Indeno(1,2,3-cd)pyrene	3758	333.6	3321	79	17-164
2-Methylnaphthalene	3758	1016	5966	132*	30-111
Naphthalene	3758	468.6	3646	84	29-106
Phenanthrene	3758	1105	5608	120	32-127
Pyrene	3758	539.8	4347	101	28-130

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: NTC21SB02-SO-020 Lab Sample ID: 0910006-43

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (UG/KG)	MSD CONCENTRATION (UG/KG)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Acenaphthene	3758	3362	86	2	50	28-110
Acenaphthylene	3758	3874	103	1	50	23-126
Anthracene	3758	3524	90	8	50	28-136
Benzo(a)anthracene	3758	2439	57	20	50	31-146
Benzo(b)fluoranthene	3758	3626	85	4	50	30-139
Benzo(k)fluoranthene	3758	3467	88	0	50	42-129
Benzo(g,h,i)perylene	3758	1919	44	8	50	21-149
Benzo(a)pyrene	3758	2999	71	1	50	28-128
Chrysene	3758	2646	63	16	50	39-134
Dibenz(a,h)anthracene	3758	2336	60	8	50	30-138
Fluoranthene	3758	3752	82	20	50	30-142
Fluorene	3758	3398	90	1	50	27-116
Indeno(1,2,3-cd)pyrene	3758	3151	75	5	50	17-164
2-Methylnaphthalene	3758	6188	138*	4	50	30-111
Naphthalene	3758	3764	88	3	50	29-106
Phenanthrene	3758	4892	101	14	50	32-127
Pyrene	3758	3569	81	20	50	28-130

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 17 outside limits
Spike Recovery: 2 out of 34 outside limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: NTC21SB14-SO-000 Lab Sample ID: 0910006-29

Level:(low/med) LOW

COMPOUND	SPIKE ADDED (UG/KG)	SAMPLE CONCENTRATION (UG/KG)	MS CONCENTRATION (UG/KG)	MS % REC #	QC. LIMITS REC.
Acenaphthene	16300	0.0000	10880	67	28-110
Acenaphthylene	16300	0.0000	12210	75	23-126
Anthracene	16300	0.0000	13710	84	28-136
Benzo(a)anthracene	16300	281.2	12130	73	31-146
Benzo(b)fluoranthene	16300	0.0000	26320	161*	30-139
Benzo(k)fluoranthene	16300	0.0000	25220	155*	42-129
Benzo(g,h,i)perylene	16300	177.2	7870	47	21-149
Benzo(a)pyrene	16300	863.6	31240	186*	28-128
Chrysene	16300	409.1	9374	55	39-134
Dibenz(a,h)anthracene	16300	0.0000	12440	76	30-138
Fluoranthene	16300	807.6	15810	92	30-142
Fluorene	16300	0.0000	11610	71	27-116
Indeno(1,2,3-cd)pyrene	16300	0.0000	16510	101	17-164
2-Methylnaphthalene	16300	895.6	18050	105	30-111
Naphthalene	16300	351.0	12270	73	29-106
Phenanthrene	16300	1299	21050	121	32-127
Pyrene	16300	738.8	14650	85	28-130

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: NTC21SB14-SO-000 Lab Sample ID: 0910006-29

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (UG/KG)	MSD CONCENTRATION (UG/KG)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Acenaphthene	16300	10880	67	0	50	28-110
Acenaphthylene	16300	12630	77	3	50	23-126
Anthracene	16300	13590	83	1	50	28-136
Benzo(a)anthracene	16300	13730	82	12	50	31-146
Benzo(b)fluoranthene	16300	25740	158*	2	50	30-139
Benzo(k)fluoranthene	16300	24720	152*	2	50	42-129
Benzo(g,h,i)perylene	16300	8837	53	12	50	21-149
Benzo(a)pyrene	16300	30720	183*	2	50	28-128
Chrysene	16300	9204	54	2	50	39-134
Dibenz(a,h)anthracene	16300	12840	79	3	50	30-138
Fluoranthene	16300	15420	90	2	50	30-142
Fluorene	16300	11710	72	1	50	27-116
Indeno(1,2,3-cd)pyrene	16300	16860	103	2	50	17-164
2-Methylnaphthalene	16300	17820	104	1	50	30-111
Naphthalene	16300	12160	72	1	50	29-106
Phenanthrene	16300	19480	112	8	50	32-127
Pyrene	16300	14580	85	0	50	28-130

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 17 outside limits
Spike Recovery: 6 out of 34 outside limits

COMMENTS: _____

FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID (Standard): CCV01 Date Analyzed: 10/02/09

Instrument ID: BNA3 Time Analyzed: 1337

		IS1(PHN) AREA #	RT #	IS2(PRY) AREA #	RT #	AREA #	RT #
	12 HOUR STD	190850	15.93	85443	25.36		
	UPPER LIMIT	381700	16.43	170886	25.86		
	LOWER LIMIT	95425	15.43	42722	24.86		
	CLIENT SAMPLE NO.						
01	SBLK1001BW1	224112	15.93	95578	25.37		
02	SBLK1001BW1L	269897	15.93	128201	25.36		
03	SBLK1001BW1L	272427	15.93	114427	25.37		
04	RB-092909-01	227943	15.93	96655	25.37		
05	RB-092909-02	247391	15.93	74059	25.37		
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IS1 (PHN) = Phenanthrene-d10
IS2 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID (Standard): CCV01E Date Analyzed: 10/03/09

Instrument ID: BNA3 Time Analyzed: 0802

		IS1(PHN) AREA #	RT #	IS2(PRY) AREA #	RT #	AREA #	RT #
	12 HOUR STD	243949	15.93	87949	25.36		
	UPPER LIMIT	487898	16.43	175898	25.86		
	LOWER LIMIT	121975	15.43	43975	24.86		
	CLIENT SAMPLE NO.						
01	SB-092909-01	237681	15.93	68171	25.37		
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IS1 (PHN) = Phenanthrene-d10
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AREA UPPER LIMIT = +100% of internal standard area
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* Values outside of QC limits.

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FORM VIII SV

FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID (Standard): CCV01 Date Analyzed: 10/06/09

Instrument ID: BNA3 Time Analyzed: 1350

		IS1(PHN) AREA #	RT #	IS2(PRY) AREA #	RT #	AREA #	RT #
	12 HOUR STD	272054	15.81	136518	25.24		
	UPPER LIMIT	544108	16.31	273036	25.74		
	LOWER LIMIT	136027	15.31	68259	24.74		
	CLIENT SAMPLE NO.						
01	SBLK1003BS1	247219	15.81	88086	25.24		
02	SBLK1003BS1L	293294	15.82	126869	25.24		
03	FD-092609-01	316432	15.81	136669	25.25		
04	FD-092609-02	257300	15.84	55863*	25.31		
05	NTC21SB09-SO	229954	15.84	58939*	25.33		
06	NTC21SB09-SO	286549	15.84	52718*	25.29		
07	NTC21SB10-SO	284361	15.85	74258	25.33		
08	NTC21SB10-SO	266895	15.84	45547*	25.30		
09	NTC21SB11-SO	233173	15.86	55319*	25.41		
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FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID (Standard): CCV01 Date Analyzed: 10/08/09

Instrument ID: BNA3 Time Analyzed: 0650

		IS1(PHN) AREA #	RT #	IS2(PRY) AREA #	RT #	AREA #	RT #
	12 HOUR STD	257828	15.64	177508	25.02		
	UPPER LIMIT	515656	16.14	355016	25.52		
	LOWER LIMIT	128914	15.14	88754	24.52		
	CLIENT SAMPLE NO.						
01	NTC21SB17-SO	308175	15.65	180060	25.03		
02	NTC21SB18-SO	185795	15.65	120572	25.03		
03	NTC21SB20-SO	271000	15.65	106218	25.04		
04	NTC21SB21-SO	263482	15.65	137262	25.04		
05	FD-092709-01	278829	15.65	115175	25.04		
06	NTC21SB09-SO	319242	15.65	126594	25.03		
07	NTC21SB10-SO	192702	15.65	117019	25.03		
08	NTC21SB11-SO	260766	15.66	84612*	25.06		
09	NTC21SB11-SO	314378	15.68	77763*	25.08		
10	NTC21SB12-SO	320871	15.68	110057	25.09		
11	NTC21SB12-SO	306033	15.68	76049*	25.08		
12	NTC21SB17-SO	342165	15.67	101185	25.07		
13	NTC21SB18-SO	289072	15.67	103174	25.07		
14	NTC21SB20-SO	230318	15.67	43287*	25.12		
15	NTC21SB21-SO	247609	15.74	54494*	25.22		
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FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID (Standard): CCV01 Date Analyzed: 10/10/09

Instrument ID: BNA3 Time Analyzed: 1426

		IS1(PHN) AREA #	RT #	IS2(PRY) AREA #	RT #	AREA #	RT #
	12 HOUR STD	291537	15.53	214811	24.91		
	UPPER LIMIT	583074	16.03	429622	25.41		
	LOWER LIMIT	145769	15.03	107406	24.41		
	CLIENT SAMPLE NO.						
01	SBLK1007BS2	328847	15.53	201171	24.90		
02	SBLK1007BS2L	286940	15.53	192694	24.90		
03	NTC21SB02-SO	374031	15.55	180740	24.96		
04	NTC21SB02-SO	361324	15.56	158757	24.99		
05	NTC21SB03-SO	330537	15.56	112173	25.00		
06	NTC21SB05-SO	305697	15.57	73243*	25.00		
07	NTC21SB05-SO	281366	15.56	92363*	24.99		
08	NTC21SB08-SO	242677	15.57	84486*	25.00		
09	NTC21SB08-SO	273481	15.56	94126*	25.09		
10	NTC21SB02-SO	227975	15.57	81329*	25.01		
11	NTC21SB02-SO	223493	15.57	64693*	25.00		
12	NTC21SB21-SO	296018	15.56	80891*	24.99		
13	NTC21SB11-SO	272123	15.57	68083*	24.99		
14	NTC21SB12-SO	273141	15.56	76588*	24.99		
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FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID (Standard): CCV01 Date Analyzed: 10/13/09

Instrument ID: BNA3 Time Analyzed: 1248

		IS1(PHN) AREA #	RT #	IS2(PRY) AREA #	RT #	AREA #	RT #
	12 HOUR STD	267269	15.48	163883	24.87		
	UPPER LIMIT	534538	15.98	327766	25.37		
	LOWER LIMIT	133635	14.98	81942	24.37		
	CLIENT SAMPLE NO.						
01	NTC21SB03-SO	186989	15.48	110099	24.88		
02	NTC21SB20-SO	231350	15.48	48803*	24.89		
03	NTC21SB03-SO	249696	15.48	75413*	24.89		
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FORM VIII SV

FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID (Standard): SEQ-CCV1 Date Analyzed: 10/19/09

Instrument ID: BNA3 Time Analyzed: 1322

		IS1(PHN) AREA #	RT #	IS2(PRY) AREA #	RT #	AREA #	RT #
	12 HOUR STD	10309400	15.27	6704920	24.78		
	UPPER LIMIT	20618800	15.77	13049840	25.28		
	LOWER LIMIT	5154720	14.77	3352480	24.28		
	CLIENT SAMPLE NO.						
01	9J05025-BLK1	11232747	15.29	11340865	24.86		
02	9J05025-BLK1	11465619	15.30	5077495	24.87		
03	NTC21SB04-SO	12441742	15.32	3452023	24.99		
04	NTC21SB04-SO	12129988	15.30	4337257	24.92		
05	NTC21SB06-SO	12043846	15.33	4219434	25.11		
06	NTC21SB13-SO	12259131	15.31	4954246	24.95		
07	NTC21SB14-SO	11310988	15.31	3481609	24.93		
08	NTC21SB15-SO	11983340	15.31	4383896	24.97		
09	NTC21SB16-SO	11583440	15.30	4901588	24.95		
10	NTC21SB19-SO	11483887	15.31	4317656	24.99		
11	NTC21SB13-SO	11383075	15.35	3841035	25.19		
12	NTC21SB14-SO	11892729	15.35	3156163*	25.15		
13	NTC21SB15-SO	11205140	15.34	3256427*	25.13		
14	NTC21SB14-SO	10514715	15.37	2940857*	25.28		
15	NTC21SB14-SO	10492367	15.37	3314846*	25.28		
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FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID (Standard): SEQ-CCV1 Date Analyzed: 10/20/09

Instrument ID: BNA3 Time Analyzed: 1355

		IS1(PHN) AREA #	RT #	IS2(PRY) AREA #	RT #	AREA #	RT #
	12 HOUR STD	6970960	15.18	4322520	24.56		
	UPPER LIMIT	13941920	15.68	8645040	25.06		
	LOWER LIMIT	3485480	14.68	2161280	24.06		
	CLIENT SAMPLE NO.						
01	NTC21SB06-SO	13729014	15.23	3351593	24.64		
02	NTC21SB16-SO	12938228	15.24	3422731	24.64		
03	NTC21SB19-SO	12795647	15.23	4405271	24.65		
04	NTC21SB22-SO	9310211	15.24	4005162	24.72		
05	NTC21SB22-SO	10778607	15.24	3537446	24.67		
06	FD-092809-01	9168344	15.24	3174571	24.65		
07	NTC21SB01-SO	9472816	15.23	2782397	24.66		
08	NTC21SB07-SO	12843956	15.27	3895133	24.69		
09	NTC21SB07-SO	12481669	15.25	3595581	24.66		
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IS1 (PHN) = Phenanthrene-d10
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FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab File ID (Standard): SEQ-CCV1 Date Analyzed: 10/21/09

Instrument ID: BNA3 Time Analyzed: 1451

		IS1(PHN) AREA #	RT #	IS2(PRY) AREA #	RT #	AREA #	RT #
	12 HOUR STD	10622640	15.14	5840240	24.50		
	UPPER LIMIT	21245280	15.64	11680480	25.00		
	LOWER LIMIT	5311320	14.64	2920120	24.00		
	CLIENT SAMPLE NO.						
01	NTC21SB22-SO	10118422	15.17	4731385	24.54		
02	NTC21SB01-SO	11303032	15.16	5746787	24.54		
03	NTC21SB07-SO	9154496	15.17	4418528	24.53		
04	NTC21SB07-SO	9442335	15.17	5314241	24.53		
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IS1 (PHN) = Phenanthrene-d10
IS2 (PRY) = Perylene-d12

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FORM VIII SV

NTC GREAT LAKES
SOIL DATA
CTO064_001

FRACTION	CHEMICAL	FD-092609-02	UNITS	NTC21SB09-SO-0001	RPD	D
OS	2-METHYLNAPHTHALENE	350	UG/KG	340	2.90	10.00
OS	ACENAPHTHENE	82	UG/KG	67	20.13	15.00
OS	ANTHRACENE	100	UG/KG	110	9.52	10.00
OS	BENZO(A)ANTHRACENE	310	UG/KG	250	21.43	60.00
OS	BENZO(A)PYRENE	660 J	UG/KG	460 J	35.71	200.00
OS	BENZO(B)FLUORANTHENE	860 J	UG/KG	670 J	24.84	190.00
OS	BENZO(G,H,I)PERYLENE	420 J	UG/KG	350 J	18.18	70.00
OS	BENZO(K)FLUORANTHENE	440 J	UG/KG	290 J	41.10	150.00
OS	BIS(2-ETHYLHEXYL)PHTHALATE	160 J	UG/KG	130 J	20.69	30.00
OS	CARBAZOLE	65 J	UG/KG	ND	200.00	65.00 N/A<2XR.L.
OS	CHRYSENE	450	UG/KG	320	33.77	130.00
OS	DIBENZO(A,H)ANTHRACENE	110 J	UG/KG	81 J	30.37	29.00
OS	DIBENZOFURAN	96 J	UG/KG	110 J	13.59	14.00
OS	DI-N-BUTYL PHTHALATE	69 J	UG/KG	37 J	60.38	32.00 N/A<2XR.L.
OS	FLUORANTHENE	1100	UG/KG	860	24.49	240.00
PAH OS	FLUORENE	63	UG/KG	ND	200.00	63.00
OS	INDENO(1,2,3-CD)PYRENE	480 J	UG/KG	400 J	18.18	80.00
OS	NAPHTHALENE	210	UG/KG	280	28.57	70.00
OS	PHENANTHRENE	870	UG/KG	760	13.50	110.00
OS	PYRENE	940	UG/KG	760	21.18	180.00

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NTC GREAT LAKES
SOIL DATA
CTO064_001

FRACTION	CHEMICAL	FD-092609-01	UNITS	NTC21SB18-SO-0507	RPD	D
OS	CHRYSENE	1.8 J	UG/KG	3.4 J	61.54	1.60 N/A-2XR.L.
OS	PHENANTHRENE	ND	UG/KG	2.3 J	200.00	2.30 N/A-2XR.L.

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NTC GREAT LAKES
SOIL DATA
CTO064_001

FRACTION	CHEMICAL	FD-092709-01	UNITS	NTC21SB15-SO-0204	RPD	D
OS	2-METHYLNAPHTHALENE	110	UG/KG	99	10.53	11.00
OS	ACENAPHTHYLENE	11	UG/KG	12	8.70	1.00
OS	BENZO(A)ANTHRACENE	22	UG/KG	47	72.46	25.00
OS	BENZO(A)PYRENE	22	UG/KG	ND	200.00	22.00
OS	BENZO(B)FLUORANTHENE	38	UG/KG	ND	200.00	38.00
OS	BENZO(G,H,I)PERYLENE	14	UG/KG	ND	200.00	14.00
OS	BENZO(K)FLUORANTHENE	10	UG/KG	ND	200.00	10.00
OS	CHRYSENE	31	UG/KG	35	12.12	4.00
OS	DIBENZOFURAN	42 J	UG/KG	55 J	26.80	13.00
OS	FLUORANTHENE	57	UG/KG	80	33.58	23.00
OS	INDENO(1,2,3-CD)PYRENE	18	UG/KG	ND	200.00	18.00
OS	NAPHTHALENE	49	UG/KG	44	10.75	5.00
OS	PHENANTHRENE	190	UG/KG	190	0.00	0.00
OS	PYRENE	55	UG/KG	70	24.00	15.00

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NTC GREAT LAKES
SOIL DATA
CTO064_001

FRACTION	CHEMICAL	FD-092809-01	UNITS	NTC21SB05-SO-0001	RPD	D
OS	2-METHYLNAPHTHALENE	490	UG/KG	400	20.22	90.00
OS	ACENAPHTHENE	60	UG/KG	81	29.79	21.00
OS	ANTHRACENE	ND	UG/KG	180	200.00	180.00
OS	BENZO(A)ANTHRACENE	290	UG/KG	250	14.81	40.00
OS	BENZO(A)PYRENE	440	UG/KG	390 J	12.05	50.00
OS	BENZO(B)FLUORANTHENE	330	UG/KG	480 J	37.04	150.00
OS	BENZO(G,H,I)PERYLENE	320	UG/KG	260 J	20.69	60.00
OS	BENZO(K)FLUORANTHENE	370	UG/KG	300 J	20.90	70.00
OS	BIS(2-ETHYLHEXYL)PHTHALATE	170 J	UG/KG	240 J	34.15	70.00
OS	CHRYSENE	400 J	UG/KG	280	35.29	120.00
OS	DIBENZO(A,H)ANTHRACENE	ND	UG/KG	78 J	200.00	78.00
OS	DIBENZOFURAN	160 J	UG/KG	130 J	20.69	30.00
OS	FLUORANTHENE	850	UG/KG	790	7.32	60.00
OS	INDENO(1,2,3-CD)PYRENE	310	UG/KG	330 J	6.25	20.00
OS	NAPHTHALENE	150	UG/KG	140	6.90	10.00
OS	PHENANTHRENE	850	UG/KG	790	7.32	60.00
OS	PYRENE	700	UG/KG	660	5.88	40.00

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

ORGANIC CASE NARRATIVE
Tetra Tech NUS, Inc./Great Lakes, IL CTO064
Project Manager: B. Cummings
SDG: CTO064_001
Work order: 0910006

Sampled	Received	Lab ID	Client ID
9/26/2009	10/1/2009	0910006-01	FD-092609-01
9/26/2009	10/1/2009	0910006-02	FD-092609-02
9/26/2009	10/1/2009	0910006-03	NTC21SB09-SO-0001
9/26/2009	10/1/2009	0910006-04	NTC21SB09-SO-0204
9/26/2009	10/1/2009	0910006-05	NTC21SB10-SO-0001
9/26/2009	10/1/2009	0910006-06	NTC21SB10-SO-0406
9/26/2009	10/1/2009	0910006-07	NTC21SB11-SO-0001
9/26/2009	10/1/2009	0910006-08	NTC21SB11-SO-0204
9/26/2009	10/1/2009	0910006-09	NTC21SB12-SO-0001
9/26/2009	10/1/2009	0910006-10	NTC21SB12-SO-0204
9/26/2009	10/1/2009	0910006-11	NTC21SB17-SO-0001
9/26/2009	10/1/2009	0910006-12	NTC21SB17-SO-0507
9/26/2009	10/1/2009	0910006-13	NTC21SB18-SO-0001
9/26/2009	10/1/2009	0910006-14	NTC21SB18-SO-0507
9/26/2009	10/1/2009	0910006-15	NTC21SB20-SO-0001
9/26/2009	10/1/2009	0910006-16	NTC21SB20-SO-0406
9/26/2009	10/1/2009	0910006-17	NTC21SB21-SO-0001
9/26/2009	10/1/2009	0910006-18	NTC21SB21-SO-0608
9/27/2009	10/1/2009	0910006-20	FD-092709-01
9/27/2009	10/1/2009	0910006-21	NTC21SB04-SO-0001
9/27/2009	10/1/2009	0910006-22	NTC21SB04-SO-0406
9/27/2009	10/1/2009	0910006-23	NTC21SB06-SO-0001
9/27/2009	10/1/2009	0910006-24	NTC21SB06-SO-0204
9/27/2009	10/1/2009	0910006-25	NTC21SB07-SO-0001
9/27/2009	10/1/2009	0910006-26	NTC21SB07-SO-0204
9/27/2009	10/1/2009	0910006-27	NTC21SB13-SO-0001
9/27/2009	10/1/2009	0910006-28	NTC21SB13-SO-0204
9/27/2009	9/30/2009	0910006-29	NTC21SB14-SO-0001
9/27/2009	10/1/2009	0910006-30	NTC21SB14-SO-0204
9/27/2009	10/1/2009	0910006-31	NTC21SB15-SO-0001
9/27/2009	10/1/2009	0910006-32	NTC21SB15-SO-0204
9/27/2009	10/1/2009	0910006-33	NTC21SB16-SO-0001
9/27/2009	10/1/2009	0910006-34	NTC21SB16-SO-0204
9/27/2009	10/1/2009	0910006-35	NTC21SB19-SO-0001
9/27/2009	10/1/2009	0910006-36	NTC21SB19-SO-0204
9/27/2009	10/1/2009	0910006-37	NTC21SB22-SO-0001
9/27/2009	10/1/2009	0910006-38	NTC21SB22-SO-0204
9/28/2009	10/1/2009	0910006-40	FD-092809-01
9/28/2009	10/1/2009	0910006-41	NTC21SB01-SO-0102
9/28/2009	10/1/2009	0910006-42	NTC21SB02-SO-0001
9/28/2009	9/30/2009	0910006-43	NTC21SB02-SO-0204
9/28/2009	10/1/2009	0910006-44	NTC21SB03-SO-0001
9/28/2009	10/1/2009	0910006-45	NTC21SB03-SO-0204
9/28/2009	10/1/2009	0910006-46	NTC21SB05-SO-0001
9/28/2009	10/1/2009	0910006-47	NTC21SB05-SO-0204
9/28/2009	10/1/2009	0910006-48	NTC21SB08-SO-0001
9/28/2009	10/1/2009	0910006-49	NTC21SB08-SO-0204
9/29/2009	9/30/2009	0910006-51	RB-092909-01
9/29/2009	9/30/2009	0910006-52	RB-092909-02
9/29/2009	9/30/2009	0910006-53	SB-092909-01

GC/ECD Herbicides

Method: The samples were analyzed by USEPA SW-846 Methods 8151A (sonication then separatory funnel extraction or separatory funnel extraction followed by esterification then capillary column GC/ECD) soils or waters upon receipt to the laboratory in satisfactory condition.

Comments: The volatile analyses for these samples were satisfactorily completed within sample holding times and met the corresponding specifications with the following note/exceptions:

- Initial Calibration Criteria: Some analytes exceeded 20% difference with a positive bias in the 10/9/09 initial calibration verifications. Reported concentrations associated to exceedences within this initial calibration verification are qualified with an "X". All other calibration criteria were within limits.
- Continuing Calibration Exceedence: Some analytes in the continuing calibration verifications (CCVs) exceeded the 20%D limit. Where analytes exceeded with a positive bias, reported concentrations detected above the quantitation limit are qualified with an "X" in the associated samples to indicate a potential positive bias. Where analytes exceeded with a negative bias, the analyte was generally not detected on the alternate column which was within limits or exceeded with a positive bias. Where results are associated to a negative bias, they are qualified with a "Y" to indicate a potential negative bias. Where analytes exceeded with a negative bias and a non-confirmed result may be due to the negative bias of the CCV result, the non-detect result is qualified with a "Z" to indicate a potential non-confirmation due to the negative bias.
- Method Blank Results: No target analytes were confirmed in the method blanks.
- Surrogate Recoveries: Recoveries of the primary column surrogate exceeded the limit of 120% at 122% and 124% in samples NTC21SB09-SO-0204 and NTC21SB11-SO-0204 while all other surrogate recoveries were within limits.
- 9J01019-BS1/BSD1 Results: All recoveries and relative percent differences were within limits.
- 9J02016-BS1 Results: Dalapon did not recover on the confirmation column. All other recoveries were within limits or exceeded with a positive bias without detection. Associated results were evaluated and confirmed to be non-detect for dalapon on the primary column.
- 9J06005-BS1 Results: All recoveries were within limits or exceeded with a positive bias without detected in the associated samples with the exception of dicamba which exceeded the limit of 110% at 150% on the confirmation column. Results reported from the confirmation column should be evaluated as potentially having a positive bias.
- 9J07016-BS1 Results: All recoveries were within limits or exceeded with a positive bias without detected in the associated samples with the exception of dicamba which exceeded the limit of 110% at 138% on the confirmation column. Results reported from the confirmation column should be evaluated as potentially having a positive bias.
- NTC21SB14-SO-0001-MS1/MSD1 Results: All recoveries were within limits or exceeded with a positive bias without detection in the original sample.
- NTC21SB02-SO-0001-MS1/MSD1 Results: All recoveries were within limits or exceeded with a positive bias without detection in the original sample.

- Dilutions: All samples were analyzed without dilution.
- Manual integrations: Quantitation signals were manually integrated in order to accurately reflect the peak areas based on the technical judgment of the analyst. A listing of the manual integrations performed and reason for the integration is included with the logs. Before and after "pictures" are available where manual integrations were performed.

I certify that, to the best of my knowledge and based upon my inquiry of those individuals immediately responsible for obtaining the information, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in the case narrative, as verified by the following signature.

Marcia K. McGinnity
Data Quality Manager

ANALYTICAL REPORT TERMS AND QUALIFIERS (ORGANIC)

MDL: The method detection limit (MDL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The MDL is determined from analysis of a sample containing the analyte in a given matrix.

EQL: The estimated quantitation limit (EQL), also known as the reporting limit (RL), is defined as the estimated concentration above which quantitative results can be obtained with a specific degree of confidence. Empirical Laboratories defines the EQL to be at or near the lowest standard of the calibration curve.

U: The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte quantitated below the MDL.

B: The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the correct sample result might be less than the reported result and, perhaps, zero.

D: When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".

E: The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound.

J: The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The mass spectral data pass the identification criteria showing that the compound is present, but the calculated result is less than the EQL. One should feel confident that the result is greater than zero and less than the EQL.

P: The associated numerical value is an estimated quantity. There is greater than a 40% difference between the two GC columns for the detected concentrations. The higher of the two values is reported.

M: The presence of an "M" to the right of an analytical result indicates that the sample matrix interfered with the quantitation of the analyte. In GC and HPLC, results are reported from the column with the lower concentration.

I: The presence of an "I" to the right of an analytical result that the presence of a qualitative interference could have caused a false positive or over estimation of the analyte. In GC and HPLC, results are reported from the column with the lower concentration.

INITIAL CALIBRATION STANDARDS
SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9J28810	Instrument:	GL-ECD3
Calibration:	9288002		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
09J0037	Herb/DCAA @ 100/500 ppb	9J28810-CAL1	002R0201.D	10/05/09 15:10
09J0037	Herb/DCAA @ 100/500 ppb	9J28810-CAL1	002F0201.D	10/05/09 15:10
09J0038	Herb/DCAA @ 50/250 ppb	9J28810-CAL2	003R0301.D	10/05/09 15:35
09J0038	Herb/DCAA @ 50/250 ppb	9J28810-CAL2	003F0301.D	10/05/09 15:35
09J0039	Herb/DCAA @ 40/200 ppb	9J28810-CAL3	004R0401.D	10/05/09 16:00
09J0039	Herb/DCAA @ 40/200 ppb	9J28810-CAL3	004F0401.D	10/05/09 16:00
09J0040	Herb/DCAA @ 25/125 ppb	9J28810-CAL4	005R0501.D	10/05/09 16:26
09J0040	Herb/DCAA @ 25/125 ppb	9J28810-CAL4	005F0501.D	10/05/09 16:26
09J0041	Herb/DCAA @ 20/100 ppb	9J28810-CAL5	006R0601.D	10/05/09 16:51
09J0041	Herb/DCAA @ 20/100 ppb	9J28810-CAL5	006F0601.D	10/05/09 16:51
09J0042	Herb/DCAA @ 10/50 ppb	9J28810-CAL6	007R0701.D	10/05/09 17:17
09J0042	Herb/DCAA @ 10/50 ppb	9J28810-CAL6	007F0701.D	10/05/09 17:17
09J0043	Herb/DCAA @ 5/25 ppb	9J28810-CAL7	008R0801.D	10/05/09 17:42
09J0043	Herb/DCAA @ 5/25 ppb	9J28810-CAL7	008F0801.D	10/05/09 17:42

FORM 6
HERB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA17637

Instrument ID: ECD3 Calibration Date(s): 10/05/09 10/05/09

Column: MR-1 ID: 0.32 (mm) Calibration Time(s): 1510 1742

LAB FILE ID: RF100: 002F0201 RF50: 003F0301 RF40: 004F0401
RF25: 005F0501 RF20: 006F0601

wl 11/6/09

COMPOUND	RF100	RF50	RF40	RF25	RF20
2,4-D	2996.690	3175.133	3173.093	3275.964	2793.417
2,4-DB	1753.719	1860.441	1939.705	1916.504	1793.695
2,4,5-TP (Silvex)	15041.532	15222.727	15715.199	14714.568	13990.637
2,4,5-T	11441.806	11547.127	11337.149	10720.007	8922.403
Dalapon	3250.213	3164.803	3306.986	3194.826	3150.712
Dicamba	11167.390	11682.016	12224.375	12026.363	11778.953
Dichloroprop	2355.291	2491.011	2589.518	2622.992	2531.145
Dinoseb	7935.418	8336.939	8576.726	8301.430	7742.314
MCPA	15.758	17.585	18.561	20.647	20.665
MCPP	11.409	13.100	14.213	15.693	16.563
DCAA	2606.203	2739.769	2851.447	2811.034	2744.193

BM 100609

FORM VI HERB

FORM 6
HERB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA17637

Instrument ID: ECD3 Calibration Date(s): 10/05/09 10/05/09

Column: MR-1 ID: 0.32 (mm) Calibration Time(s): 1510 1742

LAB FILE ID: RF10: 007F0701 RF5: 008F0801

COMPOUND	RF10	RF5
2,4-D	03615.309	03735.697
2,4-DB	2014.129	1501.753
2,4,5-TP (Silvex)	15354.197	15045.866
2,4,5-T	11066.146	10054.442
Dalapon	3286.152	3364.915
Dicamba	12841.395	13914.116
Dichloroprop	2955.289	3238.520
Dinoseb	9066.887	9473.655
MCPA	28.954	37.580
MCPP	21.460	27.329
DCAA	3003.823	3171.693

FORM VI HERB

FORM 6
HERB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA17637

Instrument ID: ECD3 Calibration Date(s): 10/05/09 10/05/09

Column: MR-1 ID: 0.32 (mm) Calibration Time(s): 1510 1742

LAB FILE ID: RT1: 002F0201 RT2: 003F0301 RT3: 004F0401
RT4: 005F0501 RT5: 006F0601

COMPOUND	RT1	RT2	RT3	RT4	RT5
2,4-D	11.127	11.132	11.133	11.138	11.139
2,4-DB	15.017	15.025	15.026	15.034	15.039
2,4,5-TP (Silvex)	12.800	12.807	12.808	12.809	12.811
2,4,5-T	13.752	13.758	13.766	13.771	13.782
Dalapon	3.955	3.955	3.956	3.956	3.957
Dicamba	9.190	9.192	9.193	9.193	9.194
Dichloroprop	10.529	10.532	10.530	10.531	10.534
Dinoseb	14.945	14.948	14.950	14.951	14.952
MCPA	9.959	9.953	9.953	9.951	9.951
MCPP	9.494	9.492	9.491	9.489	9.491
DCAA	9.077	9.080	9.081	9.083	9.084

FORM VI HERB

FORM 6
HERB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA17637

Instrument ID: ECD3 Calibration Date(s): 10/05/09 10/05/09

Column: MR-1 ID: 0.32 (mm) Calibration Time(s): 1510 1742

LAB FILE ID: RT6: 007F0701 RT7: 008F0801

COMPOUND	RT6	RT7	MEAN RT	RT WINDOW FROM	RT WINDOW TO
2,4-D	11.145	11.154	11.138	11.102	11.162
2,4-DB	15.042	15.064	15.035	14.995	15.055
2,4,5-TP (Silvex)	12.814	12.820	12.810	12.777	12.837
2,4,5-T	13.787	13.812	13.775	13.728	13.788
Dalapon	3.957	3.955	3.956	3.925	3.985
Dicamba	9.195	9.197	9.193	9.162	9.222
Dichloroprop	10.535	10.537	10.533	10.502	10.562
Dinoseb	14.952	14.957	14.951	14.918	14.978
MCPA	9.952	9.954	9.953	9.923	9.983
MCPP	9.490	9.490	9.491	9.462	9.522
DCAA	9.089	9.090	9.083	9.050	9.110

FORM VI HERB

FORM 6
HERB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA17637

Instrument ID: ECD3 Calibration Date(s): 10/05/09 10/05/09

Column: MR-2 ID: 0.32 (mm) Calibration Time(s): 1510 1742

LAB FILE ID: RF500: 002R0201 RF400: 003R0301 RF250: 004R0401
RF200: 005R0501 RF100: 006R0601

COMPOUND	RF500	RF400	RF250	RF200	RF100
2,4-D	2816.158	2973.164	2929.560	2894.912	2410.381
2,4-DB	1618.552	1736.220	1801.813	1635.646	1555.260
2,4,5-TP (Silvex)	11493.646	11907.046	12086.974	11143.621	10492.662
2,4,5-T	9868.462	9988.374	9792.589	8800.692	7573.930
Dalapon	3046.860	3007.006	3080.505	2889.882	2693.379
Dicamba	9732.997	10180.666	10390.178	9896.547	9160.988
Dichloroprop	2114.452	2247.658	2306.679	2254.756	2099.163
Dinoseb	6143.456	6316.304	6332.587	5724.360	5169.333
MCPA	20.897	23.218	24.031	25.618	24.375
MCPP	15.309	17.282	18.417	19.347	19.539
DCAA	2875.994	3011.532	3068.832	2943.372	2763.267

BM 100605 , WL 10/6/09

FORM VI HERB

FORM 6
HERB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA17637

Instrument ID: ECD3 Calibration Date(s): 10/05/09 10/05/09

Column: MR-2 ID: 0.32 (mm) Calibration Time(s): 1510 1742

LAB FILE ID: RF50: 007R0701 RF0: 008R0801

COMPOUND	RF50	RF0
2,4-D	3121.480	3300.253
2,4-DB	1776.962	1808.672
2,4,5-TP (Silvex)	11728.698	12157.795
2,4,5-T	8817.808	8866.428
Dalapon	2784.876	2865.710
Dicamba	10227.490	10737.883
Dichloroprop	2507.632	2724.380
Dinoseb	6038.384	6203.860
MCPA	32.618	39.642
MCPP	24.341	29.469
DCAA	3066.580	3267.045

FORM VI HERB

FORM 6
HERB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA17637

Instrument ID: ECD3 Calibration Date(s): 10/05/09 10/05/09

Column: MR-2 ID: 0.32 (mm) Calibration Time(s): 1510 1742

LAB FILE ID: RT1: 002R0201 RT2: 003R0301 RT3: 004R0401
RT4: 005R0501 RT5: 006R0601

COMPOUND	RT1	RT2	RT3	RT4	RT5
2,4-D	8.737	8.740	8.742	8.743	8.744
2,4-DB	11.600	11.610	11.615	11.621	11.626
2,4,5-TP (Silvex)	9.924	9.930	9.932	9.933	9.934
2,4,5-T	10.705	10.712	10.715	10.721	10.724
Dalapon	3.310	3.312	3.312	3.313	3.314
Dicamba	7.392	7.395	7.395	7.394	7.396
Dichloroprop	8.217	8.218	8.220	8.219	8.221
Dinoseb	11.529	11.535	11.537	11.536	11.537
MCPA	7.847	7.842	7.842	7.838	7.839
MCPP	7.477	7.473	7.473	7.471	7.471
DCAA	7.225	7.227	7.228	7.229	7.229

FORM VI HERB

FORM 6
HERB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA17637

Instrument ID: ECD3 Calibration Date(s): 10/05/09 10/05/09

Column: MR-2 ID: 0.32 (mm) Calibration Time(s): 1510 1742

LAB FILE ID: RT6: 007R0701 RT7: 008R0801

COMPOUND	RT6	RT7	MEAN RT	RT WINDOW FROM	RT WINDOW TO
2,4-D	8.745	8.750	8.743	8.710	8.770
2,4-DB	11.625	11.645	11.620	11.580	11.640
2,4,5-TP (Silvex)	9.934	9.942	9.933	9.900	9.960
2,4,5-T	10.725	10.744	10.721	10.682	10.742
Dalapon	3.310	3.312	3.312	3.282	3.342
Dicamba	7.397	7.397	7.395	7.365	7.425
Dichloroprop	8.222	8.224	8.220	8.188	8.248
Dinoseb	11.539	11.545	11.537	11.505	11.565
MCPA	7.837	7.839	7.840	7.812	7.872
MCPP	7.470	7.470	7.472	7.443	7.503
DCAA	7.230	7.232	7.229	7.197	7.257

FORM VI HERB

Empirical Laboratories, LLC

ICV ~~CONTINUING CALIBRATION~~ COMPOUNDS

Instrument ID: ecd3.i
Lab File ID: 009F0901.D
Analysis Type:
Lab Sample ID: SEQ-ICV1
Method: \\ELABNSH05\TARGET\chem\ecd3.i\100509A.b\8151F.m

Injection Date: 05-OCT-2009 18:07
Init. Cal. Date(s): ~~10-JUL-2006~~ 05-OCT-2009
Init. Cal. Times: 17:39 17:42
Quant Type: ESTD

COMPOUND	RRF	RF20	MIN RRF	%D	MAX %D
5 Dalapon	3246	3517	0.010	8.4	15.0
$ 12 DCAA	2847	3067	0.010	7.7	15.0
6 Dicamba	12234	13234	0.010	8.2	15.0
10 MCPP	18779	21177	0.010	-12.8	15.0
9 MCPA	18691	20514	0.010	-9.8	15.0
7 Dichloroprop	2683	2870	0.010	7.0	15.0
1 2,4-D	3252	3298	0.010	1.4	15.0
3 2,4,5-TP (Silvex)	15012	16337	0.010	8.8	15.0
4 2,4,5-T	18.95700	19.70602	0.010	-4.0	15.0
2 2,4-DB	1826	2059	0.010	12.8	15.0
8 Dinoseb	8490	9021	0.010	6.2	15.0

BM 100609

10/6/09

Empirical Laboratories, LLC

ICV ~~CONTINUING CALIBRATION~~ COMPOUNDS

Instrument ID: ecd3.i
Lab File ID: 009R0901.D
Analysis Type:
Lab Sample ID: SEQ-ICV1
Method: \\ELABNSH05\TARGET\chem\ecd3.i\100509A.b\8151R.m

Injection Date: ~~05-OCT-2009 18:07~~
Init. Cal. Date(s): 08-JUL-2006 05-OCT-2009
Init. Cal. Times: 11:30 17:42
Quant Type: ESTD

	COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D
	5 Dalapon	2910	2854	0.010	-1.9	15.0
$	12 DCAA	3000	2986	0.010	-0.5	15.0
	6 Dicamba	10047	9961	0.010	-0.9	15.0
	10 MCPP	18779	19661	0.010	-4.7	15.0
	9 MCPA	18691	18917	0.010	-1.2	15.0
	7 Dichloroprop	2322	2297	0.010	-1.1	15.0
	1 2,4-D	188	179	0.010	4.7	15.0
	3 2,4,5-TP (Silvex)	11573	11592	0.010	0.2	15.0
	4 2,4,5-T	18.95700	17.23965	0.010	9.1	15.0
	2 2,4-DB	1705	1710	0.010	0.3	15.0
	8 Dinoseb	5990	5859	0.010	-2.2	15.0

BM 100609

10/6/10

ANALYSIS SEQUENCE SUMMARY
SW8151A

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Sequence: 9J28902
Calibration: 9288002

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Instrument: GL-ECD3

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	9J28902-CCV1	010R1001.D	10/05/09 18:33
Calibration Check	9J28902-CCV1	010F1001.D	10/05/09 18:33
Blank	9J01019-BLK1	021R2101.D	10/05/09 23:11
Blank	9J01019-BLK1	021F2101.D	10/05/09 23:11
LCS	9J01019-BS1	022F2201.D	10/05/09 23:36
LCS	9J01019-BS1	022R2201.D	10/05/09 23:36
LCS Dup	9J01019-BSD1	023F2301.D	10/06/09 00:02
LCS Dup	9J01019-BSD1	023R2301.D	10/06/09 00:02
RB-092909-01	0910006-51	025F2501.D	10/06/09 00:52
RB-092909-01	0910006-51	025R2501.D	10/06/09 00:52
RB-092909-02	0910006-52	026R2601.D	10/06/09 01:17
RB-092909-02	0910006-52	026F2601.D	10/06/09 01:17
SB-092909-01	0910006-53	027R2701.D	10/06/09 01:43
SB-092909-01	0910006-53	027F2701.D	10/06/09 01:43
Calibration Check	9J28902-CCV2	028F2801.D	10/06/09 02:08
Calibration Check	9J28902-CCV2	028R2801.D	10/06/09 02:08
Calibration Check	~~9J28902-CCV3~~	041F4101.D	10/06/09 07:37
Calibration Check	~~9J28902-CCV3~~	041R4101.D	10/06/09 07:37
Calibration Check	~~9J28902-CCV4~~	054R5401.D	10/06/09 13:06
Calibration Check	~~9J28902-CCV4~~	054F5401.D	10/06/09 13:06

CONTINUING CALIBRATION CHECK

SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Instrument ID:	GL-ECD3	Calibration:	9288002
Lab File ID:	010F1001.D	Calibration Date:	10/05/09 14:46
Sequence:	9J28902	Injection Date:	10/05/09
Lab Sample ID:	9J28902-CCV1	Injection Time:	18:33

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
2,4,5-T	Q	18.96	16.64	10727.2	9265.665		-12.2	20
2,4,5-T [2C]	Q	18.96	15.07	9101.35	7427.743		-20.5	20 *
2,4,5-TP (Silvex)	A	19.01	17.94	15012.65	14166.28		-5.6	20
2,4,5-TP (Silvex) [2C]	A	19.01	16.98	11573.33	10334.82		-10.7	20
2,4-D	A	188.1	160.7	3252.211	2778.527		-14.6	20
2,4-D [2C]	L	188.1	154.3	2920.862	2339.623		-18.0	20
2,4-DB	A	189.4	172.6	1825.588	1663.949		-8.9	20
2,4-DB [2C]	A	189.4	165.7	1704.626	1491.415		-12.5	20
Dalapon	A	455.4	447.3	3245.775	3187.615		-1.8	20
Dalapon [2C]	A	455.4	405.2	2909.98	2589.267		-11.0	20
Dicamba	A	18.82	17.97	12232.47	11678.96		-4.5	20
Dicamba [2C]	A	18.82	16.92	10045.83	9031.987		-10.1	20
Dichloroprop	A	188.7	176.9	2683.39	2515.702		-6.2	20
Dichloroprop [2C]	A	188.7	166.4	2322.098	2047.626		-11.8	20
Dinoseb	A	94.52	85.30	8490.025	7662.029		-9.8	20
Dinoseb [2C]	A	94.52	79.11	5989.452	5013.447		-16.3	20
MCPA	Q	18690	18140	22.82206	20.38684		-2.9	20
MCPA [2C]	Q	18690	17190	27.20071	23.99973		-8.0	20
MCPP	Q	18780	18890	17.10852	16.32593		0.6	20
MCPP [2C]	Q	18780	17920	20.52779	19.14936		-4.6	20
2,4-Dichlorophenylacetic acid	A	100.0	90.63	2665.611	2580.17		-3.2	20
2,4-Dichlorophenylacetic acid [2C	A	100.0	84.32	2808.529	2529.28		-9.9	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Instrument ID:	GL-ECD3	Calibration:	9288002
Lab File ID:	028F2801.D	Calibration Date:	10/05/09 14:46
Sequence:	9J28902	Injection Date:	10/06/09
Lab Sample ID:	9J28902-CCV2	Injection Time:	02:08

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
2,4,5-T	Q	18.96	15.70	10727.2	8679.325		-17.2	20
2,4,5-T [2C]	Q	18.96	16.14	9101.35	7965.665		-14.9	20
2,4,5-TP (Silvex)	A	19.01	16.36	15012.65	12915.73		-14.0	20
2,4,5-TP (Silvex) [2C]	A	19.01	16.82	11573.33	10240.56		-11.5	20
2,4-D	A	188.1	144.3	3252.211	2494.646		-23.3	20 *
2,4-D [2C]	L	188.1	159.3	2920.862	2415.385		-15.3	20
2,4-DB	A	189.4	162.2	1825.588	1563.907		-14.3	20
2,4-DB [2C]	A	189.4	177.8	1704.626	1600.787		-6.1	20
Dalapon	A	455.4	369.6	3245.775	2634.31		-18.8	20
Dalapon [2C]	A	455.4	412.4	2909.98	2634.842		-9.5	20
Dicamba	A	18.82	14.51	12232.47	9433.262		-22.9	20 *
Dicamba [2C]	A	18.82	16.37	10045.83	8740.755		-13.0	20
Dichloroprop	A	188.7	152.7	2683.39	2172.072		-19.1	20
Dichloroprop [2C]	A	188.7	167.5	2322.098	2060.901		-11.2	20
Dinoseb	A	94.52	71.89	8490.025	6458.072		-23.9	20 *
Dinoseb [2C]	A	94.52	83.75	5989.452	5307.395		-11.4	20
MCPA	Q	18690	15150	22.82206	17.34398		-18.9	20
MCPA [2C]	Q	18690	16880	27.20071	23.60246		-9.7	20
MCPP	Q	18780	15620	17.10852	13.85815		-16.8	20
MCPP [2C]	Q	18780	17570	20.52779	18.81576		-6.4	20
2,4-Dichlorophenylacetic acid	A	100.0	78.42	2665.611	2232.67		-16.2	20
2,4-Dichlorophenylacetic acid [2C	A	100.0	84.57	2808.529	2536.77		-9.7	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

INITIAL CALIBRATION STANDARDS
SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9J28508	Instrument:	GL-ECD3
Calibration:	9285002		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
09J0037	Herb/DCAA @ 100/500 ppb	9J28508-CAL1	004R0401.D	10/09/09 17:47
09J0037	Herb/DCAA @ 100/500 ppb	9J28508-CAL1	004F0401.D	10/09/09 17:47
09J0038	Herb/DCAA @ 50/250 ppb	9J28508-CAL2	005R0501.D	10/09/09 18:13
09J0038	Herb/DCAA @ 50/250 ppb	9J28508-CAL2	005F0501.D	10/09/09 18:13
09J0039	Herb/DCAA @ 40/200 ppb	9J28508-CAL3	006R0601.D	10/09/09 18:38
09J0039	Herb/DCAA @ 40/200 ppb	9J28508-CAL3	006F0601.D	10/09/09 18:38
09J0040	Herb/DCAA @ 25/125 ppb	9J28508-CAL4	007R0701.D	10/09/09 19:03
09J0040	Herb/DCAA @ 25/125 ppb	9J28508-CAL4	007F0701.D	10/09/09 19:03
09J0041	Herb/DCAA @ 20/100 ppb	9J28508-CAL5	008R0801.D	10/09/09 19:29
09J0041	Herb/DCAA @ 20/100 ppb	9J28508-CAL5	008F0801.D	10/09/09 19:29
09J0042	Herb/DCAA @ 10/50 ppb	9J28508-CAL6	009R0901.D	10/09/09 19:54
09J0042	Herb/DCAA @ 10/50 ppb	9J28508-CAL6	009F0901.D	10/09/09 19:54
09J0043	Herb/DCAA @ 5/25 ppb	9J28508-CAL7	010R1001.D	10/09/09 20:20
09J0043	Herb/DCAA @ 5/25 ppb	9J28508-CAL7	010F1001.D	10/09/09 20:20

FORM 6
HERB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: ~~SDGA46387~~

Instrument ID: ECD3 Calibration Date(s): 10/09/09 10/09/09

Column: MR-1 ID: 0.32 (mm) Calibration Time(s): 1747 2020

LAB FILE ID: RF100: 004F0401 RF50: 005F0501 RF40: 006F0601
RF25: 007F0701 RF20: 008F0801

COMPOUND	RF100	RF50	RF40	RF25	RF20
2,4-D	2285.700	2469.948	2433.722	2487.165	2226.047
2,4-DB	1520.412	1592.975	1622.509	1562.790	1522.387
2,4,5-TP (Silvex)	11852.564	12416.756	12581.490	12171.141	11494.240
2,4,5-T	9689.522	10082.966	9851.193	9602.439	8366.566
Dalapon	X 2291.430	X 2432.590	X 2222.942	X 1920.728	X 1943.282
Dicamba	8197.121	8750.877	9231.497	9155.668	9027.000
Dichloroprop	1804.849	1964.833	2023.108	2074.861	1987.068
Dinoseb	6698.186	7190.690	7098.288	6982.505	6288.136
MCPA	11.567	13.266	13.905	15.527	15.745
MCPP	8.414	9.843	10.598	11.760	12.254
DCAA	1896.882	2075.123	2147.384	2147.268	2092.008

J.H. 10.26.09

BM 10.28.09

FORM VI HERB

FORM 6
HERB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA46387

Instrument ID: ECD3 Calibration Date(s): 10/09/09 10/09/09

Column: MR-1 ID: 0.32 (mm) Calibration Time(s): 1747 2020

LAB FILE ID: RF10: 009F0901 RF5: 010F1001

COMPOUND	RF10	RF5
2,4-D	3045.858	3246.444
2,4-DB	1755.906	1874.102
2,4,5-TP (Silvex)	13492.952	13687.355
2,4,5-T	10671.379	10337.624
Dalapon	2202.225	2479.924
Dicamba	10930.690	11363.520
Dichloroprop	2496.619	2734.026
Dinoseb	8377.854	8538.702
MCPA	23.106	29.872
MCPP	16.619	20.885
DCAA	2620.963	2719.882

FORM VI HERB

FORM 6
HERB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA46387

Instrument ID: ECD3 Calibration Date(s): 10/09/09 10/09/09

Column: MR-1 ID: 0.32 (mm) Calibration Time(s): 1747 2020

LAB FILE ID: RT1: 004F0401 RT2: 005F0501 RT3: 006F0601
RT4: 007F0701 RT5: 008F0801

COMPOUND	RT1	RT2	RT3	RT4	RT5
2,4-D	11.046	11.049	11.049	11.055	11.056
2,4-DB	14.941	14.946	14.947	14.950	14.958
2,4,5-TP (Silvex)	12.708	12.711	12.710	12.710	12.713
2,4,5-T	13.640	13.646	13.647	13.653	13.663
Dalapon	3.913	3.914	3.912	3.908	3.910
Dicamba	9.123	9.123	9.122	9.123	9.125
Dichloroprop	10.455	10.454	10.454	10.455	10.455
Dinoseb	14.868	14.869	14.870	14.870	14.873
MCPA	9.885	9.879	9.879	9.878	9.878
MCPP	9.425	9.419	9.419	9.418	9.420
DCAA	9.010	9.011	9.012	9.013	9.015

FORM VI HERB

FORM 6
HERB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA46387

Instrument ID: ECD3 Calibration Date(s): 10/09/09 10/09/09

Column: MR-1 ID: 0.32 (mm) Calibration Time(s): 1747 2020

LAB FILE ID: RT6: 009F0901 RT7: 010F1001

COMPOUND	RT6	RT7	MEAN RT	RT WINDOW FROM	RT WINDOW TO
2,4-D	11.058	11.067	11.054	11.026	11.086
2,4-DB	14.949	14.966	14.951	14.928	14.988
2,4,5-TP (Silvex)	12.713	12.719	12.712	12.683	12.743
2,4,5-T	13.651	13.674	13.653	13.633	13.693
Dalapon	3.909	3.914	3.912	3.880	3.940
Dicamba	9.124	9.127	9.124	9.095	9.155
Dichloroprop	10.456	10.457	10.455	10.425	10.485
Dinoseb	14.871	14.872	14.870	14.843	14.903
MCPA	9.876	9.879	9.879	9.848	9.908
MCPP	9.418	9.419	9.420	9.390	9.450
DCAA	9.014	9.021	9.014	8.985	9.045

FORM VI HERB

FORM 6
HERB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA46387

Instrument ID: ECD3 Calibration Date(s): 10/09/09 10/09/09

Column: MR-2 ID: 0.32 (mm) Calibration Time(s): 1747 2020

LAB FILE ID: RF500: 004R0401 RF400: 005R0501 RF250: 006R0601
RF200: 007R0701 RF100: 008R0801

COMPOUND	RF500	RF400	RF250	RF200	RF100
2,4-D	2046.876	2109.725	1980.398	2021.694	1758.370
2,4-DB	1255.288	1319.898	1281.302	1289.953	1274.993
2,4,5-TP (Silvex)	8358.960	8662.711	8575.599	8455.900	8044.080
2,4,5-T	7391.028	7682.949	7300.620	7289.572	6411.299
Dalapon	1623.653	1793.085	1805.287	1368.835	1455.684
Dicamba	6841.805	7119.672	7048.526	6987.754	6638.214
Dichloroprop	1546.790	1616.456	1581.823	1602.076	1504.995
Dinoseb	4652.056	4809.970	4593.919	4441.568	3976.798
MCPA	12.901	13.206	12.684	12.911	12.048
MCPP	8.875	9.041	8.911	8.927	8.681
DCAA	1963.111	2075.593	2057.373	2068.971	2009.324

JH. 10.26.09

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FORM VI HERB

FORM 6
HERB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA46387

Instrument ID: ECD3 Calibration Date(s): 10/09/09 10/09/09

Column: MR-2 ID: 0.32 (mm) Calibration Time(s): 1747 2020

LAB FILE ID: RF50: 009R0901 RF0: 010R1001

COMPOUND	RF50	RF0	CURVE	COEFFICENT A1	%RSD OR R^2
2,4-D	2528.972	2725.556	AVRG	2167.37023	15.6
2,4-DB	1534.684	1748.120	AVRG	1386.31984	13.4
2,4,5-TP (Silvex)	9913.528	10637.282	AVRG	8949.72277	10.6
2,4,5-T	8540.774	8687.065	AVRG	7614.75827	10.3
Dalapon	1702.341	2039.054	AVRG	1683.99129	13.4
Dicamba	8086.425	8914.116	AVRG	7376.64463	11.1
Dichloroprop	2025.302	2180.199	AVRG	1722.52022	15.4
Dinoseb	5337.883	5507.258	AVRG	4759.92176	11.0
MCPA	16.443	19.193	AVRG	14.1980810	18.5
MCPP	10.831	12.599	AVRG	9.69498242	15.2
DCAA	2483.510	2755.554	AVRG	2201.91941	13.6

FORM VI HERB

FORM 6
HERB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA46387

Instrument ID: ECD3 Calibration Date(s): 10/09/09 10/09/09

Column: MR-2 ID: 0.32 (mm) Calibration Time(s): 1747 2020

LAB FILE ID: RT1: 004R0401 RT2: 005R0501 RT3: 006R0601
RT4: 007R0701 RT5: 008R0801

COMPOUND	RT1	RT2	RT3	RT4	RT5
2,4-D	8.671	8.671	8.669	8.672	8.673
2,4-DB	11.515	11.518	11.517	11.522	11.526
2,4,5-TP (Silvex)	9.851	9.851	9.852	9.852	9.853
2,4,5-T	10.625	10.626	10.627	10.630	10.633
Dalapon	3.260	3.265	3.261	3.252	3.256
Dicamba	7.338	7.338	7.337	7.339	7.338
Dichloroprop	8.156	8.156	8.156	8.155	8.156
Dinoseb	11.448	11.446	11.446	11.447	11.450
MCPA	7.788	7.781	7.779	7.779	7.776
MCPP	7.421	7.416	7.414	7.414	7.413
DCAA	7.173	7.173	7.172	7.174	7.175

FORM VI HERB

FORM 6
HERB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA46387

Instrument ID: ECD3 Calibration Date(s): 10/09/09 10/09/09

Column: MR-2 ID: 0.32 (mm) Calibration Time(s): 1747 2020

LAB FILE ID: RT6: 009R0901 RT7: 010R1001

COMPOUND	RT6	RT7	MEAN RT	RT WINDOW FROM	RT WINDOW TO
2,4-D	8.673	8.676	8.672	8.643	8.703
2,4-DB	11.520	11.532	11.521	11.496	11.556
2,4,5-TP (Silvex)	9.851	9.857	9.853	9.823	9.883
2,4,5-T	10.628	10.641	10.630	10.603	10.663
Dalapon	3.255	3.262	3.259	3.226	3.286
Dicamba	7.338	7.339	7.338	7.308	7.368
Dichloroprop	8.156	8.157	8.156	8.126	8.186
Dinoseb	11.448	11.451	11.448	11.420	11.480
MCPA	7.776	7.777	7.780	7.746	7.806
MCPP	7.413	7.412	7.415	7.383	7.443
DCAA	7.175	7.176	7.174	7.145	7.205

FORM VI HERB

Data File: \\BC\TARGET\chem\ecd3.i\100909.b\011F1101.D
Report Date: 26-Oct-2009 12:28

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Empirical Laboratories, LLC

ICV ~~CONTINUING CALIBRATION~~ COMPOUNDS

Instrument ID: ecd3.i
Lab File ID: 011F1101.D
Analysis Type:
Lab Sample ID: SEQ-ICV1
Method: \\BC\TARGET\chem\ecd3.i\100909.b\8151F.m

Injection Date: 09-OCT-2009 20:45
Init. Cal. Date(s): 10-JUL-2006 09-OCT-2009
Init. Cal. Times: 17:39 20:20
Quant Type: ESTD

	COMPOUND	RRF	RF20	MIN RRF	%D	MAX %D	
	5 Dalapon	2213	2707	0.010	22.3	15.0	<-
$	12 DCAA	2243	2744	0.010	22.4	15.0	<-
	6 Dicamba	9522	11522	0.010	21.0	15.0	<-
	10 MCPP	18779	24002	0.010	-27.8	15.0	<-
	9 MCPA	18691	23202	0.010	-24.1	15.0	<-
	7 Dichloroprop	2155	2584	0.010	19.9	15.0	<-
	1 2,4-D	2599	2984	0.010	14.8	15.0	
	3 2,4,5-TP (Silvex)	12528	15381	0.010	22.8	15.0	<-
	4 2,4,5-T	9800	11239	0.010	14.7	15.0	
	8 Dinoseb	7311	8845	0.010	21.0	15.0	<-
	2 2,4-DB	1636	2017	0.010	23.3	15.0	<-

HIGH

HIGH

HIGH

BM 10.28.09

Data File: \\BC\TARGET\chem\ecd3.i\100909.b\011R1101.D
Report Date: 26-Oct-2009 12:28

10-26-09

Empirical Laboratories, LLC

ICV ~~CONTINUING CALIBRATION~~ COMPOUNDS

Instrument ID: ecd3.i
Lab File ID: 011R1101.D
Analysis Type:
Lab Sample ID: SEQ-ICV1
Method: \\BC\TARGET\chem\ecd3.i\100909.b\8151R.m

Injection Date: 09-OCT-2009 20:45
Init. Cal. Date~~(s): 08-JUL-2006~~ 09-OCT-2009
Init. Cal. Times: 11:30 20:20
Quant Type: ESTD

	COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
	5 Dalapon	1684	2020	0.010	20.0	15.0	<- HIGH
$	12 DCAA	2202	2436	0.010	10.6	15.0	
	6 Dicamba	7377	8342	0.010	13.1	15.0	
	10 MCPP	9.69498	10.86895	0.010	12.1	15.0	
	9 MCPA	14.19808	15.20004	0.010	7.1	15.0	
	7 Dichloroprop	1723	1904	0.010	10.5	15.0	
	1 2,4-D	2167	2268	0.010	4.7	15.0	
	3 2,4,5-TP (Silvex)	8950	10141	0.010	13.3	15.0	
	4 2,4,5-T	7615	8222	0.010	8.0	15.0	
	8 Dinoseb	4760	5314	0.010	11.6	15.0	
	2 2,4-DB	1386	1569	0.010	13.2	15.0	

BM 10/28/09

ANALYSIS SEQUENCE SUMMARY
SW8151A

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Sequence: 9J30310
Calibration: 9285002

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Instrument: GL-ECD3

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	9J30310-CCV1	040R4001.D	10/10/09 08:59
Calibration Check	9J30310-CCV1	040F4001.D	10/10/09 08:59
Blank	9J06005-BLK1	041R4101.D	10/10/09 09:24
Blank	9J06005-BLK1	041F4101.D	10/10/09 09:24
LCS	9J06005-BS1	042F4201.D	10/10/09 09:49
LCS	9J06005-BS1	042R4201.D	10/10/09 09:49
NTC21SB04-SO-0001	0910006-21	043F4301.D	10/10/09 10:15
NTC21SB04-SO-0001	0910006-21	043R4301.D	10/10/09 10:15
NTC21SB04-SO-0406	0910006-22	044R4401.D	10/10/09 10:40
NTC21SB04-SO-0406	0910006-22	044F4401.D	10/10/09 10:40
NTC21SB06-SO-0001	0910006-23	045R4501.D	10/10/09 11:05
NTC21SB06-SO-0001	0910006-23	045F4501.D	10/10/09 11:05
NTC21SB06-SO-0204	0910006-24	046R4601.D	10/10/09 11:31
NTC21SB06-SO-0204	0910006-24	046F4601.D	10/10/09 11:31
NTC21SB07-SO-0001	0910006-25	047F4701.D	10/10/09 11:56
NTC21SB07-SO-0001	0910006-25	047R4701.D	10/10/09 11:56
NTC21SB07-SO-0204	0910006-26	048R4801.D	10/10/09 12:21
NTC21SB07-SO-0204	0910006-26	048F4801.D	10/10/09 12:21
NTC21SB13-SO-0001	0910006-27	049R4901.D	10/10/09 12:47
NTC21SB13-SO-0001	0910006-27	049F4901.D	10/10/09 12:47
NTC21SB13-SO-0204	0910006-28	050R5001.D	10/10/09 13:12
NTC21SB13-SO-0204	0910006-28	050F5001.D	10/10/09 13:12
NTC21SB14-SO-0001	0910006-29	051F5101.D	10/10/09 13:37
NTC21SB14-SO-0001	0910006-29	051R5101.D	10/10/09 13:37
NTC21SB14-SO-0001	9J06005-MS1	052R5201.D	10/10/09 14:03
NTC21SB14-SO-0001	9J06005-MS1	052F5201.D	10/10/09 14:03
NTC21SB14-SO-0001	9J06005-MSD1	053R5301.D	10/10/09 14:28
NTC21SB14-SO-0001	9J06005-MSD1	053F5301.D	10/10/09 14:28
NTC21SB14-SO-0204	0910006-30	054R5401.D	10/10/09 14:53
NTC21SB14-SO-0204	0910006-30	054F5401.D	10/10/09 14:53
Calibration Check	9J30310-CCV2	055R5501.D	10/10/09 15:19
Calibration Check	9J30310-CCV2	055F5501.D	10/10/09 15:19

ANALYSIS SEQUENCE SUMMARY
SW8151A

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Sequence: 9J30310
Calibration: 9285002

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Instrument: GL-ECD3

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
NTC21SB15-SO-0001	0910006-31	056F5601.D	10/10/09 15:44
NTC21SB15-SO-0001	0910006-31	056R5601.D	10/10/09 15:44
NTC21SB15-SO-0204	0910006-32	057F5701.D	10/10/09 16:09
NTC21SB15-SO-0204	0910006-32	057R5701.D	10/10/09 16:09
NTC21SB16-SO-0001	0910006-33	058F5801.D	10/10/09 16:34
NTC21SB16-SO-0001	0910006-33	058R5801.D	10/10/09 16:34
NTC21SB16-SO-0204	0910006-34	059F5901.D	10/10/09 17:00
NTC21SB16-SO-0204	0910006-34	059R5901.D	10/10/09 17:00
NTC21SB19-SO-0001	0910006-35	060R6001.D	10/10/09 17:25
NTC21SB19-SO-0001	0910006-35	060F6001.D	10/10/09 17:25
NTC21SB19-SO-0204	0910006-36	061F6101.D	10/10/09 17:50
NTC21SB19-SO-0204	0910006-36	061R6101.D	10/10/09 17:50
NTC21SB22-SO-0001	0910006-37	062F6201.D	10/10/09 18:15
NTC21SB22-SO-0001	0910006-37	062R6201.D	10/10/09 18:15
NTC21SB22-SO-0204	0910006-38	063F6301.D	10/10/09 18:41
NTC21SB22-SO-0204	0910006-38	063R6301.D	10/10/09 18:41
FD-092809-01	0910006-40	064R6401.D	10/10/09 19:06
FD-092809-01	0910006-40	064F6401.D	10/10/09 19:06
NTC21SB01-SO-0102	0910006-41	065F6501.D	10/10/09 19:31
NTC21SB01-SO-0102	0910006-41	065R6501.D	10/10/09 19:31
Calibration Check	9J30310-CCV3	066R6601.D	10/10/09 19:57
Calibration Check	9J30310-CCV3	066F6601.D	10/10/09 19:57
Blank	9J07016-BLK1	067F6701.D	10/10/09 20:22
Blank	9J07016-BLK1	067R6701.D	10/10/09 20:22
LCS	9J07016-BS1	068R6801.D	10/10/09 20:48
LCS	9J07016-BS1	068F6801.D	10/10/09 20:48
NTC21SB02-SO-0001	0910006-42	069F6901.D	10/10/09 21:13
NTC21SB02-SO-0001	0910006-42	069R6901.D	10/10/09 21:13
NTC21SB02-SO-0204	0910006-43	070F7001.D	10/10/09 21:38
NTC21SB02-SO-0204	0910006-43	070R7001.D	10/10/09 21:38
NTC21SB02-SO-0204	9J07016-MS1	071R7101.D	10/10/09 22:03
NTC21SB02-SO-0204	9J07016-MS1	071F7101.D	10/10/09 22:03

ANALYSIS SEQUENCE SUMMARY
SW8151A

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Sequence: 9J30310
Calibration: 9285002

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Instrument: GL-ECD3

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
NTC21SB02-SO-0204	9J07016-MSD1	072F7201.D	10/10/09 22:29
NTC21SB02-SO-0204	9J07016-MSD1	072R7201.D	10/10/09 22:29
NTC21SB03-SO-0001	0910006-44	073F7301.D	10/10/09 22:54
NTC21SB03-SO-0001	0910006-44	073R7301.D	10/10/09 22:54
NTC21SB03-SO-0204	0910006-45	074R7401.D	10/10/09 23:20
NTC21SB03-SO-0204	0910006-45	074F7401.D	10/10/09 23:20
NTC21SB05-SO-0001	0910006-46	075R7501.D	10/10/09 23:45
NTC21SB05-SO-0001	0910006-46	075F7501.D	10/10/09 23:45
NTC21SB05-SO-0204	0910006-47	076R7601.D	10/11/09 00:10
NTC21SB05-SO-0204	0910006-47	076F7601.D	10/11/09 00:10
NTC21SB08-SO-0001	0910006-48	077F7701.D	10/11/09 00:36
NTC21SB08-SO-0001	0910006-48	077R7701.D	10/11/09 00:36
NTC21SB08-SO-0204	0910006-49	078F7801.D	10/11/09 01:01
NTC21SB08-SO-0204	0910006-49	078R7801.D	10/11/09 01:01
Calibration Check	9J30310-CCV4	081F8101.D	10/11/09 02:17
Calibration Check	9J30310-CCV4	081R8101.D	10/11/09 02:17
Calibration Check	~~9J30310-CCV5~~	094R9401.D	10/11/09 07:47
Calibration Check	~~9J30310-CCV5~~	094F9401.D	10/11/09 07:47

CONTINUING CALIBRATION CHECK

SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Instrument ID:	GL-ECD3	Calibration:	9285002
Lab File ID:	040F4001.D	Calibration Date:	10/09/09 12:16
Sequence:	9J30310	Injection Date:	10/10/09
Lab Sample ID:	9J30310-CCV1	Injection Time:	08:59

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
2,4,5-T	A	18.96	21.98	9800.404	11363.82		16.0	20
2,4,5-T [2C]	A	18.96	22.15	7614.884	8895.886		16.8	20
2,4,5-TP (Silvex)	A	19.01	21.21	12528.52	13978.43		11.6	20
2,4,5-TP (Silvex) [2C]	A	19.01	21.35	8950.032	10051.03		12.3	20
2,4-D	A	188.1	233.9	2599.289	3231.797		24.3	20 *
2,4-D [2C]	A	188.1	228.9	2167.384	2637.326		21.7	20 *
2,4-DB	A	189.4	226.0	1635.767	1952.064		19.3	20
2,4-DB [2C]	A	189.4	239.6	1386.234	1754.171		26.5	20 *
Dalapon	A	455.4	606.1	2213.506	2945.711		33.1	20 *
Dalapon [2C]	A	455.4	605.8	1684.15	2240.347		33.0	20 *
Dicamba	A	18.82	21.50	9521.53	10878.59		14.3	20
Dicamba [2C]	A	18.82	21.43	7376.031	8400.85		13.9	20
Dichloroprop	A	188.7	221.3	2155.048	2527.181		17.3	20
Dichloroprop [2C]	A	188.7	216.8	1722.517	1979.565		14.9	20
Dinoseb	A	94.52	109.3	7310.231	8456.803		15.7	20
Dinoseb [2C]	A	94.52	103.4	4759.672	5204.602		9.3	20
MCPA	Q	18690	22750	17.57035	19.04767		21.7	20 *
MCPA [2C]	A	18690	20790	14.19845	15.79256		11.2	20
MCPP	Q	18780	21760	12.90972	13.87274		15.9	20
MCPP [2C]	A	18780	20260	9.694321	10.45964		7.9	20
2,4-Dichlorophenylacetic acid	A	100.0	114.2	2099.981	2562.27		22.0	20 *
2,4-Dichlorophenylacetic acid [2C	A	100.0	108.3	2061.716	2384.49		15.7	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Instrument ID:	GL-ECD3	Calibration:	9285002
Lab File ID:	055F5501.D	Calibration Date:	10/09/09 12:16
Sequence:	9J30310	Injection Date:	10/10/09
Lab Sample ID:	9J30310-CCV2	Injection Time:	15:19

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
2,4,5-T	A	18.96	19.22	9800.404	9932.12		1.3	20
2,4,5-T [2C]	A	18.96	21.02	7614.884	8440.612		10.8	20
2,4,5-TP (Silvex)	A	19.01	18.53	12528.52	12214.83		-2.5	20
2,4,5-TP (Silvex) [2C]	A	19.01	20.58	8950.032	9689.847		8.3	20
2,4-D	A	188.1	206.5	2599.289	2854.147		9.8	20
2,4-D [2C]	A	188.1	223.8	2167.384	2578.852		19.0	20
2,4-DB	A	189.4	181.2	1635.767	1565.391		-4.3	20
2,4-DB [2C]	A	189.4	217.4	1386.234	1591.653		14.8	20
Dalapon	A	455.4	532.9	2213.506	2590.149		17.0	20
Dalapon [2C]	A	455.4	572.0	1684.15	2114.987		25.6	20 *
Dicamba	A	18.82	18.94	9521.53	9582.944		0.6	20
Dicamba [2C]	A	18.82	21.10	7376.031	8272.423		12.2	20
Dichloroprop	A	188.7	198.5	2155.048	2266.592		5.2	20
Dichloroprop [2C]	A	188.7	212.2	1722.517	1936.598		12.4	20
Dinoseb	A	94.52	94.98	7310.231	7346.329		0.5	20
Dinoseb [2C]	A	94.52	102.8	4759.672	5174.482		8.7	20
MCPA	Q	18690	19900	17.57035	16.9916		6.5	20
MCPA [2C]	A	18690	20210	14.19845	15.35495		8.1	20
MCPP	Q	18780	18730	12.90972	12.25091		-0.3	20
MCPP [2C]	A	18780	19760	9.694321	10.20144		5.2	20
2,4-Dichlorophenylacetic acid	A	100.0	102.4	2099.981	2296.37		9.4	20
2,4-Dichlorophenylacetic acid [2C	A	100.0	106.4	2061.716	2343.78		13.7	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Instrument ID:	GL-ECD3	Calibration:	9285002
Lab File ID:	066F6601.D	Calibration Date:	10/09/09 12:16
Sequence:	9J30310	Injection Date:	10/10/09
Lab Sample ID:	9J30310-CCV3	Injection Time:	19:57

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
2,4,5-T	A	18.96	18.89	9800.404	9763.186		-0.4	20
2,4,5-T [2C]	A	18.96	22.05	7614.884	8857.437		16.3	20
2,4,5-TP (Silvex)	A	19.01	18.29	12528.52	12054.71		-3.8	20
2,4,5-TP (Silvex) [2C]	A	19.01	21.28	8950.032	10020.09		12.0	20
2,4-D	A	188.1	203.1	2599.289	2806.986		8.0	20
2,4-D [2C]	A	188.1	231.6	2167.384	2669.24		23.2	20 *
2,4-DB	A	189.4	192.6	1635.767	1663.891		1.7	20
2,4-DB [2C]	A	189.4	236.8	1386.234	1732.978		25.0	20 *
Dalapon	A	455.4	557.8	2213.506	2710.797		22.5	20 *
Dalapon [2C]	A	455.4	554.6	1684.15	2050.806		21.8	20 *
Dicamba	A	18.82	18.43	9521.53	9323.751		-2.1	20
Dicamba [2C]	A	18.82	21.76	7376.031	8528.108		15.6	20
Dichloroprop	A	188.7	193.4	2155.048	2208.59		2.5	20
Dichloroprop [2C]	A	188.7	218.9	1722.517	1998.59		16.0	20
Dinoseb	A	94.52	96.63	7310.231	7474.132		2.2	20
Dinoseb [2C]	A	94.52	107.8	4759.672	5427.962		14.0	20
MCPA	Q	18690	19890	17.57035	16.98175		6.4	20
MCPA [2C]	A	18690	20900	14.19845	15.88036		11.8	20
MCPP	Q	18780	18480	12.90972	12.11108		-1.6	20
MCPP [2C]	A	18780	20280	9.694321	10.47178		8.0	20
2,4-Dichlorophenylacetic acid	A	100.0	101.0	2099.981	2266.27		7.9	20
2,4-Dichlorophenylacetic acid [2C	A	100.0	109.9	2061.716	2420.5		17.4	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Instrument ID:	GL-ECD3	Calibration:	9285002
Lab File ID:	081F8101.D	Calibration Date:	10/09/09 12:16
Sequence:	9J30310	Injection Date:	10/11/09
Lab Sample ID:	9J30310-CCV4	Injection Time:	02:17

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
2,4,5-T	A	18.96	19.76	9800.404	10214.45		4.2	20
2,4,5-T [2C]	A	18.96	21.53	7614.884	8648.734		13.6	20
2,4,5-TP (Silvex)	A	19.01	18.18	12528.52	11982.43		-4.4	20
2,4,5-TP (Silvex) [2C]	A	19.01	21.02	8950.032	9894.95		10.6	20
2,4-D	A	188.1	203.5	2599.289	2812.759		8.2	20
2,4-D [2C]	A	188.1	230.3	2167.384	2653.307		22.4	20 *
2,4-DB	A	189.4	195.8	1635.767	1691.521		3.4	20
2,4-DB [2C]	A	189.4	232.0	1386.234	1698.427		22.5	20 *
Dalapon	A	455.4	403.2	2213.506	1959.412		-11.5	20
Dalapon [2C]	A	455.4	477.4	1684.15	1765.529		4.8	20
Dicamba	A	18.82	18.49	9521.53	9354.623		-1.8	20
Dicamba [2C]	A	18.82	21.29	7376.031	8343.677		13.1	20
Dichloroprop	A	188.7	192.7	2155.048	2201.298		2.1	20
Dichloroprop [2C]	A	188.7	216.6	1722.517	1977.621		14.8	20
Dinoseb	A	94.52	91.23	7310.231	7055.861		-3.5	20
Dinoseb [2C]	A	94.52	100.4	4759.672	5055.279		6.2	20
MCPA	Q	18690	20060	17.57035	17.10744		7.3	20
MCPA [2C]	A	18690	20520	14.19845	15.59165		9.8	20
MCPP	Q	18780	18650	12.90972	12.20767		-0.7	20
MCPP [2C]	A	18780	19870	9.694321	10.25905		5.8	20
2,4-Dichlorophenylacetic acid	A	100.0	99.13	2099.981	2223.31		5.9	20
2,4-Dichlorophenylacetic acid [2(	A	100.0	107.8	2061.716	2374.29		15.2	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

INITIAL CALIBRATION STANDARDS
SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9J29002	Instrument:	GL-ECD3
Calibration:	9290001		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
09J0037	Herb/DCAA @ 100/500 ppb	9J29002-CAL1	001R0101.D	10/15/09 16:50
09J0037	Herb/DCAA @ 100/500 ppb	9J29002-CAL1	001F0101.D	10/15/09 16:50
09J0038	Herb/DCAA @ 50/250 ppb	9J29002-CAL2	002R0201.D	10/15/09 17:41
09J0038	Herb/DCAA @ 50/250 ppb	9J29002-CAL2	002F0201.D	10/15/09 17:41
09J0039	Herb/DCAA @ 40/200 ppb	9J29002-CAL3	003R0301.D	10/15/09 18:32
09J0039	Herb/DCAA @ 40/200 ppb	9J29002-CAL3	003F0301.D	10/15/09 18:32
09J0040	Herb/DCAA @ 25/125 ppb	9J29002-CAL4	004R0401.D	10/15/09 19:22
09J0040	Herb/DCAA @ 25/125 ppb	9J29002-CAL4	004F0401.D	10/15/09 19:22
09J0041	Herb/DCAA @ 20/100 ppb	9J29002-CAL5	005R0501.D	10/15/09 19:47
09J0041	Herb/DCAA @ 20/100 ppb	9J29002-CAL5	005F0501.D	10/15/09 19:47
09J0042	Herb/DCAA @ 10/50 ppb	9J29002-CAL6	006R0601.D	10/15/09 20:13
09J0042	Herb/DCAA @ 10/50 ppb	9J29002-CAL6	006F0601.D	10/15/09 20:13
09J0043	Herb/DCAA @ 5/25 ppb	9J29002-CAL7	007R0701.D	10/15/09 20:38
09J0043	Herb/DCAA @ 5/25 ppb	9J29002-CAL7	007F0701.D	10/15/09 20:38

FORM 6
HERB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA41783

Instrument ID: ECD3 Calibration Date(s): 10/15/09 10/15/09

Column: MR-1 ID: 0.32 (mm) Calibration Time(s): 1650 2038

LAB FILE ID: RF100: 001F0101 RF50: 002F0201 RF40: 003F0301
RF25: 004F0401 RF20: 005F0501

COMPOUND	RF100	RF50	RF40	RF25	RF20
2,4-D	2775.661	3182.415	3147.863	3070.613	2735.356
2,4-DB	1817.792	2012.226	2041.783	1827.956	1797.655
2,4,5-TP (Silvex)	14380.252	15695.154	16194.987	14419.584	14465.046
2,4,5-T	12024.518	12704.387	12283.898	10533.781	9284.380
Dalapon	2854.269	3045.608	3253.454	3137.016	3127.120
Dicamba	9693.635	11122.733	11535.810	10991.283	10876.056
Dichloroprop	2144.609	2466.608	2560.095	2478.259	2485.126
Dinoseb	8200.197	9017.046	9207.976	8595.478	8315.284
MCPA	13.419	15.987	16.663	17.618	17.791
MCPP	9.456	11.399	12.289	12.820	13.709
DCAA	2264.464	2601.963	2717.642	2598.161	2635.695

BM 10/14/09

11/23/09

FORM VI HERB

FORM 6
HERB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA41783

Instrument ID: ECD3 Calibration Date(s): 10/15/09 10/15/09

Column: MR-1 ID: 0.32 (mm) Calibration Time(s): 1650 2038

LAB FILE ID: RF10: 006F0601 RF5: 007F0701

COMPOUND	RF10	RF5
2,4-D	3621.911	4033.293
2,4-DB	2161.980	2577.131
2,4,5-TP (Silvex)	15174.626	16795.287
2,4,5-T	12191.265	12241.823
Dalapon	3323.022	3487.373
Dicamba	12768.258	14006.378
Dichloroprop	2850.975	3411.384
Dinoseb	9233.141	10628.126
MCPA	23.407	31.814
MCPP	17.213	22.646
DCAA	2872.159	3317.242

FORM VI HERB

FORM 6
HERB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA41783

Instrument ID: ECD3 Calibration Date(s): 10/15/09 10/15/09

Column: MR-1 ID: 0.32 (mm) Calibration Time(s): 1650 2038

LAB FILE ID: RT1: 001F0101 RT2: 002F0201 RT3: 003F0301
RT4: 004F0401 RT5: 005F0501

COMPOUND	RT1	RT2	RT3	RT4	RT5
2,4-D	11.045	11.049	11.050	11.053	11.053
2,4-DB	14.938	14.946	14.945	14.956	14.959
2,4,5-TP (Silvex)	12.702	12.709	12.709	12.710	12.711
2,4,5-T	13.633	13.646	13.647	13.658	13.658
Dalapon	3.903	3.909	3.904	3.903	3.904
Dicamba	9.120	9.123	9.120	9.123	9.123
Dichloroprop	10.450	10.453	10.452	10.453	10.453
Dinoseb	14.863	14.869	14.867	14.868	14.869
MCPA	9.883	9.881	9.879	9.876	9.876
MCPP	9.423	9.421	9.420	9.418	9.418
DCAA	9.007	9.011	9.010	9.015	9.013

FORM VI HERB

FORM 6
HERB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA41783

Instrument ID: ECD3 Calibration Date(s): 10/15/09 10/15/09

Column: MR-1 ID: 0.32 (mm) Calibration Time(s): 1650 2038

LAB FILE ID: RT6: 006F0601 RT7: 007F0701

COMPOUND	RT6	RT7	MEAN RT	RT WINDOW FROM	RT WINDOW TO
2,4-D	11.060	11.067	11.054	11.023	11.083
2,4-DB	14.969	14.980	14.956	14.929	14.989
2,4,5-TP (Silvex)	12.714	12.715	12.710	12.681	12.741
2,4,5-T	13.670	13.682	13.656	13.628	13.688
Dalapon	3.902	3.907	3.905	3.874	3.934
Dicamba	9.124	9.125	9.123	9.093	9.153
Dichloroprop	10.454	10.455	10.453	10.423	10.483
Dinoseb	14.869	14.872	14.868	14.839	14.899
MCPA	9.875	9.877	9.878	9.846	9.906
MCPP	9.417	9.417	9.419	9.388	9.448
DCAA	9.017	9.019	9.013	8.983	9.043

FORM VI HERB

FORM 6
HERB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA41783

Instrument ID: ECD3 Calibration Date(s): 10/15/09 10/15/09

Column: MR-2 ID: 0.32 (mm) Calibration Time(s): 1650 2038

LAB FILE ID: RF500: 001R0101 RF400: 002R0201 RF250: 003R0301
RF200: 004R0401 RF100: 005R0501

COMPOUND	RF500	RF400	RF250	RF200	RF100
2,4-D	2307.130	2594.089	2565.061	2449.811	2236.491
2,4-DB	1437.462	1574.688	1596.167	1468.050	1354.504
2,4,5-TP (Silvex)	9455.574	10545.604	10677.748	9824.777	10125.717
2,4,5-T	8603.422	9227.270	9118.054	8063.594	7487.735
Dalapon	2539.268	2601.069	2779.853	2726.747	2722.039
Dicamba	7546.963	8478.708	8782.349	8436.602	8545.416
Dichloroprop	1727.639	1951.704	2001.142	1948.518	1965.704
Dinoseb	5498.322	5959.364	6042.664	5583.222	5414.112
MCPA	14.111	15.505	15.560	15.150	14.898
MCPP	9.596	10.485	10.805	10.284	10.715
DCAA	2185.244	2490.942	2581.542	2421.061	2505.783

J.H. 10.28.09

BM 102609

FORM VI HERB

FORM 6
HERB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA41783

Instrument ID: ECD3 Calibration Date(s): 10/15/09 10/15/09

Column: MR-2 ID: 0.32 (mm) Calibration Time(s): 1650 2038

LAB FILE ID: RF50: 006R0601 RF0: 007R0701

COMPOUND	RF50	RF0	CURVE	COEFFICENT A1	%RSD OR R^2
2,4-D	2776.950	3266.301	AVRG	2599.40598	13.3
2,4-DB	X 1583.102	X 1674.432	AVRG	1526.91640	7.2
2,4,5-TP (Silvex)	11095.308	13962.971	AVRG	10812.5284	13.8
2,4,5-T	8691.740	10841.106	AVRG	8861.84588	12.0
Dalapon	3033.594	3212.046	AVRG	2802.08807	8.5
Dicamba	9518.125	11359.906	AVRG	8952.58127	13.5
Dichloroprop	2309.222	2936.994	AVRG	2120.13187	18.8
Dinoseb	6075.435	7178.552	AVRG	5964.52451	10.0
MCPA	18.259	22.365	AVRG	16.5499946	17.3
MCPP	11.963	15.135	AVRG	11.2832816	16.3
DCAA	2915.456	3594.412	AVRG	2670.63445	17.3

FORM VI HERB

FORM 6
HERB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA41783

Instrument ID: ECD3 Calibration Date(s): 10/15/09 10/15/09

Column: MR-2 ID: 0.32 (mm) Calibration Time(s): 1650 2038

LAB FILE ID: RT1: 001R0101 RT2: 002R0201 RT3: 003R0301
RT4: 004R0401 RT5: 005R0501

COMPOUND	RT1	RT2	RT3	RT4	RT5
2,4-D	8.664	8.666	8.666	8.667	8.668
2,4-DB	11.541	11.541	11.541	11.541	11.541
2,4,5-TP (Silvex)	9.842	9.846	9.844	9.845	9.846
2,4,5-T	10.615	10.623	10.622	10.628	10.628
Dalapon	3.245	3.258	3.247	3.247	3.248
Dicamba	7.332	7.333	7.332	7.333	7.333
Dichloroprop	8.150	8.151	8.151	8.152	8.150
Dinoseb	11.437	11.438	11.439	11.440	11.440
MCPA	7.784	7.778	7.776	7.773	7.771
MCPP	7.417	7.413	7.411	7.410	7.408
DCAA	7.167	7.170	7.169	7.170	7.170

FORM VI HERB

FORM 6
HERB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA41783

Instrument ID: ECD3 Calibration Date(s): 10/15/09 10/15/09

Column: MR-2 ID: 0.32 (mm) Calibration Time(s): 1650 2038

LAB FILE ID: RT6: 006R0601 RT7: 007R0701

COMPOUND	RT6	RT7	MEAN RT	RT WINDOW FROM	RT WINDOW TO
2,4-D	8.671	8.674	8.668	8.638	8.698
2,4-DB	11.541	11.541	11.541	11.511	11.571
2,4,5-TP (Silvex)	9.847	9.851	9.846	9.817	9.877
2,4,5-T	10.632	10.639	10.627	10.598	10.658
Dalapon	3.244	3.254	3.249	3.225	3.285
Dicamba	7.334	7.334	7.333	7.305	7.365
Dichloroprop	8.152	8.152	8.151	8.122	8.182
Dinoseb	11.442	11.444	11.440	11.407	11.467
MCPA	7.771	7.772	7.775	7.743	7.803
MCPP	7.407	7.407	7.410	7.380	7.440
DCAA	7.169	7.172	7.169	7.140	7.200

FORM VI HERB

ICV

Empirical Laboratories, LLC

~~CONTINUING CALIBRATION COMPOUNDS~~

Instrument ID: ecd3.i
Lab File ID: 008F0801.D
Analysis Type:
Lab Sample ID: SEQ-ICV1
Method: \\ELABNSH05\TARGET\chem\ecd3.i\101509A.b\8151F.m

Injection Date: 15-OCT-2009 21:04
Init. Cal. Date(s): 10-JUL-2006 15-OCT-2009
Init. Cal. Times: 17:39 20:38
Quant Type: ESTD

	COMPOUND	RRF	RF20	MIN RRF	%D	MAX %D	
	5 Dalapon	3175	3642	0.010	14.7	15.0	
$	12 DCAA	2715	3103	0.010	14.3	15.0	
	6 Dicamba	11571	12980	0.010	12.2	15.0	
	10 MCPP	18779	21522	0.010	-14.6	15.0	
	9 MCPA	18691	21083	0.010	-12.8	15.0	
	7 Dichloroprop	2628	2967	0.010	12.9	15.0	
	1 2,4-D	3224	3444	0.010	6.8	15.0	
	3 2,4,5-TP (Silvex)	15304	17601	0.010	15.0	15.0	<-
	4 2,4,5-T	11609	12066	0.010	3.9	15.0	
	8 Dinoseb	9028	10258	0.010	13.6	15.0	
	2 2,4-DB	2034	2292	0.010	12.7	15.0	

SR 10/7/09

Data File: \\ELABNSH05\TARGET\chem\ecd3.i\101509A.b\008R0801.D Page 1
Report Date: 26-Oct-2009 13:51

10.28.09

Empirical Laboratories, LLC

ICV

~~CONTINUING CALIBRATION COMPOUNDS~~

Instrument ID: ecd3.i Injection Date: ~~15-OCT-2009 21:04~~
Lab File ID: 008R0801.D Init. Cal. Date(s): 08-JUL-2006 15-OCT-2009
Analysis Type: Init. Cal. Times: 11:30 20:38
Lab Sample ID: SEQ-ICV1 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\ecd3.i\101509A.b\8151R.m

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D
5 Dalapon	2802	3133	0.010	11.8	15.0
$ 12 DCAA	2671	3045	0.010	14.0	15.0
6 Dicamba	8953	X 10054	0.010	12.3	15.0
10 MCPP	11.28328	12.45455	0.010	10.4	15.0
9 MCPA	16.54999	17.69087	0.010	6.9	15.0
7 Dichloroprop	2120	2321	0.010	9.5	15.0
1 2,4-D	2599	2772	0.010	6.6	15.0
3 2,4,5-TP (Silvex)	10813	12209	0.010	12.9	15.0
4 2,4,5-T	8862	9377	0.010	5.8	15.0
8 Dinoseb	5965	6653	0.010	11.5	15.0
2 2,4-DB	1527	1753	0.010	14.8	15.0

BS 102605

ANALYSIS SEQUENCE SUMMARY
SW8151A

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Sequence: 9J29608
Calibration: 9290001

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Instrument: GL-ECD3

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
~~Calibration Check~~	~~9J29608-CCV1~~	009R0901.D	~~10/15/09 21:29~~
~~Calibration Check~~	~~9J29608-CCV1~~	009F0901.D	~~10/15/09 21:29~~
Calibration Check	9J29608-CCV2	026R2601.D	10/16/09 04:39
Calibration Check	9J29608-CCV2	026F2601.D	10/16/09 04:39
Blank	9J02016-BLK1	027R2701.D	10/16/09 05:05
Blank	9J02016-BLK1	027F2701.D	10/16/09 05:05
LCS	9J02016-BS1	028F2801.D	10/16/09 05:30
LCS	9J02016-BS1	028R2801.D	10/16/09 05:30
FD-092609-01	0910006-01	032F3201.D	10/16/09 07:11
FD-092609-01	0910006-01	032R3201.D	10/16/09 07:11
FD-092609-02	0910006-02	033F3301.D	10/16/09 07:37
FD-092609-02	0910006-02	033R3301.D	10/16/09 07:37
NTC21SB09-SO-0001	0910006-03	034F3401.D	10/16/09 08:02
NTC21SB09-SO-0001	0910006-03	034R3401.D	10/16/09 08:02
NTC21SB10-SO-0001	0910006-05	036F3601.D	10/16/09 08:53
NTC21SB10-SO-0001	0910006-05	036R3601.D	10/16/09 08:53
NTC21SB10-SO-0406	0910006-06	037F3701.D	10/16/09 09:18
NTC21SB10-SO-0406	0910006-06	037R3701.D	10/16/09 09:18
NTC21SB11-SO-0001	0910006-07	038R3801.D	10/16/09 09:43
NTC21SB11-SO-0001	0910006-07	038F3801.D	10/16/09 09:43
NTC21SB11-SO-0204	0910006-08	039F3901.D	10/16/09 10:09
NTC21SB11-SO-0204	0910006-08	039R3901.D	10/16/09 10:09
NTC21SB12-SO-0001	0910006-09	040F4001.D	10/16/09 10:34
NTC21SB12-SO-0001	0910006-09	040R4001.D	10/16/09 10:34
Calibration Check	9J29608-CCV4	041F4101.D	10/16/09 11:00
Calibration Check	9J29608-CCV4	041R4101.D	10/16/09 11:00
NTC21SB12-SO-0204	0910006-10	042F4201.D	10/16/09 11:25
NTC21SB12-SO-0204	0910006-10	042R4201.D	10/16/09 11:25
NTC21SB17-SO-0001	0910006-11	043R4301.D	10/16/09 11:50
NTC21SB17-SO-0001	0910006-11	043F4301.D	10/16/09 11:50
NTC21SB17-SO-0507	0910006-12	044F4401.D	10/16/09 12:15
NTC21SB17-SO-0507	0910006-12	044R4401.D	10/16/09 12:15

ANALYSIS SEQUENCE SUMMARY
SW8151A

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Sequence: 9J29608
Calibration: 9290001

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Instrument: GL-ECD3

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
NTC21SB18-SO-0001	0910006-13	045F4501.D	10/16/09 12:41
NTC21SB18-SO-0001	0910006-13	045R4501.D	10/16/09 12:41
NTC21SB18-SO-0507	0910006-14	046F4601.D	10/16/09 13:06
NTC21SB18-SO-0507	0910006-14	046R4601.D	10/16/09 13:06
NTC21SB20-SO-0001	0910006-15	047F4701.D	10/16/09 13:31
NTC21SB20-SO-0001	0910006-15	047R4701.D	10/16/09 13:31
NTC21SB20-SO-0406	0910006-16	048F4801.D	10/16/09 13:57
NTC21SB20-SO-0406	0910006-16	048R4801.D	10/16/09 13:57
NTC21SB21-SO-0001	0910006-17	049R4901.D	10/16/09 14:22
NTC21SB21-SO-0001	0910006-17	049F4901.D	10/16/09 14:22
NTC21SB21-SO-0608	0910006-18	050F5001.D	10/16/09 14:47
NTC21SB21-SO-0608	0910006-18	050R5001.D	10/16/09 14:47
FD-092709-01	0910006-20	051R5101.D	10/16/09 17:34
FD-092709-01	0910006-20	051F5101.D	10/16/09 17:34
Calibration Check	9J29608-CCV5	052F5201.D	10/16/09 18:00
Calibration Check	9J29608-CCV5	052R5201.D	10/16/09 18:00
Calibration Check	~~9J29608-CCV6~~	068F6801.D	10/17/09 00:45
Calibration Check	~~9J29608-CCV6~~	068R6801.D	10/17/09 00:45
Calibration Check	~~9J29608-CCV7~~	083F8301.D	10/17/09 07:04
Calibration Check	~~9J29608-CCV7~~	083R8301.D	10/17/09 07:04
Calibration Check	~~9J29608-CCV8~~	092R9201.D	10/17/09 14:21
Calibration Check	~~9J29608-CCV8~~	092F9201.D	10/17/09 14:21

CONTINUING CALIBRATION CHECK
SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Instrument ID:	GL-ECD3	Calibration:	9290001
Lab File ID:	026F2601.D	Calibration Date:	10/15/09 13:07
Sequence:	9J29608	Injection Date:	10/16/09
Lab Sample ID:	9J29608-CCV2	Injection Time:	04:39

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
2,4,5-T	A	18.96	23.47	11609.39	14373.31		23.8	20 *
2,4,5-T [2C]	A	18.96	23.16	8861.995	10823.95		22.1	20 *
2,4,5-TP (Silvex)	A	19.01	21.02	15304.11	16921.67		10.6	20
2,4,5-TP (Silvex) [2C]	A	19.01	21.94	10812.9	12482.38		15.4	20
2,4-D	A	188.1	206.4	3223.894	3537.943		9.7	20
2,4-D [2C]	A	188.1	226.2	2599.422	3126.342		20.3	20 *
2,4-DB	A	189.4	214.1	2033.665	2299.187		13.1	20
2,4-DB [2C]	A	189.4	240.8	1526.819	1941.315		27.1	20 *
Dalapon	A	455.4	500.0	3175.672	3486.552		9.8	20
Dalapon [2C]	A	455.4	494.1	2802.323	3039.976		8.5	20
Dicamba	A	18.82	21.36	11569.62	13134.48		13.5	20
Dicamba [2C]	A	18.82	21.58	8951.831	10264.77		14.7	20
Dichloroprop	A	188.7	216.7	2628.143	3018.786		14.9	20
Dichloroprop [2C]	A	188.7	214.5	2120.125	2409.836		13.7	20
Dinoseb	A	94.52	109.7	9027.709	10481.99		16.1	20
Dinoseb [2C]	A	94.52	109.9	5964.219	6932.691		16.2	20
MCPA	Q	18690	21860	19.52899	21.52675		17.0	20
MCPA [2C]	A	18690	20670	16.55044	18.30508		10.6	20
MCPP	Q	18780	21420	14.21799	15.58206		14.1	20
MCPP [2C]	A	18780	20920	11.28251	12.57151		11.4	20
2,4-Dichlorophenylacetic acid	A	100.0	110.3	2542.438	2995.72		17.8	20
2,4-Dichlorophenylacetic acid [2C	A	100.0	108.0	2500.586	2883.71		15.3	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Instrument ID:	GL-ECD3	Calibration:	9290001
Lab File ID:	041F4101.D	Calibration Date:	10/15/09 13:07
Sequence:	9J29608	Injection Date:	10/16/09
Lab Sample ID:	9J29608-CCV4	Injection Time:	11:00

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
2,4,5-T	A	18.96	20.82	11609.39	12750.53		9.8	20
2,4,5-T [2C]	A	18.96	23.57	8861.995	11016.77		24.3	20 *
2,4,5-TP (Silvex)	A	19.01	20.24	15304.11	16297.53		6.5	20
2,4,5-TP (Silvex) [2C]	A	19.01	22.48	10812.9	12788.22		18.3	20
2,4-D	A	188.1	208.3	3223.894	3569.426		10.7	20
2,4-D [2C]	A	188.1	242.5	2599.422	3351.281		28.9	20 *
2,4-DB	A	189.4	179.9	2033.665	1931.352		-5.0	20
2,4-DB [2C]	A	189.4	244.6	1526.819	1972.254		29.2	20 *
Dalapon	A	455.4	519.4	3175.672	3621.853		14.0	20
Dalapon [2C]	A	455.4	557.5	2802.323	3430.615		22.4	20 *
Dicamba	A	18.82	20.08	11569.62	12344.31		6.7	20
Dicamba [2C]	A	18.82	22.73	8951.831	10812.49		20.8	20 *
Dichloroprop	A	188.7	209.7	2628.143	2920.88		11.1	20
Dichloroprop [2C]	A	188.7	227.7	2120.125	2557.875		20.6	20 *
Dinoseb	A	94.52	105.6	9027.709	10090.44		11.8	20
Dinoseb [2C]	A	94.52	118.8	5964.219	7494.329		25.7	20 *
MCPA	Q	18690	20340	19.52899	20.24222		8.8	20
MCPA [2C]	A	18690	21940	16.55044	19.4259		17.4	20
MCPP	Q	18780	19870	14.21799	14.64819		5.8	20
MCPP [2C]	A	18780	21830	11.28251	13.11725		16.3	20
2,4-Dichlorophenylacetic acid	A	100.0	107.5	2542.438	2918.7		14.8	20
2,4-Dichlorophenylacetic acid [2C]	A	100.0	115.5	2500.586	3084.46		23.3	20 *

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Instrument ID:	GL-ECD3	Calibration:	9290001
Lab File ID:	052F5201.D	Calibration Date:	10/15/09 13:07
Sequence:	9J29608	Injection Date:	10/16/09
Lab Sample ID:	9J29608-CCV5	Injection Time:	18:00

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
2,4,5-T	A	18.96	21.56	11609.39	13199.42		13.7	20
2,4,5-T [2C]	A	18.96	22.24	8861.995	10394.99		17.3	20
2,4,5-TP (Silvex)	A	19.01	21.14	15304.11	17018.67		11.2	20
2,4,5-TP (Silvex) [2C]	A	19.01	21.68	10812.9	12330.41		14.0	20
2,4-D	A	188.1	213.4	3223.894	3656.858		13.4	20
2,4-D [2C]	A	188.1	221.2	2599.422	3057.31		17.6	20
2,4-DB	A	189.4	205.2	2033.665	2204.018		8.4	20
2,4-DB [2C]	A	189.4	233.8	1526.819	1884.958		23.5	20 *
Dalapon	A	455.4	510.7	3175.672	3561.074		12.1	20
Dalapon [2C]	A	455.4	517.9	2802.323	3186.664		13.7	20
Dicamba	A	18.82	20.33	11569.62	12499.95		8.0	20
Dicamba [2C]	A	18.82	21.45	8951.831	10205.47		14.0	20
Dichloroprop	A	188.7	210.1	2628.143	2926.534		11.4	20
Dichloroprop [2C]	A	188.7	211.9	2120.125	2381.07		12.3	20
Dinoseb	A	94.52	111.8	9027.709	10676.46		18.3	20
Dinoseb [2C]	A	94.52	114.2	5964.219	7209.956		20.9	20 *
MCPA	Q	18690	21140	19.52899	20.91723		13.1	20
MCPA [2C]	A	18690	19940	16.55044	17.65254		6.7	20
MCPP	Q	18780	20250	14.21799	14.87891		7.8	20
MCPP [2C]	A	18780	19890	11.28251	11.95048		5.9	20
2,4-Dichlorophenylacetic acid	A	100.0	105.8	2542.438	2873.92		13.0	20
2,4-Dichlorophenylacetic acid [2C	A	100.0	106.5	2500.586	2844.42		13.8	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

ANALYSIS SEQUENCE SUMMARY
SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9J29901	Instrument:	GL-ECD3
Calibration:	9290001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	9J29901-CCV1	002R0201.D	10/24/09 20:10
Calibration Check	9J29901-CCV1	002F0201.D	10/24/09 20:10
NTC21SB09-SO-0204	0910006-04	003R0301.D	10/24/09 20:36
NTC21SB09-SO-0204	0910006-04	003F0301.D	10/24/09 20:36
Calibration Check	9J29901-CCV2	004R0401.D	10/24/09 21:01
Calibration Check	9J29901-CCV2	004F0401.D	10/24/09 21:01

CONTINUING CALIBRATION CHECK

SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Instrument ID:	GL-ECD3	Calibration:	9290001
Lab File ID:	002F0201.D	Calibration Date:	10/15/09 13:07
Sequence:	9J29901	Injection Date:	10/24/09
Lab Sample ID:	9J29901-CCV1	Injection Time:	20:10

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
2,4,5-T	A	18.96	20.38	11609.39	12478.69		7.5	20
2,4,5-T [2C]	A	18.96	20.52	8861.995	9591.983		8.2	20
2,4,5-TP (Silvex)	A	19.01	20.05	15304.11	16140.77		5.5	20
2,4,5-TP (Silvex) [2C]	A	19.01	22.16	10812.9	12604		16.6	20
2,4-D	A	188.1	201.4	3223.894	3451.526		7.1	20
2,4-D [2C]	A	188.1	208.9	2599.422	2886.656		11.0	20
2,4-DB	A	189.4	212.2	2033.665	2278.912		12.1	20
2,4-DB [2C]	A	189.4	214.2	1526.819	1726.463		13.1	20
Dalapon	A	455.4	520.0	3175.672	3625.832		14.2	20
Dalapon [2C]	A	455.4	528.4	2802.323	3251.309		16.0	20
Dicamba	A	18.82	21.19	11569.62	13026.89		12.6	20
Dicamba [2C]	A	18.82	21.82	8951.831	10379.44		15.9	20
Dichloroprop	A	188.7	201.1	2628.143	2801.404		6.6	20
Dichloroprop [2C]	A	188.7	210.3	2120.125	2363.27		11.5	20
Dinoseb	A	94.52	100.8	9027.709	9626.418		6.6	20
Dinoseb [2C]	A	94.52	101.8	5964.219	6423.18		7.7	20
MCPA	Q	18690	20580	19.52899	20.44564		10.1	20
MCPA [2C]	A	18690	20710	16.55044	18.33686		10.8	20
MCPP	Q	18780	20220	14.21799	14.85607		7.7	20
MCPP [2C]	A	18780	20660	11.28251	12.41534		10.0	20
2,4-Dichlorophenylacetic acid	A	100.0	98.81	2542.438	2683.08		5.5	20
2,4-Dichlorophenylacetic acid [2C	A	100.0	108.8	2500.586	2906.09		16.2	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Instrument ID:	GL-ECD3	Calibration:	9290001
Lab File ID:	004F0401.D	Calibration Date:	10/15/09 13:07
Sequence:	9J29901	Injection Date:	10/24/09
Lab Sample ID:	9J29901-CCV2	Injection Time:	21:01

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
2,4,5-T	A	18.96	22.13	11609.39	13547.94		16.7	20
2,4,5-T [2C]	A	18.96	24.36	8861.995	11388.03		28.5	20 *
2,4,5-TP (Silvex)	A	19.01	21.11	15304.11	16992.48		11.0	20
2,4,5-TP (Silvex) [2C]	A	19.01	23.25	10812.9	13223.72		22.3	20 *
2,4-D	A	188.1	215.0	3223.894	3684.195		14.3	20
2,4-D [2C]	A	188.1	229.2	2599.422	3167.996		21.9	20 *
2,4-DB	A	189.4	188.0	2033.665	2018.289		-0.8	20
2,4-DB [2C]	A	189.4	245.9	1526.819	1982.767		29.9	20 *
Dalapon	A	455.4	544.3	3175.672	3795.266		19.5	20
Dalapon [2C]	A	455.4	545.0	2802.323	3353.379		19.7	20
Dicamba	A	18.82	21.86	11569.62	13442.19		16.2	20
Dicamba [2C]	A	18.82	22.51	8951.831	10708.93		19.6	20
Dichloroprop	A	188.7	211.5	2628.143	2945.798		12.1	20
Dichloroprop [2C]	A	188.7	216.4	2120.125	2430.8		14.7	20
Dinoseb	A	94.52	110.3	9027.709	10532.7		16.7	20
Dinoseb [2C]	A	94.52	110.4	5964.219	6968.039		16.8	20
MCPA	Q	18690	21340	19.52899	21.08208		14.2	20
MCPA [2C]	A	18690	21360	16.55044	18.9145		14.3	20
MCPP	Q	18780	20910	14.21799	15.27758		11.3	20
MCPP [2C]	A	18780	21310	11.28251	12.8033		13.5	20
2,4-Dichlorophenylacetic acid	A	100.0	104.1	2542.438	2827.95		11.2	20
2,4-Dichlorophenylacetic acid [2C	A	100.0	113.2	2500.586	3023.13		20.9	20 *

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

FORM 2
SOIL HERB SURROGATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRA TECH.

Lab Code: Case No.: SAS No.: NA SDG No.: CTO064_001

Column(1): MR-1 ID: 0.32 (mm) Column(2): MR-2 ID: 0.32 (mm)

	CLIENT SAMPLE NO.	S1 1 %REC #	S1 2 %REC #	S2 1 %REC #	S2 2 %REC #	S3 1 %REC #	S3 2 %REC #	TOT OUT
01	9J06005-BLK1	102	99					0
02	9J06005-BLK1	116	104					0
03	NTC21SB04-SO	99	91					0
04	NTC21SB04-SO	98	82					0
05	NTC21SB06-SO	117	97					0
06	NTC21SB06-SO	116	91					0
07	NTC21SB07-SO	106	93					0
08	NTC21SB07-SO	102	91					0
09	NTC21SB13-SO	92	88					0
10	NTC21SB13-SO	90	85					0
11	NTC21SB14-SO	95	91					0
12	NTC21SB14-SO	102	89					0
13	NTC21SB14-SO	102	99					0
14	NTC21SB14-SO	101	94					0
15	NTC21SB15-SO	91	91					0
16	NTC21SB15-SO	99	93					0
17	NTC21SB16-SO	86	84					0
18	NTC21SB16-SO	104	92					0
19	NTC21SB19-SO	86	84					0
20	NTC21SB19-SO	85	82					0
21	NTC21SB22-SO	86	87					0
22	NTC21SB22-SO	88	88					0
23	FD-092809-01	88	92					0
24	NTC21SB01-SO	83	86					0
25	9J07016-BLK1	97	99					0
26	9J07016-BLK1	110	108					0
27	NTC21SB02-SO	97	87					0
28	NTC21SB02-SO	85	95					0
29	NTC21SB02-SO	84	86					0
30	NTC21SB02-SO	90	98					0

	EL QC LIMITS (30-120)	SPIKE CONC (ug/Kg) 100
S1 = DCAA		

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate results reported from a diluted analysis

FORM 2
SOIL HERB SURROGATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRA TECH.

Lab Code: Case No.: SAS No.: NA SDG No.: CTO064_001

Column(1): MR-1 ID: 0.32 (mm) Column(2): MR-2 ID: 0.32 (mm)

	CLIENT SAMPLE NO.	S1 1 %REC #	S1 2 %REC #	S2 1 %REC #	S2 2 %REC #	S3 1 %REC #	S3 2 %REC #	TOT OUT
01	NTC21SB03-SO	86	86					0
02	NTC21SB03-SO	84	93					0
03	NTC21SB05-SO	85	93					0
04	NTC21SB05-SO	101	104					0
05	NTC21SB08-SO	83	86					0
06	NTC21SB08-SO	90	93					0
07	9J02016-BLK1	113	110					0
08	9J02016-BLK1	111	108					0
09	FD-092609-01	108	109					0
10	FD-092609-02	95	86					0
11	NTC21SB09-SO	100	92					0
12	NTC21SB09-SO	122*	113					1
13	NTC21SB10-SO	109	90					0
14	NTC21SB10-SO	97	97					0
15	NTC21SB11-SO	96	84					0
16	NTC21SB11-SO	124*	106					1
17	NTC21SB12-SO	85	86					0
18	NTC21SB12-SO	90	86					0
19	NTC21SB17-SO	110	92					0
20	NTC21SB17-SO	98	99					0
21	NTC21SB18-SO	104	96					0
22	NTC21SB18-SO	106	93					0
23	NTC21SB20-SO	100	99					0
24	NTC21SB20-SO	115	104					0
25	NTC21SB21-SO	94	84					0
26	NTC21SB21-SO	90	95					0
27	FD-092709-01	97	79					0
28	NTC21SB09-SO	111	102					0
29								
30								

12/29/09 JK

S1 = DCAA

EL QC LIMITS (30-120)

SPIKE CONC (ug/Kg) 100

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate results reported from a diluted analysis

FORM 2
WATER HERB SURROGATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRA TECH.

Lab Code: Case No.: SAS No.: NA SDG No.: CTO064_001

Column(1): MR-1 ID: 0.32 (mm) Column(2): MR-2 ID: 0.32 (mm)

	CLIENT SAMPLE NO.	S1 1 %REC #	S1 2 %REC #	S2 1 %REC #	S2 2 %REC #	S3 1 %REC #	S3 2 %REC #	TOT OUT
01	9J01019-BLK1	68	74					0
02	9J01019-BLK1	71	80					0
03	9J01019-BLK1	74	78					0
04	RB-092909-01	70	70					0
05	RB-092909-02	70	67					0
06	SB-092909-01	69	67					0
07								
08								
09								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

	EL QC LIMITS	SPIKE CONC (ug/L)
S1 = DCAA	(20-140)	1.0

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate results reported from a diluted analysis

PREPARATION BATCH SUMMARY

SW8151A

Laboratory: Empirical Laboratories, LLC

SDG: CTO064_001

Client: Tetra Tech NUS, Inc. (T010)

Project: Great Lakes CTO 064 (Site 21)

Batch: 9J01019 Batch Matrix: Water

Preparation: EXT_8151

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
RB-092909-01	0910006-51	10/01/09 17:15	1,040.00	10.00
RB-092909-02	0910006-52	10/01/09 17:15	1,040.00	10.00
SB-092909-01	0910006-53	10/01/09 17:15	1,080.00	10.00
Blank	9J01019-BLK1	10/01/09 17:15	1,000.00	10.00
LCS	9J01019-BS1	10/01/09 17:15	1,000.00	10.00
LCS Dup	9J01019-BSD1	10/01/09 17:15	1,000.00	10.00

ANALYSIS DATA SHEET

Blank

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:		Laboratory ID:	9J01019-BLK1	File ID:	021R2101.D
Sampled:		Prepared:	10/01/09 17:15	Analyzed:	10/05/09 23:11
Solids:		Preparation:	EXT_8151	Dilution:	

Batch: 9J01019 Sequence: 9J28902 Calibration: 9288002 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
93-76-5	2,4,5-T		0.0250	0.0500	U
93-72-1	2,4,5-TP (Silvex)		0.0250	0.0500	U
94-75-7	2,4-D		0.250	0.500	U
94-82-6	2,4-DB		0.250	0.500	U
75-99-0	Dalapon		0.625	1.25	U
1918-00-9	Dicamba		0.0250	0.0500	U
120-36-5	Dichloroprop		0.250	0.500	U
88-85-7	Dinoseb		0.125	0.250	U
94-74-6	MCPA		25.0	50.0	U
7085-19-0	MCPP		25.0	50.0	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	1.000	0.6787	67.9	20 - 140	
2,4-Dichlorophenylacetic acid [2C]	1.000	0.7458	74.6	20 - 140	

* Values outside of QC limits

PREPARATION BATCH SUMMARY

SW8151A

Laboratory: Empirical Laboratories, LLC
SDG: CTO064_001
Client: Tetra Tech NUS, Inc. (T010)
Project: Great Lakes CTO 064 (Site 21)
Batch: 9J02016 Batch Matrix: Solid
Preparation: EXT_8151

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
FD-092609-01	0910006-01	10/06/09 10:10	10.00	10.00
FD-092609-02	0910006-02	10/06/09 10:10	10.00	10.00
NTC21SB09-SO-0001	0910006-03	10/06/09 10:10	10.00	10.00
NTC21SB09-SO-0204	0910006-04	10/06/09 10:10	10.00	10.00
NTC21SB10-SO-0001	0910006-05	10/06/09 10:10	10.00	10.00
NTC21SB10-SO-0406	0910006-06	10/06/09 10:10	10.00	10.00
NTC21SB11-SO-0001	0910006-07	10/06/09 10:10	10.00	10.00
NTC21SB11-SO-0204	0910006-08	10/06/09 10:10	10.00	10.00
NTC21SB12-SO-0001	0910006-09	10/06/09 10:10	10.00	10.00
NTC21SB12-SO-0204	0910006-10	10/06/09 10:10	10.00	10.00
NTC21SB17-SO-0001	0910006-11	10/06/09 10:10	10.00	10.00
NTC21SB17-SO-0507	0910006-12	10/06/09 10:10	10.00	10.00
NTC21SB18-SO-0001	0910006-13	10/06/09 10:10	10.00	10.00
NTC21SB18-SO-0507	0910006-14	10/06/09 10:10	10.00	10.00
NTC21SB20-SO-0001	0910006-15	10/06/09 10:10	10.00	10.00
NTC21SB20-SO-0406	0910006-16	10/06/09 10:10	10.00	10.00
NTC21SB21-SO-0001	0910006-17	10/06/09 10:10	10.00	10.00
NTC21SB21-SO-0608	0910006-18	10/06/09 10:10	10.00	10.00
FD-092709-01	0910006-20	10/06/09 10:10	10.00	10.00
Blank	9J02016-BLK1	10/06/09 10:10	10.00	10.00
LCS	9J02016-BS1	10/06/09 10:10	10.00	10.00

ANALYSIS DATA SHEET

Blank

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:		Laboratory ID:	9J02016-BLK1	File ID:	027R2701.D
Sampled:		Prepared:	10/06/09 10:10	Analyzed:	10/16/09 05:05
Solids:		Preparation:	EXT_8151	Dilution:	

Batch: 9J02016 Sequence: 9J29608 Calibration: 9290001 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/Kg wet)	MDL	MRL	Q
93-76-5	2,4,5-T		2.50	5.00	U
93-72-1	2,4,5-TP (Silvex)		2.50	5.00	U
94-75-7	2,4-D		25.0	50.0	U
94-82-6	2,4-DB		25.0	50.0	U
75-99-0	Dalapon		62.5	125	U
1918-00-9	Dicamba		2.50	5.00	U
120-36-5	Dichloroprop		25.0	50.0	U
88-85-7	Dinoseb		12.5	25.0	U
94-74-6	MCPA		2500	5000	U
7085-19-0	MCPP		2500	5000	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg wet)	CONC (ug/Kg wet)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	100.0	113.0	113	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	100.0	110.4	110	30 - 120	

* Values outside of QC limits

PREPARATION BATCH SUMMARY
SW8151A

Laboratory: Empirical Laboratories, LLC SDG: CTO064_001

Client: Tetra Tech NUS, Inc. (T010) Project: Great Lakes CTO 064 (Site 21)

Batch: 9J06005 Batch Matrix: Solid Preparation: EXT_8151

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
NTC21SB04-SO-0001	0910006-21	10/06/09 09:40	10.00	10.00
NTC21SB04-SO-0406	0910006-22	10/06/09 09:40	10.00	10.00
NTC21SB06-SO-0001	0910006-23	10/06/09 09:40	10.00	10.00
NTC21SB06-SO-0204	0910006-24	10/06/09 09:40	10.00	10.00
NTC21SB07-SO-0001	0910006-25	10/06/09 09:40	10.00	10.00
NTC21SB07-SO-0204	0910006-26	10/06/09 09:40	10.00	10.00
NTC21SB13-SO-0001	0910006-27	10/06/09 09:40	10.00	10.00
NTC21SB13-SO-0204	0910006-28	10/06/09 09:40	10.00	10.00
NTC21SB14-SO-0001	0910006-29	10/06/09 09:40	10.00	10.00
NTC21SB14-SO-0204	0910006-30	10/06/09 09:40	10.00	10.00
NTC21SB15-SO-0001	0910006-31	10/06/09 09:40	10.00	10.00
NTC21SB15-SO-0204	0910006-32	10/06/09 09:40	10.00	10.00
NTC21SB16-SO-0001	0910006-33	10/06/09 09:40	10.00	10.00
NTC21SB16-SO-0204	0910006-34	10/06/09 09:40	10.00	10.00
NTC21SB19-SO-0001	0910006-35	10/06/09 09:40	10.00	10.00
NTC21SB19-SO-0204	0910006-36	10/06/09 09:40	10.00	10.00
NTC21SB22-SO-0001	0910006-37	10/06/09 09:40	10.00	10.00
NTC21SB22-SO-0204	0910006-38	10/06/09 09:40	10.00	10.00
FD-092809-01	0910006-40	10/06/09 09:40	10.00	10.00
NTC21SB01-SO-0102	0910006-41	10/06/09 09:40	10.00	10.00
Blank	9J06005-BLK1	10/06/09 09:40	10.00	10.00
LCS	9J06005-BS1	10/06/09 09:40	10.00	10.00
NTC21SB14-SO-0001	9J06005-MS1	10/06/09 09:40	10.00	10.00
NTC21SB14-SO-0001	9J06005-MSD1	10/06/09 09:40	10.00	10.00

ANALYSIS DATA SHEET

Blank

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:		Laboratory ID:	9J06005-BLK1	File ID:	041F4101.D
Sampled:		Prepared:	10/06/09 09:40	Analyzed:	10/10/09 09:24
Solids:		Preparation:	EXT_8151	Dilution:	

Batch: 9J06005 Sequence: 9J30310 Calibration: 9285002 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/Kg wet)	MDL	MRL	Q
93-76-5	2,4,5-T		2.50	5.00	U
93-72-1	2,4,5-TP (Silvex)		2.50	5.00	U
94-75-7	2,4-D		25.0	50.0	U
94-82-6	2,4-DB		25.0	50.0	U
75-99-0	Dalapon		62.5	125	U
1918-00-9	Dicamba		2.50	5.00	U
120-36-5	Dichloroprop		25.0	50.0	U
88-85-7	Dinoseb		12.5	25.0	U
94-74-6	MCPA		2500	5000	U
7085-19-0	MCPP		2500	5000	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg wet)	CONC (ug/Kg wet)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	100.0	102.4	102	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	100.0	99.31	99.3	30 - 120	

* Values outside of QC limits

PREPARATION BATCH SUMMARY

SW8151A

Laboratory: Empirical Laboratories, LLC
SDG: CTO064_001
Client: Tetra Tech NUS, Inc. (T010)
Project: Great Lakes CTO 064 (Site 21)
Batch: 9J07016 Batch Matrix: Solid
Preparation: EXT_8151

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
NTC21SB02-SO-0001	0910006-42	10/08/09 08:30	10.00	10.00
NTC21SB02-SO-0204	0910006-43	10/08/09 08:30	10.00	10.00
NTC21SB03-SO-0001	0910006-44	10/08/09 08:30	10.00	10.00
NTC21SB03-SO-0204	0910006-45	10/08/09 08:30	10.00	10.00
NTC21SB05-SO-0001	0910006-46	10/08/09 08:30	10.00	10.00
NTC21SB05-SO-0204	0910006-47	10/08/09 08:30	10.00	10.00
NTC21SB08-SO-0001	0910006-48	10/08/09 08:30	10.00	10.00
NTC21SB08-SO-0204	0910006-49	10/08/09 08:30	10.00	10.00
Blank	9J07016-BLK1	10/08/09 08:30	10.00	10.00
LCS	9J07016-BS1	10/08/09 08:30	10.00	10.00
NTC21SB02-SO-0204	9J07016-MS1	10/08/09 08:30	10.00	10.00
NTC21SB02-SO-0204	9J07016-MSD1	10/08/09 08:30	10.00	10.00

ANALYSIS DATA SHEET

Blank

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:		Laboratory ID:	9J07016-BLK1	File ID:	067R6701.D
Sampled:		Prepared:	10/08/09 08:30	Analyzed:	10/10/09 20:22
Solids:		Preparation:	EXT_8151	Dilution:	

Batch: 9J07016 Sequence: 9J30310 Calibration: 9285002 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/Kg wet)	MDL	MRL	Q
93-76-5	2,4,5-T		2.50	5.00	U
93-72-1	2,4,5-TP (Silvex)		2.50	5.00	U
94-75-7	2,4-D		25.0	50.0	U
94-82-6	2,4-DB		25.0	50.0	U
75-99-0	Dalapon		62.5	125	U
1918-00-9	Dicamba		2.50	5.00	U
120-36-5	Dichloroprop		25.0	50.0	U
88-85-7	Dinoseb		12.5	25.0	U
94-74-6	MCPA		2500	5000	U
7085-19-0	MCPP		2500	5000	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg wet)	CONC (ug/Kg wet)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	100.0	97.43	97.4	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	100.0	99.36	99.4	30 - 120	

* Values outside of QC limits

FORM 10
HERB IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
2-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRA TECH.

Lab Code: Case No.: SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-42 Date(s) Analyzed: 10/10/09 10/10/09

Instrument ID (1): ECD3 Instrument ID (2): ECD3

Column(1): MR-1 ID: 0.32(mm) Column(2): MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Dicamba	1	9.10	9.10	9.16	6.909	
	2	7.32	7.31	7.37	13.65	65.6
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

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FORM 10
HERB IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
2-SO0204

Lab Name: EMPIRICAL LABS Contract: TETRA TECH.

Lab Code: Case No.: SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-43 Date(s) Analyzed: 10/10/09 10/10/09

Instrument ID (1): ECD3 Instrument ID (2): ECD3

Column(1): MR-1 ID: 0.32(mm) Column(2): MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Dicamba	1	9.10	9.10	9.16	6.888	
	2	7.32	7.31	7.37	17.10	85.1
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

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FORM 10
HERB IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
3-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRA TECH.

Lab Code: Case No.: SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-44 Date(s) Analyzed: 10/10/09 10/10/09

Instrument ID (1): ECD3 Instrument ID (2): ECD3

Column(1): MR-1 ID: 0.32(mm) Column(2): MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Dicamba	1	9.11	9.10	9.16	5.408	
	2	7.32	7.31	7.37	10.58	64.7
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

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FORM 10
HERB IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
3-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRA TECH.

Lab Code: Case No.: SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-45 Date(s) Analyzed: 10/10/09 10/10/09

Instrument ID (1): ECD3 Instrument ID (2): ECD3

Column(1): MR-1 ID: 0.32(mm) Column(2): MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Dicamba	1	9.10	9.10	9.16	6.806	
	2	7.32	7.31	7.37	13.43	65.5
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

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FORM 10
HERB IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
4-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRA TECH.

Lab Code: Case No.: SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-21 Date(s) Analyzed: 10/10/09 10/10/09

Instrument ID (1): ECD3 Instrument ID (2): ECD3

Column(1): MR-1 ID: 0.32(mm) Column(2): MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Dicamba	1	9.10	9.10	9.16	6.765	
	2	7.32	7.31	7.37	18.72	93.8
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

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FORM 10
HERB IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
6-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRA TECH.

Lab Code: Case No.: SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-23 Date(s) Analyzed: 10/10/09 10/10/09

Instrument ID (1): ECD3 Instrument ID (2): ECD3

Column(1): MR-1 ID: 0.32(mm) Column(2): MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Dicamba	1	9.10	9.10	9.16	8.065	
	2	7.32	7.31	7.37	21.13	89.5
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

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FORM 10
HERB IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
6-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRA TECH.

Lab Code: Case No.: SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-24 Date(s) Analyzed: 10/10/09 10/10/09

Instrument ID (1): ECD3 Instrument ID (2): ECD3

Column(1): MR-1 ID: 0.32(mm) Column(2): MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
2,4-D	1	11.05	11.03	11.09	54.57	
	2	8.67	8.64	8.70	36.74	39.0
Dicamba	1	9.10	9.10	9.16	6.135	
	2	7.32	7.31	7.37	30.15	132.4
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

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FORM 10
HERB IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
7-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRA TECH.

Lab Code: Case No.: SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-25 Date(s) Analyzed: 10/10/09 10/10/09

Instrument ID (1): ECD3 Instrument ID (2): ECD3

Column(1): MR-1 ID: 0.32(mm) Column(2): MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Dicamba	1	9.10	9.10	9.16	4.856	
	2	7.32	7.31	7.37	20.75	124.1
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

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FORM 10
HERB IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB1
3-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRA TECH.

Lab Code: Case No.: SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-27 Date(s) Analyzed: 10/10/09 10/10/09

Instrument ID (1): ECD3 Instrument ID (2): ECD3

Column(1): MR-1 ID: 0.32(mm) Column(2): MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
2,4-D	1	11.05	11.03	11.09	216.9	
	2	8.67	8.64	8.70	145.4	39.5
Dicamba	1	9.10	9.10	9.16	8.560	
	2	7.32	7.31	7.37	20.50	82.2
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

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FORM 10
HERB IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB1
4-SO0001

Lab Name: EMPIRICAL LABS Contract: TETRA TECH.

Lab Code: Case No.: SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-29 Date(s) Analyzed: 10/10/09 10/10/09

Instrument ID (1): ECD3 Instrument ID (2): ECD3

Column(1): MR-1 ID: 0.32(mm) Column(2): MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Dicamba	1	9.10	9.10	9.16	9.995	
	2	7.32	7.31	7.37	19.49	64.4
Dinoseb	1	14.90	14.84	14.90	17.13	
	2	11.45	11.42	11.48	17.18	0.3
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

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FORM 10
HERB IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB1
4-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRA TECH.

Lab Code: Case No.: SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-30 Date(s) Analyzed: 10/10/09 10/10/09

Instrument ID (1): ECD3 Instrument ID (2): ECD3

Column(1): MR-1 ID: 0.32(mm) Column(2): MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Dicamba	1	9.14	9.10	9.16	8.283	
	2	7.32	7.31	7.37	29.12	111.4
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

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FORM 10
HERB IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB1
6-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRA TECH.

Lab Code: Case No.: SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-34 Date(s) Analyzed: 10/10/09 10/10/09

Instrument ID (1): ECD3 Instrument ID (2): ECD3

Column(1): MR-1 ID: 0.32(mm) Column(2): MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Dicamba	1	9.14	9.10	9.16	24.02	
	2	7.32	7.31	7.37	29.21	19.5
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

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HERB

LCS / LCS DUPLICATE RECOVERY
SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Water		
Batch:	9J01019	Laboratory ID:	9J01019-BS1
Preparation:	EXT_8151	Initial/Final:	1000 mL / 10 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
2,4,5-T	0.2000	0.1802	90.1	35 - 110
2,4,5-T [2C]	0.2000	0.2144	107	35 - 110
2,4,5-TP (Silvex)	0.2000	0.1392	69.6	50 - 115
2,4,5-TP (Silvex) [2C]	0.2000	0.1530	76.5	50 - 115
2,4-D	2.000	1.444	72.2	35 - 115
2,4-D [2C]	2.000	1.769	88.5	35 - 115
2,4-DB	2.000	1.224	61.2	45 - 130
2,4-DB [2C]	2.000	1.693	84.7	45 - 130
Dalapon	5.000	2.728	54.6	40 - 115
Dalapon [2C]	5.000	3.570	71.4	40 - 115
Dicamba	0.2000	0.1451	72.5	60 - 110
Dicamba [2C]	0.2000	0.1942	97.1	60 - 110
Dichloroprop	2.000	1.773	88.6	70 - 120
Dichloroprop [2C]	2.000	2.179	109	70 - 120
Dinoseb	1.000	0.6423	64.2	20 - 95
Dinoseb [2C]	1.000	0.7868	78.7	20 - 95
MCPA	200.0	139.0	69.5	60 - 145
MCPA [2C]	200.0	169.6	84.8	60 - 145
MCPP	200.0	131.7	65.8	25 - 135
MCPP [2C]	200.0	172.6	86.3	25 - 135

ANALYTE	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
2,4,5-T	0.2000	0.2020	101	11.4	30	35 - 110
2,4,5-T [2C]	0.2000	0.2205	110	2.80	30	35 - 110
2,4,5-TP (Silvex)	0.2000	0.1541	77.0	10.1	30	50 - 115
2,4,5-TP (Silvex) [2C]	0.2000	0.1635	81.8	6.63	30	50 - 115
2,4-D	2.000	1.566	78.3	8.10	30	35 - 115
2,4-D [2C]	2.000	1.887	94.3	6.42	30	35 - 115
2,4-DB	2.000	1.304	65.2	6.34	30	45 - 130

LCS / LCS DUPLICATE RECOVERY
SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Water		
Batch:	9J01019	Laboratory ID:	9J01019-BSD1
Preparation:	EXT_8151	Initial/Final:	1000 mL / 10 mL

ANALYTE	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
2,4-DB [2C]	2.000	1.814	90.7	6.87	30	45 - 130
Dalapon	5.000	2.969	59.4	8.46	30	40 - 115
Dalapon [2C]	5.000	3.855	77.1	7.68	30	40 - 115
Dicamba	0.2000	0.1602	80.1	9.89	30	60 - 110
Dicamba [2C]	0.2000	0.1856	92.8	4.53	30	60 - 110
Dichloroprop	2.000	1.943	97.2	9.18	30	70 - 120
Dichloroprop [2C]	2.000	2.313	116	5.95	30	70 - 120
Dinoseb	1.000	0.6766	67.7	5.20	30	20 - 95
Dinoseb [2C]	1.000	0.8165	81.6	3.70	30	20 - 95
MCPA	200.0	154.1	77.0	10.3	30	60 - 145
MCPA [2C]	200.0	178.5	89.2	5.07	30	60 - 145
MCPP	200.0	153.1	76.5	15.0	30	25 - 135
MCPP [2C]	200.0	176.3	88.1	2.13	30	25 - 135

LCS / LCS DUPLICATE RECOVERY

SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO~~510_002~~ 064-001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO ~~510 (site9)~~ 064 (Site 21) 10/3/09
Matrix:	Solid		
Batch:	9J02016	Laboratory ID:	9J02016-BS1
Preparation:	EXT_8151	Initial/Final:	10 g / 10 mL

ANALYTE	SPIKE ADDED (ug/Kg wet)	LCS CONCENTRATION (ug/Kg wet)	LCS % REC.	QC LIMITS REC.
2,4,5-T	**20.00**	**28.21**	**141**	**45 - 135**
2,4,5-T [2C]	**20.00**	**28.92**	**145**	**45 - 135**
2,4,5-TP (Silvex)	20.00	23.75	119	45 - 125
2,4,5-TP (Silvex) [2C]	20.00	23.50	118	45 - 125
2,4-D	200.0	229.9	115	35 - 145
2,4-D [2C]	200.0	238.6	119	35 - 145
2,4-DB	200.0	193.7	96.9	50 - 155
2,4-DB [2C]	200.0	241.7	121	50 - 155
Dalapon	500.0	81.09	16.2	10 - 110
Dalapon [2C]	**500.0**	**125 U**	**0** *	**10 - 110**
Dicamba	20.00	18.33	91.7	55 - 110
Dicamba [2C]	**20.00**	**40.78**	**204**	**55 - 110**
Dichloroprop	**200.0**	**287.5**	**144**	**75 - 140**
Dichloroprop [2C]	**200.0**	**295.0**	**147**	**75 - 140**
Dinoseb	100.0	42.58	42.6	5 - 130
Dinoseb [2C]	100.0	42.83	42.8	5 - 130
MCPA	20000	22470	112	30 - 115
MCPA [2C]	20000	22030	110	30 - 115
MCPP	20000	22360	112	35 - 135
MCPP [2C]	20000	22630	113	35 - 135

* Rpt primary only 10/3/09

LCS / LCS DUPLICATE RECOVERY
SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Solid		
Batch:	9J06005	Laboratory ID:	9J06005-BS1
Preparation:	EXT_8151	Initial/Final:	10 g / 10 mL

ANALYTE	SPIKE ADDED (ug/Kg wet)	LCS CONCENTRATION (ug/Kg wet)	LCS % REC.	QC LIMITS REC.
2,4,5-T	20.00	27.10	135	45 - 135
2,4,5-T [2C]	20.00	26.86	134	45 - 135
2,4,5-TP (Silvex)	20.00	22.38	112	45 - 125
2,4,5-TP (Silvex) [2C]	20.00	23.91	120	45 - 125
2,4-D	200.0	234.8	117	35 - 145
2,4-D [2C]	200.0	222.6	111	35 - 145
2,4-DB	200.0	186.5	93.3	50 - 155
2,4-DB [2C]	200.0	207.4	104	50 - 155
Dalapon	500.0	111.1	22.2	10 - 110
Dalapon [2C]	500.0	88.11	17.6	10 - 110
Dicamba	20.00	19.79	99.0	55 - 110
Dicamba [2C]	**20.00**	**29.91**	**150**	**55 - 110**
Dichloroprop	**200.0**	**284.2**	**142**	**75 - 140**
Dichloroprop [2C]	200.0	268.1	134	75 - 140
Dinoseb	100.0	43.13	43.1	5 - 130
Dinoseb [2C]	100.0	43.25	43.3	5 - 130
MCPA	20000	22870	114	30 - 115
MCPA [2C]	20000	20450	102	30 - 115
MCPP	20000	22280	111	35 - 135
MCPP [2C]	20000	21330	107	35 - 135

LCS / LCS DUPLICATE RECOVERY

SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Solid		
Batch:	9J07016	Laboratory ID:	9J07016-BS1
Preparation:	EXT_8151	Initial/Final:	10 g / 10 mL

ANALYTE	SPIKE ADDED (ug/Kg wet)	LCS CONCENTRATION (ug/Kg wet)	LCS % REC.	QC LIMITS REC.
2,4,5-T	**20.00**	**29.32**	**147**	**45 - 135**
2,4,5-T [2C]	**20.00**	**39.16**	**196**	**45 - 135**
2,4,5-TP (Silvex)	20.00	22.04	110	45 - 125
2,4,5-TP (Silvex) [2C]	20.00	23.32	117	45 - 125
2,4-D	200.0	225.4	113	35 - 145
2,4-D [2C]	200.0	234.7	117	35 - 145
2,4-DB	200.0	193.5	96.7	50 - 155
2,4-DB [2C]	200.0	224.0	112	50 - 155
Dalapon	500.0	129.0	25.8	10 - 110
Dalapon [2C]	500.0	109.9	22.0	10 - 110
Dicamba	20.00	19.67	98.3	55 - 110
Dicamba [2C]	**20.00**	**27.62**	**138**	**55 - 110**
Dichloroprop	200.0	266.2	133	75 - 140
Dichloroprop [2C]	**200.0**	**330.4**	**165**	**75 - 140**
Dinoseb	100.0	37.00	37.0	5 - 130
Dinoseb [2C]	100.0	44.71	44.7	5 - 130
MCPA	20000	21020	105	30 - 115
MCPA [2C]	20000	21170	106	30 - 115
MCPP	20000	20380	102	35 - 135
MCPP [2C]	20000	22000	110	35 - 135

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW8151A

NTC21SB14-SO-0001

Laboratory: Empirical Laboratories, LLC

SDG: CTO064_001

Client: Tetra Tech NUS, Inc. (T010)

Project: Great Lakes CTO 064 (Site 21)

Matrix: Solid

Batch: 9J06005

% Solids: 81.84

Source Sample Name: **0910006-29**

ANALYTE	SPIKE ADDED (ug/Kg dry)	SAMPLE CONCENTRATION (ug/Kg dry)	MS CONCENTRATION (ug/Kg dry)	MS % REC.	Q	QC LIMITS REC.
2,4,5-T	24.44	ND	26.58	109		45 - 135
2,4,5-T [2C]	24.44	ND	23.96	98.0		45 - 135
2,4,5-TP (Silvex)	24.44	ND	17.93	73.4		45 - 125
2,4,5-TP (Silvex) [2C]	24.44	4.224	23.83	80.2		45 - 125
2,4-D	244.4	ND	238.3	97.5		35 - 145
2,4-D [2C]	244.4	ND	203.3	83.2		35 - 145
2,4-DB	244.4	ND	206.2	84.4		50 - 155
2,4-DB [2C]	244.4	ND	181.6	74.3		50 - 155
Dalapon	610.9	ND	114.8	18.8		10 - 110
Dalapon [2C]	610.9	ND	105.5	17.3		10 - 110
Dicamba	24.44	9.995	24.53	59.5		55 - 110
Dicamba [2C]	24.44	19.49	36.00	67.5		55 - 110
Dichloroprop	244.4	ND	295.3	121		75 - 140
Dichloroprop [2C]	244.4	ND	268.2	110		75 - 140
Dinoseb	122.2	17.13	49.85	26.8		5 - 130
Dinoseb [2C]	122.2	17.18	57.47	33.0		5 - 130
MCPA	24440	ND	25380	104		30 - 115
MCPA [2C]	24440	ND	24120	98.7		30 - 115
MCPP	24440	ND	21860	89.5		35 - 135
MCPP [2C]	24440	ND	23900	97.8		35 - 135

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW8151A

NTC21SB14-SO-0001

Laboratory: Empirical Laboratories, LLC

SDG: CTO064_001

Client: Tetra Tech NUS, Inc. (T010)

Project: Great Lakes CTO 064 (Site 21)

Matrix: Solid

Batch: 9J06005

% Solids: 81.84

Source Sample Name: **0910006-29**

ANALYTE	SPIKE ADDED (ug/Kg dry)	MSD CONCENTRATION (ug/Kg dry)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
2,4,5-T	24.44	31.75	130	17.7		30	45 - 135
2,4,5-T [2C]	24.44	23.81	97.4	0.627		30	45 - 135
2,4,5-TP (Silvex)	24.44	18.40	75.3	2.62		30	45 - 125
2,4,5-TP (Silvex) [2C]	24.44	24.37	82.5	2.25		30	45 - 125
2,4-D	244.4	244.0	99.8	2.38		30	35 - 145
2,4-D [2C]	244.4	211.1	86.4	3.78		30	35 - 145
2,4-DB	244.4	212.4	86.9	2.96		30	50 - 155
2,4-DB [2C]	244.4	190.0	77.7	4.48		30	50 - 155
Dalapon	610.9	120.4	19.7	4.80		30	10 - 110
Dalapon [2C]	610.9	106.7	17.5	1.18		30	10 - 110
Dicamba	24.44	25.02	61.5	1.98		30	55 - 110
Dicamba [2C]	24.44	37.42	73.3	3.87		30	55 - 110
Dichloroprop	244.4	296.3	121	0.369		30	75 - 140
Dichloroprop [2C]	244.4	277.3	113	3.33		30	75 - 140
Dinoseb	122.2	60.47	35.5	19.2		30	5 - 130
Dinoseb [2C]	122.2	65.69	39.7	13.4		30	5 - 130
MCPA	24440	25900	106	2.02		30	30 - 115
MCPA [2C]	24440	24210	99.0	0.345		30	30 - 115
MCPP	24440	22240	91.0	1.69		30	35 - 135
MCPP [2C]	24440	23790	97.3	0.462		30	35 - 135

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW8151A

NTC21SB02-SO-0204

Laboratory: Empirical Laboratories, LLC

SDG: CTO064_001

Client: Tetra Tech NUS, Inc. (T010)

Project: Great Lakes CTO 064 (Site 21)

Matrix: Solid

Batch: 9J07016

% Solids: 88.74

Source Sample Name: **0910006-43**

ANALYTE	SPIKE ADDED (ug/Kg dry)	SAMPLE CONCENTRATION (ug/Kg dry)	MS CONCENTRATION (ug/Kg dry)	MS % REC.	Q	QC LIMITS REC.
2,4,5-T	22.54	ND NC	27.05	120		45 - 135
2,4,5-T [2C]	22.54	17.25	16.90	-1.54	N	45 - 135
2,4,5-TP (Silvex)	22.54	ND NC	17.73	78.7		45 - 125
2,4,5-TP (Silvex) [2C]	22.54	3.136	20.11	75.3		45 - 125
2,4-D	225.4	ND	197.5	87.6		35 - 145
2,4-D [2C]	225.4	ND	177.7	78.8		35 - 145
2,4-DB	225.4	ND	163.8	72.7		50 - 155
2,4-DB [2C]	225.4	ND	153.0	67.9		50 - 155
Dalapon	563.5	ND	92.32	16.4		10 - 110
Dalapon [2C]	563.5	ND	91.43	16.2		10 - 110
Dicamba	22.54	6.888	19.39	55.5		55 - 110
Dicamba [2C]	22.54	17.10	32.22	67.1		55 - 110
Dichloroprop	225.4	ND	249.4	111		75 - 140
Dichloroprop [2C]	225.4	ND	254.5	113		75 - 140
Dinoseb	112.7	ND	33.17	29.4		5 - 130
Dinoseb [2C]	112.7	ND	42.31	37.5		5 - 130
MCPA	22540	ND	19890	88.2		30 - 115
MCPA [2C]	22540	2881	20810	79.5		30 - 115
MCPP	22540	ND	18430	81.8		35 - 135
MCPP [2C]	22540	ND	19490	86.5		35 - 135

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY
SW8151A

NTC21SB02-SO-0204

Laboratory: Empirical Laboratories, LLC
SDG: CTO064_001
Client: Tetra Tech NUS, Inc. (T010)
Project: Great Lakes CTO 064 (Site 21)
Matrix: Solid
Batch: 9J07016
% Solids: 88.74
Source Sample Name: 0910006-43

ANALYTE	SPIKE ADDED (ug/Kg dry)	MSD CONCENTRATION (ug/Kg dry)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
2,4,5-T	22.54	27.02 NC	120	0.132		30	45 - 135
2,4,5-T [2C]	22.54	19.90	11.8	16.3	N	30	45 - 135
2,4,5-TP (Silvex)	22.54	18.98	84.2	6.78		30	45 - 125
2,4,5-TP (Silvex) [2C]	22.54	19.68	73.4	2.13		30	45 - 125
2,4-D	225.4	203.5	90.3	2.98		30	35 - 145
2,4-D [2C]	225.4	198.9	88.3	11.3		30	35 - 145
2,4-DB	225.4	182.5	81.0	10.8		30	50 - 155
2,4-DB [2C]	225.4	176.8	78.4	14.4		30	50 - 155
Dalapon	563.5	99.86	17.7	7.85		30	10 - 110
Dalapon [2C]	563.5	103.1	18.3	12.0		30	10 - 110
Dicamba	22.54	21.97	66.9	12.5		30	55 - 110
Dicamba [2C]	22.54	34.33	76.5	6.35		30	55 - 110
Dichloroprop	225.4	258.8	115	3.66		30	75 - 140
Dichloroprop [2C]	225.4	283.9	126	10.9		30	75 - 140
Dinoseb	112.7	31.46	27.9	5.29		30	5 - 130
Dinoseb [2C]	112.7	46.80	41.5	10.1		30	5 - 130
MCPA	22540	20670	91.7	3.85		30	30 - 115
MCPA [2C]	22540	22530	87.2	7.94		30	30 - 115
MCPP	22540	19990	88.7	8.12		30	35 - 135
MCPP [2C]	22540	20620	91.5	5.65		30	35 - 135

ORGANIC CASE NARRATIVE – PEST/PCBs
Tetra Tech NUS, Inc./Great Lakes, IL CTO064
Project Manager: B. Cummings
SDG: CTO064_001
Work order: 0910006

PEST/PCB

Sampled	Received	Lab ID	Client ID
9/26/2009	10/1/2009	0910006-01	FD-092609-01
9/26/2009	10/1/2009	0910006-02	FD-092609-02
9/26/2009	10/1/2009	0910006-03	NTC21SB09-SO-0001
9/26/2009	10/1/2009	0910006-04	NTC21SB09-SO-0204
9/26/2009	10/1/2009	0910006-05	NTC21SB10-SO-0001
9/26/2009	10/1/2009	0910006-06	NTC21SB10-SO-0406
9/26/2009	10/1/2009	0910006-07	NTC21SB11-SO-0001
9/26/2009	10/1/2009	0910006-08	NTC21SB11-SO-0204
9/26/2009	10/1/2009	0910006-09	NTC21SB12-SO-0001
9/26/2009	10/1/2009	0910006-10	NTC21SB12-SO-0204
9/26/2009	10/1/2009	0910006-11	NTC21SB17-SO-0001
9/26/2009	10/1/2009	0910006-12	NTC21SB17-SO-0507
9/26/2009	10/1/2009	0910006-13	NTC21SB18-SO-0001
9/26/2009	10/1/2009	0910006-14	NTC21SB18-SO-0507
9/26/2009	10/1/2009	0910006-15	NTC21SB20-SO-0001
9/26/2009	10/1/2009	0910006-16	NTC21SB20-SO-0406
9/26/2009	10/1/2009	0910006-17	NTC21SB21-SO-0001
9/26/2009	10/1/2009	0910006-18	NTC21SB21-SO-0608
9/27/2009	10/1/2009	0910006-20	FD-092709-01
9/27/2009	10/1/2009	0910006-21	NTC21SB04-SO-0001
9/27/2009	10/1/2009	0910006-22	NTC21SB04-SO-0406
9/27/2009	10/1/2009	0910006-23	NTC21SB06-SO-0001
9/27/2009	10/1/2009	0910006-24	NTC21SB06-SO-0204
9/27/2009	10/1/2009	0910006-25	NTC21SB07-SO-0001
9/27/2009	10/1/2009	0910006-26	NTC21SB07-SO-0204
9/27/2009	10/1/2009	0910006-27	NTC21SB13-SO-0001
9/27/2009	10/1/2009	0910006-28	NTC21SB13-SO-0204
9/27/2009	9/30/2009	0910006-29	NTC21SB14-SO-0001
9/27/2009	10/1/2009	0910006-30	NTC21SB14-SO-0204
9/27/2009	10/1/2009	0910006-31	NTC21SB15-SO-0001
9/27/2009	10/1/2009	0910006-32	NTC21SB15-SO-0204
9/27/2009	10/1/2009	0910006-33	NTC21SB16-SO-0001
9/27/2009	10/1/2009	0910006-34	NTC21SB16-SO-0204
9/27/2009	10/1/2009	0910006-35	NTC21SB19-SO-0001
9/27/2009	10/1/2009	0910006-36	NTC21SB19-SO-0204
9/27/2009	10/1/2009	0910006-37	NTC21SB22-SO-0001
9/27/2009	10/1/2009	0910006-38	NTC21SB22-SO-0204
9/28/2009	10/1/2009	0910006-40	FD-092809-01
9/28/2009	10/1/2009	0910006-41	NTC21SB01-SO-0102
9/28/2009	10/1/2009	0910006-42	NTC21SB02-SO-0001
9/28/2009	9/30/2009	0910006-43	NTC21SB02-SO-0204
9/28/2009	10/1/2009	0910006-44	NTC21SB03-SO-0001
9/28/2009	10/1/2009	0910006-45	NTC21SB03-SO-0204
9/28/2009	10/1/2009	0910006-46	NTC21SB05-SO-0001
9/28/2009	10/1/2009	0910006-47	NTC21SB05-SO-0204
9/28/2009	10/1/2009	0910006-48	NTC21SB08-SO-0001
9/28/2009	10/1/2009	0910006-49	NTC21SB08-SO-0204
9/29/2009	9/30/2009	0910006-51	RB-092909-01
9/29/2009	9/30/2009	0910006-52	RB-092909-02
9/29/2009	9/30/2009	0910006-53	SB-092909-01

Method: The samples were prepared and analyzed by USEPA SW-846 Methods 3546 or 3510C and 8081A/8082 (microwave or separatory funnel extraction followed by capillary column GC/ECD) for soils or QC waters upon receipt to the laboratory in satisfactory condition.

Comments: The analyses for these samples were satisfactorily completed within sample holding times and met the corresponding specifications with the following exceptions:

- Performance Evaluation Mix: All method criteria were met.
- Initial Calibration Criteria: All method criteria were met. The multi-component analyte toxaphene was calibrated using a single point at the low point of the calibration curve. No further calibration was required

as it was not detected in the sample. Aroclors 1016/1260 were fully calibrated. No other aroclor standards were required as no other aroclors were detected.

- Continuing Calibration Criteria: Most analytes were within 20% difference or exceeded with a positive bias and were non-detect in the associated samples with the exception of some PCB-1260 and 4,4'-DDD results which are qualified with an "X" to indicate a potential positive bias. However, due to the sample matrix, some analytes exceeded with a negative bias in some of the CCVs. In most cases, these analytes were non-detect on a column that was within limits or reported from a column that was within limits. In cases where results are associated with a negative bias, these results are qualified with a "Y" to indicate the potential for a negative bias. Where an analyte is not confirmed and is associated to a low CCV, the non-detect result is qualified with a "Z" to indicate potential non-confirmation due to the low bias on the confirmation column.
- Blank Results: No target analytes were detected in the method blanks.
- Surrogate Recoveries: Recoveries of TCMX were below the DOD limit of 70% in some of the samples but were within EMLB limits of 30%. Recoveries of DCB were below the DOD limit of 60% in many samples but were within EMLB limits of 35%.
- LCS(/LCSD) Results: All recoveries (and relative percent differences) were within limits.
- NTC21SB14-SO-0001MS/MSD results: Of 40 pesticide recoveries, 24 were outside acceptance limits while all relative percent differences were within limits. All PCB recoveries and relative percent differences were within limits. See form 3s.
- NTC21SB02-SO-0204MS/MSD results: Of 40 pesticide recoveries, 28 recoveries were outside limits while all relative percent differences were within limits. All PCB recoveries and relative percent differences were within limits. See form 3s.
- Dilutions: All samples were analyzed without dilution. Some samples were also analyzed at dilutions to bring the target compound into range of the initial calibration.
- Note: Samples containing PCB may have confirmed pesticide results due to the presence of PCB.
- Manual integrations: Quantitation signals were manually integrated in order to accurately reflect the peak areas based on the technical judgment of the analyst. A listing of the manual integrations performed and reason for the integration is included with the logs. Before and after "pictures" are available where manual integrations were performed.

I certify that, to the best of my knowledge and based upon my inquiry of those individuals immediately responsible for obtaining the information, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in the case narrative, as verified by the following signature.

Marcia K. McGinnity
Data Quality Manager

ANALYTICAL REPORT TERMS AND QUALIFIERS (ORGANIC)

MDL: The method detection limit (MDL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The MDL is determined from analysis of a sample containing the analyte in a given matrix.

EQL: The estimated quantitation limit (EQL) is defined as the estimated concentration above which quantitative results can be obtained with a specific degree of confidence. Empirical Laboratories defines the EQL to be at or near the lowest standard of the calibration curve.

U: The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte quantitated below the MDL.

B: The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the correct sample result might be less than the reported result and, perhaps, zero.

D: When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".

E: The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound.

J: The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The data pass the identification criteria indicating that the compound is present, but the calculated result is less than the EQL.

P: The associated numerical value is an estimated quantity. There is greater than a 40% difference between the two GC columns for the detected concentrations. The higher of the two values is reported.

M: The presence of an "M" to the right of an analytical result indicates that the sample matrix interfered with the quantitation of the analyte. In GC and HPLC, results are reported from the column with the lower concentration.

I: The presence of an "I" to the right of an analytical result that the presence of a qualitative interference could have caused a false positive or over estimation of the analyte. In GC and HPLC, results are reported from the column with the lower concentration.

FORM 8
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA25197

Column: ZB MR-1 ID: 0.32 (mm) Cont. Calib. Date(s): 09/29/09

Instrument ID: ECD4

THE ANALYTICAL SEQUENCE OF PERFORMANCE BLANKS, AND SAMPLES GIVEN BELOW: PCB Cal.

	SURROGATE RT FROM CONTINUING CALIBRATION					
	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	RT #	RT #
01	SEQ-CAL1	SEQ-CAL1	09/29/09	2042		
02	SEQ-CAL2	SEQ-CAL2	09/29/09	2100		
03	SEQ-CAL3	SEQ-CAL3	09/29/09	2118		
04	SEQ-CAL4	SEQ-CAL4	09/29/09	2136		
05	SEQ-CAL5	SEQ-CAL5	09/29/09	2155		
06	SEQ-CAL6	SEQ-CAL6	09/29/09	2213		
07	SEQ-CAL7	SEQ-CAL7	09/29/09	2231		
08	SEQ-ICV1	SEQ-ICV1	09/29/09	2249		
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QC LIMITS

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA25197

Instrument ID: ECD4 Calibration Date(s): 09/29/09 09/29/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 2042 2231

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
PCB-1016	2ORDR	0.00000000	7.486e-004	7.797e-011	0.999
(2)	2ORDR	0.00000000	2.163e-003	4.107e-010	1.000
(3)	2ORDR	0.00000000	1.452e-003	2.781e-010	0.999
(4)	2ORDR	0.00000000	1.497e-003	2.693e-010	1.000
(5)	2ORDR	0.00000000	1.586e-003	2.212e-010	0.999
PCB-1260	AVRG		2573.62513		8.1
(2)	AVRG		1224.69641		14.0
(3)	AVRG		1123.75090		12.5
(4)	AVRG		1236.02730		11.8
(5)	AVRG		660.677010		10.4

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA25197

Instrument ID: ECD4 Calibration Date(s): 09/29/09 09/29/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 2042 2231

LAB FILE ID: RT1: 005F0501 RT2: 006F0601 RT3: 007F0701
RT4: 008F0801 RT5: 009F0901

COMPOUND	RT1	RT2	RT3	RT4	RT5
PCB-1016	5.486	5.480	5.478	5.478	5.478
(2)	4.696	4.690	4.690	4.690	4.688
(3)	5.014	5.007	5.007	5.007	5.005
(4)	5.193	5.187	5.187	5.187	5.185
(5)	5.644	5.635	5.635	5.637	5.633
PCB-1260	8.623	8.612	8.613	8.613	8.613
(2)	7.224	7.215	7.213	7.215	7.217
(3)	7.969	7.960	7.958	7.958	7.960
(4)	8.229	8.220	8.218	8.220	8.220
(5)	9.691	9.680	9.682	9.680	9.682

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA25197

Instrument ID: ECD4 Calibration Date(s): 09/29/09 09/29/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 2042 2231

LAB FILE ID: RT6: 010F1001 RT7: 011F1101

COMPOUND	RT6	RT7	MEAN RT	RT WINDOW FROM	RT WINDOW TO
PCB-1016	5.480	5.478	5.480	5.450	5.510
(2)	4.690	4.690	4.691	4.660	4.720
(3)	5.006	5.007	5.008	4.977	5.037
(4)	5.186	5.185	5.187	5.157	5.217
(5)	5.635	5.635	5.636	5.605	5.665
PCB-1260	8.615	8.615	8.615	8.582	8.642
(2)	7.220	7.222	7.218	7.185	7.245
(3)	7.961	7.963	7.962	7.930	7.990
(4)	8.221	8.222	8.222	8.190	8.250
(5)	9.681	9.681	9.683	9.650	9.710

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA25197

Instrument ID: ECD4 Calibration Date(s): 09/29/09 09/29/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 2042 2231

LAB FILE ID: RF200: 005F0501 RF100: 006F0601 RF50: 007F0701
RF25: 008F0801 RF10: 009F0901

COMPOUND	RF200	RF100	RF50	RF25	RF10
PCB-1016	1047.209	1244.710	1155.687	1191.052	1494.830
(2)	390.004	434.147	424.820	433.744	577.570
(3)	545.674	631.118	604.825	642.196	824.970
(4)	537.723	615.697	596.833	620.938	796.950
(5)	531.011	608.366	573.912	553.030	762.500
PCB-1260	2309.702	2695.207	2436.809	2328.118	2777.480
(2)	1019.903	1189.367	1107.519	1065.496	1403.810
(3)	942.558	1128.203	1022.493	1001.432	1278.150
(4)	1037.840	1244.910	1126.855	1115.616	1385.250
(5)	573.524	666.314	621.411	587.730	747.940

10/3/09

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA25197

Instrument ID: ECD4 Calibration Date(s): 09/29/09 09/29/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 2042 2231

LAB FILE ID: RF5: 010F1001 RF1: 011F1101

COMPOUND	RF5	RF1
PCB-1016	1538.740	1484.240
(2)	630.420	612.400
(3)	877.020	853.840
(4)	847.160	790.560
(5)	792.000	680.880
PCB-1260	2789.900	2678.160
(2)	1445.860	1340.920
(3)	1299.140	1194.280
(4)	1415.720	1326.000
(5)	727.100	700.720

FORM VI PESTA

FORM 8
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA25197

Column: ZB MR-2 ID: 0.32 (mm) Cont. Calib. Date(s): 09/29/09

Instrument ID: ECD4

THE ANALYTICAL SEQUENCE OF PERFORMANCE BLANKS, AND SAMPLES GIVEN BELOW:

PCB Cal.

	SURROGATE RT FROM CONTINUING CALIBRATION					
	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	RT #	RT #
01	SEQ-CAL1	SEQ-CAL1	09/29/09	2042		
02	SEQ-CAL2	SEQ-CAL2	09/29/09	2100		
03	SEQ-CAL3	SEQ-CAL3	09/29/09	2118		
04	SEQ-CAL4	SEQ-CAL4	09/29/09	2136		
05	SEQ-CAL5	SEQ-CAL5	09/29/09	2155		
06	SEQ-CAL6	SEQ-CAL6	09/29/09	2213		
07	SEQ-CAL7	SEQ-CAL7	09/29/09	2231		
08	SEQ-ICV1	SEQ-ICV1	09/29/09	2249		
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QC LIMITS

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA25197

Instrument ID: ECD4 Calibration Date(s): 09/29/09 09/29/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 2042 2231

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
PCB-1016 [2C]	2ORDR	0.00000000	2.735e-004	1.496e-011	1.000
(2)	2ORDR	0.00000000	8.306e-004	1.322e-010	1.000
(3)	2ORDR	0.00000000	4.87e-004	6.223e-011	1.000
(4)	2ORDR	0.00000000	4.809e-004	5.986e-011	0.999
(5)	2ORDR	0.00000000	5.21e-004	7.228e-011	1.000
PCB-1260 [2C]	AVRG		8032.00531		12.8
(2)	AVRG		4392.29610		12.7
(3)	AVRG		4667.04397		9.9
(4)	AVRG		4163.74007		19.8
(5)	AVRG		4028.58142		12.9

Avg. 13.6%

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA25197

Instrument ID: ECD4 Calibration Date(s): 09/29/09 09/29/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 2042 2231

LAB FILE ID: RF5: 010R1001 RF1: 011R1101

COMPOUND	RF5	RF1
PCB-1016 [2C]	3678.720	3645.680
(2)	1446.980	1438.320
(3)	2291.800	2232.480
(4)	2107.880	2132.280
(5)	2094.780	2102.520
PCB-1260 [2C]	08931.980	8879.960
(2)	4949.000	4841.200
(3)	5025.780	4900.600
(4)	5046.860	4937.360
(5)	4583.920	4416.720

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA25197

Instrument ID: ECD4 Calibration Date(s): 09/29/09 09/29/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 2042 2231

LAB FILE ID: RF200: 005R0501 RF100: 006R0601 RF50: 007R0701
RF25: 008R0801 RF10: 009R0901

COMPOUND	RF200	RF100	RF50	RF25	RF10
PCB-1016 [2C]	2674.684	3188.725	3115.773	62961.200	3925.430
(2)	889.321	1043.653	1042.529	22197.240	1448.070
(3)	1414.900	1674.995	1770.319	36034.880	2230.170
(4)	1435.577	1761.914	1703.919	34711.480	2146.450
(5)	1316.656	1608.709	1580.947	32237.960	2054.010
PCB-1260 [2C]	6599.601	7472.634	7325.227	147426.64	8982.630
(2)	3665.780	4075.933	3960.364	83654.160	4861.500
(3)	3889.145	4557.887	4482.592	90214.400	5146.260
(4)	3174.464	3538.338	3576.388	73775.960	4709.030
(5)	3360.453	3692.946	3653.809	73239.120	4463.640

BM 10/09

WL 10/3/09

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA25197

Instrument ID: ECD4 Calibration Date(s): 09/29/09 09/29/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 2042 2231

LAB FILE ID: RT1: 005R0501 RT2: 006R0601 RT3: 007R0701
RT4: 008R0801 RT5: 009R0901

COMPOUND	RT1	RT2	RT3	RT4	RT5
PCB-1016 [2C]	4.491	4.494	4.494	4.495	4.495
(2)	3.880	3.882	3.882	3.884	3.884
(3)	4.126	4.129	4.129	4.129	4.129
(4)	4.630	4.631	4.632	4.632	4.632
(5)	4.686	4.687	4.689	4.689	4.689
PCB-1260 [2C]	7.076	7.074	7.077	7.079	7.080
(2)	6.108	6.109	6.110	6.112	6.117
(3)	6.441	6.442	6.444	6.449	6.450
(4)	6.503	6.502	6.505	6.507	6.509
(5)	6.773	6.774	6.775	6.777	6.780

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA25197

Instrument ID: ECD4 Calibration Date(s): 09/29/09 09/29/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 2042 2231

LAB FILE ID: RT6: 010R1001 RT7: 011R1101

COMPOUND	RT6	RT7	MEAN RT	RT WINDOW FROM	RT WINDOW TO
PCB-1016 [2C]	4.495	4.495	4.494	4.464	4.524
(2)	3.883	3.883	3.882	3.852	3.912
(3)	4.128	4.128	4.128	4.099	4.159
(4)	4.632	4.632	4.631	4.601	4.661
(5)	4.688	4.688	4.688	4.657	4.717
PCB-1260 [2C]	7.085	7.087	7.080	7.044	7.104
(2)	6.122	6.123	6.114	6.079	6.139
(3)	6.455	6.457	6.448	6.412	6.472
(4)	6.512	6.513	6.507	6.472	6.532
(5)	6.783	6.783	6.778	6.744	6.804

FORM VI PESTA

FORM 8
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA48717

Column: ZB MR-1 ID: 0.32 (mm) Cont. Calib. Date(s): 10/05/09

Instrument ID: ECD4

PEST Cal

THE ANALYTICAL SEQUENCE OF PERFORMANCE BLANKS, AND SAMPLES GIVEN BELOW:

SURROGATE RT FROM CONTINUING CALIBRATION
S1 : 4.65 S2 : 10.75

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #
01	SEQ-CAL1	SEQ-CAL1	10/05/09	2027	4.65	10.75
02	SEQ-CAL2	SEQ-CAL2	10/05/09	2045	4.65	10.75
03	SEQ-CAL3	SEQ-CAL3	10/05/09	2103	4.65	10.75
04	SEQ-CAL4	SEQ-CAL4	10/05/09	2122	4.65	10.75
05	SEQ-CAL5	SEQ-CAL5	10/05/09	2140	4.65	10.75
06	SEQ-CAL6	SEQ-CAL6	10/05/09	2158	4.65	10.75
07	SEQ-CAL7	SEQ-CAL7	10/05/09	2216	4.65	10.75
08	SEQ-ICV1	SEQ-ICV1	10/05/09	2235		
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	QC LIMITS
S1 = TCMX	(+/- 0.03 MINUTES)
S2 = DCB	(+/- 0.03 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA48717

Instrument ID: ECD4 Calibration Date(s): 10/05/09 10/05/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 2027 2216

LAB FILE ID: RF5: 010F1001 RF1: 011F1101

COMPOUND	RF5	RF1	CURVE	COEFFICENT A1	%RSD OR R^2
Aldrin	36227.400	43209.000	AVRG	35701.6393	11.4
Alpha-BHC	54562.400	61955.000	AVRG	53469.9129	9.1
Alpha-Chlordane	30800.000	38206.000	AVRG	30458.8821	13.0
Beta-BHC	21157.600	26875.000	AVRG	20331.8329	16.9 ok
4,4'-DDD	23699.800	28174.000	AVRG	23936.9414	9.4
4,4'-DDE	27660.200	33174.000	AVRG	28141.8507	9.7
4,4'-DDT	20621.600	22941.000	AVRG	22034.8900	5.3
Delta-BHC	41134.200	51497.000	AVRG	41879.3686	11.7
Dieldrin	30244.800	35591.000	AVRG	30499.2529	9.2
Endosulfan I	29124.200	35156.000	AVRG	28765.6336	11.9
Endosulfan II	26066.600	30723.000	AVRG	25915.3543	10.0
Endosulfan Sulfate	22177.000	26266.000	AVRG	22416.3643	9.1
Endrin	17882.400	22724.000	AVRG	18871.4779	10.9
Endrin Aldehyde	24352.200	30967.000	AVRG	24117.2736	13.6
Endrin Ketone	30945.000	36014.000	AVRG	31079.7814	8.5
Gamma-BHC	46454.200	54128.000	AVRG	45797.8529	10.1
Gamma-Chlordane	31326.200	38337.000	AVRG	31088.0764	12.1
Heptachlor	37396.400	45197.000	AVRG	36650.4236	12.4
Heptachlor Epoxide	32765.600	40419.000	AVRG	31927.7436	14.1
Methoxychlor	12007.200	13684.000	AVRG	11821.1457	9.0
TCMX	42818.200	51635.000	AVRG	40528.4750	14.6
DCB	22819.000	28057.000	AVRG	21737.3229	14.6

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA48717

Instrument ID: ECD4 Calibration Date(s): 10/05/09 10/05/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 2027 2216

LAB FILE ID: RF200: 005F0501 RF100: 006F0601 RF50: 007F0701
RF25: 008F0801 RF10: 009F0901

COMPOUND	RF200	RF100	RF50	RF25	RF10
Aldrin	30456.055	32504.220	34214.420	37497.880	35802.500
Alpha-BHC	46836.850	49287.340	52045.560	55465.040	54137.200
Alpha-Chlordane	25926.695	27710.740	28508.360	31992.080	30068.300
Beta-BHC	16456.600	17523.170	18434.600	21423.160	20452.700
4,4'-DDD	21463.470	22788.540	22815.320	25582.760	23034.700
4,4'-DDE	24902.675	26628.940	27004.960	30225.280	27396.900
4,4'-DDT	21644.250	22522.460	21599.680	23925.040	20990.200
Delta-BHC	36517.530	38519.770	39790.980	44520.800	41175.300
Dieldrin	26981.270	28746.120	29396.160	32650.120	29885.300
Endosulfan I	24543.555	26356.220	27257.640	30460.320	28461.500
Endosulfan II	22803.480	24210.200	24547.080	27616.720	25440.400
Endosulfan Sulfate	20222.110	21408.220	21238.000	23920.520	21682.700
Endrin	16342.475	18400.710	18105.900	20302.560	18342.300
Endrin Aldehyde	21139.215	21957.380	22354.480	24525.640	23525.000
Endrin Ketone	28379.770	29600.100	29417.280	33114.920	30087.400
Gamma-BHC	39830.660	42061.290	44066.500	48106.120	45938.200
Gamma-Chlordane	26630.925	28587.110	29304.620	32797.680	30633.000
Heptachlor	31093.625	33136.140	34604.560	38221.240	36904.000
Heptachlor Epoxide	26441.275	28463.110	29894.140	33655.480	31855.600
Methoxychlor	10501.160	11237.260	11061.920	12574.880	11681.600
TCMX	33200.415	35687.810	38629.980	40399.920	41328.000
DCB	18655.110	19814.770	19346.420	22144.760	21324.200

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FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA48717

Instrument ID: ECD4 Calibration Date(s): 10/05/09 10/05/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 2027 2216

LAB FILE ID: RT1: 005F0501 RT2: 006F0601 RT3: 007F0701
RT4: 008F0801 RT5: 009F0901

COMPOUND	RT1	RT2	RT3	RT4	RT5
Aldrin	6.311	6.310	6.311	6.310	6.310
Alpha-BHC	5.066	5.065	5.066	5.065	5.067
Alpha-Chlordane	7.148	7.147	7.149	7.149	7.148
Beta-BHC	5.581	5.580	5.581	5.580	5.580
4,4'-DDD	7.966	7.965	7.966	7.967	7.967
4,4'-DDE	7.353	7.354	7.356	7.354	7.355
4,4'-DDT	8.341	8.340	8.341	8.340	8.340
Delta-BHC	5.826	5.825	5.826	5.825	5.825
Dieldrin	7.519	7.519	7.519	7.520	7.520
Endosulfan I	7.204	7.204	7.204	7.205	7.205
Endosulfan II	8.056	8.055	8.056	8.055	8.055
Endosulfan Sulfate	8.498	8.497	8.499	8.498	8.498
Endrin	7.786	7.785	7.786	7.787	7.787
Endrin Aldehyde	8.213	8.212	8.212	8.213	8.213
Endrin Ketone	9.084	9.084	9.084	9.085	9.083
Gamma-BHC	5.381	5.380	5.381	5.380	5.380
Gamma-Chlordane	7.061	7.060	7.061	7.060	7.062
Heptachlor	5.958	5.957	5.957	5.957	5.957
Heptachlor Epoxide	6.773	6.774	6.774	6.774	6.773
Methoxychlor	8.938	8.939	8.939	8.939	8.938
TCMX	4.648	4.645	4.647	4.647	4.647
DCB	10.749	10.750	10.749	10.749	10.750

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA48717

Instrument ID: ECD4 Calibration Date(s): 10/05/09 10/05/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 2027 2216

LAB FILE ID: RT6: 010F1001 RT7: 011F1101

COMPOUND	RT6	RT7	MEAN RT	RT WINDOW FROM	RT WINDOW TO
Aldrin	6.308	6.308	6.310	6.280	6.340
Alpha-BHC	5.065	5.065	5.066	5.035	5.095
Alpha-Chlordane	7.146	7.145	7.147	7.117	7.177
Beta-BHC	5.578	5.580	5.580	5.550	5.610
4,4'-DDD	7.966	7.966	7.966	7.935	7.995
4,4'-DDE	7.355	7.355	7.354	7.324	7.384
4,4'-DDT	8.340	8.340	8.340	8.310	8.370
Delta-BHC	5.825	5.825	5.825	5.795	5.855
Dieldrin	7.518	7.518	7.519	7.489	7.549
Endosulfan I	7.203	7.201	7.204	7.174	7.234
Endosulfan II	8.055	8.055	8.055	8.025	8.085
Endosulfan Sulfate	8.496	8.498	8.498	8.467	8.527
Endrin	7.785	7.785	7.786	7.755	7.815
Endrin Aldehyde	8.211	8.211	8.212	8.182	8.242
Endrin Ketone	9.083	9.081	9.084	9.054	9.114
Gamma-BHC	5.378	5.380	5.380	5.350	5.410
Gamma-Chlordane	7.060	7.060	7.061	7.030	7.090
Heptachlor	5.956	5.955	5.957	5.927	5.987
Heptachlor Epoxide	6.771	6.773	6.773	6.744	6.804
Methoxychlor	8.938	8.938	8.938	8.909	8.969
TCMX	4.646	4.646	4.647	4.615	4.675
DCB	10.748	10.748	10.749	10.720	10.780

FORM VI PESTA

FORM 8
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA48717

Column: ZB MR-2 ID: 0.32 (mm) Cont. Calib. Date(s): 10/05/09

Instrument ID: ECD4

THE ANALYTICAL SEQUENCE OF PERFORMANCE BLANKS, AND SAMPLES GIVEN BELOW:

PEST Cal

SURROGATE RT FROM CONTINUING CALIBRATION
S1 : 3.75 S2 : 8.98

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #
01	SEQ-CAL1	SEQ-CAL1	10/05/09	2027	3.75	8.98
02	SEQ-CAL2	SEQ-CAL2	10/05/09	2045	3.75	8.98
03	SEQ-CAL3	SEQ-CAL3	10/05/09	2103	3.75	8.98
04	SEQ-CAL4	SEQ-CAL4	10/05/09	2122	3.75	8.98
05	SEQ-CAL5	SEQ-CAL5	10/05/09	2140	3.75	8.98
06	SEQ-CAL6	SEQ-CAL6	10/05/09	2158	3.75	8.98
07	SEQ-CAL7	SEQ-CAL7	10/05/09	2216	3.75	8.98
08	SEQ-ICV1	SEQ-ICV1	10/05/09	2235		
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	QC LIMITS
S1 = TCMX [2C]	(+/- 0.03 MINUTES)
S2 = DCB [2C]	(+/- 0.03 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA48717

Instrument ID: ECD4 Calibration Date(s): 10/05/09 10/05/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 2027 2216

LAB FILE ID: RF5: 010R1001 RF1: 011R1101

COMPOUND	RF5	RF1	CURVE	COEFFICENT A1	%RSD OR R^2
Aldrin [2C]	127314.80	145217.00	AVRG	118472.786	14.6
Alpha-BHC [2C]	144611.20	164747.00	AVRG	139985.095	9.9
Alpha-Chlordane [2C]	117337.20	136094.00	AVRG	110665.869	14.4
Beta-BHC [2C]	58696.000	79199.000	AVRG	57659.4471	18.4
4,4'-DDD [2C]	94473.600	99975.000	AVRG	90699.1150	9.5
4,4'-DDE [2C]	107806.60	120846.00	AVRG	104220.530	11.4
4,4'-DDT [2C]	84636.800	88273.000	AVRG	84021.3207	7.9
Delta-BHC [2C]	123438.20	139194.00	AVRG	121713.407	9.2
Dieldrin [2C]	125256.40	140343.00	AVRG	117464.541	13.7
Endosulfan I [2C]	115363.80	131048.00	AVRG	106190.374	16.0
Endosulfan II [2C]	106615.40	118587.00	AVRG	99023.6786	13.9
Endosulfan Sulfate [2C]	89007.600	100025.00	AVRG	85557.2136	11.6
Endrin [2C]	75744.000	93765.000	AVRG	75217.1221	15.3
Endrin Aldehyde [2C]	105396.80	124878.00	AVRG	96820.8071	17.0
Endrin Ketone [2C]	123892.80	142969.00	AVRG	115219.384	15.5
Gamma-BHC [2C]	128186.00	146903.00	AVRG	124513.202	10.4
Gamma-Chlordane [2C]	117690.80	135054.00	AVRG	112645.210	12.7
Heptachlor [2C]	123698.60	143651.00	AVRG	114810.764	15.6
Heptachlor Epoxide [2C]	117739.80	137821.00	AVRG	108800.427	16.9
Methoxychlor [2C]	46925.600	51419.000	AVRG	44204.7371	12.8
TCMX [2C]	99606.000	117273.00	AVRG	93297.9171	14.2
DCB [2C]	84672.200	95852.000	AVRG	80716.0421	12.1

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA48717

Instrument ID: ECD4 Calibration Date(s): 10/05/09 10/05/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 2027 2216

LAB FILE ID: RF200: 005R0501 RF100: 006R0601 RF50: 007R0701
RF25: 008R0801 RF10: 009R0901

COMPOUND	RF200	RF100	RF50	RF25	RF10
Aldrin [2C]	94253.825	101956.46	110709.28	125631.24	124226.90
Alpha-BHC [2C]	122532.87	127320.00	134347.34	143622.96	142714.30
Alpha-Chlordane [2C]	89383.305	94666.840	104058.94	118403.40	114717.40
Beta-BHC [2C]	46534.080	49666.830	52911.840	59596.080	57012.300
4,4'-DDD [2C]	76554.865	83344.760	89123.300	100133.48	91288.800
4,4'-DDE [2C]	85909.270	93992.020	100164.02	113616.20	107209.60
4,4'-DDT [2C]	74591.515	79337.410	81012.640	95238.880	85059.000
Delta-BHC [2C]	105999.05	112335.58	116742.06	131090.36	123194.60
Dieldrin [2C]	93394.125	102099.32	111370.38	126983.76	122804.80
Endosulfan I [2C]	81882.500	89433.040	98822.460	114447.92	112334.90
Endosulfan II [2C]	78771.930	85727.840	94445.380	107815.60	101202.60
Endosulfan Sulfate [2C]	70856.055	76445.540	82897.680	93329.520	86339.100
Endrin [2C]	57713.195	66901.920	71739.840	82341.400	78314.500
Endrin Aldehyde [2C]	76115.400	80545.110	90018.580	100959.76	99832.000
Endrin Ketone [2C]	90682.565	98158.440	106727.26	124204.92	119900.70
Gamma-BHC [2C]	107702.57	113047.79	118739.68	129918.88	127094.50
Gamma-Chlordane [2C]	92346.270	99215.300	106792.70	120822.60	116594.80
Heptachlor [2C]	90307.580	98040.290	106651.26	120384.12	120942.50
Heptachlor Epoxide [2C]	83555.900	91228.150	100632.36	116018.48	114607.30
Methoxychlor [2C]	35230.570	38861.610	42513.840	48259.840	46222.700
TCMX [2C]	76679.460	81937.500	88679.820	92979.440	95930.200
DCB [2C]	66459.105	73542.690	75393.600	87369.400	81723.300

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FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA48717

Instrument ID: ECD4 Calibration Date(s): 10/05/09 10/05/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 2027 2216

LAB FILE ID: RT1: 005R0501 RT2: 006R0601 RT3: 007R0701
RT4: 008R0801 RT5: 009R0901

COMPOUND	RT1	RT2	RT3	RT4	RT5
Aldrin [2C]	4.944	4.944	4.944	4.944	4.944
Alpha-BHC [2C]	4.136	4.134	4.134	4.134	4.134
Alpha-Chlordane [2C]	5.691	5.692	5.691	5.690	5.690
Beta-BHC [2C]	4.644	4.646	4.644	4.644	4.645
4,4'-DDD [2C]	6.451	6.451	6.451	6.452	6.454
4,4'-DDE [2C]	5.881	5.881	5.881	5.880	5.882
4,4'-DDT [2C]	6.728	6.729	6.727	6.729	6.729
Delta-BHC [2C]	4.836	4.836	4.834	4.834	4.834
Dieldrin [2C]	5.998	5.999	5.999	5.999	5.999
Endosulfan I [2C]	5.738	5.737	5.737	5.737	5.737
Endosulfan II [2C]	6.586	6.586	6.586	6.585	6.587
Endosulfan Sulfate [2C]	7.031	7.032	7.032	7.032	7.032
Endrin [2C]	6.271	6.271	6.269	6.270	6.270
Endrin Aldehyde [2C]	6.773	6.772	6.772	6.774	6.774
Endrin Ketone [2C]	7.584	7.584	7.584	7.584	7.584
Gamma-BHC [2C]	4.394	4.394	4.394	4.394	4.394
Gamma-Chlordane [2C]	5.636	5.636	5.636	5.635	5.635
Heptachlor [2C]	4.701	4.701	4.701	4.700	4.700
Heptachlor Epoxide [2C]	5.383	5.382	5.382	5.382	5.382
Methoxychlor [2C]	7.366	7.367	7.367	7.367	7.369
TCMX [2C]	3.749	3.749	3.749	3.749	3.749
DCB [2C]	8.981	8.981	8.981	8.980	8.982

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA48717

Instrument ID: ECD4 Calibration Date(s): 10/05/09 10/05/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 2027 2216

LAB FILE ID: RT6: 010R1001 RT7: 011R1101

COMPOUND	RT6	RT7	MEAN RT	RT WINDOW FROM	RT WINDOW TO
Aldrin [2C]	4.943	4.942	4.944	4.914	4.974
Alpha-BHC [2C]	4.133	4.133	4.134	4.104	4.164
Alpha-Chlordane [2C]	5.690	5.690	5.691	5.662	5.722
Beta-BHC [2C]	4.643	4.645	4.644	4.616	4.676
4,4'-DDD [2C]	6.452	6.452	6.452	6.421	6.481
4,4'-DDE [2C]	5.882	5.882	5.881	5.851	5.911
4,4'-DDT [2C]	6.728	6.727	6.728	6.699	6.759
Delta-BHC [2C]	4.833	4.833	4.834	4.806	4.866
Dieldrin [2C]	5.998	5.997	5.998	5.969	6.029
Endosulfan I [2C]	5.737	5.735	5.737	5.707	5.767
Endosulfan II [2C]	6.587	6.587	6.586	6.556	6.616
Endosulfan Sulfate [2C]	7.032	7.030	7.032	7.002	7.062
Endrin [2C]	6.268	6.268	6.270	6.241	6.301
Endrin Aldehyde [2C]	6.773	6.772	6.773	6.742	6.802
Endrin Ketone [2C]	7.583	7.582	7.583	7.554	7.614
Gamma-BHC [2C]	4.392	4.393	4.394	4.364	4.424
Gamma-Chlordane [2C]	5.635	5.635	5.635	5.606	5.666
Heptachlor [2C]	4.700	4.700	4.700	4.671	4.731
Heptachlor Epoxide [2C]	5.382	5.382	5.382	5.352	5.412
Methoxychlor [2C]	7.368	7.367	7.367	7.337	7.397
TCMX [2C]	3.748	3.748	3.749	3.719	3.779
DCB [2C]	8.978	8.978	8.980	8.951	9.011

FORM VI PESTA

FORM 8
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA48717

Column: ZB MR-1 ID: 0.32 (mm) Cont. Calib. Date(s): 10/05/09

Instrument ID: ECD4

THE ANALYTICAL SEQUENCE OF PERFORMANCE BLANKS, AND SAMPLES GIVEN BELOW: TOX Chlordane

	SURROGATE RT FROM CONTINUING CALIBRATION					
	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	RT #	RT #
01	SEQ-PEM1	SEQ-PEM1	10/05/09	1931		
02	SEQ-CAL8	SEQ-CAL8	10/05/09	2253		
03	SEQ-CAL9	SEQ-CAL9	10/05/09	2311		
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QC LIMITS

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA48717

Instrument ID: ECD4 Calibration Date(s): ~~08/10/09~~ 10/05/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): ~~1721~~ 2253

RF5: 013F1301

← single pt →

COMPOUND	RF5	CURVE	COEFFICENT A1	%RSD OR R^2
Toxaphene	1166.180	AVRG	1166.18000	0.0
(2)	530.680	AVRG	530.680000	0.0
(3)	735.640	AVRG	735.640000	0.0
(4)	963.100	AVRG	963.100000	0.0
(5)	525.920	AVRG	525.920000	0.0

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FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA48717

Instrument ID: ECD4 Calibration Date(s): 05~~/15/09~~ 10/05/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): ~~1445~~ 2311

RF5: 014F1401

← Single pt →

COMPOUND	RF5	CURVE	COEFFICENT A1	%RSD OR R^2
Chlordane	5080.000	AVRG	5080.00000	0.0
(2)	1757.400	AVRG	1757.40000	0.0
(3)	2144.600	AVRG	2144.60000	0.0
(4)	1746.000	AVRG	1746.00000	0.0
(5)	4973.400	AVRG	4973.40000	0.0

FORM VI PESTA

FORM 8
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA48717

Column: ZB MR-2 ID: 0.32 (mm) Cont. Calib. Date(s): 10/05/09

Instrument ID: ECD4

THE ANALYTICAL SEQUENCE OF PERFORMANCE BLANKS, AND SAMPLES GIVEN BELOW: Tox Chlordane Cal

	SURROGATE RT FROM CONTINUING CALIBRATION					
	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	RT #	RT #
01	SEQ-PEM1	SEQ-PEM1	10/05/09	1931		
02	SEQ-CAL8	SEQ-CAL8	10/05/09	2253		
03	SEQ-CAL9	SEQ-CAL9	10/05/09	2311		
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QC LIMITS

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

page 1 of 1

FORM VIII PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA48717

Instrument ID: ECD4 Calibration Date(s): ~~08/10/09~~ 10/05/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): ~~1721~~ 2253

RF5: 013R1301

← Single point →

COMPOUND	RF5	CURVE	COEFFICENT A1	%RSD OR R^2
Toxaphene	5324.880	AVRG	5324.88000	0.0
(2)	2282.060	AVRG	2282.06000	0.0
(3)	2929.850	AVRG	2929.85000	0.0
(4)	4080.280	AVRG	4080.28000	0.0
(5)	4479.990	AVRG	4479.99000	0.0

WL
10/6/09

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FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA48717

Instrument ID: ECD4 Calibration Date(s): 05~~/15/09~~ 10/05/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): ~~1445~~ 2311

RF5: 014R1401

← Single pt →

COMPOUND	RF5	CURVE	COEFFICENT A1	%RSD OR R^2
Chlordane	14486.600	AVRG	14486.6000	0.0
(2)	4927.600	AVRG	4927.60000	0.0
(3)	8469.800	AVRG	8469.80000	0.0
(4)	5279.400	AVRG	5279.40000	0.0
(5)	12760.200	AVRG	12760.2000	0.0

FORM VI PESTA

FORM 8
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Column: ZB MR-1 ID: 0.32 (mm) Cont. Calib. Date(s): 10/06/09

Instrument ID: ECD4

THE ANALYTICAL SEQUENCE OF PERFORMANCE BLANKS, AND SAMPLES GIVEN BELOW:

SURROGATE RT FROM CONTINUING CALIBRATION
S1 : 4.65 S2 : 10.75

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #
01	SEQ-CCV5	SEQ-CCV5	10/06/09	0948	4.65	10.75
02	SEQ-CCV6	SEQ-CCV6	10/06/09	1006		
03	RB-092909-01	0910006-51	10/06/09	1137	4.65	10.75
04	RB-092909-02	0910006-52	10/06/09	1156	4.64	10.75
05	SB-092909-01	0910006-53	10/06/09	1214	4.64	10.75
06	SEQ-CCV7	SEQ-CCV7	10/06/09	1232	4.65	10.75
07	SEQ-CCV8	SEQ-CCV8	10/06/09	1250		
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	QC LIMITS
S1 = TCMX	(+/- 0.03 MINUTES)
S2 = DCB	(+/- 0.03 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII PESTA

FORM 8
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Column: ZB MR-2 ID: 0.32 (mm) Cont. Calib. Date(s): 10/06/09

Instrument ID: ECD4

THE ANALYTICAL SEQUENCE OF PERFORMANCE BLANKS, AND SAMPLES GIVEN BELOW:

SURROGATE RT FROM CONTINUING CALIBRATION
S1 : 3.75 S2 : 8.98

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #
01	SEQ-CCV5	SEQ-CCV5	10/06/09	0948	3.75	8.98
02	SEQ-CCV6	SEQ-CCV6	10/06/09	1006		
03	RB-092909-01	0910006-51	10/06/09	1137	3.75	8.98
04	RB-092909-02	0910006-52	10/06/09	1156	3.75	8.98
05	SB-092909-01	0910006-53	10/06/09	1214	3.75	8.98
06	SEQ-CCV7	SEQ-CCV7	10/06/09	1232	3.75	8.98
07	SEQ-CCV8	SEQ-CCV8	10/06/09	1250		
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		QC LIMITS
S1	= TCMX	(+/- 0.03 MINUTES)
S2	= DCB	(+/- 0.03 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

page 1 of 1

FORM VIII PESTA

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 049F4901.D
Analysis Type:
Lab Sample ID: SEQ-CCV5
Method: \\ELABNSH05\TARGET\chem\ecd4.i\100509.b\8081_82F.m

Injection Date: 06-OCT-2009 09:48
Init. Cal. Date(s): 25-FEB-2009 05-OCT-2009
Init. Cal. Times: 19:14 23:11
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D
$ 36 TCMX	40528	37471	0.010	-7.5	15.0
3 Alpha-BHC	53470	51813	0.010	-3.1	15.0
23 Gamma-BHC	45798	44907	0.010	-1.9	15.0
5 Beta-BHC	20332	18608	0.010	-8.5	15.0
15 Delta-BHC	41879	41544	0.010	-0.8	15.0
25 Heptachlor	36650	36311	0.010	-0.9	15.0
2 Aldrin	35702	34522	0.010	-3.3	15.0
26 Heptachlor Epoxide	31928	30349	0.010	-4.9	15.0
24 Gamma-Chlordane	31088	30325	0.010	-2.5	15.0
4 Alpha-Chlordane	30459	29384	0.010	-3.5	15.0
17 Endosulfan I	28766	27987	0.010	-2.7	15.0
13 4,4'-DDE	28142	28477	0.010	1.2	15.0
16 Dieldrin	30499	30538	0.010	0.1	15.0
20 Endrin	18871	21649	0.010	14.7	15.0
12 4,4'-DDD	23937	24887	0.010	4.0	15.0
18 Endosulfan II	25915	25782	0.010	-0.5	15.0
21 Endrin Aldehyde	24117	22887	0.010	-5.1	15.0
14 4,4'-DDT	22035	24896	0.010	13.0	15.0
19 Endosulfan Sulfate	22416	23774	0.010	6.1	15.0
27 Methoxychlor	11821	11841	0.010	0.2	15.0
22 Endrin Ketone	31080	30930	0.010	-0.5	15.0
$ 37 DCB	21737	20466	0.010	-5.8	15.0

WL
10/6/09

BM
100709

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 049R4901.D
Analysis Type:
Lab Sample ID: SEQ-CCV5
Method: \\ELABNSH05\TARGET\chem\ecd4.i\100509.b\8081 82R.m

Injection Date: 06-OCT-2009 09:48
Init. Cal. Date(s): ~~25-FEB-2009~~ 05-OCT-2009
Init. Cal. Times: 19:14 23:11
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D
$ 36 TCMX	93298	86971	0.010	-6.8	15.0
3 Alpha-BHC	139985	136850	0.010	-2.2	15.0
23 Gamma-BHC	124513	122171	0.010	-1.9	15.0
5 Beta-BHC	57659	53194	0.010	-7.7	15.0
25 Heptachlor	114811	107081	0.010	-6.7	15.0
15 Delta-BHC	121713	122496	0.010	0.6	15.0
2 Aldrin	118473	108574	0.010	-8.4	15.0
26 Heptachlor Epoxide	108800	96989	0.010	-10.9	15.0
24 Gamma-Chlordane	112645	106103	0.010	-5.8	15.0
4 Alpha-Chlordane	110666	100958	0.010	-8.8	15.0
17 Endosulfan I	106190	97767	0.010	-7.9	15.0
13 4,4'-DDE	104221	102433	0.010	-1.7	15.0
16 Dieldrin	117465	110112	0.010	-6.3	15.0
20 Endrin	75217	79184	0.010	5.3	15.0
12 4,4'-DDD	90699	89216	0.010	-1.6	15.0
18 Endosulfan II	99024	92637	0.010	-6.4	15.0
14 4,4'-DDT	84021	83281	0.010	-0.9	15.0
21 Endrin Aldehyde	96821	84617	0.010	-12.6	15.0
19 Endosulfan Sulfate	85557	84839	0.010	-0.8	15.0
27 Methoxychlor	44205	42716	0.010	-3.4	15.0
22 Endrin Ketone	115219	105521	0.010	-8.4	15.0
$ 37 DCB	80716	75500	0.010	-6.5	15.0

BC 100709

10/6/09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 050F5001.D
Analysis Type:
Lab Sample ID: SEQ-CCV6
Injection Date: 06-OCT-2009 10:06
Init. Cal. Date(s): 25-FEB-2009 05-OCT-2009
Init. Cal. Times: 19:14 23:11
Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\ecd4.i\100509.b\8081_82F.m

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
29 PCB-1016(1)	1000	1317	0.010	-31.7	15.0	<-
(2)	1000	1317	0.010	-31.7	15.0	<-
(3)	1000	1317	0.010	-31.7	15.0	<-
(4)	1000	1317	0.010	-31.7	15.0	<-
(5)	1000	1317	0.010	-31.7	15.0	<-
(6)	1000	1317	0.010	-31.7	15.0	<-
35 PCB-1260(1)	2574	0 2629	0.010	2.1	15.0	
(2)	1225	1200	0.010	-2.0	15.0	
(3)	++++	++++	0.010	++++	15.0	<-
(4)	++++	++++	0.010	++++	15.0	<-
(5)	1124	1130	0.010	0.5	15.0	
(6)	1236	1218	0.010	-1.5	15.0	
(7)	++++	++++	0.010	++++	15.0	<-
(8)	661	616	0.010	-6.8	15.0	

+31.7%D (high)

-1.6%D (low)

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 050R5001.D
Analysis Type:
Lab Sample ID: SEQ-CCV6
Method: \\ELABNSH05\TARGET\chem\ecd4.i\100509.b\8081_82R.m

Injection Date: 06-OCT-2009 10:06
Init. Cal. Date(s): 25-FEB-2009 05-OCT-2009
Init. Cal. Times: 19:14 23:11
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
29 PCB-1016(1)	1000	1301	0.010	-30.1	15.0	<-
(2)	1000	1301	0.010	-30.1	15.0	<-
(3)	1000	1301	0.010	-30.1	15.0	<-
(4)	1000	1301	0.010	-30.1	15.0	<-
(5)	1000	1301	0.010	-30.1	15.0	<-
(6)	1000	1301	0.010	-30.1	15.0	<-
35 PCB-1260(1)	8032	9482	0.010	18.1	15.0	<-
(2)	++++	++++	0.010	++++	15.0	<-
(3)	4392	5312	0.010	20.9	15.0	<-
(4)	4667	5249	0.010	12.5	15.0	
(5)	4164	4554	0.010	9.4	15.0	
(6)	++++	++++	0.010	++++	15.0	<-
(7)	4029	4731	0.010	17.4	15.0	<-
(8)	++++	++++	0.010	++++	15.0	<-

+30.1 %D (high)

+15.7 %D (high)

JS 10.12.09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 058F5801.D
Analysis Type:
Lab Sample ID: SEQ-CCV7
Method: \\ELABNSH05\TARGET\chem\ecd4.i\100509.b\8081_82F.m

Injection Date: 06-OCT-2009 12:32
Init. Cal. Date(s): 25-FEB-2009 05-OCT-2009
Init. Cal. Times: 19:14 23:11
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
$ 36 TCMX	40528	38607	0.010	-4.7	15.0	
3 Alpha-BHC	53470	53659	0.010	0.4	15.0	
23 Gamma-BHC	45798	46229	0.010	0.9	15.0	
5 Beta-BHC	20332	19154	0.010	-5.8	15.0	
15 Delta-BHC	41879	42430	0.010	1.3	15.0	
25 Heptachlor	36650	36983	0.010	0.9	15.0	
2 Aldrin	35702	35300	0.010	-1.1	15.0	
26 Heptachlor Epoxide	31928	30680	0.010	-3.9	15.0	
24 Gamma-Chlordane	31088	30573	0.010	-1.7	15.0	
4 Alpha-Chlordane	30459	29670	0.010	-2.6	15.0	
17 Endosulfan I	28766	28388	0.010	-1.3	15.0	
13 4,4'-DDE	28142	28766	0.010	2.2	15.0	
16 Dieldrin	30499	30807	0.010	1.0	15.0	
20 Endrin	18871	21726	0.010	15.1	15.0	<-
12 4,4'-DDD	23937	25388	0.010	6.1	15.0	
18 Endosulfan II	25915	24804	0.010	-4.3	15.0	
21 Endrin Aldehyde	24117	22559	0.010	-6.5	15.0	
14 4,4'-DDT	22035	24696	0.010	12.1	15.0	
19 Endosulfan Sulfate	22416	23724	0.010	5.8	15.0	
27 Methoxychlor	11821	11662	0.010	-1.3	15.0	
22 Endrin Ketone	31080	30367	0.010	-2.3	15.0	
$ 37 DCB	21737	19839	0.010	-8.7	15.0	

10/08 Boa

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

OLS 10-12-09

Instrument ID: ecd4.i
Lab File ID: 058R5801.D
Analysis Type:
Lab Sample ID: SEQ-CCV7
Method: \\ELABNSH05\TARGET\chem\ecd4.i\100509.b\8081_82R.m

Injection Date: 06-OCT-2009 12:32
Init. Cal. Date(s): ~~25-FEB-2009~~ 05-OCT-2009
Init. Cal. Times: 19:14 23:11
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D
$ 36 TCMX	93298	91030	0.010	-2.4	15.0
3 Alpha-BHC	139985	0 142587	0.010	1.9	15.0
23 Gamma-BHC	124513	127049	0.010	2.0	15.0
5 Beta-BHC	57659	53852	0.010	-6.6	15.0
25 Heptachlor	114811	108835	0.010	-5.2	15.0
15 Delta-BHC	121713	125507	0.010	3.1	15.0
2 Aldrin	118473	110694	0.010	-6.6	15.0
26 Heptachlor Epoxide	108800	98313	0.010	-9.6	15.0
24 Gamma-Chlordane	112645	106260	0.010	-5.7	15.0
4 Alpha-Chlordane	110666	101955	0.010	-7.9	15.0
17 Endosulfan I	106190	98402	0.010	-7.3	15.0
13 4,4'-DDE	104221	103218	0.010	-1.0	15.0
16 Dieldrin	117465	110497	0.010	-5.9	15.0
20 Endrin	75217	79149	0.010	5.2	15.0
12 4,4'-DDD	90699	81304	0.010	-10.4	15.0
18 Endosulfan II	99024	91786	0.010	-7.3	15.0
14 4,4'-DDT	84021	80982	0.010	-3.6	15.0
21 Endrin Aldehyde	96821	83132	0.010	-14.1	15.0
19 Endosulfan Sulfate	85557	83493	0.010	-2.4	15.0
27 Methoxychlor	44205	41310	0.010	-6.5	15.0
22 Endrin Ketone	115219	105003	0.010	-8.9	15.0
$ 37 DCB	80716	73733	0.010	-8.7	15.0

WL 10/8/09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 059F5901.D
Analysis Type:
Lab Sample ID: SEQ-CCV8
Method: \\ELABNSH05\TARGET\chem\ecd4.i\100509.b\8081_82F.m

Injection Date: 06-OCT-2009 12:50
Init. Cal. Date(s): 25-FEB-2009 05-OCT-2009
Init. Cal. Times: 19:14 23:11
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
29 PCB-1016(1)	1000	1358	0.010	-35.8	15.0	<-
(2)	1000	1358	0.010	-35.8	15.0	<-
(3)	1000	1358	0.010	-35.8	15.0	<-
(4)	1000	1358	0.010	-35.8	15.0	<-
(5)	1000	1358	0.010	-35.8	15.0	<-
(6)	1000	1358	0.010	-35.8	15.0	<-
35 PCB-1260(1)	2574	2674	0.010	3.9	15.0	
(2)	1225	1233	0.010	0.7	15.0	
(3)	++++	++++	0.010	++++	15.0	<-
(4)	++++	++++	0.010	++++	15.0	<-
(5)	1124	1158	0.010	3.1	15.0	
(6)	1236	1237	0.010	0.1	15.0	
(7)	++++	++++	0.010	++++	15.0	<-
(8)	661	643	0.010	-2.7	15.0	

+35.8% (high)

1.0%D (high)

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 059R5901.D
Analysis Type:
Lab Sample ID: SEQ-CCV8
Method: \\ELABNSH05\TARGET\chem\ecd4.i\100509.b\8081_82R.m

Injection Date: 06-OCT-2009 12:50
Init. Cal. Date(s): 25-FEB-2009 05-OCT-2009
Init. Cal. Times: 19:14 23:11
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
29 PCB-1016(1)	1000	1350	0.010	-35.0	15.0	<-
(2)	1000	1350	0.010	-35.0	15.0	<-
(3)	1000	1350	0.010	-35.0	15.0	<-
(4)	1000	1350	0.010	-35.0	15.0	<-
(5)	1000	1350	0.010	-35.0	15.0	<-
(6)	1000	1350	0.010	-35.0	15.0	<-
35 PCB-1260(1)	8032	9626	0.010	19.8	15.0	<-
(2)	++++	++++	0.010	++++	15.0	<-
(3)	4392	5369	0.010	22.2	15.0	<-
(4)	4667	5304	0.010	13.7	15.0	
(5)	4164	4527	0.010	8.7	15.0	
(6)	++++	++++	0.010	++++	15.0	<-
(7)	4029	4649	0.010	15.4	15.0	<-
(8)	++++	++++	0.010	++++	15.0	<-

+35.0% (high)

+16.0% (high)

FORM 8
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA13637

Column: ZB MR-1 ID: 0.32 (mm) Cont. Calib. Date(s): 10/09/09

Instrument ID: ECD4

THE ANALYTICAL SEQUENCE OF PERFORMANCE BLANKS, AND SAMPLES GIVEN BELOW:

PCB Cal

Tox Cal
Chlordane

	SURROGATE RT FROM CONTINUING CALIBRATION					
	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	RT #	RT #
01	SEQ-CAL10	SEQ-CAL10	10/09/09	1741		
02	SEQ-CAL11	SEQ-CAL11	10/09/09	1800		
03	SEQ-CAL12	SEQ-CAL12	10/09/09	1818		
04	SEQ-CAL13	SEQ-CAL13	10/09/09	1836		
05	SEQ-CAL14	SEQ-CAL14	10/09/09	1854		
06	SEQ-CAL15	SEQ-CAL15	10/09/09	1913		
07	SEQ-CAL16	SEQ-CAL16	10/09/09	1931		
08	SEQ-ICV2	SEQ-ICV2	10/09/09	1949		
09						
10						
11						
12						
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26						
27						
28						
29						
30						
31						
32						

QC LIMITS

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA13637

Instrument ID: ECD4 Calibration Date(s): 10/09/09 10/09/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 1741 1931

LAB FILE ID: RF5: 013F1301 RF1: 014F1401

COMPOUND	RF5	RF1	CURVE	COEFFICENT A1	%RSD OR R^2
PCB-1016	1897.800	1791.040	AVRG	1617.01860	12.9
(2)	787.900	755.000	AVRG	656.911562	15.6
(3)	1147.820	1080.720	AVRG	953.089619	15.0
(4)	1073.920	1040.920	AVRG	895.699638	15.3
(5)	924.240	874.840	AVRG	800.942562	11.5
PCB-1260	3019.560	2697.000	AVRG	2705.25878	6.2
(2)	1564.980	1467.960	AVRG	1318.62939	12.9
(3)	1383.680	1264.440	AVRG	1205.92734	8.9
(4)	1473.720	1323.240	AVRG	1278.24200	8.6
(5)	752.940	687.320	AVRG	686.148600	5.4

AVG = 14.1

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA13637

Instrument ID: ECD4 Calibration Date(s): 10/09/09 10/09/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 1741 1931

LAB FILE ID: RF200: 008F0801 RF100: 009F0901 RF50: 010F1001
RF25: 011F1101 RF10: 012F1201

COMPOUND	RF200	RF100	RF50	RF25	RF10
PCB-1016	1376.223	1501.161	1458.468	1484.978	1809.460
(2)	526.622	602.696	585.913	597.340	742.910
(3)	771.024	873.020	860.913	869.800	1068.330
(4)	724.725	819.436	803.607	815.330	991.960
(5)	683.980	759.947	739.365	739.396	884.830
PCB-1260	2559.705	2727.256	2583.179	2554.342	2795.770
(2)	1119.966	1241.380	1191.169	1203.770	1441.180
(3)	1084.788	1192.767	1117.992	1123.214	1274.610
(4)	1178.188	1263.778	1185.276	1178.992	1344.500
(5)	658.961	686.085	655.592	648.242	713.900

10/10/09

BM 10/14/09

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA13637

Instrument ID: ECD4 Calibration Date(s): 10/09/09 10/09/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 1741 1931

LAB FILE ID: RT1: 008F0801 RT2: 009F0901 RT3: 010F1001
RT4: 011F1101 RT5: 012F1201

COMPOUND	RT1	RT2	RT3	RT4	RT5
PCB-1016	5.773	5.774	5.773	5.773	5.774
(2)	4.947	4.949	4.947	4.946	4.947
(3)	5.280	5.280	5.280	5.280	5.279
(4)	5.468	5.470	5.468	5.470	5.469
(5)	5.937	5.937	5.938	5.938	5.939
PCB-1260	8.973	8.975	8.975	8.975	8.977
(2)	7.560	7.562	7.562	7.561	7.562
(3)	8.313	8.314	8.315	8.315	8.316
(4)	8.578	8.579	8.580	8.581	8.581
(5)	10.052	10.054	10.055	10.053	10.056

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA13637

Instrument ID: ECD4 Calibration Date(s): 10/09/09 10/09/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 1741 1931

LAB FILE ID: RT6: 013F1301 RT7: 014F1401

COMPOUND	RT6	RT7	MEAN RT	RT WINDOW FROM	RT WINDOW TO
PCB-1016	5.774	5.774	5.774	5.744	5.804
(2)	4.947	4.947	4.947	4.919	4.979
(3)	5.279	5.281	5.280	5.250	5.310
(4)	5.469	5.469	5.469	5.440	5.500
(5)	5.937	5.937	5.938	5.907	5.967
PCB-1260	8.976	8.977	8.976	8.945	9.005
(2)	7.562	7.564	7.562	7.532	7.592
(3)	8.316	8.317	8.315	8.284	8.344
(4)	8.582	8.582	8.581	8.549	8.609
(5)	10.056	10.056	10.055	10.024	10.084

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA13637

Instrument ID: ECD4 Calibration Date(s): ~~08/10/09~~ 10/09/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): ~~1721~~ 1647

RF5: 005F0501

← Single pt →

COMPOUND	RF5	CURVE	COEFFICENT A1	%RSD OR R^2
Toxaphene	01251.780	AVRG	1251.78000	0.0
(2)	* 552.850	AVRG	552.850000	0.0
(3)	795.470	AVRG	795.470000	0.0
(4)	1028.950	AVRG	1028.95000	0.0
(5)	564.500	AVRG	564.500000	0.0

J.H. 10.25.09

WL 10/12/09

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA13637

Instrument ID: ECD4 Calibration Date(s): ~~05/15/~~09 10/09/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): ~~1445~~ 1705

RF5: 006F0601

Single pt →

COMPOUND	RF5	CURVE	COEFFICENT A1	%RSD OR R^2
Chlordane	5452.600	AVRG	5452.60000	0.0
(2)	2446.800	AVRG	2446.80000	0.0
(3)	2666.200	AVRG	2666.20000	0.0
(4)	2475.400	AVRG	2475.40000	0.0
(5)	*3720.000	AVRG	3720.00000	0.0

FORM VI PESTA

FORM 8
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA13637

Column: ZB MR-2 ID: 0.32 (mm) Cont. Calib. Date(s): 10/09/09

Instrument ID: ECD4

THE ANALYTICAL SEQUENCE OF PERFORMANCE BLANKS, AND SAMPLES GIVEN BELOW:

PCB Cal

Tox & Chlordane Cal.

	SURROGATE RT FROM CONTINUING CALIBRATION					
	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	RT #	RT #
01	SEQ-CAL10	SEQ-CAL10	10/09/09	1741		
02	SEQ-CAL11	SEQ-CAL11	10/09/09	1800		
03	SEQ-CAL12	SEQ-CAL12	10/09/09	1818		
04	SEQ-CAL13	SEQ-CAL13	10/09/09	1836		
05	SEQ-CAL14	SEQ-CAL14	10/09/09	1854		
06	SEQ-CAL15	SEQ-CAL15	10/09/09	1913		
07	SEQ-CAL16	SEQ-CAL16	10/09/09	1931		
08	SEQ-ICV2	SEQ-ICV2	10/09/09	1949		
09						
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QC LIMITS

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

page 1 of 1

FORM VIII PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA13637

Instrument ID: ECD4 Calibration Date(s): 10/09/09 10/09/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 1741 1931

LAB FILE ID: RF5: 013R1301 RF1: 014R1401

COMPOUND	RF5	RF1	CURVE	COEFFICENT A1	%RSD OR R^2
PCB-1016 [2C]	4777.300	4196.240	AVRG	4113.73559	12.0
(2)	1768.620	1651.360	AVRG	1474.50211	17.7
(3)	2720.940	2664.280	AVRG	2347.70203	17.4
(4)	2559.480	2311.280	AVRG	2198.75271	12.0
(5)	2309.000	2092.320	AVRG	1938.02861	13.6
PCB-1260 [2C]	11707.240	10137.680	AVRG	9985.68083	10.5
(2)	6381.800	5271.280	AVRG	5374.70692	10.4
(3)	6481.880	5545.200	AVRG	5714.29068	7.4
(4)	5918.260	5202.240	AVRG	4933.98647	13.9
(5)	5488.900	4745.600	AVRG	4744.17650	9.7

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA13637

Instrument ID: ECD4 Calibration Date(s): 10/09/09 10/09/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 1741 1931

LAB FILE ID: RF200: 008R0801 RF100: 009R0901 RF50: 010R1001
RF25: 011R1101 RF10: 012R1201

COMPOUND	RF200	RF100	RF50	RF25	RF10
PCB-1016 [2C]	3503.263	3915.403	3726.997	78599.880	4563.210
(2)	1120.430	1315.682	1305.971	27416.120	1684.950
(3)	1801.375	2051.175	2113.300	43514.160	2735.130
(4)	1835.814	2073.172	2036.551	41149.360	2376.220
(5)	1595.472	1841.889	1726.991	33901.600	2062.500
PCB-1260 [2C]	8619.820	9709.395	9354.940	187928.24	10385.010
(2)	4691.887	5288.579	5162.105	103057.56	5452.590
(3)	5254.194	5764.455	5469.215	108498.40	5770.800
(4)	4018.957	4595.692	4517.000	90596.480	5351.770
(5)	4131.590	4627.917	4500.972	89558.960	4970.080

BN 10/10/09

10/10/09

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA13637

Instrument ID: ECD4 Calibration Date(s): 10/09/09 10/09/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 1741 1931

LAB FILE ID: RT1: 008R0801 RT2: 009R0901 RT3: 010R1001
RT4: 011R1101 RT5: 012R1201

COMPOUND	RT1	RT2	RT3	RT4	RT5
PCB-1016 [2C]	4.652	4.650	4.652	4.651	4.651
(2)	4.017	4.015	4.017	4.016	4.016
(3)	4.272	4.270	4.272	4.271	4.273
(4)	4.795	4.795	4.795	4.795	4.796
(5)	4.852	4.852	4.852	4.851	4.853
PCB-1260 [2C]	7.297	7.299	7.299	7.300	7.301
(2)	6.315	6.315	6.317	6.316	6.321
(3)	6.657	6.659	6.659	6.660	6.663
(4)	6.719	6.719	6.720	6.720	6.721
(5)	6.994	6.995	6.997	6.996	6.998

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA13637

Instrument ID: ECD4 Calibration Date(s): 10/09/09 10/09/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 1741 1931

LAB FILE ID: RT6: 013R1301 RT7: 014R1401

COMPOUND	RT6	RT7	MEAN RT	RT WINDOW FROM	RT WINDOW TO
PCB-1016 [2C]	4.651	4.652	4.651	4.620	4.680
(2)	4.016	4.017	4.016	3.985	4.045
(3)	4.272	4.272	4.272	4.240	4.300
(4)	4.796	4.796	4.795	4.765	4.825
(5)	4.852	4.852	4.852	4.822	4.882
PCB-1260 [2C]	7.301	7.302	7.300	7.269	7.329
(2)	6.319	6.321	6.318	6.285	6.345
(3)	6.662	6.662	6.660	6.629	6.689
(4)	6.722	6.722	6.721	6.689	6.749
(5)	6.997	7.001	6.997	6.965	7.025

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA13637

Instrument ID: ECD4 Calibration Date(s): ~~08/10/09~~ 10/09/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): ~~1721~~ 1647

RF5: 005R0501

← Single pt →

COMPOUND	RF5	CURVE	COEFFICENT A1	%RSD OR R^2
Toxaphene	5152.420	AVRG	5152.42000	0.0
(2)	1611.710	AVRG	1611.71000	0.0
(3)	3003.810	AVRG	3003.81000	0.0
(4)	3721.730	AVRG	3721.73000	0.0
(5)	4042.570	AVRG	4042.57000	0.0

J.H. 10.25.09

10/12/09

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA13637

Instrument ID: ECD4 Calibration Date(s): ~~05/15/~~09 10/09/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): ~~1445~~ 1705

RF5: 006R0601

Single pt

COMPOUND	RF5	CURVE	COEFFICENT A1	%RSD OR R^2
Chlordane	19078.200	AVRG	19078.2000	0.0
(2)	4681.600	AVRG	4681.60000	0.0
(3)	8164.600	AVRG	8164.60000	0.0
(4)	5190.800	AVRG	5190.80000	0.0
(5)	10361.200	AVRG	10361.2000	0.0

FORM VI PESTA

FORM 8
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Column: ZB MR-1 ID: 0.32 (mm) Cont. Calib. Date(s): 10/09/09 - 10/10/09

Instrument ID: ECD4

THE ANALYTICAL SEQUENCE OF PERFORMANCE BLANKS, AND SAMPLES GIVEN BELOW:

SURROGATE RT FROM CONTINUING CALIBRATION
S1 : 4.58 S2 : 10.65

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #
01	SEQ-CCV1	SEQ-CCV1	10/09/09	2007	4.58	10.65
02	SEQ-CCV2	SEQ-CCV2	10/09/09	2026		
03	9J01022-BLK1	9J01022-BLK1	10/09/09	2044	4.58	10.65
04	9J01022-BLK1	9J01022-BS1	10/09/09	2102	4.58	10.65
05	9J01022-BLK1	9J01022-BSD2	10/09/09	2120	4.58	10.65
06	9J01022-BLK1	9J01022-BS2	10/09/09	2139	4.58	10.65
07	9J01022-BLK1	9J01022-BSD1	10/09/09	2157	4.58	10.65
08	SEQ-CCV3	SEQ-CCV3	10/10/09	0004	4.58	10.65
09	SEQ-CCV4	SEQ-CCV4	10/10/09	0022		
10	9J02013-BLK1	9J02013-BLK1	10/10/09	0040	4.58	10.65
11	9J02013-BLK1	9J02013-BS1	10/10/09	0059	4.58	10.65
12	9J02013-BLK1	9J02013-BS2	10/10/09	0117	4.58	10.65
13	FD-092609-01	0910006-01	10/10/09	0440	4.58	10.65
14	FD-092609-02	0910006-02	10/10/09	0511	4.58	10.65
15	NTC21SB09-SO	0910006-03	10/10/09	0542	4.58	10.65
16	NTC21SB09-SO	0910006-04	10/10/09	0613	4.58	10.65
17	NTC21SB10-SO	0910006-05	10/10/09	0644	4.58	10.65
18	NTC21SB10-SO	0910006-06	10/10/09	0715	4.58	10.65
19	NTC21SB11-SO	0910006-07	10/10/09	0746	4.58	10.64
20	NTC21SB11-SO	0910006-08	10/10/09	0817	4.58	10.65
21	SEQ-CCV5	SEQ-CCV5	10/10/09	0848	4.58	10.65
22	SEQ-CCV6	SEQ-CCV6	10/10/09	0906		
23	NTC21SB12-SO	0910006-09	10/10/09	0924	4.58	10.65
24	NTC21SB12-SO	0910006-10	10/10/09	0955	4.58	10.65
25	NTC21SB17-SO	0910006-11	10/10/09	1026	4.58	10.65
26	NTC21SB17-SO	0910006-12	10/10/09	1057	4.58	10.65
27	NTC21SB18-SO	0910006-13	10/10/09	1128	4.58	10.65
28	NTC21SB18-SO	0910006-14	10/10/09	1159	4.58	10.65
29	NTC21SB20-SO	0910006-15	10/10/09	1230	4.58	10.66
30	NTC21SB20-SO	0910006-16	10/10/09	1301	4.58	10.65
31	NTC21SB21-SO	0910006-17	10/10/09	1332	4.58	10.63
32	NTC21SB21-SO	0910006-18	10/10/09	1403	4.58	10.65
	SEQCCV7		10/10/09	1434		
	SEQCCV8		10/10/09	1453		

QC LIMITS
S1 = TCMX (+/- 0.03 MINUTES)
S2 = DCB (+/- 0.03 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

page 1 of 2

FORM VIII PESTA

FORM 8
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Column: ZB MR-1 ID: 0.32 (mm) Cont. Calib. Date(s): 10/09/09

Instrument ID: ECD4

THE ANALYTICAL SEQUENCE OF PERFORMANCE BLANKS, AND SAMPLES GIVEN BELOW:

SURROGATE RT FROM CONTINUING CALIBRATION
S1 : 4.58 S2 : 10.65

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #
01	SEQ-CCV7	SEQ-CCV7	10/10/09	1434	4.58	10.65
02	SEQ-CCV8	SEQ-CCV8	10/10/09	1453		
03						
04						
05						
06						
07						
08						
09						
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32						

	QC LIMITS
S1 = TCMX	(+/- 0.03 MINUTES)
S2 = DCB	(+/- 0.03 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII PESTA

FORM 8
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Column: ZB MR-2 ID: 0.32 (mm) Cont. Calib. Date(s): 10/09/09 - 10/10/09

Instrument ID: ECD4

THE ANALYTICAL SEQUENCE OF PERFORMANCE BLANKS, AND SAMPLES GIVEN BELOW:

SURROGATE RT FROM CONTINUING CALIBRATION
S1 : 3.70 S2 : 8.90

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #
01	SEQ-CCV1	SEQ-CCV1	10/09/09	2007	3.70	8.90
02	SEQ-CCV2	SEQ-CCV2	10/09/09	2026		
03	9J01022-BLK1	9J01022-BLK1	10/09/09	2044	3.70	8.89
04	9J01022-BLK1	9J01022-BS1	10/09/09	2102	3.70	8.89
05	9J01022-BLK1	9J01022-BSD2	10/09/09	2120	3.70	8.89
06	9J01022-BLK1	9J01022-BS2	10/09/09	2139	3.70	8.89
07	9J01022-BLK1	9J01022-BSD1	10/09/09	2157	3.70	8.89
08	SEQ-CCV3	SEQ-CCV3	10/10/09	0004	3.70	8.90
09	SEQ-CCV4	SEQ-CCV4	10/10/09	0022		
10	9J02013-BLK1	9J02013-BLK1	10/10/09	0040	3.70	8.89
11	9J02013-BLK1	9J02013-BS1	10/10/09	0059	3.70	8.89
12	9J02013-BLK1	9J02013-BS2	10/10/09	0117	3.70	8.89
13	FD-092609-01	0910006-01	10/10/09	0440	3.70	8.89
14	FD-092609-02	0910006-02	10/10/09	0511	3.70	8.90
15	NTC21SB09-SO	0910006-03	10/10/09	0542	3.70	8.90
16	NTC21SB09-SO	0910006-04	10/10/09	0613	3.70	8.89
17	NTC21SB10-SO	0910006-05	10/10/09	0644	3.70	8.90
18	NTC21SB10-SO	0910006-06	10/10/09	0715	3.70	8.89
19	NTC21SB11-SO	0910006-07	10/10/09	0746	3.70	8.91
20	NTC21SB11-SO	0910006-08	10/10/09	0817	3.70	8.90
21	SEQ-CCV5	SEQ-CCV5	10/10/09	0848	3.70	8.89
22	SEQ-CCV6	SEQ-CCV6	10/10/09	0906		
23	NTC21SB12-SO	0910006-09	10/10/09	0924	3.70	8.89
24	NTC21SB12-SO	0910006-10	10/10/09	0955	3.70	8.89
25	NTC21SB17-SO	0910006-11	10/10/09	1026	3.70	8.89
26	NTC21SB17-SO	0910006-12	10/10/09	1057	3.70	8.89
27	NTC21SB18-SO	0910006-13	10/10/09	1128	3.70	8.89
28	NTC21SB18-SO	0910006-14	10/10/09	1159	3.70	8.89
29	NTC21SB20-SO	0910006-15	10/10/09	1230	3.70	8.90
30	NTC21SB20-SO	0910006-16	10/10/09	1301	3.70	8.89
31	NTC21SB21-SO	0910006-17	10/10/09	1332	3.70	8.92
32	NTC21SB21-SO	0910006-18	10/10/09	1403	3.70	8.90
33	SEQ-CCV7	SEQ-CCV7	10/10/09	1434	3.70	8.90
34	SEQ-CCV8	SEQ-CCV8	10/10/09	1453		

QC LIMITS
S1 = TCMX (+/- 0.03 MINUTES)
S2 = DCB (+/- 0.03 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

page 1 of 1

FORM VIII PESTA

Data File: \\ELABNSH05\TARGET\chem\ecd4.i\100909.b\016F1601.D
Report Date: 11-Oct-2009 15:15

J.H. 10.25.09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 016F1601.D
Analysis Type:
Lab Sample ID: SEQ-CCV1
Method: \\ELABNSH05\TARGET\chem\ecd4.i\100909.b\8081_82F.m

Injection Date: 09-OCT-2009 20:07
Init. Cal. Date(s): ~~25-FEB-2009~~ 09-OCT-2009
Init. Cal. Times: 19:14 19:31
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
$ 36 TCMX	40528	36645	0.010	-9.6	15.0	
3 Alpha-BHC	53470	52521	0.010	-1.8	15.0	
23 Gamma-BHC	45798	45483	0.010	-0.7	15.0	
5 Beta-BHC	20332	18771	0.010	-7.7	15.0	
15 Delta-BHC	41879	41679	0.010	-0.5	15.0	
25 Heptachlor	36650	36372	0.010	-0.8	15.0	
2 Aldrin	35702	35146	0.010	-1.6	15.0	
26 Heptachlor Epoxide	31928	30679	0.010	-3.9	15.0	
24 Gamma-Chlordane	31088	30397	0.010	-2.2	15.0	
4 Alpha-Chlordane	30459	29406	0.010	-3.5	15.0	
17 Endosulfan I	28766	28288	0.010	-1.7	15.0	
13 4,4'-DDE	28142	28218	0.010	0.3	15.0	
16 Dieldrin	30499	30745	0.010	0.8	15.0	
20 Endrin	18871	25441	0.010	34.8	15.0	<-
12 4,4'-DDD	23937	24706	0.010	3.2	15.0	
18 Endosulfan II	25915	25953	0.010	0.1	15.0	
21 Endrin Aldehyde	24117	21405	0.010	-11.2	15.0	
14 4,4'-DDT	22035	25752	0.010	16.9	15.0	<-
19 Endosulfan Sulfate	22416	23547	0.010	5.0	15.0	
27 Methoxychlor	11821	12476	0.010	5.5	15.0	
22 Endrin Ketone	31080	29953	0.010	-3.6	15.0	
$ 37 DCB	21737	21959	0.010	1.0	15.0	

NL
10/11/09

Data File: \\ELABNSH05\TARGET\chem\ecd4.i\100909.b\016R1601.D
Report Date: 11-Oct-2009 15:15

J.H. 10.25.09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 016R1601.D
Analysis Type:
Lab Sample ID: SEQ-CCV1
Method: \\ELABNSH05\TARGET\chem\ecd4.i\100909.b\8081_82R.m

Injection Date: 09-OCT-2009 20:07
Init. Cal. Date(s): 25-FEB-2009 09-OCT-2009
Init. Cal. Times: 19:14 19:31
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
$ 36 TCMX	93298	82517	0.010	-11.6	15.0	
3 Alpha-BHC	139985	0135858	0.010	-2.9	15.0	
23 Gamma-BHC	124513	122443	0.010	-1.7	15.0	
5 Beta-BHC	57659	51865	0.010	-10.0	15.0	
25 Heptachlor	114811	104826	0.010	-8.7	15.0	
15 Delta-BHC	121713	121021	0.010	-0.6	15.0	
2 Aldrin	118473	109010	0.010	-8.0	15.0	
26 Heptachlor Epoxide	108800	96174	0.010	-11.6	15.0	
24 Gamma-Chlordane	112645	104313	0.010	-7.4	15.0	
4 Alpha-Chlordane	110666	100341	0.010	-9.3	15.0	
17 Endosulfan I	106190	98022	0.010	-7.7	15.0	
13 4,4'-DDE	104221	101331	0.010	-2.8	15.0	
16 Dieldrin	117465	111345	0.010	-5.2	15.0	
20 Endrin	75217	93217	0.010	23.9	15.0	<-
12 4,4'-DDD	90699	87691	0.010	-3.3	15.0	
18 Endosulfan II	99024	93258	0.010	-5.8	15.0	
14 4,4'-DDT	84021	86252	0.010	2.7	15.0	
21 Endrin Aldehyde	96821	81744	0.010	-15.6	15.0	<-
19 Endosulfan Sulfate	85557	84489	0.010	-1.2	15.0	
27 Methoxychlor	44205	44569	0.010	0.8	15.0	
22 Endrin Ketone	115219	102819	0.010	-10.8	15.0	
$ 37 DCB	80716	X 82482	0.010	2.2	15.0	

WL
10/11/09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 017F1701.D
Analysis Type:
Lab Sample ID: SEQ-CCV2
Method: \\ELABNSH05\TARGET\chem\ecd4.i\100909.b\8081_82F.m

Injection Date: 09-OCT-2009 20:26
Init. Cal. Date(s): 25-FEB-2009 09-OCT-2009
Init. Cal. Times: 19:14 19:31
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
29 PCB-1016(1)	1617	1506	0.010	-6.9	15.0	
(2)	657	594	0.010	-9.5	15.0	
(3)	953	863	0.010	-9.4	15.0	-8.6% D*
(4)	896	806	0.010	-10.0	15.0	
(5)	++++	++++	0.010	++++	15.0	<-
(6)	801	744	0.010	-7.1	15.0	
35 PCB-1260(1)	2705	2688	0.010	-0.6	15.0	
(2)	1319	1217	0.010	-7.7	15.0	
(3)	++++	++++	0.010	++++	15.0	<-
(4)	++++	++++	0.010	++++	15.0	<- -5.2% D*
(5)	1206	1165	0.010	-3.4	15.0	
(6)	1278	1235	0.010	-3.4	15.0	
(7)	++++	++++	0.010	++++	15.0	<-
(8)	686	611	0.010	-11.0	15.0	

WC
10/11/09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 017R1701.D
Analysis Type:
Lab Sample ID: SEQ-CCV2
Method: \\ELABNSH05\TARGET\chem\ecd4.i\100909.b\8081_82R.m

Injection Date: 09-OCT-2009 20:26
Init. Cal. Date(s): 25-FEB-2009 09-OCT-2009
Init. Cal. Times: 19:14 19:31
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
29 PCB-1016(1)	4114	4003	0.010	-2.7	15.0	
(2)	1475	1313	0.010	-10.9	15.0	
(3)	2348	2131	0.010	-9.2	15.0	-6.2%D*
(4)	++++	++++	0.010	++++	15.0	<-
(5)	2199	2113	0.010	-3.9	15.0	
(6)	1938	1857	0.010	-4.2	15.0	
35 PCB-1260(1)	9986	9637	0.010	-3.5	15.0	
(2)	++++	++++	0.010	++++	15.0	<-
(3)	5375	5067	0.010	-5.7	15.0	
(4)	5714	6064	0.010	6.1	15.0	-1.7%D*
(5)	4934	4567	0.010	-7.4	15.0	
(6)	++++	++++	0.010	++++	15.0	<-
(7)	4744	4831	0.010	1.8	15.0	
(8)	++++	++++	0.010	++++	15.0	<-

Data File: \\ELABNSH05\TARGET\chem\ecd4.i\100909.b\029F2901.D
Report Date: 11-Oct-2009 15:26

J.H. 10.25.09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 029F2901.D
Analysis Type:
Lab Sample ID: SEQ-CCV3
Method: \\ELABNSH05\TARGET\chem\ecd4.i\100909.b\8081_82F.m

Injection Date: 10-OCT-2009 00:04
Init. Cal. Date(s): 25-FEB-2009 09-OCT-2009
Init. Cal. Times: 19:14 19:31
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
$ 36 TCMX	40528	36426	0.010	-10.1	15.0	
3 Alpha-BHC	53470	52861	0.010	-1.1	15.0	
23 Gamma-BHC	45798	45581	0.010	-0.5	15.0	
5 Beta-BHC	20332	18601	0.010	-8.5	15.0	
15 Delta-BHC	41879	41485	0.010	-0.9	15.0	
25 Heptachlor	36650	35735	0.010	-2.5	15.0	
2 Aldrin	35702	34926	0.010	-2.2	15.0	
26 Heptachlor Epoxide	31928	30345	0.010	-5.0	15.0	
24 Gamma-Chlordane	31088	29573	0.010	-4.9	15.0	
4 Alpha-Chlordane	30459	28931	0.010	-5.0	15.0	
17 Endosulfan I	28766	27707	0.010	-3.7	15.0	
13 4,4'-DDE	28142	27049	0.010	-3.9	15.0	
16 Dieldrin	30499	30062	0.010	-1.4	15.0	
20 Endrin	18871	23421	0.010	24.1	15.0	<-
12 4,4'-DDD	23937	23611	0.010	-1.4	15.0	
18 Endosulfan II	25915	24997	0.010	-3.5	15.0	
21 Endrin Aldehyde	24117	20628	0.010	-14.5	15.0	
14 4,4'-DDT	22035	24039	0.010	9.1	15.0	
19 Endosulfan Sulfate	22416	22489	0.010	0.3	15.0	
27 Methoxychlor	11821	11558	0.010	-2.2	15.0	
22 Endrin Ketone	31080	29287	0.010	-5.8	15.0	
$ 37 DCB	21737	20745	0.010	-4.6	15.0	

10/11/09

J.H. 10-25-09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 029R2901.D
Analysis Type:
Lab Sample ID: SEQ-CCV3
Method: \\ELABNSH05\TARGET\chem\ecd4.i\100909.b\8081_82R.m

Injection Date: 10-OCT-2009 00:04
Init. Cal. Date(s): 25-FEB-2009 09-OCT-2009
Init. Cal. Times: 19:14 19:31
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
$ 36 TCMX	93298	80837	0.010	-13.4	15.0	
3 Alpha-BHC	139985	0 133376	0.010	-4.7	15.0	
23 Gamma-BHC	124513	119664	0.010	-3.9	15.0	
5 Beta-BHC	57659	50363	0.010	-12.7	15.0	
25 Heptachlor	114811	101283	0.010	-11.8	15.0	
15 Delta-BHC	121713	116944	0.010	-3.9	15.0	
2 Aldrin	118473	x106035	0.010	-10.5	15.0	
26 Heptachlor Epoxide	108800	93079	0.010	-14.4	15.0	
24 Gamma-Chlordane	112645	99924	0.010	-11.3	15.0	
4 Alpha-Chlordane	110666	96575	0.010	-12.7	15.0	
17 Endosulfan I	106190	94324	0.010	-11.2	15.0	
13 4,4'-DDE	104221	95274	0.010	-8.6	15.0	
16 Dieldrin	117465	107256	0.010	-8.7	15.0	
20 Endrin	75217	85683	0.010	13.9	15.0	
12 4,4'-DDD	90699	81799	0.010	-9.8	15.0	
18 Endosulfan II	99024	87911	0.010	-11.2	15.0	
14 4,4'-DDT	84021	79488	0.010	-5.4	15.0	
21 Endrin Aldehyde	96821	77782	0.010	-19.7	15.0	<-
19 Endosulfan Sulfate	85557	79452	0.010	-7.1	15.0	
27 Methoxychlor	44205	41046	0.010	-7.1	15.0	
22 Endrin Ketone	115219	99669	0.010	-13.5	15.0	
$ 37 DCB	80716	74734	0.010	-7.4	15.0	

WL
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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 030F3001.D
Analysis Type:
Lab Sample ID: SEQ-CCV4
Method: \\ELABNSH05\TARGET\chem\ecd4.i\100909.b\8081_82F.m

Injection Date: 10-OCT-2009 00:22
Init. Cal. Date(s): 25-FEB-2009 09-OCT-2009
Init. Cal. Times: 19:14 19:31
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
29 PCB-1016(1)	1617	1578	0.010	-2.4	15.0	
(2)	657	607	0.010	-7.7	15.0	
(3)	953	864	0.010	-9.3	15.0	
(4)	896	816	0.010	-8.9	15.0	-6.6%D*
(5)	++++	++++	0.010	++++	15.0	<-
(6)	801	763	0.010	-4.7	15.0	
35 PCB-1260(1)	2705	2758	0.010	1.9	15.0	
(2)	1319	1256	0.010	-4.8	15.0	
(3)	++++	++++	0.010	++++	15.0	<-
(4)	++++	++++	0.010	++++	15.0	<- -0.7%D*
(5)	1206	1200	0.010	-0.5	15.0	
(6)	1278	1271	0.010	-0.5	15.0	
(7)	++++	++++	0.010	++++	15.0	<-
(8)	686	690	0.010	0.6	15.0	

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 030R3001.D
Analysis Type:
Lab Sample ID: SEQ-CCV4
Injection Date: 10-OCT-2009 00:22
Init. Cal. Date(s): 25-FEB-2009 09-OCT-2009
Init. Cal. Times: 19:14 19:31
Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\ecd4.i\100909.b\8081_82R.m

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
29 PCB-1016(1)	4114	0 4091	0.010	-0.5	15.0	
(2)	1475	1316	0.010	-10.7	15.0	
(3)	2348	2848	0.010	21.3	15.0	<-
(4)	++++	++++	0.010	++++	15.0	<-
(5)	2199	2117	0.010	-3.7	15.0	
(6)	1938	1884	0.010	-2.8	15.0	
35 PCB-1260(1)	9986	x 9797	0.010	-1.9	15.0	
(2)	++++	++++	0.010	++++	15.0	<-
(3)	5375	5282	0.010	-1.7	15.0	
(4)	5714	5911	0.010	3.4	15.0	
(5)	4934	4627	0.010	-6.2	15.0	
(6)	++++	++++	0.010	++++	15.0	<-
(7)	4744	4858	0.010	2.4	15.0	
(8)	++++	++++	0.010	++++	15.0	<-

0.7%D *

0.8%D *

Data File: \\ELABNSH05\TARGET\chem\ecd4.i\100909.b\062F6201.D
Report Date: 11-Oct-2009 15:41

J.H. 10.25.09

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 062F6201.D
Analysis Type:
Lab Sample ID: SEQ-CCV5
Method: \\ELABNSH05\TARGET\chem\ecd4.i\100909.b\8081_82F.m

Injection Date: 10-OCT-2009 08:48
Init. Cal. Date(s): 25-FEB-2009 09-OCT-2009
Init. Cal. Times: 19:14 19:31
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
$ 36 TCMX	40528	34491	0.010	-14.9	15.0	
3 Alpha-BHC	53470	46867	0.010	-12.3	15.0	
23 Gamma-BHC	45798	37076	0.010	-19.0	15.0	<-
5 Beta-BHC	20332	15751	0.010	-22.5	15.0	<-
15 Delta-BHC	41879	35536	0.010	-15.1	15.0	<-
25 Heptachlor	36650	22508	0.010	-38.6	15.0	<-
2 Aldrin	35702	30228	0.010	-15.3	15.0	<-
26 Heptachlor Epoxide	31928	25692	0.010	-19.5	15.0	<-
24 Gamma-Chlordane	31088	24908	0.010	-19.9	15.0	<-
4 Alpha-Chlordane	30459	24286	0.010	-20.3	15.0	<-
17 Endosulfan I	28766	23430	0.010	-18.5	15.0	<-
13 4,4'-DDE	28142	23709	0.010	-15.8	15.0	<-
16 Dieldrin	30499	25248	0.010	-17.2	15.0	<-
20 Endrin	18871	16835	0.010	-10.8	15.0	
12 4,4'-DDD	23937	23703	0.010	-1.0	15.0	
18 Endosulfan II	25915	20394	0.010	-21.3	15.0	<-
21 Endrin Aldehyde	24117	16839	0.010	-30.2	15.0	<-
14 4,4'-DDT	22035	8029	0.010	-63.6	15.0	<-
19 Endosulfan Sulfate	22416	17774	0.010	-20.7	15.0	<-
27 Methoxychlor	11821	4604	0.010	-61.1	15.0	<-
22 Endrin Ketone	31080	20318	0.010	-34.6	15.0	<-
$ 37 DCB	21737	13754	0.010	-36.7	15.0	<-

low

low

WL
10/11/09

Data File: \\ELABNSH05\TARGET\chem\ecd4.i\100909.b\062R6201.D
Report Date: 11-Oct-2009 15:41

J.H. 10.25.09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 062R6201.D
Analysis Type:
Lab Sample ID: SEQ-CCV5
Method: \\ELABNSH05\TARGET\chem\ecd4.i\100909.b\8081_82R.m

Injection Date: 10-OCT-2009 08:48
Init. Cal. Date(s): 25-FEB-2009 09-OCT-2009
Init. Cal. Times: 19:14 19:31
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
$ 36 TCMX	93298	77664	0.010	-16.8	15.0	<-
3 Alpha-BHC	139985	117594	0.010	-16.0	15.0	<-
23 Gamma-BHC	124513	97291	0.010	-21.9	15.0	<-
5 Beta-BHC	57659	43166	0.010	-25.1	15.0	<-
25 Heptachlor	114811	66207	0.010	-42.3	15.0	<-
15 Delta-BHC	121713	101322	0.010	-16.8	15.0	<-
2 Aldrin	118473	94557	0.010	-20.2	15.0	<-
26 Heptachlor Epoxide	108800	81925	0.010	-24.7	15.0	<-
24 Gamma-Chlordane	112645	86217	0.010	-23.5	15.0	<-
4 Alpha-Chlordane	110666	81466	0.010	-26.4	15.0	<-
17 Endosulfan I	106190	79512	0.010	-25.1	15.0	<-
13 4,4'-DDE	104221	82338	0.010	-21.0	15.0	<-
16 Dieldrin	117465	87748	0.010	-25.3	15.0	<-
20 Endrin	75217	60984	0.010	-18.9	15.0	<-
12 4,4'-DDD	90699	80903	0.010	-10.8	15.0	
18 Endosulfan II	99024	69873	0.010	-29.4	15.0	<-
14 4,4'-DDT	84021	29345	0.010	-65.1	15.0	<-
21 Endrin Aldehyde	96821	58944	0.010	-39.1	15.0	<-
19 Endosulfan Sulfate	85557	61382	0.010	-28.3	15.0	<-
27 Methoxychlor	44205	17379	0.010	-60.7	15.0	<-
22 Endrin Ketone	115219	65684	0.010	-43.0	15.0	<-
$ 37 DCB	80716	44265	0.010	-45.2	15.0	<-

low

low

WL
10/11/09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 063F6301.D
Analysis Type:
Lab Sample ID: SEQ-CCV6
Method: \\ELABNSH05\TARGET\chem\ecd4.i\100909.b\8081_82F.m

Injection Date: 10-OCT-2009 09:06
Init. Cal. Date(s): 25-FEB-2009 09-OCT-2009
Init. Cal. Times: 19:14 19:31
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
29 PCB-1016(1)	1617	D 1403	0.010	-13.3	15.0	
(2)	657	582	0.010	-11.5	15.0	
(3)	953	812	0.010	-14.8	15.0	-13.3%D*
(4)	896	762	0.010	-14.9	15.0	
(5)	++++	++++	0.010	++++	15.0	<-
(6)	801	703	0.010	-12.3	15.0	
35 PCB-1260(1)	2705	X 2201	0.010	-18.6	15.0	<-
(2)	1319	1110	0.010	-15.8	15.0	<-
(3)	++++	++++	0.010	++++	15.0	<-
(4)	++++	++++	0.010	++++	15.0	<- -20.4%D* (low)
(5)	1206	988	0.010	-18.1	15.0	<-
(6)	1278	1015	0.010	-20.6	15.0	<-
(7)	++++	++++	0.010	++++	15.0	<-
(8)	686	487	0.010	-29.0	15.0	<-

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 063R6301.D
Analysis Type:
Lab Sample ID: SEQ-CCV6
Injection Date: 10-OCT-2009 09:06
Init. Cal. Date(s): 25-FEB-2009 09-OCT-2009
Init. Cal. Times: 19:14 19:31
Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\ecd4.i\100909.b\8081_82R.m

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
29 PCB-1016(1)	4114	3835	0.010	-6.8	15.0	
(2)	1475	1295	0.010	-12.2	15.0	
(3)	2348	1991	0.010	-15.2	15.0	<-
(4)	++++	++++	0.010	++++	15.0	<-
(5)	2199	2079	0.010	-5.4	15.0	
(6)	1938	1777	0.010	-8.3	15.0	
35 PCB-1260(1)	9986	x 7613	0.010	-23.8	15.0	<-
(2)	++++	++++	0.010	++++	15.0	<-
(3)	5375	4579	0.010	-14.8	15.0	
(4)	5714	5096	0.010	-10.8	15.0	
(5)	4934	3731	0.010	-24.4	15.0	<-
(6)	++++	++++	0.010	++++	15.0	<-
(7)	4744	3904	0.010	-17.7	15.0	<-
(8)	++++	++++	0.010	++++	15.0	<-

-9.6%D x

-18.3%D x (low)

J.H. 10.25.09

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 084F8401.D
Analysis Type:
Lab Sample ID: SEQ-CCV7
Method: \\ELABNSH05\TARGET\chem\ecd4.i\100909.b\8081_82F.m

Injection Date: 10-OCT-2009 14:34
Init. Cal. Date(s): 25-FEB-2009 09-OCT-2009
Init. Cal. Times: 19:14 19:31
Quant Type: ESTD

	COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
$	36 TCMX	40528	33710	0.010	-16.8	15.0	<-
	3 Alpha-BHC	53470	45166	0.010	-15.5	15.0	<-
	23 Gamma-BHC	45798	34791	0.010	-24.0	15.0	<-
	5 Beta-BHC	20332	14951	0.010	-26.5	15.0	<-
	15 Delta-BHC	41879	33534	0.010	-19.9	15.0	<-
	25 Heptachlor	36650	17892	0.010	-51.2	15.0	<-
	2 Aldrin	35702	28448	0.010	-20.3	15.0	<-
	26 Heptachlor Epoxide	31928	23680	0.010	-25.8	15.0	<-
	24 Gamma-Chlordane	31088	22918	0.010	-26.3	15.0	<-
	4 Alpha-Chlordane	30459	22281	0.010	-26.8	15.0	<-
	17 Endosulfan I	28766	21490	0.010	-25.3	15.0	<-
	13 4,4'-DDE	28142	22385	0.010	-20.5	15.0	<-
	16 Dieldrin	30499	23373	0.010	-23.4	15.0	<-
	20 Endrin	18871	13266	0.010	-29.7	15.0	<-
	12 4,4'-DDD	23937	22787	0.010	-4.8	15.0	
	18 Endosulfan II	25915	18447	0.010	-28.8	15.0	<-
	21 Endrin Aldehyde	24117	15033	0.010	-37.7	15.0	<-
	14 4,4'-DDT	22035	4347	0.010	-80.3	15.0	<-
	19 Endosulfan Sulfate	22416	15710	0.010	-29.9	15.0	<-
	27 Methoxychlor	11821	2716	0.010	-77.0	15.0	<-
	22 Endrin Ketone	31080	18518	0.010	-40.4	15.0	<-
$	37 DCB	21737	12309	0.010	-43.4	15.0	<-

low

low

WL
10/11/09

Data File: \\ELABNSH05\TARGET\chem\ecd4.i\100909.b\084R8401.D
Report Date: 11-Oct-2009 18:28

J.H. 10.25.09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 084R8401.D
Analysis Type:
Lab Sample ID: SEQ-CCV7
Method: \\ELABNSH05\TARGET\chem\ecd4.i\100909.b\8081_82R.m

Injection Date: 10-OCT-2009 14:34
Init. Cal. Date(s): 25-FEB-2009 09-OCT-2009
Init. Cal. Times: 19:14 19:31
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
$ 36 TCMX	93298	76663	0.010	-17.8	15.0	<-
• 3 Alpha-BHC	139985	114894	0.010	-17.9	15.0	<-
23 Gamma-BHC	124513	92906	0.010	-25.4	15.0	<-
5 Beta-BHC	57659	41524	0.010	-28.0	15.0	<-
25 Heptachlor	114811	54458	0.010	-52.6	15.0	<-
• 15 Delta-BHC	121713	97705	0.010	-19.7	15.0	<-
2 Aldrin	118473	90806	0.010	-23.4	15.0	<-
26 Heptachlor Epoxide	108800	78013	0.010	-28.3	15.0	<-
24 Gamma-Chlordane	112645	81619	0.010	-27.5	15.0	<-
4 Alpha-Chlordane	110666	76960	0.010	-30.5	15.0	<-
17 Endosulfan I	106190	75822	0.010	-28.6	15.0	<-
13 4,4'-DDE	104221	76926	0.010	-26.2	15.0	<-
16 Dieldrin	117465	82292	0.010	-29.9	15.0	<-
20 Endrin	75217	49066	0.010	-34.8	15.0	<-
• 12 4,4'-DDD	90699	80733	0.010	-11.0	15.0	
18 Endosulfan II	99024	63367	0.010	-36.0	15.0	<-
14 4,4'-DDT	84021	17158	0.010	-79.6	15.0	<-
21 Endrin Aldehyde	96821	53835	0.010	-44.4	15.0	<-
19 Endosulfan Sulfate	85557	55377	0.010	-35.3	15.0	<-
27 Methoxychlor	44205	10220	0.010	-76.9	15.0	<-
22 Endrin Ketone	115219	56598	0.010	-50.9	15.0	<-
$ 37 DCB	80716	36855	0.010	-54.3	15.0	<-

low

low

10/11/09

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 085F8501.D
Analysis Type:
Lab Sample ID: SEQ-CCV8
Method: \\ELABNSH05\TARGET\chem\ecd4.i\100909.b\8081_82F.m

Injection Date: 10-OCT-2009 14:53
Init. Cal. Date~~(s): 25-FEB-2009~~ 09-OCT-2009
Init. Cal. Times: 19:14 19:31
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
29 PCB-1016(1)	1617	0 1306	0.010	-19.2	15.0	<-
(2)	657	552	0.010	-15.9	15.0	<-
(3)	953	769	0.010	-19.4	15.0	<-
(4)	896	715	0.010	-20.1	15.0	<-
(5)	++++	++++	0.010	++++	15.0	<-
(6)	801	653	0.010	-18.5	15.0	<-
35 PCB-1260(1)	2705	x 1874	0.010	-30.7	15.0	<-
(2)	1319	973	0.010	-26.2	15.0	<-
(3)	++++	++++	0.010	++++	15.0	<-
(4)	++++	++++	0.010	++++	15.0	<-
(5)	1206	845	0.010	-29.9	15.0	<-
(6)	1278	853	0.010	-33.3	15.0	<-
(7)	++++	++++	0.010	++++	15.0	<-
(8)	686	418	0.010	-39.1	15.0	<-

-18.6%D x (low)

-31.9%D x (low)

10/11/09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 085R8501.D
Analysis Type:
Lab Sample ID: SEQ-CCV8
Method: \\ELABNSH05\TARGET\chem\ecd4.i\100909.b\8081_82R.m

Injection Date: 10-OCT-2009 14:53
Init. Cal. Date(s): 25-FEB-2009 09-OCT-2009
Init. Cal. Times: 19:14 19:31
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
29 PCB-1016(1)	4114	0 3595	0.010	-12.6	15.0	
(2)	1475	1258	0.010	-14.7	15.0	
(3)	2348	1902	0.010	-19.0	15.0	<-
(4)	++++	++++	0.010	++++	15.0	<-
(5)	2199	1962	0.010	-10.8	15.0	
(6)	1938	x 1655	0.010	-14.6	15.0	
35 PCB-1260(1)	9986	6421	0.010	-35.7	15.0	<-
(2)	++++	++++	0.010	++++	15.0	<-
(3)	5375	4116	0.010	-23.4	15.0	<-
(4)	5714	4502	0.010	-21.2	15.0	<-
(5)	4934	3323	0.010	-32.7	15.0	<-
(6)	++++	++++	0.010	++++	15.0	<-
(7)	4744	3335	0.010	-29.7	15.0	<-
(8)	++++	++++	0.010	++++	15.0	<-

-14.3%D*

-28.5%D* (low)

FORM 8
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA20205

Column: ZB MR-1 ID: 0.32 (mm) Cont. Calib. Date(s): 10/12/09

Instrument ~~ID: ECD4~~

THE ANALYTICAL SEQUENCE OF PERFORMANCE BLANKS, AND SAMPLES GIVEN BELOW:

Tox Cal
Chlordane

	SURROGATE RT FROM CONTINUING CALIBRATION					
	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	RT #	RT #
01	SEQ-PEM1	SEQ-PEM1	10/12/09	2044		
02	SEQ-CAL8	SEQ-CAL8	10/12/09	2138		
03	SEQ-CAL9	SEQ-CAL9	10/12/09	2157		
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QC LIMITS

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA20205

Instrument ID: ECD4 Calibration Date(s): ~~08/10/09~~ 10/12/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): ~~1721~~ 2138

RF5: 005F0501

← Single pt →

COMPOUND	RF5	CURVE	COEFFICENT A1	%RSD OR R^2
Toxaphene	1240.160	AVRG	1240.16000	0.0
(2)	606.250	AVRG	606.250000	0.0
(3)	822.800	AVRG	822.800000	0.0
(4)	1039.410	AVRG	1039.41000	0.0
(5)	592.290	AVRG	592.290000	0.0

BM 10/21/09

BM 10/21/09

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA20205

Instrument ID: ECD4 Calibration Date(s): 05~~/15/09~~ 10/12/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): ~~1445~~ 2157

RF5: 006F0601

5 1/2 le pb

COMPOUND	RF5	CURVE	COEFFICENT A1	%RSD OR R^2
Chlordane	5597.000	AVRG	5597.00000	0.0
(2)	2058.800	AVRG	2058.80000	0.0
(3)	2501.800	AVRG	2501.80000	0.0
(4)	1925.200	AVRG	1925.20000	0.0
(5)	3674.000	AVRG	3674.00000	0.0

FORM VI PESTA

FORM 8
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA20205

Column: ZB MR-2 ID: 0.32 (mm) Cont. Calib. Date(s): 10/12/09

Instrument ~~ID:~~ ECD4

THE ANALYTICAL SEQUENCE OF PERFORMANCE BLANKS, AND SAMPLES GIVEN BELOW:

Tox# Chlordane Cal.

	SURROGATE RT FROM CONTINUING CALIBRATION					
	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	RT #	RT #
01	SEQ-PEM1	SEQ-PEM1	10/12/09	2044		
02	SEQ-CAL8	SEQ-CAL8	10/12/09	2138		
03	SEQ-CAL9	SEQ-CAL9	10/12/09	2157		
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QC LIMITS

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA20205

Instrument ID: ECD4 Calibration Date(s): ~~08/10/~~09 10/12/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): ~~1721~~ 2138

RF5: 005R0501

← Single point →

COMPOUND	RF5	CURVE	COEFFICENT A1	%RSD OR R^2
Toxaphene	5100.300	AVRG	5100.30000	0.0
(2)	2123.250	AVRG	2123.25000	0.0
(3)	2769.750	AVRG	2769.75000	0.0
(4)	3829.850	AVRG	3829.85000	0.0
(5)	4136.300	AVRG	4136.30000	0.0

ML
10/21/09

BM
10/21/09

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA20205

Instrument ID: ECD4 Calibration Date(s): ~~05/15/09~~ 10/12/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): ~~1445~~ 2157

RF5: 006R0601

← Single point →

COMPOUND	RF5	CURVE	COEFFICENT A1	%RSD OR R^2
Chlordane	16860.000	AVRG	16860.0000	0.0
(2)	3738.000	AVRG	3738.00000	0.0
(3)	7118.000	AVRG	7118.00000	0.0
(4)	5452.800	AVRG	5452.80000	0.0
(5)	8781.400	AVRG	8781.40000	0.0

lu
10/21/09

FORM VI PESTA

FORM 8
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA20205

Column: ZB MR-1 ID: 0.32 (mm) Cont. Calib. Date(s): 10/12/09 -10/13/09

Instrument ID: ECD4

THE ANALYTICAL SEQUENCE OF PERFORMANCE BLANKS, AND SAMPLES GIVEN BELOW: PEST Col

SURROGATE RT FROM CONTINUING CALIBRATION
S1 : 4.45 S2 : 10.44

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #
01	SEQ-CAL1	SEQ-CAL1	10/12/09	2215	4.45	10.45
02	SEQ-CAL2	SEQ-CAL2	10/12/09	2233	4.45	10.44
03	SEQ-CAL3	SEQ-CAL3	10/12/09	2251	4.45	10.45
04	SEQ-CAL4	SEQ-CAL4	10/12/09	2309	4.45	10.44
05	SEQ-CAL5	SEQ-CAL5	10/12/09	2328	4.45	10.45
06	SEQ-CAL6	SEQ-CAL6	10/12/09	2346	4.45	10.45
07	SEQ-CAL7	SEQ-CAL7	10/13/09	0004	4.45	10.45
08	SEQ-ICV1	SEQ-ICV1	10/13/09	0022		
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	QC LIMITS
S1 = TCMX	(+/- 0.03 MINUTES)
S2 = DCB	(+/- 0.03 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

page 1 of 1

FORM VIII PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA20205

Instrument ID: ECD4 Calibration Date(s): 10/12/09 10/13/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 2215 0004

LAB FILE ID: RF5: 012F1201 RF1: 013F1301

COMPOUND	RF5	RF1	CURVE	COEFFICENT A1	%RSD OR R^2	
Aldrin	37944.200	45889.000	AVRG	38299.6964	10.9	
Alpha-BHC	54420.000	62487.000	AVRG	55104.5214	8.0	
Alpha-Chlordane	31863.400	40626.000	AVRG	32095.3593	13.5	
Beta-BHC	21037.000	26417.000	AVRG	20693.5586	14.6	
4,4'-DDD	24664.400	30401.000	AVRG	25673.0371	10.6	
4,4'-DDE	30444.200	35887.000	AVRG	30620.9271	10.8	
4,4'-DDT	21870.800	23638.000	AVRG	23669.1243	7.7	
Delta-BHC	38288.400	46341.000	AVRG	41766.4264	9.6	
Dieldrin	32588.000	38562.000	AVRG	33177.8621	9.7	
Endosulfan I	33217.200	41155.000	AVRG	32340.6893	14.3	
Endosulfan II	28410.400	36306.000	AVRG	28668.8614	13.6	
Endosulfan Sulfate	21962.800	24951.000	AVRG	23007.1779	8.1	
Endrin	17474.400	19835.000	AVRG	22120.2564	16.1	ok
Endrin Aldehyde	26128.000	34650.000	AVRG	25079.8450	18.6	ok
Endrin Ketone	32889.200	38501.000	AVRG	32178.2707	11.0	
Gamma-BHC	46537.200	55022.000	AVRG	47650.8086	9.2	
Gamma-Chlordane	33503.200	41195.000	AVRG	33517.8793	12.4	
Heptachlor	38049.600	46007.000	AVRG	38620.2329	11.2	
Heptachlor Epoxide	34420.400	42753.000	AVRG	34244.6350	13.3	
Methoxychlor	12056.200	12020.000	AVRG	12245.4700	9.0	
TCMX	42604.000	49924.000	AVRG	40560.1364	12.0	
DCB	24004.200	26695.000	AVRG	23347.0036	10.0	

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA20205

Instrument ID: ECD4 Calibration Date(s): 10/12/09 10/13/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 2215 0004

LAB FILE ID: RF200: 007F0701 RF100: 008F0801 RF50: 009F0901
RF25: 010F1001 RF10: 011F1101

COMPOUND	RF200	RF100	RF50	RF25	RF10
Aldrin	32988.695	35714.500	38331.440	41110.440	36119.600
Alpha-BHC	50152.890	52594.960	56208.720	58795.680	51072.400
Alpha-Chlordane	27407.105	29446.690	31451.380	34232.840	29640.100
Beta-BHC	17468.330	18651.860	19935.640	22540.680	18804.400
4,4'-DDD	22412.820	24460.640	25728.920	28130.280	23913.200
4,4'-DDE	26250.300	28790.830	31125.580	33608.480	28240.100
4,4'-DDT	22245.420	23840.490	25340.920	26695.640	22052.600
Delta-BHC	38821.305	40987.320	43714.840	47072.520	37139.600
Dieldrin	28985.235	31061.720	33609.100	35899.680	31539.300
Endosulfan I	26970.535	28733.770	32041.660	34026.960	30239.700
Endosulfan II	24269.880	25837.390	28609.920	30233.840	27014.600
Endosulfan Sulfate	20560.365	22190.220	23845.380	25676.280	21864.200
Endrin	21653.145	24244.830	24299.240	27830.280	19504.900
Endrin Aldehyde	20458.595	21338.880	24131.000	24195.040	24657.400
Endrin Ketone	27325.545	29422.190	32038.660	33879.400	31191.900
Gamma-BHC	43091.480	45328.000	48651.940	51552.240	43372.800
Gamma-Chlordane	28440.245	30811.310	32897.820	36259.280	31518.300
Heptachlor	33437.100	36148.210	39726.580	41940.040	35033.100
Heptachlor Epoxide	28669.155	30902.250	33733.240	36741.800	32492.600
Methoxychlor	10658.710	11860.780	12837.140	14267.760	12017.700
TCMX	34827.395	36689.860	40106.420	40992.280	38777.000
DCB	20002.995	21135.750	23584.640	25423.440	22583.000

BM 10/21/09

WL 10/17/09

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA20205

Instrument ID: ECD4 Calibration Date(s): 10/12/09 10/13/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 2215 0004

LAB FILE ID: RT1: 007F0701 RT2: 008F0801 RT3: 009F0901
RT4: 010F1001 RT5: 011F1101

COMPOUND	RT1	RT2	RT3	RT4	RT5
Aldrin	6.056	6.056	6.056	6.055	6.055
Alpha-BHC	4.856	4.856	4.856	4.855	4.855
Alpha-Chlordane	6.878	6.878	6.877	6.875	6.877
Beta-BHC	5.358	5.358	5.359	5.357	5.359
4,4'-DDD	7.693	7.691	7.694	7.694	7.695
4,4'-DDE	7.089	7.089	7.092	7.090	7.092
4,4'-DDT	8.061	8.059	8.062	8.060	8.062
Delta-BHC	5.593	5.591	5.592	5.592	5.592
Dieldrin	7.239	7.239	7.241	7.239	7.239
Endosulfan I	6.931	6.929	6.931	6.930	6.930
Endosulfan II	7.768	7.769	7.771	7.769	7.770
Endosulfan Sulfate	8.208	8.206	8.209	8.207	8.207
Endrin	7.501	7.501	7.504	7.502	7.502
Endrin Aldehyde	7.924	7.924	7.926	7.925	7.927
Endrin Ketone	8.783	8.781	8.782	8.782	8.782
Gamma-BHC	5.159	5.158	5.159	5.157	5.159
Gamma-Chlordane	6.791	6.793	6.792	6.792	6.792
Heptachlor	5.714	5.714	5.716	5.714	5.714
Heptachlor Epoxide	6.509	6.509	6.509	6.509	6.509
Methoxychlor	8.658	8.656	8.659	8.657	8.660
TCMX	4.453	4.453	4.452	4.452	4.452
DCB	10.446	10.444	10.447	10.444	10.447

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA20205

Instrument ID: ECD4 Calibration Date(s): 10/12/09 10/13/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 2215 0004

LAB FILE ID: RT6: 012F1201 RT7: 013F1301

COMPOUND	RT6	RT7	MEAN RT	RT WINDOW FROM	RT WINDOW TO
Aldrin	6.055	6.055	6.055	6.026	6.086
Alpha-BHC	4.855	4.855	4.855	4.826	4.886
Alpha-Chlordane	6.877	6.878	6.877	6.848	6.908
Beta-BHC	5.357	5.358	5.358	5.328	5.388
4,4'-DDD	7.695	7.703	7.695	7.661	7.721
4,4'-DDE	7.092	7.096	7.092	7.059	7.119
4,4'-DDT	8.062	8.065	8.062	8.029	8.089
Delta-BHC	5.592	5.591	5.592	5.561	5.621
Dieldrin	7.238	7.240	7.239	7.209	7.269
Endosulfan I	6.930	6.930	6.930	6.899	6.959
Endosulfan II	7.770	7.771	7.770	7.739	7.799
Endosulfan Sulfate	8.208	8.211	8.208	8.176	8.236
Endrin	7.502	7.503	7.502	7.471	7.531
Endrin Aldehyde	7.925	7.928	7.926	7.894	7.954
Endrin Ketone	8.783	8.783	8.782	8.751	8.811
Gamma-BHC	5.158	5.158	5.158	5.128	5.188
Gamma-Chlordane	6.792	6.793	6.792	6.763	6.823
Heptachlor	5.713	5.713	5.714	5.684	5.744
Heptachlor Epoxide	6.508	6.510	6.509	6.479	6.539
Methoxychlor	8.662	8.665	8.659	8.626	8.686
TCMX	4.452	4.451	4.452	4.423	4.483
DCB	10.447	10.448	10.446	10.414	10.474

FORM VI PESTA

FORM 8
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA20205

Column: ZB MR-2 ID: 0.32 (mm) Cont. Calib. Date(s): 10/12/09 - 10/13/09

Instrument ID: ECD4

THE ANALYTICAL SEQUENCE OF PERFORMANCE BLANKS, AND SAMPLES GIVEN BELOW:

PEST Cal.

SURROGATE RT FROM CONTINUING CALIBRATION
S1 : 3.61 S2 : 8.72

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #
01	SEQ-CAL1	SEQ-CAL1	10/12/09	2215	3.61	8.73
02	SEQ-CAL2	SEQ-CAL2	10/12/09	2233	3.61	8.72
03	SEQ-CAL3	SEQ-CAL3	10/12/09	2251	3.61	8.73
04	SEQ-CAL4	SEQ-CAL4	10/12/09	2309	3.61	8.73
05	SEQ-CAL5	SEQ-CAL5	10/12/09	2328	3.61	8.73
06	SEQ-CAL6	SEQ-CAL6	10/12/09	2346	3.61	8.73
07	SEQ-CAL7	SEQ-CAL7	10/13/09	0004	3.60	8.73
08	SEQ-ICV1	SEQ-ICV1	10/13/09	0022		
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	QC LIMITS
S1 = TCMX [2C]	(+/- 0.03 MINUTES)
S2 = DCB [2C]	(+/- 0.03 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA20205

Instrument ID: ECD4 Calibration Date(s): 10/12/09 10/13/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 2215 0004

LAB FILE ID: RF5: 012R1201 RF1: 013R1301

COMPOUND	RF5	RF1	CURVE	COEFFICENT A1	%RSD OR R^2
Aldrin [2C]	103859.40	136758.00	AVRG	106200.863	15.3
Alpha-BHC [2C]	115505.40	146602.00	AVRG	122339.659	12.1
Alpha-Chlordane [2C]	85068.000	109987.00	AVRG	90078.0271	13.4
Beta-BHC [2C]	39553.600	53215.000	AVRG	44236.7579	13.2
4,4'-DDD [2C]	70361.000	64433.000	AVRG	71319.5636	10.6
4,4'-DDE [2C]	80275.000	82744.000	AVRG	84214.0079	11.4
4,4'-DDT [2C]	48202.400	43594.000	AVRG	58760.3400	18.9
Delta-BHC [2C]	83960.800	102901.00	AVRG	97381.6793	13.7
Dieldrin [2C]	108673.00	134766.00	AVRG	108601.766	13.8
Endosulfan I [2C]	100027.20	131858.00	AVRG	99821.1893	17.8
Endosulfan II [2C]	86540.000	121461.00	AVRG	90227.2850	17.4
Endosulfan Sulfate [2C]	66153.000	76223.000	AVRG	71985.5557	9.7
Endrin [2C]	52030.400	60899.000	AVRG	68890.3986	18.8
Endrin Aldehyde [2C]	98354.000	115501.00	AVRG	87696.3593	19.0
Endrin Ketone [2C]	100896.80	128617.00	AVRG	99805.5471	15.7
Gamma-BHC [2C]	91250.600	127429.00	AVRG	103547.000	15.6
Gamma-Chlordane [2C]	78761.800	99674.000	AVRG	88950.6207	12.8
Heptachlor [2C]	98474.600	128865.00	AVRG	101481.806	15.4
Heptachlor Epoxide [2C]	92009.400	117946.00	AVRG	94103.7007	14.9
Methoxychlor [2C]	31157.000	29436.000	AVRG	34034.1471	13.5
TCMX [2C]	81208.200	104732.00	AVRG	81394.7336	14.5
DCB [2C]	64073.400	72592.000	AVRG	67589.3464	9.6

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA20205

Instrument ID: ECD4 Calibration Date(s): 10/12/09 10/13/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 2215 0004

LAB FILE ID: RF200: 007R0701 RF100: 008R0801 RF50: 009R0901
RF25: 010R1001 RF10: 011R1101

COMPOUND	RF200	RF100	RF50	RF25	RF10
Aldrin [2C]	89187.670	98099.130	106864.22	116184.72	92452.900
Alpha-BHC [2C]	115754.66	119136.37	126518.98	132960.00	99900.200
Alpha-Chlordane [2C]	79728.990	84653.200	93571.360	101178.64	76359.000
Beta-BHC [2C]	42142.505	43756.940	46504.960	48775.200	35709.100
4,4'-DDD [2C]	64361.415	70584.990	79634.620	83548.920	66313.000
4,4'-DDE [2C]	76478.565	85379.570	92271.880	100310.84	72038.200
4,4'-DDT [2C]	58166.010	68970.710	66113.360	73121.000	53154.900
Delta-BHC [2C]	96509.085	101049.83	107933.48	113534.36	75783.200
Dieldrin [2C]	89941.820	96263.700	113507.48	116860.96	100199.40
Endosulfan I [2C]	79179.525	87088.480	102648.44	110830.28	87116.400
Endosulfan II [2C]	74154.775	78678.520	93814.760	94769.840	82172.100
Endosulfan Sulfate [2C]	63319.370	68865.360	79936.960	81038.000	68363.200
Endrin [2C]	65835.390	74393.020	80423.620	88916.760	59734.600
Endrin Aldehyde [2C]	69269.685	69086.290	94000.220	80488.520	87174.800
Endrin Ketone [2C]	79144.260	86138.210	100662.36	105261.80	97918.400
Gamma-BHC [2C]	98823.990	102717.31	110004.90	116105.20	78498.000
Gamma-Chlordane [2C]	82623.665	89912.320	95097.060	103758.60	72826.900
Heptachlor [2C]	84345.005	92696.720	104838.16	113120.56	88032.600
Heptachlor Epoxide [2C]	78507.045	84043.080	96281.200	106216.28	83722.900
Methoxychlor [2C]	30250.140	34881.050	38300.940	41827.200	32386.700
TCMX [2C]	72512.195	76408.840	82558.600	84268.800	68074.500
DCB [2C]	58634.755	64014.630	70667.660	77870.280	65272.700

BM 10/8/09

hr 10/17/09

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA20205

Instrument ID: ECD4 Calibration Date(s): 10/12/09 10/13/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 2215 0004

LAB FILE ID: RT1: 007R0701 RT2: 008R0801 RT3: 009R0901
RT4: 010R1001 RT5: 011R1101

COMPOUND	RT1	RT2	RT3	RT4	RT5
Aldrin [2C]	4.761	4.761	4.761	4.761	4.762
Alpha-BHC [2C]	3.989	3.988	3.987	3.987	3.987
Alpha-Chlordane [2C]	5.486	5.486	5.487	5.486	5.487
Beta-BHC [2C]	4.483	4.483	4.482	4.482	4.482
4,4'-DDD [2C]	6.236	6.236	6.239	6.239	6.240
4,4'-DDE [2C]	5.678	5.678	5.682	5.681	5.684
4,4'-DDT [2C]	6.506	6.506	6.507	6.507	6.509
Delta-BHC [2C]	4.663	4.663	4.662	4.662	4.662
Dieldrin [2C]	5.783	5.783	5.784	5.784	5.784
Endosulfan I [2C]	5.528	5.530	5.529	5.529	5.529
Endosulfan II [2C]	6.359	6.360	6.361	6.361	6.360
Endosulfan Sulfate [2C]	6.798	6.796	6.801	6.799	6.799
Endrin [2C]	6.046	6.046	6.047	6.049	6.047
Endrin Aldehyde [2C]	6.543	6.543	6.544	6.544	6.544
Endrin Ketone [2C]	7.338	7.336	7.337	7.337	7.337
Gamma-BHC [2C]	4.238	4.236	4.237	4.236	4.237
Gamma-Chlordane [2C]	5.433	5.433	5.432	5.434	5.434
Heptachlor [2C]	4.529	4.530	4.529	4.529	4.529
Heptachlor Epoxide [2C]	5.188	5.186	5.187	5.187	5.187
Methoxychlor [2C]	7.139	7.138	7.142	7.139	7.140
TCMX [2C]	3.606	3.606	3.606	3.606	3.605
DCB [2C]	8.728	8.725	8.727	8.726	8.727

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA20205

Instrument ID: ECD4 Calibration Date(s): 10/12/09 10/13/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 2215 0004

LAB FILE ID: RT6: 012R1201 RT7: 013R1301

COMPOUND	RT6	RT7	MEAN RT	RT WINDOW FROM	RT WINDOW TO
Aldrin [2C]	4.762	4.761	4.761	4.731	4.791
Alpha-BHC [2C]	3.987	3.986	3.987	3.958	4.018
Alpha-Chlordane [2C]	5.487	5.486	5.487	5.456	5.516
Beta-BHC [2C]	4.482	4.483	4.482	4.453	4.513
4,4'-DDD [2C]	6.242	6.246	6.240	6.206	6.266
4,4'-DDE [2C]	5.685	5.690	5.683	5.648	5.708
4,4'-DDT [2C]	6.510	6.515	6.509	6.476	6.536
Delta-BHC [2C]	4.662	4.663	4.662	4.633	4.693
Dieldrin [2C]	5.783	5.785	5.784	5.753	5.813
Endosulfan I [2C]	5.530	5.528	5.529	5.500	5.560
Endosulfan II [2C]	6.362	6.365	6.361	6.330	6.390
Endosulfan Sulfate [2C]	6.800	6.803	6.799	6.766	6.826
Endrin [2C]	6.048	6.048	6.048	6.016	6.076
Endrin Aldehyde [2C]	6.545	6.546	6.544	6.513	6.573
Endrin Ketone [2C]	7.338	7.338	7.338	7.306	7.366
Gamma-BHC [2C]	4.235	4.235	4.236	4.206	4.266
Gamma-Chlordane [2C]	5.433	5.433	5.433	5.403	5.463
Heptachlor [2C]	4.528	4.528	4.529	4.500	4.560
Heptachlor Epoxide [2C]	5.187	5.186	5.187	5.156	5.216
Methoxychlor [2C]	7.143	7.150	7.142	7.108	7.168
TCMX [2C]	3.605	3.605	3.606	3.576	3.636
DCB [2C]	8.728	8.730	8.727	8.695	8.755

FORM VI PESTA

FORM 8
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Column: ZB MR-1 ID: 0.32 (mm) Cont. Calib. Date(s): 10/13/09 - 10/14/09

Instrument ID: ECD4

THE ANALYTICAL SEQUENCE OF PERFORMANCE BLANKS, AND SAMPLES GIVEN BELOW:

SURROGATE RT FROM CONTINUING CALIBRATION
S1 : 4.45 S2 : 10.44

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #
01	SEQ-CCV5	SEQ-CCV5	10/13/09	1500	4.45	10.45
02	SEQ-CCV6	SEQ-CCV6	10/13/09	1518		
03	9J02014-BLK1	9J02014-BLK1	10/13/09	1536	4.45	10.44
04	9J02014-BLK1	9J02014-BS1	10/13/09	1554	4.45	10.44
05	9J02014-BLK1	9J02014-BS2	10/13/09	1613	4.45	10.44
06	FD-092709-01	0910006-20	10/13/09	1631	4.45	10.44
07	NTC21SB04-SO	0910006-22	10/13/09	1702	4.45	10.44
08	NTC21SB07-SO	0910006-26	10/13/09	1733	4.45	10.45
09	NTC21SB13-SO	0910006-28	10/13/09	1804	4.45	10.44
10	NTC21SB14-SO	0910006-30	10/13/09	1835	4.45	10.45
11	NTC21SB15-SO	0910006-32	10/13/09	1906	4.45	10.44
12	NTC21SB16-SO	0910006-33	10/13/09	1937	4.45	10.44
13	NTC21SB16-SO	0910006-34	10/13/09	2009	4.45	10.45
14	NTC21SB19-SO	0910006-36	10/13/09	2040	4.45	10.45
15	9J06028-BLK1	9J06028-BLK1	10/13/09	2111	4.45	10.45
16	9J06028-BLK1	9J06028-BS1	10/13/09	2129	4.45	10.44
17	9J06028-BLK1	9J06028-BS2	10/13/09	2147	4.45	10.45
18	SEQ-CCV7	SEQ-CCV7	10/13/09	2206	4.45	10.45
19	SEQ-CCV8	SEQ-CCV8	10/13/09	2224		
20	NTC21SB22-SO	0910006-37RE	10/14/09	0320	4.45	10.45
21	SEQ-CCV9	SEQ-CCV9	10/14/09	0759	4.45	10.45
22	SEQ-CCV10	SEQ-CCV10	10/14/09	0817		
23	NTC21SB05-SO	0910006-46RE	10/14/09	0907	4.45	10.45
24	SEQ-CCV11	SEQ-CCV11	10/14/09	1111	4.45	10.45
25	SEQ-CCV12	SEQ-CCV12	10/14/09	1130		
26	NTC21SB22-SO	0910006-38RE	10/14/09	1321	4.45	10.44
27	SEQ-CCV13	SEQ-CCV13	10/14/09	1501	4.45	10.45
28	SEQ-CCV14	SEQ-CCV14	10/14/09	1519		
29						
30						
31						
32						

missing but not needed

QC LIMITS
S1 = TCMX (+/- 0.03 MINUTES)
S2 = DCB (+/- 0.03 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

page 1 of 1

FORM VIII PESTA

FORM 8
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Column: ZB MR-2 ID: 0.32 (mm) Cont. Calib. Date(s): 10/13/09 - 10/14/09

Instrument ~~ID:~~ ECD4

THE ANALYTICAL SEQUENCE OF PERFORMANCE BLANKS, AND SAMPLES GIVEN BELOW:

SURROGATE RT FROM CONTINUING CALIBRATION
S1 : 3.61 S2 : 8.72

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #
01	SEQ-CCV5	SEQ-CCV5	10/14/09	1500	3.61	8.72
02	SEQ-CCV6	SEQ-CCV6	10/13/09	1518		
03	9J02014-BLK1	9J02014-BLK1	10/13/09	1536	3.61	8.72
04	9J02014-BLK1	9J02014-BS1	10/13/09	1554	3.61	8.72
05	9J02014-BLK1	9J02014-BS2	10/13/09	1613	3.61	8.72
06	FD-092709-01	0910006-20	10/13/09	1631	3.61	8.72
07	NTC21SB04-SO	0910006-22	10/13/09	1702	3.61	8.72
08	NTC21SB07-SO	0910006-26	10/13/09	1733	3.61	8.72
09	NTC21SB13-SO	0910006-28	10/13/09	1804	3.60	8.72
10	NTC21SB14-SO	0910006-30	10/13/09	1835	3.61	8.72
11	NTC21SB15-SO	0910006-32	10/13/09	1906	3.60	8.72
12	NTC21SB16-SO	0910006-33	10/13/09	1937	3.61	8.72
13	NTC21SB16-SO	0910006-34	10/13/09	2009	3.60	8.72
14	NTC21SB19-SO	0910006-36	10/13/09	2040	3.61	8.72
15	9J06028-BLK1	9J06028-BLK1	10/13/09	2111	3.61	8.73
16	9J06028-BLK1	9J06028-BS1	10/13/09	2129	3.61	8.73
17	9J06028-BLK1	9J06028-BS2	10/13/09	2147	3.61	8.73
18	SEQ-CCV7	SEQ-CCV7	10/13/09	2206	3.61	8.73
19	SEQ-CCV8	SEQ-CCV8	10/13/09	2224		
20	NTC21SB22-SO	0910006-37RE	10/14/09	0320		
21	SEQ-CCV9	SEQ-CCV9	10/14/09	0759	3.61	8.73
22	SEQ-CCV10	SEQ-CCV10	10/14/09	0817		
23	NTC21SB05-SO	0910006-46RE	10/14/09	0907	3.60	8.72
24	SEQ-CCV11	SEQ-CCV11	10/14/09	1111	3.61	8.73
25	SEQ-CCV12	SEQ-CCV12	10/14/09	1130		
26	NTC21SB22-SO	0910006-38RE	10/14/09	1321	3.60	8.72
27	SEQ-CCV13	SEQ-CCV13	10/14/09	1501	3.60	8.72
28	SEQ-CCV14	SEQ-CCV14	10/14/09	1519		
29						
30						
31						
32						

Missing

	QC LIMITS
S1 = TCMX [2C]	(+/- 0.03 MINUTES)
S2 = DCB [2C]	(+/- 0.03 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

page 1 of 1

FORM VIII PESTA

J.H. 10.27.09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 066F6901.D
Analysis Type:
Lab Sample ID: SEQ-CCV5
Method: \\ELABNSH05\TARGET\chem\ecd4.i\101209A.b\8081_82F.m

Injection Date: 13-OCT-2009 15:00
Init. Cal. Date(s): ~~25-FEB-2009~~ 13-OCT-2009
Init. Cal. Times: 19:14 00:04
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
$ 36 TCMX	40560	37901	0.010	-6.6	15.0	
3 Alpha-BHC	55105	53374	0.010	-3.1	15.0	
23 Gamma-BHC	47651	46132	0.010	-3.2	15.0	
5 Beta-BHC	20694	19400	0.010	-6.3	15.0	
15 Delta-BHC	41766	41624	0.010	-0.3	15.0	
25 Heptachlor	38620	35322	0.010	-8.5	15.0	
2 Aldrin	38300	35619	0.010	-7.0	15.0	
26 Heptachlor Epoxide	34245	30472	0.010	-11.0	15.0	
24 Gamma-Chlordane	33518	30258	0.010	-9.7	15.0	
4 Alpha-Chlordane	32095	28991	0.010	-9.7	15.0	
17 Endosulfan I	32341	28187	0.010	-12.8	15.0	
13 4,4'-DDE	30621	28845	0.010	-5.8	15.0	
16 Dieldrin	33178	30097	0.010	-9.3	15.0	
20 Endrin	22120	16774	0.010	-24.2	15.0	<-
12 4,4'-DDD	25673	23732	0.010	-7.6	15.0	
18 Endosulfan II	28669	25093	0.010	-12.5	15.0	
21 Endrin Aldehyde	25080	23682	0.010	-5.6	15.0	
14 4,4'-DDT	23669	20895	0.010	-11.7	15.0	
19 Endosulfan Sulfate	23007	20923	0.010	-9.1	15.0	
27 Methoxychlor	12245	10058	0.010	-17.9	15.0	<-
22 Endrin Ketone	32178	29700	0.010	-7.7	15.0	
$ 39 DCB	23347	17160	0.010	-26.5	15.0	<-

WL
10/22/09

J.H. 10.27.9

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 066R6901.D
Analysis Type:
Lab Sample ID: SEQ-CCV5
Method: \\ELABNSH05\TARGET\chem\ecd4.i\101209A.b\8081_82R.m

Injection Date: 13-OCT-2009 15:00
Init. Cal. Date(s): 25-FEB-2009 13-OCT-2009
Init. Cal. Times: 19:14 00:04
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
$ 36 TCMX	81395	81951	0.010	0.7	15.0	
3 Alpha-BHC	122340	125540	0.010	2.6	15.0	
23 Gamma-BHC	103547	109813	0.010	6.1	15.0	
5 Beta-BHC	44237	46285	0.010	4.6	15.0	
25 Heptachlor	101482	94250	0.010	-7.1	15.0	
15 Delta-BHC	97382	107104	0.010	10.0	15.0	
2 Aldrin	106201	102162	0.010	-3.8	15.0	
26 Heptachlor Epoxide	94104	84170	0.010	-10.6	15.0	
24 Gamma-Chlordane	88951	92790	0.010	4.3	15.0	
4 Alpha-Chlordane	90078	89382	0.010	-0.8	15.0	
17 Endosulfan I	99821	87786	0.010	-12.1	15.0	
13 4,4'-DDE	84214	88469	0.010	5.1	15.0	
16 Dieldrin	108602	97357	0.010	-10.4	15.0	
20 Endrin	68890	52635	0.010	-23.6	15.0	<-
12 4,4'-DDD	71320	78312	0.010	9.8	15.0	
18 Endosulfan II	90227	80420	0.010	-10.9	15.0	
14 4,4'-DDT	58760	63886	0.010	8.7	15.0	
21 Endrin Aldehyde	87696	80346	0.010	-8.4	15.0	
19 Endosulfan Sulfate	71986	68252	0.010	-5.2	15.0	
27 Methoxychlor	34034	32190	0.010	-5.4	15.0	
22 Endrin Ketone	99806	91275	0.010	-8.5	15.0	
$ 37 DCB	67589	55176	0.010	-18.4	15.0	<-

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10/02/09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 067F7001.D
Analysis Type:
Lab Sample ID: SEQ-CCV6
Method: \\ELABNSH05\TARGET\chem\ecd4.i\101209A.b\8081_82F.m

Injection Date: 13-OCT-2009 15:18
Init. Cal. Date(s): ~~25-FEB-2009~~ 13-OCT-2009
Init. Cal. Times: 19:14 00:04
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
29 PCB-1016(1)	1617	0 1695	0.010	4.8	15.0	
(2)	657	657	0.010	0.1	15.0	
(3)	953	938	0.010	-1.5	15.0	
(4)	896	892	0.010	-0.4	15.0	
(5)	++++	++++	0.010	++++	15.0	<-
(6)	801	842	0.010	5.1	15.0	
35 PCB-1260(1)	2705	2669	0.010	-1.3	15.0	
(2)	1319	1317	0.010	-0.2	15.0	
(3)	++++	++++	0.010	++++	15.0	<-
(4)	++++	++++	0.010	++++	15.0	<-
(5)	1206	1183	0.010	-1.9	15.0	
(6)	1278	1239	0.010	-3.1	15.0	
(7)	++++	++++	0.010	++++	15.0	<-
(8)	686	* 604	0.010	-12.0	15.0	

<15%D
[-1.6%D*

~~<15.5~~
-3.7%D*

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 067R7001.D
Analysis Type:
Lab Sample ID: SEQ-CCV6
Method: \\ELABNSH05\TARGET\chem\ecd4.i\101209A.b\8081_82R.m

Injection Date: 13-OCT-2009 15:18
Init. Cal. Date(s): ~~25-FEB-2009~~ 13-OCT-2009
Init. Cal. Times: 19:14 00:04
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
29 PCB-1016(1)	4114	4198	0.010	2.1	15.0	
(2)	1475	1373	0.010	-6.9	15.0	
(3)	2348	2188	0.010	-6.8	15.0	
(4)	++++	++++	0.010	++++	15.0	<-
(5)	2199	2216	0.010	0.8	15.0	
(6)	1938	1875	0.010	-3.3	15.0	
35 PCB-1260(1)	9986	8504	0.010	-14.8	15.0	
(2)	++++	++++	0.010	++++	15.0	<-
(3)	5375	5102	0.010	-5.1	15.0	
(4)	5714	5453	0.010	-4.6	15.0	
(5)	4934	4250	0.010	-13.9	15.0	
(6)	++++	++++	0.010	++++	15.0	<-
(7)	4744	4378	0.010	-7.7	15.0	
(8)	++++	++++	0.010	++++	15.0	<-

-2.8%D

-9.2%D

Report Date: 21-Oct-2009 17:30

J.H. 10.27.09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 092F9501.D
Analysis Type:
Lab Sample ID: SEQ-CCV7
Method: \\ELABNSH05\TARGET\chem\ecd4.i\101209A.b\8081_82F.m

Injection Date: 13-OCT-2009 22:06
Init. Cal. Date(s): ~~25-FEB-2009~~ 13-OCT-2009
Init. Cal. Times: 19:14 00:04
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
$ 36 TCMX	40560	37210	0.010	-8.3	15.0	
3 Alpha-BHC	55105	53031	0.010	-3.8	15.0	
23 Gamma-BHC	47651	45622	0.010	-4.3	15.0	
5 Beta-BHC	20694	19416	0.010	-6.2	15.0	
15 Delta-BHC	41766	41558	0.010	-0.5	15.0	
25 Heptachlor	38620	31551	0.010	-18.3	15.0	<-
2 Aldrin	38300	35226	0.010	-8.0	15.0	
26 Heptachlor Epoxide	34245	30093	0.010	-12.1	15.0	
24 Gamma-Chlordane	33518	29530	0.010	-11.9	15.0	
4 Alpha-Chlordane	32095	28439	0.010	-11.4	15.0	
17 Endosulfan I	32341	28323	0.010	-12.4	15.0	
13 4,4'-DDE	30621	27979	0.010	-8.6	15.0	
16 Dieldrin	33178	29626	0.010	-10.7	15.0	
20 Endrin	22120	14688	0.010	-33.6	15.0	<-
12 4,4'-DDD	25673	24087	0.010	-6.2	15.0	
18 Endosulfan II	28669	24841	0.010	-13.4	15.0	
21 Endrin Aldehyde	25080	22887	0.010	-8.7	15.0	
14 4,4'-DDT	23669	16693	0.010	-29.5	15.0	<-
19 Endosulfan Sulfate	23007	20595	0.010	-10.5	15.0	
27 Methoxychlor	12245	7783	0.010	-36.4	15.0	<-
22 Endrin Ketone	32178	28302	0.010	-12.0	15.0	
$ 37 DCB	23347	16618	0.010	-28.8	15.0	<-

10/22/09

J.H. 10.27.09

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 092R9501.D
Analysis Type:
Lab Sample ID: SEQ-CCV7
Method: \\ELABNSH05\TARGET\chem\ecd4.i\101209A.b\8081_82R.m

Injection Date: 13-OCT-2009 22:06
Init. Cal. Date(s): 25-FEB-2009 13-OCT-2009
Init. Cal. Times: 19:14 00:04
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
$ 36 TCMX	81395	75770	0.010	-6.9	15.0	
3 Alpha-BHC	122340	118915	0.010	-2.8	15.0	
23 Gamma-BHC	103547	104008	0.010	0.4	15.0	
5 Beta-BHC	44237	42106	0.010	-4.8	15.0	
25 Heptachlor	101482	81531	0.010	-19.7	15.0	<-
15 Delta-BHC	97382	100659	0.010	3.4	15.0	
2 Aldrin	106201	94845	0.010	-10.7	15.0	
26 Heptachlor Epoxide	94104	80679	0.010	-14.3	15.0	
24 Gamma-Chlordane	88951	84395	0.010	-5.1	15.0	
4 Alpha-Chlordane	90078	82067	0.010	-8.9	15.0	
17 Endosulfan I	99821	85734	0.010	-14.1	15.0	
13 4,4'-DDE	84214	84198	0.010	-0.0	15.0	
16 Dieldrin	108602	92175	0.010	-15.1	15.0	<-
20 Endrin	68890	45327	0.010	-34.2	15.0	<-
12 4,4'-DDD	71320	74574	0.010	4.6	15.0	
18 Endosulfan II	90227	74915	0.010	-17.0	15.0	<-
14 4,4'-DDT	58760	46089	0.010	-21.6	15.0	<-
21 Endrin Aldehyde	87696	76145	0.010	-13.2	15.0	
19 Endosulfan Sulfate	71986	63172	0.010	-12.2	15.0	
27 Methoxychlor	34034	24366	0.010	-28.4	15.0	<-
22 Endrin Ketone	99806	84290	0.010	-15.5	15.0	<-
$ 37 DCB	67589	50128	0.010	-25.8	15.0	<-

10/22/09

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 093F9601.D
Analysis Type:
Lab Sample ID: SEQ-CCV8
Injection Date: 13-OCT-2009 22:24
Init. Cal. Date(s): 25-FEB-2009 13-OCT-2009
Init. Cal. Times: 19:14 00:04
Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\ecd4.i\101209A.b\8081_82F.m

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
29 PCB-1016(1)	1617	0 1751	0.010	8.3	15.0	
(2)	657	634	0.010	-3.5	15.0	
(3)	953	904	0.010	-5.2	15.0	
(4)	896	870	0.010	-2.9	15.0	0%D
(5)	++++	++++	0.010	++++	15.0	<-
(6)	801	848	0.010	5.9	15.0	
35 PCB-1260(1)	2705	X 2801	0.010	3.5	15.0	
(2)	1319	1331	0.010	0.9	15.0	
(3)	++++	++++	0.010	++++	15.0	<-
(4)	++++	++++	0.010	++++	15.0	<- -1%D
(5)	1206	1223	0.010	1.5	15.0	
(6)	1278	1284	0.010	0.5	15.0	
(7)	++++	++++	0.010	++++	15.0	<-
(8)	686	675	0.010	-1.6	15.0	

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 093R9601.D
Analysis Type:
Lab Sample ID: SEQ-CCV8
Method: \\ELABNSH05\TARGET\chem\ecd4.i\101209A.b\8081_82R.m

Injection Date: 13-OCT-2009 22:24
Init. Cal. Date(s): 25-FEB-2009 13-OCT-2009
Init. Cal. Times: 19:14 00:04
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
29 PCB-1016(1)	4114	X 3907	0.010	-5.0	15.0	
(2)	1475	1252	0.010	-15.1	15.0	<-
(3)	2348	1951	0.010	-16.9	15.0	<-
(4)	++++	++++	0.010	++++	15.0	<-
(5)	2199	2146	0.010	-2.4	15.0	
(6)	1938	1728	0.010	-10.8	15.0	
35 PCB-1260(1)	9986	D 8329	0.010	-16.6	15.0	<-
(2)	++++	++++	0.010	++++	15.0	<-
(3)	5375	4842	0.010	-9.9	15.0	
(4)	5714	5078	0.010	-11.1	15.0	
(5)	4934	4288	0.010	-13.1	15.0	
(6)	++++	++++	0.010	++++	15.0	<-
(7)	4744	4301	0.010	-9.3	15.0	
(8)	++++	++++	0.010	++++	15.0	<-

-10.0%D x

-12.0%D x

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 130FAX01.D
Analysis Type:
Lab Sample ID: SEQ-CCV9
Method: \\ELABNSH05\TARGET\chem\ecd4.i\101209A.b\8081_82F.m

Injection Date: 14-OCT-2009 07:59
Init. Cal. Date(s): ~~25-FEB-2009~~ 13-OCT-2009
Init. Cal. Times: 19:14 00:04
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
$ 36 TCMX	40560	39537	0.010	-2.5	15.0	
3 Alpha-BHC	55105	57012	0.010	3.5	15.0	
23 Gamma-BHC	47651	49324	0.010	3.5	15.0	
5 Beta-BHC	20694	20948	0.010	1.2	15.0	
15 Delta-BHC	41766	45874	0.010	9.8	15.0	
25 Heptachlor	38620	33405	0.010	-13.5	15.0	
2 Aldrin	38300	38581	0.010	0.7	15.0	
26 Heptachlor Epoxide	34245	32940	0.010	-3.8	15.0	
24 Gamma-Chlordane	33518	32166	0.010	-4.0	15.0	
4 Alpha-Chlordane	32095	31341	0.010	-2.3	15.0	
17 Endosulfan I	32341	30659	0.010	-5.2	15.0	
13 4,4'-DDE	30621	30878	0.010	0.8	15.0	
16 Dieldrin	33178	32408	0.010	-2.3	15.0	
20 Endrin	22120	19997	0.010	-9.6	15.0	
12 4,4'-DDD	25673	27124	0.010	5.7	15.0	
18 Endosulfan II	28669	26947	0.010	-6.0	15.0	
21 Endrin Aldehyde	25080	23234	0.010	-7.4	15.0	
14 4,4'-DDT	23669	17851	0.010	-24.6	15.0	<-
19 Endosulfan Sulfate	23007	22593	0.010	-1.8	15.0	
27 Methoxychlor	12245	8617	0.010	-29.6	15.0	<- Low
22 Endrin Ketone	32178	30460	0.010	-5.3	15.0	
$ 37 DCB	23347	17281	0.010	-26.0	15.0	<- Low

Only DDT, ~~DD~~ DDD, DDE targets

NL
10/27/09

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 130RAX01.D
Analysis Type:
Lab Sample ID: SEQ-CCV9
Method: \\ELABNSH05\TARGET\chem\ecd4.i\101209A.b\8081_82R.m

Injection Date: 14-OCT-2009 07:59
Init. Cal. Date(s): ~~25-FEB-2009~~ 13-OCT-2009
Init. Cal. Times: 19:14 00:04
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
$ 36 TCMX	81395	84245	0.010	3.5	15.0	
3 Alpha-BHC	122340	132085	0.010	8.0	15.0	
23 Gamma-BHC	103547	115328	0.010	11.4	15.0	
5 Beta-BHC	44237	48281	0.010	9.1	15.0	
25 Heptachlor	101482	87380	0.010	-13.9	15.0	
15 Delta-BHC	97382	115449	0.010	18.6	15.0	<- HIGH
2 Aldrin	106201	106865	0.010	0.6	15.0	
26 Heptachlor Epoxide	94104	88605	0.010	-5.8	15.0	
24 Gamma-Chlordane	88951	97008	0.010	9.1	15.0	
4 Alpha-Chlordane	90078	93757	0.010	4.1	15.0	
17 Endosulfan I	99821	94088	0.010	-5.7	15.0	
13 4,4'-DDE	84214	95164	0.010	13.0	15.0	
16 Dieldrin	108602	103092	0.010	-5.1	15.0	
20 Endrin	68890	63035	0.010	-8.5	15.0	
12 4,4'-DDD	71320	87210	0.010	22.3	15.0	<- ↓
18 Endosulfan II	90227	84562	0.010	-6.3	15.0	
14 4,4'-DDT	58760	54207	0.010	-7.7	15.0	
21 Endrin Aldehyde	87696	79144	0.010	-9.8	15.0	
19 Endosulfan Sulfate	71986	73498	0.010	2.1	15.0	
27 Methoxychlor	34034	28516	0.010	-16.2	15.0	<- LOW
22 Endrin Ketone	99806	94091	0.010	-5.7	15.0	
$ 37 DCB	67589	55094	0.010	-18.5	15.0	<- LOW

only DDD, DDE, DDT targets for these CCVs

WL 11/20/09

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 142FB901.D
Analysis Type:
Lab Sample ID: SEQ-CCV11
Method: \\ELABNSH05\TARGET\chem\ecd4.i\101209A.b\8081_82F.m

Injection Date: 14-OCT-2009 11:11
Init. Cal. Date(s): ~~25-FEB-2009~~ 13-OCT-2009
Init. Cal. Times: 19:14 00:04
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
$ 36 TCMX	40560	39080	0.010	-3.6	15.0	
3 Alpha-BHC	55105	0 56417	0.010	2.4	15.0	
23 Gamma-BHC	47651	48781	0.010	2.4	15.0	
5 Beta-BHC	20694	X 20867	0.010	0.8	15.0	
15 Delta-BHC	41766	45554	0.010	9.1	15.0	
25 Heptachlor	38620	33518	0.010	-13.2	15.0	
2 Aldrin	38300	38168	0.010	-0.3	15.0	
26 Heptachlor Epoxide	34245	32799	0.010	-4.2	15.0	
24 Gamma-Chlordane	33518	32091	0.010	-4.3	15.0	
4 Alpha-Chlordane	32095	30948	0.010	-3.6	15.0	
17 Endosulfan I	32341	30730	0.010	-5.0	15.0	
13 4,4'-DDE	30621	30692	0.010	0.2	15.0	
16 Dieldrin	33178	32234	0.010	-2.8	15.0	
20 Endrin	22120	18679	0.010	-15.6	15.0	<- Low
12 4,4'-DDD	25673	27117	0.010	5.6	15.0	
18 Endosulfan II	28669	26877	0.010	-6.2	15.0	
21 Endrin Aldehyde	25080	23934	0.010	-4.6	15.0	
14 4,4'-DDT	23669	18070	0.010	-23.7	15.0	<- ↓
19 Endosulfan Sulfate	23007	22980	0.010	-0.1	15.0	
27 Methoxychlor	12245	8876	0.010	-27.5	15.0	<- Low
22 Endrin Ketone	32178	31162	0.010	-3.2	15.0	
$ 37 DCB	23347	18070	0.010	-22.6	15.0	<- Low

only DDD, DDE, DDT targets

10/27/09

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 142RB901.D
Analysis Type:
Lab Sample ID: SEQ-CCV11
Method: \\ELABNSH05\TARGET\chem\ecd4.i\101209A.b\8081_82R.m

Injection Date: 14-OCT-2009 11:11
Init. Cal. Date(s): ~~25-FEB-2009~~ 13-OCT-2009
Init. Cal. Times: 19:14 00:04
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
$ 36 TCMX	81395	83525	0.010	2.6	15.0	
3 Alpha-BHC	122340	130846	0.010	7.0	15.0	
23 Gamma-BHC	103547	115135	0.010	11.2	15.0	
5 Beta-BHC	44237	47010	0.010	6.3	15.0	
25 Heptachlor	101482	88026	0.010	-13.3	15.0	
15 Delta-BHC	97382	114641	0.010	17.7	15.0	<- LOW
2 Aldrin	106201	105772	0.010	-0.4	15.0	
26 Heptachlor Epoxide	94104	88118	0.010	-6.4	15.0	
24 Gamma-Chlordane	88951	95918	0.010	7.8	15.0	
4 Alpha-Chlordane	90078	92690	0.010	2.9	15.0	
17 Endosulfan I	99821	93037	0.010	-6.8	15.0	
13 4,4'-DDE	84214	94130	0.010	11.8	15.0	
16 Dieldrin	108602	102308	0.010	-5.8	15.0	
20 Endrin	68890	59110	0.010	-14.2	15.0	
12 4,4'-DDD	71320	87477	0.010	22.7	15.0	<- HIGH
18 Endosulfan II	90227	83728	0.010	-7.2	15.0	
14 4,4'-DDT	58760	53706	0.010	-8.6	15.0	
21 Endrin Aldehyde	87696	82976	0.010	-5.4	15.0	
19 Endosulfan Sulfate	71986	74608	0.010	3.6	15.0	
27 Methoxychlor	34034	28743	0.010	-15.5	15.0	<- LOW
22 Endrin Ketone	99806	96982	0.010	-2.8	15.0	
$ 37 DCB	67589	59333	0.010	-12.2	15.0	

only DDD, DDE, DDT targets ~~for th~~

10/27/09

J.H. 10-27-09

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 154FBL01.D
Analysis Type:
Lab Sample ID: SEQ-CCV13
Method: \\ELABNSH05\TARGET\chem\ecd4.i\101209A.b\8081_82F.m

Injection Date: 14-OCT-2009 15:01
Init. Cal. Date(s): 25-FEB-2009 13-OCT-2009
Init. Cal. Times: 19:14 00:04
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
$ 36 TCMX	40560	38885	0.010	-4.1	15.0	
3 Alpha-BHC	55105	56162	0.010	1.9	15.0	
23 Gamma-BHC	47651	48382	0.010	1.5	15.0	
5 Beta-BHC	20694	20618	0.010	-0.4	15.0	
15 Delta-BHC	41766	44802	0.010	7.3	15.0	
25 Heptachlor	38620	32525	0.010	-15.8	15.0	<-
2 Aldrin	38300	37774	0.010	-1.4	15.0	
26 Heptachlor Epoxide	34245	32251	0.010	-5.8	15.0	
24 Gamma-Chlordane	33518	31285	0.010	-6.7	15.0	
4 Alpha-Chlordane	32095	30360	0.010	-5.4	15.0	
17 Endosulfan I	32341	30175	0.010	-6.7	15.0	
13 4,4'-DDE	30621	29773	0.010	-2.8	15.0	
16 Dieldrin	33178	31271	0.010	-5.7	15.0	
20 Endrin	22120	16959	0.010	-23.3	15.0	<- Not target
12 4,4'-DDD	25673	25987	0.010	1.2	15.0	
18 Endosulfan II	28669	25727	0.010	-10.3	15.0	
21 Endrin Aldehyde	25080	22339	0.010	-10.9	15.0	
14 4,4'-DDT	23669	16495	0.010	-30.3	15.0	<-
19 Endosulfan Sulfate	23007	21165	0.010	-8.0	15.0	
27 Methoxychlor	12245	7969	0.010	-34.9	15.0	<- Low
22 Endrin Ketone	32178	29010	0.010	-9.8	15.0	
$ 37 DCB	23347	15858	0.010	-32.1	15.0	<- Low

10/27/09

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 154RBL01.D
Analysis Type:
Lab Sample ID: SEQ-CCV13
Method: \\ELABNSH05\TARGET\chem\ecd4.i\101209A.b\8081_82R.m

Injection Date: 14-OCT-2009 15:01
Init. Cal. Date(s): ~~25-FEB-2009~~ 13-OCT-2009
Init. Cal. Times: 19:14 00:04
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
$ 36 TCMX	81395	76074	0.010	-6.5	15.0	
3 Alpha-BHC	122340	118394	0.010	-3.2	15.0	
23 Gamma-BHC	103547	103589	0.010	0.0	15.0	
5 Beta-BHC	44237	42673	0.010	-3.5	15.0	
25 Heptachlor	101482	77687	0.010	-23.4	15.0	<- Low
15 Delta-BHC	97382	102306	0.010	5.1	15.0	
2 Aldrin	106201	94928	0.010	-10.6	15.0	
26 Heptachlor Epoxide	94104	79723	0.010	-15.3	15.0	<- Low
24 Gamma-Chlordane	88951	85753	0.010	-3.6	15.0	
4 Alpha-Chlordane	90078	82768	0.010	-8.1	15.0	
17 Endosulfan I	99821	86029	0.010	-13.8	15.0	
13 4,4'-DDE	84214	83974	0.010	-0.3	15.0	
16 Dieldrin	108602	92930	0.010	-14.4	15.0	
20 Endrin	68890	49676	0.010	-27.9	15.0	<- Low
12 4,4'-DDD	71320	77543	0.010	8.7	15.0	
18 Endosulfan II	90227	75075	0.010	-16.8	15.0	<-
14 4,4'-DDT	58760	43730	0.010	-25.6	15.0	<- Low
21 Endrin Aldehyde	87696	73185	0.010	-16.5	15.0	<-
19 Endosulfan Sulfate	71986	62820	0.010	-12.7	15.0	
27 Methoxychlor	34034	24116	0.010	-29.1	15.0	<-
22 Endrin Ketone	99806	83131	0.010	-16.7	15.0	<- Low
$ 37 DCB	67589	47743	0.010	-29.4	15.0	<-

Only DDD, DDE, DDT target

10/27/09

FORM 8
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA22199

Column: ZB MR-1 ID: 0.32 (mm) Cont. Calib. Date(s): 10/15/09

Instrument ~~ID:~~ ECD4

THE ANALYTICAL SEQUENCE OF PERFORMANCE BLANKS, AND SAMPLES GIVEN BELOW: Tox Chlordane Cal,

	SURROGATE RT FROM CONTINUING CALIBRATION					
	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	RT #	RT #
01	SEQ-PEM1	SEQ-PEM1	10/15/09	1232		
02	SEQ-CAL8	SEQ-CAL8	10/15/09	1722		
03	SEQ-CAL9	SEQ-CAL9	10/15/09	1740		
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QC LIMITS

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA22199

Instrument ID: ECD4 Calibration Date(s): ~~08/10/09~~ 10/15/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): ~~1721~~ 1722

RF5: 006F0601

← Single pt →

COMPOUND	RF5	CURVE	COEFFICENT A1	%RSD OR R^2
Toxaphene	1364.190	AVRG	1364.19000	0.0
(2)	663.320	AVRG	663.320000	0.0
(3)	927.720	AVRG	927.720000	0.0
(4)	1432.760	AVRG	1432.76000	0.0
(5)	608.600	AVRG	608.600000	0.0

BM 10/27/09

WL 11/23/09

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA22199

Instrument ID: ECD4 Calibration Date(s): ~~05/15/09~~ 10/15/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): ~~1445~~ 1740

RF5: 007F0701

← Single pt →

COMPOUND	RF5	CURVE	COEFFICENT A1	%RSD OR R^2
Chlordane	07433.200	AVRG	7433.20000	0.0
(2)	2466.800	AVRG	2466.80000	0.0
(3)	3103.800	AVRG	3103.80000	0.0
(4)	2123.800	AVRG	2123.80000	0.0
(5)	4392.200	AVRG	4392.20000	0.0

FORM VI PESTA

FORM 8
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA22199

Column: ZB MR-2 ID: 0.32 (mm) Cont. Calib. Date(s): 10/15/09

Instrument ID: ECD4

THE ANALYTICAL SEQUENCE OF PERFORMANCE BLANKS, AND SAMPLES GIVEN BELOW:

TOX Chlordane Cal

	SURROGATE RT FROM CONTINUING CALIBRATION					
	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	RT #	RT #
01	SEQ-PEM1	SEQ-PEM1	10/15/09	1232		
02	SEQ-CAL8	SEQ-CAL8	10/15/09	1722		
03	SEQ-CAL9	SEQ-CAL9	10/15/09	1740		
04						
05						
06						
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						

QC LIMITS

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA22199

Instrument ID: ECD4 Calibration Date(s): ~~08/10/~~09 10/15/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): ~~1721~~ 1722

RF5: 006R0601

Single pt

COMPOUND	RF5	CURVE	COEFFICENT A1	%RSD OR R^2
Toxaphene	5077.350	AVRG	5077.35000	0.0
(2)	2084.500	AVRG	2084.50000	0.0
(3)	2735.020	AVRG	2735.02000	0.0
(4)	4294.330	AVRG	4294.33000	0.0
(5)	4115.090	AVRG	4115.09000	0.0

BMS 100309

10/23/09

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA22199

Instrument ID: ECD4 Calibration Date(s): ~~05/15/09~~ 10/15/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): ~~1445~~ 1740

RF5: 007R0701

← Single pt →

COMPOUND	RF5	CURVE	COEFFICENT A1	%RSD OR R^2
Chlordane	26668.600	AVRG	26668.6000	0.0
(2)	5227.000	AVRG	5227.00000	0.0
(3)	7229.400	AVRG	7229.40000	0.0
(4)	5461.200	AVRG	5461.20000	0.0
(5)	5196.400	AVRG	5196.40000	0.0

FORM VI PESTA

FORM 8
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Column: ZB MR-1 ID: 0.32 (mm) Cont. Calib. Date(s): 10/16/09

Instrument ID: ECD4

THE ANALYTICAL SEQUENCE OF PERFORMANCE BLANKS, AND SAMPLES GIVEN BELOW:

SURROGATE RT FROM CONTINUING CALIBRATION
S1 : 4.38 S2 : 10.33

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #
01	SEQ-CCV7	SEQ-CCV7	10/16/09	0907	4.38	10.32
02	SEQ-CCV8	SEQ-CCV8	10/16/09	0926		
03	NTC21SB10-SO	0910006-05RE	10/16/09	1329	4.38	
04	SEQ-CCV9	SEQ-CCV9	10/16/09	1604	4.38	10.32
05	SEQ-CCV10	SEQ-CCV10	10/16/09	1622		
06	FD-092609-02	0910006-02RE	10/16/09	1640		
07	NTC21SB11-SO	0910006-07RE	10/16/09	1711	4.37	
08	NTC21SB21-SO	0910006-17RE	10/16/09	1813	4.38	10.34
09	NTC21SB06-SO	0910006-23RE	10/16/09	1844	4.37	10.32
10	NTC21SB06-SO	0910006-24RE	10/16/09	1915	4.37	
11	SEQ-CCV11	SEQ-CCV11	10/16/09	2119	4.38	10.32
12	SEQ-CCV12	SEQ-CCV12	10/16/09	2137		
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						

		QC LIMITS
S1	= TCMX	(+/- 0.03 MINUTES)
S2	= DCB	(+/- 0.03 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

page 1 of 1

FORM VIII PESTA

FORM 8
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Column: ZB MR-2 ID: 0.32 (mm) Cont. Calib. Date(s): 10/16/09

Instrument ID: ECD4

THE ANALYTICAL SEQUENCE OF PERFORMANCE BLANKS, AND SAMPLES GIVEN BELOW:

SURROGATE RT FROM CONTINUING CALIBRATION
S1 : 3.55 S2 : 8.63

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #
01	SEQ-CCV7	SEQ-CCV7	10/16/09	0907	3.55	8.63
02	SEQ-CCV8	SEQ-CCV9	10/16/09	0926		
03	NTC21SB10-SO	0910006-05RE	10/16/09	1329	3.55	
04	SEQ-CCV9	SEQ-CCV9	10/16/09	1604	3.55	8.62
05	SEQ-CCV10	SEQ-CCV10	10/16/09	1622		
06	FD-092609-02	0910006-02RE	10/16/09	1640		
07	NTC21SB11-SO	0910006-07RE	10/16/09	1711	3.55	
08	NTC21SB21-SO	0910006-17RE	10/16/09	1813	3.55	8.62
09	NTC21SB06-SO	0910006-23RE	10/16/09	1844	3.55	8.62
10	NTC21SB06-SO	0910006-24RE	10/16/09	1915	3.55	8.62
11	SEQ-CCV11	SEQ-CCV11	10/16/09	2119	3.55	8.62
12	SEQ-CCV12	SEQ-CCV12	10/16/09	2137		
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						

	QC LIMITS
S1 = TCMX	(+/- 0.03 MINUTES)
S2 = DCB	(+/- 0.03 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

page 1 of 1

FORM VIII PESTA

J.H. 10.28.09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 060F6001.D
Analysis Type:
Lab Sample ID: SEQ-CCV7
Method: \\ELABNSH05\TARGET\chem\ecd4.i\101509.b\8081_82F.m

Injection Date: 16-OCT-2009 09:07
Init. Cal. Date(s): 25-FEB-2009 15-OCT-2009
Init. Cal. Times: 19:14 17:40
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
$ 36 TCMX	40560	X 36639	0.010	-9.7	15.0	
3 Alpha-BHC	55105	O 54760	0.010	-0.6	15.0	
23 Gamma-BHC	47651	49186	0.010	3.2	15.0	
5 Beta-BHC	20694	21833	0.010	5.5	15.0	
15 Delta-BHC	41766	49533	0.010	18.6	15.0	<- ↑
25 Heptachlor	38620	42244	0.010	9.4	15.0	
2 Aldrin	38300	42965	0.010	12.2	15.0	
26 Heptachlor Epoxide	34245	37762	0.010	10.3	15.0	
24 Gamma-Chlordane	33518	37381	0.010	11.5	15.0	
4 Alpha-Chlordane	32095	35627	0.010	11.0	15.0	
17 Endosulfan I	32341	35742	0.010	10.5	15.0	
13 4,4'-DDE	30621	35735	0.010	16.7	15.0	<- ↑
16 Dieldrin	33178	37229	0.010	12.2	15.0	
20 Endrin	22120	26020	0.010	17.6	15.0	<- 3↑
12 4,4'-DDD	25673	30057	0.010	17.1	15.0	<-
18 Endosulfan II	28669	31036	0.010	8.3	15.0	
21 Endrin Aldehyde	25080	26142	0.010	4.2	15.0	
14 4,4'-DDT	23669	24333	0.010	2.8	15.0	
19 Endosulfan Sulfate	23007	25953	0.010	12.8	15.0	
27 Methoxychlor	12245	11589	0.010	-5.4	15.0	
22 Endrin Ketone	32178	33426	0.010	3.9	15.0	
$ 37 DCB	23347	20475	0.010	-12.3	15.0	

ML
10/24/09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 060R6001.D
Analysis Type:
Lab Sample ID: SEQ-CCV7
Method: \\ELABNSH05\TARGET\chem\ecd4.i\101509.b\8081_82R.m

Injection Date: 16-OCT-2009 09:07
Init. Cal. Date(s): 25-FEB-2009 15-OCT-2009
Init. Cal. Times: 19:14 17:40
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
$ 36 TCMX	81395	80295	0.010	-1.4	15.0	
3 Alpha-BHC	122340	126759	0.010	3.6	15.0	
23 Gamma-BHC	103547	113310	0.010	9.4	15.0	
5 Beta-BHC	44237	46727	0.010	5.6	15.0	
25 Heptachlor	101482	96068	0.010	-5.3	15.0	
15 Delta-BHC	97382	115443	0.010	18.5	15.0	<-
2 Aldrin	106201	105372	0.010	-0.8	15.0	
26 Heptachlor Epoxide	94104	90727	0.010	-3.6	15.0	
24 Gamma-Chlordane	88951	98835	0.010	11.1	15.0	
4 Alpha-Chlordane	90078	97757	0.010	8.5	15.0	
17 Endosulfan I	99821	92072	0.010	-7.8	15.0	
13 4,4'-DDE	84214	94857	0.010	12.6	15.0	
16 Dieldrin	108602	107175	0.010	-1.3	15.0	
20 Endrin	68890	73231	0.010	6.3	15.0	
12 4,4'-DDD	71320	88904	0.010	24.7	15.0	<-
18 Endosulfan II	90227	90646	0.010	0.5	15.0	
14 4,4'-DDT	58760	65461	0.010	11.4	15.0	
21 Endrin Aldehyde	87696	87407	0.010	-0.3	15.0	
19 Endosulfan Sulfate	71986	82203	0.010	14.2	15.0	
27 Methoxychlor	34034	36204	0.010	6.4	15.0	
22 Endrin Ketone	99806	102354	0.010	2.6	15.0	
$ 37 DCB	67589	71038	0.010	5.1	15.0	

10/24/09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 061F6101.D
Analysis Type:
Lab Sample ID: SEQ-CCV8
Method: \\ELABNSH05\TARGET\chem\ecd4.i\101509.b\8081_82F.m

Injection Date: 16-OCT-2009 09:26
Init. Cal. Date(s): 25-FEB-2009 15-OCT-2009
Init. Cal. Times: 19:14 17:40
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
29 PCB-1016(1)	1617	2030	0.010	25.6	15.0	<-
(2)	657	678	0.010	3.2	15.0	
(3)	953	966	0.010	1.4	15.0	
(4)	896	975	0.010	8.9	15.0	
(5)	++++	++++	0.010	++++	15.0	<-
(6)	801	1070	0.010	33.5	15.0	<-
35 PCB-1260(1)	2705	3080	0.010	13.9	15.0	
(2)	1319	1594	0.010	20.9	15.0	<-
(3)	++++	++++	0.010	++++	15.0	<-
(4)	++++	++++	0.010	++++	15.0	<-
(5)	1206	1415	0.010	17.4	15.0	<-
(6)	1278	1449	0.010	13.4	15.0	
(7)	++++	++++	0.010	++++	15.0	<-
(8)	686	725	0.010	5.7	15.0	

14.5%D *

14.2%D *

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i Injection Date: 16-OCT-2009 09:26
Lab File ID: 061R6101.D Init. Cal. Date(s): ~~25-FEB-2009~~ 15-OCT-2009
Analysis Type: Init. Cal. Times: 19:14 17:40
Lab Sample ID: SEQ-CCV8 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\ecd4.i\101509.b\8081_82R.m

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
29 PCB-1016(1)	4114	0 4046	0.010	-1.6	15.0	
(2)	1475	1325	0.010	-10.2	15.0	
(3)	2348	2138	0.010	-8.9	15.0	
(4)	++++	++++	0.010	++++	15.0	<-
(5)	2199	x 2345	0.010	6.7	15.0	
(6)	1938	1932	0.010	-0.3	15.0	
35 PCB-1260(1)	9986	9470	0.010	-5.2	15.0	
(2)	++++	++++	0.010	++++	15.0	<-
(3)	5375	5442	0.010	1.2	15.0	
(4)	5714	5851	0.010	2.4	15.0	
(5)	4934	4761	0.010	-3.5	15.0	
(6)	++++	++++	0.010	++++	15.0	<-
(7)	4744	4758	0.010	0.3	15.0	
(8)	++++	++++	0.010	++++	15.0	<-

-2.9%D x

-1.0%D x

JH. 10.28.09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 084F8401.D
Analysis Type:
Lab Sample ID: SEQ-CCV9
Method: \\ELABNSH05\TARGET\chem\ecd4.i\101509.b\8081_82F.m

Injection Date: ~~16~~-OCT-2009 16:04
Init. Cal. Date(s): 25-FEB-2009 15-OCT-2009
Init. Cal. Times: 19:14 17:40
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
$ 36 TCMX	40560	34740	0.010	-14.3	15.0	
3 Alpha-BHC	55105	O 52245	0.010	-5.2	15.0	
23 Gamma-BHC	47651	46175	0.010	-3.1	15.0	
5 Beta-BHC	20694	20549	0.010	-0.7	15.0	
15 Delta-BHC	41766	46126	0.010	10.4	15.0	
25 Heptachlor	38620	36650	0.010	-5.1	15.0	
2 Aldrin	38300	40391	0.010	5.5	15.0	
26 Heptachlor Epoxide	34245	X 35507	0.010	3.7	15.0	
24 Gamma-Chlordane	33518	34921	0.010	4.2	15.0	
4 Alpha-Chlordane	32095	33396	0.010	4.1	15.0	
17 Endosulfan I	32341	33416	0.010	3.3	15.0	
13 4,4'-DDE	30621	32897	0.010	7.4	15.0	
16 Dieldrin	33178	34818	0.010	4.9	15.0	
20 Endrin	22120	22464	0.010	1.6	15.0	
12 4,4'-DDD	25673	28666	0.010	11.7	15.0	
18 Endosulfan II	28669	28286	0.010	-1.3	15.0	
21 Endrin Aldehyde	25080	23643	0.010	-5.7	15.0	
~~14~~ 4,4'-DDT	23669	17950	0.010	-24.2	15.0	<- ↓
19 Endosulfan Sulfate	23007	23081	0.010	0.3	15.0	
~~27 Methoxychlor~~	12245	8872	0.010	-27.5	15.0	<- ↓
22 Endrin Ketone	32178	30186	0.010	-6.2	15.0	
$ ~~37 DCB~~	23347	16881	0.010	-27.7	15.0	<- ↓

JL
10/24/09

Data File: \\ELABNSH05\TARGET\chem\ecd4.i\101509.b\084R8401.D
Report Date: 24-Oct-2009 15:10

J.H. 10-28-09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 084R8401.D
Analysis Type:
Lab Sample ID: SEQ-CCV9
Method: \\ELABNSH05\TARGET\chem\ecd4.i\101509.b\8081_82R.m

Injection Date: 16-OCT-2009 16:04
Init. Cal. Date(s): ~~25-FEB-2009~~ 15-OCT-2009
Init. Cal. Times: 19:14 17:40
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
$ 36 TCMX	81395	76137	0.010	-6.5	15.0	
3 Alpha-BHC	122340	0 121260	0.010	-0.9	15.0	
23 Gamma-BHC	103547	107367	0.010	3.7	15.0	
5 Beta-BHC	44237	43441	0.010	-1.8	15.0	
25 Heptachlor	101482	84660	0.010	-16.6	15.0	<- ↓
15 Delta-BHC	97382	X 108006	0.010	10.9	15.0	
2 Aldrin	106201	99523	0.010	-6.3	15.0	
26 Heptachlor Epoxide	94104	84298	0.010	-10.4	15.0	
24 Gamma-Chlordane	88951	90339	0.010	1.6	15.0	
4 Alpha-Chlordane	90078	89714	0.010	-0.4	15.0	
17 Endosulfan I	99821	84932	0.010	-14.9	15.0	
13 4,4'-DDE	84214	85676	0.010	1.7	15.0	
16 Dieldrin	108602	97544	0.010	-10.2	15.0	
20 Endrin	68890	62564	0.010	-9.2	15.0	
12 4,4'-DDD	71320	83128	0.010	16.6	15.0	<- ↑
18 Endosulfan II	90227	81326	0.010	-9.9	15.0	
14 4,4'-DDT	58760	46502	0.010	-20.9	15.0	<- ↓
21 Endrin Aldehyde	87696	78325	0.010	-10.7	15.0	
19 Endosulfan Sulfate	71986	72478	0.010	0.7	15.0	
27 Methoxychlor	34034	27512	0.010	-19.2	15.0	<- ↓
22 Endrin Ketone	99806	89886	0.010	-9.9	15.0	
$ 37 DCB	67589	60163	0.010	-11.0	15.0	

WL 10/24/09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i Injection Date: 16-OCT-2009 16:22
Lab File ID: 085F8501.D Init. Cal. Date(s): 25-FEB-2009 15-OCT-2009
Analysis Type: Init. Cal. Times: 19:14 17:40
Lab Sample ID: SEQ-CCV10 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\ecd4.i\101509.b\8081_82F.m

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
29 PCB-1016(1)	1617	1983	0.010	22.7	15.0	<-
(2)	657	657	0.010	0.0	15.0	
(3)	953	944	0.010	-1.0	15.0	
(4)	896	948	0.010	5.8	15.0	
(5)	++++	++++	0.010	++++	15.0	<-
(6)	801	1063	0.010	32.7	15.0	<-
35 PCB-1260(1)	2705	2990	0.010	10.5	15.0	
(2)	1319	1591	0.010	20.6	15.0	<-
(3)	++++	++++	0.010	++++	15.0	<-
(4)	++++	++++	0.010	++++	15.0	<-
(5)	1206	1402	0.010	16.2	15.0	<-
(6)	1278	1426	0.010	11.6	15.0	
(7)	++++	++++	0.010	++++	15.0	<-
(8)	686	693	0.010	0.9	15.0	

+12.1%D *

+12.0%D *

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 085R8501.D
Analysis Type:
Lab Sample ID: SEQ-CCV10
Method: \\ELABNSH05\TARGET\chem\ecd4.i\101509.b\8081_82R.m

Injection Date: 16-OCT-2009 16:22
Init. Cal. Date(s): ~~25-FEB-2009~~ 15-OCT-2009
Init. Cal. Times: 19:14 17:40
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
29 PCB-1016(1)	4114	D 3950	0.010	-4.0	15.0	
(2)	1475	1302	0.010	-11.7	15.0	
(3)	2348	2085	0.010	-11.2	15.0	
(4)	++++	++++	0.010	++++	15.0	<-
(5)	2199	2315	0.010	5.3	15.0	
(6)	1938	1886	0.010	-2.7	15.0	
35 PCB-1260(1)	9986	X 9059	0.010	-9.3	15.0	
(2)	++++	++++	0.010	++++	15.0	<-
(3)	5375	5221	0.010	-2.9	15.0	
(4)	5714	5667	0.010	-0.8	15.0	
(5)	4934	4556	0.010	-7.7	15.0	
(6)	++++	++++	0.010	++++	15.0	<-
(7)	4744	4608	0.010	-2.9	15.0	
(8)	++++	++++	0.010	++++	15.0	<-

-4.9%D X

-4.7%D X

J.H. 10.28.09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 104FA401.D
Analysis Type:
Lab Sample ID: SEQ-CCV11
Method: \\ELABNSH05\TARGET\chem\ecd4.i\101509.b\8081_82F.m

Injection Date: ~~16-OCT-2009 21:19~~
Init. Cal. Date(s): 25-FEB-2009 15-OCT-2009
Init. Cal. Times: 19:14 17:40
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
$ 36 TCMX	40560	0 34901	0.010	-14.0	15.0	
3 Alpha-BHC	55105	51382	0.010	-6.8	15.0	
23 Gamma-BHC	47651	44411	0.010	-6.8	15.0	
5 Beta-BHC	20694	19633	0.010	-5.1	15.0	
15 Delta-BHC	41766	X 44745	0.010	7.1	15.0	
25 Heptachlor	38620	30346	0.010	-21.4	15.0	<-
2 Aldrin	38300	39314	0.010	2.6	15.0	
26 Heptachlor Epoxide	34245	34538	0.010	0.9	15.0	
24 Gamma-Chlordane	33518	33454	0.010	-0.2	15.0	
4 Alpha-Chlordane	32095	32052	0.010	-0.1	15.0	
17 Endosulfan I	32341	31319	0.010	-3.2	15.0	
13 4,4'-DDE	30621	31390	0.010	2.5	15.0	
16 Dieldrin	33178	32725	0.010	-1.4	15.0	
20 Endrin	22120	22783	0.010	3.0	15.0	
12 4,4'-DDD	25673	28173	0.010	9.7	15.0	
18 Endosulfan II	28669	25904	0.010	-9.6	15.0	
21 Endrin Aldehyde	25080	20886	0.010	-16.7	15.0	<-
14 4,4'-DDT	23669	12354	0.010	-47.8	15.0	<-
19 Endosulfan Sulfate	23007	21021	0.010	-8.6	15.0	
27 Methoxychlor	12245	6629	0.010	-45.9	15.0	<-
22 Endrin Ketone	32178	25593	0.010	-20.5	15.0	<-
$ 37 DCB	23347	13781	0.010	-41.0	15.0	<-

NL
10/24/09

JH. 10.28.09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 104RA401.D
Analysis Type:
Lab Sample ID: SEQ-CCV11
Method: \\ELABNSH05\TARGET\chem\ecd4.i\101509.b\8081_82R.m

Injection Date: 16-OCT-2009 21:19
Init. Cal. Date(s): 25-FEB-2009 15-OCT-2009
Init. Cal. Times: 19:14 17:40
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
$ 36 TCMX	81395	74572	0.010	-8.4	15.0	
3 Alpha-BHC	122340	O 117271	0.010	-4.1	15.0	
23 Gamma-BHC	103547	102511	0.010	-1.0	15.0	
5 Beta-BHC	44237	43275	0.010	-2.2	15.0	
~~25 Heptachlor~~	101482	69128	0.010	-31.9	15.0	<- ↓
15 Delta-BHC	97382	104861	0.010	7.7	15.0	
2 Aldrin	106201	94763	0.010	-10.8	15.0	
26 Heptachlor Epoxide	94104	81325	0.010	-13.6	15.0	
24 Gamma-Chlordane	88951	87185	0.010	-2.0	15.0	
4 Alpha-Chlordane	90078	x 85705	0.010	-4.9	15.0	
~~17 Endosulfan I~~	99821	78611	0.010	-21.2	15.0	<- ↓
13 4,4'-DDE	84214	82060	0.010	-2.6	15.0	
~~16 Dieldrin~~	108602	89844	0.010	-17.3	15.0	<- ↓
20 Endrin	68890	63597	0.010	-7.7	15.0	
12 4,4'-DDD	71320	80579	0.010	13.0	15.0	
~~18 Endosulfan II~~	90227	73135	0.010	-18.9	15.0	<-
~~14 4,4'-DDT~~	58760	35401	0.010	-39.8	15.0	<- ↓
21 Endrin Aldehyde	87696	64396	0.010	-26.6	15.0	<-
~~19 Endosulfan Sulfate~~	71986	64646	0.010	-10.2	15.0	
~~27 Methoxychlor~~	34034	21236	0.010	-37.6	15.0	<-
22 Endrin Ketone	99806	74619	0.010	-25.2	15.0	<- ↓
$ 37 DCB	67589	47448	0.010	-29.8	15.0	<-

WL
10/24/09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i Injection Date: 16-OCT-2009 21:37
Lab File ID: 105FA501.D Init. Cal. Date~~(s): 25-FEB-2009~~ 15-OCT-2009
Analysis Type: Init. Cal. Times: 19:14 17:40
Lab Sample ID: SEQ-CCV12 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\ecd4.i\101509.b\8081_82F.m

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
29 PCB-1016(1)	1617	0 1824	0.010	12.8	15.0	
(2)	657	643	0.010	-2.0	15.0	
(3)	953	930	0.010	-2.4	15.0	
(4)	896	919	0.010	2.6	15.0	+7.1%D x
(5)	++++	++++	0.010	++++	15.0	<-
(6)	801	999	0.010	24.8	15.0	<-
35 PCB-1260(1)	2705	x 2473	0.010	-8.6	15.0	
(2)	1319	1437	0.010	9.0	15.0	
(3)	++++	++++	0.010	++++	15.0	<-
(4)	++++	++++	0.010	++++	15.0	<- -6.0% D x
(5)	1206	1197	0.010	-0.7	15.0	
(6)	1278	1207	0.010	-5.6	15.0	
(7)	++++	++++	0.010	++++	15.0	<-
(8)	686	521	0.010	-24.1	15.0	<-

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 105RA501.D
Analysis Type:
Lab Sample ID: SEQ-CCV12
Method: \\ELABNSH05\TARGET\chem\ecd4.i\101509.b\8081_82R.m

Injection Date: 16-OCT-2009 21:37
Init. Cal. Date(s): 25-FEB-2009 15-OCT-2009
Init. Cal. Times: ~~19:14~~ 17:40
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
29 PCB-1016(1)	4114	0 3724	0.010	-9.5	15.0	
(2)	1475	1239	0.010	-16.0	15.0	<-
(3)	2348	1960	0.010	-16.5	15.0	<-
(4)	++++	++++	0.010	++++	15.0	<-
(5)	2199	2045	0.010	-7.0	15.0	
(6)	1938	1754	0.010	-9.5	15.0	
35 PCB-1260(1)	9986	X 7567	0.010	-24.2	15.0	<-
(2)	++++	++++	0.010	++++	15.0	<-
(3)	5375	4643	0.010	-13.6	15.0	
(4)	5714	4969	0.010	-13.0	15.0	
(5)	4934	3886	0.010	-21.2	15.0	<-
(6)	++++	++++	0.010	++++	15.0	<-
(7)	4744	3855	0.010	-18.8	15.0	<-
(8)	++++	++++	0.010	++++	15.0	<-

* -11.7%D x

-18.2%D x (low)

FORM 8
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA22199

Column: ZB MR-1 ID: 0.32 (mm) Cont. Calib. Date(s): 10/23/09

Instrument ID: ECD4

THE ANALYTICAL SEQUENCE OF PERFORMANCE BLANKS, AND SAMPLES GIVEN BELOW:

Tox
Chlordane
Cal

	SURROGATE RT FROM CONTINUING CALIBRATION					
	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	RT #	RT #
01	SEQ-PEM1	SEQ-PEM1	10/23/09	1735		
02	SEQ-CAL8	SEQ-CAL8	10/23/09	1848		
03	SEQ-CAL9	SEQ-CAL9	10/23/09	1906		
04						
05						
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QC LIMITS

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA22199

Instrument ID: ECD4 Calibration Date(s): 0~~8/10/09~~ 10/23/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): ~~1721~~ 1848

RF5: 005F0501

← Single pt →

COMPOUND	RF5	CURVE	COEFFICENT A1	%RSD OR R^2
Toxaphene	01829.610	AVRG	1829.61000	0.0
(2)	1166.610	AVRG	1166.61000	0.0
(3)	1663.500	AVRG	1663.50000	0.0
(4)	1793.860	AVRG	1793.86000	0.0
(5)	838.080	AVRG	838.080000	0.0

10/26/09

10/28/09

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA22199

Instrument ID: ECD4 Calibration Date(s): ~~05/15/09~~ 10/23/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): ~~1445~~ 1906

RF5: 006F0601

← single pt →

COMPOUND	RF5	CURVE	COEFFICENT A1	%RSD OR R^2
Chlordane	10382.800	AVRG	10382.8000	0.0
(2)	2267.400	AVRG	2267.40000	0.0
(3)	2338.600	AVRG	2338.60000	0.0
(4)	2669.200	AVRG	2669.20000	0.0
(5)	5546.000	AVRG	5546.00000	0.0

FORM VI PESTA

FORM 8
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA22199

Column: ZB MR-2 ID: 0.32 (mm) Cont. Calib. Date(s): 10/23/09

Instrument ID: ECD4

THE ANALYTICAL SEQUENCE OF PERFORMANCE BLANKS, AND SAMPLES GIVEN BELOW: Tox Chlordane Cal

	SURROGATE RT FROM CONTINUING CALIBRATION					
	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	RT #	RT #
01	SEQ-PEM1	SEQ-PEM1	10/23/09	1735		
02	SEQ-CAL8	SEQ-CAL8	10/23/09	1848		
03	SEQ-CAL9	SEQ-CAL9	10/23/09	1906		
04						
05						
06						
07						
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32						

QC LIMITS

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA22199

Instrument ID: ECD4 Calibration Date(s): ~~08/10/09~~ 10/23/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): ~~1721~~ 1848

RF5: 005R0501

← Single pt →

COMPOUND	RF5	CURVE	COEFFICENT A1	%RSD OR R^2
Toxaphene	6203.570	AVRG	6203.57000	0.0
(2)	2879.520	AVRG	2879.52000	0.0
(3)	6984.290	AVRG	6984.29000	0.0
(4)	4445.930	AVRG	4445.93000	0.0
(5)	4584.900	AVRG	4584.90000	0.0

WL
10/26/09

BM
10/28/09

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA22199

Instrument ID: ECD4 Calibration Date(s): ~~05/15/09~~ 10/23/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): ~~1445~~ 1906

RF5: 006R0601

← Single pt →

COMPOUND	RF5	CURVE	COEFFICENT A1	%RSD OR R^2
Chlordane	25165.800	AVRG	25165.8000	0.0
(2)	5504.400	AVRG	5504.40000	0.0
(3)	7148.200	AVRG	7148.20000	0.0
(4)	5718.600	AVRG	5718.60000	0.0
(5)	9677.600	AVRG	9677.60000	0.0

FORM VI PESTA

FORM 8
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA22199

Column: ZB MR-1 ID: 0.32 (mm) Cont. Calib. Date(s): 10/23/09

Instrument ID: ECD4

PEST
CaO

THE ANALYTICAL SEQUENCE OF PERFORMANCE BLANKS, AND SAMPLES GIVEN BELOW:

SURROGATE RT FROM CONTINUING CALIBRATION
S1 : 4.26 S2 : 10.13

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #
01	SEQ-CAL1	SEQ-CAL1	10/23/09	1943	4.26	10.12
02	SEQ-CAL2	SEQ-CAL2	10/23/09	2001	4.26	10.13
03	SEQ-CAL3	SEQ-CAL3	10/23/09	2020	4.26	10.13
04	SEQ-CAL4	SEQ-CAL4	10/23/09	2038	4.26	10.13
05	SEQ-CAL5	SEQ-CAL5	10/23/09	2056	4.26	10.13
06	SEQ-CAL6	SEQ-CAL6	10/23/09	2114	4.26	10.13
07	SEQ-CAL7	SEQ-CAL7	10/23/09	2133	4.26	10.13
08	SEQ-ICV1	SEQ-ICV1	10/23/09	2151		
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32						

	QC LIMITS
S1 = TCMX	(+/- 0.03 MINUTES)
S2 = DCB	(+/- 0.03 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA22199

Instrument ID: ECD4 Calibration Date(s): 10/23/09 10/23/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 1943 2133

LAB FILE ID: RF5: 013F1301 RF1: 014F1401

COMPOUND	RF5	RF1	CURVE	COEFFICENT A1	%RSD OR R^2	
Aldrin	66237.400	72601.000	AVRG	62551.1557	13.0	
Alpha-BHC	60802.800	66243.000	AVRG	57475.1707	11.8	
Alpha-Chlordane	53604.000	60739.000	AVRG	49878.9743	15.8	ok
Beta-BHC	25990.600	30517.000	AVRG	24535.3050	16.0	ok
4,4'-DDD	34481.400	33340.000	AVRG	32417.4307	10.1	
4,4'-DDE	52967.200	55839.000	AVRG	49708.9871	13.2	
4,4'-DDT	39945.400	38100.000	AVRG	36319.9800	13.2	
Delta-BHC	50348.000	53931.000	AVRG	48212.9750	11.5	
Dieldrin	62533.400	67790.000	AVRG	58322.1871	14.6	
Endosulfan I	62352.000	69305.000	AVRG	57618.2214	15.6	ok
Endosulfan II	51924.400	58012.000	AVRG	46601.0657	19.5	ok
Endosulfan Sulfate	37290.600	40515.000	AVRG	34026.0957	15.9	ok
Endrin	37781.000	41432.000	AVRG	34991.6371	14.0	
Endrin Aldehyde	41432.800	47625.000	AVRG	37586.2607	19.4	ok
Endrin Ketone	50554.400	55398.000	AVRG	45248.3464	18.3	
Gamma-BHC	55550.600	61135.000	AVRG	52597.6793	12.3	
Gamma-Chlordane	59106.200	65186.000	AVRG	55782.2943	13.7	
Heptachlor	53538.600	57581.000	AVRG	49670.1479	13.8	
Heptachlor Epoxide	59736.200	67758.000	AVRG	55305.8214	16.5	
Methoxychlor	20615.600	21119.000	AVRG	18064.4686	16.7	
TCMX	55479.400	63933.000	AVRG	51533.5964	14.9	
DCB	28769.000	31099.000	AVRG	25497.0421	16.2	

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA22199

Instrument ID: ECD4 Calibration Date(s): 10/23/09 10/23/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 1943 2133

LAB FILE ID: RT1: 008F0801 RT2: 009F0901 RT3: 010F1001
RT4: 011F1101 RT5: 012F1201

COMPOUND	RT1	RT2	RT3	RT4	RT5
Aldrin	5.796	5.795	5.795	5.795	5.796
Alpha-BHC	4.644	4.644	4.644	4.644	4.643
Alpha-Chlordane	6.596	6.594	6.594	6.594	6.596
Beta-BHC	5.131	5.130	5.130	5.132	5.131
4,4'-DDD	7.402	7.404	7.409	7.409	7.413
4,4'-DDE	6.809	6.810	6.815	6.817	6.824
4,4'-DDT	7.762	7.764	7.765	7.767	7.771
Delta-BHC	5.354	5.354	5.352	5.354	5.353
Dieldrin	6.947	6.949	6.947	6.947	6.946
Endosulfan I	6.642	6.644	6.644	6.644	6.644
Endosulfan II	7.467	7.467	7.465	7.467	7.468
Endosulfan Sulfate	7.899	7.900	7.900	7.902	7.903
Endrin	7.202	7.202	7.202	7.204	7.203
Endrin Aldehyde	7.621	7.622	7.622	7.622	7.624
Endrin Ketone	8.462	8.462	8.464	8.463	8.464
Gamma-BHC	4.934	4.934	4.934	4.934	4.933
Gamma-Chlordane	6.512	6.512	6.512	6.512	6.513
Heptachlor	5.467	5.467	5.467	5.467	5.468
Heptachlor Epoxide	6.237	6.237	6.237	6.237	6.236
Methoxychlor	8.362	8.362	8.365	8.364	8.369
TCMX	4.257	4.257	4.257	4.257	4.258
DCB	10.124	10.125	10.125	10.125	10.126

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA22199

Instrument ID: ECD4 Calibration Date(s): 10/23/09 10/23/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 1943 2133

LAB FILE ID: RF200: 008F0801 RF100: 009F0901 RF50: 010F1001
RF25: 011F1101 RF10: 012F1201

COMPOUND	RF200	RF100	RF50	RF25	RF10
Aldrin	48973.010	54935.940	61832.300	68034.840	65243.600
Alpha-BHC	45991.905	51396.830	56678.060	61401.000	59812.600
Alpha-Chlordane	37005.940	42918.680	48799.260	54523.440	51562.500
Beta-BHC	18392.045	21448.370	23381.060	26962.760	25055.300
4,4'-DDD	26856.185	31320.330	33539.740	37064.960	30319.400
4,4'-DDE	38040.130	44784.500	48880.420	56650.760	50800.900
4,4'-DDT	28363.220	31987.440	35909.380	42577.520	37356.900
Delta-BHC	38752.665	43335.560	48071.280	53940.120	49112.200
Dieldrin	44118.080	49957.170	57578.240	64937.320	61341.100
Endosulfan I	43096.420	48994.030	56085.320	63460.080	60034.700
Endosulfan II	32476.560	37335.940	43874.280	51841.480	50742.800
Endosulfan Sulfate	24886.840	29506.890	33208.460	38234.080	34540.800
Endrin	27479.150	29857.730	34372.860	38254.720	35764.000
Endrin Aldehyde	26891.765	30384.780	34604.300	42186.280	39978.900
Endrin Ketone	31195.015	38161.150	43871.260	50764.400	46794.200
Gamma-BHC	41866.805	46612.390	52056.000	56603.760	54359.200
Gamma-Chlordane	42900.650	48780.010	55326.840	61502.760	57673.600
Heptachlor	38259.875	42841.000	48863.420	54324.840	52282.300
Heptachlor Epoxide	40565.240	47150.050	53051.260	60844.400	58035.600
Methoxychlor	13282.540	15423.880	17014.840	20881.120	18114.300
TCMX	40284.695	44482.700	50289.500	52732.280	53533.600
DCB	19411.285	21493.910	24634.720	27982.880	25088.500

BR 10/27/09

11/26/09

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA22199

Instrument ID: ECD4 Calibration Date(s): 10/23/09 10/23/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 1943 2133

LAB FILE ID: RT6: 013F1301 RT7: 014F1401

COMPOUND	RT6	RT7	MEAN RT	RT WINDOW FROM	RT WINDOW TO
Aldrin	5.796	5.795	5.795	5.765	5.825
Alpha-BHC	4.644	4.643	4.644	4.614	4.674
Alpha-Chlordane	6.594	6.595	6.595	6.564	6.624
Beta-BHC	5.131	5.130	5.131	5.100	5.160
4,4'-DDD	7.413	7.417	7.409	7.374	7.434
4,4'-DDE	6.823	6.825	6.818	6.780	6.840
4,4'-DDT	7.771	7.772	7.767	7.734	7.794
Delta-BHC	5.354	5.353	5.353	5.324	5.384
Dieldrin	6.948	6.947	6.947	6.919	6.979
Endosulfan I	6.644	6.643	6.644	6.614	6.674
Endosulfan II	7.468	7.467	7.467	7.437	7.497
Endosulfan Sulfate	7.904	7.903	7.902	7.870	7.930
Endrin	7.203	7.202	7.202	7.172	7.232
Endrin Aldehyde	7.624	7.625	7.623	7.592	7.652
Endrin Ketone	8.466	8.467	8.464	8.432	8.492
Gamma-BHC	4.934	4.933	4.934	4.904	4.964
Gamma-Chlordane	6.513	6.512	6.512	6.482	6.542
Heptachlor	5.468	5.467	5.467	5.437	5.497
Heptachlor Epoxide	6.238	6.238	6.237	6.207	6.267
Methoxychlor	8.366	8.368	8.365	8.332	8.392
TCMX	4.258	4.257	4.257	4.227	4.287
DCB	10.128	10.127	10.126	10.095	10.155

FORM VI PESTA

FORM 8
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA22199

Column: ZB MR-2 ID: 0.32 (mm) Cont. Calib. Date(s): 10/23/09

Instrument ID: ECD4

PEST
CQ

THE ANALYTICAL SEQUENCE OF PERFORMANCE BLANKS, AND SAMPLES GIVEN BELOW:

SURROGATE RT FROM CONTINUING CALIBRATION
S1 : 3.46 S2 : 8.46

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #
01	SEQ-CAL1	SEQ-CAL1	10/23/09	1943	3.46	8.46
02	SEQ-CAL2	SEQ-CAL2	10/23/09	2001	3.46	8.46
03	SEQ-CAL3	SEQ-CAL3	10/23/09	2020	3.46	8.46
04	SEQ-CAL4	SEQ-CAL4	10/23/09	2038	3.46	8.46
05	SEQ-CAL5	SEQ-CAL5	10/23/09	2056	3.46	8.46
06	SEQ-CAL6	SEQ-CAL6	10/23/09	2114	3.46	8.46
07	SEQ-CAL7	SEQ-CAL7	10/23/09	2133	3.46	8.46
08	SEQ-ICV1	SEQ-ICV1	10/23/09	2151		
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	QC LIMITS
S1 = TCMX [2C]	(+/- 0.03 MINUTES)
S2 = DCB [2C]	(+/- 0.03 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

page 1 of 1

FORM VIII PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA22199

Instrument ID: ECD4 Calibration Date(s): 10/23/09 10/23/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 1943 2133

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
Aldrin [2C]	AVRG		124215.074		18.9
Alpha-BHC [2C]	AVRG		142333.654		15.0
Alpha-Chlordane [2C]	AVRG		108852.051		18.0
Beta-BHC [2C]	AVRG		50796.2536		18.6
4,4'-DDD [2C]	AVRG		68591.3464		10.2
4,4'-DDE [2C]	AVRG		78916.7257		10.1
4,4'-DDT [2C]	AVRG		54494.7421		11.0
Delta-BHC [2C]	AVRG		115853.409		13.9
Dieldrin [2C]	AVRG		125845.101		18.4
Endosulfan I [2C]	2ORDR	0.00000000	6.947e-006	5.43e-013	1.000
Endosulfan II [2C]	AVRG		102605.831		18.6
Endosulfan Sulfate [2C]	AVRG		86647.0050		15.1
Endrin [2C]	AVRG		81585.5493		16.9
Endrin Aldehyde [2C]	2ORDR	0.00000000	6.151e-006	5.826e-013	0.999
Endrin Ketone [2C]	AVRG		115793.379		18.9
Gamma-BHC [2C]	AVRG		125572.259		18.1
Gamma-Chlordane [2C]	AVRG		109959.498		16.6
Heptachlor [2C]	2ORDR	0.00000000	7.356e-006	3.11e-013	1.000
Heptachlor Epoxide [2C]	2ORDR	0.00000000	7.786e-006	3.807e-013	1.000
Methoxychlor [2C]	AVRG		37252.8029		14.2
TCMX [2C]	AVRG		90694.3721		17.4
DCB [2C]	AVRG		73937.1136		15.1

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA22199

Instrument ID: ECD4 Calibration Date(s): 10/23/09 10/23/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 1943 2133

COMPOUND	AVERAGE RF	MIN. RF	%RSD	MAX. %RSD
Aldrin [2C]	124215.074	0.010	18.9	20.0
Alpha-BHC [2C]	142333.654	0.010	15.0	20.0
Alpha-Chlordane [2C]	108852.051	0.010	18.0	20.0
Beta-BHC [2C]	50796.2536	0.010	18.6	20.0
4,4'-DDD [2C]	68591.3464	0.010	10.2	20.0
4,4'-DDE [2C]	78916.7257	0.010	10.1	20.0
4,4'-DDT [2C]	54494.7421	0.010	11.0	20.0
Delta-BHC [2C]	115853.409	0.010	13.9	20.0
Dieldrin [2C]	125845.101	0.010	18.4	20.0
Endosulfan I [2C]	107154.067	0.010	21.1	20.0
Endosulfan II [2C]	102605.831	0.010	18.6	20.0
Endosulfan Sulfate [2C]	86647.0050	0.010	15.1	20.0
Endrin [2C]	81585.5493	0.010	16.9	20.0
Endrin Aldehyde [2C]	115149.303	0.010	23.7	20.0
Endrin Ketone [2C]	115793.379	0.010	18.9	20.0
Gamma-BHC [2C]	125572.259	0.010	18.1	20.0
Gamma-Chlordane [2C]	109959.498	0.010	16.6	20.0
Heptachlor [2C]	118524.024	0.010	20.6	20.0
Heptachlor Epoxide [2C]	109575.508	0.010	20.3	20.0
Methoxychlor [2C]	37252.8029	0.010	14.2	20.0
TCMX [2C]	90694.3721	0.010	17.4	20.0
DCB [2C]	73937.1136	0.010	15.1	20.0

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA22199

Instrument ID: ECD4 Calibration Date(s): 10/23/09 10/23/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 1943 2133

LAB FILE ID: RF200: 008R0801 RF100: 009R0901 RF50: 010R1001
RF25: 011R1101 RF10: 012R1201

COMPOUND	RF200	RF100	RF50	RF25	RF10
Aldrin [2C]	85385.325	102745.91	117361.30	137293.08	135401.50
Alpha-BHC [2C]	108654.68	124007.86	137744.82	150266.92	148614.50
Alpha-Chlordane [2C]	73410.960	92602.760	108081.74	120948.00	116759.90
Beta-BHC [2C]	36486.085	43774.050	49510.060	55002.480	50869.300
4,4'-DDD [2C]	60919.305	66997.260	64137.420	82598.240	68193.800
4,4'-DDE [2C]	68592.730	79745.230	76472.200	94172.720	74447.800
4,4'-DDT [2C]	51639.995	62264.360	55260.380	63319.560	49640.100
Delta-BHC [2C]	86860.400	103958.98	114420.72	131043.96	119224.20
Dieldrin [2C]	86098.705	103255.58	123582.64	144707.68	142574.30
Endosulfan I [2C]	69141.080	86261.550	101909.00	120569.64	116721.80
Endosulfan II [2C]	69445.890	85478.830	101551.34	121506.76	115186.60
Endosulfan Sulfate [2C]	63878.615	74154.140	87212.880	100096.20	90420.600
Endrin [2C]	57649.865	68731.060	80675.940	90214.680	86165.900
Endrin Aldehyde [2C]	70158.710	85882.490	112092.74	134951.48	130671.10
Endrin Ketone [2C]	77680.860	95489.790	113264.30	133462.20	123567.90
Gamma-BHC [2C]	85528.090	108907.58	123290.82	135811.52	132692.40
Gamma-Chlordane [2C]	76612.915	95489.810	109861.98	123971.68	115853.10
Heptachlor [2C]	80932.770	94880.880	112388.82	128229.20	127078.10
Heptachlor Epoxide [2C]	74481.655	88178.880	103778.94	120144.08	118376.60
Methoxychlor [2C]	29817.010	33140.630	34130.460	45577.320	38334.400
TCMX [2C]	68797.965	76346.300	86020.200	92727.240	94784.700
DCB [2C]	54011.895	66874.020	72887.360	85195.920	72144.200

BM 10/30/09

10/26/09

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA22199

Instrument ID: ECD4 Calibration Date(s): 10/23/09 10/23/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 1943 2133

LAB FILE ID: RT1: 008R0801 RT2: 009R0901 RT3: 010R1001
RT4: 011R1101 RT5: 012R1201

COMPOUND	RT1	RT2	RT3	RT4	RT5
Aldrin [2C]	4.577	4.577	4.577	4.577	4.576
Alpha-BHC [2C]	3.841	3.841	3.841	3.840	3.840
Alpha-Chlordane [2C]	5.274	5.274	5.274	5.275	5.275
Beta-BHC [2C]	4.319	4.319	4.319	4.319	4.320
4,4'-DDD [2C]	6.007	6.011	6.012	6.015	6.020
4,4'-DDE [2C]	5.464	5.466	5.469	5.474	5.478
4,4'-DDT [2C]	6.269	6.271	6.274	6.275	6.286
Delta-BHC [2C]	4.489	4.489	4.487	4.489	4.488
Dieldrin [2C]	5.561	5.561	5.561	5.560	5.560
Endosulfan I [2C]	5.314	5.314	5.314	5.314	5.315
Endosulfan II [2C]	6.119	6.121	6.119	6.120	6.120
Endosulfan Sulfate [2C]	6.549	6.549	6.551	6.552	6.553
Endrin [2C]	5.814	5.814	5.814	5.815	5.815
Endrin Aldehyde [2C]	6.299	6.299	6.299	6.300	6.303
Endrin Ketone [2C]	7.076	7.076	7.077	7.077	7.080
Gamma-BHC [2C]	4.081	4.081	4.079	4.079	4.080
Gamma-Chlordane [2C]	5.222	5.224	5.222	5.224	5.223
Heptachlor [2C]	4.356	4.357	4.357	4.357	4.356
Heptachlor Epoxide [2C]	4.987	4.987	4.987	4.987	4.986
Methoxychlor [2C]	6.896	6.896	6.901	6.899	6.905
TCMX [2C]	3.456	3.456	3.456	3.457	3.456
DCB [2C]	8.459	8.457	8.457	8.459	8.461

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA22199

Instrument ID: ECD4 Calibration Date(s): 10/23/09 10/23/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 1943 2133

LAB FILE ID: RT6: 013R1301 RT7: 014R1401

COMPOUND	RT6	RT7	MEAN RT	RT WINDOW FROM	TO
Aldrin [2C]	4.578	4.577	4.577	4.547	4.607
Alpha-BHC [2C]	3.839	3.840	3.840	3.811	3.871
Alpha-Chlordane [2C]	5.276	5.275	5.275	5.244	5.304
Beta-BHC [2C]	4.319	4.319	4.319	4.289	4.349
4,4'-DDD [2C]	6.019	6.025	6.016	5.981	6.041
4,4'-DDE [2C]	5.479	5.484	5.473	5.436	5.496
4,4'-DDT [2C]	6.279	6.287	6.277	6.241	6.301
Delta-BHC [2C]	4.488	4.489	4.488	4.459	4.519
Dieldrin [2C]	5.561	5.560	5.560	5.531	5.591
Endosulfan I [2C]	5.314	5.314	5.314	5.284	5.344
Endosulfan II [2C]	6.121	6.122	6.120	6.091	6.151
Endosulfan Sulfate [2C]	6.556	6.555	6.552	6.519	6.579
Endrin [2C]	5.814	5.814	5.814	5.784	5.844
Endrin Aldehyde [2C]	6.303	6.304	6.301	6.269	6.329
Endrin Ketone [2C]	7.079	7.082	7.078	7.046	7.106
Gamma-BHC [2C]	4.079	4.079	4.080	4.051	4.111
Gamma-Chlordane [2C]	5.223	5.224	5.223	5.194	5.254
Heptachlor [2C]	4.356	4.357	4.357	4.327	4.387
Heptachlor Epoxide [2C]	4.986	4.987	4.987	4.957	5.017
Methoxychlor [2C]	6.904	6.905	6.901	6.866	6.926
TCMX [2C]	3.456	3.455	3.456	3.426	3.486
DCB [2C]	8.461	8.464	8.460	8.427	8.487

FORM VI PESTA

FORM 8
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Column: ZB MR-1 ID: 0.32 (mm) Cont. Calib. Date(s): 10/24/09 - 10/25/09

Instrument ID: ECD4

THE ANALYTICAL SEQUENCE OF PERFORMANCE BLANKS, AND SAMPLES GIVEN BELOW:

SURROGATE RT FROM CONTINUING CALIBRATION
S1 : 4.26 S2 : 10.13

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #
01	SEQ-CCV5	SEQ-CCV5	10/24/09	1050	4.26	10.12
02	SEQ-CCV6	SEQ-CCV6	10/24/09	1108		
03	NTC21SB11-SO	0910006-08RE	10/24/09	1158	4.26	10.12
04	NTC21SB04-SO	0910006-21	10/24/09	1402	4.26	10.13
05	NTC21SB06-SO	0910006-23	10/24/09	1433	4.26	10.12
06	NTC21SB06-SO	0910006-24	10/24/09	1504	4.26	10.13
07	NTC21SB07-SO	0910006-25	10/24/09	1536	4.26	10.12
08	NTC21SB13-SO	0910006-27	10/24/09	1607	4.26	10.12
09	NTC21SB14-SO	0910006-29	10/24/09	1638	4.26	10.12
10	NTC21SB14-SO	9J02014-MS1	10/24/09	1709	4.26	10.12
11	NTC21SB14-SO	9J02014-MSD1	10/24/09	1838	4.26	10.13
12	NTC21SB14-SO	9J02014-MS2	10/24/09	1909	4.26	10.12
13	NTC21SB14-SO	9J02014-MSD2	10/24/09	1940	4.26	10.12
14	NTC21SB15-SO	0910006-31	10/24/09	2011	4.26	10.12
15	NTC21SB19-SO	0910006-35	10/24/09	2042	4.26	10.12
16	SEQ-CCV7	SEQ-CCV7	10/24/09	2113	4.26	10.12
17	SEQ-CCV8	SEQ-CCV8	10/24/09	2132		
18	NTC21SB22-SO	0910006-37	10/24/09	2150	4.26	10.12
19	NTC21SB22-SO	0910006-38	10/24/09	2221	4.26	10.13
20	FD-092809-01	0910006-40	10/24/09	2252	4.26	10.13
21	NTC21SB01-SO	0910006-41	10/24/09	2323	4.26	10.12
22	NTC21SB02-SO	0910006-42	10/24/09	2355	4.26	10.12
23	NTC21SB02-SO	0910006-43	10/25/09	0026	4.26	10.12
24	NTC21SB02-SO	9J06028-MS1	10/25/09	0057	4.26	10.12
25	NTC21SB02-SO	9J06028-MSD1	10/25/09	0128	4.26	10.12
26	NTC21SB02-SO	9J06028-MS2	10/25/09	0159	4.26	10.12
27	NTC21SB02-SO	9J06028-MSD2	10/25/09	0230	4.26	10.12
28	NTC21SB03-SO	0910006-44	10/25/09	0301	4.26	10.12
29	NTC21SB03-SO	0910006-45	10/25/09	0332	4.26	10.12
30	NTC21SB05-SO	0910006-46	10/25/09	0403	4.26	10.12
31	NTC21SB05-SO	0910006-47	10/25/09	0434	4.26	10.12
32	SEQ-CCV9	SEQ-CCV9	10/25/09	0505	4.26	10.12
	SEQ-CCV10		10/25/09	0524		

		QC LIMITS
S1	= TCMX	(+/- 0.03 MINUTES)
S2	= DCB	(+/- 0.03 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

page 1 of 2

FORM VIII PESTA

FORM 8
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Column: ZB MR-1 ID: 0.32 (mm) Cont. Calib. Date(s): 10/24/09

Instrument ID: ECD4

THE ANALYTICAL SEQUENCE OF PERFORMANCE BLANKS, AND SAMPLES GIVEN BELOW:

SURROGATE RT FROM CONTINUING CALIBRATION
S1 : 4.26 S2 : 10.13

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #
01	SEQ-CCV10	SEQ-CCV10	10/25/09	0524		
02	NTC21SB08-SO	0910006-48	10/25/09	0542	4.26	10.12
03	NTC21SB08-SO	0910006-49	10/25/09	0613	4.26	10.12
04	NTC21SB09-SO	0910006-03RE	10/25/09	0644	4.26	10.12
05	SEQ-CCV11	SEQ-CCV11	10/25/09	0715	4.26	10.12
06	SEQ-CCV12	SEQ-CCV12	10/25/09	0733		
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	QC LIMITS
S1 = TCMX	(+/- 0.03 MINUTES)
S2 = DCB	(+/- 0.03 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII PESTA

FORM 8
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Column: ZB MR-2 ID: 0.32 (mm) Cont. Calib. Date(s): 10/24/09 - 10/25/09

Instrument ID: ECD4

THE ANALYTICAL SEQUENCE OF PERFORMANCE BLANKS, AND SAMPLES GIVEN BELOW:

SURROGATE RT FROM CONTINUING CALIBRATION
S1 : 3.46 S2 : 8.46

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #
01	SEQ-CCV5	SEQ-CCV5	10/24/09	1050	3.46	8.46
02	SEQ-CCV6	SEQ-CCV6	10/24/09	1108		
03	NTC21SB11-SO	0910006-08RE	10/24/09	1158	3.45	8.45
04	NTC21SB04-SO	0910006-21	10/24/09	1402	3.46	8.46
05	NTC21SB06-SO	0910006-23	10/24/09	1433	3.45	8.46
06	NTC21SB06-SO	0910006-24	10/24/09	1504	3.46	8.46
07	NTC21SB07-SO	0910006-25	10/24/09	1536	3.46	8.46
08	NTC21SB13-SO	0910006-27	10/24/09	1607	3.46	8.46
09	NTC21SB14-SO	0910006-29	10/24/09	1638	3.46	8.46
10	NTC21SB14-SO	9J02014-MS1	10/24/09	1709	3.46	8.46
11	NTC21SB14-SO	9J02014-MSD1	10/24/09	1838	3.45	8.46
12	NTC21SB14-SO	9J02014-MS2	10/24/09	1909	3.46	8.45
13	NTC21SB14-SO	9J02014-MSD2	10/24/09	1940	3.46	8.45
14	NTC21SB15-SO	0910006-31	10/24/09	2011	3.46	8.45
15	NTC21SB19-SO	0910006-35	10/24/09	2042	3.45	8.45
16	SEQ-CCV7	SEQ-CCV7	10/24/09	2113	3.46	8.46
17	SEQ-CCV8	SEQ-CCV8	10/24/09	2132		
18	NTC21SB22-SO	0910006-37	10/24/09	2150	3.46	8.46
19	NTC21SB22-SO	0910006-38	10/24/09	2221	3.46	8.46
20	FD-092809-01	0910006-40	10/24/09	2252	3.46	8.46
21	NTC21SB01-SO	0910006-41	10/24/09	2323	3.46	8.46
22	NTC21SB02-SO	0910006-42	10/24/09	2355	3.46	8.46
23	NTC21SB02-SO	0910006-43	10/25/09	0026	3.46	8.46
24	NTC21SB02-SO	9J06028-MS1	10/25/09	0057	3.46	8.46
25	NTC21SB02-SO	9J06028-MSD1	10/25/09	0128	3.46	8.46
26	NTC21SB02-SO	9J06028-MS2	10/25/09	0159	3.46	8.46
27	NTC21SB02-SO	9J06028-MSD2	10/25/09	0230	3.46	8.46
28	NTC21SB03-SO	0910006-44	10/25/09	0301	3.46	8.46
29	NTC21SB03-SO	0910006-45	10/25/09	0332	3.46	8.46
30	NTC21SB05-SO	0910006-46	10/25/09	0403	3.46	8.46
31	NTC21SB05-SO	0910006-47	10/25/09	0434	3.46	8.46
32	SEQ-CCV9	SEQ-CCV9	10/25/09	0505	3.46	8.46
33	SEQ-CCV10	SEQ-CCV10	10/25/09	0524		
34	NTC21SB08-SO	0910006-48	10/25/09	0542	3.46	8.45

	QC LIMITS
S1 = TCMX	(+/- 0.03 MINUTES)
S2 = DCB	(+/- 0.03 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII PESTA

FORM 8
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Column: ZB MR-2 ID: 0.32 (mm) Cont. Calib. Date(s): 10/24/09

Instrument ID: ECD4

THE ANALYTICAL SEQUENCE OF PERFORMANCE BLANKS, AND SAMPLES GIVEN BELOW:

SURROGATE RT FROM CONTINUING CALIBRATION
S1 : 3.46 S2 : 8.46

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #
01	NTC21SB08-SO	0910006-49	10/25/09	0613	3.46	8.46
02	NTC21SB09-SO	0910006-03RE	10/25/09	0644	3.46	8.45
03	~~SEQ-CCV11~~	SEQ-CCV11	~~10/25/09~~	~~0715~~	3.46	8.46
04	SEQ-CCV12	SEQ-CCV12	10/25/09	0733		
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	QC LIMITS
S1 = TCMX	(+/- 0.03 MINUTES)
S2 = DCB	(+/- 0.03 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII PESTA

J.H. 10-30-09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 064F6401.D
Analysis Type:
Lab Sample ID: SEQ-CCV5
Method: \\ELABNSH05\TARGET\chem\ecd4.i\102309.b\8081_82F.m

Injection Date: 24-OCT-2009 10:50
Init. Cal. Date(s): 25-FEB-2009 23-OCT-2009
Init. Cal. Times: 19:14 21:33
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D
$ 36 TCMX	51534	46974	0.010	-8.8	15.0
3 Alpha-BHC	57475	0 56595	0.010	-1.5	15.0
23 Gamma-BHC	52598	X 51219	0.010	-2.6	15.0
5 Beta-BHC	24535	24555	0.010	0.1	15.0
15 Delta-BHC	48213	47075	0.010	-2.4	15.0
25 Heptachlor	49670	47160	0.010	-5.1	15.0
2 Aldrin	62551	57409	0.010	-8.2	15.0
26 Heptachlor Epoxide	55306	50430	0.010	-8.8	15.0
24 Gamma-Chlordane	55782	52105	0.010	-6.6	15.0
4 Alpha-Chlordane	49879	45987	0.010	-7.8	15.0
17 Endosulfan I	57618	52140	0.010	-9.5	15.0
13 4,4'-DDE	49709	49625	0.010	-0.2	15.0
16 Dieldrin	58322	53145	0.010	-8.9	15.0
20 Endrin	34992	34502	0.010	-1.4	15.0
12 4,4'-DDD	32417	35796	0.010	10.4	15.0
18 Endosulfan II	46601	42607	0.010	-8.6	15.0
21 Endrin Aldehyde	37586	36204	0.010	-3.7	15.0
14 4,4'-DDT	36320	34352	0.010	-5.4	15.0
19 Endosulfan Sulfate	34026	32696	0.010	-3.9	15.0
27 Methoxychlor	18064	15931	0.010	-11.8	15.0
22 Endrin Ketone	45248	40854	0.010	-9.7	15.0
$ 37 DCB	25497	22452	0.010	-11.9	15.0

BM 10/30/09

NL 10/26/09

Data File: \\ELABNSH05\TARGET\chem\ecd4.i\102309.b\064R6401.D
Report Date: 26-Oct-2009 13:39

J.H. 10.30.09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 064R6401.D
Analysis Type:
Lab Sample ID: SEQ-CCV5
Method: \\ELABNSH05\TARGET\chem\ecd4.i\102309.b\8081_82R.m

Injection Date: 24-OCT-2009 10:50
Init. Cal. Date(s): 25-FEB-2009 23-OCT-2009
Init. Cal. Times: 19:14 21:33
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
$ 36 TCMX	90694	80757	0.010	-11.0	15.0	
3 Alpha-BHC	142334	129216	0.010	-9.2	15.0	
23 Gamma-BHC	125572	114811	0.010	-8.6	15.0	
5 Beta-BHC	50796	46676	0.010	-8.1	15.0	
25 Heptachlor	100	102	0.010	-1.8	15.0	
15 Delta-BHC	115853	112114	0.010	-3.2	15.0	
2 Aldrin	124215	104527	0.010	-15.9	15.0	<-
26 Heptachlor Epoxide	100	102	0.010	-2.1	15.0	
24 Gamma-Chlordane	109959	98618	0.010	-10.3	15.0	
4 Alpha-Chlordane	108852	96608	0.010	-11.2	15.0	
17 Endosulfan I	100	104	0.010	-4.3	15.0	
13 4,4'-DDE	78917	89027	0.010	12.8	15.0	
16 Dieldrin	125845	104397	0.010	-17.0	15.0	<-
20 Endrin	81586	71312	0.010	-12.6	15.0	
12 4,4'-DDD	68591	79242	0.010	15.5	15.0	<-
18 Endosulfan II	102606	88747	0.010	-13.5	15.0	
14 4,4'-DDT	54495	61644	0.010	13.1	15.0	
21 Endrin Aldehyde	100	104	0.010	-3.7	15.0	
19 Endosulfan Sulfate	86647	78254	0.010	-9.7	15.0	
27 Methoxychlor	37253	34413	0.010	-7.6	15.0	
22 Endrin Ketone	115793	98251	0.010	-15.1	15.0	<-
$ 37 DCB	73937	65219	0.010	-11.8	15.0	

WL
10/26/09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 065F6501.D
Analysis Type:
Lab Sample ID: SEQ-CCV6
Method: \\ELABNSH05\TARGET\chem\ecd4.i\102309.b\8081_82F.m

Injection Date: 24-OCT-2009 11:08
Init. Cal. Date(s): 25-FEB-2009 23-OCT-2009
Init. Cal. Times: 19:14 21:33
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
29 PCB-1016(1)	1617	2702	0.010	67.1	15.0	<-
(2)	657	834	0.010	27.0	15.0	<-
(3)	953	975	0.010	2.3	15.0	
(4)	896	1230	0.010	37.3	15.0	<-
(5)	++++	++++	0.010	++++	15.0	<-
(6)	801	1235	0.010	54.1	15.0	<-
35 PCB-1260(1)	2705	4518	0.010	67.0	15.0	<-
(2)	1319	2279	0.010	72.8	15.0	<-
(3)	++++	++++	0.010	++++	15.0	<-
(4)	++++	++++	0.010	++++	15.0	<-
(5)	1206	2058	0.010	70.7	15.0	<-
(6)	1278	2192	0.010	71.5	15.0	<-
(7)	++++	++++	0.010	++++	15.0	<-
(8)	686	809	0.010	18.0	15.0	<-

+37.6% x

+60.0% x

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 065R6501.D
Analysis Type:
Lab Sample ID: SEQ-CCV6
Method: \\ELABNSH05\TARGET\chem\ecd4.i\102309.b\8081_82R.m

Injection Date: 24-OCT-2009 11:08
Init. Cal. Date(s): 25-FEB-2009 23-OCT-2009
Init. Cal. Times: 19:14 21:33
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
29 PCB-1016(1)	4114	6 3812	0.010	-7.3	15.0	
(2)	1475	1309	0.010	-11.2	15.0	
(3)	2348	2120	0.010	-9.7	15.0	-4.6%D *
(4)	++++	++++	0.010	++++	15.0	<-
(5)	2199	2330	0.010	6.0	15.0	
(6)	1938	1922	0.010	-0.8	15.0	
35 PCB-1260(1)	9986	8672	0.010	-13.2	15.0	
(2)	++++	++++	0.010	++++	15.0	<-
(3)	5375	5169	0.010	-3.8	15.0	
(4)	5714	5292	0.010	-7.4	15.0	-7.5%D *
(5)	4934	4575	0.010	-7.3	15.0	
(6)	++++	++++	0.010	++++	15.0	<-
(7)	4744	4459	0.010	-6.0	15.0	
(8)	++++	++++	0.010	++++	15.0	<-

J.H. 10.30.09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 100FA001.D
Analysis Type:
Lab Sample ID: SEQ-CCV7
Method: \\ELABNSH05\TARGET\chem\ecd4.i\102309.b\8081_82F.m

Injection Date: 24-OCT-2009 21:13
Init. Cal. Date(s): 25-FEB-2009 23-OCT-2009
Init. Cal. Times: 19:14 21:33
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
$ 36 TCMX	51534	46328	0.010	-10.1	15.0	
3 Alpha-BHC	57475	56726	0.010	-1.3	15.0	
23 Gamma-BHC	52598	50154	0.010	-4.6	15.0	
5 Beta-BHC	24535	24245	0.010	-1.2	15.0	
15 Delta-BHC	48213	46102	0.010	-4.4	15.0	
25 Heptachlor	49670	32428	0.010	-34.7	15.0	<-
2 Aldrin	62551	54863	0.010	-12.3	15.0	
26 Heptachlor Epoxide	55306	47906	0.010	-13.4	15.0	
24 Gamma-Chlordane	55782	49455	0.010	-11.3	15.0	
4 Alpha-Chlordane	49879	44171	0.010	-11.4	15.0	
17 Endosulfan I	57618	47429	0.010	-17.7	15.0	<-
13 4,4'-DDE	49709	45744	0.010	-8.0	15.0	
16 Dieldrin	58322	48658	0.010	-16.6	15.0	<-
20 Endrin	34992	32422	0.010	-7.3	15.0	
12 4,4'-DDD	32417	36147	0.010	11.5	15.0	
18 Endosulfan II	46601	38100	0.010	-18.2	15.0	<-
21 Endrin Aldehyde	37586	31325	0.010	-16.7	15.0	<-
14 4,4'-DDT	36320	20485	0.010	-43.6	15.0	<-
19 Endosulfan Sulfate	34026	29495	0.010	-13.3	15.0	
27 Methoxychlor	18064	10007	0.010	-44.6	15.0	<-
22 Endrin Ketone	45248	34093	0.010	-24.7	15.0	<-
$ 37 DCB	25497	18732	0.010	-26.5	15.0	<-

11/26/09

Data File: \\ELABNSH05\TARGET\chem\ecd4.i\102309.b\100RA001.D
Report Date: 26-Oct-2009 13:51

J.H. 10.30.09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 100RA001.D
Analysis Type:
Lab Sample ID: SEQ-CCV7
Method: \\ELABNSH05\TARGET\chem\ecd4.i\102309.b\8081_82R.m

Injection Date: 24-OCT-2009 21:13
Init. Cal. Date(s): ~~25-FEB-2009~~ 23-OCT-2009
Init. Cal. Times: 19:14 21:33
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
$ 36 TCMX	90694	79338	0.010	-12.5	15.0	
3 Alpha-BHC	142334	126178	0.010	-11.4	15.0	
23 Gamma-BHC	125572	111232	0.010	-11.4	15.0	
5 Beta-BHC	50796	47218	0.010	-7.0	15.0	
25 Heptachlor	100	65.14552	0.010	-34.9	15.0	<-
15 Delta-BHC	115853	111119	0.010	-4.1	15.0	
2 Aldrin	124215	99790	0.010	-19.7	15.0	<-
26 Heptachlor Epoxide	100	96.31902	0.010	3.7	15.0	
24 Gamma-Chlordane	109959	95707	0.010	-13.0	15.0	
4 Alpha-Chlordane	108852	92607	0.010	-14.9	15.0	
17 Endosulfan I	100	96.67652	0.010	3.3	15.0	
13 4,4'-DDE	78917	85840	0.010	8.8	15.0	
16 Dieldrin	125845	95915	0.010	-23.8	15.0	<-
20 Endrin	81586	69878	0.010	-14.4	15.0	
12 4,4'-DDD	68591	79034	0.010	15.2	15.0	<-
18 Endosulfan II	102606	79667	0.010	-22.4	15.0	<-
14 4,4'-DDT	54495	44970	0.010	-17.5	15.0	<-
21 Endrin Aldehyde	100	75.54598	0.010	24.5	15.0	<-
19 Endosulfan Sulfate	86647	71327	0.010	-17.7	15.0	<-
27 Methoxychlor	37253	24776	0.010	-33.5	15.0	<-
22 Endrin Ketone	115793	82628	0.010	-28.6	15.0	<-
$ 37 DCB	73937	54462	0.010	-26.3	15.0	<-

OK OK

10/26/09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 101FA101.D
Analysis Type:
Lab Sample ID: SEQ-CCV8
Injection Date: 24-OCT-2009 21:32
Init. Cal. Date(s): 25-FEB-2009 23-OCT-2009
Init. Cal. Times: 19:14 21:33
Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\ecd4.i\102309.b\8081_82F.m

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
29 PCB-1016(1)	1617	6 2910	0.010	80.0	15.0	<-
(2)	657	834	0.010	27.0	15.0	<-
(3)	953	962	0.010	0.9	15.0	
(4)	896	1231	0.010	37.4	15.0	<-
(5)	++++	++++	0.010	++++	15.0	<-
(6)	801	1249	0.010	55.9	15.0	<-
35 PCB-1260(1)	2705	x 4414	0.010	63.2	15.0	<-
(2)	1319	2264	0.010	71.7	15.0	<-
(3)	++++	++++	0.010	++++	15.0	<-
(4)	++++	++++	0.010	++++	15.0	<-
(5)	1206	2055	0.010	70.4	15.0	<-
(6)	1278	2129	0.010	66.5	15.0	<-
(7)	++++	++++	0.010	++++	15.0	<-
(8)	686	816	0.010	18.9	15.0	<-

+40.2%

+58.1%

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 101RA101.D
Analysis Type:
Lab Sample ID: SEQ-CCV8
Method: \\ELABNSH05\TARGET\chem\ecd4.i\102309.b\8081_82R.m

Injection Date: 24-OCT-2009 21:32
Init. Cal. Date(s): 25-FEB-2009 23-OCT-2009
Init. Cal. Times: 19:14 21:33
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
29 PCB-1016(1)	4114	3945	0.010	-4.1	15.0	
(2)	1475	1305	0.010	-11.5	15.0	
(3)	2348	2120	0.010	-9.7	15.0	
(4)	++++	++++	0.010	++++	15.0	<-
(5)	2199	2232	0.010	1.5	15.0	
(6)	1938	1930	0.010	-0.4	15.0	
35 PCB-1260(1)	9986	8660	0.010	-13.3	15.0	
(2)	++++	++++	0.010	++++	15.0	<-
(3)	5375	5234	0.010	-2.6	15.0	
(4)	5714	5624	0.010	-1.6	15.0	
(5)	4934	4480	0.010	-9.2	15.0	
(6)	++++	++++	0.010	++++	15.0	<-
(7)	4744	4452	0.010	-6.2	15.0	
(8)	++++	++++	0.010	++++	15.0	<-

-4.85 -4.8%D

-6.6%

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 130FAU01.D
Analysis Type:
Lab Sample ID: SEQ-CCV9
Method: \\ELABNSH05\TARGET\chem\ecd4.i\102309.b\8081_82F.m

Injection Date: 25-OCT-2009 05:05
Init. Cal. Date(s): ~~25-FEB-2009~~ 23-OCT-2009
Init. Cal. Times: 19:14 21:33
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
$ 36 TCMX	51534	44403	0.010	-13.8	15.0	
3 Alpha-BHC	57475	0 54683	0.010	-4.9	15.0	
23 Gamma-BHC	52598	45224	0.010	-14.0	15.0	
5 Beta-BHC	24535	22235	0.010	-9.4	15.0	
15 Delta-BHC	48213	42760	0.010	-11.3	15.0	
25 Heptachlor	49670	24537	0.010	-50.6	15.0	<-
2 Aldrin	62551	50768	0.010	-18.9	15.0	<-
26 Heptachlor Epoxide	55306	43790	0.010	-20.9	15.0	<-
24 Gamma-Chlordane	55782	44893	0.010	-19.5	15.0	<-
4 Alpha-Chlordane	49879	40459	0.010	-18.9	15.0	<-
17 Endosulfan I	57618	43063	0.010	-25.3	15.0	<-
13 4,4'-DDE	49709	42229	0.010	-15.0	15.0	<-
16 Dieldrin	58322	44425	0.010	-23.8	15.0	<-
20 Endrin	34992	28053	0.010	-19.8	15.0	<-
12 4,4'-DDD	32417	35354	0.010	9.1	15.0	
18 Endosulfan II	46601	33909	0.010	-27.2	15.0	<-
21 Endrin Aldehyde	37586	27683	0.010	-26.3	15.0	<-
14 4,4'-DDT	36320	12717	0.010	-65.0	15.0	<-
19 Endosulfan Sulfate	34026	27603	0.010	-18.9	15.0	<-
27 Methoxychlor	18064	6923	0.010	-61.7	15.0	<-
22 Endrin Ketone	45248	28751	0.010	-36.5	15.0	<-
$ 37 DCB	25497	15855	0.010	-37.8	15.0	<-

~~high~~ low

low

NL
10/26/09

BM
10/30/09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 130RAU01.D
Analysis Type:
Lab Sample ID: SEQ-CCV9
Method: \\ELABNSH05\TARGET\chem\ecd4.i\102309.b\8081_82R.m

Injection Date: 25-OCT-2009 05:05
Init. Cal. Date(s): 25-FEB-2009 23-OCT-2009
Init. Cal. Times: 19:14 21:33
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
$ 36 TCMX	90694	76126	0.010	-16.1	15.0	<-
3 Alpha-BHC	142334	0 117415	0.010	-17.5	15.0	<-
23 Gamma-BHC	125572	97060	0.010	-22.7	15.0	<-
5 Beta-BHC	50796	42224	0.010	-16.9	15.0	<-
25 Heptachlor	100	48.33235	0.010	-51.7	15.0	<-
15 Delta-BHC	115853	101072	0.010	-12.8	15.0	
2 Aldrin	124215	92173	0.010	-25.8	15.0	<-
26 Heptachlor Epoxide	100	86.04745	0.010	14.0	15.0	
24 Gamma-Chlordane	109959	85567	0.010	-22.2	15.0	<-
4 Alpha-Chlordane	108852	83823	0.010	-23.0	15.0	<-
17 Endosulfan I	100	84.64252	0.010	15.4	15.0	<-
13 4,4'-DDE	78917	80411	0.010	1.9	15.0	
16 Dieldrin	125845	86865	0.010	-31.0	15.0	<-
20 Endrin	81586	61715	0.010	-24.4	15.0	<-
12 4,4'-DDD	68591	76915	0.010	12.1	15.0	
18 Endosulfan II	102606	70552	0.010	-31.8	15.0	<-
14 4,4'-DDT	54495	29922	0.010	-45.1	15.0	<-
21 Endrin Aldehyde	100	60.86201	0.010	39.1	15.0	<-
19 Endosulfan Sulfate	86647	62768	0.010	-27.6	15.0	<-
27 Methoxychlor	37253	18507	0.010	-50.3	15.0	<-
22 Endrin Ketone	115793	67898	0.010	-41.4	15.0	<-
$ 37 DCB	73937	45283	0.010	-38.8	15.0	<-

BMG 10/30/09

m 10/26/09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 131FAV01.D
Analysis Type:
Lab Sample ID: SEQ-CCV10
Method: \\ELABNSH05\TARGET\chem\ecd4.i\102309.b\8081_82F.m

Injection Date: 25-OCT-2009 05:24
Init. Cal. Date(s): ~~25-FEB-2009~~ 23-OCT-2009
Init. Cal. Times: 19:14 21:33
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
29 PCB-1016(1)	1617	0 2668	0.010	65.0	15.0	<-
(2)	657	819	0.010	24.6	15.0	<-
(3)	953	965	0.010	1.2	15.0	
(4)	896	1184	0.010	32.2	15.0	<-
(5)	++++	++++	0.010	++++	15.0	<-
(6)	801	1187	0.010	48.2	15.0	<-
35 PCB-1260(1)	2705	3577	0.010	32.2	15.0	<-
(2)	1319	1975	0.010	49.8	15.0	<-
(3)	++++	++++	0.010	++++	15.0	<-
(4)	++++	++++	0.010	++++	15.0	<-
(5)	1206	1712	0.010	42.0	15.0	<-
(6)	1278	1771	0.010	38.6	15.0	<-
(7)	++++	++++	0.010	++++	15.0	<-
(8)	686	649	0.010	-5.5	15.0	

+34.2%D

+31.4%D

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 131RAV01.D
Analysis Type:
Lab Sample ID: SEQ-CCV10
Method: \\ELABNSH05\TARGET\chem\ecd4.i\102309.b\8081_82R.m

Injection Date: 25-OCT-2009 05:24
Init. Cal. Date~~(s): 25-FEB-2009~~ 23-OCT-2009
Init. Cal. Times: 19:14 21:33
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
29 PCB-1016(1)	4114	3784	0.010	-8.0	15.0	
(2)	1475	1281	0.010	-13.1	15.0	
(3)	2348	1986	0.010	-15.4	15.0	<-
(4)	++++	++++	0.010	++++	15.0	<-
(5)	2199	2044	0.010	-7.1	15.0	
(6)	1938	1791	0.010	-7.6	15.0	
35 PCB-1260(1)	9986	7087	0.010	-29.0	15.0	<-
(2)	++++	++++	0.010	++++	15.0	<-
(3)	5375	4378	0.010	-18.5	15.0	<-
(4)	5714	4778	0.010	-16.4	15.0	<-
(5)	4934	3572	0.010	-27.6	15.0	<-
(6)	++++	++++	0.010	++++	15.0	<-
(7)	4744	3597	0.010	-24.2	15.0	<-
(8)	++++	++++	0.010	++++	15.0	<-

10.2%D

-23.2%D (low)

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 138FB201.D
Analysis Type:
Lab Sample ID: SEQ-CCV11
Method: \\ELABNSH05\TARGET\chem\ecd4.i\102309.b\8081_82F.m

Injection Date: 25-OCT-2009 07:15
Init. Cal. Date(s): ~~25-FEB-2009~~ 23-OCT-2009
Init. Cal. Times: 19:14 21:33
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
$ 36 TCMX	51534	45594	0.010	-11.5	15.0	
3 Alpha-BHC	57475	0 56346	0.010	-2.0	15.0	
23 Gamma-BHC	52598	46388	0.010	-11.8	15.0	
5 Beta-BHC	24535	22679	0.010	-7.6	15.0	
15 Delta-BHC	48213	44020	0.010	-8.7	15.0	
25 Heptachlor	49670	23623	0.010	-52.4	15.0	<-
2 Aldrin	62551	51972	0.010	-16.9	15.0	<-
26 Heptachlor Epoxide	55306	44198	0.010	-20.1	15.0	<-
24 Gamma-Chlordane	55782	45072	0.010	-19.2	15.0	<-
4 Alpha-Chlordane	49879	41411	0.010	-17.0	15.0	<-
17 Endosulfan I	57618	42586	0.010	-26.1	15.0	<-
13 4,4'-DDE	49709	42001	0.010	-15.5	15.0	<-
16 Dieldrin	58322	44560	0.010	-23.6	15.0	<-
20 Endrin	34992	25376	0.010	-27.5	15.0	<-
12 4,4'-DDD	32417	35729	0.010	10.2	15.0	
18 Endosulfan II	46601	33505	0.010	-28.1	15.0	<-
21 Endrin Aldehyde	37586	27647	0.010	-26.4	15.0	<-
14 4,4'-DDT	36320	10302	0.010	-71.6	15.0	<-
19 Endosulfan Sulfate	34026	26915	0.010	-20.9	15.0	<-
27 Methoxychlor	18064	5745	0.010	-68.2	15.0	<-
22 Endrin Ketone	45248	28434	0.010	-37.2	15.0	<-
$ 37 DCB	25497	14861	0.010	-41.7	15.0	<-

low

low

BM 10/30/09

WL 11/26/09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 138RB201.D
Analysis Type:
Lab Sample ID: SEQ-CCV11
Method: \\ELABNSH05\TARGET\chem\ecd4.i\102309.b\8081_82R.m

Injection Date: 25-OCT-2009 07:15
Init. Cal. Date(s): ~~25-FEB-2009~~ 23-OCT-2009
Init. Cal. Times: 19:14 21:33
Quant Type: ESTD

	COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
$	36 TCMX	90694	76399	0.010	-15.8	15.0	<-
	3 Alpha-BHC	142334	0 117082	0.010	-17.7	15.0	<-
	23 Gamma-BHC	125572	95484	0.010	-24.0	15.0	<-
	5 Beta-BHC	50796	41648	0.010	-18.0	15.0	<-
	25 Heptachlor	100	44.41887	0.010	55.6	15.0	<-
	15 Delta-BHC	115853	100253	0.010	-13.5	15.0	
	2 Aldrin	124215	92190	0.010	-25.8	15.0	<-
	26 Heptachlor Epoxide	100	84.53730	0.010	15.5	15.0	<-
	24 Gamma-Chlordane	109959	83715	0.010	-23.9	15.0	<-
	4 Alpha-Chlordane	108852	80882	0.010	-25.7	15.0	<-
	17 Endosulfan I	100	82.90102	0.010	17.1	15.0	<-
	13 4,4'-DDE	78917	76864	0.010	-2.6	15.0	
	16 Dieldrin	125845	84447	0.010	-32.9	15.0	<-
	20 Endrin	81586	54431	0.010	-33.3	15.0	<-
	12 4,4'-DDD	68591	74832	0.010	9.1	15.0	
	18 Endosulfan II	102606	67165	0.010	-34.5	15.0	<-
	14 4,4'-DDT	54495	22571	0.010	-58.6	15.0	<-
	21 Endrin Aldehyde	100	58.10108	0.010	41.9	15.0	<-
	19 Endosulfan Sulfate	86647	59276	0.010	-31.6	15.0	<-
	27 Methoxychlor	37253	14819	0.010	-60.2	15.0	<-
	22 Endrin Ketone	115793	64185	0.010	-44.6	15.0	<-
$	37 DCB	73937	42144	0.010	-43.0	15.0	<-

low

low

low

low

BM 10/29

WL 10/26/09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 139FB301.D
Analysis Type:
Lab Sample ID: SEQ-CCV12
Method: \\ELABNSH05\TARGET\chem\ecd4.i\102309.b\8081_82F.m

Injection Date: 25-OCT-2009 07:33
Init. Cal. Date(s): 25-FEB-2009 23-OCT-2009
Init. Cal. Times: 19:14 21:33
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
29 PCB-1016(1)	1617	0 2650	0.010	63.9	15.0	<-
(2)	657	791	0.010	20.4	15.0	<-
(3)	953	901	0.010	-5.4	15.0	
(4)	896	1146	0.010	28.0	15.0	<-
(5)	++++	++++	0.010	++++	15.0	<-
(6)	801	1138	0.010	42.1	15.0	<-
35 PCB-1260(1)	2705	3387	0.010	25.2	15.0	<-
(2)	1319	1891	0.010	43.4	15.0	<-
(3)	++++	++++	0.010	++++	15.0	<-
(4)	++++	++++	0.010	++++	15.0	<-
(5)	1206	1627	0.010	34.9	15.0	<-
(6)	1278	1652	0.010	29.3	15.0	<-
(7)	++++	++++	0.010	++++	15.0	<-
(8)	686	580	0.010	-15.5	15.0	<-

+29.8%

+23.5%

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: ecd4.i
Lab File ID: 139RB301.D
Analysis Type:
Lab Sample ID: SEQ-CCV12
Method: \\ELABNSH05\TARGET\chem\ecd4.i\102309.b\8081_82R.m

Injection Date: 25-OCT-2009 07:33
Init. Cal. Date(s): 25-FEB-2009 23-OCT-2009
Init. Cal. Times: 19:14 21:33
Quant Type: ESTD

COMPOUND	RRF	RF100	MIN RRF	%D	MAX %D	
29 PCB-1016(1) OK	4114	3565	0.010	-13.3	15.0	
(2) OK	1475	1226	0.010	-16.8	15.0	<-
(3)	2348	1932	0.010	-17.7	15.0	<-
(4)	++++	++++	0.010	++++	15.0	<-
(5)	2199	1972	0.010	-10.3	15.0	
(6)	1938	1714	0.010	-11.6	15.0	
35 PCB-1260(1)	9986	6515	0.010	-34.8	15.0	<-
(2)	++++	++++	0.010	++++	15.0	<-
(3)	5375	4112	0.010	-23.5	15.0	<-
(4)	5714	4475	0.010	-21.7	15.0	<-
(5)	4934	3115	0.010	-36.9	15.0	<-
(6)	++++	++++	0.010	++++	15.0	<-
(7)	4744	3348	0.010	-29.4	15.0	<-
(8)	++++	++++	0.010	++++	15.0	<-

-14.0%D

-29.3%D low

PREPARATION BATCH SUMMARY
SW8081A

Laboratory: Empirical Laboratories, LLC SDG: CTO064_001

Client: Tetra Tech NUS, Inc. (T010) Project: Great Lakes CTO 064 (Site 21)

Batch: 9J01022 Batch Matrix: Water Preparation: EXT_3510

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
RB-092909-01	0910006-51	10/01/09 14:25	1,020.00	10.00
RB-092909-02	0910006-52	10/01/09 14:25	1,060.00	10.00
SB-092909-01	0910006-53	10/01/09 14:25	1,040.00	10.00
Blank	9J01022-BLK1	10/01/09 14:25	1,000.00	10.00
LCS	9J01022-BS1	10/01/09 14:25	1,000.00	10.00
LCS	9J01022-BS2	10/01/09 14:25	1,000.00	10.00
LCS Dup	9J01022-BSD1	10/01/09 14:25	1,000.00	10.00
LCS Dup	9J01022-BSD2	10/01/09 14:25	1,000.00	10.00

ANALYSIS DATA SHEET

Blank

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:		Laboratory ID:	9J01022-BLK1	File ID:	018F1801.D
Sampled:		Prepared:	10/01/09 14:25	Analyzed:	10/09/09 20:44
Solids:		Preparation:	EXT_3510	Dilution:	

Batch: 9J01022 Sequence: 9J29207 Calibration: 9292002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
72-55-9	4,4'-DDE		0.0050	0.020	U
72-54-8	4,4'-DDD		0.0050	0.020	U
50-29-3	4,4'-DDT		0.0050	0.020	U
309-00-2	Aldrin		0.0033	0.010	U
319-84-6	alpha-BHC		0.0033	0.010	U
5103-71-9	alpha-Chlordane		0.0033	0.010	U
319-85-7	beta-BHC		0.0033	0.010	U
319-86-8	delta-BHC		0.0033	0.010	~~U~~
60-57-1	Dieldrin		0.0050	0.020	U
959-98-8	Endosulfan I		0.0033	0.010	U
33213-65-9	Endosulfan II		0.0050	0.020	U
1031-07-8	Endosulfan sulfate		0.0050	0.020	U
72-20-8	Endrin		0.0050	0.020	U
7421-93-4	Endrin aldehyde		0.0050	0.020	U
53494-70-5	Endrin ketone		0.0050	0.020	U
58-89-9	gamma-BHC (Lindane)		0.0033	0.010	U
5566-34-7	gamma-Chlordane		0.0033	0.010	U
76-44-8	Heptachlor		0.0033	0.010	U
1024-57-3	Heptachlor epoxide		0.0033	0.010	U
72-43-5	Methoxychlor		0.0033	0.010	U
57-74-9	Chlordane (tech)		0.017	0.050	U
8001-35-2	Toxaphene		0.33	1.0	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	0.5000	0.3425	68.5	25 - 140	
Tetrachloro-m-xylene [2C]	0.5000	0.3491	69.8	25 - 140	
Decachlorobiphenyl	0.5000	0.3810	76.2	40 - 135	
Decachlorobiphenyl [2C]	0.5000	0.4172	83.4	40 - 135	

Values outside of QC limits

J.H. 11.2.09

ANALYSIS DATA SHEET

Blank

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:		Laboratory ID:	9J01022-BLK1	File ID:	018R1801.D
Sampled:		Prepared:	10/01/09 14:25	Analyzed:	10/09/09 20:44
Solids:		Preparation:	EXT_3510	Dilution:	

Batch: 9J01022 Sequence: 9J29207 Calibration: 9292002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
12674-11-2	Aroclor-1016		0.12	0.50	U
11104-28-2	Aroclor-1221		0.12	0.50	U
11141-16-5	Aroclor-1232		0.12	0.50	U
53469-21-9	Aroclor-1242		0.12	0.50	U
12672-29-6	Aroclor-1248		0.12	0.50	U
11097-69-1	Aroclor-1254		0.12	0.50	U
11096-82-5	Aroclor-1260		0.12	0.50	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	0.5000	0.3425	68.5	25 - 140	
Tetrachloro-m-xylene [2C]	0.5000	0.3491	69.8	25 - 140	
Decachlorobiphenyl	0.5000	0.3810	76.2	40 - 135	
Decachlorobiphenyl [2C]	0.5000	0.4172	83.4	40 - 135	

Values outside of QC limits

PREPARATION BATCH SUMMARY

SW8081A

Laboratory: Empirical Laboratories, LLC SDG: CTO064_001

Client: Tetra Tech NUS, Inc. (T010) Project: Great Lakes CTO 064 (Site 21)

Batch: 9J02013 Batch Matrix: Solid Preparation: EXT_3546

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
FD-092609-01	0910006-01	10/02/09 17:00	15.00	5.00
FD-092609-02	0910006-02	10/02/09 17:00	15.00	5.00
FD-092609-02	0910006-02RE1	10/02/09 17:00	15.00	5.00
NTC21SB09-SO-0001	0910006-03	10/02/09 17:00	15.00	5.00
NTC21SB09-SO-0001	0910006-03RE1	10/02/09 17:00	15.00	5.00
NTC21SB09-SO-0204	0910006-04	10/02/09 17:00	15.00	5.00
NTC21SB10-SO-0001	0910006-05	10/02/09 17:00	15.00	5.00
NTC21SB10-SO-0001	0910006-05RE1	10/02/09 17:00	15.00	5.00
NTC21SB10-SO-0406	0910006-06	10/02/09 17:00	15.00	5.00
NTC21SB11-SO-0001	0910006-07	10/02/09 17:00	15.00	5.00
NTC21SB11-SO-0001	0910006-07RE1	10/02/09 17:00	15.00	5.00
NTC21SB11-SO-0204	0910006-08	10/02/09 17:00	15.00	5.00
NTC21SB11-SO-0204	0910006-08RE1	10/02/09 17:00	15.00	5.00
NTC21SB12-SO-0001	0910006-09	10/02/09 17:00	15.00	5.00
NTC21SB12-SO-0204	0910006-10	10/02/09 17:00	15.00	5.00
NTC21SB17-SO-0001	0910006-11	10/02/09 17:00	15.00	5.00
NTC21SB17-SO-0507	0910006-12	10/02/09 17:00	15.00	5.00
NTC21SB18-SO-0001	0910006-13	10/02/09 17:00	15.00	5.00
NTC21SB18-SO-0507	0910006-14	10/02/09 17:00	15.00	5.00
NTC21SB20-SO-0001	0910006-15	10/02/09 17:00	15.00	5.00
NTC21SB20-SO-0406	0910006-16	10/02/09 17:00	15.00	5.00
NTC21SB21-SO-0001	0910006-17	10/02/09 17:00	15.00	5.00
NTC21SB21-SO-0001	0910006-17RE1	10/02/09 17:00	15.00	5.00
NTC21SB21-SO-0608	0910006-18	10/02/09 17:00	15.00	5.00
Blank	9J02013-BLK1	10/02/09 19:00	15.00	5.00
LCS	9J02013-BS1	10/02/09 19:00	15.00	5.00
LCS	9J02013-BS2	10/02/09 19:00	15.00	5.00
NTC09SB15-SO-0204	9J02013-MS1	10/02/09 19:00	15.00	5.00
NTC09SB15-SO-0204	9J02013-MS2	10/02/09 19:00	15.00	5.00
NTC09SB15-SO-0204	9J02013-MSD1	10/02/09 19:00	15.00	5.00
NTC09SB15-SO-0204	9J02013-MSD2	10/02/09 19:00	15.00	5.00

ANALYSIS DATA SHEET

Blank

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:		Laboratory ID:	9J02013-BLK1	File ID:	031F3101.D
Sampled:		Prepared:	10/02/09 19:00	Analyzed:	10/10/09 00:40
Solids:		Preparation:	EXT_3546	Dilution:	

Batch: 9J02013 Sequence: 9J29207 Calibration: 9292002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg wet)	MDL	MRL	Q
72-54-8	4,4'-DDD		0.17	0.67	U
72-55-9	4,4'-DDE		0.17	0.67	U
50-29-3	4,4'-DDT		0.17	0.67	U
309-00-2	Aldrin		0.11	0.33	U
319-84-6	alpha-BHC		0.11	0.33	U
5103-71-9	alpha-Chlordane		0.11	0.33	U
319-85-7	beta-BHC		0.11	0.33	U
319-86-8	delta-BHC		0.11	0.33	U
60-57-1	Dieldrin		0.17	0.67	U
959-98-8	Endosulfan I		0.11	0.33	U
33213-65-9	Endosulfan II		0.17	0.67	U
1031-07-8	Endosulfan sulfate		0.17	0.67	U
72-20-8	Endrin		0.17	0.67	U
7421-93-4	Endrin aldehyde		0.17	0.67	U
53494-70-5	Endrin ketone		0.17	0.67	U
58-89-9	gamma-BHC (Lindane)		0.11	0.33	U
5566-34-7	gamma-Chlordane		0.11	0.33	U
76-44-8	Heptachlor		0.11	0.33	U
1024-57-3	Heptachlor epoxide		0.11	0.33	U
72-43-5	Methoxychlor		0.11	0.33	U
57-74-9	Chlordane (tech)		0.57	1.7	U
8001-35-2	Toxaphene		11	33	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg wet)	CONC (ug/Kg wet)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	16.67	13.05	78.3	70 - 125	
Tetrachloro-m-xylene [2C]	16.67	12.34	74.1	70 - 125	
Decachlorobiphenyl	16.67	14.89	89.4	60 - 125	
Decachlorobiphenyl [2C]	16.67	14.46	86.8	60 - 125	

Values outside of QC limits

ANALYSIS DATA SHEET

Blank

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:		Laboratory ID:	9J02013-BLK1	File ID:	031F3101.D
Sampled:		Prepared:	10/02/09 19:00	Analyzed:	10/10/09 00:40
Solids:		Preparation:	EXT_3546	Dilution:	

Batch: 9J02013 Sequence: 9J29207 Calibration: 9292002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg wet)	MDL	MRL	Q
12674-11-2	Aroclor-1016		4.2	17	U
11104-28-2	Aroclor-1221		4.2	17	U
11141-16-5	Aroclor-1232		4.2	17	U
53469-21-9	Aroclor-1242		4.2	17	U
12672-29-6	Aroclor-1248		4.2	17	U
11097-69-1	Aroclor-1254		4.2	17	U
11096-82-5	Aroclor-1260		4.2	17	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg wet)	CONC (ug/Kg wet)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	16.67	13.05	78.3	70 - 125	
Tetrachloro-m-xylene [2C]	16.67	12.34	74.1	70 - 125	
Decachlorobiphenyl	16.67	14.89	89.4	60 - 125	
Decachlorobiphenyl [2C]	16.67	14.46	86.8	60 - 125	

Values outside of QC limits

PREPARATION BATCH SUMMARY
SW8081A

Laboratory: Empirical Laboratories, LLC SDG: CTO064_001

Client: Tetra Tech NUS, Inc. (T010) Project: Great Lakes CTO 064 (Site 21)

Batch: 9J02014 Batch Matrix: Solid Preparation: EXT_3546

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
FD-092709-01	0910006-20	10/03/09 11:10	15.00	5.00
NTC21SB04-SO-0001	0910006-21	10/03/09 11:10	15.00	5.00
NTC21SB04-SO-0406	0910006-22	10/03/09 11:10	15.00	5.00
NTC21SB06-SO-0001	0910006-23	10/03/09 11:10	15.00	5.00
NTC21SB06-SO-0001	0910006-23RE1	10/03/09 11:10	15.00	5.00
NTC21SB06-SO-0204	0910006-24	10/03/09 11:10	15.00	5.00
NTC21SB06-SO-0204	0910006-24RE1	10/03/09 11:10	15.00	5.00
NTC21SB07-SO-0001	0910006-25	10/03/09 11:10	15.00	5.00
NTC21SB07-SO-0204	0910006-26	10/03/09 11:10	15.00	5.00
NTC21SB13-SO-0001	0910006-27	10/03/09 11:10	15.00	5.00
NTC21SB13-SO-0204	0910006-28	10/03/09 11:10	15.00	5.00
NTC21SB14-SO-0001	0910006-29	10/03/09 11:10	15.00	5.00
NTC21SB14-SO-0204	0910006-30	10/03/09 11:10	15.00	5.00
NTC21SB15-SO-0001	0910006-31	10/03/09 11:10	15.00	5.00
NTC21SB15-SO-0204	0910006-32	10/03/09 11:10	15.00	5.00
NTC21SB16-SO-0001	0910006-33	10/03/09 11:10	15.00	5.00
NTC21SB16-SO-0204	0910006-34	10/03/09 11:10	15.00	5.00
NTC21SB19-SO-0001	0910006-35	10/03/09 11:10	15.00	5.00
NTC21SB19-SO-0204	0910006-36	10/03/09 11:10	15.00	5.00
NTC21SB22-SO-0001	0910006-37	10/03/09 11:10	15.00	5.00
NTC21SB22-SO-0001	0910006-37RE1	10/03/09 11:10	15.00	5.00
NTC21SB22-SO-0204	0910006-38	10/03/09 11:10	15.00	5.00
NTC21SB22-SO-0204	0910006-38RE1	10/03/09 11:10	15.00	5.00
FD-092809-01	0910006-40	10/03/09 11:10	15.00	5.00
Blank	9J02014-BLK1	10/03/09 11:10	15.00	5.00
LCS	9J02014-BS1	10/03/09 11:10	15.00	5.00
LCS	9J02014-BS2	10/03/09 11:10	15.00	5.00
NTC21SB14-SO-0001	9J02014-MS1	10/03/09 11:10	15.00	5.00
NTC21SB14-SO-0001	9J02014-MS2	10/03/09 11:10	15.00	5.00
NTC21SB14-SO-0001	9J02014-MSD1	10/03/09 11:10	15.00	5.00
NTC21SB14-SO-0001	9J02014-MSD2	10/03/09 11:10	15.00	5.00

ANALYSIS DATA SHEET

Blank

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:		Laboratory ID:	9J02014-BLK1	File ID:	068F7101.D
Sampled:		Prepared:	10/03/09 11:10	Analyzed:	10/13/09 15:36
Solids:		Preparation:	EXT_3546	Dilution:	

Batch: 9J02014 Sequence: 9J30317 Calibration: 9295002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg wet)	MDL	MRL	Q
72-54-8	4,4'-DDD		0.17	0.67	U
72-55-9	4,4'-DDE		0.17	0.67	U
50-29-3	4,4'-DDT		0.17	0.67	U
309-00-2	Aldrin		0.11	0.33	U
319-84-6	alpha-BHC		0.11	0.33	U
5103-71-9	alpha-Chlordane		0.11	0.33	U
319-85-7	beta-BHC		0.11	0.33	U
319-86-8	delta-BHC		0.11	0.33	~~U~~
60-57-1	Dieldrin		0.17	0.67	U
959-98-8	Endosulfan I		0.11	0.33	U
33213-65-9	Endosulfan II		0.17	0.67	U
1031-07-8	Endosulfan sulfate		0.17	0.67	U
72-20-8	Endrin		0.17	0.67	U Y
7421-93-4	Endrin aldehyde		0.17	0.67	U
53494-70-5	Endrin ketone		0.17	0.67	U
58-89-9	gamma-BHC (Lindane)		0.11	0.33	U
5566-34-7	gamma-Chlordane		0.11	0.33	U
76-44-8	Heptachlor		0.11	0.33	U
1024-57-3	Heptachlor epoxide		0.11	0.33	U
72-43-5	Methoxychlor		0.11	0.33	U
57-74-9	Chlordane (tech)		0.57	1.7	U
8001-35-2	Toxaphene		11	33	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg wet)	CONC (ug/Kg wet)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	16.67	13.95	83.7	70 - 125	
Tetrachloro-m-xylene [2C]	16.67	15.01	90.1	70 - 125	
Decachlorobiphenyl	16.67	11.34	68.0	60 - 125	
Decachlorobiphenyl [2C]	16.67	12.73	76.4	60 - 125	

* Values outside of QC limits

J.H. 11.2.09

ANALYSIS DATA SHEET

Blank

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:		Laboratory ID:	9J02014-BLK1	File ID:	068F7101.D
Sampled:		Prepared:	10/03/09 11:10	Analyzed:	10/13/09 15:36
Solids:		Preparation:	EXT_3546	Dilution:	

Batch: 9J02014 Sequence: 9J30317 Calibration: 9295002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg wet)	MDL	MRL	Q
12674-11-2	Aroclor-1016		4.2	17	U
11104-28-2	Aroclor-1221		4.2	17	U
11141-16-5	Aroclor-1232		4.2	17	U
53469-21-9	Aroclor-1242		4.2	17	U
12672-29-6	Aroclor-1248		4.2	17	U
11097-69-1	Aroclor-1254		4.2	17	U
11096-82-5	Aroclor-1260		4.2	17	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg wet)	CONC (ug/Kg wet)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	16.67	13.95	83.7	70 - 125	
Tetrachloro-m-xylene [2C]	16.67	15.01	90.1	70 - 125	
Decachlorobiphenyl	16.67	11.34	68.0	60 - 125	
Decachlorobiphenyl [2C]	16.67	12.73	76.4	60 - 125	

* Values outside of QC limits

PREPARATION BATCH SUMMARY

SW8081A

Laboratory: Empirical Laboratories, LLC SDG: CTO064_001

Client: Tetra Tech NUS, Inc. (T010) Project: Great Lakes CTO 064 (Site 21)

Batch: 9J06028 Batch Matrix: Solid Preparation: EXT_3546

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
NTC21SB01-SO-0102	0910006-41	10/07/09 19:25	15.00	5.00
NTC21SB02-SO-0001	0910006-42	10/07/09 19:25	15.00	5.00
NTC21SB02-SO-0204	0910006-43	10/07/09 19:25	15.00	5.00
NTC21SB03-SO-0001	0910006-44	10/07/09 19:25	15.00	5.00
NTC21SB03-SO-0204	0910006-45	10/07/09 19:25	15.00	5.00
NTC21SB05-SO-0001	0910006-46	10/07/09 19:25	15.00	5.00
NTC21SB05-SO-0001	0910006-46RE1	10/07/09 19:25	15.00	5.00
NTC21SB05-SO-0204	0910006-47	10/07/09 19:25	15.00	5.00
NTC21SB08-SO-0001	0910006-48	10/07/09 19:25	15.00	5.00
NTC21SB08-SO-0204	0910006-49	10/07/09 19:25	15.00	5.00
Blank	9J06028-BLK1	10/07/09 19:25	15.00	5.00
LCS	9J06028-BS1	10/07/09 19:25	15.00	5.00
LCS	9J06028-BS2	10/07/09 19:25	15.00	5.00
NTC21SB02-SO-0204	9J06028-MS1	10/07/09 19:25	15.00	5.00
NTC21SB02-SO-0204	9J06028-MS2	10/07/09 19:25	15.00	5.00
NTC21SB02-SO-0204	9J06028-MSD1	10/07/09 19:25	15.00	5.00
NTC21SB02-SO-0204	9J06028-MSD2	10/07/09 19:25	15.00	5.00

ANALYSIS DATA SHEET

Blank

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:		Laboratory ID:	9J06028-BLK1	File ID:	089F9201.D
Sampled:		Prepared:	10/07/09 19:25	Analyzed:	10/13/09 21:11
Solids:		Preparation:	EXT_3546	Dilution:	

Batch: 9J06028 Sequence: 9J30317 Calibration: 9295002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg wet)	MDL	MRL	Q
72-54-8	4,4'-DDD		0.17	0.67	U
72-55-9	4,4'-DDE		0.17	0.67	U
50-29-3	4,4'-DDT		0.17	0.67	U Y
309-00-2	Aldrin		0.11	0.33	U
319-84-6	alpha-BHC		0.11	0.33	U
5103-71-9	alpha-Chlordane		0.11	0.33	U
319-85-7	beta-BHC		0.11	0.33	U
319-86-8	delta-BHC		0.11	0.33	U
60-57-1	Dieldrin		0.17	0.67	U
959-98-8	Endosulfan I		0.11	0.33	U
33213-65-9	Endosulfan II		0.17	0.67	U
1031-07-8	Endosulfan sulfate		0.17	0.67	U
72-20-8	Endrin		0.17	0.67	U Y
7421-93-4	Endrin aldehyde		0.17	0.67	U
53494-70-5	Endrin ketone		0.17	0.67	U
58-89-9	gamma-BHC (Lindane)		0.11	0.33	U
5566-34-7	gamma-Chlordane		0.11	0.33	U
76-44-8	Heptachlor		0.11	0.33	U
1024-57-3	Heptachlor epoxide		0.11	0.33	U
72-43-5	Methoxychlor		0.11	0.33	U Y
57-74-9	Chlordane (tech)		0.57	1.7	U
8001-35-2	Toxaphene		11	33	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg wet)	CONC (ug/Kg wet)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	16.67	9.561	57.4	70 - 125	*
Tetrachloro-m-xylene [2C]	16.67	10.09	60.5	70 - 125	*
Decachlorobiphenyl	16.67	8.729	52.4	60 - 125	*
Decachlorobiphenyl [2C]	16.67	9.672	58.0	60 - 125	*

* Values outside of QC limits

JH. 11.2.09

ANALYSIS DATA SHEET

Blank

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_001	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:		Laboratory ID:	9J06028-BLK1	File ID:	089F9201.D
Sampled:		Prepared:	10/07/09 19:25	Analyzed:	10/13/09 21:11
Solids:		Preparation:	EXT_3546	Dilution:	

Batch: 9J06028 Sequence: 9J30317 Calibration: 9295002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg wet)	MDL	MRL	Q
12674-11-2	Aroclor-1016		4.2	17	U
11104-28-2	Aroclor-1221		4.2	17	U
11141-16-5	Aroclor-1232		4.2	17	U
53469-21-9	Aroclor-1242		4.2	17	U
12672-29-6	Aroclor-1248		4.2	17	U
11097-69-1	Aroclor-1254		4.2	17	U
11096-82-5	Aroclor-1260		4.2	17	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg wet)	CONC (ug/Kg wet)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	16.67	9.561	57.4	70 - 125	*
Tetrachloro-m-xylene [2C]	16.67	10.09	60.5	70 - 125	*
Decachlorobiphenyl	16.67	8.729	52.4	60 - 125	*
Decachlorobiphenyl [2C]	16.67	9.672	58.0	60 - 125	*

* Values outside of QC limits

FORM 3
SOIL PESTICIDE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: Case No.: SAS No.: NA SDG No.: ~~CTO510_002~~ CTO064_001

Matrix Spike - Client Sample No.: 9J02013-BLK1

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENTRATION (ug/kg)	LCS CONCENTRATION (ug/kg)	LCS % REC #	QC. LIMITS REC.
Aldrin	33.33	0.0000	26.42	79	45-140
Alpha-BHC	33.33	0.0000	26.12	78	60-125
Alpha-Chlordane	33.33	0.0000	26.35	79	65-120
Beta-BHC	33.33	0.0000	25.79	77	60-125
4,4'-DDD	33.33	0.0000	27.60	83	30-135
4,4'-DDE	33.33	0.0000	27.22	82	70-125
4,4'-DDT	33.33	0.0000	30.70	92	45-140
Delta-BHC	33.33	0.0000	25.25	76	55-130
Dieldrin	33.33	0.0000	27.60	83	65-125
Endosulfan I	33.33	0.0000	26.85	80	15-135
Endosulfan II	33.33	0.0000	27.16	81	35-140
Endosulfan Sulfate	33.33	0.0000	27.87	84	60-135
Endrin	33.33	0.0000	35.40	106	60-135
Endrin Aldehyde	33.33	0.0000	20.31	61	35-145
Endrin Ketone	33.33	0.0000	26.17	78	65-135
Gamma-BHC	33.33	0.0000	26.75	80	60-125
Gamma-Chlordane	33.33	0.0000	26.40	79	65-125
Heptachlor	33.33	0.0000	26.75	80	50-140
Heptachlor Epoxide	33.33	0.0000	26.43	79	65-130
Methoxychlor	33.33	0.0000	27.55	83	55-145

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 20 outside limits

COMMENTS: _____

FORM 3
SOIL PESTICIDE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: Case No.: SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: 9J02014-BLK1

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENTRATION (ug/kg)	LCS CONCENTRATION (ug/kg)	LCS % REC #	QC. LIMITS REC.
Aldrin	33.33	0.0000	27.24	82	45-140
Alpha-BHC	33.33	0.0000	27.70	83	60-125
Alpha-Chlordane	33.33	0.0000	29.26	88	65-120
Beta-BHC	33.33	0.0000	29.87	90	60-125
4,4'-DDD	33.33	0.0000	30.28	91	30-135
4,4'-DDE	33.33	0.0000	31.85	96	70-125
4,4'-DDT	33.33	0.0000	34.27	103	45-140
Delta-BHC	33.33	0.0000	28.07	84	55-130
Dieldrin	33.33	0.0000	27.20	82	65-125
Endosulfan I	33.33	0.0000	25.76	77	15-135
Endosulfan II	33.33	0.0000	25.99	78	35-140
Endosulfan Sulfate	33.33	0.0000	27.13	81	60-135
Endrin	33.33	0.0000	25.19	76	60-135
Endrin Aldehyde	33.33	0.0000	23.79	71	35-145
Endrin Ketone	33.33	0.0000	26.08	78	65-135
Gamma-BHC	33.33	0.0000	28.87	87	60-125
Gamma-Chlordane	33.33	0.0000	31.08	93	65-125
Heptachlor	33.33	0.0000	28.08	84	50-140
Heptachlor Epoxide	33.33	0.0000	28.10	84	65-130
Methoxychlor	33.33	0.0000	29.35	88	55-145

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 20 outside limits

COMMENTS: _____

FORM 3
WATER PESTICIDE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: Case No.: SAS No.: NA SDG No.: ~~CTO510-002~~ CTO064_001

Matrix Spike - Client Sample No.: 9J01022-BLK1

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Aldrin	1.000	0.0000	0.8648	86	25-140
Alpha-BHC	1.000	0.0000	0.8560	86	60-130
Alpha-Chlordane	1.000	0.0000	0.8550	86	65-125
Beta-BHC	1.000	0.0000	0.8384	84	65-125
4,4'-DDD	1.000	0.0000	0.8956	90	25-150
4,4'-DDE	1.000	0.0000	0.8813	88	35-140
4,4'-DDT	1.000	0.0000	1.009	101	45-140
Delta-BHC	1.000	0.0000	0.8440	84	45-135
Dieldrin	1.000	0.0000	0.8943	89	60-130
Endosulfan I	1.000	0.0000	0.8727	87	50-110
Endosulfan II	1.000	0.0000	0.8686	87	30-130
Endosulfan Sulfate	1.000	0.0000	0.9080	91	55-135
Endrin	1.000	0.0000	1.201	120	55-135
Endrin Aldehyde	1.000	0.0000	0.6778	68	55-135
Endrin Ketone	1.000	0.0000	0.8583	86	75-125
Gamma-BHC	1.000	0.0000	0.8727	87	25-135
Gamma-Chlordane	1.000	0.0000	0.8583	86	60-125
Heptachlor	1.000	0.0000	0.8744	87	40-130
Heptachlor Epoxide	1.000	0.0000	0.8622	86	60-130
Methoxychlor	1.000	0.0000	0.9254	92	55-150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER PESTICIDE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: Case No.: SAS No.: NA SDG No.: ~~CTO510-002~~ CTO064_001

Matrix Spike - Client Sample No.: 9J01022-BLK1

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Aldrin	1.000	0.8606	86	0	30	25-140
Alpha-BHC	1.000	0.8535	85	0	30	60-130
Alpha-Chlordane	1.000	0.8640	86	1	30	65-125
Beta-BHC	1.000	0.8503	85	1	30	65-125
4,4'-DDD	1.000	0.9137	91	2	30	25-150
4,4'-DDE	1.000	0.8964	90	2	30	35-140
4,4'-DDT	1.000	1.024	102	1	30	45-140
Delta-BHC	1.000	0.8548	85	1	30	45-135
Dieldrin	1.000	0.9086	91	2	30	60-130
Endosulfan I	1.000	0.8843	88	1	30	50-110
Endosulfan II	1.000	0.8844	88	2	30	30-130
Endosulfan Sulfate	1.000	0.9344	93	3	30	55-135
Endrin	1.000	1.212	121	1	30	55-135
Endrin Aldehyde	1.000	0.7514	75	10	30	55-135
Endrin Ketone	1.000	0.8820	88	3	30	75-125
Gamma-BHC	1.000	0.8679	87	0	30	25-135
Gamma-Chlordane	1.000	0.8648	86	1	30	60-125
Heptachlor	1.000	0.8683	87	1	30	40-130
Heptachlor Epoxide	1.000	0.8712	87	1	30	60-130
Methoxychlor	1.000	0.9471	95	2	30	55-150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 20 outside limits
Spike Recovery: 0 out of 40 outside limits

COMMENTS: _____

FORM 3
SOIL PESTICIDE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: Case No.: SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: 9J06028-BLK1

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENTRATION (ug/kg)	LCS CONCENTRATION (ug/kg)	LCS % REC #	QC. LIMITS REC.
Aldrin	33.33	0.0000	23.01	69	45-140
Alpha-BHC	33.33	0.0000	23.11	69	60-125
Alpha-Chlordane	33.33	0.0000	24.04	72	65-120
Beta-BHC	33.33	0.0000	24.36	73	60-125
4,4'-DDD	33.33	0.0000	25.70	77	30-135
4,4'-DDE	33.33	0.0000	25.76	77	70-125
4,4'-DDT	33.33	0.0000	27.56	83	45-140
Delta-BHC	33.33	0.0000	24.04	72	55-130
Dieldrin	33.33	0.0000	22.87	69	65-125
Endosulfan I	33.33	0.0000	22.47	67	15-135
Endosulfan II	33.33	0.0000	21.83	65	35-140
Endosulfan Sulfate	33.33	0.0000	23.18	70	60-135
Endrin	33.33	0.0000	20.07	60	60-135
Endrin Aldehyde	33.33	0.0000	18.91	57	35-145
Endrin Ketone	33.33	0.0000	21.54	65	65-135
Gamma-BHC	33.33	0.0000	24.18	72	60-125
Gamma-Chlordane	33.33	0.0000	24.87	75	65-125
Heptachlor	33.33	0.0000	23.92	72	50-140
Heptachlor Epoxide	33.33	0.0000	22.92	69	65-130
Methoxychlor	33.33	0.0000	23.87	72	55-145

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 20 outside limits

COMMENTS: _____

FORM 3
SOIL PESTICIDE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: Case No.: SAS No.: NA SDG No.: ~~CTO510-002~~ CTO064_001

Matrix Spike - Client Sample No.: 9J02013-BLK1

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENTRATION (ug/kg)	LCS CONCENTRATION (ug/kg)	LCS % REC #	QC. LIMITS REC.
PCB-1016	166.7	0.0000	139.6	84	40-140
PCB-1260	166.7	0.0000	138.5	83	60-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 2 outside limits

COMMENTS: _____

FORM III PESTA

FORM 3
WATER PESTICIDE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: Case No.: SAS No.: NA SDG No.: ~~CTO510-002~~ CTO064_001

Matrix Spike - Client Sample No.: 9J01022-BLK1

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
PCB-1016	5.000	0.0000	5.640	113	25-145
PCB-1260	5.000	0.0000	5.553	111	30-145

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
PCB-1016	5.000	5.641	113	0	30	25-145
PCB-1260	5.000	5.046	101	10	30	30-145

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 2 outside limits
Spike Recovery: 0 out of 4 outside limits

COMMENTS: _____

FORM III PESTA

FORM 3
SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: NTC21SB14-SO-000 Lab Sample ID: 0910006-29

COMPOUND	SPIKE ADDED (mg/kg)	SAMPLE CONCENTRATION (mg/kg)	MS CONCENTRATION (mg/kg)	MS % REC #	QC. LIMITS REC.
Aldrin	40.73	0.0000	22.15	54	45-140
Alpha-BHC	40.73	0.0000	26.89	66	60-125
Alpha-Chlordane	40.73	0.0000	21.80	54*	65-120
Beta-BHC	40.73	0.0000	22.74	56*	60-125
4,4'-DDD	40.73	1.579	26.70	62	30-135
4,4'-DDE	40.73	1.932	26.65	61*	70-125
4,4'-DDT	40.73	7.143	31.67	60	45-140
Delta-BHC	40.73	0.0000	22.22	54*	55-130
Dieldrin	40.73	0.0000	20.56	50*	65-125
Endosulfan I	40.73	0.0000	20.32	50	15-135
Endosulfan II	40.73	0.0000	16.92	42	35-140
Endosulfan Sulfate	40.73	0.0000	21.09	52*	60-135
Endrin	40.73	0.0000	27.00	66	60-135
Endrin Aldehyde	40.73	0.0000	14.96	37	35-145
Endrin Ketone	40.73	0.0000	16.07	39*	65-135
Gamma-BHC	40.73	0.2188	23.82	58*	60-125
Gamma-Chlordane	40.73	0.0000	22.26	55*	65-125
Heptachlor	40.73	0.0000	17.63	43*	60-140
Heptachlor Epoxide	40.73	0.0000	22.04	54*	65-130
Methoxychlor	40.73	0.0000	20.14	49*	55-145

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: NTC21SB14-SO-000 Lab Sample ID: 0910006-29

COMPOUND	SPIKE ADDED (mg/kg)	MSD CONCENTRATION (mg/kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Aldrin	40.73	21.59	53	2	50	45-140
Alpha-BHC	40.73	25.46	62	5	50	60-125
Alpha-Chlordane	40.73	21.31	52*	2	50	65-120
Beta-BHC	40.73	22.47	55*	1	50	60-125
4,4'-DDD	40.73	24.95	57	7	50	30-135
4,4'-DDE	40.73	23.04	52*	14	50	70-125
4,4'-DDT	40.73	26.51	48	18	50	45-140
Delta-BHC	40.73	22.09	54*	0	50	55-130
Dieldrin	40.73	20.09	49*	2	50	65-125
Endosulfan I	40.73	20.00	49	2	50	15-135
Endosulfan II	40.73	15.83	39	7	50	35-140
Endosulfan Sulfate	40.73	20.33	50*	4	50	60-135
Endrin	40.73	26.30	64	3	50	60-135
Endrin Aldehyde	40.73	14.80	36	1	50	35-145
Endrin Ketone	40.73	15.12	37*	6	50	65-135
Gamma-BHC	40.73	23.14	56*	3	50	60-125
Gamma-Chlordane	40.73	21.45	53*	4	50	65-125
Heptachlor	40.73	18.12	44*	3	50	50-140
Heptachlor Epoxide	40.73	21.35	52*	3	50	65-130
Methoxychlor	40.73	17.60	43*	13	50	55-145

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 20 outside limits
Spike Recovery: 24 out of 40 outside limits

COMMENTS: _____

FORM 3
SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: NTC21SB02-SO-020 Lab Sample ID: 0910006-43

COMPOUND	SPIKE ADDED (mg/kg)	SAMPLE CONCENTRATION (mg/kg)	MS CONCENTRATION (mg/kg)	MS % REC #	QC. LIMITS REC.
Aldrin	37.56	0.0000	19.06	51	45-140
Alpha-BHC	37.56	2.796	23.67	56*	60-125
Alpha-Chlordane	37.56	0.0000	18.64	50*	65-120
Beta-BHC	37.56	0.0000	18.79	50*	60-125
4,4'-DDD	37.56	7.914	32.94	67	30-135
4,4'-DDE	37.56	8.240	30.27	59*	70-125
4,4'-DDT	37.56	7.993	23.80	42*	45-140
Delta-BHC	37.56	0.0000	17.83	47*	55-130
Dieldrin	37.56	0.8699	19.62	50*	65-125
Endosulfan I	37.56	0.0000	15.62	42	15-135
Endosulfan II	37.56	0.5921	11.52	29*	35-140
Endosulfan Sulfate	37.56	1.325	18.56	46*	60-135
Endrin	37.56	0.8161	22.10	57*	60-135
Endrin Aldehyde	37.56	0.0000	10.16	27*	35-145
Endrin Ketone	37.56	0.0000	17.63	47*	65-135
Gamma-BHC	37.56	0.0000	19.78	53*	60-125
Gamma-Chlordane	37.56	3.548	21.39	48*	65-125
Heptachlor	37.56	0.0000	13.61	36*	50-140
Heptachlor Epoxide	37.56	0.8998	19.21	49*	65-130
Methoxychlor	37.56	9.500	25.10	42*	55-145

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: NTC21SB02-SO-020 Lab Sample ID: 0910006-43

COMPOUND	SPIKE ADDED (mg/kg)	MSD CONCENTRATION (mg/kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Aldrin	37.56	22.40	60	16	50	45-140
Alpha-BHC	37.56	28.20	68	17	50	60-125
Alpha-Chlordane	37.56	22.33	59*	18	50	65-120
Beta-BHC	37.56	22.01	58*	16	50	60-125
4,4'-DDD	37.56	36.96	77	12	50	30-135
4,4'-DDE	37.56	35.50	72	16	50	70-125
4,4'-DDT	37.56	26.58	49	11	50	45-140
Delta-BHC	37.56	20.60	55	14	50	55-130
Dieldrin	37.56	22.76	58*	15	50	65-125
Endosulfan I	37.56	18.05	48	14	50	15-135
Endosulfan II	37.56	12.65	32*	9	50	35-140
Endosulfan Sulfate	37.56	21.25	53*	14	50	60-135
Endrin	37.56	25.26	65	13	50	60-135
Endrin Aldehyde	37.56	11.02	29*	8	50	35-145
Endrin Ketone	37.56	19.37	52*	9	50	65-135
Gamma-BHC	37.56	23.43	62	17	50	60-125
Gamma-Chlordane	37.56	24.79	56*	15	50	65-125
Heptachlor	37.56	15.53	41*	13	50	50-140
Heptachlor Epoxide	37.56	22.35	57*	15	50	65-130
Methoxychlor	37.56	25.58	43*	2	50	55-145

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 20 outside limits
Spike Recovery: 28 out of 40 outside limits

COMMENTS: _____

FORM 3
SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: Case No.: SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: NTC21SB14-SO-000 Lab Sample ID: 0910006-29

COMPOUND	SPIKE ADDED (mg/kg)	SAMPLE CONCENTRATION (mg/kg)	MS CONCENTRATION (mg/kg)	MS % REC #	QC. LIMITS REC.
PCB-1016	203.6	0.0000	168.5	83	40-140
PCB-1260	203.6	0.0000	161.5	79	60-130

COMPOUND	SPIKE ADDED (mg/kg)	MSD CONCENTRATION (mg/kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
PCB-1016	203.6	177.9	87	5	50	40-140
PCB-1260	203.6	168.7	83	4	50	60-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 2 outside limits
Spike Recovery: 0 out of 4 outside limits

COMMENTS: _____

FORM III PESTA

FORM 3
SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: Case No.: SAS No.: NA SDG No.: CTO064_001

Matrix Spike - Client Sample No.: NTC21SB02-SO-020 Lab Sample ID: 0910006-43

COMPOUND	SPIKE ADDED (mg/kg)	SAMPLE CONCENTRATION (mg/kg)	MS CONCENTRATION (mg/kg)	MS % REC #	QC. LIMITS REC.
PCB-1016	187.8	0.0000	174.1	93	40-140
PCB-1260	187.8	69.38	209.5	75	60-130

COMPOUND	SPIKE ADDED (mg/kg)	MSD CONCENTRATION (mg/kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
PCB-1016	187.8	183.3	98	5	50	40-140
PCB-1260	187.8	270.2	107	25	50	60-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 2 outside limits
Spike Recovery: 0 out of 4 outside limits

COMMENTS:

FORM III PESTA

7D

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: EMPIRICAL LABS, LLC Contract: TETRA TECH

Lab Code: ____ Case No.: ____ SAS No.: ____ SDG No.: CTO064_001

GC Column: ZB-MR1 ID: 0.32 (mm) Init. Calib. Date(s): ____ ____

EPA Sample No. (PIBLK): ____ Date Analyzed: ____

Lab Sample ID (PIBLK): ____ Time Analyzed: ____

EPA Sample No. (PEM): ____ Date Analyzed: 10/5/04

Lab Sample ID (PEM): ____ Time Analyzed: 14:31

PEM COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
alpha-BHC						
beta-BHC						
gamma-BHC (Lindane)						
Endrin						
4,4'-DDT						
Methoxychlor						

4,4'-DDT % breakdown (1): 5.6% Endrin % breakdown (1): 13.8%

Combined % breakdown (1): NA

OLM03.0

FORM VII PEST-1

7D

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: EMPIRICAL LABS, LLC Contract: TETRA TECH

Case No.: ____ SAS No.: ____ SDG No.: CTO064_001

Lab Code: ____

GC Column: ZB-MR1 ID: 0.32 (mm) Init. Calib. Date(s): 100504 ____

EPA Sample No. (PIBLK): ____ Date Analyzed: ____

Lab Sample ID (PIBLK): ____ Time Analyzed: ____

EPA Sample No. (PEM): ____ Date Analyzed: 10/04/09

Lab Sample ID (PEM): ____ Time Analyzed: 13:33

PEM COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
alpha-BHC						
beta-BHC						
gamma-BHC (Lindane)						
Endrin						
4,4'-DDT						
Methoxychlor						

4,4'-DDT % breakdown (1): 3.7%

Endrin % breakdown (1): Ø%

Combined % breakdown (1): NA

OLM03.0

FORM VII PEST-1

7D

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: EMPIRICAL LABS, LLC Contract: TETRA TECH

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: CTO064_001

GC Column: ZB-MR1 ID: 0.32 (mm) Init. Calib. Date(s): 10/12/04 _____

EPA Sample No. (PIBLK): _____ Date Analyzed: _____

Lab Sample ID (PIBLK): _____ Time Analyzed: _____

EPA Sample No. (PEM): _____ Date Analyzed: 10/12/04

Lab Sample ID (PEM): _____ Time Analyzed: 20:44

PEM COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
alpha-BHC						
beta-BHC						
gamma-BHC (Lindane)						
Endrin						
4,4'-DDT						
Methoxychlor						

4,4'-DDT % breakdown (1): 5.3% Endrin % breakdown (1): 9.6%

Combined % breakdown (1): NA

OLM03.0

FORM VII PEST-1

7D

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: EMPIRICAL LABS, LLC Contract: TETRA TECH

Case No.: ____ SAS No.: ____ SDG No.: CTO064_001

Lab Code: ____

GC Column: ZB-MR1 ID: 0.32 (mm) Init. Calib. Date(s): 10/12/09 ____

EPA Sample No. (PIBLK): ____ Date Analyzed: ____

Lab Sample ID (PIBLK): ____ Time Analyzed: ____

EPA Sample No. (PEM): ____ Date Analyzed: 10/15/09

Lab Sample ID (PEM): ____ Time Analyzed: 12:32

PEM COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
alpha-BHC						
beta-BHC						
gamma-BHC (Lindane)						
Endrin						
4,4'-DDT						
Methoxychlor						

4,4'-DDT % breakdown (1): 2.8%

Endrin % breakdown (1): 5.6%

Combined % breakdown (1): NA

OLM03.0

FORM VII PEST-1

7D

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: EMPIRICAL LABS, LLC Contract: TETRA TECH

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: CTO064_001

GC Column: ZB-MR1 ID: 0.32 (mm) Init. Calib. Date(s): 10/23/04 _____

EPA Sample No. (PIBLK): — Date Analyzed: —

Lab Sample ID (PIBLK): — Time Analyzed: —

EPA Sample No. (PEM): — Date Analyzed: 10/03/04

Lab Sample ID (PEM): — Time Analyzed: 17:35

PEM COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
alpha-BHC						
beta-BHC						
gamma-BHC (Lindane)						
Endrin						
4,4'-DDT						
Methoxychlor						

4,4'-DDT % breakdown (1): Ø %

Endrin % breakdown (1): 9.2%

Combined % breakdown (1): NA

OLM03.0

FORM VII PEST-1

7D

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: EMPIRICAL LABS, LLC Contract: TETRA TECH

Lab Code: ____ Case No.: ____ SAS No.: ____ SDG No.: CT0064_001

GC Column: ZB-MR2 ID: 0.32 (mm) Init. Calib. Date(s): 100509 ____

EPA Sample No. (PIBLK): ____ Date Analyzed: ____

Lab Sample ID (PIBLK): ____ Time Analyzed: ____

EPA Sample No. (PEM): ____ Date Analyzed: 10/05/09

Lab Sample ID (PEM): ____ Time Analyzed: 19:31

PEM COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
alpha-BHC						
beta-BHC						
gamma-BHC (Lindane)						
Endrin						
4,4'-DDT						
Methoxychlor						

4,4'-DDT % breakdown (1): 5.2%

Endrin % breakdown (1): 14.8%

Combined % breakdown (1): NA

OLM03.0

FORM VII PEST-1

7D

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: EMPIRICAL LABS, LLC Contract: TETRA TECH

Lab Code: ____ Case No.: ____ SAS No.: ____ SDG No.: CTO064_002

GC Column: ZB-MR2 ID: 0.32 (mm) Init. Calib. Date(s): 100504 ____

EPA Sample No. (PIBLK): — Date Analyzed: —

Lab Sample ID (PIBLK): — Time Analyzed: —

EPA Sample No. (PEM): — Date Analyzed: 10/09/04

Lab Sample ID (PEM): — Time Analyzed: 1333

PEM COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
alpha-BHC						
beta-BHC						
gamma-BHC (Lindane)						
Endrin						
4,4'-DDT						
Methoxychlor						

4,4'-DDT % breakdown (1): Ø%

Endrin % breakdown (1): Ø%

Combined % breakdown (1): NA

OLM03.0

FORM VII PEST-1

7D

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: EMPIRICAL LABS, LLC Contract: TETRA TECH

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: CTO064_001

GC Column: ZB-MR2 ID: 0.32 (mm) Init. Calib. Date(s): 10/12/04 _____

EPA Sample No. (PIBLK): — Date Analyzed: —

Lab Sample ID (PIBLK): — Time Analyzed: —

EPA Sample No. (PEM): — Date Analyzed: 10/12/04

Lab Sample ID (PEM): — Time Analyzed: 20:44

PEM COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
alpha-BHC						
beta-BHC						
gamma-BHC (Lindane)						
Endrin						
4,4'-DDT						
Methoxychlor						

4,4'-DDT % breakdown (1): 3.7%

Endrin % breakdown (1): 6.8%

Combined % breakdown (1): NA

OLM03.0

FORM VII PEST-1

7D

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: EMPIRICAL LABS, LLC Contract: TETRA TECH

Lab Code: ____ Case No.: ____ SAS No.: ____ SDG No.: CTO064_001

GC Column: ZB-MR2 ID: 0.32 (mm) Init. Calib. Date(s): 10/12/09 ____

EPA Sample No. (PIBLK): ____ Date Analyzed: ____

Lab Sample ID (PIBLK): ____ Time Analyzed: ____

EPA Sample No. (PEM): ____ Date Analyzed: 10/15/09

Lab Sample ID (PEM): ____ Time Analyzed: 12:32

PEM COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
alpha-BHC						
beta-BHC						
gamma-BHC (Lindane)						
Endrin						
4,4'-DDT						
Methoxychlor						

4,4'-DDT % breakdown (1): 1.9%

Endrin % breakdown (1): 5.1%

Combined % breakdown (1): NA

OLM03.0

FORM VII PEST-1

7D

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name: EMPIRICAL LABS, LLC Contract: TETRA TECH

Lab Code: ____ Case No.: ____ SAS No.: ____ SDG No.: CTO064_001

GC Column: ZB-MR2 ID: 0.32 (mm) Init. Calib. Date(s): 11/23/09 ____

EPA Sample No. (PIBLK): ____ Date Analyzed: ____

Lab Sample ID (PIBLK): ____ Time Analyzed: ____

EPA Sample No. (PEM): ____ Date Analyzed: 10/23/09

Lab Sample ID (PEM): ____ Time Analyzed: 17:35

PEM COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	%D
alpha-BHC						
beta-BHC						
gamma-BHC (Lindane)						
Endrin						
4,4'-DDT						
Methoxychlor						

4,4'-DDT % breakdown (1): Ø%

Endrin % breakdown (1): 0%

Combined % breakdown (1): NA

OLM03.0

FORM VII PEST-1

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

RB-092909-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-51 Date(s) Analyzed: 10/06/09 10/06/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Gamma-Chlordane	1	7.07	7.03	7.09	0.009188	
	2	5.65	5.61	5.67	0.01026	11.0
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

RB-092909-02

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-52 Date(s) Analyzed: 10/06/09 10/06/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Gamma-Chlordane	1	7.06	7.03	7.09	0.009723	
	2	5.65	5.61	5.67	0.007391	27.2
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

SB-092909-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-53 Date(s) Analyzed: 10/06/09 10/06/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Gamma-Chlordane	1	7.06	7.03	7.09	0.004930	
	2	5.65	5.61	5.67	0.005656	13.7
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

FD-092609-02

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-02 Date(s) Analyzed: 10/10/09 10/10/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Alpha-Chlordane	1	7.06	7.03	7.09	3.287	
	2	5.60	5.59	5.65	4.528	31.8
4,4'-DDD	1	7.88	7.85	7.91	132.6	
	2	6.38	6.35	6.41	88.01	40.4
4,4'-DDE	1	7.26	7.24	7.30	37.82	
	2	5.81	5.79	5.85	26.58	34.9
4,4'-DDT	1	8.25	8.22	8.28	23.41	
	2	6.66	6.63	6.69	31.43	29.2
Dieldrin	1	7.43	7.40	7.46	3.579	
	2	5.93	5.90	5.96	107.3	187.1
Endosulfan II	1	7.96	7.93	7.99	2.330	
	2	6.53	6.48	6.54	3.978	52.2
Endosulfan Sulfate	1	8.38	8.37	8.43	5.721	
	2	6.94	6.92	6.98	3.512	47.8
Endrin	1	7.71	7.66	7.72	9.029	
	2	6.21	6.17	6.23	5.656	45.9

PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

FD-092609-02

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-02 Date(s) Analyzed: 10/10/09 10/10/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Gamma-Chlordane	1	6.94	6.94	7.00	20.21	
	2	5.57	5.54	5.60	14.91	30.2
Heptachlor Epoxide	1	6.68	6.66	6.72	4.937	
	2	5.35	5.29	5.35	0.9133	137.6
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

FD-092609-02

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-02RE1 Date(s) Analyzed: 10/16/09 10/16/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
4,4'-DDD	1	7.58	7.56	7.62	188.0	
	2	6.15	6.12	6.18	274.2	37.3
4,4'-DDE	1	6.99	6.96	7.02	99.23	
	2	5.59	5.57	5.63	51.69	63.0
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

CLIENT SAMPLE NO.

FD-092609-02

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-02 Date(s) Analyzed: 10/10/09 10/10/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
	1	8.97	8.95	9.01	208.7		
PCB-1260	2	7.56	7.53	7.59	208.4		
	3	8.31	8.28	8.34	176.6		
COLUMN 1	4	8.58	8.55	8.61	177.2		
	5	10.06	10.02	10.08	190.3	192.2	
	1	7.30	7.27	7.33	165.8		
	2	6.32	6.29	6.35	182.8		
	3						
COLUMN 2	4	6.72	6.69	6.75	136.5		
	5	7.00	6.97	7.03	183.3	167.1	14.0
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						

At least 3 peaks are required for identification of multicomponent analytes.

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

FD-092809-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-40 Date(s) Analyzed: 10/24/09 10/24/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Alpha-BHC	1	4.67	4.61	4.67	0.8517	
	2	3.84	3.81	3.87	M 0.2145	119.5
4,4'-DDD	1	7.40	7.37	7.43	18.68	
	2	6.00	5.98	6.04	10.03	60.2
4,4'-DDE	1	6.81	6.78	6.84	10.02	
	2	5.46	5.44	5.50	10.02	0.0
4,4'-DDT	1	7.76	7.73	7.79	3.002	
	2	6.27	6.24	6.30	6.453	73.0
Delta-BHC	1	5.34	5.32	5.38	0.3932	
	2	4.47	4.46	4.52	0.2326	51.3
Dieldrin	1	6.97	6.92	6.98	0.8791	
	2	5.55	5.53	5.59	1.424	47.3
Endosulfan II	1	7.47	7.44	7.50	0.5474	
	2	6.13	6.09	6.15	0.9896	57.5
Endosulfan Sulfate	1	7.89	7.87	7.93	1.280	
	2	6.53	6.52	6.58	0.6156	70.1

PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

FD-092809-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-40 Date(s) Analyzed: 10/24/09 10/24/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Endrin Ketone	1	8.48	8.43	8.49	3.745	
	2	7.05	7.05	7.11	2.519	39.1
Gamma-Chlordane	1	6.50	6.48	6.54	3.183	
	2	5.23	5.19	5.25	1.364	80.0
Heptachlor Epoxide	1	6.24	6.21	6.27	M 0.7418	
	2	5.01	4.96	5.02	2.998	120.6
Methoxychlor	1	8.36	8.33	8.39	3.787	
	2	6.90	6.87	6.93	8.294	74.6
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

CLIENT SAMPLE NO.

FD-092809-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-40 Date(s) Analyzed: 10/24/09 10/24/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
	1	8.48	8.45	8.51	62.64		
PCB-1260	2	7.09	7.06	7.12	85.19		
	3	7.83	7.80	7.86	59.41		
COLUMN 1	4	8.08	8.05	8.11	93.67		
	5	9.54	9.51	9.57	106.3	81.44	
	1	6.90	6.86	6.92	30.94		
	2	5.94	5.91	5.97	41.80		
	3						
COLUMN 2	4	6.33	6.30	6.36	28.04		
	5	6.60	6.56	6.62	30.78	32.89	84.9
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						

At least 3 peaks are required for identification of multicomponent analytes.

PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
1-SO-0102

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-41 Date(s) Analyzed: 10/24/09 10/24/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

	ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
M	Aldrin	1	5.78	5.77	5.83	1.033	
		2	4.59	4.55	4.61	0.3283	103.5
	Alpha-Chlordane	1	6.60	6.56	6.62	7.353	
		2	5.27	5.24	5.30	4.366	51.0
M	Beta-BHC	1	5.15	5.10	5.16	0.2738	
		2	4.31	4.29	4.35	1.135	122.3
	4,4'-DDD	1	7.40	7.37	7.43	13.66	
		2	6.00	5.98	6.04	7.853	54.0
	4,4'-DDE	1	6.80	6.78	6.84	10.36	
		2	5.46	5.44	5.50	10.03	3.2
	4,4'-DDT	1	7.76	7.73	7.79	8.160	
		2	6.27	6.24	6.30	14.43	55.5
	Delta-BHC	1	5.34	5.32	5.38	0.5062	
		2	4.51	4.46	4.52	0.1808	94.7
	Endosulfan Sulfate	1	7.89	7.87	7.93	0.8898	
		2	6.53	6.52	6.58	1.776	66.5

PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
1-SO-0102

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-41 Date(s) Analyzed: 10/24/09 10/24/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Endrin M	1	7.18	7.17	7.23	0.7129	
	2	5.83	5.78	5.84	2.273	104.5
Endrin Aldehyde ?	1	7.63	7.59	7.65	0.2378	
	2	6.33	6.27	6.33	0.3886	48.1
Endrin Ketone	1	8.47	8.43	8.49	0.8135	
	2	7.08	7.05	7.11	0.8500	4.4
Gamma-BHC M	1	4.92	4.90	4.96	0.2510	
	2	4.07	4.05	4.11	1.138	127.7
Gamma-Chlordane	1	6.51	6.48	6.54	10.70	
	2	5.22	5.19	5.25	6.390	50.4
Heptachlor Epoxide M	1	6.24	6.21	6.27	2.453	
	2	4.98	4.96	5.02	0.2401	164.3
Methoxychlor	1	8.36	8.33	8.39	13.88	
	2	6.89	6.87	6.93	3.122	126.5
	1					
	2					

PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
2-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-42 Date(s) Analyzed: 10/24/09 10/24/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Alpha-BHC	1	4.62	4.61	4.67	0.2792	
	2	3.84	3.81	3.87	0.1458	62.8
Alpha-Chlordane	1	6.60	6.56	6.62	0.3227	
	2	5.25	5.24	5.30	0.6363	65.4
4,4'-DDD	1	7.40	7.37	7.43	17.23	
	2	6.00	5.98	6.04	6.856	86.1
4,4'-DDE	1	6.81	6.78	6.84	5.323	
	2	5.46	5.44	5.50	5.246	1.4
4,4'-DDT	1	7.76	7.73	7.79	8.472	
	2	6.27	6.24	6.30	19.94	80.7
Dieldrin	1	6.97	6.92	6.98	2.020	
	2	5.55	5.53	5.59	1.013	66.4
Endosulfan II	1	7.47	7.44	7.50	1.523	
	2	6.15	6.09	6.15	1.236	20.8
Endosulfan Sulfate M	1	7.89	7.87	7.93	4.095	
	2	6.53	6.52	6.58	1.345	101.1

PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
2-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-42 Date(s) Analyzed: 10/24/09 10/24/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Gamma-Chlordane	1	6.50	6.48	6.54	1.713	
	2	5.22	5.19	5.25	0.6253	93.0
Methoxychlor M	1	8.38	8.33	8.39	3.293	
	2	6.89	6.87	6.93	27.35	157.0
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
2-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-42 Date(s) Analyzed: 10/24/09 10/24/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
	1	8.47	8.45	8.51	191.0		
PCB-1260	2	7.09	7.06	7.12	201.3		
	3	7.83	7.80	7.86	213.2		
COLUMN 1	4	8.08	8.05	8.11	208.1		
	5	9.53	9.51	9.57	153.4	193.4	
	1	6.89	6.86	6.92	102.0		
	2	5.94	5.91	5.97	86.80		
	3						
COLUMN 2	4	6.33	6.30	6.36	95.36		
	5	6.59	6.56	6.62	98.54	95.68	67.6
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						

At least 3 peaks are required for identification of multicomponent analytes.

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
2-SO-020

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-43 Date(s) Analyzed: 10/25/09 10/25/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Alpha-BHC	1	4.67	4.61	4.67	2.796	
	2	3.81	3.81	3.87	1.866	39.9
4,4'-DDD	1	7.40	7.37	7.43	7.914	
	2	6.00	5.98	6.04	3.566	75.7
4,4'-DDE	1	6.81	6.78	6.84	7.644	
	2	5.46	5.44	5.50	8.240	7.5
4,4'-DDT	1	7.76	7.73	7.79	3.656	
	2	6.27	6.24	6.30	7.993	74.5
Dieldrin	1	6.97	6.92	6.98	0.8016	
	2	5.55	5.53	5.59	0.8699	8.2
Endosulfan II	1	7.47	7.44	7.50	0.4410	
	2	6.13	6.09	6.15	0.5921	29.2
Endosulfan Sulfate	1	7.89	7.87	7.93	1.325	
	2	6.53	6.52	6.58	0.5775	78.6
Endrin	1	7.23	7.17	7.23	0.8161	
	2	5.84	5.78	5.84	0.4523	57.4

PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
2-SO-020

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-43 Date(s) Analyzed: 10/25/09 10/25/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Gamma-Chlordane	1	6.50	6.48	6.54	3.548	
	2	5.23	5.19	5.25	2.779	24.3 ok
Heptachlor Epoxide	1	6.24	6.21	6.27	0.6028	
	2	5.01	4.96	5.02	0.8998	39.5
Methoxychlor	1	8.36	8.33	8.39	1.216	
	2	6.89	6.87	6.93	9.500	154.6
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
2-SO-020

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-43 Date(s) Analyzed: 10/25/09 10/25/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
PCB-1260 COLUMN 1	1	8.47	8.45	8.51	60.96		
	2	7.09	7.06	7.12	75.42		
	3	7.82	7.80	7.86	74.41		
	4	8.08	8.05	8.11	85.06		
	5	9.54	9.51	9.57	51.07	69.38	
COLUMN 2	1	6.89	6.86	6.92	35.44		
	2	5.94	5.91	5.97	33.71		
	3						
	4	6.33	6.30	6.36	35.50		
	5	6.59	6.56	6.62	34.34	34.74	66.5
_____ COLUMN 1	1						
	2						
	3						
	4						
	5						
COLUMN 2	1						
	2						
	3						
	4						
	5						
_____ COLUMN 1	1						
	2						
	3						
	4						
	5						
COLUMN 2	1						
	2						
	3						
	4						
	5						

At least 3 peaks are required for identification of multicomponent analytes.

PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
3-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-44 Date(s) Analyzed: 10/25/09 10/25/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Aldrin	1	5.79	5.77	5.83	0.1238	
	2	4.59	4.55	4.61	0.2267	58.7
Alpha-BHC	1	4.67	4.61	4.67	5.233	
	2	3.81	3.81	3.87	3.400	42.5
Alpha-Chlordane	1	6.60	6.56	6.62	0.7418	
	2	5.26	5.24	5.30	1.141	42.4
Beta-BHC	1	5.14	5.10	5.16	0.3630	
	2	4.32	4.29	4.35	1.003	93.7
4,4'-DDD	1	7.40	7.37	7.43	20.24	
	2	6.00	5.98	6.04	10.92	59.8
4,4'-DDE	1	6.81	6.78	6.84	9.385	
	2	5.46	5.44	5.50	9.368	0.2
4,4'-DDT	1	7.76	7.73	7.79	14.28	
	2	6.27	6.24	6.30	23.09	47.2
Dieldrin	1	6.97	6.92	6.98	1.162	
	2	5.55	5.53	5.59	1.866	46.5

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
3-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-44 Date(s) Analyzed: 10/25/09 10/25/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Endosulfan I	1	6.64	6.61	6.67	0.1953	
	2	5.31	5.28	5.34	2.144	166.6
Endosulfan II	1	7.47	7.44	7.50	0.7174	
	2	6.13	6.09	6.15	1.744	83.4
Endosulfan Sulfate	1	7.89	7.87	7.93	2.735	
	2	6.54	6.52	6.58	1.823	40.0
Endrin	1	7.23	7.17	7.23	1.141	
	2	5.80	5.78	5.84	0.5993	62.2
Endrin Ketone	1	8.47	8.43	8.49	7.220	
	2	7.05	7.05	7.11	1.476	132.1
Gamma-BHC	1	4.91	4.90	4.96	0.4901	
	2	4.07	4.05	4.11	0.3026	47.3
Gamma-Chlordane	1	6.49	6.48	6.54	3.438	
	2	5.22	5.19	5.25	1.619	71.9
Heptachlor Epoxide	1	6.24	6.21	6.27	0.8505	
	2	5.01	4.96	5.02	1.958	78.9

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
3-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-44 Date(s) Analyzed: 10/25/09 10/25/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Methoxychlor	1	8.36	8.33	8.39	5.882	
	2	6.89	6.87	6.93	17.36	98.8
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
3-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-44 Date(s) Analyzed: 10/25/09 10/25/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
PCB-1260 COLUMN 1	1	8.47	8.45	8.51	120.8		
	2	7.09	7.06	7.12	147.3		
	3	7.82	7.80	7.86	131.6		
	4	8.08	8.05	8.11	156.5		
	5	9.54	9.51	9.57	88.63	129.0	
COLUMN 2	1	6.89	6.86	6.92	64.76		
	2	5.94	5.91	5.97	52.85		
	3						
	4	6.33	6.30	6.36	59.00		
	5	6.59	6.56	6.62	67.81	61.10	71.4
_____ COLUMN 1	1						
	2						
	3						
	4						
	5						
COLUMN 2	1						
	2						
	3						
	4						
	5						
_____ COLUMN 1	1						
	2						
	3						
	4						
	5						
COLUMN 2	1						
	2						
	3						
	4						
	5						

At least 3 peaks are required for identification of multicomponent analytes.

PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
3-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-45 Date(s) Analyzed: 10/25/09 10/25/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Alpha-BHC	1	4.67	4.61	4.67	3.014	
	2	3.84	3.81	3.87	0.3669	156.6
4,4'-DDD	1	7.40	7.37	7.43	10.76	
	2	6.00	5.98	6.04	6.538	48.8
4,4'-DDE	1	6.81	6.78	6.84	13.73	
	2	5.46	5.44	5.50	14.67	6.6
4,4'-DDT	1	7.76	7.73	7.79	11.71	
	2	6.27	6.24	6.30	16.39	33.3
Dieldrin	1	6.92	6.92	6.98	1.106	
	2	5.55	5.53	5.59	1.028	7.3
Endosulfan II	1	7.47	7.44	7.50	0.1925	
	2	6.13	6.09	6.15	1.011	136.0
Endosulfan Sulfate	1	7.89	7.87	7.93	0.7244	
	2	6.53	6.52	6.58	0.5999	18.8
Endrin Ketone	1	8.47	8.43	8.49	1.474	
	2	7.05	7.05	7.11	0.9759	40.7

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
3-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-45 Date(s) Analyzed: 10/25/09 10/25/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Gamma-BHC	1	4.91	4.90	4.96	0.2924	
	2	4.07	4.05	4.11	0.3319	12.6
Gamma-Chlordane	1	6.49	6.48	6.54	2.387	
	2	5.22	5.19	5.25	1.057	77.2
Heptachlor Epoxide M	1	6.24	6.21	6.27	0.3938	
	2	5.01	4.96	5.02	1.419	113.1
Methoxychlor	1	8.36	8.33	8.39	2.621	
	2	6.89	6.87	6.93	4.283	48.1
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
3-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-45 Date(s) Analyzed: 10/25/09 10/25/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
	1	8.47	8.45	8.51	24.65		
PCB-1260	2	7.09	7.06	7.12	36.48		
	3	7.83	7.80	7.86	42.91		
COLUMN 1	4	8.10	8.05	8.11	15.02		
	5	9.53	9.51	9.57	26.80	29.17	
	1	6.89	6.86	6.92	15.98		
	2	5.94	5.91	5.97	21.04		
	3						
COLUMN 2	4	6.33	6.30	6.36	18.20		
	5	6.60	6.56	6.62	20.44	18.92	42.4
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						

At least 3 peaks are required for identification of multicomponent analytes.

PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
4-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-21 Date(s) Analyzed: 10/24/09 10/24/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
4,4'-DDD M	1	7.41	7.37	7.43	101.8	
	2	6.00	5.98	6.04	4.744	182.2
4,4'-DDE M	1	6.80	6.78	6.84	54.91	
	2	5.46	5.44	5.50	7.867	149.9
4,4'-DDT M	1	7.76	7.73	7.79	30.06	
	2	6.27	6.24	6.30	121.9	120.9
Dieldrin	1	6.97	6.92	6.98	6.467	
	2	5.54	5.53	5.59	13.13	68.0
Endosulfan I	1	6.65	6.61	6.67	3.209	
	2	5.31	5.28	5.34	1.375	80.0
Endosulfan Sulfate	1	7.89	7.87	7.93	4.910	
	2	6.57	6.52	6.58	3.378	37.0
Endrin	1	7.23	7.17	7.23	71.86	
	2	5.84	5.78	5.84	64.10	11.4
Endrin Aldehyde	1	7.61	7.59	7.65	8.637	
	2	6.29	6.27	6.33	8.488	1.7

PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
4-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-21 Date(s) Analyzed: 10/24/09 10/24/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Gamma-Chlordane	1	6.50	6.48	6.54	70.72	
	2	5.21	5.19	5.25	46.38	41.6
Methoxychlor	1	8.38	8.33	8.39	31.86	
	2	6.90	6.87	6.93	37.38	15.9
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

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FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
4-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-21 Date(s) Analyzed: 10/24/09 10/24/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
PCB-1260	1	8.48	8.45	8.51	214.9		
	2						
	3	7.82	7.80	7.86	226.5		
COLUMN 1	4	8.09	8.05	8.11	485.8		
	5					309.1	
	1	6.90	6.86	6.92	139.4		
	2						
	3						
COLUMN 2	4	6.33	6.30	6.36	188.5		
	5	6.61	6.56	6.62	440.4	256.1	18.8
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						

At least 3 peaks are required for identification of multicomponent analytes.

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FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
5-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-46 Date(s) Analyzed: 10/25/09 10/25/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Alpha-BHC	1	4.67	4.61	4.67	11.50	
	2	3.81	3.81	3.87	7.453	42.7
4,4'-DDD	1	7.40	7.37	7.43	131.7	
	2	6.01	5.98	6.04	106.5	21.2
4,4'-DDE	1	6.81	6.78	6.84	96.46	
	2	5.46	5.44	5.50	108.1	11.4
4,4'-DDT	1	7.76	7.73	7.79	58.46	
	2	6.27	6.24	6.30	90.62	43.1
Dieldrin	1	6.96	6.92	6.98	2.829	
	2	5.55	5.53	5.59	1.567	57.4
Gamma-Chlordane	1	6.50	6.48	6.54	10.61	
	2	5.23	5.19	5.25	8.924	17.3
Heptachlor Epoxide	1	6.24	6.21	6.27	2.262	
	2	5.01	4.96	5.02	1.085	70.3
Methoxychlor	1	8.38	8.33	8.39	3.966	
	2	6.89	6.87	6.93	30.10	153.4

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FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
5-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-46 Date(s) Analyzed: 10/25/09 10/25/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
PCB-1260 COLUMN 1	1	8.47	8.45	8.51	215.4		
	2	7.09	7.06	7.12	254.1		
	3	7.82	7.80	7.86	232.3		
	4	8.08	8.05	8.11	232.4		
	5	9.53	9.51	9.57	137.5	214.3	
COLUMN 2	1	6.89	6.86	6.92	112.3		
	2	5.94	5.91	5.97	144.2		
	3						
	4	6.33	6.30	6.36	99.12		
	5	6.59	6.56	6.62	101.0	114.2	60.9
_____ COLUMN 1	1						
	2						
	3						
	4						
	5						
COLUMN 2	1						
	2						
	3						
	4						
	5						
_____ COLUMN 1	1						
	2						
	3						
	4						
	5						
COLUMN 2	1						
	2						
	3						
	4						
	5						

At least 3 peaks are required for identification of multicomponent analytes.

PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
5-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-46RE1 Date(s) Analyzed: 10/14/09 10/14/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
4,4'-DDD	1	7.69	7.66	7.72	126.8	
	2	6.23	6.21	6.27	122.6	3.4
4,4'-DDE	1	7.09	7.06	7.12	113.1	
	2	5.68	5.65	5.71	127.1	11.6
4,4'-DDT	1	8.06	8.03	8.09	114.0	
	2	6.50	6.48	6.54	159.9	33.5
Dieldrin	1	7.25	7.21	7.27	5.466	
	2	5.77	5.75	5.81	2.755	66.0
Gamma-Chlordane	1	6.77	6.76	6.82	13.80	
	2	5.43	5.40	5.46	14.18	2.7
Heptachlor	1	5.71	5.68	5.74	1.436	
	2	4.53	4.50	4.56	2.013	33.4
Methoxychlor	1	8.69	8.63	8.69	6.728	
	2	7.14	7.11	7.17	47.46	150.3
	1					
	2					

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FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
5-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-47 Date(s) Analyzed: 10/25/09 10/25/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Alpha-Chlordane	1	6.61	6.56	6.62	0.5067	
	2	5.25	5.24	5.30	0.6180	19.8
4,4'-DDD	1	7.40	7.37	7.43	29.83	
	2	6.00	5.98	6.04	18.57	46.5
4,4'-DDE	1	6.81	6.78	6.84	19.96	
	2	5.46	5.44	5.50	21.54	7.6
4,4'-DDT	1	7.76	7.73	7.79	5.335	
	2	6.27	6.24	6.30	14.43	92.0
Dieldrin	1	6.97	6.92	6.98	1.562	
	2	5.55	5.53	5.59	0.8173	62.6
Endosulfan II	1	7.47	7.44	7.50	1.080	
	2	6.15	6.09	6.15	0.9143	16.6
Endosulfan Sulfate M	1	7.89	7.87	7.93	2.909	
	2	6.52	6.52	6.58	0.6515	126.8
Endrin	1	7.23	7.17	7.23	1.456	
	2	5.83	5.78	5.84	0.9113	46.0

PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
5-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-47 Date(s) Analyzed: 10/25/09 10/25/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Gamma-Chlordane	1	6.50	6.48	6.54	3.856	
	2	5.22	5.19	5.25	1.686	78.3
Heptachlor Epoxide ? M	1	6.24	6.21	6.27	1.551	
	2	5.01	4.96	5.02	0.5260	98.7
Methoxychlor M	1	8.38	8.33	8.39	2.750	
	2	6.89	6.87	6.93	18.48	148.2
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

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FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
5-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-47 Date(s) Analyzed: 10/25/09 10/25/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
	1	8.47	8.45	8.51	137.1		
PCB-1260	2	7.09	7.06	7.12	162.6		
	3	7.82	7.80	7.86	132.1		
COLUMN 1	4	8.08	8.05	8.11	144.9		
	5	9.53	9.51	9.57	90.65	133.5	
	1	6.89	6.86	6.92	68.95		
	2	5.94	5.91	5.97	86.70		
	3						
COLUMN 2	4	6.33	6.30	6.36	59.87		
	5	6.59	6.56	6.62	63.00	69.63	62.9
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						

At least 3 peaks are required for identification of multicomponent analytes.

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FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
6-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-23 Date(s) Analyzed: 10/24/09 10/24/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Alpha-BHC M	1	4.67	4.61	4.67	3.484	
	2	3.84	3.81	3.87	0.2976	168.5
Alpha-Chlordane	1	6.61	6.56	6.62	3.984	
	2	5.25	5.24	5.30	5.113	24.8
4,4'-DDD	1	7.40	7.37	7.43	284.8	
	2	6.00	5.98	6.04	259.4	9.3
4,4'-DDE	1	6.81	6.78	6.84	180.7	
	2	5.46	5.44	5.50	213.1	16.4
4,4'-DDT	1	7.76	7.73	7.79	79.09	
	2	6.27	6.24	6.30	128.1	47.3
Delta-BHC	1	5.33	5.32	5.38	1.354	
	2	4.46	4.46	4.52	1.174	14.2
Dieldrin M	1	6.92	6.92	6.98	25.20	
	2	5.55	5.53	5.59	3.528	150.9
Endosulfan I	1	6.64	6.61	6.67	1.094	
	2	5.31	5.28	5.34	2.266	69.8

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
6-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-23 Date(s) Analyzed: 10/24/09 10/24/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Endrin	1	7.23	7.17	7.23	6.741	
	2	5.83	5.78	5.84	5.150	26.8
Gamma-Chlordane M	1	6.50	6.48	6.54	21.27	
	2	5.21	5.19	5.25	3.818	139.1
Heptachlor Epoxide	1	6.24	6.21	6.27	2.886	
	2	5.01	4.96	5.02	2.950	2.2
Methoxychlor M	1	8.38	8.33	8.39	7.458	
	2	6.89	6.87	6.93	41.90	139.6
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

page 2 of 2

PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
6-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-23 Date(s) Analyzed: 10/24/09 10/24/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
	1	8.47	8.45	8.51	293.5		
PCB-1260	2	7.09	7.06	7.12	354.5		
	3	7.82	7.80	7.86	345.5		
COLUMN 1	4	8.08	8.05	8.11	355.6		
	5	9.54	9.51	9.57	205.4	310.9	
	1	6.89	6.86	6.92	156.3		
	2	5.94	5.91	5.97	208.4		
	3						
COLUMN 2	4	6.33	6.30	6.36	140.6		
	5	6.59	6.56	6.62	162.0	166.8	~~60.3~~
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						

At least 3 peaks are required for identification of multicomponent analytes.

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
6-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-23RE1 Date(s) Analyzed: 10/16/09 10/16/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
4,4'-DDD	1	7.58	7.56	7.62	286.4	
	2	6.14	6.12	6.18	244.8	15.7
4,4'-DDE	1	6.98	6.96	7.02	223.0	
	2	5.59	5.57	5.63	195.6	13.1
4,4'-DDT	1	7.94	7.92	7.98	77.43	
	2	6.41	6.39	6.45	112.8	37.2
Dieldrin	1	7.14	7.10	7.16	7.718	
	2	5.68	5.67	5.73	5.200	39.0
Endosulfan I	1	6.81	6.79	6.85	11.25	
	2	5.44	5.42	5.48	5.906	62.3
Endrin	1	7.41	7.36	7.42	11.71	
	2	5.97	5.93	5.99	8.940	26.8
Gamma-Chlordane	1	6.71	6.66	6.72	25.08	
	2	5.35	5.32	5.38	25.79	2.8
Heptachlor Epoxide	1	6.40	6.38	6.44	6.953	
	2	5.14	5.08	5.14	11.34	48.0

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
6-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-23RE1 Date(s) Analyzed: 10/16/09 10/16/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
~~Methoxychlor~~	1	8.56	8.52	8.58	~~16.77~~	
	2	7.04	7.02	7.08	~~71.92~~	124.4
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
6-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-24 Date(s) Analyzed: 10/24/09 10/24/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Alpha-BHC	1	4.67	4.61	4.67	10.60	
M	2	3.84	3.81	3.87	0.6374	177.3
Alpha-Chlordane	1	6.61	6.56	6.62	8.436	
	2	5.26	5.24	5.30	9.856	15.5
Beta-BHC	1	5.13	5.10	5.16	0.5679	
M	2	4.32	4.29	4.35	4.239	152.7
4,4'-DDD	1	7.40	7.37	7.43	436.3	
	2	6.01	5.98	6.04	375.6	15.0
4,4'-DDE	1	6.81	6.78	6.84	222.8	
	2	5.47	5.44	5.50	262.3	16.3
4,4'-DDT	1	7.76	7.73	7.79	115.9	
	2	6.27	6.24	6.30	190.6	48.7
Delta-BHC	1	5.33	5.32	5.38	3.044	
	2	4.46	4.46	4.52	2.945	3.3
Dieldrin	1	6.92	6.92	6.98	40.21	
M	2	5.55	5.53	5.59	5.599	151.1

PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
6-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-24 Date(s) Analyzed: 10/24/09 10/24/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Endosulfan Sulfate	1	7.89	7.87	7.93	8.741	
	2	6.55	6.52	6.58	3.807	78.6
Gamma-BHC	1	4.91	4.90	4.96	2.280	
	2	4.07	4.05	4.11	1.656	31.7
Gamma-Chlordane M	1	6.50	6.48	6.54	34.18	
	2	5.21	5.19	5.25	4.472	153.7
Heptachlor Epoxide	1	6.24	6.21	6.27	6.333	
	2	5.01	4.96	5.02	5.603	12.2
Methoxychlor M	1	8.38	8.33	8.39	11.03	
	2	6.90	6.87	6.93	63.87	141.1
	1					
	2					
	1					
	2					
	1					
	2					

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
6-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-24 Date(s) Analyzed: 10/24/09 10/24/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
	1	8.48	8.45	8.51	378.2		
PCB-1260	2	7.09	7.06	7.12	565.4		
	3	7.83	7.80	7.86	470.4		
COLUMN 1	4	8.09	8.05	8.11	490.5		
	5	9.54	9.51	9.57	296.1	440.1	
	1	6.90	6.86	6.92	238.3		
	2	5.94	5.91	5.97	312.5		
	3						
COLUMN 2	4	6.33	6.30	6.36	204.6		
	5	6.60	6.56	6.62	258.7	253.5	53.8
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						

At least 3 peaks are required for identification of multicomponent analytes.

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
6-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-24RE1 Date(s) Analyzed: 10/16/09 10/16/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
4,4'-DDD	1	7.58	7.56	7.62	476.7	
	2	6.14	6.12	6.18	380.6	22.4
4,4'-DDE	1	6.98	6.96	7.02	299.6	
	2	5.59	5.57	5.63	256.7	15.4
4,4'-DDT	1	7.94	7.92	7.98	196.0	
	2	6.41	6.39	6.45	244.2	21.9
Endrin	1	7.41	7.36	7.42	20.06	
	2	5.97	5.93	5.99	13.78	37.1
Gamma-Chlordane	1	6.71	6.66	6.72	23.20	
	2	5.35	5.32	5.38	64.33	94.0
Heptachlor Epoxide	1	6.40	6.38	6.44	12.50	
	2	5.14	5.08	5.14	9.275	29.6
	1					
	2					
	1					
	2					

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
7-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-25 Date(s) Analyzed: 10/24/09 10/24/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Alpha-Chlordane	1	6.60	6.56	6.62	1.180	
	2	5.27	5.24	5.30	1.294	9.2
Beta-BHC	1	5.14	5.10	5.16	0.2102	
	2	4.32	4.29	4.35	0.5558	90.2
4,4'-DDD	1	7.40	7.37	7.43	29.90	
	2	6.00	5.98	6.04	24.14	21.3
4,4'-DDE	1	6.81	6.78	6.84	15.19	
	2	5.46	5.44	5.50	16.39	7.6
4,4'-DDT	1	7.76	7.73	7.79	5.514	
	2	6.27	6.24	6.30	9.081	48.9
Dieldrin	1	6.92	6.92	6.98	3.734	
	2	5.55	5.53	5.59	1.258	99.2
Gamma-BHC	1	4.91	4.90	4.96	0.4362	
	2	4.07	4.05	4.11	0.3140	32.6
Gamma-Chlordane	1	6.50	6.48	6.54	3.370	
	2	5.23	5.19	5.25	1.877	56.9

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
7-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-25 Date(s) Analyzed: 10/24/09 10/24/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Heptachlor Epoxide M	1	6.24	6.21	6.27	0.5146	
	2	5.01	4.96	5.02	2.424	130.0
Methoxychlor	1	8.36	8.33	8.39	3.252	
	2	6.89	6.87	6.93	3.932	18.9
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
7-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-25 Date(s) Analyzed: 10/24/09 10/24/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
PCB-1260 COLUMN 1	1	8.47	8.45	8.51	20.17		
	2						
	3	7.82	7.80	7.86	29.05		
	4						
	5	9.54	9.51	9.57	14.82	21.35	
COLUMN 2	1	6.89	6.86	6.92	14.67		
	2	5.94	5.91	5.97	25.75		
	3						
	4	6.33	6.30	6.36	14.57		
	5	6.59	6.56	6.62	16.72	17.93	17.4
_____ COLUMN 1	1						
	2						
	3						
	4						
	5						
COLUMN 2	1						
	2						
	3						
	4						
	5						
_____ COLUMN 1	1						
	2						
	3						
	4						
	5						
COLUMN 2	1						
	2						
	3						
	4						
	5						

At least 3 peaks are required for identification of multicomponent analytes.

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
7-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-26 Date(s) Analyzed: 10/13/09 10/13/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Methoxychlor	1	8.67	8.63	8.69	0.9863	
	2	7.12	7.11	7.17	2.669	92.1
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
8-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-48 Date(s) Analyzed: 10/25/09 10/25/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Alpha-BHC	1	4.67	4.61	4.67	8.879	
	2	3.81	3.81	3.87	5.715	43.4
Alpha-Chlordane	1	6.60	6.56	6.62	3.224	
	2	5.26	5.24	5.30	2.976	8.0
4,4'-DDD	1	7.40	7.37	7.43	51.45	
	2	6.00	5.98	6.04	38.12	29.8
4,4'-DDE	1	6.81	6.78	6.84	45.57	
	2	5.46	5.44	5.50	48.07	5.3
4,4'-DDT	1	7.76	7.73	7.79	52.47	
	2	6.27	6.24	6.30	71.74	31.0
Dieldrin	1	6.92	6.92	6.98	3.530	
	2	5.55	5.53	5.59	2.302	42.1
Endosulfan Sulfate	1	7.89	7.87	7.93	1.817	
	2	6.54	6.52	6.58	1.344	29.9
Gamma-Chlordane	1	6.50	6.48	6.54	7.039	
	2	5.22	5.19	5.25	4.169	51.2

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
8-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-48 Date(s) Analyzed: 10/25/09 10/25/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Heptachlor Epoxide M	1	6.24	6.21	6.27	1.031	
	2	5.01	4.96	5.02	3.811	114.8
Methoxychlor	1	8.36	8.33	8.39	6.987	
	2	6.89	6.87	6.93	9.450	30.0
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
8-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-48 Date(s) Analyzed: 10/25/09 10/25/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
PCB-1260 COLUMN 1	1	8.47	8.45	8.51	61.62		
	2	7.09	7.06	7.12	93.61		
	3	7.82	7.80	7.86	94.00		
	4	8.08	8.05	8.11	116.0		
	5	9.53	9.51	9.57	53.71	83.79	
COLUMN 2	1	6.89	6.86	6.92	35.25		
	2	5.94	5.91	5.97	53.06		
	3						
	4	6.33	6.30	6.36	39.71		
	5	6.60	6.56	6.62	42.91	42.73	64.9
_____ COLUMN 1	1						
	2						
	3						
	4						
	5						
COLUMN 2	1						
	2						
	3						
	4						
	5						
_____ COLUMN 1	1						
	2						
	3						
	4						
	5						
COLUMN 2	1						
	2						
	3						
	4						
	5						

At least 3 peaks are required for identification of multicomponent analytes.

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
8-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-49 Date(s) Analyzed: 10/25/09 10/25/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Alpha-Chlordane	1	6.60	6.56	6.62	1.878	
	2	5.26	5.24	5.30	2.049	8.7
4,4'-DDD	1	7.40	7.37	7.43	31.44	
	2	6.00	5.98	6.04	18.46	52.0
4,4'-DDE	1	6.81	6.78	6.84	20.02	
	2	5.46	5.44	5.50	20.28	1.3
4,4'-DDT	1	7.76	7.73	7.79	19.69	
	2	6.27	6.24	6.30	31.27	45.4
Dieldrin	1	6.97	6.92	6.98	1.068	
	2	5.55	5.53	5.59	1.122	4.9
Endosulfan II	1	7.47	7.44	7.50	0.8752	
	2	6.14	6.09	6.15	1.211	32.2
Endosulfan Sulfate M	1	7.89	7.87	7.93	2.295	
	2	6.54	6.52	6.58	0.7252	104.0
Endrin	1	7.23	7.17	7.23	1.259	
	2	5.84	5.78	5.84	0.8236	41.8

page 1 of 2

PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
8-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-49 Date(s) Analyzed: 10/25/09 10/25/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Gamma-Chlordane	1	6.50	6.48	6.54	4.153	
	2	5.22	5.19	5.25	2.268	58.7
Heptachlor Epoxide	1	6.24	6.21	6.27	0.8763	
	2	5.01	4.96	5.02	1.370	44.0
Methoxychlor M	1	8.38	8.33	8.39	3.736	
	2	6.89	6.87	6.93	16.89	127.5
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
8-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-49 Date(s) Analyzed: 10/25/09 10/25/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
	1	8.47	8.45	8.51	132.1		
PCB-1260	2	7.09	7.06	7.12	124.8		
	3	7.82	7.80	7.86	134.3		
COLUMN 1	4	8.08	8.05	8.11	132.1		
	5	9.54	9.51	9.57	79.00	120.5	
	1	6.89	6.86	6.92	63.01		
	2	5.94	5.91	5.97	75.86		
	3						
COLUMN 2	4	6.33	6.30	6.36	49.67		
	5	6.60	6.56	6.62	63.22	62.94	62.8
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						

At least 3 peaks are required for identification of multicomponent analytes.

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
9-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-03 Date(s) Analyzed: 10/10/09 10/10/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Alpha-Chlordane	1	7.06	7.03	7.09	7.337	
	2	5.60	5.59	5.65	5.866	22.3
4,4'-DDD	1	7.88	7.85	7.91	364.7	
	2	6.38	6.35	6.41	278.4	26.8
4,4'-DDE	1	7.27	7.24	7.30	64.74	
	2	5.81	5.79	5.85	53.83	18.4
4,4'-DDT	1	8.25	8.22	8.28	62.02	
	2	6.66	6.63	6.69	61.31	1.2
Dieldrin	1	7.43	7.40	7.46	2.534	
	2	5.93	5.90	5.96	261.7	196.2
Endosulfan II	1	7.96	7.93	7.99	1.834	
	2	6.53	6.48	6.54	4.022	74.7
Endosulfan Sulfate	1	8.39	8.37	8.43	4.266	
	2	6.94	6.92	6.98	6.740	45.0
Endrin	1	7.71	7.66	7.72	7.302	
	2	6.19	6.17	6.23	2.575	95.7

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
9-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-03 Date(s) Analyzed: 10/10/09 10/10/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Endrin Aldehyde	1	8.12	8.09	8.15	2.854	
	2	6.72	6.67	6.73	6.788	81.6
Gamma-Chlordane M	1	6.96	6.94	7.00	5.695	
	2	5.56	5.54	5.60	28.83	134.0
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
9-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-03 Date(s) Analyzed: 10/10/09 10/10/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
	1	8.98	8.95	9.01	141.9		
PCB-1260	2	7.56	7.53	7.59	158.8		
	3	8.31	8.28	8.34	114.9		
COLUMN 1	4	8.58	8.55	8.61	123.2		
	5	10.06	10.02	10.08	134.9	134.7	
	1	7.30	7.27	7.33	126.2		
	2	6.32	6.29	6.35	176.8		
	3						
COLUMN 2	4	6.72	6.69	6.75	133.2		
	5	7.00	6.97	7.03	101.0	134.3	0.3
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						

At least 3 peaks are required for identification of multicomponent analytes.

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
9-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-03RE1 Date(s) Analyzed: 10/25/09 10/25/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Alpha-BHC	1	4.67	4.61	4.67	11.24	
	2	3.81	3.81	3.87	6.716	50.4
4,4'-DDD	1	7.40	7.37	7.43	484.6	
	2	6.00	5.98	6.04	393.6	20.7
4,4'-DDE	1	6.80	6.78	6.84	85.81	
	2	5.46	5.44	5.50	91.80	6.7
4,4'-DDT	1	7.76	7.73	7.79	53.36	
	2	6.27	6.24	6.30	96.30	57.4
Endosulfan Sulfate	1	7.89	7.87	7.93	7.711	
	2	6.54	6.52	6.58	8.152	5.6
Endrin	1	7.23	7.17	7.23	9.185	
	2	5.83	5.78	5.84	10.71	15.3
Gamma-Chlordane	1	6.50	6.48	6.54	48.35	
	2	5.23	5.19	5.25	59.13	20.0
Methoxychlor	1	8.38	8.33	8.39	8.590	
	2	6.89	6.87	6.93	45.03	135.9

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB0
9-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-04 Date(s) Analyzed: 10/10/09 10/10/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
4,4'-DDD	1	7.87	7.85	7.91	0.3653	
	2	6.38	6.35	6.41	0.2184	50.3
Gamma-Chlordane M	1	6.99	6.94	7.00	0.1499	
	2	5.57	5.54	5.60	1.126	153.0
Methoxychlor	1	8.87	8.82	8.88	0.3771	
	2	7.28	7.26	7.32	0.8047	72.4
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB1
0-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-05 Date(s) Analyzed: 10/10/09 10/10/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Alpha-Chlordane M	1	7.06	7.03	7.09	7.495	
	2	5.60	5.59	5.65	62.82	157.4
4,4'-DDD	1	7.88	7.85	7.91	369.9	
	2	6.38	6.35	6.41	219.7	50.9
4,4'-DDE	1	7.27	7.24	7.30	256.2	
	2	5.82	5.79	5.85	173.5	38.5
4,4'-DDT	1	8.25	8.22	8.28	331.1	
	2	6.66	6.63	6.69	417.5	23.1
Delta-BHC	1	5.76	5.72	5.78	3.509	
	2	4.75	4.75	4.81	3.101	12.3
Dieldrin M	1	7.44	7.40	7.46	12.21	
	2	5.95	5.90	5.96	524.8	190.9
Endosulfan I	1	7.11	7.08	7.14	9.180	
	2	5.66	5.64	5.70	13.63	39.0
Endosulfan II M	1	7.96	7.93	7.99	4.567	
	2	6.53	6.48	6.54	68.49	175.0

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB1
0-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-05 Date(s) Analyzed: 10/10/09 10/10/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Endosulfan Sulfate	1	8.39	8.37	8.43	17.95	
	2	6.96	6.92	6.98	6.666	91.7
Endrin	1	7.71	7.66	7.72	160.6	
	2	6.21	6.17	6.23	122.7	26.8
Endrin Aldehyde	1	8.13	8.09	8.15	13.04	
	2	6.72	6.67	6.73	28.33	73.9
Gamma-Chlordane	1	6.95	6.94	7.00	120.7	
	2	5.55	5.54	5.60	73.36	48.8
Heptachlor Epoxide	1	6.69	6.66	6.72	59.94	
M	2	5.31	5.29	5.35	2.666	183.0
	1					
	2					
	1					
	2					
	1					
	2					

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB1
0-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-05 Date(s) Analyzed: 10/10/09 10/10/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
PCB-1260	1	8.98	8.95	9.01	506.2		
	2						
	3	8.32	8.28	8.34	451.4		
COLUMN 1	4	8.58	8.55	8.61	516.4		
	5	10.06	10.02	10.08	431.2	476.3	
	1	7.30	7.27	7.33	468.2		
	2						
	3						
COLUMN 2	4	6.72	6.69	6.75	556.0		
	5	7.01	6.97	7.03	1081	701.7	38.3
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						

At least 3 peaks are required for identification of multicomponent analytes.

PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB1
0-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-05RE1 Date(s) Analyzed: 10/16/09 10/16/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
4,4'-DDD	1	7.58	7.56	7.62	516.0	
	2	6.14	6.12	6.18	273.2	61.5
4,4'-DDE	1	6.98	6.96	7.02	348.0	
	2	5.59	5.57	5.63	208.2	50.3
4,4'-DDT	1	7.94	7.92	7.98	524.0	
	2	6.41	6.39	6.45	736.2	33.7
Dieldrin	1	7.14	7.10	7.16	28.47	
	2	5.72	5.67	5.73	155.3	138.0
Endrin	1	7.41	7.36	7.42	223.8	
	2	5.97	5.93	5.99	191.1	15.8
Endrin Aldehyde	1	7.83	7.78	7.84	17.62	
	2	6.47	6.42	6.48	43.67	85.0
Gamma-Chlordane	1	6.66	6.66	6.72	188.6	
	2	5.33	5.32	5.38	117.3	46.6
Methoxychlor	1	8.57	8.52	8.58	92.39	
	2	7.04	7.02	7.08	176.2	62.4

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB1
0-SO-0406

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-06 Date(s) Analyzed: 10/10/09 10/10/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Alpha-BHC	1	5.01	4.97	5.03	0.7106	
	2	4.06	4.06	4.12	0.5521	25.1
Alpha-Chlordane	1	7.09	7.03	7.09	0.5736	
	2	5.63	5.59	5.65	0.7315	24.2
Beta-BHC 1.1	1	5.50	5.48	5.54	0.9533	
	2	4.57	4.56	4.62	1.149	18.6
4,4'-DDD	1	7.88	7.85	7.91	1.671	
	2	6.38	6.35	6.41	1.223	31.0
4,4'-DDE	1	7.26	7.24	7.30	0.6918	
	2	5.81	5.79	5.85	0.5036	31.5
4,4'-DDT 1.9	1	8.25	8.22	8.28	1.026	
	2	6.65	6.63	6.69	1.864	58.0
M Delta-BHC 0.52	1	5.76	5.72	5.78	0.5170	
	2	4.77	4.75	4.81	1.970	116.8
Endosulfan I 0.96	1	7.11	7.08	7.14	0.5839	
	2	5.66	5.64	5.70	0.9593	48.6

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FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB1
0-SO-0406

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-06 Date(s) Analyzed: 10/10/09 10/10/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Endrin Aldehyde	1	8.12	8.09	8.15	4.886	
	2	6.71	6.67	6.73	2.680	58.3
Gamma-BHC	1	5.30	5.28	5.34	0.1967	
	2	4.35	4.31	4.37	0.4175	71.9
Gamma-Chlordane	1	6.96	6.94	7.00	1.722	
	2	5.57	5.54	5.60	1.329	25.8
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB1
1-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-07 Date(s) Analyzed: 10/10/09 10/10/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Alpha-Chlordane	1	7.06	7.03	7.09	4.308	
	2	5.61	5.59	5.65	3.764	13.5
4,4'-DDD	1	7.88	7.85	7.91	170.7	
	2	6.38	6.35	6.41	112.3	41.3
4,4'-DDE	1	7.27	7.24	7.30	53.00	
	2	5.82	5.79	5.85	38.52	31.6
4,4'-DDT	1	8.25	8.22	8.28	12.35	
	2	6.66	6.63	6.69	33.82	93.0
Dieldrin M	1	7.44	7.40	7.46	6.798	
	2	5.94	5.90	5.96	382.1	193.0
Endosulfan I M	1	7.12	7.08	7.14	4.102	
	2	5.66	5.64	5.70	14.82	113.3
Endosulfan Sulfate	1	8.39	8.37	8.43	12.97	
	2	6.95	6.92	6.98	6.860	61.6
Gamma-BHC	1	5.28	5.28	5.34	4.728	
	2	4.33	4.31	4.37	2.633	56.9

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB1
1-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-07 Date(s) Analyzed: 10/10/09 10/10/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Gamma-Chlordane ?	1	6.97	6.94	7.00	3.677	
	2	5.57	5.54	5.60	8.266	76.8
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB1
1-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-07 Date(s) Analyzed: 10/10/09 10/10/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
	1	8.98	8.95	9.01	401.0		
PCB-1260	2	7.56	7.53	7.59	367.3		
	3	8.32	8.28	8.34	370.2		
COLUMN 1	4	8.59	8.55	8.61	363.0		
	5	10.07	10.02	10.08	348.9	370.1	
	1	7.31	7.27	7.33	446.2		
	2	6.32	6.29	6.35	385.4		
	3	6.66	6.63	6.69	497.3		
COLUMN 2	4	6.73	6.69	6.75	313.3		
	5	7.00	6.97	7.03	325.1	393.5	6.1
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						

At least 3 peaks are required for identification of multicomponent analytes.

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB1
1-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-07RE1 Date(s) Analyzed: 10/16/09 10/16/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
4,4'-DDD	1	7.58	7.56	7.62	232.6	
	2	6.14	6.12	6.18	162.6	35.4
4,4'-DDE	1	6.98	6.96	7.02	81.40	
	2	5.59	5.57	5.63	67.62	18.5
4,4'-DDT	1	7.94	7.92	7.98	27.00	
	2	6.41	6.39	6.45	65.06	82.7
Dieldrin	1	7.14	7.10	7.16	12.33	
	2	5.68	5.67	5.73	866.7	194.4
Heptachlor Epoxide	1	6.40	6.38	6.44	10.46	
	2	5.14	5.08	5.14	14.29	30.9
	1					
	2					
	1					
	2					
	1					
	2					

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB1
1-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-08 Date(s) Analyzed: 10/10/09 10/10/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Alpha-Chlordane	1	7.06	7.03	7.09	16.50	
	2	5.62	5.59	5.65	9.786	51.1
4,4'-DDD	1	7.88	7.85	7.91	106.0	
	2	6.38	6.35	6.41	77.90	30.6
4,4'-DDE	1	7.27	7.24	7.30	35.48	
	2	5.81	5.79	5.85	29.13	19.6
4,4'-DDT	1	8.25	8.22	8.28	16.51	
	2	6.66	6.63	6.69	18.07	9.0
Dieldrin	1	7.44	7.40	7.46	1.494	
	2	5.93	5.90	5.96	1.747	15.6
Endosulfan Sulfate	1	8.39	8.37	8.43	3.056	
	2	6.94	6.92	6.98	2.133	35.6
Endrin	1	7.71	7.66	7.72	2.336	
	2	6.20	6.17	6.23	3.205	31.4
Gamma-Chlordane	1	6.97	6.94	7.00	14.59	
	2	5.57	5.54	5.60	19.01	26.3

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB1
1-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-08 Date(s) Analyzed: 10/10/09 10/10/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
PCB-1260 COLUMN 1	1	8.98	8.95	9.01	71.42		
	2	7.56	7.53	7.59	80.85		
	3	8.32	8.28	8.34	73.26		
	4	8.58	8.55	8.61	62.39		
	5	10.06	10.02	10.08	67.13	71.01	
COLUMN 2	1	7.30	7.27	7.33	61.90		
	2	6.32	6.29	6.35	108.6		
	3						
	4	6.72	6.69	6.75	51.53		
	5	7.00	6.97	7.03	64.78	71.70	0.9
_____ COLUMN 1	1						
	2						
	3						
	4						
	5						
COLUMN 2	1						
	2						
	3						
	4						
	5						
_____ COLUMN 1	1						
	2						
	3						
	4						
	5						
COLUMN 2	1						
	2						
	3						
	4						
	5						

At least 3 peaks are required for identification of multicomponent analytes.

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB1
1-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-08RE1 Date(s) Analyzed: 10/24/09 10/24/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Alpha-Chlordane	1	6.60	6.56	6.62	36.65	
	2	5.25	5.24	5.30	29.34	22.2
4,4'-DDD	1	7.40	7.37	7.43	188.7	
	2	6.00	5.98	6.04	151.5	21.9
4,4'-DDE	1	6.81	6.78	6.84	56.61	
	2	5.46	5.44	5.50	59.72	5.3
4,4'-DDT	1	7.76	7.73	7.79	47.35	
	2	6.26	6.24	6.30	80.03	51.3
Dieldrin	1	6.92	6.92	6.98	25.69	
	2	5.54	5.53	5.59	9.058	95.7
Endosulfan Sulfate	1	7.89	7.87	7.93	7.197	
	2	6.54	6.52	6.58	4.903	37.9
Gamma-Chlordane	1	6.51	6.48	6.54	31.37	
	2	5.22	5.19	5.25	28.54	9.4
	1					
	2					

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB1
2-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-09 Date(s) Analyzed: 10/10/09 10/10/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
4,4'-DDD	1	7.88	7.85	7.91	3.897	
	2	6.38	6.35	6.41	2.476	44.6
4,4'-DDE	1	7.27	7.24	7.30	7.214	
	2	5.81	5.79	5.85	5.965	19.0
4,4'-DDT	1	8.25	8.22	8.28	7.555	
	2	6.65	6.63	6.69	6.548	14.3
Delta-BHC M	1	5.76	5.72	5.78	0.5640	
	2	4.77	4.75	4.81	8.274	174.5
Endosulfan I M	1	7.11	7.08	7.14	2.033	
	2	5.66	5.64	5.70	0.5517	114.6
Endrin Aldehyde	1	8.12	8.09	8.15	0.6754	
	2	6.71	6.67	6.73	1.610	81.8
Gamma-Chlordane	1	6.95	6.94	7.00	1.022	
	2	5.57	5.54	5.60	1.301	24.0
Heptachlor Epoxide	1	6.68	6.66	6.72	0.2674	
	2	5.35	5.29	5.35	0.6869	87.9

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB1
2-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-09 Date(s) Analyzed: 10/10/09 10/10/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Methoxychlor	1	8.88	8.82	8.88	2.286	
	2	7.28	7.26	7.32	6.602	97.1
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB1
2-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-10 Date(s) Analyzed: 10/10/09 10/10/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
4,4'-DDE	1	7.27	7.24	7.30	1.649	
	2	5.81	5.79	5.85	1.672	1.4
4,4'-DDT	1	8.25	8.22	8.28	1.188	
	2	6.65	6.63	6.69	1.242	4.4
Delta-BHC M	1	5.76	5.72	5.78	0.3391	
	2	4.77	4.75	4.81	5.459	176.6
Endosulfan I	1	7.11	7.08	7.14	1.311	
	2	5.66	5.64	5.70	1.038	23.2
Endrin Aldehyde	1	8.12	8.09	8.15	0.9602	
	2	6.71	6.67	6.73	1.127	16.0
Gamma-Chlordane	1	6.95	6.94	7.00	0.9465	
	2	5.57	5.54	5.60	1.132	17.8
Methoxychlor	1	8.88	8.82	8.88	3.756	
	2	7.28	7.26	7.32	8.864	81.0
	1					
	2					

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB1
3-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-27 Date(s) Analyzed: 10/24/09 10/24/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
4,4'-DDD M	1	7.40	7.37	7.43	10.05	
	2	6.01	5.98	6.04	1.183	157.9
4,4'-DDE	1	6.81	6.78	6.84	1.393	
	2	5.46	5.44	5.50	0.9189	41.0
4,4'-DDT	1	7.76	7.73	7.79	3.576	
	2	6.27	6.24	6.30	9.942	94.2
Dieldrin	1	6.97	6.92	6.98	1.398	
	2	5.55	5.53	5.59	3.076	75.0
Endosulfan II	1	7.47	7.44	7.50	0.9676	
	2	6.13	6.09	6.15	1.486	42.2
Endosulfan Sulfate	1	7.89	7.87	7.93	2.714	
	2	6.53	6.52	6.58	1.565	53.7
Gamma-BHC	1	4.91	4.90	4.96	0.8967	
	2	4.07	4.05	4.11	0.9622	7.0
Gamma-Chlordane	1	6.49	6.48	6.54	2.157	
	2	5.21	5.19	5.25	0.9201	80.4

PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB1
3-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-27 Date(s) Analyzed: 10/24/09 10/24/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Heptachlor Epoxide M	1	6.24	6.21	6.27	1.071	
	2	5.01	4.96	5.02	7.747	151.4
Methoxychlor	1	8.36	8.33	8.39	9.075	
	2	6.89	6.87	6.93	16.79	59.6
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB1
3-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-27 Date(s) Analyzed: 10/24/09 10/24/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
PCB-1260 COLUMN 1	1	8.47	8.45	8.51	97.96	126 AVG 104.2	
	2	7.09	7.06	7.12	164.3		
	3	7.82	7.80	7.86	115.3		
	4						
	5						
COLUMN 2	1	6.89	6.86	6.92	62.63		
	2						
	3						
	4	6.33	6.30	6.36	58.00		
	5	6.60	6.56	6.62	60.99	60.54	53.0
_____ COLUMN 1	1						
	2						
	3						
	4						
	5						
COLUMN 2	1						
	2						
	3						
	4						
	5						
_____ COLUMN 1	1						
	2						
	3						
	4						
	5						
COLUMN 2	1						
	2						
	3						
	4						
	5						

At least 3 peaks are required for identification of multicomponent analytes.

PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB1
4-SO-000

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-29 Date(s) Analyzed: 10/24/09 10/24/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
4,4'-DDD	1	7.40	7.37	7.43	1.579	
	2	6.00	5.98	6.04	1.144	32.0
4,4'-DDE	1	6.81	6.78	6.84	1.719	
	2	5.46	5.44	5.50	1.932	11.7
4,4'-DDT	1	7.76	7.73	7.79	5.759	
	2	6.26	6.24	6.30	7.143	21.4
Gamma-BHC	1	4.91	4.90	4.96	0.2188	
	2	4.07	4.05	4.11	0.2052	6.4
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB1
5-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-31 Date(s) Analyzed: 10/24/09 10/24/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
4,4'-DDD	1	7.40	7.37	7.43	2.574	
	2	6.00	5.98	6.04	1.457	55.4
4,4'-DDE	1	6.81	6.78	6.84	3.039	
	2	5.46	5.44	5.50	3.114	2.4
4,4'-DDT	1	7.76	7.73	7.79	5.920	
	2	6.26	6.24	6.30	7.601	24.9
Gamma-Chlordane	1	6.49	6.48	6.54	0.6000	
	2	5.22	5.19	5.25	0.3394	55.5
Heptachlor Epoxide	1	6.24	6.21	6.27	0.1328	
	2	5.01	4.96	5.02	0.6030	127.8
	1					
	2					
	1					
	2					
	1					
	2					

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB1
6-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-33 Date(s) Analyzed: 10/13/09 10/13/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Alpha-BHC	1	4.88	4.83	4.89	0.4413	
	2	3.96	3.96	4.02	0.4064	8.2
4,4'-DDD ?	1	7.69	7.66	7.72	0.7470	
	2	6.23	6.21	6.27	0.4893	41.7
4,4'-DDE	1	7.08	7.06	7.12	0.5544	
	2	5.67	5.65	5.71	0.6098	9.5
4,4'-DDT	1	8.06	8.03	8.09	1.341	
	2	6.50	6.48	6.54	1.739	25.8
Methoxychlor M	1	8.68	8.63	8.69	0.3506	
	2	7.14	7.11	7.17	1.543	125.9
	1					
	2					
	1					
	2					
	1					
	2					

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB1
7-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-11 Date(s) Analyzed: 10/10/09 10/10/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
4,4'-DDD	1	7.88	7.85	7.91	9.192	
	2	6.38	6.35	6.41	6.378	36.1
4,4'-DDE	1	7.26	7.24	7.30	1.916	
	2	5.81	5.79	5.85	1.440	28.4
4,4'-DDT	1	8.27	8.22	8.28	2.581	
	2	6.65	6.63	6.69	1.572	48.6
Delta-BHC	1	5.76	5.72	5.78	0.6501	
	2	4.77	4.75	4.81	11.41	178.4
Endosulfan I 2.8	1	7.11	7.08	7.14	2.647	
	2	5.66	5.64	5.70	2.827	6.6
Endrin Aldehyde 2.0	1	8.12	8.09	8.15	1.631	
	2	6.71	6.67	6.73	2.050	22.8
Gamma-Chlordane 1.8	1	6.95	6.94	7.00	1.800	
	2	5.57	5.54	5.60	1.565	14.0
Methoxychlor 15	1	8.88	8.82	8.88	6.155	
	2	7.28	7.26	7.32	14.62	81.5

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB1
8-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-13 Date(s) Analyzed: 10/10/09 10/10/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
4,4'-DDD	1	7.87	7.85	7.91	1.081	
	2	6.38	6.35	6.41	0.7453	36.8
4,4'-DDE	1	7.27	7.24	7.30	0.4388	
	2	5.81	5.79	5.85	0.4465	1.7
4,4'-DDT	1	8.25	8.22	8.28	0.3661	
	2	6.65	6.63	6.69	0.7681	70.9
Delta-BHC	1	5.73	5.72	5.78	1.280	
	2	4.77	4.75	4.81	2.420	61.6
Gamma-Chlordane	1	6.96	6.94	7.00	0.3478	
	2	5.57	5.54	5.60	0.6369	58.7
Methoxychlor	1	8.88	8.82	8.88	0.7671	
	2	7.28	7.26	7.32	2.016	89.7
	1					
	2					
	1					
	2					

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB1
9-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-35 Date(s) Analyzed: 10/24/09 10/24/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Alpha-Chlordane	1	6.60	6.56	6.62	0.9516	
	2	5.26	5.24	5.30	0.8626	9.8
4,4'-DDD	1	7.40	7.37	7.43	24.84	
	2	6.00	5.98	6.04	19.99	21.6
4,4'-DDE	1	6.80	6.78	6.84	11.30	
	2	5.46	5.44	5.50	11.99	5.9
4,4'-DDT	1	7.76	7.73	7.79	9.789	
	2	6.26	6.24	6.30	14.83	41.0
Dieldrin	1	6.95	6.92	6.98	0.6803	
	2	5.55	5.53	5.59	0.5426	22.5 ok
Endosulfan II	1	7.47	7.44	7.50	0.2489	
	2	6.14	6.09	6.15	0.5815	80.1
Endosulfan Sulfate	1	7.89	7.87	7.93	0.9616	
	2	6.54	6.52	6.58	0.6095	44.8
Gamma-Chlordane	1	6.50	6.48	6.54	4.138	
	2	5.23	5.19	5.25	2.929	34.2

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB1
9-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-35 Date(s) Analyzed: 10/24/09 10/24/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Heptachlor Epoxide	1	6.24	6.21	6.27	0.6202	
	2	5.01	4.96	5.02	0.7354	17.0
Methoxychlor ?	1	8.36	8.33	8.39	0.6160	
	2	6.89	6.87	6.93	5.644	160.6
M	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB1
9-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-35 Date(s) Analyzed: 10/24/09 10/24/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
	1	8.47	8.45	8.51	38.45		
PCB-1260	2	7.09	7.06	7.12	46.34		
	3	7.82	7.80	7.86	45.55		
COLUMN 1	4	8.08	8.05	8.11	53.64		
	5	9.53	9.51	9.57	29.26	42.65	
	1	6.89	6.86	6.92	21.05		
	2	5.94	5.91	5.97	22.78		
	3						
COLUMN 2	4	6.33	6.30	6.36	19.11		
	5	6.59	6.56	6.62	21.45	21.10	67.6
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						

At least 3 peaks are required for identification of multicomponent analytes.

PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB1
9-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-36 Date(s) Analyzed: 10/13/09 10/13/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Alpha-BHC	1	4.85	4.83	4.89	0.1378	
	2	4.00	3.96	4.02	0.3142	78.0
Delta-BHC	1	5.57	5.56	5.62	0.2502	
	2	4.69	4.63	4.69	0.1688	38.8
Endosulfan I	1	6.92	6.90	6.96	0.2303	
	2	5.52	5.50	5.56	0.2935	24.1
Gamma-Chlordane	1	6.78	6.76	6.82	0.4672	
	2	5.42	5.40	5.46	0.1913	83.8
Heptachlor Epoxide M	1	6.49	6.48	6.54	0.2619	
	2	5.21	5.16	5.22	1.170	126.8
Methoxychlor ? M	1	8.68	8.63	8.69	0.8417	
	2	7.12	7.11	7.17	3.007	112.5
	1					
	2					
	1					
	2					

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB2
0-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-15 Date(s) Analyzed: 10/10/09 10/10/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Alpha-Chlordane	1	7.06	7.03	7.09	1.281	
	2	5.61	5.59	5.65	0.8526	40.2
4,4'-DDD M	1	7.88	7.85	7.91	2.988	
	2	6.38	6.35	6.41	0.8551	111.0
4,4'-DDE	1	7.27	7.24	7.30	5.549	
	2	5.81	5.79	5.85	4.053	31.2
4,4'-DDT	1	8.25	8.22	8.28	1.437	
	2	6.66	6.63	6.69	1.549	7.5
Dieldrin M	1	7.43	7.40	7.46	0.3294	
	2	5.91	5.90	5.96	1.457	126.2
Endrin	1	7.71	7.66	7.72	1.030	
	2	6.21	6.17	6.23	0.5983	53.0
Endrin Ketone	1	8.96	8.95	9.01	3.158	
	2	7.47	7.47	7.53	1.630	63.8
Gamma-BHC	1	5.28	5.28	5.34	0.7012	
	2	4.33	4.31	4.37	0.5342	27.0

PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB2
0-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-15 Date(s) Analyzed: 10/10/09 10/10/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Gamma-Chlordane	1	6.96	6.94	7.00	0.9102	
	2	5.57	5.54	5.60	1.648	57.7
Heptachlor Epoxide	1	6.68	6.66	6.72	0.9490	
	2	5.35	5.29	5.35	3.450	113.7
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB2
1-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-17 Date(s) Analyzed: 10/10/09 10/10/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
4,4'-DDD	1	7.89	7.85	7.91	155.8	
	2	6.40	6.35	6.41	92.68	50.8
4,4'-DDE	1	7.28	7.24	7.30	151.6	
	2	5.84	5.79	5.85	129.8	15.5
4,4'-DDT	1	8.26	8.22	8.28	172.8	
	2	6.67	6.63	6.69	159.8	7.8
Dieldrin M	1	7.40	7.40	7.46	14.87	
	2	5.94	5.90	5.96	223.4	175.0
Endosulfan Sulfate	1	8.39	8.37	8.43	24.87	
	2	6.96	6.92	6.98	19.16	25.9
Endrin Ketone M	1	9.00	8.95	9.01	44.16	
	2	7.48	7.47	7.53	112.7	87.4
Gamma-BHC	1	5.29	5.28	5.34	18.26	
	2	4.34	4.31	4.37	19.87	8.4
	1					
	2					

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB2
1-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-17 Date(s) Analyzed: 10/10/09 10/10/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
	1	9.00	8.95	9.01	507.3		
PCB-1260	2	7.57	7.53	7.59	296.9		
	3	8.32	8.28	8.34	514.6		
COLUMN 1	4	8.59	8.55	8.61	466.2		
	5	10.07	10.02	10.08	469.7	450.9	
	1						
	2	6.31	6.29	6.35	242.3		
	3						
COLUMN 2	4	6.73	6.69	6.75	253.0		
	5	7.01	6.97	7.03	282.6	259.3	54.0
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						

At least 3 peaks are required for identification of multicomponent analytes.

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB2
1-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-17RE1 Date(s) Analyzed: 10/16/09 10/16/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Alpha-BHC	1	4.80	4.75	4.81	13.68	
	2	3.93	3.90	3.96	15.74	81.3
4,4'-DDD	1	7.58	7.56	7.62	153.9	
	2	6.15	6.12	6.18	94.56	47.8
4,4'-DDE	1	6.98	6.96	7.02	185.8	
	2	5.60	5.57	5.63	163.4	12.8
4,4'-DDT	1	7.95	7.92	7.98	346.6	
	2	6.41	6.39	6.45	386.6	10.9
Endosulfan I	1	6.81	6.79	6.85	31.71	
	2	5.44	5.42	5.48	95.93	100.6
Endosulfan Sulfate	1	8.08	8.06	8.12	20.96	
	2	6.69	6.68	6.74	26.96	25.0
Gamma-BHC	1	5.05	5.04	5.10	13.63	
	2	4.17	4.15	4.21	12.75	6.7
Heptachlor Epoxide	1	6.41	6.38	6.44	12.59	
	2	5.14	5.08	5.14	201.7	176.5

PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB2
1-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-17RE1 Date(s) Analyzed: 10/16/09 10/16/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Methoxychlor	1	8.56	8.52	8.58	257.6	
	2	7.02	7.02	7.08	480.6	60.4
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

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PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB2
2-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-37 Date(s) Analyzed: 10/24/09 10/24/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Alpha-BHC	1	4.67	4.61	4.67	4.326	
	2	3.84	3.81	3.87	0.4564	161.8
Alpha-Chlordane	1	6.60	6.56	6.62	26.75	
	2	5.27	5.24	5.30	23.51	12.9
4,4'-DDD	1	7.40	7.37	7.43	237.4	
	2	6.00	5.98	6.04	199.5	17.3
4,4'-DDE	1	6.81	6.78	6.84	78.78	
	2	5.46	5.44	5.50	81.96	4.0
4,4'-DDT	1	7.76	7.73	7.79	50.75	
	2	6.27	6.24	6.30	71.29	33.7
Delta-BHC	1	5.38	5.32	5.38	1.916	
	2	4.49	4.46	4.52	0.4198	128.1
Dieldrin	1	6.92	6.92	6.98	29.02	
	2	5.55	5.53	5.59	1.760	177.1
Endosulfan Sulfate	1	7.89	7.87	7.93	3.407	
	2	6.54	6.52	6.58	2.039	50.2

PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB2
2-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-37 Date(s) Analyzed: 10/24/09 10/24/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Endrin	1	7.23	7.17	7.23	2.193	
	2	5.82	5.78	5.84	1.999	9.2
Gamma-BHC	1	4.93	4.90	4.96	0.2907	
	2	4.08	4.05	4.11	0.5253	57.5
Gamma-Chlordane	1	6.51	6.48	6.54	44.03	
	2	5.22	5.19	5.25	31.85	32.1
Heptachlor Epoxide	1	6.24	6.21	6.27	5.717	
	2	5.01	4.96	5.02	1.508	116.5
Methoxychlor	1	8.37	8.33	8.39	0.7081	
	2	6.89	6.87	6.93	13.98	180.7
	1					
	2					
	1					
	2					
	1					
	2					

PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB2
2-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-37 Date(s) Analyzed: 10/24/09 10/24/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
PCB-1260 COLUMN 1	1	8.47	8.45	8.51	99.86		
	2	7.09	7.06	7.12	130.1		
	3	7.82	7.80	7.86	132.4		
	4	8.08	8.05	8.11	108.8		
	5	9.54	9.51	9.57	74.44	109.1	
COLUMN 2	1	6.89	6.86	6.92	52.15		
	2	5.94	5.91	5.97	69.01		
	3						
	4	6.33	6.30	6.36	50.09		
	5	6.60	6.56	6.62	61.38	58.16	60.9
_____ COLUMN 1	1						
	2						
	3						
	4						
	5						
COLUMN 2	1						
	2						
	3						
	4						
	5						
_____ COLUMN 1	1						
	2						
	3						
	4						
	5						
COLUMN 2	1						
	2						
	3						
	4						
	5						

At least 3 peaks are required for identification of multicomponent analytes.

PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB2
2-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-37RE1 Date(s) Analyzed: 10/14/09 10/14/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Alpha-Chlordane	1	6.88	6.85	6.91	34.41	
	2	5.48	5.46	5.52	44.08	24.6
4,4'-DDD	1	7.69	7.66	7.72	231.9	
	2	6.23	6.21	6.27	213.2	8.4
4,4'-DDE	1	7.09	7.06	7.12	93.49	
	2	5.67	5.65	5.71	91.73	1.9
4,4'-DDT	1	8.06	8.03	8.09	68.74	
	2	6.50	6.48	6.54	88.16	24.8
Endosulfan II	1	7.77	7.74	7.80	3.551	
	2	6.37	6.33	6.39	3.059	14.9
Endosulfan Sulfate	1	8.19	8.18	8.24	5.007	
	2	6.79	6.77	6.83	4.771	4.8
Endrin	1	7.52	7.47	7.53	3.767	
	2	6.05	6.02	6.08	3.440	9.1
Gamma-Chlordane	1	6.79	6.76	6.82	40.34	
	2	5.43	5.40	5.46	53.16	27.4

page 1 of 2

PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB2
2-SO-0001

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-37RE1 Date(s) Analyzed: 10/14/09 10/14/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Methoxychlor	1	8.68	8.63	8.69	3.580	
	2	7.14	7.11	7.17	23.80	147.7
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

page 2 of 2

PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB2
2-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-38 Date(s) Analyzed: 10/24/09 10/24/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Alpha-BHC	1	4.67	4.61	4.67	6.687	
	2	3.84	3.81	3.87	0.2742	184.2
Alpha-Chlordane	1	6.60	6.56	6.62	26.03	
	2	5.27	5.24	5.30	24.24	7.1
4,4'-DDD	1	7.40	7.37	7.43	242.6	
	2	6.01	5.98	6.04	192.9	22.8
4,4'-DDE	1	6.81	6.78	6.84	83.70	
	2	5.46	5.44	5.50	87.16	4.0
4,4'-DDT	1	7.76	7.73	7.79	37.50	
	2	6.27	6.24	6.30	62.07	49.4
Dieldrin	1	6.92	6.92	6.98	33.62	
	2	5.55	5.53	5.59	3.247	164.8
Endosulfan II	1	7.47	7.44	7.50	0.0521	
	2	6.14	6.09	6.15	3.593	138.6
Endosulfan Sulfate	1	7.89	7.87	7.93	5.814	
	2	6.54	6.52	6.58	3.447	51.1

PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB2
2-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-38 Date(s) Analyzed: 10/24/09 10/24/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Gamma-Chlordane	1	6.51	6.48	6.54	45.52	
	2	5.23	5.19	5.25	33.86	29.4
Heptachlor Epoxide	1	6.24	6.21	6.27	6.857	
	2	5.01	4.96	5.02	3.407	67.2
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

page 2 of 2

PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB2
2-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-38 Date(s) Analyzed: 10/24/09 10/24/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
PCB-1260 COLUMN 1	1	8.48	8.45	8.51	264.0		
	2	7.09	7.06	7.12	326.4		
	3	7.83	7.80	7.86	276.1		
	4	8.08	8.05	8.11	281.4		
	5	9.54	9.51	9.57	199.2	269.4	
COLUMN 2	1	6.89	6.86	6.92	132.6		
	2	5.94	5.91	5.97	165.6		
	3						
	4	6.33	6.30	6.36	116.5		
	5	6.60	6.56	6.62	150.4	141.3	62.4
_____ COLUMN 1	1						
	2						
	3						
	4						
	5						
COLUMN 2	1						
	2						
	3						
	4						
	5						
_____ COLUMN 1	1						
	2						
	3						
	4						
	5						
COLUMN 2	1						
	2						
	3						
	4						
	5						

At least 3 peaks are required for identification of multicomponent analytes.

PESTA

FORM 10
PESTICIDE IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21SB2
2-SO-0204

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_001

Lab Sample ID: 0910006-38RE1 Date(s) Analyzed: 10/14/09 10/14/09

Instrument ID (1): ECD4 Instrument ID (2): ECD4

Column(1): ZB MR-1 ID: 0.32(mm) Column(2): ZB MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Alpha-Chlordane	1	6.88	6.85	6.91	69.74	
	2	5.46	5.46	5.52	164.8	81.1
4,4'-DDD	1	7.69	7.66	7.72	313.7	
	2	6.23	6.21	6.27	328.8	4.7
4,4'-DDE	1	7.09	7.06	7.12	143.7	
	2	5.68	5.65	5.71	153.9	6.8
4,4'-DDT	1	8.06	8.03	8.09	78.88	
	2	6.50	6.48	6.54	137.2	54.0
Delta-BHC	1	5.59	5.56	5.62	14.42	
	2	4.66	4.63	4.69	14.23	1.3
Endosulfan I	1	6.93	6.90	6.96	13.99	
	2	5.53	5.50	5.56	29.50	71.3
Gamma-Chlordane	1	6.78	6.76	6.82	91.65	
	2	5.43	5.40	5.46	83.11	9.8
	1					
	2					

page 1 of 1

PESTA

NTC GREAT LAKES
SOIL DATA
CTO064_001

FRACTION	CHEMICAL	FD-092609-02	UNITS	NTC21SB09-SO-0001	RPD	D
PEST/PCB	4,4'-DDE	38 J	UG/KG	65 J	52.43	27.00
PEST/PCB	4,4'-DDT	31 J	UG/KG	62 J	66.67	31.00
PEST/PCB	ALPHA-CHLORDANE	4.5 J	UG/KG	7.3 J	47.46	2.80
PEST/PCB	AROCLOR-1260	190 J	UG/KG	130 J	37.50	60.00
PEST/PCB	DIELDRIN	3.6 J	UG/KG	2.5 J	36.07	1.10
PEST/PCB	ENDOSULFAN II	4 J	UG/KG	4 J	0.00	0.00
PEST/PCB	ENDOSULFAN SULFATE	5.7 J	UG/KG	6.7 J	16.13	1.00
PEST/PCB	ENDRIN	9 J	UG/KG	7.3 J	20.86	1.70
PEST/PCB	ENDRIN ALDEHYDE	ND	UG/KG	6.8 J	200.00	6.80
PEST/PCB	GAMMA-CHLORDANE	20 J	UG/KG	5.7 J	111.28	14.30
PEST/PCB	HEPTACHLOR EPOXIDE	0.91 J	UG/KG	ND	200.00	0.91

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NTC GREAT LAKES
SOIL DATA
CTO064_001

FRACTION	CHEMICAL	FD-092609-02-DL	UNITS	NTC21SB09-SO-0001-DL	RPD	D
PEST/PCB	4,4'-DDD	270 J	UG/KG	480	56.00	210.00

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

dilution analysis

NTC GREAT LAKES
SOIL DATA
CTO064_001

FRACTION	CHEMICAL	FD-092809-01	UNITS	NTC21SB05-SO-0001	RPD	D
PEST/PCB	4,4'-DDD	19 J	UG/KG	ND	200.00	19.00
PEST/PCB	4,4'-DDE	10	UG/KG	ND	200.00	10.00
PEST/PCB	4,4'-DDT	6.5 J	UG/KG	ND	200.00	6.50
PEST/PCB	ALPHA-BHC	0.21 J	UG/KG	12 J	193.12	11.79
PEST/PCB	AROCLOR-1260	81 J	UG/KG	210 J	88.66	129.00
PEST/PCB	DELTA-BHC	0.39 J	UG/KG	ND	200.00	0.39 N/A <2XR.L
PEST/PCB	DIELDRIN	1.4 J	UG/KG	2.8 J	66.67	1.40 N/A <2XR.L
PEST/PCB	ENDOSULFAN SULFATE	1.3 J	UG/KG	ND	200.00	1.30 N/A <2XR.L
PEST/PCB	GAMMA-CHLORDANE	ND	UG/KG	11 J	200.00	11.00
PEST/PCB	HEPTACHLOR EPOXIDE	ND	UG/KG	2.3 J	200.00	2.30
PEST/PCB	METHOXYCHLOR	8.3 JM	UG/KG	4 J	69.92	4.30

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NTC GREAT LAKES
SOIL DATA
CTO064_001

FRACTION	CHEMICAL	FD-092809-01	UNITS	NTC21SB05-SO-0001-DI	RPD	D
PEST/PCB	4,4'-DDD	19 J	UG/KG	130	148.99	111.00
PEST/PCB	4,4'-DDE	10	UG/KG	130	171.43	120.00
PEST/PCB	4,4'-DDT	6.5 J	UG/KG	160 J	184.38	153.50
PEST/PCB	ALPHA-BHC	0.21 J	UG/KG	ND	200.00	0.21
PEST/PCB	AROCLOR-1260	81 J	UG/KG	ND	200.00	81.00
PEST/PCB	DELTA-BHC	0.39 J	UG/KG	ND	200.00	0.39
PEST/PCB	DIELDRIN	1.4 J	UG/KG	ND	200.00	1.40
PEST/PCB	ENDOSULFAN SULFATE	1.3 J	UG/KG	ND	200.00	1.30
PEST/PCB	METHOXYCHLOR	8.3 JM	UG/KG	ND	200.00	8.30

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**B. CUMMINGS**	**DATE:**	**JANUARY 11, 2010**
FROM:	**JOSEPH KALINYAK**	**COPIES:**	**DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – PCDD/PCDF**
NTC GREAT LAKES, CTO C064
SDG G330-42B

SAMPLES: 4 / Soil / PCDD/PCDF

FD-092609-02 NTC21SB02-SO-0204 NTC21SB09-SO-0001
NTC21SB17-SO-0001

2 / Aqueous / PCDD/PCDF

RB-092909-01 SB-092909-01

OVERVIEW

The sample set for CTO C064, NTC GREAT LAKES, SDG G330-42B consisted of four (4) soil environmental samples and two (2) aqueous environmental blank samples. There was one field duplicate pair associated with this SDG: FD-092609-02 / NTC21SB09-SO-0001. All samples were analyzed for polychlorinated dibenzyldioxins (PCDDs) and polychlorinated dibenzylfurans (PCDF).

The samples were collected by TetraTech NUS on September 26, 28, and 29, 2009 and analyzed by SGS North America Inc. All analyses were conducted in accordance with USEPA SW 846 Method 8290 analytical and reporting protocols. The data contained in this SDG were validated with regard to the following parameters:

*	•	Data completeness
*	•	Hold times
*	•	Mass Calibration
*	•	HRGC/HRMS Tuning and System Performance
*	•	Chromatographic Resolution /Window Defining Mixtures
*	•	Initial and continuing calibration
	•	Blank results
*	•	Internal Standard Recoveries
*	•	Recovery Standard Performance
*	•	Clean-up Standard Recoveries
*	•	Blank Spike/Blank Spike Duplicate Results
*	•	Matrix Spike/Matrix Spike Duplicate Results
*	•	Estimated Detection Limits
*	•	Field Duplicate Results
	•	Compound Quantitation
*	•	Compound Identification

The symbol (*) indicates that all quality control criteria were met for this parameter. Problems affecting data quality are discussed below; documentation supporting these findings is presented in Appendix C. Qualified Analytical results are presented in Appendix A. Results as reported by the laboratory are presented in Appendix B.

PCDD/PCDF

The following compounds were detected in the method blank at the maximum concentration indicated below affecting all soil samples FD-092609-02, NTC21SB02-SO-0204, NTC21SB09-SO-0001, NTC21SB17-SO-0001.

Compound	Maximum Conc. ng/kg	Action Level ng/kg
1,2,3,4,6,7,8-HpCDD	1.48	7.40
OCDD	23.9	119.5
2,3,7,8-TCDF	0.264	1.320
1,2,3,7,8-PeCDF	0.134*	0.670*
1,2,3,4,6,7,8-HpCDF	0.720	3.600
Total HpCDD	3.33	16.65
Total TCDF	0.264	1.320
Total HxCDF	0.284	1.420
Total HpCDF	0.720	3.600

*EMPC result (estimated maximum possible concentration)

An action level of 5X the maximum contaminant level for the PCDD/PCDFs has been used to evaluate sample data for blank contamination. Sample aliquot, percent moisture and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination for each individual sample. Results less than the action level were qualified as non-detected, (U), due to method blank contamination.

Positive sample analyte results below the lower method calibration limit were qualified estimated, (J).

Sample analyte EMPC results were qualified estimated, (J).

Sample analyte results qualified by the laboratory as indicating the presence of polychlorinated diphenylether (DPE) interference were qualified estimated, (J).

Sample analyte results qualified by the laboratory indicating a qualitative interference were qualified estimated, (J).

Notes

The 2,3,7,8-TCDF positive results were verified and reported from a confirmation column/analysis.

The 2,3,7,8-TCDF positive result reported from the confirmation column for sample FD-092609-02 was identified as an EMPC result by the laboratory.

The matrix spike (MS) and MS duplicate (MSD) % recoveries were less than the quality control limit for OCDD for the spiked sample NTC21SB02-SO-0204. No action was taken as the sample concentration for OCDD was significantly higher than the spiked amount added to the sample

The MSD % recovery was less than the quality control limit for 1,2,3,4,6,7,8-HpCDD for the spiked sample NTC21SB02-SO-0204. No action was taken as the % recovery for the MS for the sample was within the quality control limits as was the RPD for the MS/MSD for the analyte.

EXECUTIVE SUMMARY

Laboratory Performance Issues: Method blank contamination resulted in data qualification.

Other Factors Affecting Data Quality: The presence of DPE interference, EMPCs, and other qualitative interferences resulted in data qualification. Positive analyte results less than the lower calibration limit were qualified estimated, (J).

The data for these analyses were reviewed with reference to the EPA National Functional Guidelines for Chlorinated Dibenzo-p-dioxins and Chlorinated Dibenzofurans (Sept. 2005) and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (January 2006). The text of this report has been formulated to address only those problem areas affecting data quality.

Tetra Tech NUS
Joseph Kalinyak
Chemist/Data Validator

TetraTech NUS
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

PROJ_NO: 01797	NSAMPLE	FD-092609-02			FD-092609-02-RE			NTC21SB02-SO-0204			NTC21SB09-SO-0001		
SDG: G330-42B	LAB_ID	G330-42-9C			G330-42-9C			G330-42-13B			G330-42-10C		
FRACTION: DIOX	SAMP_DATE	9/26/2009			9/26/2009			9/28/2009			9/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	NG/KG			NG/KG			NG/KG			NG/KG		
	PCT_SOLIDS	88.1			88.1			88.9			87.8		
	DUP_OF	NTC21SB09-SO-0001			NTC21SB09-SO-0001								
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		1840						1950			1310		
1,2,3,4,6,7,8,9-OCDF		143						44.8			141		
1,2,3,4,6,7,8-HPCDD		224						167			169		
1,2,3,4,6,7,8-HPCDF		89.9						18.1			82.4		
1,2,3,4,7,8,9-HPCDF		4.32	J	P				1.74	J	P	4.08	J	P
1,2,3,4,7,8-HXCDD		1.95	J	P				1.04	J	P	1.9	J	P
1,2,3,4,7,8-HXCDF		6.27						2.56	J	P	5.91		
1,2,3,6,7,8-HXCDD		8.99						3.62	J	P	7.9		
1,2,3,6,7,8-HXCDF		11.1						1.39	J	P	11.6		
1,2,3,7,8,9-HXCDD		5.18	J	P				2.42	J	P	5.17		
1,2,3,7,8,9-HXCDF		2.67	J	P				0.682	J	P	2.68	J	P
1,2,3,7,8-PECDD		4.99	J	PW				0.579	J	PW	5.9	J	W
1,2,3,7,8-PECDF		2.11	J	P				0.521	U	A	1.92	J	P
2,3,4,6,7,8-HXCDF		24.7						2.14	J	P	26.2		
2,3,4,7,8-PECDF		51.5						2.75	J	P	57.5		
2,3,7,8-TCDD		0.694	J	P				0.279	J	P	0.816	J	P
2,3,7,8-TCDF					3.79	J	W	0.742	U	A			
TOTAL HPCDD		437						335			326		
TOTAL HPCDF		221						61.3			202		
TOTAL HXCDD		73.7						29.8			67		
TOTAL HXCDF		376						40.4			393	J	Q
TOTAL PECDD		20.1	J	Q				4.76	J	Q	19.4	J	Q
TOTAL PECDF		616						32.5			712	J	Q
TOTAL TCDD		11.4	J	Q				2.93			10.8		
TOTAL TCDF		197	J	Q				12.6			215	J	Q

PROJ_NO: 01797	NSAMPLE	NTC21SB09-SO-0001-RE			NTC21SB17-SO-0001		
SDG: G330-42B	LAB_ID	G330-42-10C			G330-42-11C		
FRACTION: DIOX	SAMP_DATE	9/26/2009			9/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM		
	UNITS	NG/KG			NG/KG		
	PCT_SOLIDS	87.8			90.3		
	DUP_OF						
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD					174		
1,2,3,4,6,7,8,9-OCDF					19.8		
1,2,3,4,6,7,8-HPCDD					17.7		
1,2,3,4,6,7,8-HPCDF					9.64		
1,2,3,4,7,8,9-HPCDF					0.952	J	P
1,2,3,4,7,8-HXCDD					5	U	
1,2,3,4,7,8-HXCDF					1.31	J	P
1,2,3,6,7,8-HXCDD					1.14	J	P
1,2,3,6,7,8-HXCDF					1.07	J	P
1,2,3,7,8,9-HXCDD					0.81	J	P
1,2,3,7,8,9-HXCDF					0.358	J	PQ
1,2,3,7,8-PECDD					0.76	J	PW
1,2,3,7,8-PECDF					0.462	U	A
2,3,4,6,7,8-HXCDF					1.84	J	P
2,3,4,7,8-PECDF					3.66	J	P
2,3,7,8-TCDD					0.198	J	PW
2,3,7,8-TCDF		3.17			0.728	U	A
TOTAL HPCDD					33.9		
TOTAL HPCDF					25.2		
TOTAL HXCDD					10.6		
TOTAL HXCDF					29.8	J	Q
TOTAL PECDD					4.01	J	Q
TOTAL PECDF					40.9		
TOTAL TCDD					1.57		
TOTAL TCDF					16.2		

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

Method 8290
RB-092909-01
Tetra Tech Nus, Inc.

Analytical Data Summary Sheet

Analyte	Amount ng/L	EDL ng/L	RL ng/L	EMPC ng/L	RT (min.)	Ratio	Qualifier
2,3,7,8-TCDD	ND	0.00106	0.0103				
1,2,3,7,8-PeCDD	ND	0.00515	0.0515				
1,2,3,4,7,8-HxCDD	ND	0.00515	0.0515				
1,2,3,6,7,8-HxCDD	ND	0.00515	0.0515				
1,2,3,7,8,9-HxCDD	ND	0.00515	0.0515				
1,2,3,4,6,7,8-HpCDD	ND	0.00551	0.0515				
OCDD	**0.00929**		0.103		44:40	0.83	A
2,3,7,8-TCDF	ND	0.00103	0.0103				
1,2,3,7,8-PeCDF	ND	0.00515	0.0515				
2,3,4,7,8-PeCDF	ND	0.00515	0.0515				
1,2,3,4,7,8-HxCDF	ND	0.00515	0.0515				
1,2,3,6,7,8-HxCDF	ND	0.00515	0.0515				
2,3,4,6,7,8-HxCDF	ND	0.00515	0.0515				
1,2,3,7,8,9-HxCDF	ND	0.00515	0.0515				
1,2,3,4,6,7,8-HpCDF	ND	0.00515	0.0515				
1,2,3,4,7,8,9-HpCDF	ND	0.00515	0.0515				
OCDF	ND	0.0103	0.103				
Total TCDDs	ND	0.00106	0.0103				
Total PeCDDs	ND	0.00515	0.0515				
Total HxCDDs	ND	0.00515	0.0515				
Total HpCDDs	ND	0.00551	0.0515				
Total TCDFs	ND	0.00103	0.0103	0.00169			
Total PeCDFs	ND	0.00515	0.0515				
Total HxCDFs	ND	0.00515	0.0515				
Total HpCDFs	ND	0.00515	0.0515				
WHO-2005 TEQ (ND=0)	**0.00000279**			0.00000279			
WHO-2005 TEQ (ND=½)	**0.00589**			0.00589			

Client Information			**Sample Information**		
Project Name:	112G01797		Report Basis:	Wet	
			Matrix:	Water	
Sample ID:	RB-092909-01		Weight / Volume:	971	mL
			Solids / Lipids:	NA	%
			Original pH :	6.00	
Laboratory Information			Batch ID:	WG17335	
Project ID:	G330-42		Instrument:	HRMS1	
Sample ID:	G330-42-14C		Filename:	a07oct09a_2-10	
Collection Date/Time:	09/29/09	11:26	Retchk:	a07oct09a-15	
Receipt Date/Time:	09/30/09	9:45	Begin ConCal:	a07oct09a-15	
Extraction Date:	10/05/09		End ConCal:	a07oct09a_2-14	
Analysis Date/Time:	10/08/09	2:14	Initial Cal:	m8290-092309a	

Method 8290
RB-092909-01
Tetra Tech Nus, Inc.

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)		Percent Recovery (%)	RT (min.)	Ratio	Qualifier
Extraction Standards							
13C12-2,3,7,8-TCDD	2	1.84		92.2	31:31	0.78	
13C12-1,2,3,7,8-PeCDD	2	1.95		97.5	34:18	1.57	
13C12-1,2,3,6,7,8-HxCDD	2	1.89		94.7	37:00	1.25	
13C12-1,2,3,4,6,7,8-HpCDD	2	2.03		101	40:21	1.06	
13C12-OCDD	4.0	3.88		97.0	44:40	0.90	
13C12-2,3,7,8-TCDF	2	1.82		90.9	30:55	0.77	
13C12-1,2,3,7,8-PeCDF	2	1.80		90.2	33:30	1.56	
13C12-1,2,3,6,7,8-HxCDF	2	1.83		91.6	36:18	0.53	
13C12-1,2,3,4,6,7,8-HpCDF	2	1.83		91.4	39:04	0.45	
Cleanup Standards							
37Cl4-2,3,7,8-TCDD	0.4	0.467		117	31:31	-	
13C12-2,3,4,7,8-PeCDF	0.4	0.444		111	34:07	1.55	
13C12-1,2,3,4,7,8-HxCDD	0.4	0.446		112	36:55	1.26	
13C12-1,2,3,4,7,8-HxCDF	0.4	0.454		114	36:12	0.51	
13C12-1,2,3,4,7,8,9-HpCDF	0.4	0.448		112	41:01	0.44	
Injection Standards							
13C12-1,2,3,4-TCDD	2.0	-		-	31:04	0.79	
13C12-1,2,3,7,8,9-HxCDD	2.0	-		-	37:15	1.24	

Client Information			**Sample Information**		
Project Name:	112G01797		Report Basis:	Wet	
			Matrix:	Water	
Sample ID:	RB-092909-01		Weight / Volume:	971	mL
			Solids / Lipids:	NA	%
			Original pH :	6.00	
Laboratory Information			Batch ID:	WG17335	
Project ID:	G330-42		Instrument:	HRMS1	
Sample ID:	G330-42-14C		Filename:	a07oct09a_2-10	
Collection Date/Time:	09/29/09	11:26	Retchk:	a07oct09a-15	
Receipt Date/Time:	09/30/09	9:45	Begin ConCal:	a07oct09a-15	
Extraction Date:	10/05/09		End ConCal:	a07oct09a_2-14	
Analysis Date/Time:	10/08/09	2:14	Initial Cal:	m8290-092309a	

Form Version:[8290]Report

Analyzed by: DS
Date: 10-13-09

Reviewed by: [illegible]
Date: 10/14/09

Method 8290
SB-092909-01
Tetra Tech Nus, Inc.

Analytical Data Summary Sheet

Analyte	Amount ng/L	EDL ng/L	RL ng/L	EMPC ng/L	RT (min.)	Ratio	Qualifier
2,3,7,8-TCDD	ND	0.00110	0.0101				
1,2,3,7,8-PeCDD	ND	0.00505	0.0505				
1,2,3,4,7,8-HxCDD	ND	0.00505	0.0505				
1,2,3,6,7,8-HxCDD	ND	0.00505	0.0505				
1,2,3,7,8,9-HxCDD	ND	0.00505	0.0505				
1,2,3,4,6,7,8-HpCDD	ND	0.00601	0.0505				
OCDD	ND	0.0101	0.101				
2,3,7,8-TCDF	ND	0.00101	0.0101				
1,2,3,7,8-PeCDF	ND	0.00505	0.0505				
2,3,4,7,8-PeCDF	ND	0.00505	0.0505				
1,2,3,4,7,8-HxCDF	ND	0.00505	0.0505				
1,2,3,6,7,8-HxCDF	ND	0.00505	0.0505				
2,3,4,6,7,8-HxCDF	ND	0.00505	0.0505				
1,2,3,7,8,9-HxCDF	ND	0.00505	0.0505				
1,2,3,4,6,7,8-HpCDF	ND	0.00505	0.0505				
1,2,3,4,7,8,9-HpCDF	ND	0.00505	0.0505				
OCDF	ND	0.0101	0.101				
Total TCDDs	ND	0.00110	0.0101				
Total PeCDDs	ND	0.00505	0.0505				
Total HxCDDs	ND	0.00505	0.0505				
Total HpCDDs	ND	0.00601	0.0505				
Total TCDFs	ND	0.00101	0.0101				
Total PeCDFs	ND	0.00505	0.0505				
Total HxCDFs	ND	0.00505	0.0505				
Total HpCDFs	ND	0.00505	0.0505				
WHO-2005 TEQ (ND=0)	ND			ND			
WHO-2005 TEQ (ND=½)	**0.00580**			0.0058			

Client Information			**Sample Information**		
Project Name:	112G01797		Report Basis:	Wet	
			Matrix:	Water	
Sample ID:	SB-092909-01		Weight / Volume:	991	mL
			Solids / Lipids:	NA	%
			Original pH :	6.00	
Laboratory Information			Batch ID:	WG17335	
Project ID:	G330-42		Instrument:	HRMS1	
Sample ID:	G330-42-15C		Filename:	a07oct09a_2-11	
Collection Date/Time:	09/29/09	10:31	Retchk:	a07oct09a-15	
Receipt Date/Time:	09/30/09	9:45	Begin ConCal:	a07oct09a-15	
Extraction Date:	10/05/09		End ConCal:	a07oct09a_2-14	
Analysis Date/Time:	10/08/09	3:03	Initial Cal:	m8290-092309a	

Method 8290
SB-092909-01
Tetra Tech Nus, Inc.

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)		Percent Recovery (%)	RT (min.)	Ratio	Qualifier
Extraction Standards							
13C12-2,3,7,8-TCDD	2	1.70		84.8	31:30	0.79	
13C12-1,2,3,7,8-PeCDD	2	1.82		90.8	34:18	1.57	
13C12-1,2,3,6,7,8-HxCDD	2	1.82		91.1	37:00	1.27	
13C12-1,2,3,4,6,7,8-HpCDD	2	2.00		100	40:21	1.05	
13C12-OCDD	4.0	3.54		88.4	44:40	0.89	
13C12-2,3,7,8-TCDF	2	1.69		84.6	30:54	0.78	
13C12-1,2,3,7,8-PeCDF	2	1.68		84.1	33:30	1.57	
13C12-1,2,3,6,7,8-HxCDF	2	1.77		88.3	36:18	0.52	
13C12-1,2,3,4,6,7,8-HpCDF	2	1.81		90.4	39:04	0.44	
Cleanup Standards							
37Cl4-2,3,7,8-TCDD	0.4	0.433		108	31:31	-	
13C12-2,3,4,7,8-PeCDF	0.4	0.412		103	34:07	1.58	
13C12-1,2,3,4,7,8-HxCDD	0.4	0.435		109	36:55	1.31	
13C12-1,2,3,4,7,8-HxCDF	0.4	0.435		109	36:12	0.52	
13C12-1,2,3,4,7,8,9-HpCDF	0.4	0.432		108	41:03	0.43	
Injection Standards							
13C12-1,2,3,4-TCDD	2.0	-		-	31:04	0.79	
13C12-1,2,3,7,8,9-HxCDD	2.0	-		-	37:15	1.25	

Client Information			**Sample Information**		
Project Name:	112G01797		Report Basis:	Wet	
			Matrix:	Water	
Sample ID:	SB-092909-01		Weight / Volume:	991	mL
			Solids / Lipids:	NA	%
			Original pH :	6.00	
Laboratory Information			Batch ID:	WG17335	
Project ID:	G330-42		Instrument:	HRMS1	
Sample ID:	G330-42-15C		Filename:	a07oct09a_2-11	
Collection Date/Time:	09/29/09	10:31	Retchk:	a07oct09a-15	
Receipt Date/Time:	09/30/09	9:45	Begin ConCal:	a07oct09a-15	
Extraction Date:	10/05/09		End ConCal:	a07oct09a_2-14	
Analysis Date/Time:	10/08/09	3:03	Initial Cal:	m8290-092309a	

Form Version:[8290]Report

Analyzed by: DS
Date: 10-14-09

Reviewed by: [illegible]
Date: 10/14/09

Method 8290
FD-092609-02
Tetra Tech Nus, Inc.

Analytical Data Summary Sheet

Analyte	Amount pg/g	EDL pg/g	RL pg/g	EMPC pg/g	RT (min.)	Ratio	Qualifier
2,3,7,8-TCDD	**0.694**		1.05		31:31	0.71	A
1,2,3,7,8-PeCDD	EMPC	0.524	5.24	4.99	34:19	0.30 *	A
1,2,3,4,7,8-HxCDD	**1.95**		5.24		36:58	1.41	A
1,2,3,6,7,8-HxCDD	**8.99**		5.24		37:04	1.26	
1,2,3,7,8,9-HxCDD	**5.18**		5.24		37:19	1.30	A
1,2,3,4,6,7,8-HpCDD	**224**		5.24		40:22	1.04	
OCDD	**1840**		10.5		44:43	0.90	
2,3,7,8-TCDF	**3.99**		1.05		30:55	0.78	
1,2,3,7,8-PeCDF	**2.11**		5.24		33:30	1.58	A
2,3,4,7,8-PeCDF	**51.5**		5.24		34:07	1.56	
1,2,3,4,7,8-HxCDF	**6.27**		5.24		36:13	1.24	
1,2,3,6,7,8-HxCDF	**11.1**		5.24		36:19	1.28	
2,3,4,6,7,8-HxCDF	**24.7**		5.24		36:49	1.27	
1,2,3,7,8,9-HxCDF	**2.67**		5.24		37:39	1.33	A
1,2,3,4,6,7,8-HpCDF	**89.9**		5.24		39:06	1.05	
1,2,3,4,7,8,9-HpCDF	**4.32**		5.24		41:04	1.05	A
OCDF	**143**		10.5		45:01	0.88	
Total TCDDs	**11.4**		1.05	12.8			Q
Total PeCDDs	**20.1**		5.24	25.1			Q
Total HxCDDs	**73.7**		5.24	74.7			
Total HpCDDs	**437**		5.24				
Total TCDFs	**197**		1.05	198			Q
Total PeCDFs	**616**		5.24	616			
Total HxCDFs	**376**		5.24				
Total HpCDFs	**221**		5.24				
WHO-2005 TEQ (ND=0)	**26.5**			31.5			
WHO-2005 TEQ (ND=½)	**26.7**			31.5			

Client Information			**Sample Information**		
Project Name:	112G01797		Report Basis:	Dry	
			Matrix:	Soil	
Sample ID:	FD-092609-02		Weight / Volume:	10.83	g
			Solids / Lipids:	88.1	%
			Original pH :	NA	
Laboratory Information			Batch ID:	WG17345	
Project ID:	G330-42		Instrument:	HRMS1	
Sample ID:	G330-42-9C		Filename:	a08oct09a-7	
Collection Date/Time:	09/26/09		Retchk:	a08oct09a-1	
Receipt Date/Time:	09/30/09	9:45	Begin ConCal:	a08oct09a-1	
Extraction Date:	10/07/09		End ConCal:	a08oct09a-15	
Analysis Date/Time:	10/08/09	20:51	Initial Cal:	m8290-092309a	

Method 8290
FD-092609-02
Tetra Tech Nus, Inc.

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)		Percent Recovery (%)	RT (min.)	Ratio	Qualifier
Extraction Standards							
13C12-2,3,7,8-TCDD	2	1.78		89.0	31:30	0.79	
13C12-1,2,3,7,8-PeCDD	2	1.78		89.1	34:19	1.57	
13C12-1,2,3,6,7,8-HxCDD	2	1.90		95.2	37:04	1.25	
13C12-1,2,3,4,6,7,8-HpCDD	2	2.11		106	40:22	1.06	
13C12-OCDD	4.0	4.15		104	44:43	0.89	
13C12-2,3,7,8-TCDF	2	1.79		89.5	30:55	0.78	
13C12-1,2,3,7,8-PeCDF	2	1.72		86.2	33:30	1.57	
13C12-1,2,3,6,7,8-HxCDF	2	1.83		91.4	36:19	0.53	
13C12-1,2,3,4,6,7,8-HpCDF	2	1.91		95.6	39:04	0.45	
Cleanup Standards							
37Cl4-2,3,7,8-TCDD	0.4	0.436		109	31:31	-	
13C12-2,3,4,7,8-PeCDF	0.4	0.403		101	34:07	1.58	
13C12-1,2,3,4,7,8-HxCDD	0.4	0.416		104	36:58	1.28	
13C12-1,2,3,4,7,8-HxCDF	0.4	0.426		106	36:13	0.53	
13C12-1,2,3,4,7,8,9-HpCDF	0.4	0.435		109	41:04	0.45	
Injection Standards							
13C12-1,2,3,4-TCDD	2.0	-		-	31:04	0.79	
13C12-1,2,3,7,8,9-HxCDD	2.0	-		-	37:19	1.25	

Client Information			**Sample Information**		
Project Name:	112G01797		Report Basis:	Dry	
			Matrix:	Soil	
Sample ID:	FD-092609-02		Weight / Volume:	10.83	g
			Solids / Lipids:	88.1	%
			Original pH :	NA	
Laboratory Information			Batch ID:	WG17345	
Project ID:	G330-42		Instrument:	HRMS1	
Sample ID:	G330-42-9C		Filename:	a08oct09a-7	
Collection Date/Time:	09/26/09		Retchk:	a08oct09a-1	
Receipt Date/Time:	09/30/09	9:45	Begin ConCal:	a08oct09a-1	
Extraction Date:	10/07/09		End ConCal:	a08oct09a-15	
Analysis Date/Time:	10/08/09	20:51	Initial Cal:	m8290-092309a	

Form Version:[8290]Report

Analyzed by: DS
Date: 10-14-09

Reviewed by: [illegible]
Date: 10/14/09

TCDF Confirmation - Method 8290
FD-092609-02
Tetra Tech Nus, Inc.

Analytical Data Summary Sheet

Analyte	Amount (pg/g)	EDL (pg/g)	EMPC (pg/g)	RT (min.)	Ratio	Qualifier
2,3,7,8-TCDF	EMPC	0.592	3.79	21.17	0.61 *	

Labeled Standard	Spiked Amount (ng)	RT (min.)	Ratio	Qualifier
Extraction Standards				
$^{13}C_{12}$-2,3,7,8-TCDF	2.00	21.16	0.72	

Client Information			**Sample Information**		
Project Name:	112G01797		Report Basis:	Dry	
			Matrix:	Soil	
Sample ID:	FD-092609-02		Weight / Volume:	10.83	g
			Solids / Lipids:	88.06	%
			Original pH :	NA	
Laboratory Information			Batch ID:	WG17345	
Project ID:	G330-42		Instrument:	hrms3	
Sample ID:	G330-42-9C		Filename:	c12oct09a-10	
Collection Date/Time:	09/26/09		Retchk:	c12oct09a-2	
Receipt Date:	09/30/09	9:45	Begin ConCal:	c12oct09a-1	
Extraction Date:	10/07/09		End ConCal:	c12oct09a-12	
Analysis Date/Time:	10/12/09	9:52	Initial Cal:	mcf-c042709a	

Analyzed by: DS
Date: 10-14-09

Reviewed by: [illegible]
Date: 10/21/09

Method 8290
NTC21SB02-SO-0204
Tetra Tech Nus, Inc.

Analytical Data Summary Sheet

Analyte	Amount pg/g	EDL pg/g	RL pg/g	EMPC pg/g	RT (min.)	Ratio		Qualifier
2,3,7,8-TCDD	0.279		0.969		31:31	0.78		A
1,2,3,7,8-PeCDD	EMPC	0.484	4.84	0.579	34:19	1.21	*	A
1,2,3,4,7,8-HxCDD	1.04		4.84		36:57	1.19		A
1,2,3,6,7,8-HxCDD	3.62		4.84		37:03	1.28		A
1,2,3,7,8,9-HxCDD	2.42		4.84		37:18	1.23		A
1,2,3,4,6,7,8-HpCDD	167		4.84		40:22	1.04		
OCDD	1950		9.69		44:43	0.89		
2,3,7,8-TCDF	0.742		0.969		30:55	0.77		A
1,2,3,7,8-PeCDF	0.521		4.84		33:30	1.58		A
2,3,4,7,8-PeCDF	2.75		4.84		34:07	1.53		A
1,2,3,4,7,8-HxCDF	2.56		4.84		36:13	1.23		A
1,2,3,6,7,8-HxCDF	1.39		4.84		36:19	1.24		A
2,3,4,6,7,8-HxCDF	2.14		4.84		36:49	1.26		A
1,2,3,7,8,9-HxCDF	0.682		4.84		37:37	1.28		A
1,2,3,4,6,7,8-HpCDF	18.1		4.84		39:04	1.05		
1,2,3,4,7,8,9-HpCDF	1.74		4.84		41:04	0.94		A
OCDF	44.8		9.69		45:01	0.89		
Total TCDDs	2.93		0.969	3.29				
Total PeCDDs	4.76		4.84	6.10				Q
Total HxCDDs	29.8		4.84	30.3				
Total HpCDDs	335		4.84					
Total TCDFs	12.6		0.969	14.0				
Total PeCDFs	32.5		4.84	32.6				
Total HxCDFs	40.4		4.84					
Total HpCDFs	61.3		4.84					
WHO-2005 TEQ (ND=0)	5.05			5.62				
WHO-2005 TEQ (ND=½)	5.29			5.62				

Client Information			**Sample Information**		
Project Name:	112G01797		Report Basis:	Dry	
			Matrix:	Soil	
Sample ID:	NTC21SB02-SO-0204		Weight / Volume:	11.62	g
			Solids / Lipids:	88.9	%
			Original pH :	NA	
Laboratory Information			Batch ID:	WG17345	
Project ID:	G330-42		Instrument:	HRMS1	
Sample ID:	G330-42-13B		Filename:	a08oct09a-10	
Collection Date/Time:	09/28/09	10:30	Retchk:	a08oct09a-1	
Receipt Date/Time:	09/30/09	9:45	Begin ConCal:	a08oct09a-1	
Extraction Date:	10/07/09		End ConCal:	a08oct09a-15	
Analysis Date/Time:	10/08/09	23:16	Initial Cal:	m8290-092309a	

Method 8290
NTC21SB02-SO-0204
Tetra Tech Nus, Inc.

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)		Percent Recovery (%)	RT (min.)	Ratio	Qualifier
Extraction Standards							
13C12-2,3,7,8-TCDD	2	1.74		86.9	31:30	0.77	
13C12-1,2,3,7,8-PeCDD	2	1.81		90.3	34:18	1.58	
13C12-1,2,3,6,7,8-HxCDD	2	1.76		87.8	37:01	1.26	
13C12-1,2,3,4,6,7,8-HpCDD	2	1.96		97.8	40:22	1.06	
13C12-OCDD	4.0	3.93		98.2	44:42	0.90	
13C12-2,3,7,8-TCDF	2	1.77		88.3	30:55	0.79	
13C12-1,2,3,7,8-PeCDF	2	1.72		86.0	33:30	1.59	
13C12-1,2,3,6,7,8-HxCDF	2	1.71		85.6	36:19	0.53	
13C12-1,2,3,4,6,7,8-HpCDF	2	1.76		87.8	39:04	0.45	
Cleanup Standards							
37Cl4-2,3,7,8-TCDD	0.4	0.417		104	31:31	-	
13C12-2,3,4,7,8-PeCDF	0.4	0.407		102	34:07	1.56	
13C12-1,2,3,4,7,8-HxCDD	0.4	0.416		104	36:57	1.27	
13C12-1,2,3,4,7,8-HxCDF	0.4	0.412		103	36:12	0.52	
13C12-1,2,3,4,7,8,9-HpCDF	0.4	0.402		101	41:03	0.45	
Injection Standards							
13C12-1,2,3,4-TCDD	2.0	-		-	31:04	0.79	
13C12-1,2,3,7,8,9-HxCDD	2.0	-		-	37:18	1.26	

Client Information			**Sample Information**		
Project Name:	112G01797		Report Basis:	Dry	
			Matrix:	Soil	
Sample ID:	NTC21SB02-SO-0204		Weight / Volume:	11.62	g
			Solids / Lipids:	88.9	%
			Original pH :	NA	
Laboratory Information			Batch ID:	WG17345	
Project ID:	G330-42		Instrument:	HRMS1	
Sample ID:	G330-42-13B		Filename:	a08oct09a-10	
Collection Date/Time:	09/28/09	10:30	Retchk:	a08oct09a-1	
Receipt Date/Time:	09/30/09	9:45	Begin ConCal:	a08oct09a-1	
Extraction Date:	10/07/09		End ConCal:	a08oct09a-15	
Analysis Date/Time:	10/08/09	23:16	Initial Cal:	m8290-092309a	

Form Version:[8290]Report

Analyzed by: DS
Date: 10-14-09

Reviewed by: CD
Date: 10/14/09

Method 8290
NTC21SB09-SO-0001
Tetra Tech Nus, Inc.

Analytical Data Summary Sheet

Analyte	Amount pg/g	EDL pg/g	RL pg/g	EMPC pg/g	RT (min.)	Ratio	Qualifier
2,3,7,8-TCDD	0.816		1.03		31:31	0.67	A
1,2,3,7,8-PeCDD	EMPC	0.513	5.13	5.90	34:19	0.27 *	
1,2,3,4,7,8-HxCDD	1.90		5.13		37:00	1.23	A
1,2,3,6,7,8-HxCDD	7.90		5.13		37:04	1.27	
1,2,3,7,8,9-HxCDD	5.17		5.13		37:21	1.25	
1,2,3,4,6,7,8-HpCDD	169		5.13		40:22	1.05	
OCDD	1310		10.3		44:42	0.90	
2,3,7,8-TCDF	3.61		1.03		30:55	0.78	
1,2,3,7,8-PeCDF	1.92		5.13		33:30	1.56	A
2,3,4,7,8-PeCDF	57.5		5.13		34:07	1.55	
1,2,3,4,7,8-HxCDF	5.91		5.13		36:13	1.30	
1,2,3,6,7,8-HxCDF	11.6		5.13		36:19	1.20	
2,3,4,6,7,8-HxCDF	26.2		5.13		36:51	1.24	
1,2,3,7,8,9-HxCDF	2.68		5.13		37:40	1.21	QA
1,2,3,4,6,7,8-HpCDF	82.4		5.13		39:06	1.05	
1,2,3,4,7,8,9-HpCDF	4.08		5.13		41:04	1.11	A
OCDF	141		10.3		45:01	0.90	
Total TCDDs	10.8		1.03	11.7			
Total PeCDDs	19.4		5.13	26.0			Q
Total HxCDDs	67.0		5.13				
Total HpCDDs	326		5.13				
Total TCDFs	215		1.03	216			Q DPE
Total PeCDFs	712		5.13	713			DPE
Total HxCDFs	393		5.13	396			Q
Total HpCDFs	202		5.13				
WHO-2005 TEQ (ND=0)	27.6			33.5			
WHO-2005 TEQ (ND=½)	27.9			33.5			

Client Information			**Sample Information**		
Project Name:	112G01797		Report Basis:	Dry	
			Matrix:	Soil	
Sample ID:	NTC21SB09-SO-0001		Weight / Volume:	11.11	g
			Solids / Lipids:	87.8	%
			Original pH :	NA	
Laboratory Information			Batch ID:	WG17345	
Project ID:	G330-42		Instrument:	HRMS1	
Sample ID:	G330-42-10C		Filename:	a08oct09a-8	
Collection Date/Time:	09/26/09	16:20	Retchk:	a08oct09a-1	
Receipt Date/Time:	09/30/09	9:45	Begin ConCal:	a08oct09a-1	
Extraction Date:	10/07/09		End ConCal:	a08oct09a-15	
Analysis Date/Time:	10/08/09	21:40	Initial Cal:	m8290-092309a	

Method 8290
NTC21SB09-SO-0001
Tetra Tech Nus, Inc.

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)		Percent Recovery (%)	RT (min.)	Ratio	Qualifier
Extraction Standards							
13C12-2,3,7,8-TCDD	2	1.81		90.3	31:30	0.78	
13C12-1,2,3,7,8-PeCDD	2	1.87		93.5	34:18	1.58	
13C12-1,2,3,6,7,8-HxCDD	2	1.82		91.1	37:04	1.25	
13C12-1,2,3,4,6,7,8-HpCDD	2	2.04		102	40:22	1.06	
13C12-OCDD	4.0	3.82		95.4	44:40	0.90	
13C12-2,3,7,8-TCDF	2	1.82		90.9	30:55	0.79	
13C12-1,2,3,7,8-PeCDF	2	1.76		88.2	33:30	1.57	
13C12-1,2,3,6,7,8-HxCDF	2	1.81		90.6	36:19	0.52	
13C12-1,2,3,4,6,7,8-HpCDF	2	1.86		92.8	39:04	0.45	
Cleanup Standards							
37Cl4-2,3,7,8-TCDD	0.4	0.427		107	31:31	-	
13C12-2,3,4,7,8-PeCDF	0.4	0.401		100	34:07	1.56	
13C12-1,2,3,4,7,8-HxCDD	0.4	0.411		103	36:58	1.27	
13C12-1,2,3,4,7,8-HxCDF	0.4	0.415		104	36:13	0.53	
13C12-1,2,3,4,7,8,9-HpCDF	0.4	0.407		102	41:03	0.45	
Injection Standards							
13C12-1,2,3,4-TCDD	2.0	-		-	31:04	0.79	
13C12-1,2,3,7,8,9-HxCDD	2.0	-		-	37:19	1.25	Q

Client Information			**Sample Information**		
Project Name:	112G01797		Report Basis:	Dry	
			Matrix:	Soil	
Sample ID:	NTC21SB09-SO-0001		Weight / Volume:	11.11	g
			Solids / Lipids:	87.8	%
			Original pH :	NA	
Laboratory Information			Batch ID:	WG17345	
Project ID:	G330-42		Instrument:	HRMS1	
Sample ID:	G330-42-10C		Filename:	a08oct09a-8	
Collection Date/Time:	09/26/09	16:20	Retchk:	a08oct09a-1	
Receipt Date/Time:	09/30/09	9:45	Begin ConCal:	a08oct09a-1	
Extraction Date:	10/07/09		End ConCal:	a08oct09a-15	
Analysis Date/Time:	10/08/09	21:40	Initial Cal:	m8290-092309a	

Form Version:[8290]Report

Analyzed by: DS
Date: 10-14-09

Reviewed by: [illegible]
Date: 10/14/09

TCDF Confirmation - Method 8290
NTC21SB09-SO-0001
Tetra Tech Nus, Inc.

Analytical Data Summary Sheet

Analyte	Amount (pg/g)	EDL (pg/g)	EMPC (pg/g)	RT (min.)	Ratio	Qualifier
2,3,7,8-TCDF	3.17	0.415		21.17	0.77	

Labeled Standard	Spiked Amount (ng)	RT (min.)	Ratio	Qualifier
Extraction Standards				
$^{13}C_{12}$-2,3,7,8-TCDF	2.00	21.15	0.71	

Client Information			**Sample Information**		
Project Name:	112G01797		Report Basis:	Dry	
			Matrix:	Soil	
Sample ID:	NTC21SB09-SO-0001		Weight / Volume:	11.11	g
			Solids / Lipids:	87.76	%
			Original pH :	NA	
Laboratory Information			Batch ID:	WG17345	
Project ID:	G330-42		Instrument:	hrms3	
Sample ID:	G330-42-10C		Filename:	c13oct09b-4	
Collection Date/Time:	09/26/09	16:20	Retchk:	c13oct09b-2	
Receipt Date:	09/30/09	9:45	Begin ConCal:	c13oct09b-1	
Extraction Date:	10/07/09		End ConCal:	c13oct09b-6	
Analysis Date/Time:	10/13/09	8:13	Initial Cal:	mcf-c042709a	

Analyzed by: DS
Date: 10-14-09

Reviewed by: [illegible]
Date: 10/23/09

Method 8290
NTC21SB17-SO-0001
Tetra Tech Nus, Inc.

Analytical Data Summary Sheet

Analyte	Amount pg/g	EDL pg/g	RL pg/g	EMPC pg/g	RT (min.)	Ratio	Qualifier
2,3,7,8-TCDD	EMPC	0.131	1.00	0.198	31:30	0.47 *	A
1,2,3,7,8-PeCDD	EMPC	0.500	5.00	0.760	34:19	0.42 *	A
1,2,3,4,7,8-HxCDD	ND	0.500	5.00				
1,2,3,6,7,8-HxCDD	**1.14**		5.00		37:04	1.25	A
1,2,3,7,8,9-HxCDD	**0.810**		5.00		37:19	1.14	A
1,2,3,4,6,7,8-HpCDD	**17.7**		5.00		40:22	1.02	
OCDD	**174**		10.0		44:40	0.89	
2,3,7,8-TCDF	**0.728**		1.00		30:55	0.81	A
1,2,3,7,8-PeCDF	**0.462**		5.00		33:30	1.58	A
2,3,4,7,8-PeCDF	**3.66**		5.00		34:07	1.61	A
1,2,3,4,7,8-HxCDF	**1.31**		5.00		36:12	1.42	A
1,2,3,6,7,8-HxCDF	**1.07**		5.00		36:19	1.22	A
2,3,4,6,7,8-HxCDF	**1.84**		5.00		36:49	1.16	A
1,2,3,7,8,9-HxCDF	**0.358**		5.00		37:37	1.37	QA
1,2,3,4,6,7,8-HpCDF	**9.64**		5.00		39:04	1.04	
1,2,3,4,7,8,9-HpCDF	**0.952**		5.00		41:03	1.06	A
OCDF	**19.8**		10.0		45:00	0.91	
Total TCDDs	**1.57**		1.00	4.05			
Total PeCDDs	**4.01**		5.00	5.17			Q
Total HxCDDs	**10.6**		5.00				
Total HpCDDs	**33.9**		5.00				
Total TCDFs	**16.2**		1.00	16.6			
Total PeCDFs	**40.9**		5.00	41.2			
Total HxCDFs	**29.8**		5.00				Q
Total HpCDFs	**25.2**		5.00	25.5			
WHO-2005 TEQ (ND=0)	**2.18**			3.14			
WHO-2005 TEQ (ND=½)	**2.52**			3.16			

Client Information			**Sample Information**		
Project Name:	112G01797		Report Basis:	Dry	
			Matrix:	Soil	
Sample ID:	NTC21SB17-SO-0001		Weight / Volume:	11.07	g
			Solids / Lipids:	90.3	%
			Original pH :	NA	
Laboratory Information			Batch ID:	WG17345	
Project ID:	G330-42		Instrument:	HRMS1	
Sample ID:	G330-42-11C		Filename:	a08oct09a-9	
Collection Date/Time:	09/26/09	13:26	Retchk:	a08oct09a-1	
Receipt Date/Time:	09/30/09	9:45	Begin ConCal:	a08oct09a-1	
Extraction Date:	10/07/09		End ConCal:	a08oct09a-15	
Analysis Date/Time:	10/08/09	22:28	Initial Cal:	m8290-092309a	

Method 8290
NTC21SB17-SO-0001
Tetra Tech Nus, Inc.

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)		Percent Recovery (%)	RT (min.)	Ratio	Qualifier
Extraction Standards							
13C12-2,3,7,8-TCDD	2	1.76		88.1	31:30	0.78	
13C12-1,2,3,7,8-PeCDD	2	1.88		94.0	34:18	1.57	
13C12-1,2,3,6,7,8-HxCDD	2	1.79		89.7	37:03	1.25	
13C12-1,2,3,4,6,7,8-HpCDD	2	2.01		100	40:21	1.05	
13C12-OCDD	4.0	3.47		86.6	44:40	0.89	
13C12-2,3,7,8-TCDF	2	1.79		89.3	30:55	0.78	
13C12-1,2,3,7,8-PeCDF	2	1.78		89.1	33:28	1.56	
13C12-1,2,3,6,7,8-HxCDF	2	1.78		88.9	36:18	0.53	
13C12-1,2,3,4,6,7,8-HpCDF	2	1.81		90.7	39:04	0.45	
Cleanup Standards							
37Cl4-2,3,7,8-TCDD	0.4	0.426		106	31:31	-	
13C12-2,3,4,7,8-PeCDF	0.4	0.420		105	34:07	1.58	
13C12-1,2,3,4,7,8-HxCDD	0.4	0.415		104	36:57	1.27	
13C12-1,2,3,4,7,8-HxCDF	0.4	0.426		107	36:12	0.52	
13C12-1,2,3,4,7,8,9-HpCDF	0.4	0.421		105	41:01	0.44	
Injection Standards							
13C12-1,2,3,4-TCDD	2.0	-		-	31:03	0.79	
13C12-1,2,3,7,8,9-HxCDD	2.0	-		-	37:19	1.26	Q

Client Information			**Sample Information**		
Project Name:	112G01797		Report Basis:	Dry	
			Matrix:	Soil	
Sample ID:	NTC21SB17-SO-0001		Weight / Volume:	11.07	g
			Solids / Lipids:	90.3	%
			Original pH :	NA	
Laboratory Information			Batch ID:	WG17345	
Project ID:	G330-42		Instrument:	HRMS1	
Sample ID:	G330-42-11C		Filename:	a08oct09a-9	
Collection Date/Time:	09/26/09	13:26	Retchk:	a08oct09a-1	
Receipt Date/Time:	09/30/09	9:45	Begin ConCal:	a08oct09a-1	
Extraction Date:	10/07/09		End ConCal:	a08oct09a-15	
Analysis Date/Time:	10/08/09	22:28	Initial Cal:	m8290-092309a	

Form Version:[8290]Report

Analyzed by: DS
Date: 10-14-09

Reviewed by: [illegible]
Date: 10/14/09

APPENDIX C

SUPPORT DOCUMENTATION

HOLDTIME

SDG G330-42B

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
DIOX	%	SB-092909-01	G330-42-15C	NM	09/29/2009	10/05/2009	10/08/2009	6	3	9
DIOX	%	RB-092909-01	G330-42-14C	NM	09/29/2009	10/05/2009	10/08/2009	6	3	9
DIOX	%	NTC21SB17-SO-0001	G330-42-11C	NM	09/26/2009	10/07/2009	10/08/2009	11	1	12
DIOX	%	NTC21SB09-SO-0001	G330-42-10C	NM	09/26/2009	10/07/2009	10/08/2009	11	1	12
DIOX	%	NTC21SB02-SO-0204	G330-42-13B	NM	09/28/2009	10/07/2009	10/08/2009	9	1	10
DIOX	%	FD-092609-02	G330-42-9C	NM	09/26/2009	10/07/2009	10/08/2009	11	1	12
DIOX	NG/KG	NTC21SB17-SO-0001	G330-42-11C	NM	09/26/2009	10/07/2009	10/08/2009	11	1	12
DIOX	NG/KG	NTC21SB09-SO-0001	G330-42-10C	NM	09/26/2009	10/07/2009	10/13/2009	11	6	17
DIOX	NG/KG	NTC21SB09-SO-0001	G330-42-10C	NM	09/26/2009	10/07/2009	10/08/2009	11	1	12
DIOX	NG/KG	NTC21SB02-SO-0204	G330-42-13B	NM	09/28/2009	10/07/2009	10/08/2009	9	1	10
DIOX	NG/KG	FD-092609-02	G330-42-9C	NM	09/26/2009	10/07/2009	10/12/2009	11	5	16
DIOX	NG/KG	FD-092609-02	G330-42-9C	NM	09/26/2009	10/07/2009	10/08/2009	11	1	12
DIOX	NG/L	SB-092909-01	G330-42-15C	NM	09/29/2009	10/05/2009	10/08/2009	6	3	9
DIOX	NG/L	RB-092909-01	G330-42-14C	NM	09/29/2009	10/05/2009	10/08/2009	6	3	9

G330-42

Project No:	Facility:	Project Manager:	Carrier:	Laboratory Name:
112G01797	**GREAT LAKES NTC**	**Biff Cummings**	**Airborne Express**	**SGS North American Inc.** **5500 Business Drive** **Wilmington, NC 28405**
Task No: **0064**	Turn Around Time: **Standard**	Field Ops Leader: **Shannon Hill**	Carrier/Waybill No. **8698 1038 6240 0215**	Point of Contact: **Linda McWhirter** **910.350.1903**

Date	Sample ID #	Time	Analysis	Loc ID	Matrix	Description	Preservative	Container Count	Container Type	Container Reqs	Comments
09/26/2009	FD-092609-02	00:00	**SW-846 8290**	QC	SO	Dioxins/Furans	4°C	2	Glass - Amber	4 oz. wide-mouth w/Teflon cap	
09/26/2009	NTC21SB09-SO-0001	16:20	**SW-846 8290**	NTC21SB09	SO	Dioxins/Furans	4°C	2	Glass - Amber	4 oz. wide-mouth w/Teflon cap	
09/26/2009	NTC21SB17-SO-0001	13:26	**SW-846 8290**	NTC21SB17	SO	Dioxins/Furans	4°C	2	Glass - Amber	4 oz. wide-mouth w/Teflon cap	
09/27/2009	NTC21SB14-SO-0001	09:30	**SW-846 8290**	NTC21SB14	SO	Dioxins/Furans	4°C	2	Glass - Amber	4 oz. wide-mouth w/Teflon cap	
09/28/2009	NTC21SB02-SO-0204	10:30	**SW-846 8290**	NTC21SB02	SO	Dioxins/Furans	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	MS/MSD
09/29/2009	RB-092909-01	11:26	**SW-846 8290**	QC	AQ	Dioxins/Furans	4°C	2	Glass - Amber	1L	
09/29/2009	SB-092909-01	10:31	**SW-846 8290**	QC	AQ	Dioxins/Furans	4°C	2	Glass - Amber	1L	

1. Relinquished By: **Shannon Hill**	Date: 09/29/2009	Time: 17:54	Received By: **Airborne Express**	Date: 09/29/2009	Time: 18:54
2. Relinquished By:	Date:	Time:	Received By:	Date: 9/30/09	Time: 9:45
3. Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Comments: 5.3 Seal intact

SGS Environmental Services, Inc.

Cust Proj ID: 112G01489
Client Name: Tetra Tech Nus, Inc. PO:

G330-42

Due Date: 2009-10-15 17:00:00
Login Date: 2009-10-01 17:13:40

Sample ID		Cust Sample ID	PRI	Date Collected	Date Received	Date Due	Matrix	LOC	Report	Analysis	Status
G330-42-1	A	NTC09SB01A-SO-0204	STD	2009-09-23 16:00:00	2009-09-30	2009-10-15	Soil	W2	Full	8290	PR::NEED
	B					2009-10-15	Soil	W2	Full	8290	PR::NEED
G330-42-2	A	FD-092509-02	STD	2009-09-25 00:00:00	2009-09-30	2009-10-15	Soil	W2	Full	8290	PR::NEED
	B					2009-10-15	Soil	W2	Full	8290	PR::NEED
G330-42-3	A	NTC09SB07-SO-0204	STD	2009-09-25 16:58:00	2009-09-30	2009-10-15	Soil	W2	Full	8290	PR::NEED
	B					2009-10-15	Soil	W2	Full	8290	PR::NEED
G330-42-4	A	NTC09SB09-SO-0406	STD	2009-09-25 14:50:00	2009-09-30	2009-10-15	Soil	W2	Full	8290	PR::NEED
	B					2009-10-15	Soil	W2	Full	8290	PR::NEED
G330-42-5	A	NTC09SB17-SO-0406	STD	2009-09-25 12:53:00	2009-09-30	2009-10-15	Soil	W2	Full	8290	PR::NEED
	B					2009-10-15	Soil	W2	Full	8290	PR::NEED
G330-42-6	A	NTC09SB20-SO-0204	STD	2009-09-25 14:18:00	2009-09-30	2009-10-15	Soil	W2	Full	8290	PR::NEED
	B					2009-10-15	Soil	W2	Full	8290	PR::NEED
G330-42-7	A	NTC09SB15-SO-0204	STD	2009-09-25 10:33:00	2009-09-30	2009-10-15	Soil	W2	Full	8290	PR::NEED
	B					2009-10-15	Soil	W2	Full	8290	PR::NEED
G330-42-8	A	RB-092909-01	STD	2009-09-29 11:50:00	2009-09-30	2009-10-15	Water	W2	Full	8290	PR::NEED
	B					2009-10-15	Water	W2	Full	8290	PR::NEED
G330-42-9	A	FD-092609-02	STD	2009-09-22 00:00:00	2009-09-30	2009-10-15	Soil	W2	Full	8290	PR::NEED
	B					2009-10-15	Soil	W2	Full	8290	PR::NEED
G330-42-10	A	NTC21SB09-SO-0001	STD	2009-09-26 16:20:00	2009-09-30	2009-10-15	Soil	W2	Full	8290	PR::NEED
	B					2009-10-15	Soil	W2	Full	8290	PR::NEED
G330-42-11	A	NTC21SB17-SO-0001	STD	2009-09-26 13:26:00	2009-09-30	2009-10-15	Soil	W2	Full	8290	PR::NEED
	B					2009-10-15	Soil	W2	Full	8290	PR::NEED
G330-42-13	A	NTC21SB02-SO-0204	STD	2009-09-28 10:30:00	2009-09-30	2009-10-15	Soil	W2	Full	8290	PR::NEED
G330-42-14	A	RB-092909-01	STD	2009-09-29 11:26:00	2009-09-30	2009-10-15	Water	W2	Full	8290	PR::NEED
	B					2009-10-15	Water	W2	Full	8290	PR::NEED
G330-42-15	A	SB-092909-01	STD	2009-09-29 10:31:00	2009-09-30	2009-10-15	Water	W2	Full	8290	PR::NEED
	B					2009-10-15	Water	W2	Full	8290	PR::NEED
G330-42-16 MS	A	NTC09SB15-SO-0204 MS	STD	2009-09-26 10:33:00	2009-09-30	2009-10-15	Soil	W2	Full	8290	PR::NEED
	B					2009-10-15	Soil	W2	Full	8290	PR::NEED
G330-42-17 MSD	A	NTC09SB15-SO-0204 MSD	STD	2009-09-26 10:33:00	2009-09-30	2009-10-15	Soil	W2	Full	8290	PR::NEED
	B					2009-10-15	Soil	W2	Full	8290	PR::NEED
G330-42-18 MS	A	NTC21SB02-SO-0204 MS	STD	2009-09-28 10:30:00	2009-09-30	2009-10-15	Soil	W2	Full	8290	PR::NEED
G330-42-19 MSD	A	NTC21SB02-SO-0204 MSD	STD	2009-09-28 10:30:00	2009-09-30	2009-10-15	Soil	W2	Full	8290	PR::NEED

SGS North America Inc.

Sample Receipt Checklist (SRC)

Client: Tetra Tech Lab Proj. ID: G330-42

Client Proj. ID:

1. ✓ Shipped
   ___ Hand Delivered
   Notes:

2. ✓ COC Present on Receipt
   ___ No COC
   ___ Additional Transmittal Forms
   Notes:

3. ✓ Custody Tape on Container
   ___ No Custody Tape
   Notes:

4. ✓ Samples Intact
   ___ Samples Broken / Leaking
   ___ VOA Vials Checked for Air Bubbles
   Notes:

5. ✓ Chilled on Receipt Actual Temp.(s) in °C: 5.3
   ___ Ambient on Receipt
   ___ Walk-in on Ice; Coming down to temp.
   Notes:

6. ✓ Sufficient Sample Submitted
   ___ Insufficient Sample Submitted
   Notes:

7. ✓ Samples Preserved Correctly
   ___ Improper Preservative(s)
   ___ None recommended (N/A)
   (see preservative checklist where applicable)
   Notes:

8. ✓ Received Within Holding Time
   ___ Not Received Within Holding Time
   ___ N/A
   Notes:

9. ✓ No Discrepancies Noted
   ___ Discrepancies Noted
   ___ No COC Received
   Notes:

10. ___ No Headspace present in VOC vials
    ___ Headspace present in VOC vials >6mm
    ✓ N/A
    Notes:

Comments: 6 containers rec'd for Sample NTC09SB15-SO-0204 and NO containers rec'd for NTC21SB14-SO-0001. Per client: NTC21SB14-SO-0001 was not sampled. Assign MS/MSD to NTC09SB15-SO-0204 and NTC21SB02-SO-0204. L 10/2/09

Inspected and Logged in by: [illegible]
Date / Time: 10/2/09

MI11.071309.3

List of Qualifiers: Dioxin's

B Analyte was detected in the Lab Method Blank at a level above the Reporting Limit.

EDL "Estimated Detection Limit"

EMPC "Estimated Maximum Possible Concentration"

RL Report Limit

CL Control Limit

U Undetected

ppt Parts-per-trillion (pg/g; ng/L)

V Recovery is below quality control limit. The data has been validated based on a favorable signal-to-noise and detection limit.

Outside quality control limits

* Indicates that the ion-ratio fails high or low; analyte reported as an EMPC

An average uncertainty of 30% can be routinely achieved as concluded from the evaluation of HRGC-HRMS standard operating procedures. The following flags warn the data user of situations where the uncertainty may be greater than stated.

A Amount detected is less than the Lower Method Calibration Limit.

J Amount detected is between the Method Detection Limit and the Lower Calibration Limit.

O The recovery of this analyte in the OPR is above the Method QC Limits and the reported concentration in the sample may be biased high.

E Amount detected is greater than the Upper Calibration Limit.

S The amount of analyte present has saturated the detector. This situation results in an underestimation of the affected analyte(s).

Q Indicates the presence of a quantitative interference. This situation may result in an underestimation of the affected analyte(s).

I Indicates the presence of a qualitative interference that could cause a false positive or an overestimation of the affected analyte(s).

DPE Indicates the presence of a peak in the polychlorinated diphenylether channel that could cause a false positive or an overestimation of the affected analyte(s).

DC250.081908.1

Toxic Equivalency Factors

Analyte	WHO* 1998	WHO* 2005	International-89	MADEP+
2,3,7,8-TCDD	1	1	1	1
1,2,3,7,8-PeCDD	1	1	0.5	0.5
1,2,3,4,7,8-HxCDD	0.1	0.1	0.1	0.1
1,2,3,6,7,8-HxCDD	0.1	0.1	0.1	0.1
1,2,3,7,8,9-HxCDD	0.1	0.1	0.1	0.1
1,2,3,4,6,7,8-HpCDD	0.01	0.01	0.01	0.1
OCDD	0.0001	0.0003	0.001	0.001
2,3,7,8-TCDF	0.1	0.1	0.1	0.1
1,2,3,7,8-PeCDF	0.05	0.03	0.05	0.5
2,3,4,7,8-PeCDF	0.5	0.3	0.5	0.5
1,2,3,4,7,8-HxCDF	0.1	0.1	0.1	0.1
1,2,3,6,7,8-HxCDF	0.1	0.1	0.1	0.1
2,3,4,6,7,8-HxCDF	0.1	0.1	0.1	0.1
1,2,3,7,8,9-HxCDF	0.1	0.1	0.1	0.1
1,2,3,4,6,7,8-HpCDF	0.01	0.01	0.01	0.1
1,2,3,4,7,8,9-HpCDF	0.01	0.01	0.01	0.1
OCDF	0.0001	0.0003	0.001	0.001

* World Health Organization
+ Massachusetts Department of Environmental Protection

Cal: m8290-092309a CAL.

Results: Version: V3.6 6-JAN-2000 17:51:42

Ent	Name	Mean RRF	Std	%RSD	a23sep09a-2 RRF#1 (0.25)	a23sep09a-4 RRF#2 (2.00)	a23sep09a-5 RRF#3 (10.0)	a23sep09a-6 RRF#4 (40.0)	a23sep09a-7 RRF#5 (200 pg/ml)
1	2,3,7,8-TCDD	1.0293	18	3.24 %	1.05	0.98	1.02	1.03	1.07
2	1,2,3,7,8-PeCDD	1.0539	19	4.18 %	0.99	1.03	1.06	1.07	1.11
3	1,2,3,4,7,8-HxCDD	0.9679	20	1.64 %	0.95	0.96	0.96	0.99	0.98
4	1,2,3,6,7,8-HxCDD	0.9886	20	2.54 %	1.01	0.95	0.98 calc.	1.00	1.00
5	1,2,3,7,8,9-HxCDD	0.9540	20	3.13 %	1.00	0.93	0.94	0.95	0.95
6	1,2,3,4,6,7,8-HpCDD	1.0970	21	3.94 %	1.15	1.04	1.08	1.09	1.13
7	OCDD	1.1240	22	6.39 %	1.24 calc.	1.05	1.08	1.11	1.14
8	2,3,7,8-TCDF	1.0424	23	6.47 %	1.14	0.96	1.00	1.05	1.07 calc.
9	1,2,3,7,8-PeCDF	0.9997	24	3.89 %	0.94	0.99	1.01	1.02	1.04
10	2,3,4,7,8-PeCDF	1.0386	24	2.02 %	1.03	1.03 calc.	1.01	1.06	1.06
11	1,2,3,4,7,8-HxCDF	1.0846	25	1.83 %	1.11	1.06	1.09	1.09	1.07
12	1,2,3,6,7,8-HxCDF	1.1500	25	3.25 %	1.13	1.10	1.15	1.17	1.20
13	2,3,4,6,7,8-HxCDF	1.1020	25	1.44 %	1.08	1.09	1.11	1.11	1.12
14	1,2,3,7,8,9-HxCDF	0.9369	25	6.28 %	0.88	0.89	0.94	0.94 calc.	1.03
15	1,2,3,4,6,7,8-HpCDF	1.3813	26	3.02 %	1.40	1.31	1.37	1.41	1.42
16	1,2,3,4,7,8,9-HpCDF	1.0673	26	5.37 %	1.08	0.97	1.11	1.09	1.10
17	OCDF	1.3977	22	9.03 %	1.34	1.29	1.31	1.47	1.59
18	13C-2,3,7,8-TCDD	1.1184	27	1.49 %	1.13	1.10 calc.	1.10	1.12	1.14
19	13C-1,2,3,7,8-PeCDD	0.8116	27	5.64 %	0.84	0.76	0.77	0.82	0.87
20	13C-1,2,3,6,7,8-HxCDD	1.0736	28	2.09 %	1.05	1.06	1.08	1.07 calc.	1.11
21	13C-1,2,3,4,6,7,8-HpCDD	0.7360	28	2.32 %	0.76	0.71	0.74	0.73	0.75
22	13C-OCDD	0.5833	28	5.91 %	0.58 calc.	0.53	0.61	0.58	0.62
23	13C-2,3,7,8-TCDF	1.7135	27	1.08 %	1.73	1.74	1.71 calc.	1.70	1.69
24	13C-1,2,3,7,8-PeCDF	1.3731	27	5.15 %	1.42	1.28	1.34	1.37	1.46
25	13C-1,2,3,6,7,8-HxCDF	1.4379	28	0.42 %	1.43	1.44	1.43	1.45	1.44
26	13C-1,2,3,4,6,7,8-HpCDF	1.0173	28	2.10 %	1.05	1.00	1.01	1.00	1.03 calc.
27	13C-1,2,3,4-TCDD	-		- %	-	-	-	-	-
28	13C-1,2,3,7,8,9-HxCDD	-		- %	-	-	-	-	-
29	37Cl-2,3,7,8-TCDD	1.1662	27	5.09 %	1.15	1.10	1.13	1.21	1.24
30	13C-2,3,4,7,8-PeCDF	1.3373	27	4.37 %	1.38	1.27	1.28	1.35	1.41
31	13C-1,2,3,4,7,8-HxCDD	0.9822	28	1.16 %	0.99	0.99	0.96	0.98	0.99
32	13C-1,2,3,4,7,8-HxCDF	1.2981	28	3.16 %	1.32	1.33	1.31	1.29	1.23
33	13C-1,2,3,4,7,8,9-HpCDF	0.7821	28	2.85 %	0.79	0.75 calc.	0.80	0.77	0.79
34	37Cl-2,3,7,8-TCDD	1.0425	18	3.95 %	1.02	0.99	1.03 calc.	1.07	1.09
35	13C-2,3,4,7,8-PeCDF	0.9744	24	1.74 %	0.97	1.00	0.96	0.99	0.96
36	13C-1,2,3,4,7,8-HxCDD	0.9152	20	2.68 %	0.94	0.93	0.89	0.92	0.89
37	13C-1,2,3,4,7,8-HxCDF	0.9028	25	3.19 %	0.92	0.92	0.91	0.89	0.86
38	13C-1,2,3,4,7,8,9-HpCDF	0.7688	26	2.52 %	0.76	0.75	0.80	0.78	0.77
39	Total Tetra-Furans	1.0424		6.47 %	1.14	0.96	1.00	1.05	1.07
40	Total Tetra-Dioxins	1.0293		3.24 %	1.05	0.98	1.02	1.03	1.07
41	Total Penta-Furans Fn1	1.0191	9 10	2.59 %	0.98	1.01	1.01	1.04	1.05
42	Total Penta-Furans Fn2	1.0191		2.59 %	0.98	1.01	1.01	1.04	1.05
43	Total Penta-Dioxins	1.0539		4.18 %	0.99	1.03	1.06	1.07	1.11
44	Total Hexa-Furans	1.0684		2.58 %	1.05	1.03	1.07	1.08	1.11
45	Total Hexa-Dioxins	0.9702		1.90 %	0.99	0.95	0.96	0.98	0.98

TM 9-27-09

46	Total Hepta-Furans	1.2243	3.90 %	1.24	1.14	1.24	1.25	1.26
47	Total Hepta-Dioxins	1.0970	3.94 %	1.15	1.04	1.08	1.09	1.13
48	HxCDPE	-	- %	-	-	-	-	-
49	HpCDPE	-	- %	-	-	-	-	-
50	OCDPE	-	- %	-	-	-	-	-
51	NCDPE	-	- %	-	-	-	-	-
52	DCDPE	-	- %	-	-	-	-	-
53	QC CHK ION (Tetra)	-	- %	-	-	-	-	-
54	QC CHK ION (Penta)	-	- %	-	-	-	-	-
55	QC CHK ION (Hexa)	-	- %	-	-	-	-	-
56	QC CHK ION (Hepta)	-	- %	-	-	-	-	-
57	QC CHK ION (Octa)	-	- %	-	-	-	-	-

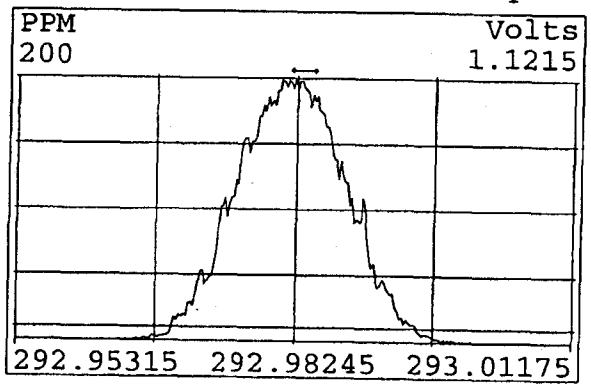
CAL

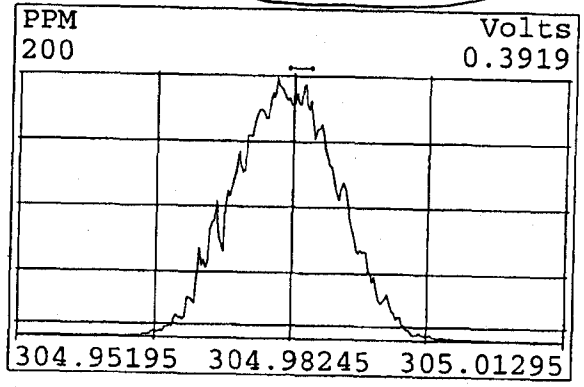
HRMS2 Sequence Log

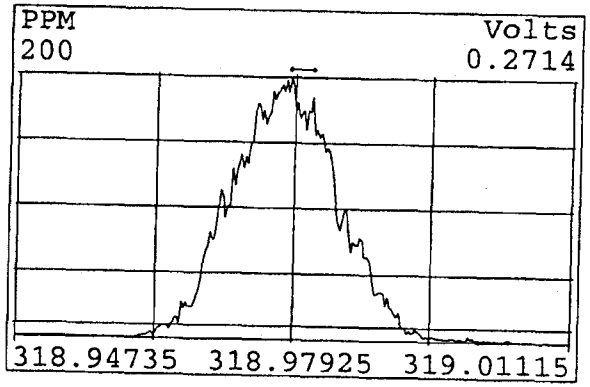
SGS Environmental Services

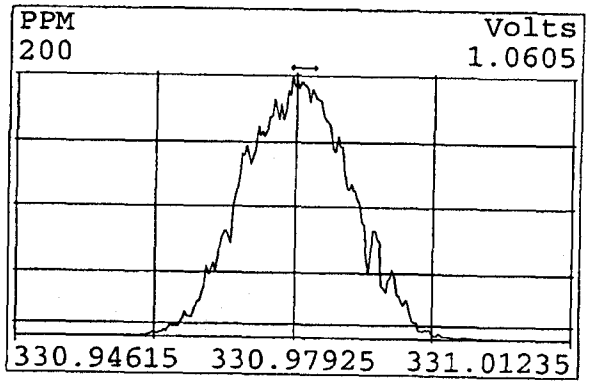
Data File S	Sample ID	Analyst	Acq. Date	Time
a23sep09a;1	;SB	;JWP	23-SEP-09	06:57:45
a23sep09a;2	;CS0.5 S30-144A	;JWP	23-SEP-09	07:46:05
a23sep09a;3	;CS1 S30-144B	;JWP	23-SEP-09	08:34:22
a23sep09a;4	;CS2 S30-144C	;JWP	23-SEP-09	09:22:38
a23sep09a;5	;CS3 S30-144D	;JWP	23-SEP-09	10:10:54
a23sep09a;6	;CS4 S30-144E	;JWP	23-SEP-09	10:59:11
a23sep09a;7	;CS5 S30-144F	;JWP	23-SEP-09	11:47:31

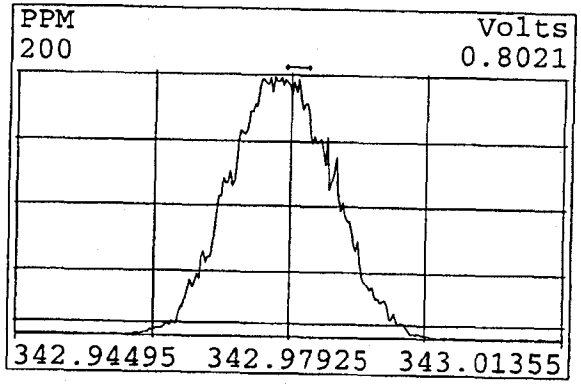
Peak Locate Examination:23-SEP-2009:06:55 File:A23SEP09A_L
Experiment:EXP_DB5MS Function:1 Reference:PFK

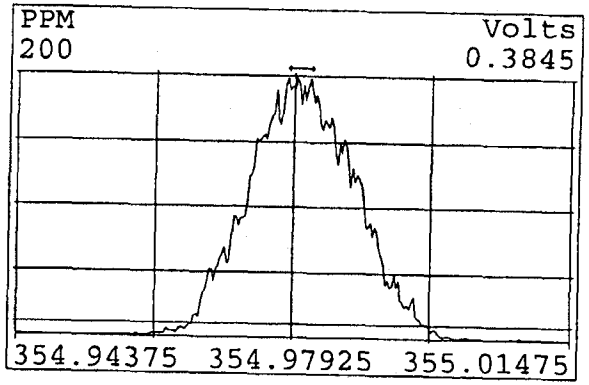


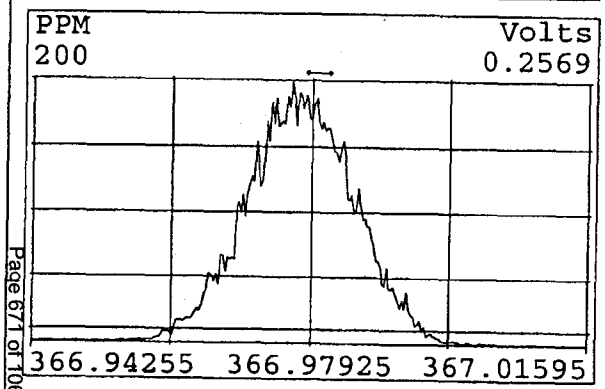


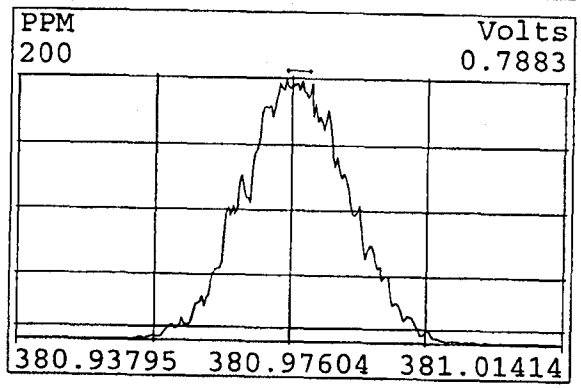




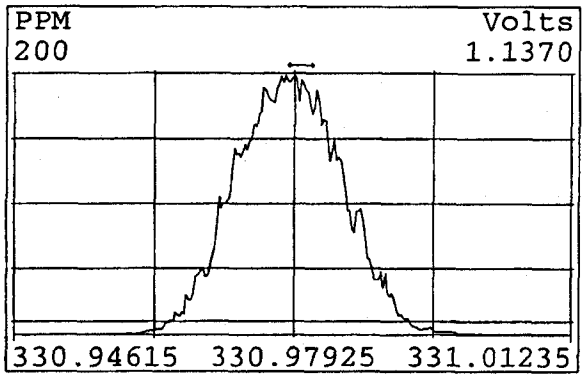


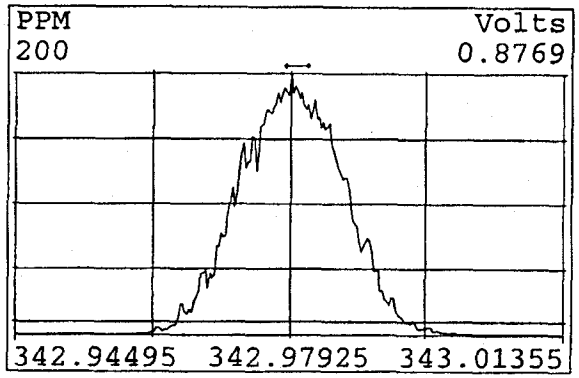


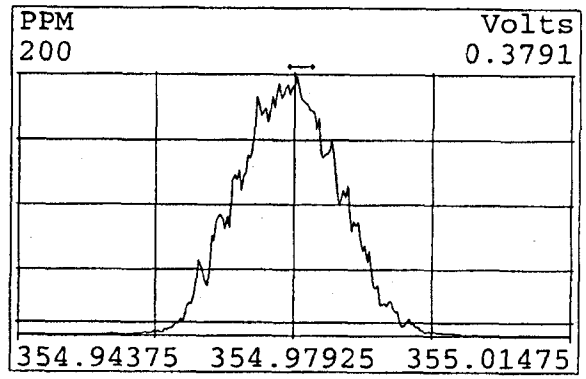


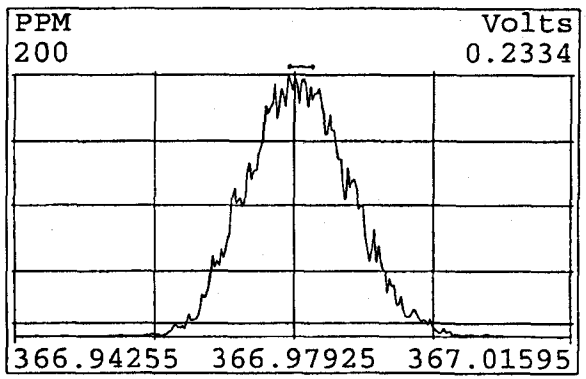


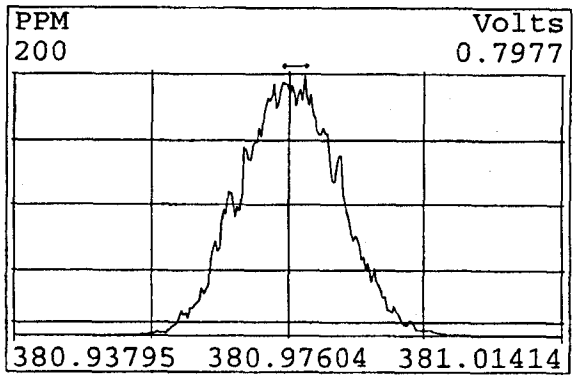
Peak Locate Examination:23-SEP-2009:06:56 File:A23SEP09A_L
Experiment:EXP_DB5MS Function:2 Reference:PFK

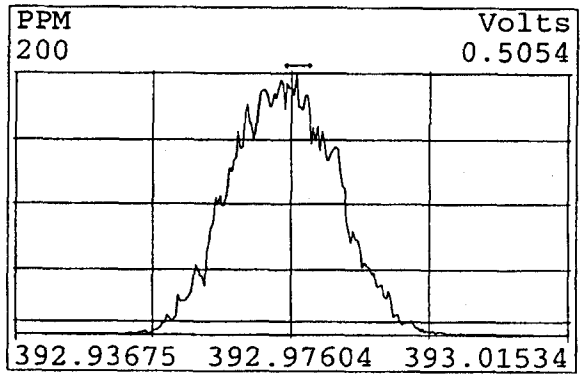


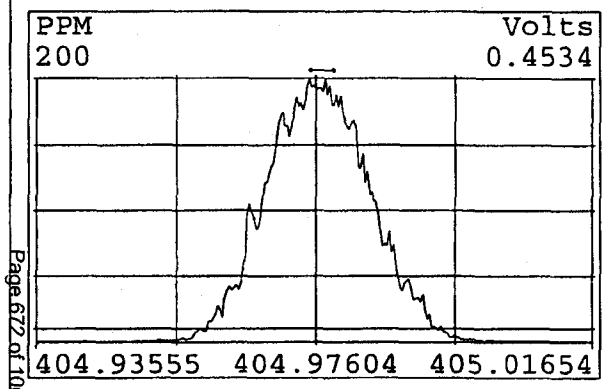


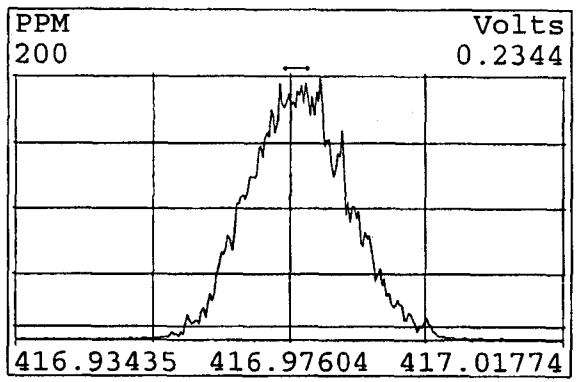




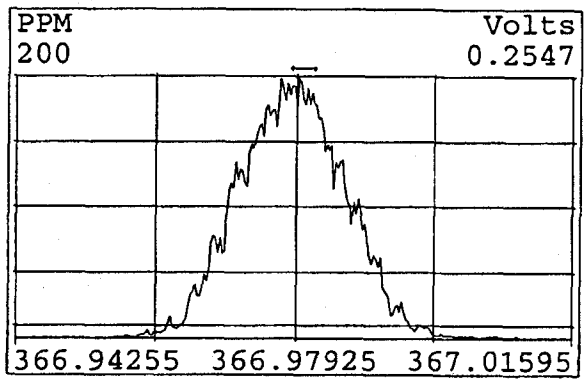


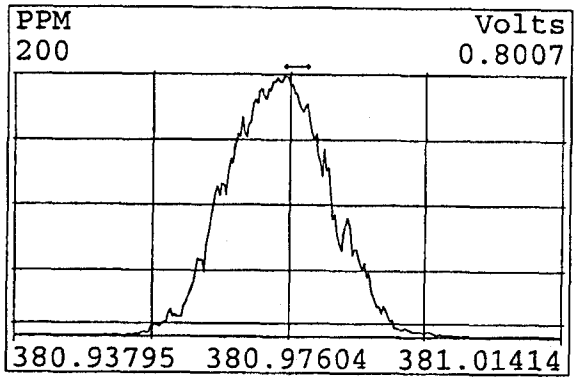


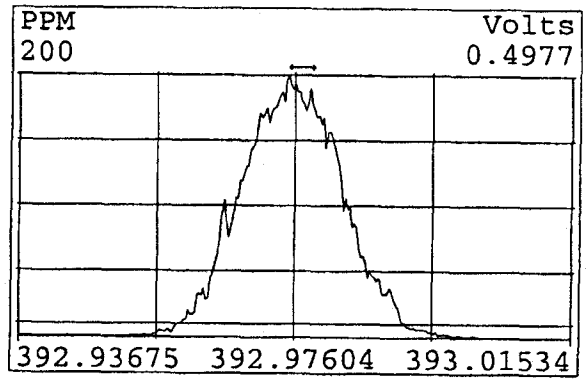


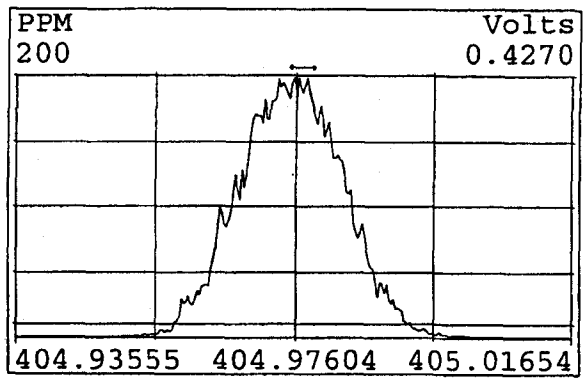


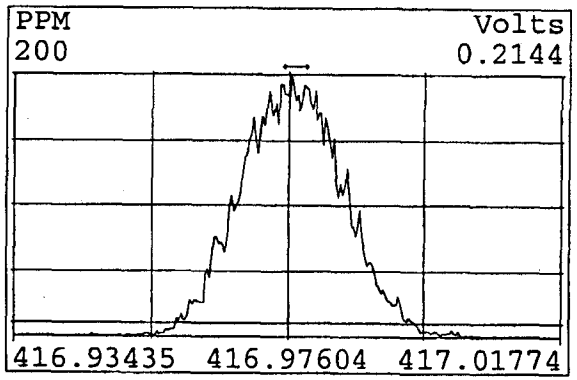
Peak Locate Examination:23-SEP-2009:06:56 File:A23SEP09A_L
Experiment:EXP_DB5MS Function:3 Reference:PFK

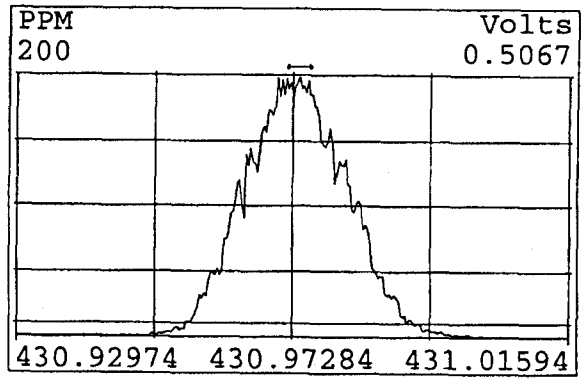


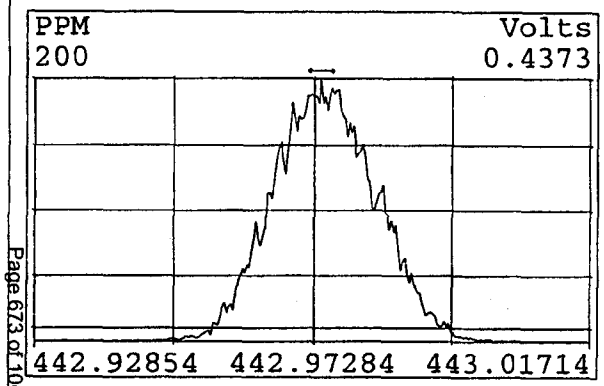


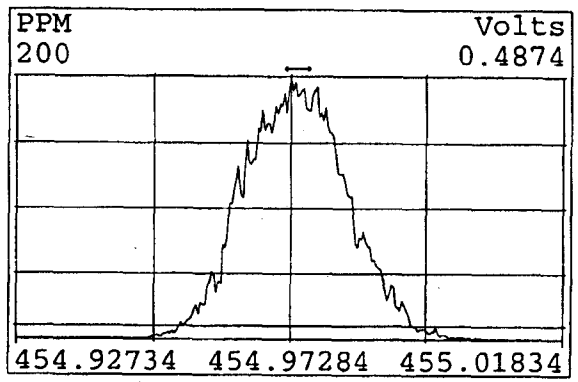




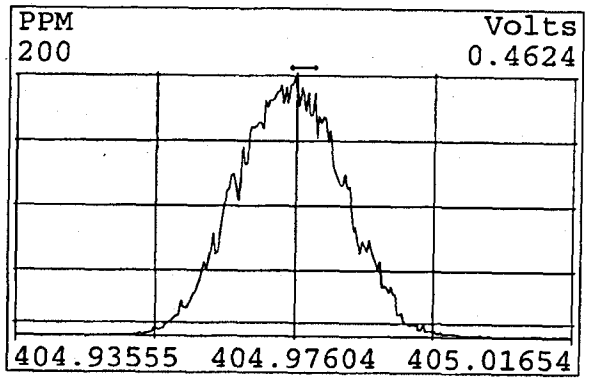


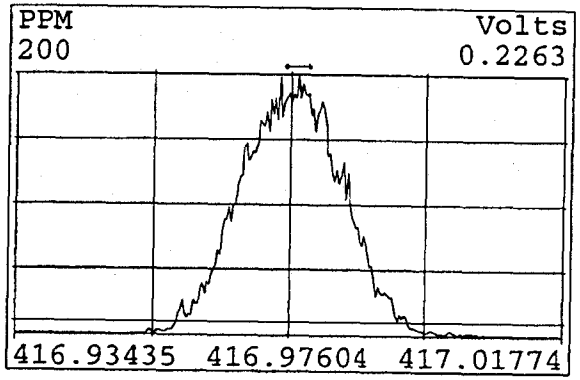


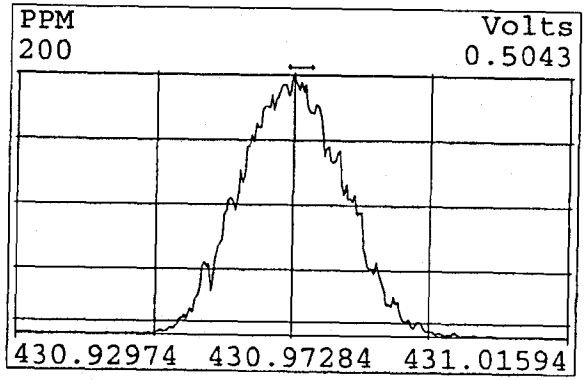


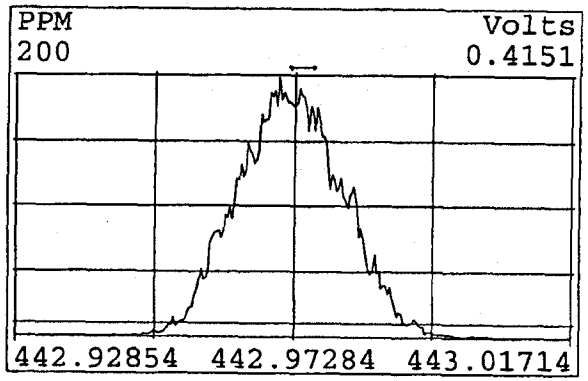


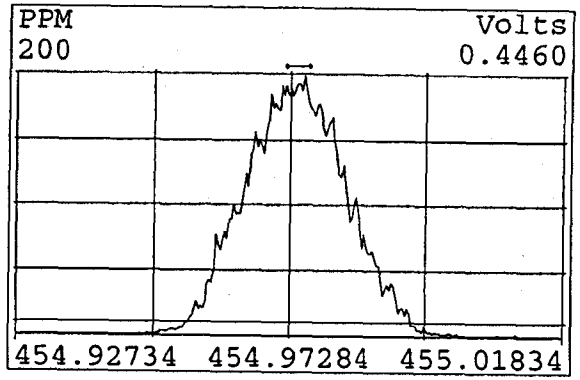
Peak Locate Examination:23-SEP-2009:06:56 File:A23SEP09A_L
Experiment:EXP_DB5MS Function:4 Reference:PFK

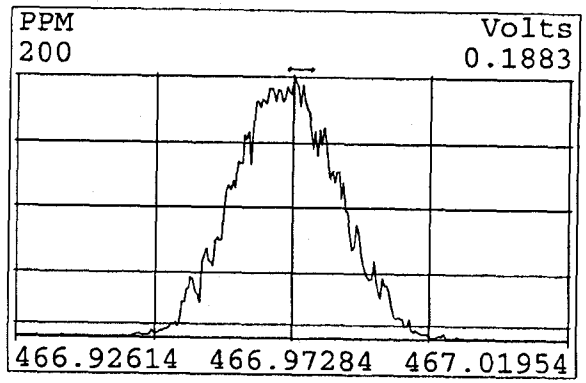


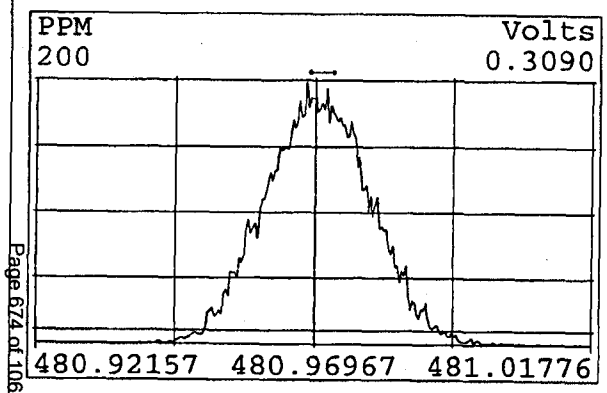




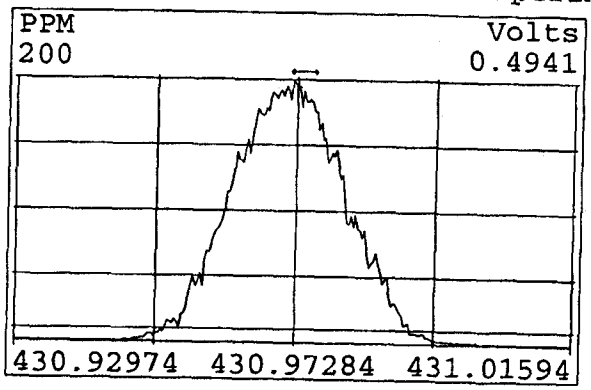


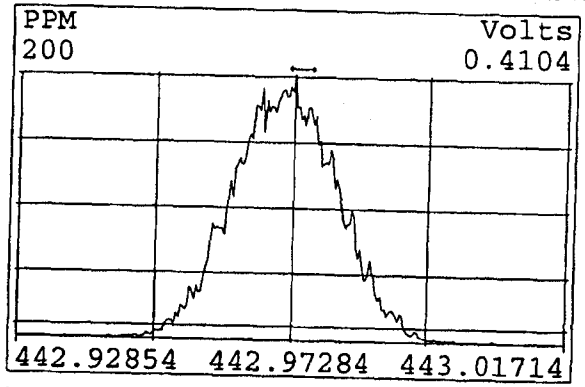


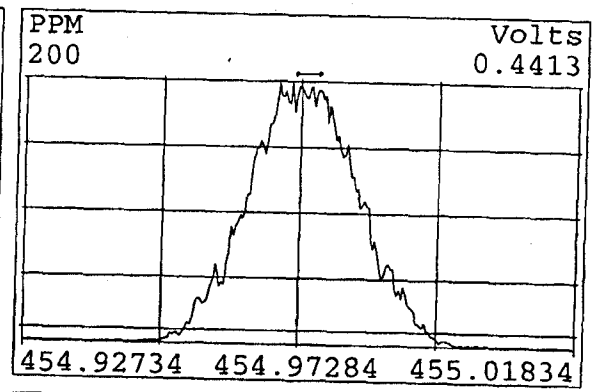


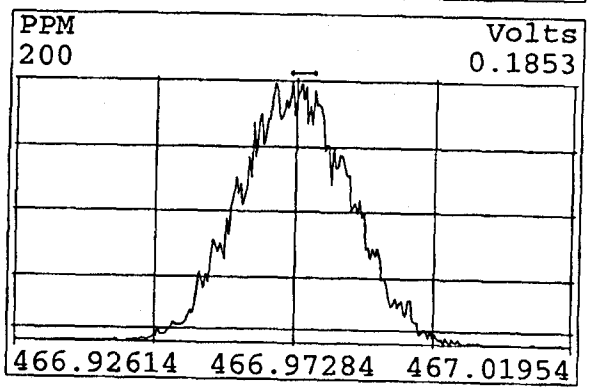


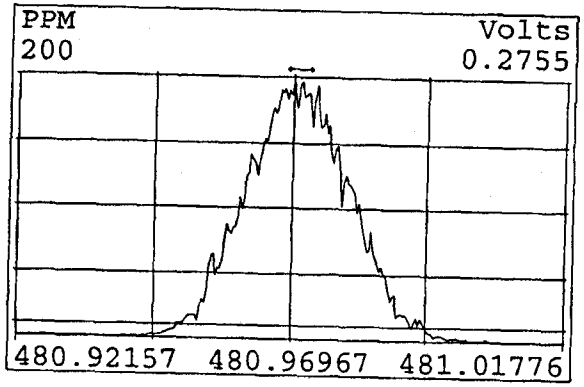
Peak Locate Examination:23-SEP-2009:06:57 File:A23SEP09A_L
Experiment:EXP_DB5MS Function:5 Reference:PFK

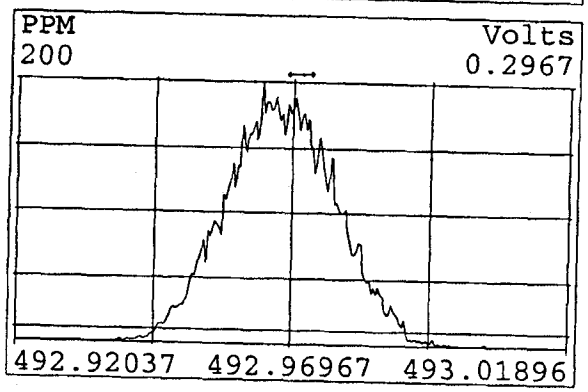


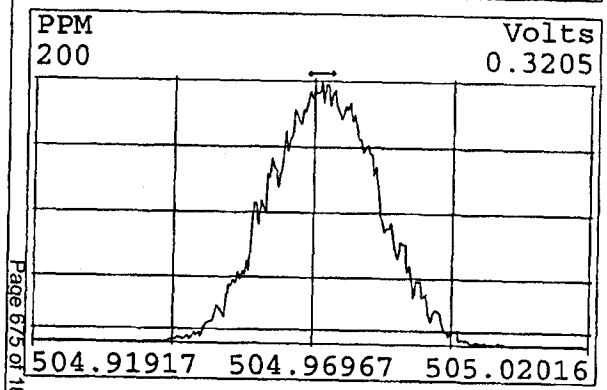


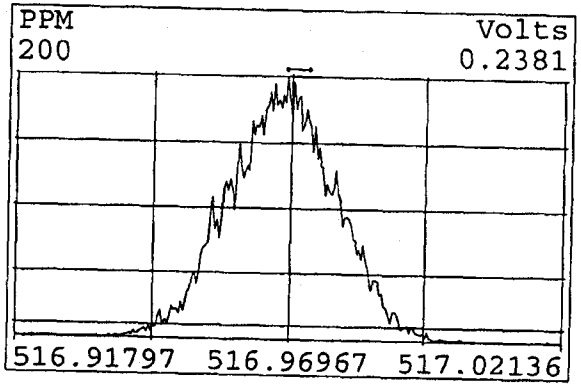




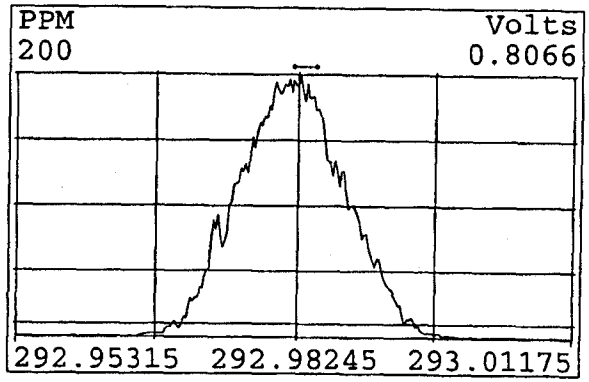


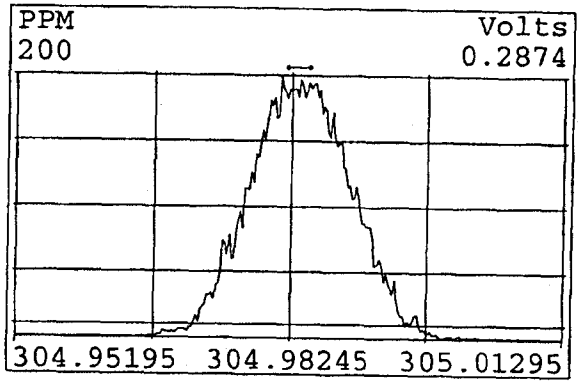


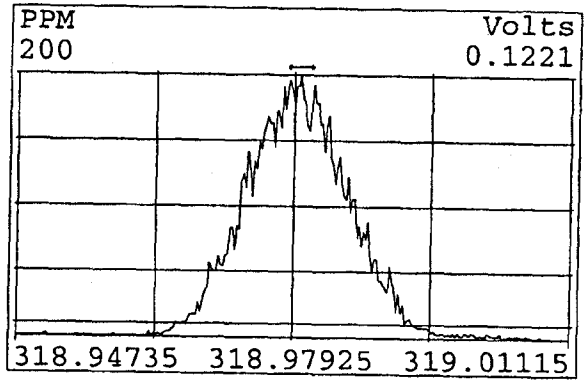


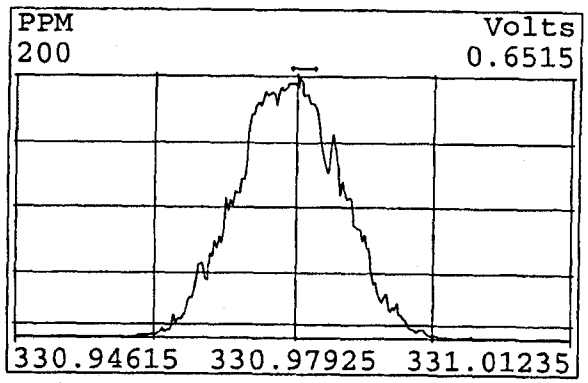


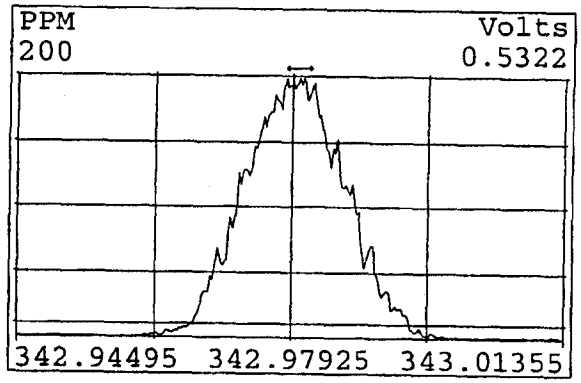
Peak Locate Examination:23-SEP-2009:12:35 File:A23SEP09A_RES_CHECK
Experiment:EXP_DB5MS Function:1 Reference:PFK

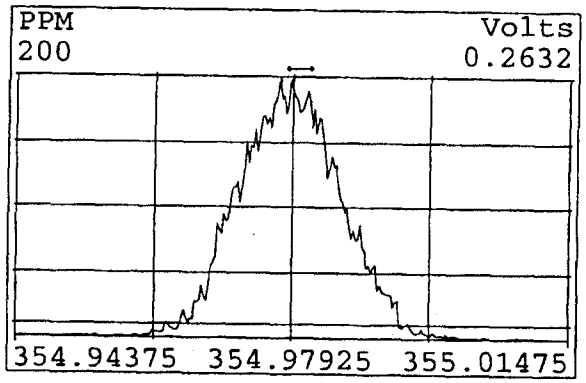


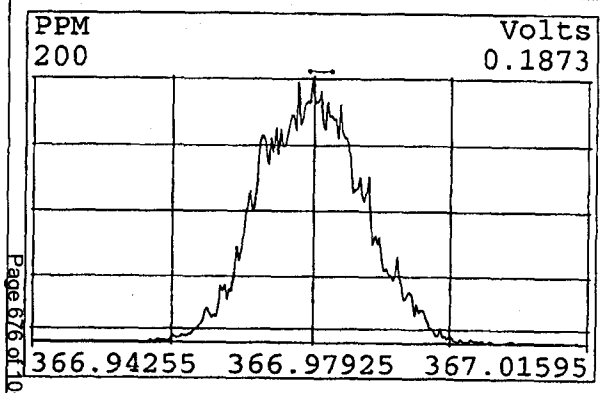


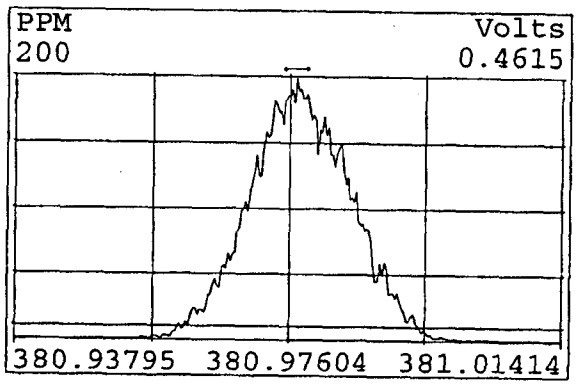




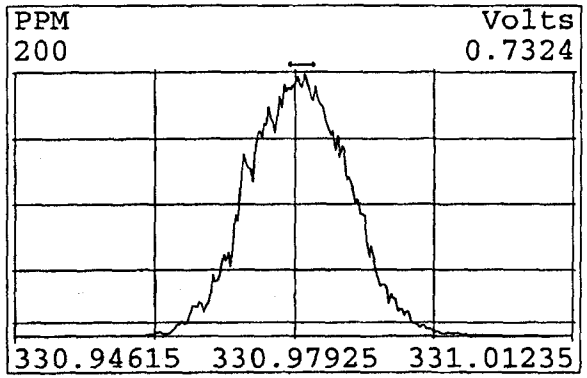


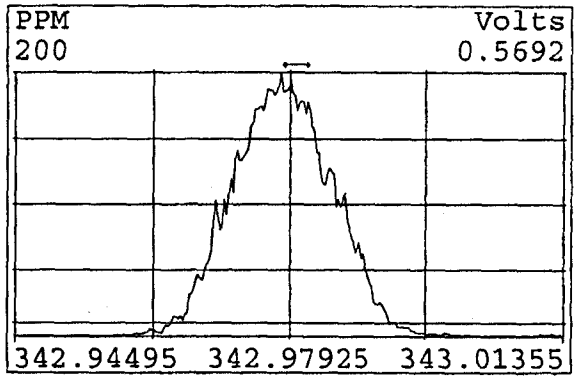


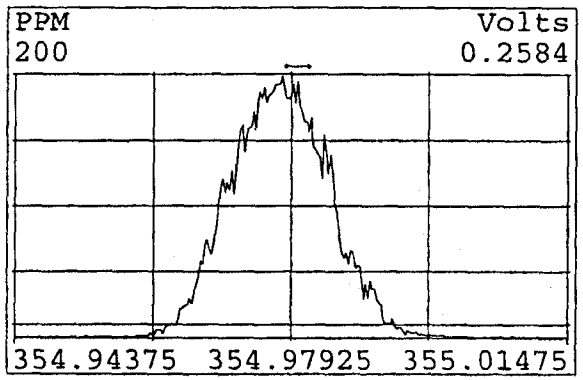


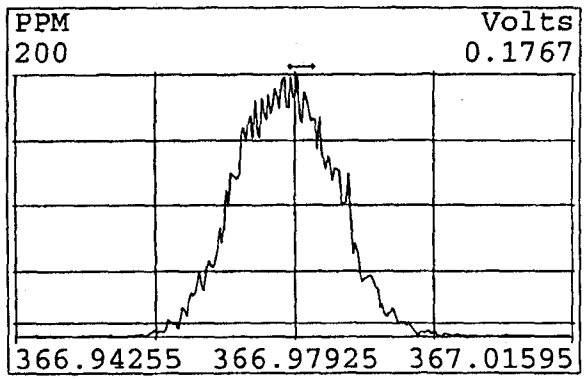


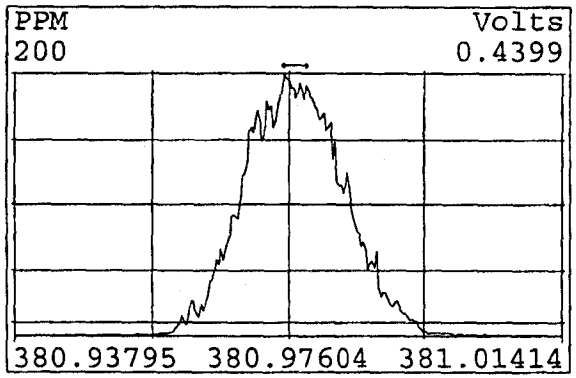
Peak Locate Examination:23-SEP-2009:12:36 File:A23SEP09A_RES_CHECK
Experiment:EXP_DB5MS Function:2 Reference:PFK

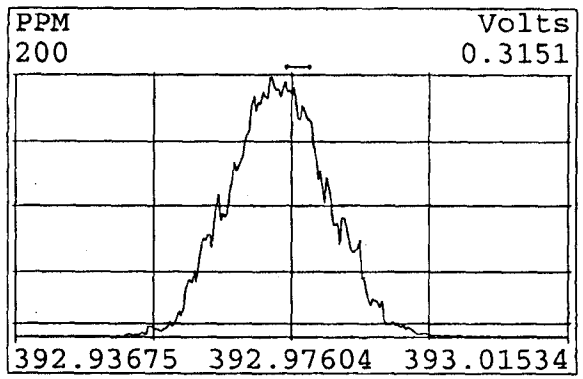


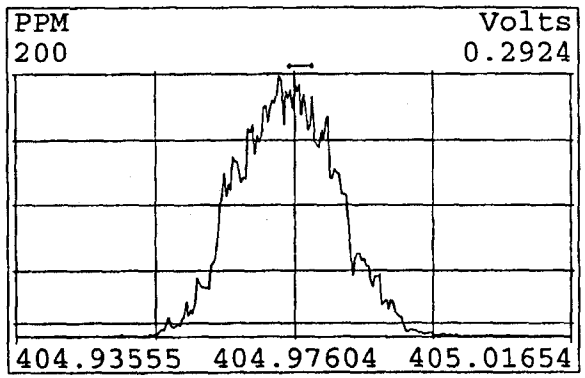


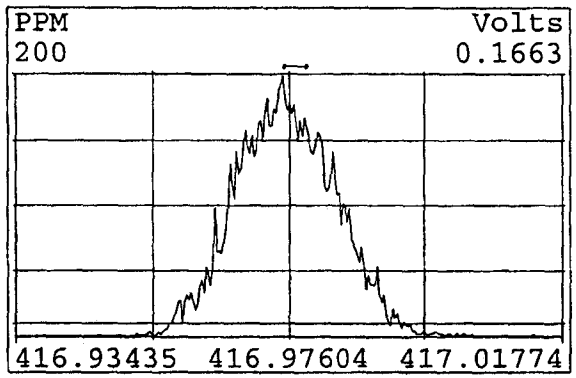




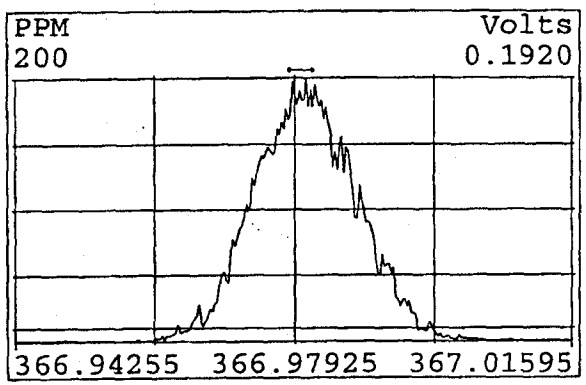


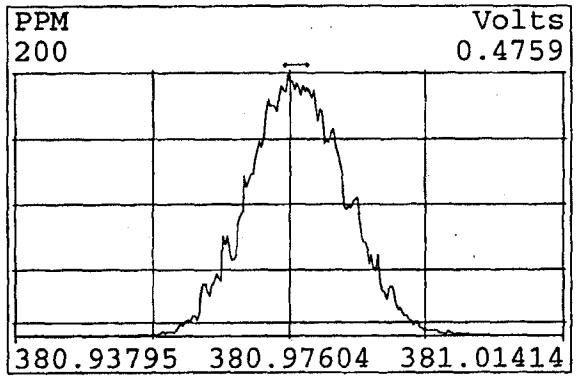


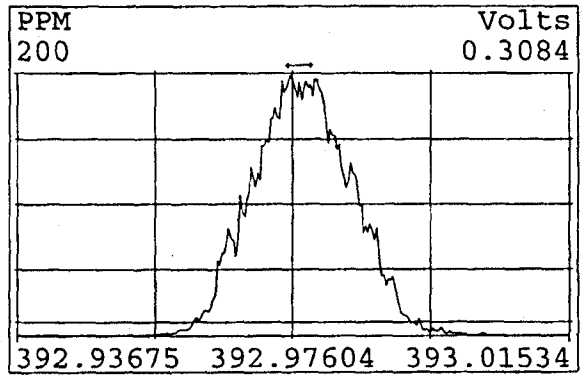


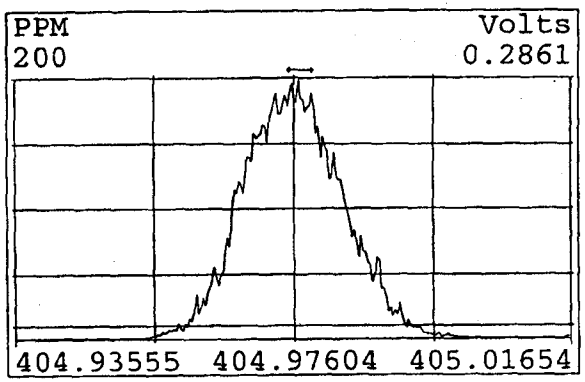


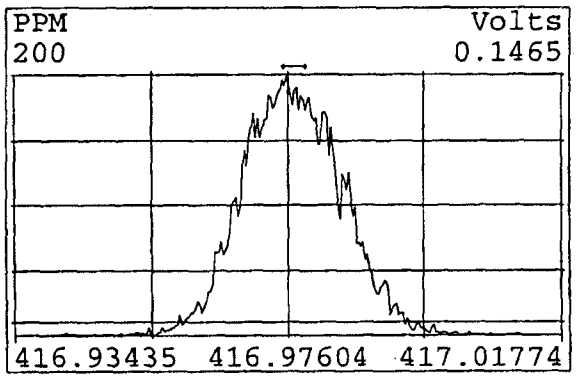
Peak Locate Examination:23-SEP-2009:12:37 File:A23SEP09A_RES_CHECK
Experiment:EXP_DB5MS Function:3 Reference:PFK

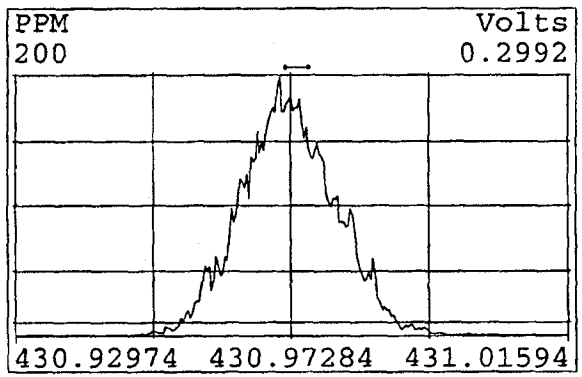


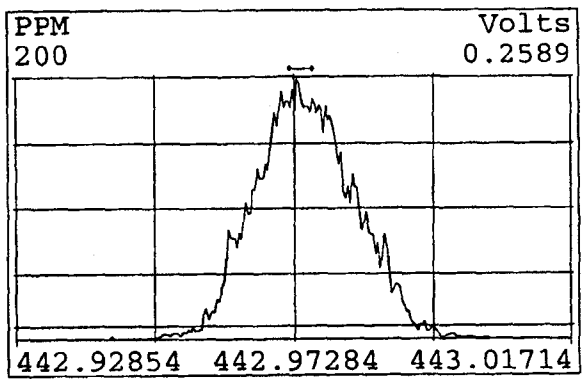


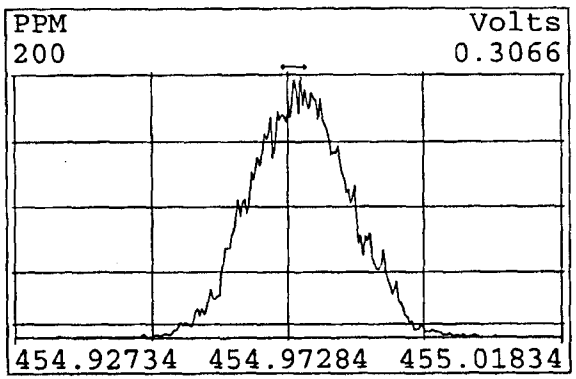




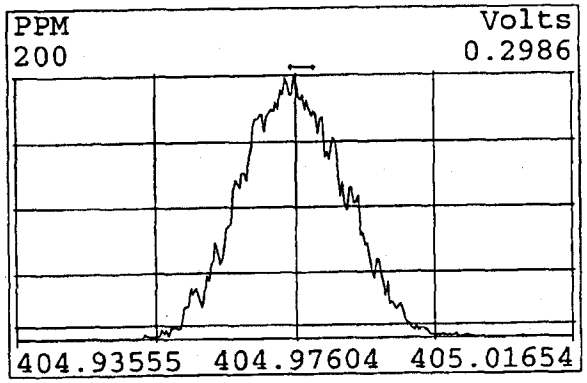


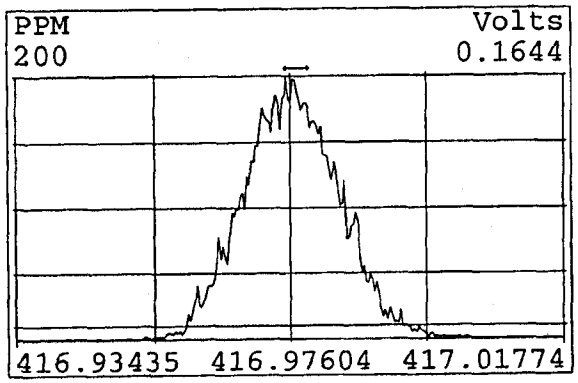


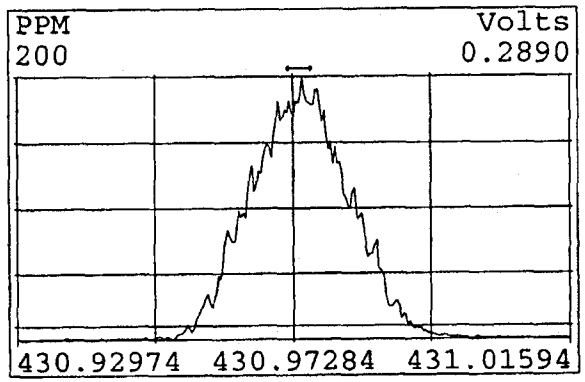


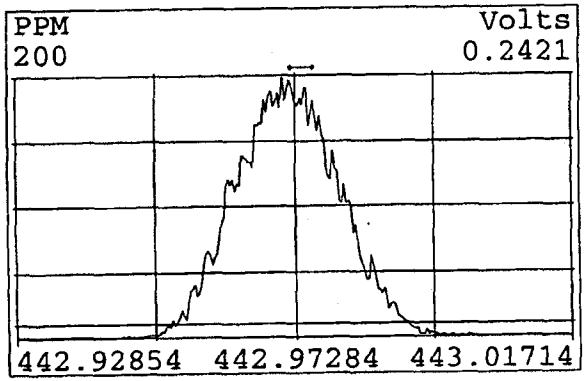


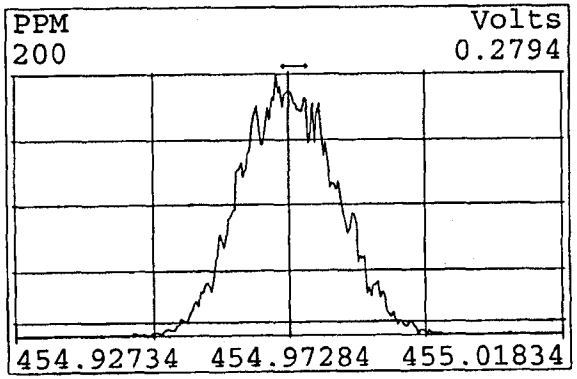
Peak Locate Examination:23-SEP-2009:12:38 File:A23SEP09A_RES_CHECK
Experiment:EXP_DB5MS Function:4 Reference:PFK

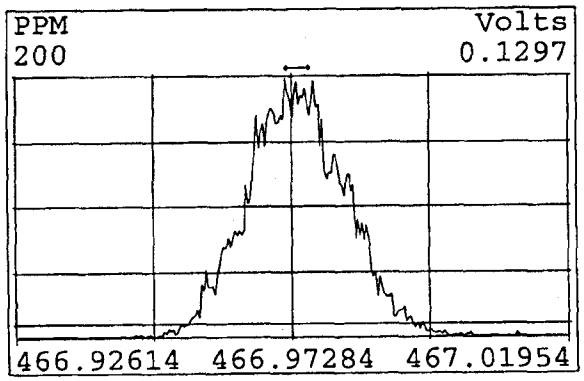


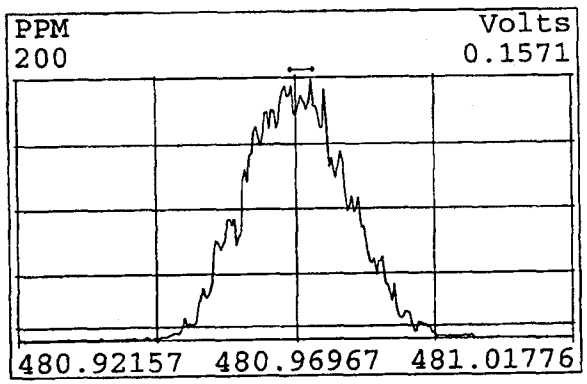




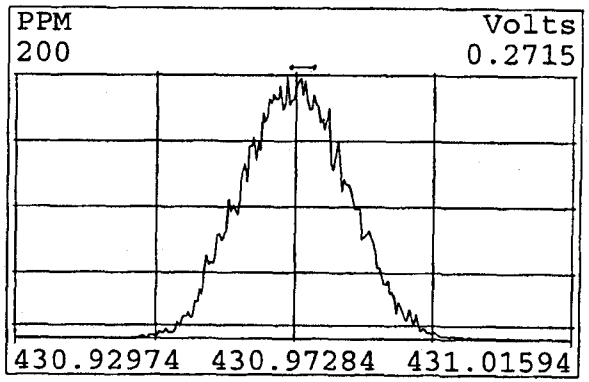


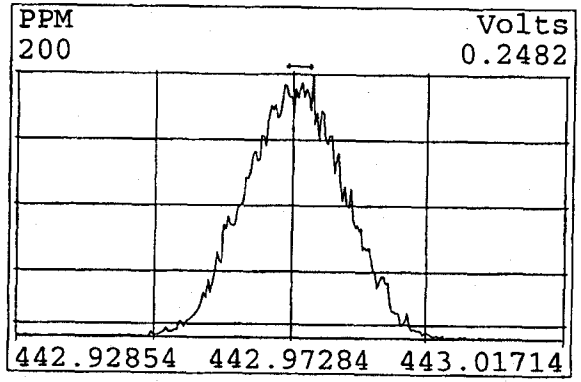


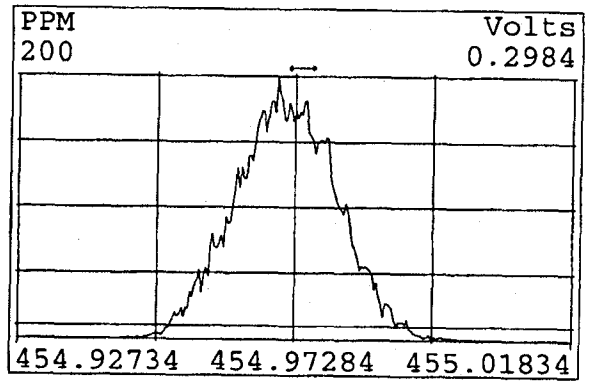


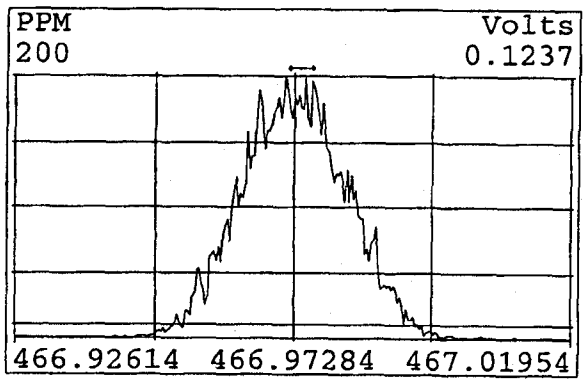


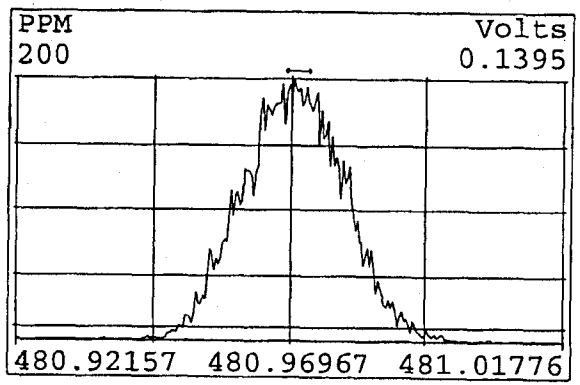
Peak Locate Examination:23-SEP-2009:12:39 File:A23SEP09A_RES_CHECK
Experiment:EXP_DB5MS Function:5 Reference:PFK

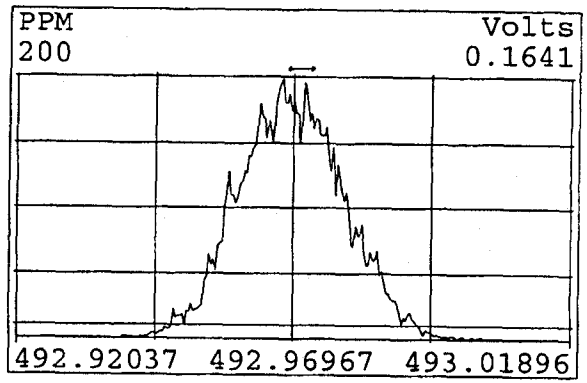


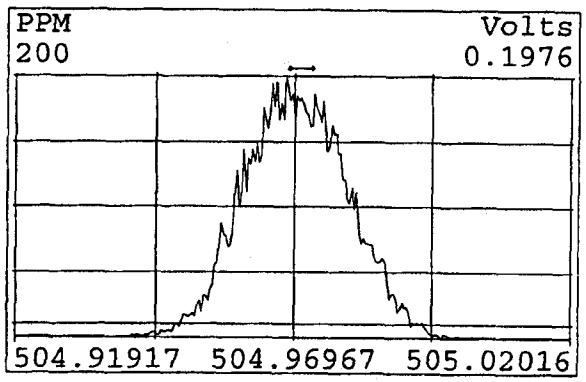


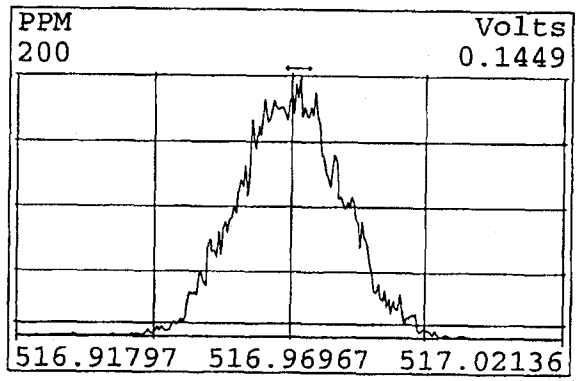












HRMS2 Sequence Log

SGS Environmental Services

Data File S	Sample ID	Analyst	Acq. Date	Time
a07oct09a;1	;RETCON S33-78D pass	;JWP	7-OCT-09	06:48:55
a07oct09a;2	;OPRI7335	;JWP	7-OCT-09	07:37:15
a07oct09a;3	;OPRD17335	;JWP	7-OCT-09	08:25:32
a07oct09a;4	;LMB17335	;JWP	7-OCT-09	09:13:53 Blank
a07oct09a;5	;G552-625-1C	;JWP	7-OCT-09	10:02:14
a07oct09a;6	;G552-625-2C	;JWP	7-OCT-09	10:50:30
a07oct09a;7	;G552-625-3C	;JWP	7-OCT-09	11:38:51
a07oct09a;8	;G1089-8-1C d10 Hpcdd	;JWP	7-OCT-09	12:27:13
a07oct09a;9	;G1089-8-2C	;JWP	7-OCT-09	13:15:34
a07oct09a;10	;G1089-8-3C	;JWP	7-OCT-09	14:03:55
a07oct09a;11	;G1089-8-4C	;JWP	7-OCT-09	14:52:17
a07oct09a;12	;G1089-8-5C	;JWP	7-OCT-09	15:40:38
a07oct09a;13	;G1089-8-6C	;JWP	7-OCT-09	16:29:00
a07oct09a;14	;G1089-8-7C	;JWP	7-OCT-09	17:17:23
a07oct09a;15	;RETCON S33-78D pass	;JWP	7-OCT-09	18:05:43

next page

DS 10-8-09

TM 10-8-09

HRMS2 Sequence Log SGS Environmental Services

Data File S	Sample ID	Analyst	Acq. Date	Time
a07oct09a_2;1	;SB	;JWP	7-OCT-09	18:59:40
a07oct09a_2;2	;G383-771-1C d20	;JWP	7-OCT-09	19:47:57
a07oct09a_2;3	;G383-771-2C d10	;JWP	7-OCT-09	20:36:15
a07oct09a_2;4	;G383-766-3D	;JWP	7-OCT-09	21:24:32
a07oct09a_2;5	;G330-42-2C	;JWP	7-OCT-09	22:12:56
a07oct09a_2;6	;G330-42-3C	;JWP	7-OCT-09	23:01:14
a07oct09a_2;7	;G330-42-4C	;JWP	7-OCT-09	23:49:36
a07oct09a_2;8	;G330-42-7C REX *	;JWP	8-OCT-09	00:38:00
a07oct09a_2;9	;G330-42-8C RB092909	;JWP-01	8-OCT-09	01:26:22
a07oct09a_2;10	;G330-42-14C	;JWP	8-OCT-09	02:14:39
a07oct09a_2;11	;G330-42-15C - SB	;JWP	8-OCT-09	03:03:03
a07oct09a_2;12	;G330-42-16C REX *	;JWP	8-OCT-09	03:51:20
a07oct09a_2;13	;G330-42-17C ↓ ↓	;JWP	~~8-OCT-09~~	~~04:39:38~~
a07oct09a_2;14	;RETCON S33-78D pass	;JWP	8-OCT-09	05:27:59

*- ms/msd not spiked

DS

10-8-09

TM 10-9-09

8290 CCAL

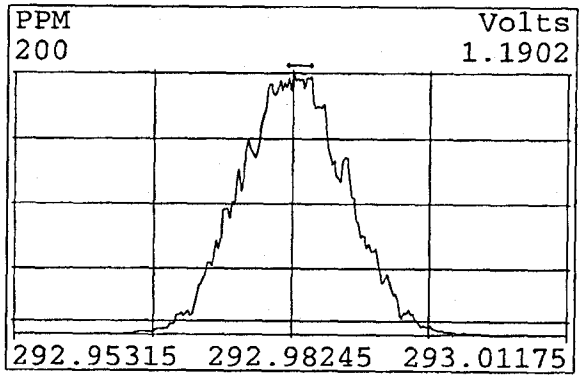
Sample text; RETCON S33-78D
Filename; a07oct09a -15 Acquired; 7-OCT-09 18:05:43 Processed; 8-OCT-09 06:32:04
ICAL; m8290-092309a Results;

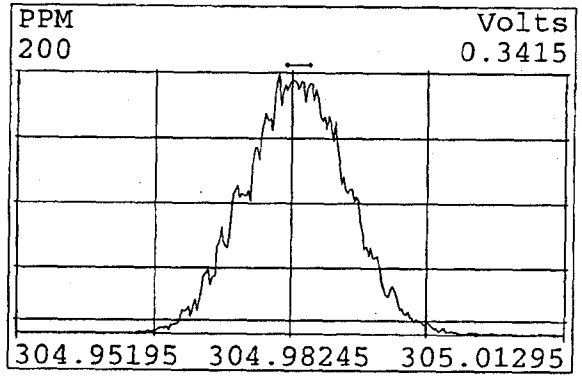
Name;	Resp;	Ion 1;	Ion 2	; RA	;?	; RT	; Conc	; Dev'n;	CCAL RRF;	ICAL RRF	;Mod
2,3,7,8-TCDD;	3.0e+07;	1.30e+07;	1.68e+07	; 0.77	;y	; 31:30	; 9.666	; -3.3;	0.9949;	1.0293	;n
1,2,3,7,8-PeCDD;	1.2e+08;	7.02e+07;	4.49e+07	; 1.56	;y	; 34:19	; 48.42	; -3.2;	1.0205;	1.0539	;n
1,2,3,4,7,8-HxCDD;	1.1e+08;	5.95e+07;	4.75e+07	; 1.25	;y	; 36:56	; 46.87	; -6.3;	0.9074;	0.9679	;n
1,2,3,6,7,8-HxCDD;	1.1e+08;	6.29e+07;	5.03e+07	; 1.25	;y	; 37:01	; 48.56	; -2.9;	0.9600;	0.9886	;n
1,2,3,7,8,9-HxCDD;	1.1e+08;	5.86e+07;	4.66e+07	; 1.26	;y	; 37:15	; 46.75	; -6.5;	0.8920;	0.9540	;n
1,2,3,4,6,7,8-HpCDD;	9.2e+07;	4.72e+07;	4.52e+07	; 1.04	;y	; 40:22	; 47.92	; -4.2;	1.0514;	1.0970	;n
OCDD;	1.6e+08;	7.35e+07;	8.20e+07	; 0.90	;y	; 44:41	; 94.64	; -5.4;	1.0638;	1.1240	;n
2,3,7,8-TCDF;	4.3e+07;	1.87e+07;	2.39e+07	; 0.78	;y	; 30:55	; 9.531	; -4.7;	0.9935;	1.0424	;n
1,2,3,7,8-PeCDF;	1.8e+08;	1.06e+08;	6.87e+07	; 1.55	;y	; 33:30	; 49.22	; -1.6;	0.9841;	0.9997	;n
2,3,4,7,8-PeCDF;	1.8e+08;	1.10e+08;	7.05e+07	; 1.56	;y	; 34:07	; 48.71	; -2.6;	1.0117;	1.0386	;n
1,2,3,4,7,8-HxCDF;	1.6e+08;	8.78e+07;	7.03e+07	; 1.25	;y	; 36:12	; 48.67	; -2.7;	1.0558;	1.0846	;n
1,2,3,6,7,8-HxCDF;	1.7e+08;	9.26e+07;	7.39e+07	; 1.25	;y	; 36:19	; 48.35	; -3.3;	1.1121;	1.1500	;n
2,3,4,6,7,8-HxCDF;	1.6e+08;	8.94e+07;	7.16e+07	; 1.25	;y	; 36:48	; 48.79	; -2.4;	1.0753;	1.1020	;n
1,2,3,7,8,9-HxCDF;	1.4e+08;	7.62e+07;	6.06e+07	; 1.26	;y	; 37:35	; 48.75	; -2.5;	0.9135;	0.9369	;n
1,2,3,4,6,7,8-HpCDF;	1.4e+08;	7.34e+07;	7.03e+07	; 1.04	;y	; 39:05	; 48.09	; -3.8;	1.3286;	1.3813	;n
1,2,3,4,7,8,9-HpCDF;	1.2e+08;	6.04e+07;	5.78e+07	; 1.04	;y	; 41:03	; 51.18	; 2.4;	1.0925;	1.0673	;n
OCDF;	1.8e+08;	8.74e+07;	9.64e+07	; 0.91	;y	; 44:59	; 89.96	; -10.0;	1.2573;	1.3977	;n
Extraction Standards											
13C-2,3,7,8-TCDD;	3.0e+08;	1.32e+08;	1.68e+08	; 0.78	;y	; 31:29	; 97.88	; -2.1;	1.0946;	1.1184	;n
13C-1,2,3,7,8-PeCDD;	2.3e+08;	1.38e+08;	8.74e+07	; 1.58	;y	; 34:18	; 101.5	; 1.5;	0.8238;	0.8116	;n
13C-1,2,3,6,7,8-HxCDD;	2.4e+08;	1.31e+08;	1.05e+08	; 1.25	;y	; 37:00	; 102.2	; 2.2;	1.0976;	1.0736	;n
13C-1,2,3,4,6,7,8-HpCDD;	1.8e+08;	9.01e+07;	8.56e+07	; 1.05	;y	; 40:21	; 111.1	; 11.1;	0.8178;	0.7360	;n
13C-OCDD;	2.9e+08;	1.39e+08;	1.54e+08	; 0.90	;y	; 44:40	; 233.3	; 16.7;	0.6804;	0.5833	;n
13C-2,3,7,8-TCDF;	4.3e+08;	1.90e+08;	2.39e+08	; 0.79	;y	; 30:54	; 91.46	; -8.5;	1.5672;	1.7135	;n
13C-1,2,3,7,8-PeCDF;	3.6e+08;	2.17e+08;	1.39e+08	; 1.56	;y	; 33:29	; 94.75	; -5.2;	1.3010;	1.3731	;n
13C-1,2,3,6,7,8-HxCDF;	3.0e+08;	1.03e+08;	1.97e+08	; 0.52	;y	; 36:18	; 96.92	; -3.1;	1.3937;	1.4379	;n
13C-1,2,3,4,6,7,8-HpCDF;	2.2e+08;	6.71e+07;	1.49e+08	; 0.45	;y	; 39:04	; 98.96	; -1.0;	1.0068;	1.0173	;n
Injection Standards											
13C-1,2,3,4-TCDD;	2.7e+08;	1.21e+08;	1.53e+08	; 0.79	;y	; 31:03	; 593.3	; -;	-;	-	;n
13C-1,2,3,7,8,9-HxCDD;	2.1e+08;	1.20e+08;	9.52e+07	; 1.26	;y	; 37:15	; 595.4	; -;	-;	-	;n
Cleanup Standards											
37Cl-2,3,7,8-TCDD;	3.1e+07;	3.12e+07;	-	; -	;-	; 31:30	; 9.775	; -2.2;	1.1400;	1.1662	;n
13C-2,3,4,7,8-PeCDF;	3.5e+08;	2.15e+08;	1.38e+08	; 1.56	;y	; 34:06	; 96.43	; -3.6;	1.2896;	1.3373	;n
13C-1,2,3,4,7,8-HxCDD;	2.1e+08;	1.16e+08;	9.14e+07	; 1.27	;y	; 36:55	; 98.23	; -1.8;	0.9647;	0.9822	;n
13C-1,2,3,4,7,8-HxCDF;	2.7e+08;	9.29e+07;	1.76e+08	; 0.53	;y	; 36:12	; 96.49	; -3.5;	1.2525;	1.2981	;n
13C-1,2,3,4,7,8,9-HpCDF;	1.8e+08;	5.53e+07;	1.23e+08	; 0.45	;y	; 41:02	; 105.9	; 5.9;	0.8280;	0.7821	;n
Sampling Standards											
37Cl-2,3,7,8-TCDD;	3.1e+07;	3.12e+07;	-	; -	;-	; 31:30	; 9.990	; -0.1;	1.0415;	1.0425	;n
13C-2,3,4,7,8-PeCDF;	3.5e+08;	2.15e+08;	1.38e+08	; 1.56	;y	; 34:06	; 101.7	; 1.7;	0.9913;	0.9744	;n
13C-1,2,3,4,7,8-HxCDD;	2.1e+08;	1.16e+08;	9.14e+07	; 1.27	;y	; 36:55	; 96.04	; -4.0;	0.8789;	0.9152	;n
13C-1,2,3,4,7,8-HxCDF;	2.7e+08;	9.29e+07;	1.76e+08	; 0.53	;y	; 36:12	; 99.55	; -0.5;	0.8987;	0.9028	;n
13C-1,2,3,4,7,8,9-HpCDF;	1.8e+08;	5.53e+07;	1.23e+08	; 0.45	;y	; 41:02	; 107.0	; 7.0;	0.8224;	0.7688	;n

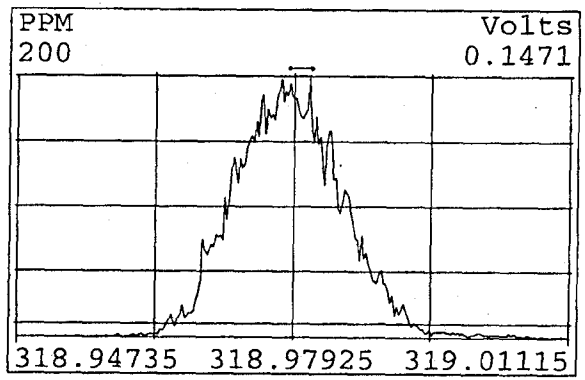
Sample text; RETCON S33-78D
Filename; a07oct09a_2 -14 Acquired; 8-OCT-09 05:27:59 Processed; 8-OCT-09 06:32:45
ICAL; m8290-092309a Results;

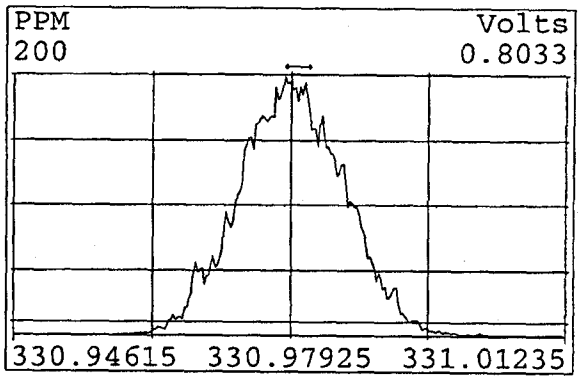
Name;	Resp;	Ion 1;	Ion 2	; RA	;?	; RT	; Conc	; Dev'n;	CCAL RRF;	ICAL RRF	;Mod
2,3,7,8-TCDD;	3.3e+07;	1.46e+07;	1.85e+07	; 0.79	;y	; 31:30	; 9.424	; -5.8;	0.9700;	1.0293	;n
1,2,3,7,8-PeCDD;	1.3e+08;	8.12e+07;	5.20e+07	; 1.56	;y	; 34:19	; 49.28	; -1.4;	1.0388;	1.0539	;n
1,2,3,4,7,8-HxCDD;	1.2e+08;	6.91e+07;	5.53e+07	; 1.25	;y	; 36:56	; 47.78	; -4.4;	0.9250;	0.9679	;n
1,2,3,6,7,8-HxCDD;	1.3e+08;	7.22e+07;	5.79e+07	; 1.25	;y	; 37:01	; 48.95	; -2.1;	0.9677;	0.9886	;n
1,2,3,7,8,9-HxCDD;	1.2e+08;	6.85e+07;	5.49e+07	; 1.25	;y	; 37:15	; 48.09	; -3.8;	0.9176;	0.9540	;n
1,2,3,4,6,7,8-HpCDD;	1.0e+08;	5.17e+07;	5.00e+07	; 1.03	;y	; 40:22	; 47.97	; -4.1;	1.0525;	1.0970	;n
OCDD;	1.7e+08;	8.14e+07;	9.10e+07	; 0.89	;y	; 44:41	; 95.01	; -5.0;	1.0680;	1.1240	;n
2,3,7,8-TCDF;	5.0e+07;	2.21e+07;	2.80e+07	; 0.79	;y	; 30:55	; 9.717	; -2.8;	1.0129;	1.0424	;n
1,2,3,7,8-PeCDF;	2.1e+08;	1.26e+08;	8.04e+07	; 1.57	;y	; 33:30	; 49.13	; -1.7;	0.9823;	0.9997	;n
2,3,4,7,8-PeCDF;	2.1e+08;	1.28e+08;	8.19e+07	; 1.57	;y	; 34:07	; 48.16	; -3.7;	1.0004;	1.0386	;n
1,2,3,4,7,8-HxCDF;	1.8e+08;	9.95e+07;	8.04e+07	; 1.24	;y	; 36:12	; 48.88	; -2.2;	1.0604;	1.0846	;n
1,2,3,6,7,8-HxCDF;	1.9e+08;	1.06e+08;	8.47e+07	; 1.25	;y	; 36:18	; 48.97	; -2.1;	1.1262;	1.1500	;n
2,3,4,6,7,8-HxCDF;	1.8e+08;	1.02e+08;	8.17e+07	; 1.25	;y	; 36:48	; 49.11	; -1.8;	1.0824;	1.1020	;n
1,2,3,7,8,9-HxCDF;	1.6e+08;	8.70e+07;	6.98e+07	; 1.25	;y	; 37:35	; 49.33	; -1.3;	0.9244;	0.9369	;n
1,2,3,4,6,7,8-HpCDF;	1.6e+08;	8.31e+07;	7.95e+07	; 1.05	;y	; 39:05	; 49.68	; -0.6;	1.3725;	1.3813	;n
1,2,3,4,7,8,9-HpCDF;	1.3e+08;	6.62e+07;	6.32e+07	; 1.05	;y	; 41:03	; 51.16	; 2.3;	1.0920;	1.0673	;n
OCDF;	2.0e+08;	9.64e+07;	1.06e+08	; 0.91	;y	; 44:59	; 89.82	; -10.2;	1.2554;	1.3977	;n
Extraction Standards											
13C-2,3,7,8-TCDD;	3.4e+08;	1.49e+08;	1.92e+08	; 0.78	;y	; 31:30	; 97.78	; -2.2;	1.0936;	1.1184	;n
13C-1,2,3,7,8-PeCDD;	2.6e+08;	1.57e+08;	9.93e+07	; 1.58	;y	; 34:18	; 101.3	; 1.3;	0.8224;	0.8116	;n
13C-1,2,3,6,7,8-HxCDD;	2.7e+08;	1.50e+08;	1.19e+08	; 1.26	;y	; 36:60	; 100.6	; 0.6;	1.0802;	1.0736	;n
13C-1,2,3,4,6,7,8-HpCDD;	1.9e+08;	9.92e+07;	9.39e+07	; 1.06	;y	; 40:21	; 105.5	; 5.5;	0.7761;	0.7360	;n
13C-OCDD;	3.2e+08;	1.53e+08;	1.70e+08	; 0.90	;y	; 44:40	; 222.4	; 11.2;	0.6487;	0.5833	;n
13C-2,3,7,8-TCDF;	4.9e+08;	2.17e+08;	2.78e+08	; 0.78	;y	; 30:54	; 92.58	; -7.4;	1.5864;	1.7135	;n
13C-1,2,3,7,8-PeCDF;	4.2e+08;	2.56e+08;	1.64e+08	; 1.56	;y	; 33:29	; 98.12	; -1.9;	1.3472;	1.3731	;n
13C-1,2,3,6,7,8-HxCDF;	3.4e+08;	1.17e+08;	2.22e+08	; 0.53	;y	; 36:18	; 94.81	; -5.2;	1.3633;	1.4379	;n
13C-1,2,3,4,6,7,8-HpCDF;	2.4e+08;	7.22e+07;	1.65e+08	; 0.44	;y	; 39:04	; 93.63	; -6.4;	0.9526;	1.0173	;n
Injection Standards											
13C-1,2,3,4-TCDD;	3.1e+08;	1.38e+08;	1.74e+08	; 0.79	;y	; 31:03	; 675.8	; -;	-;	-	;n
13C-1,2,3,7,8,9-HxCDD;	2.5e+08;	1.38e+08;	1.11e+08	; 1.25	;y	; 37:15	; 689.7	; -;	-;	-	;n
Cleanup Standards											
37Cl-2,3,7,8-TCDD;	3.5e+07;	3.54e+07;	-	; -	;-	; 31:30	; 9.723	; -2.8;	1.1340;	1.1662	;n
13C-2,3,4,7,8-PeCDF;	4.1e+08;	2.51e+08;	1.59e+08	; 1.58	;y	; 34:06	; 98.49	; -1.5;	1.3172;	1.3373	;n
13C-1,2,3,4,7,8-HxCDD;	2.4e+08;	1.32e+08;	1.04e+08	; 1.28	;y	; 36:55	; 96.56	; -3.4;	0.9484;	0.9822	;n
13C-1,2,3,4,7,8-HxCDF;	3.0e+08;	1.04e+08;	1.99e+08	; 0.52	;y	; 36:11	; 93.70	; -6.3;	1.2163;	1.2981	;n
13C-1,2,3,4,7,8,9-HpCDF;	1.9e+08;	5.92e+07;	1.33e+08	; 0.45	;y	; 41:02	; 98.55	; -1.4;	0.7708;	0.7821	;n
Sampling Standards											
37Cl-2,3,7,8-TCDD;	3.5e+07;	3.54e+07;	-	; -	;-	; 31:30	; 9.947	; -0.5;	1.0369;	1.0425	;n
13C-2,3,4,7,8-PeCDF;	4.1e+08;	2.51e+08;	1.59e+08	; 1.58	;y	; 34:06	; 100.3	; 0.3;	0.9777;	0.9744	;n
13C-1,2,3,4,7,8-HxCDD;	2.4e+08;	1.32e+08;	1.04e+08	; 1.28	;y	; 36:55	; 95.93	; -4.1;	0.8780;	0.9152	;n
13C-1,2,3,4,7,8-HxCDF;	3.0e+08;	1.04e+08;	1.99e+08	; 0.52	;y	; 36:11	; 98.83	; -1.2;	0.8922;	0.9028	;n
13C-1,2,3,4,7,8,9-HpCDF;	1.9e+08;	5.92e+07;	1.33e+08	; 0.45	;y	; 41:02	; 105.2	; 5.2;	0.8091;	0.7688	;n

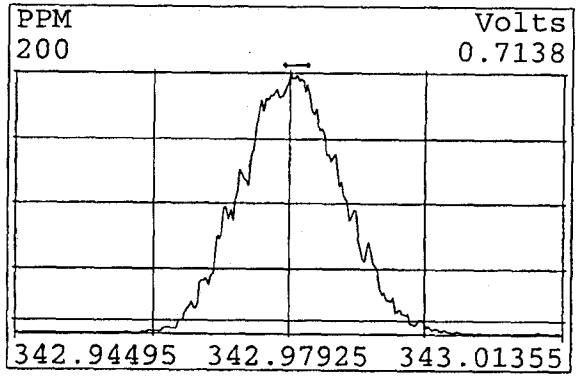
Peak Locate Examination: 7-OCT-2009:18:54 File:A07OCT09A_RES_CHECK
Experiment:EXP_DB5MS Function:1 Reference:PFK

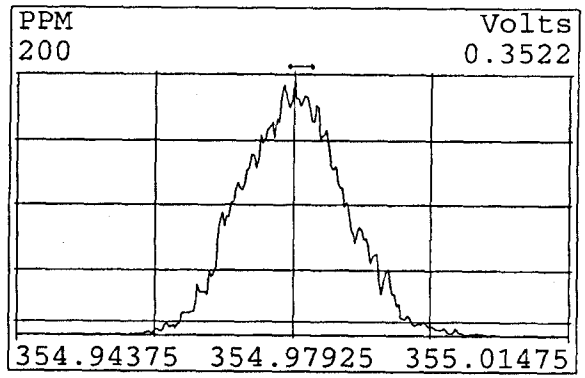


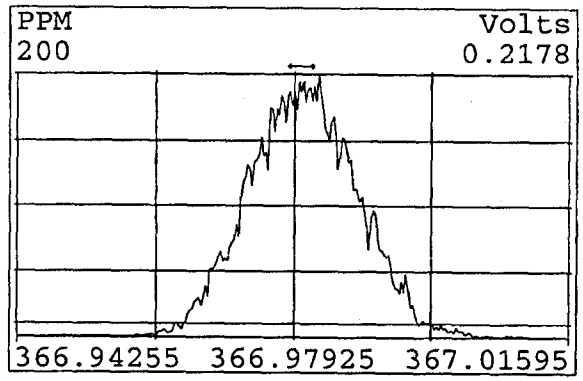


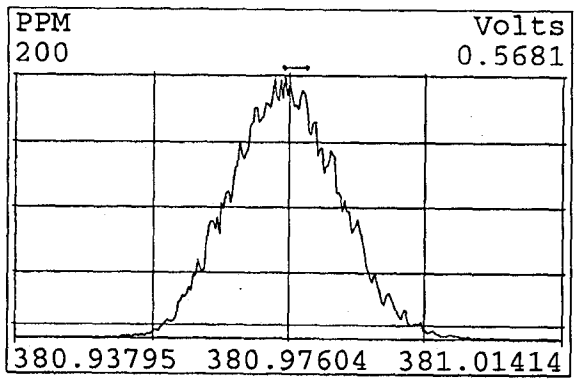




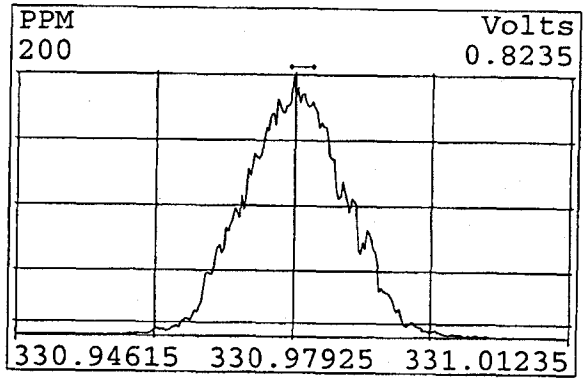


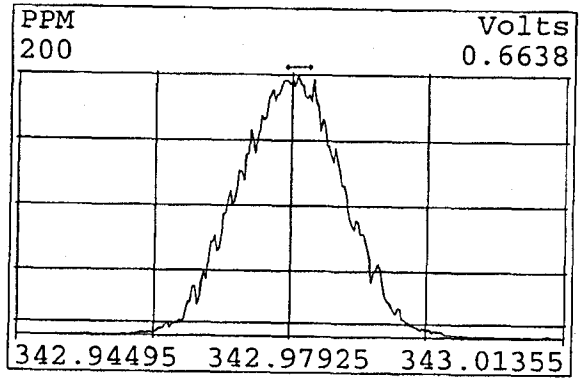


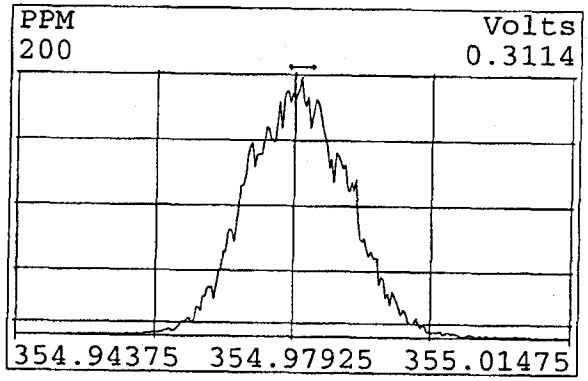


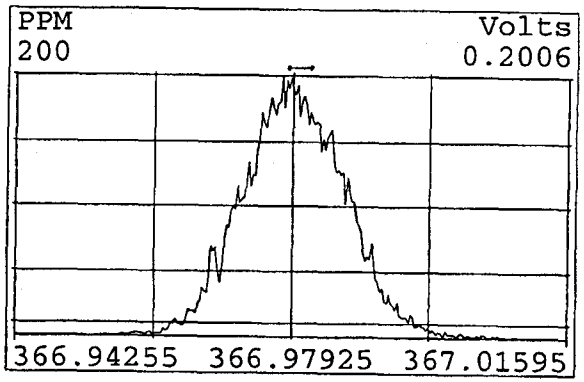


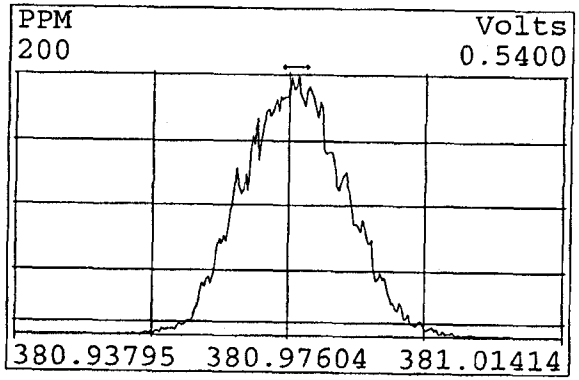
Peak Locate Examination: 7-OCT-2009:18:55 File:A07OCT09A_RES_CHECK
Experiment:EXP_DB5MS Function:2 Reference:PFK

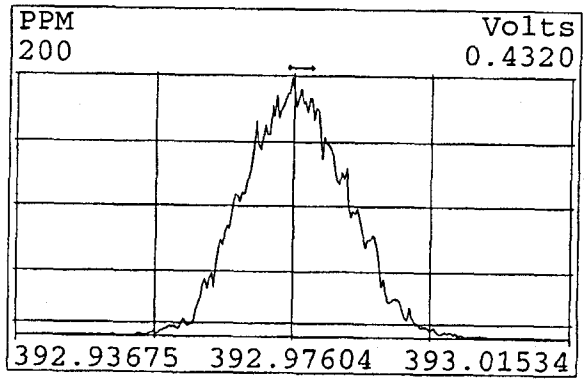


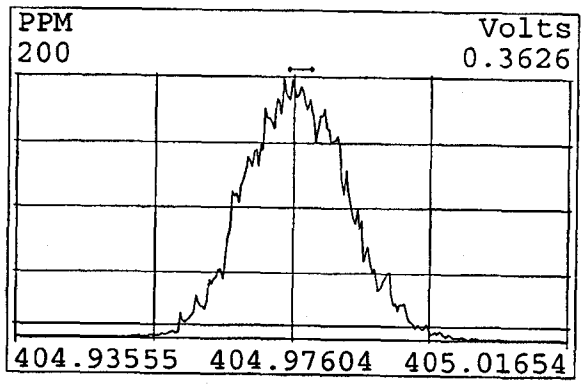


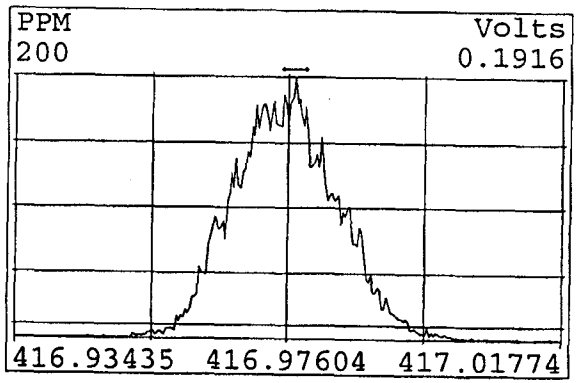




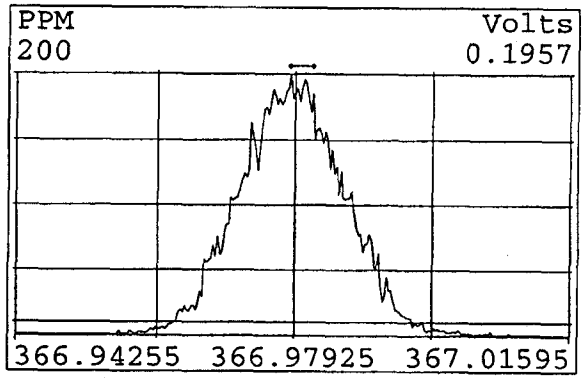


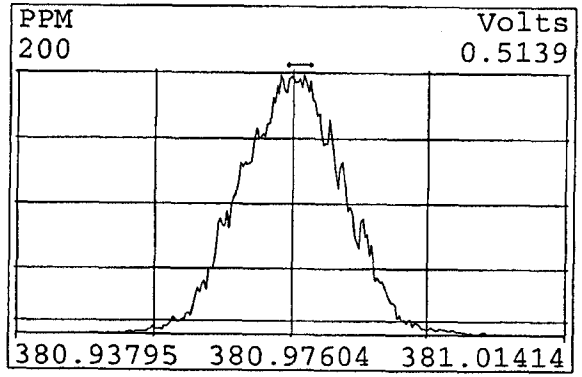


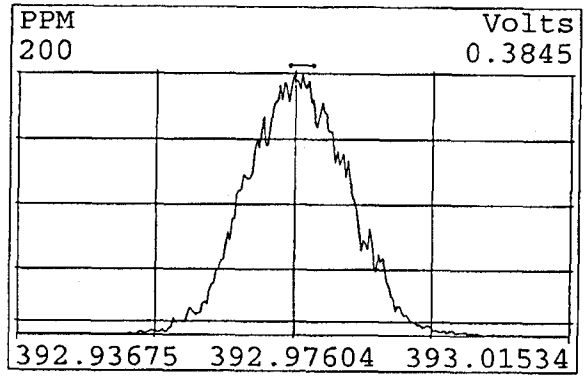


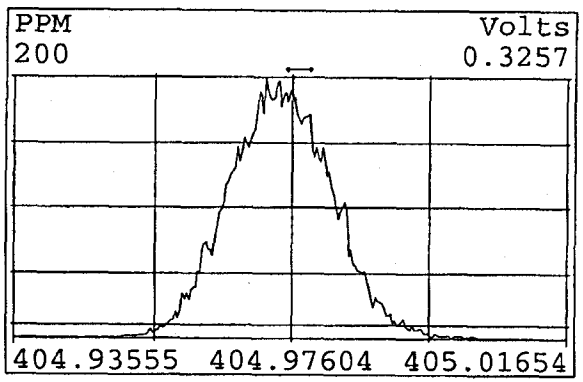


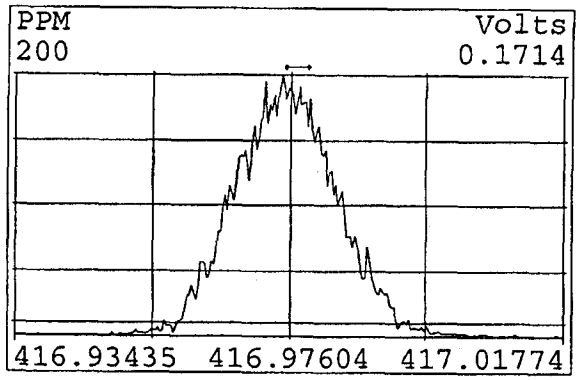
Peak Locate Examination: 7-OCT-2009:18:56 File:A07OCT09A_RES_CHECK
Experiment:EXP_DB5MS Function:3 Reference:PFK

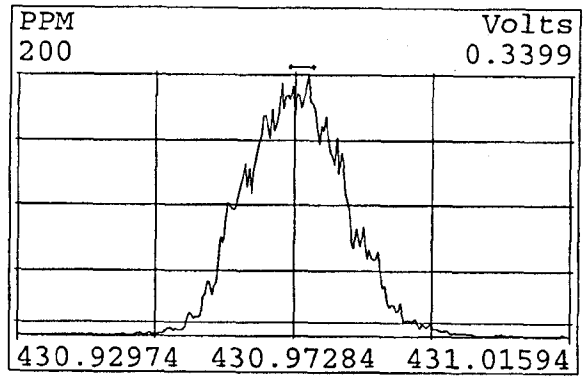


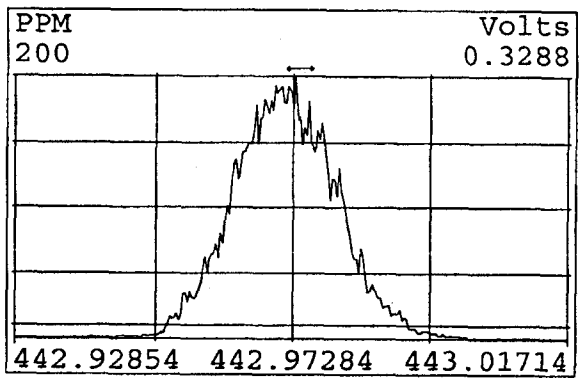


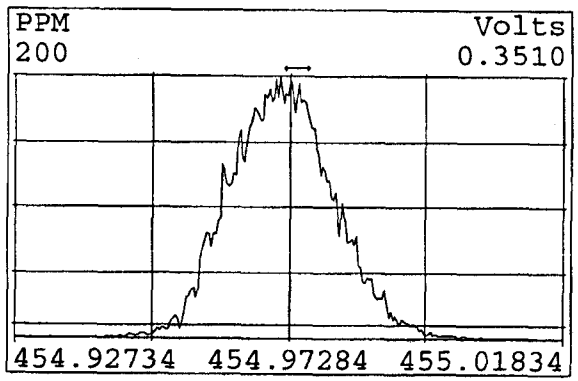




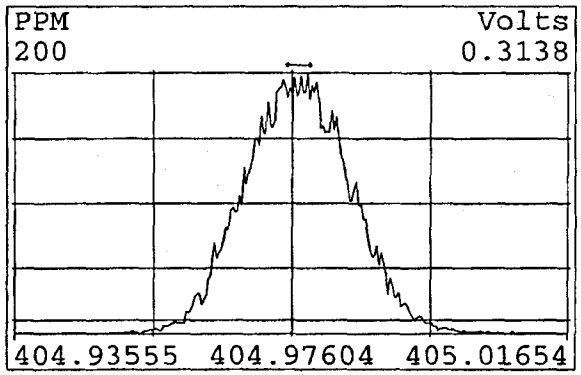


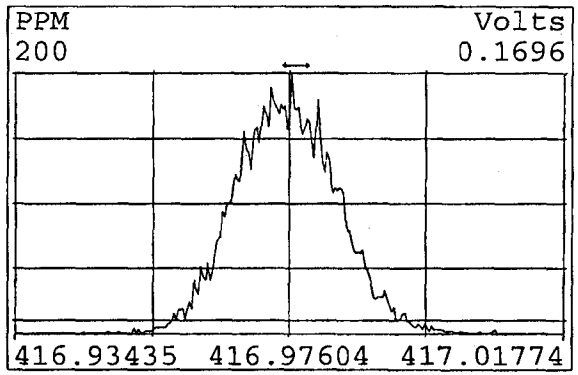


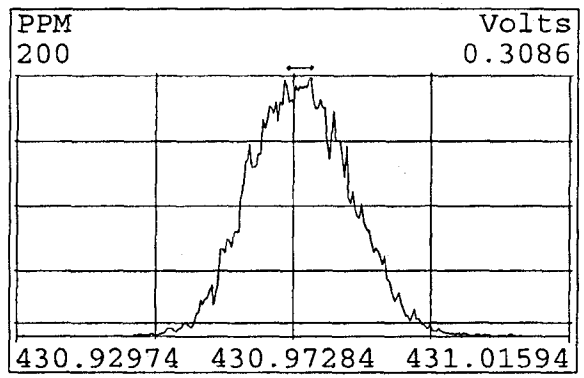


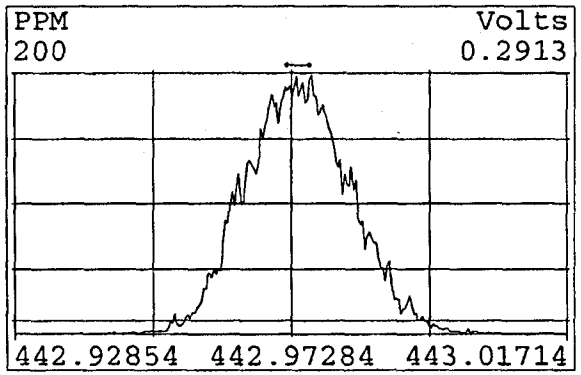


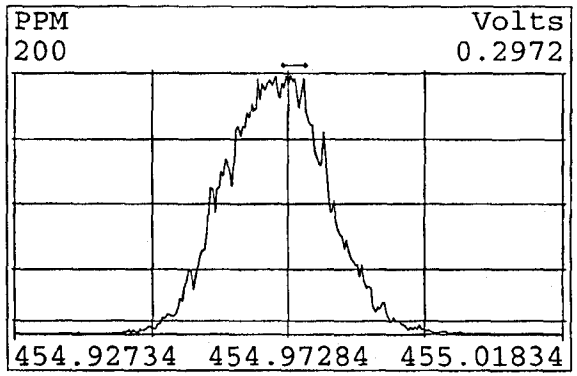
Peak Locate Examination: 7-OCT-2009:18:57 File:A07OCT09A_RES_CHECK
Experiment:EXP_DB5MS Function:4 Reference:PFK

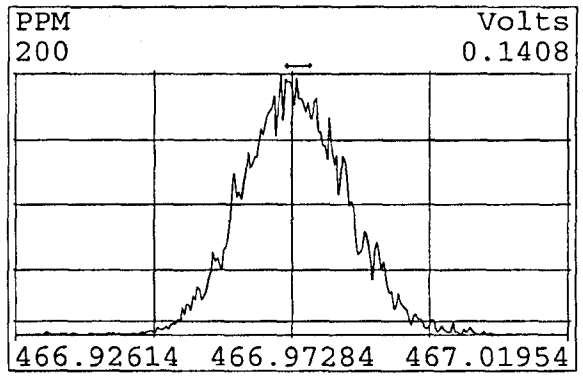


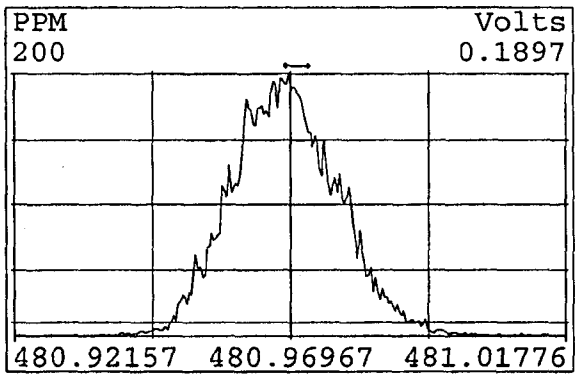




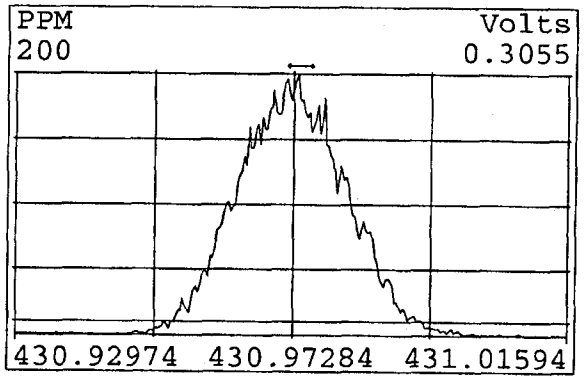


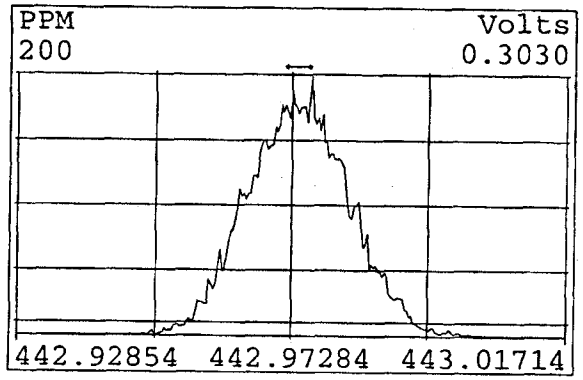


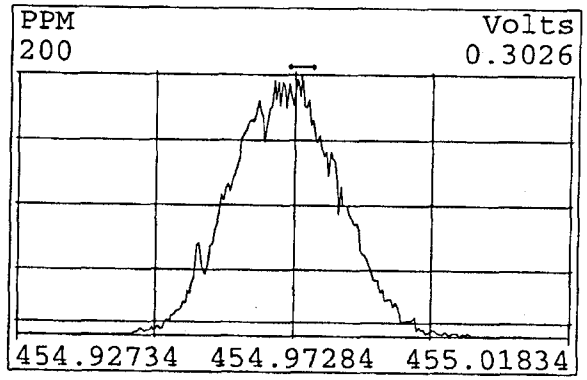


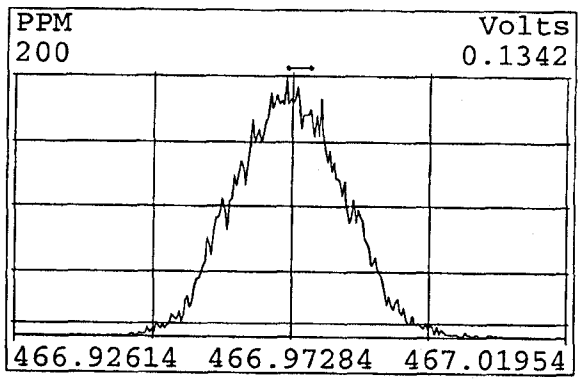


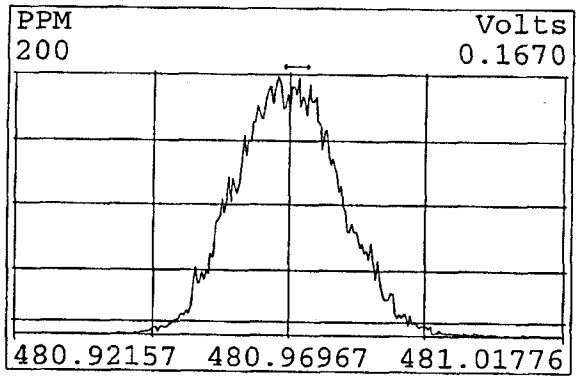
Peak Locate Examination: 7-OCT-2009:18:58 File:A07OCT09A_RES_CHECK
Experiment:EXP_DB5MS Function:5 Reference:PFK

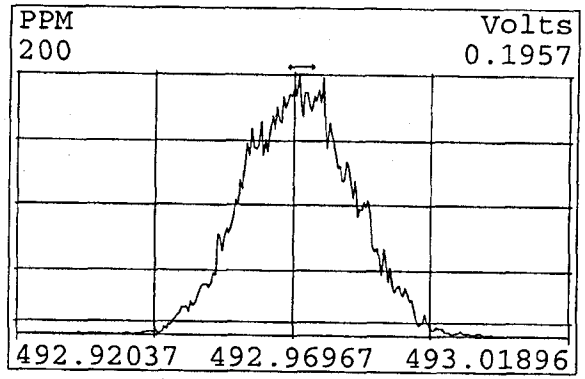


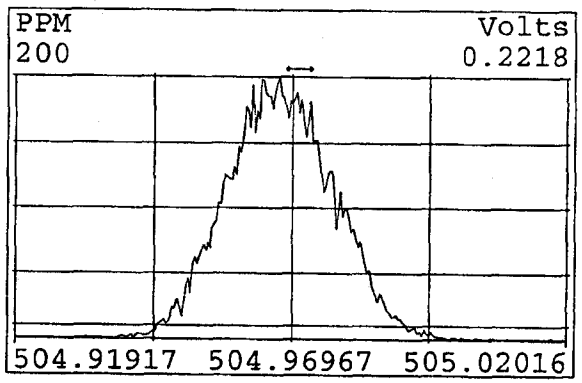


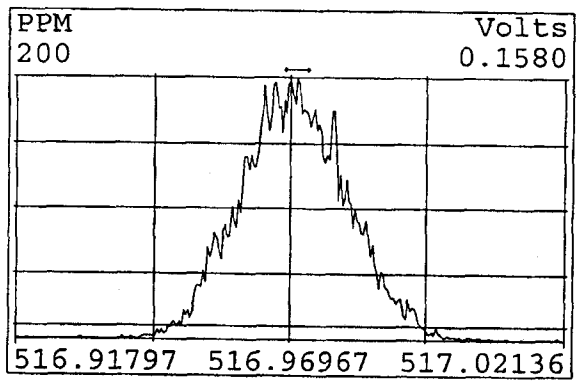




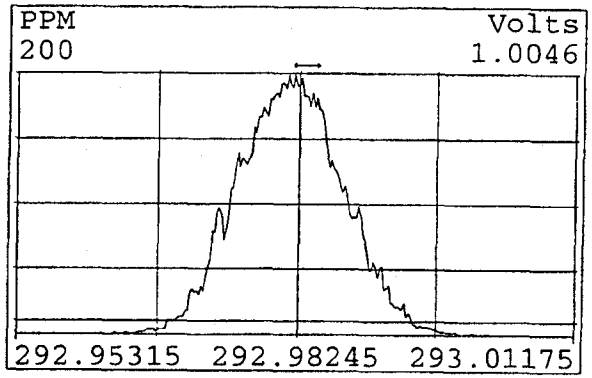


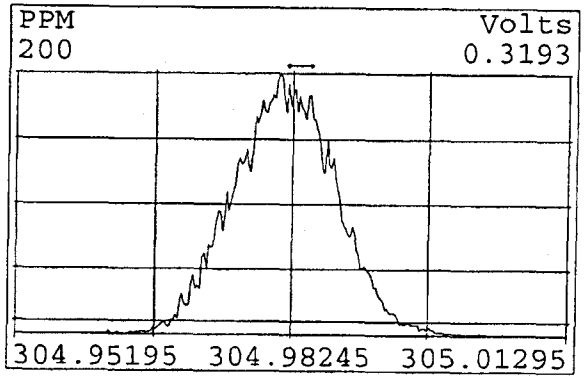


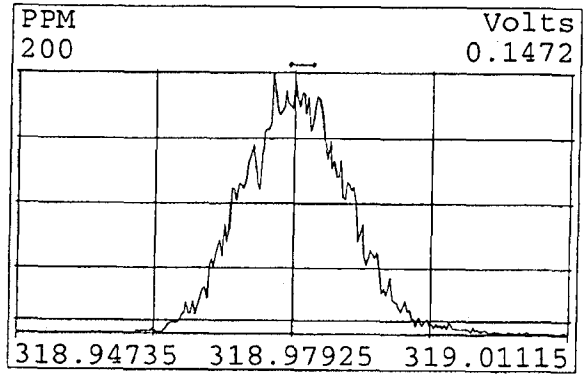


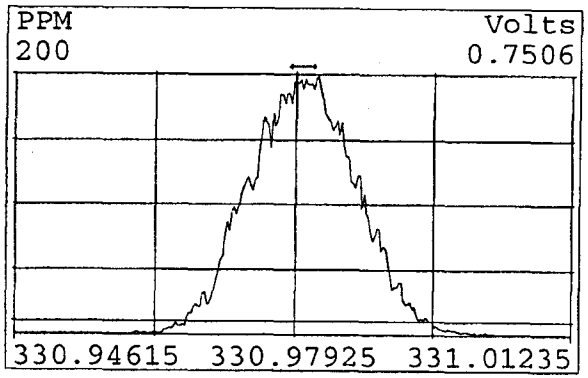


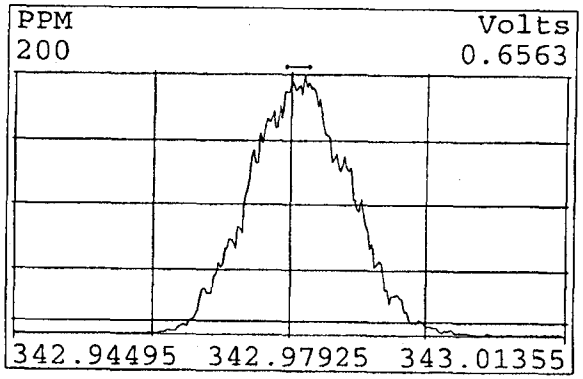
Peak Locate Examination: 8-OCT-2009:06:16 File:A07OCT09A_2_RES_CHECK
Experiment:EXP_DB5MS Function:1 Reference:PFK

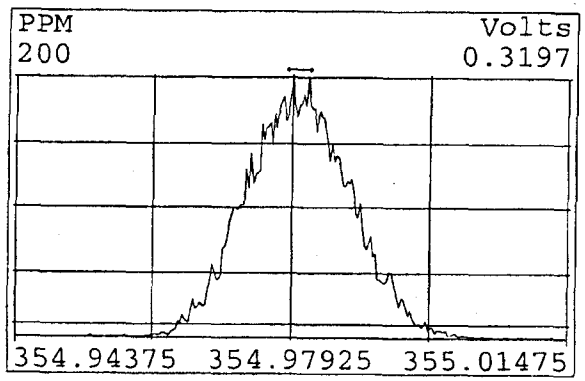


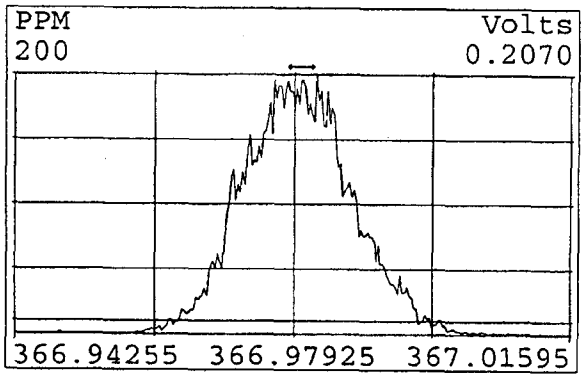


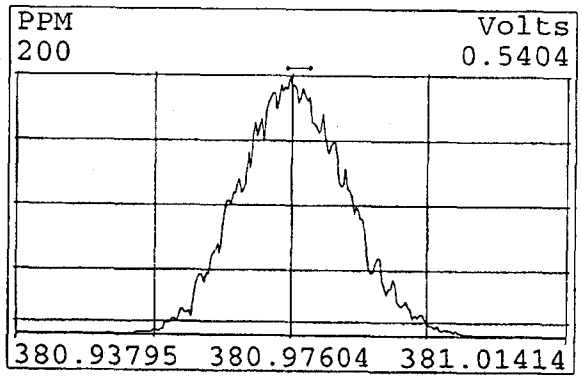




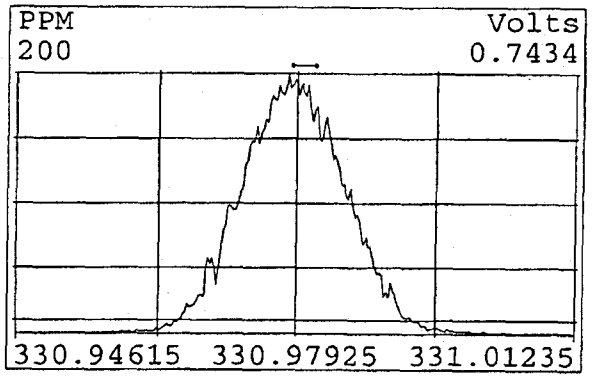


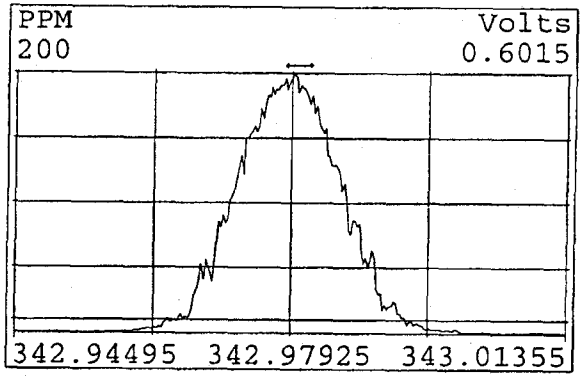


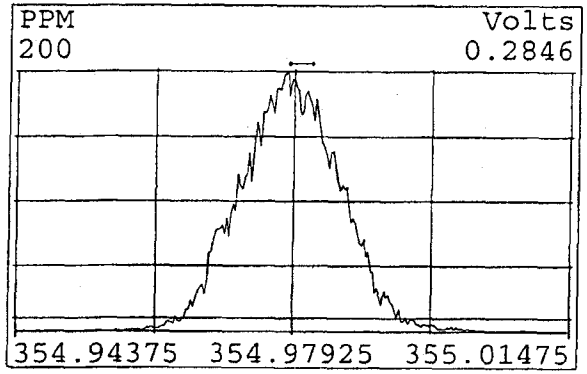


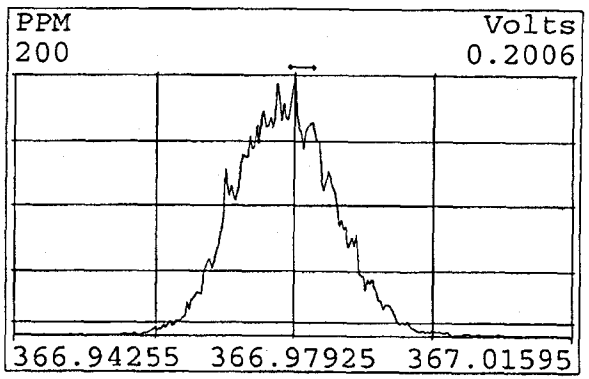


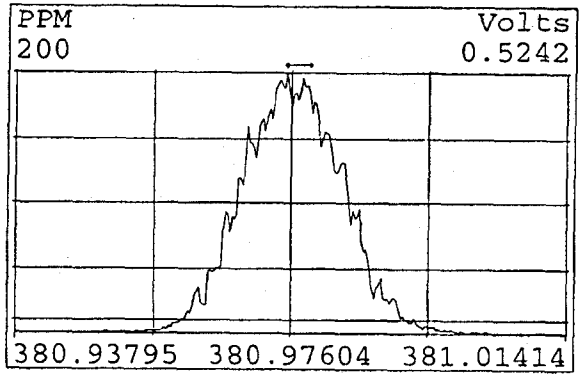
Peak Locate Examination: 8-OCT-2009:06:17 File:A07OCT09A_2_RES_CHECK
Experiment:EXP_DB5MS Function:2 Reference:PFK

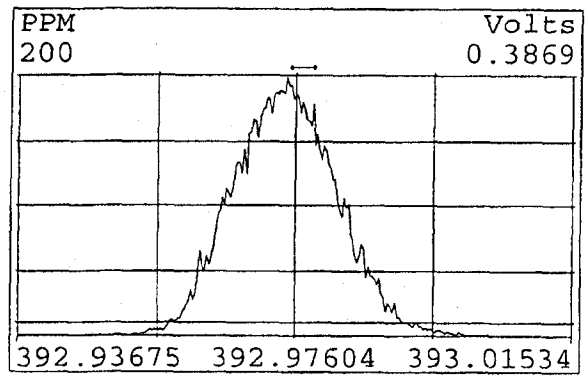


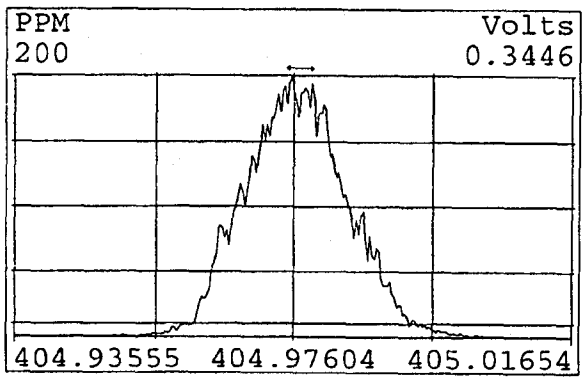


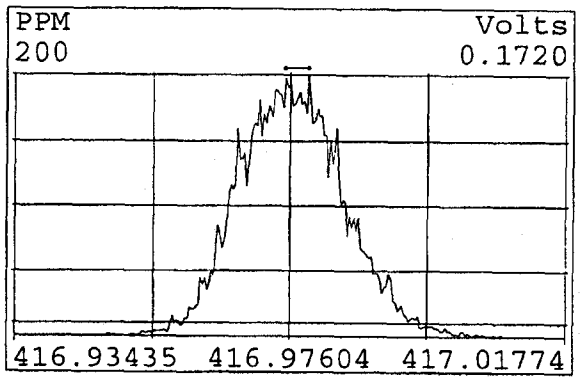




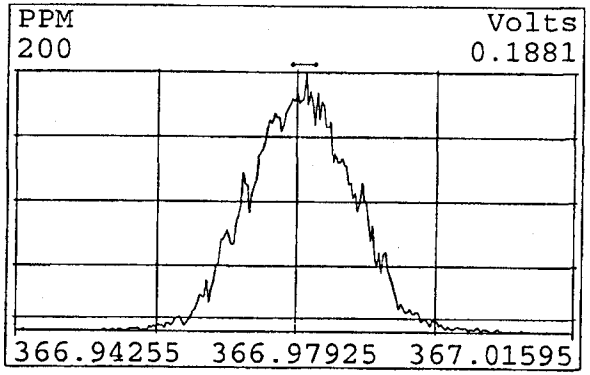


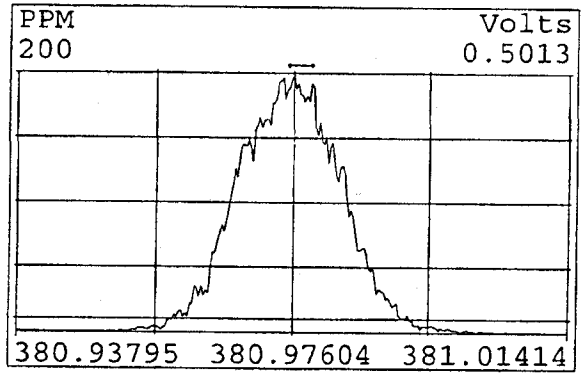


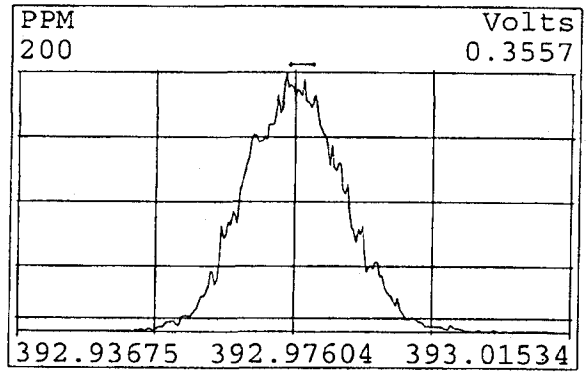


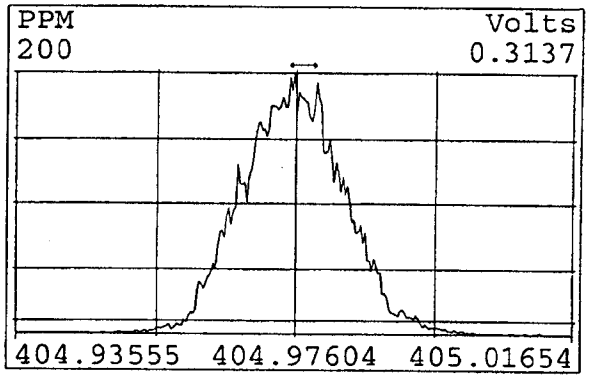


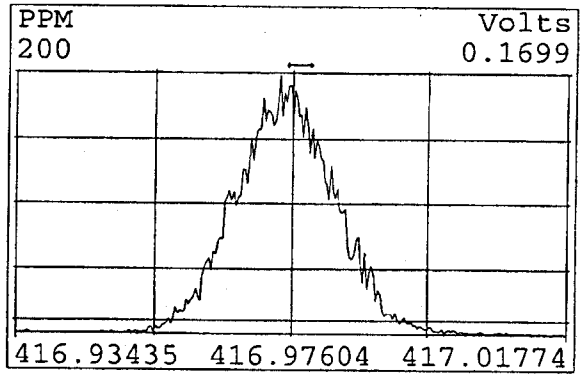
Peak Locate Examination: 8-OCT-2009:06:18 File:A07OCT09A_2_RES_CHECK
Experiment:EXP_DB5MS Function:3 Reference:PFK

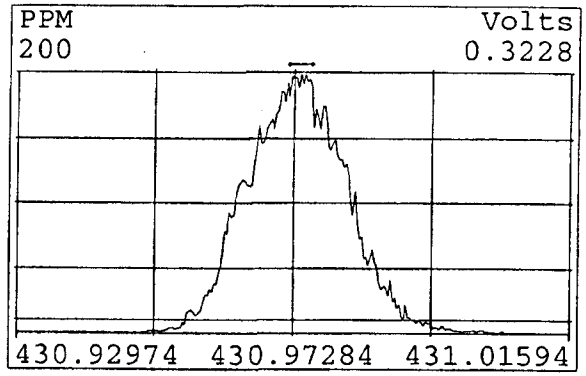


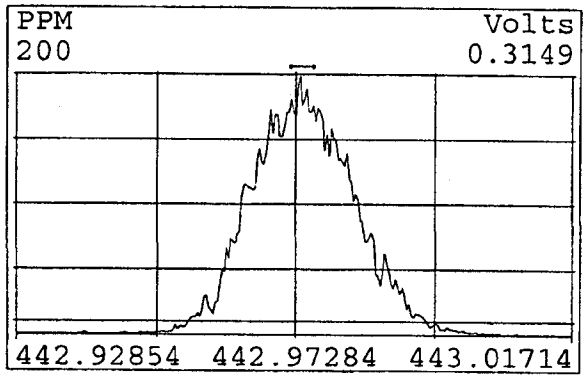


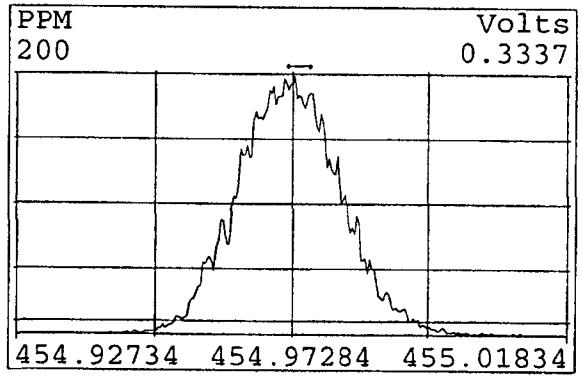




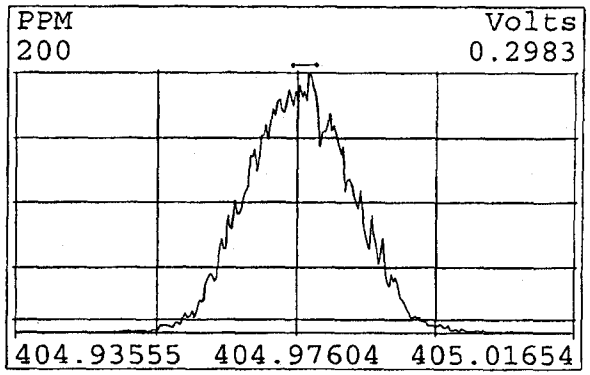


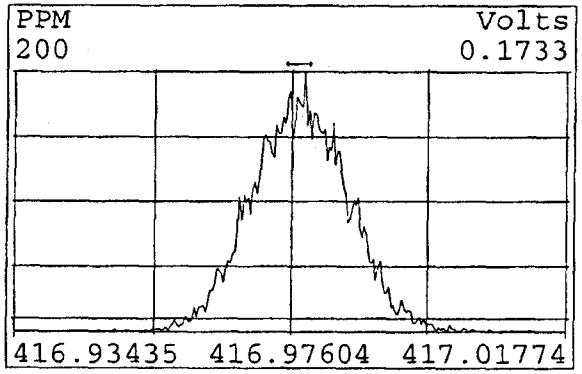


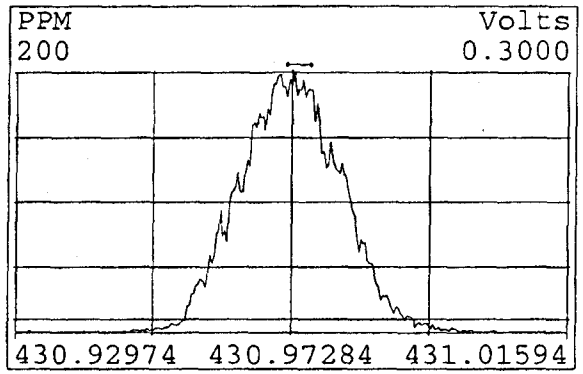


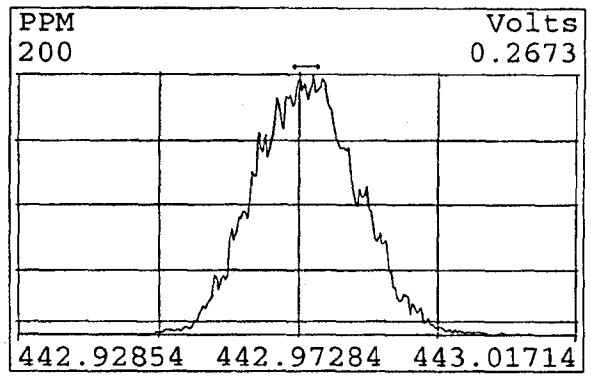


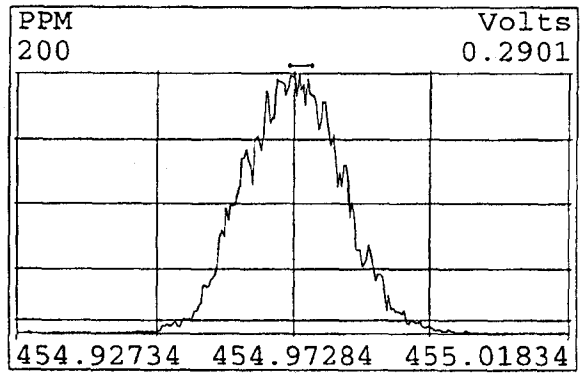
Peak Locate Examination: 8-OCT-2009:06:19 File:A07OCT09A_2_RES_CHECK
Experiment:EXP_DB5MS Function:4 Reference:PFK

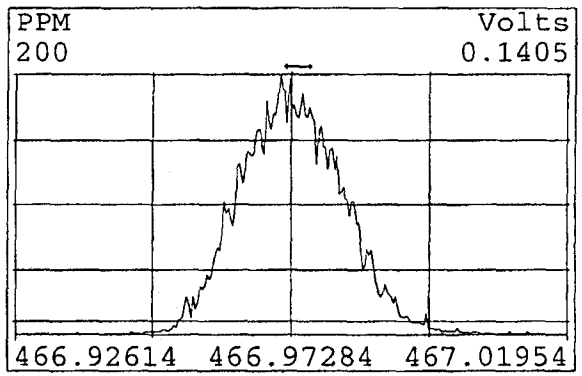


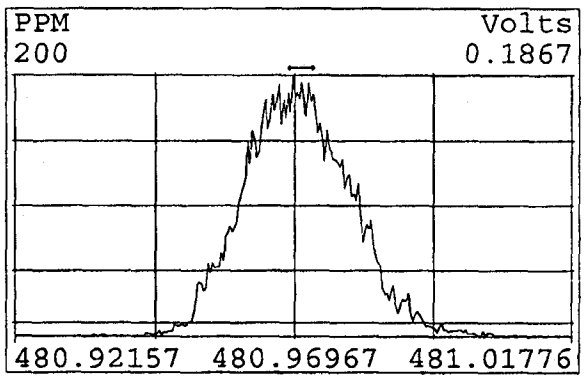




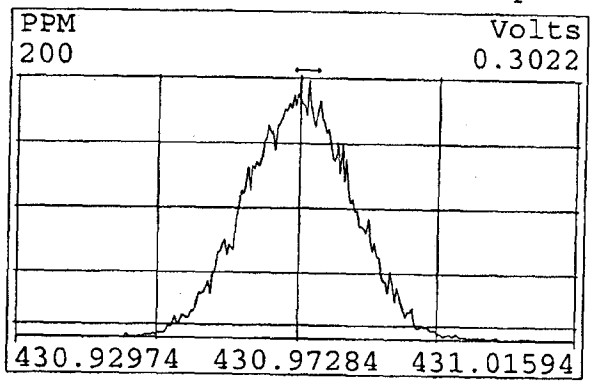


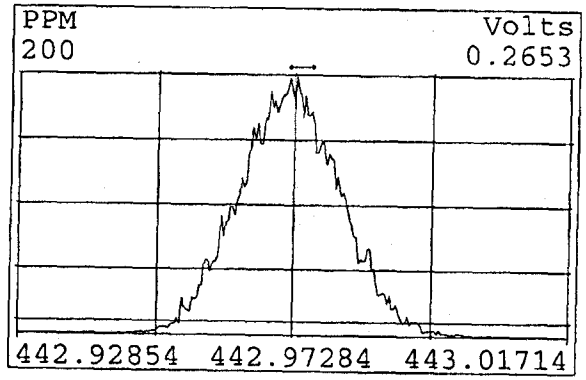


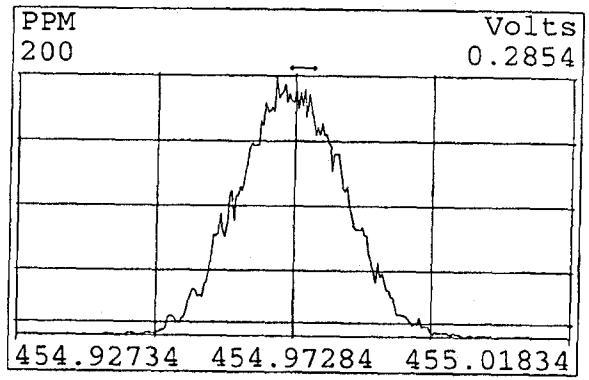


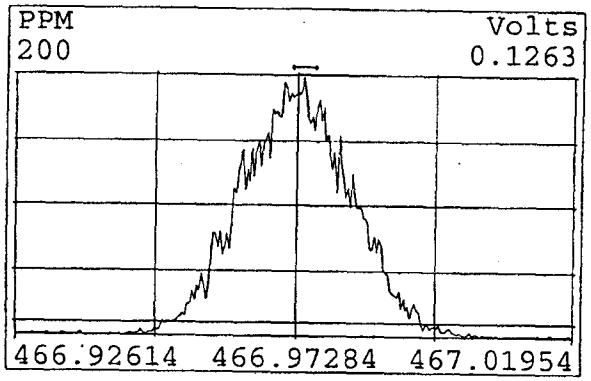


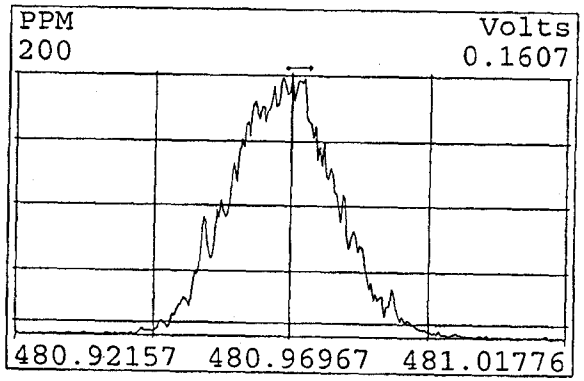
Peak Locate Examination: 8-OCT-2009:06:20 File:A07OCT09A_2_RES_CHECK
Experiment:EXP_DB5MS Function:5 Reference:PFK

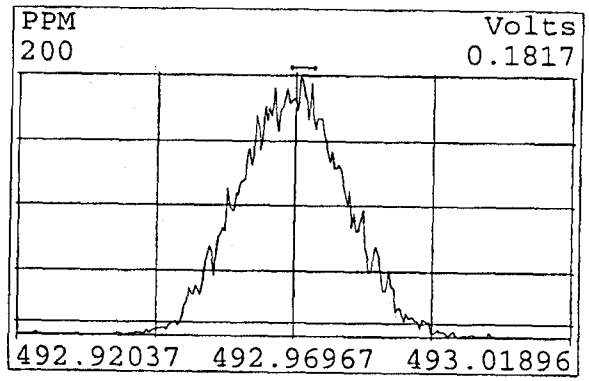


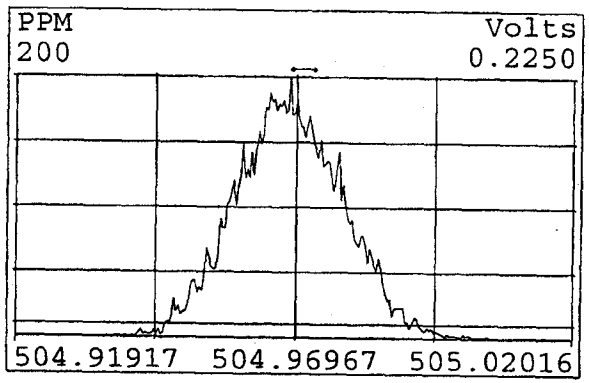


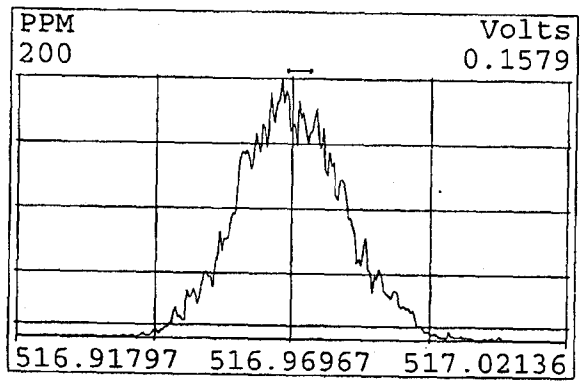








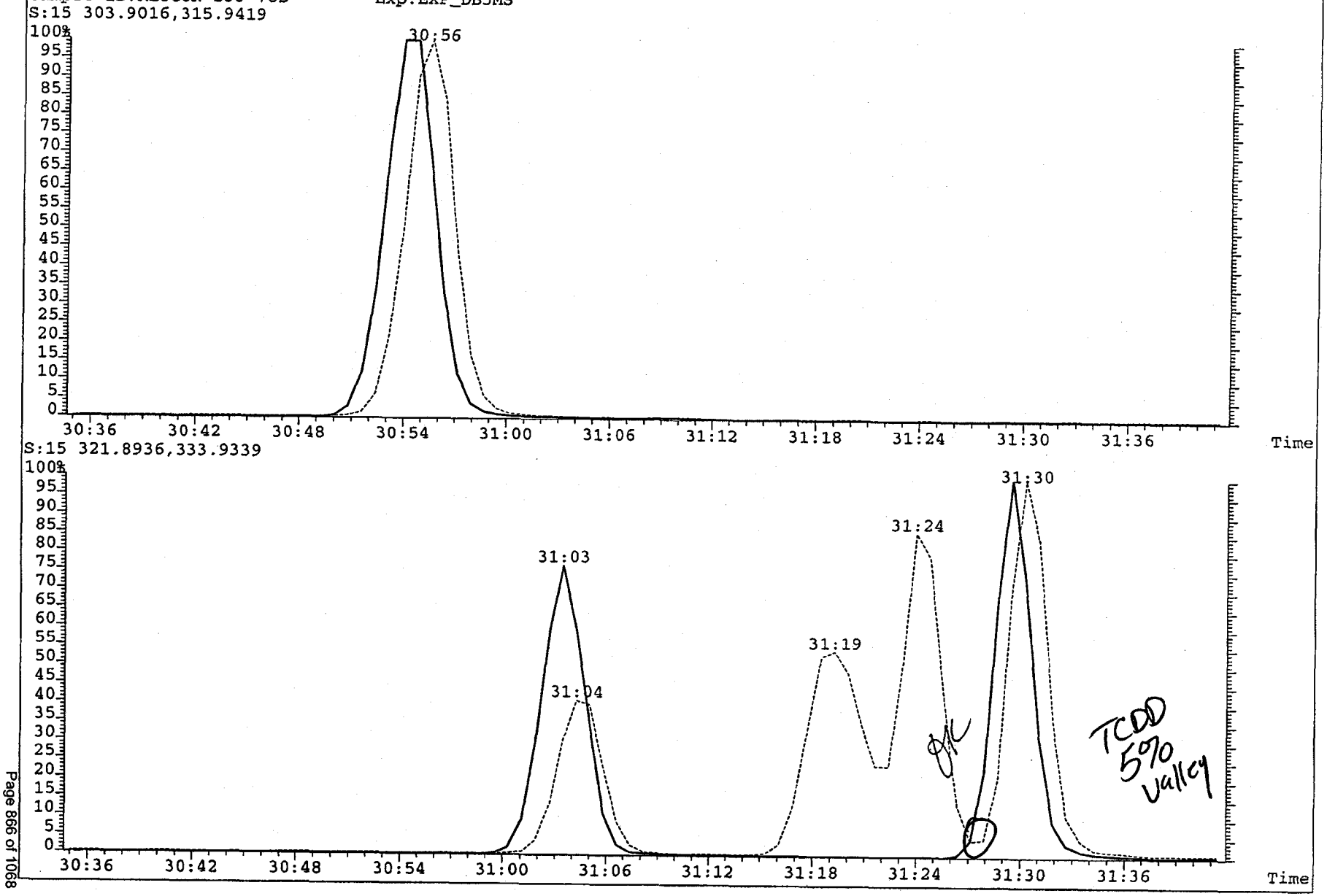




Filename ; a07oct09a
Sample ; 15
Acquired ; 7-OCT-09 18:05:43
Processed ; 8-OCT-09 06:29:11
Sample ID ; RETCON S33-78D

Name	First Eluter RT	Last Eluter RT
TCDD	28:24	32:02
PeCDD	32:57	34:34
HxCDD	35:40	37:15
HpCDD	39:25	40:21
OCDD	44:40	
TCDF	26:39	32:07
PeCDF	32:05	34:46
HxCDF	35:15	37:35
HpCDF	39:05	41:03
OCDF	44:59	

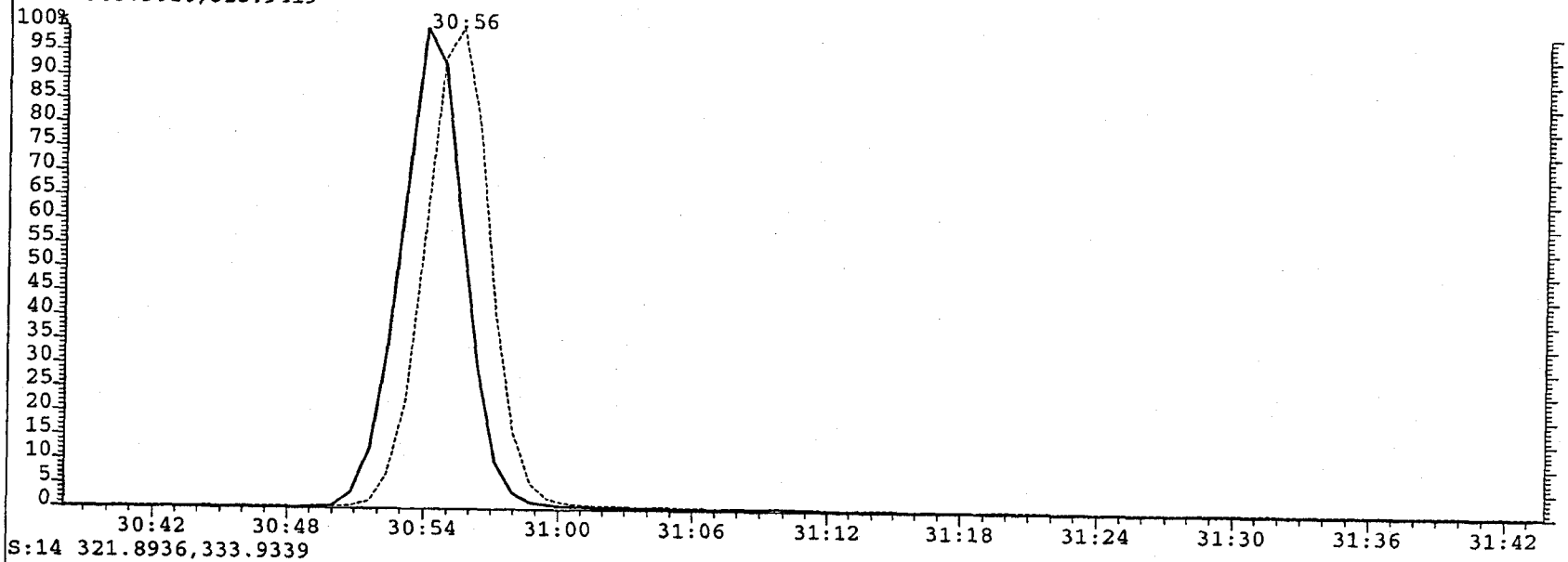
Filename:A07OCT09A -15 Acq: 7-OCT-2009 18:05:43 Inst: HRMS2
Sample ID:RETCON S33-78D Exp:EXP_DB5MS



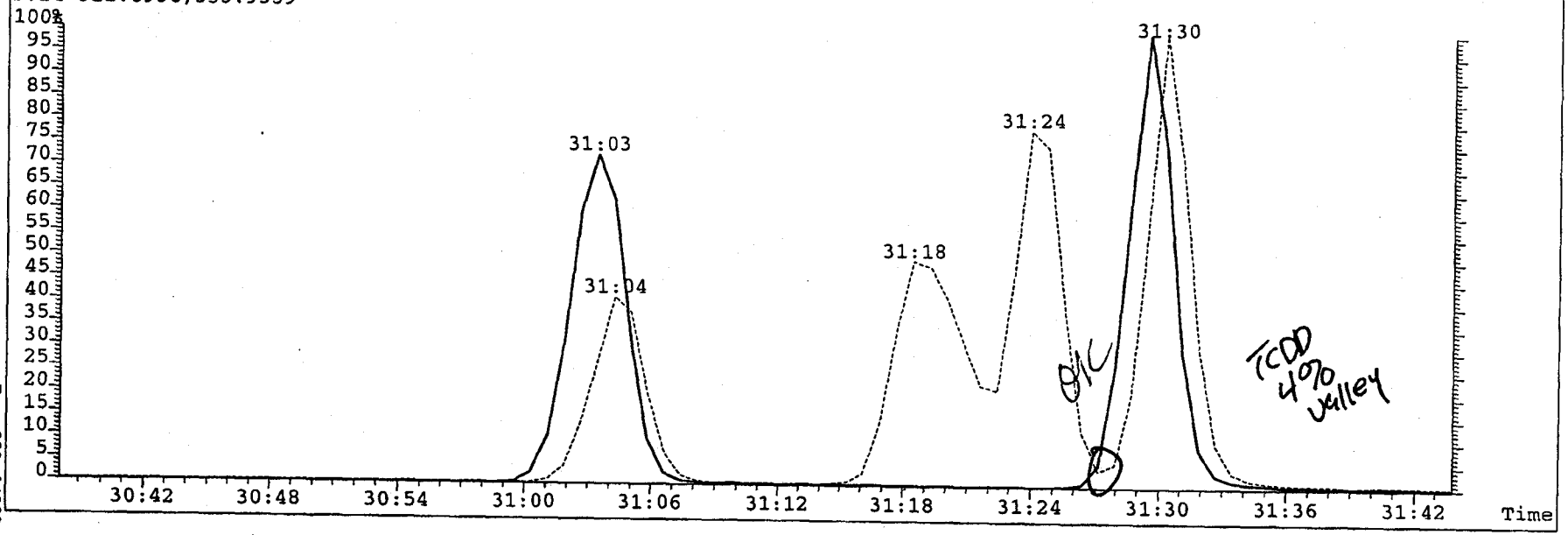
Filename ; a07oct09a_2
Sample ; 14
Acquired ; 8-OCT-09 05:27:59
Processed ; 8-OCT-09 16:59:48
Sample ID ; RETCON S33-78D

Name	First Eluter RT	Last Eluter RT
TCDD	28:23	32:02
PeCDD	32:57	34:34
HxCDD	35:40	37:15
HpCDD	39:25	40:22
OCDD	44:41	
TCDF	26:39	32:07
PeCDF	32:05	34:46
HxCDF	35:15	37:35
HpCDF	39:05	41:03
OCDF	44:59	

Filename:A07OCT09A_2 -14 Acq: 8-OCT-2009 05:27:59 Inst: HRMS2
Sample ID:RETCON S33-78D Exp:EXP_DB5MS
S:14 303.9016,315.9419



S:14 321.8936,333.9339



Method 8290
Lab Method Blank

Analytical Data Summary Sheet

Analyte	Amount ng/L	EDL ng/L	RL ng/L	EMPC ng/L	RT (min.)	Ratio	Qualifier
2,3,7,8-TCDD	ND	0.00120	0.0100				
1,2,3,7,8-PeCDD	ND	0.00500	0.0500				
1,2,3,4,7,8-HxCDD	ND	0.00500	0.0500				
1,2,3,6,7,8-HxCDD	ND	0.00500	0.0500				
1,2,3,7,8,9-HxCDD	ND	0.00500	0.0500				
1,2,3,4,6,7,8-HpCDD	ND	0.00500	0.0500				
OCDD	ND	0.0100	0.100				
2,3,7,8-TCDF	ND	0.00103	0.0100				
1,2,3,7,8-PeCDF	ND	0.00500	0.0500				
2,3,4,7,8-PeCDF	ND	0.00500	0.0500				
1,2,3,4,7,8-HxCDF	ND	0.00500	0.0500				
1,2,3,6,7,8-HxCDF	ND	0.00500	0.0500				
2,3,4,6,7,8-HxCDF	ND	0.00500	0.0500				
1,2,3,7,8,9-HxCDF	ND	0.00500	0.0500				
1,2,3,4,6,7,8-HpCDF	ND	0.00500	0.0500				
1,2,3,4,7,8,9-HpCDF	ND	0.00500	0.0500				
OCDF	ND	0.0100	0.100				
Total TCDDs	ND	0.00120	0.0100				
Total PeCDDs	ND	0.00500	0.0500				
Total HxCDDs	ND	0.00500	0.0500				
Total HpCDDs	ND	0.00500	0.0500				
Total TCDFs	ND	0.00103	0.0100				
Total PeCDFs	ND	0.00500	0.0500				
Total HxCDFs	ND	0.00500	0.0500				
Total HpCDFs	ND	0.00500	0.0500				
WHO-2005 TEQ (ND=0)	ND			ND			
WHO-2005 TEQ (ND=½)	**0.00580**			0.0058			

Client Information			**Sample Information**		
Project Name:			Report Basis:	Wet	
			Matrix:	Water	
Sample ID:	Lab Method Blank		Weight / Volume:	1000	mL
			Solids / Lipids:	NA	%
			Original pH :	5.00	
Laboratory Information			Batch ID:	WG17335	
Project ID:			Instrument:	HRMS1	
Sample ID:			Filename:	a07oct09a-4	
Collection Date/Time:			Retchk:	a07oct09a-1	
Receipt Date/Time:			Begin ConCal:	a07oct09a-1	
Extraction Date:	10/05/09		End ConCal:	a07oct09a-15	
Analysis Date/Time:	10/07/09	9:13	Initial Cal:	m8290-092309a	

Method 8290
Lab Method Blank

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)		Percent Recovery (%)	RT (min.)	Ratio	Qualifier
Extraction Standards							
13C12-2,3,7,8-TCDD	2	1.76		88.1	31:30	0.78	
13C12-1,2,3,7,8-PeCDD	2	1.91		95.4	34:18	1.58	
13C12-1,2,3,6,7,8-HxCDD	2	1.95		97.4	37:00	1.25	
13C12-1,2,3,4,6,7,8-HpCDD	2	2.02		101	40:21	1.07	
13C12-OCDD	4.0	3.92		98.0	44:40	0.90	
13C12-2,3,7,8-TCDF	2	1.79		89.6	30:55	0.79	
13C12-1,2,3,7,8-PeCDF	2	1.73		86.6	33:30	1.54	
13C12-1,2,3,6,7,8-HxCDF	2	1.88		93.9	36:18	0.52	
13C12-1,2,3,4,6,7,8-HpCDF	2	1.89		94.3	39:04	0.45	
Cleanup Standards							
37Cl4-2,3,7,8-TCDD	0.4	0.416		104	31:31	-	
13C12-2,3,4,7,8-PeCDF	0.4	0.403		101	34:07	1.55	
13C12-1,2,3,4,7,8-HxCDD	0.4	0.434		109	36:55	1.27	
13C12-1,2,3,4,7,8-HxCDF	0.4	0.428		107	36:12	0.51	
13C12-1,2,3,4,7,8,9-HpCDF	0.4	0.416		104	41:03	0.45	
Injection Standards							
13C12-1,2,3,4-TCDD	2.0	-		-	31:03	0.78	
13C12-1,2,3,7,8,9-HxCDD	2.0	-		-	37:15	1.25	

Client Information			**Sample Information**		
Project Name:			Report Basis:	Wet	
			Matrix:	Water	
Sample ID:	Lab Method Blank		Weight / Volume:	1000	mL
			Solids / Lipids:	NA	%
			Original pH :	5.00	
Laboratory Information			Batch ID:	WG17335	
Project ID:			Instrument:	HRMS1	
Sample ID:			Filename:	a07oct09a-4	
Collection Date/Time:			Retchk:	a07oct09a-1	
Receipt Date/Time:			Begin ConCal:	a07oct09a-1	
Extraction Date:	10/05/09		End ConCal:	a07oct09a-15	
Analysis Date/Time:	10/07/09	9:13	Initial Cal:	m8290-092309a	

Form Version:[8290]Report

Analyzed by: DS
Date: 10-12-09

Reviewed by: [illegible]
Date: 10/13/09

Analytical Results
for
Ongoing Precision Result (OPR)

Analyte	Spiked (pg/µL)	AMT (pg/µL)	REC %	Range % Lower	Range % Upper	Qualifier
2,3,7,8-TCDD	10	10.1	101	70.0	130	
1,2,3,7,8-PeCDD	50	49.3	98.6	70.0	130	
1,2,3,4,7,8-HxCDD	50	47.9	95.8	70.0	130	
1,2,3,6,7,8-HxCDD	50	50.5	101	70.0	130	
1,2,3,7,8,9-HxCDD	50	49.0	98.0	70.0	130	
1,2,3,4,6,7,8-HpCDD	50	48.0	96.1	70.0	130	
OCDD	100	93.7	93.7	70.0	130	
2,3,7,8-TCDF	10	9.40	94.0	70.0	130	
1,2,3,7,8-PeCDF	50	49.5	99.0	70.0	130	
2,3,4,7,8-PeCDF	50	47.8	95.5	70.0	130	
1,2,3,4,7,8-HxCDF	50	49.4	98.7	70.0	130	
1,2,3,6,7,8-HxCDF	50	51.7	103	70.0	130	
2,3,4,6,7,8-HxCDF	50	49.0	98.0	70.0	130	
1,2,3,7,8,9-HxCDF	50	47.4	94.7	70.0	130	
1,2,3,4,6,7,8-HpCDF	50	49.0	97.9	70.0	130	
1,2,3,4,7,8,9-HpCDF	50	47.5	95.0	70.0	130	
OCDF	100	98.6	98.6	70.0	130	

= Outside range limits
* = Ion Ratio Out

QC Information

OPR Project No: OPR17335
Extraction Date: 5-Oct-09
Analysis Date: 7-Oct-09
Method: 8290

Sample Information

Matrix: Water

File Information

OPR Filename: a07oct09a-2
Retchk: a07oct09a-1
Begin ConCal: a07oct09a-1
End ConCal: a07oct09a-15
Initial Cal: m8290-092309a

Analytical Results
for
Ongoing Precision Result (OPR)

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)	Percent Recovery (%)	RT (min.)	Ratio	Qualifier
Extraction Standards						
13C12-2,3,7,8-TCDD	2	1.76	88.0	31:30	0.77	
13C12-1,2,3,7,8-PeCDD	2	1.89	94.5	34:18	1.57	
13C12-1,2,3,6,7,8-HxCDD	2	1.95	97.5	37:00	1.25	
13C12-1,2,3,4,6,7,8-HpCDD	2	2.03	102	40:21	1.07	
13C12-OCDD	4	3.84	96.0	44:40	0.90	
13C12-2,3,7,8-TCDF	2	1.79	89.5	30:55	0.79	
13C12-1,2,3,7,8-PeCDF	2	1.75	87.5	33:30	1.55	
13C12-1,2,3,6,7,8-HxCDF	2	1.84	92.0	36:18	0.52	
13C12-1,2,3,4,6,7,8-HpCDF	2	1.88	94.0	39:04	0.44	
Cleanup Standards						
37Cl4-2,3,7,8-TCDD	0.4	0.438	110	31:31	-	
13C12-2,3,4,7,8-PeCDF	0.4	0.425	106	34:07	1.57	
13C12-1,2,3,4,7,8-HxCDD	0.4	0.447	112	36:55	1.26	
13C12-1,2,3,4,7,8-HxCDF	0.4	0.441	110	36:12	0.52	
13C12-1,2,3,4,7,8,9-HpCDF	0.4	0.442	111	41:03	0.44	
Injection Standards						
13C12-1,2,3,4-TCDD	2	-	-	31:03	0.78	
13C12-1,2,3,7,8,9-HxCDD	2	-	-	37:15	1.25	

QC Information

OPR Project No: OPR17335
Extraction Date: 5-Oct-09
Analysis Date: 7-Oct-09
Method: 8290

Sample Information

Matrix: Water

File Information

OPR Filename : a07oct09a-2
Retchk: a07oct09a-1
Begin ConCal: a07oct09a-1
End ConCal: a07oct09a-15
Initial Cal: m8290-092309a

Form Version.[8290]OPR

Reviewed By: JM

Date Reviewed: 10-9-09

Analytical Results
for
Ongoing Precision & Recovery Duplicate Results (OPRD)

Analyte	Spiked (pg/µL)	AMT (pg/µL)	Recovery %	#	Range Lower	Range Upper	OPR Rec(%)	#	RPD (±20%)	Qualifier
2,3,7,8-TCDD	10.0	10.3	103		70.0	130	101		2.05	
1,2,3,7,8-PeCDD	50.0	49.5	99.0		70.0	130	98.6		0.396	
1,2,3,4,7,8-HxCDD	50.0	48.6	97.3		70.0	130	95.8		1.52	
1,2,3,6,7,8-HxCDD	50.0	52.2	104		70.0	130	101		3.25	
1,2,3,7,8,9-HxCDD	50.0	50.0	100		70.0	130	98.0		2.04	
1,2,3,4,6,7,8-HpCDD	50.0	48.6	97.1		70.0	130	96.1		1.06	
OCDD	100	95.8	95.8		70.0	130	93.7		2.18	
2,3,7,8-TCDF	10.0	9.43	94.3		70.0	130	94.0		0.286	
1,2,3,7,8-PeCDF	50.0	49.8	99.6		70.0	130	99.0		0.646	
2,3,4,7,8-PeCDF	50.0	47.8	95.5		70.0	130	95.5		0.0209	
1,2,3,4,7,8-HxCDF	50.0	50.5	101		70.0	130	98.7		2.24	
1,2,3,6,7,8-HxCDF	50.0	52.1	104		70.0	130	103		1.18	
2,3,4,6,7,8-HxCDF	50.0	49.7	99.4		70.0	130	98.0		1.37	
1,2,3,7,8,9-HxCDF	50.0	48.6	97.1		70.0	130	94.7		2.51	
1,2,3,4,6,7,8-HpCDF	50.0	49.8	99.5		70.0	130	97.9		1.64	
1,2,3,4,7,8,9-HpCDF	50.0	47.5	95.0		70.0	130	95.0		0.0316	
OCDF	100	94.4	94.4		70.0	130	98.6		4.47	

= Outside range limits
* = Ion Ratio Out

QC Information

OPR Project No: OPRD17335
Extraction Date: 5-Oct-09
Analysis Date: 7-Oct-09
Method: 8290

Sample Information

Matrix: Water

File Information

OPRD Filename : a07oct09a-3
Retchk: a07oct09a-1
Begin ConCal: a07oct09a-1
End ConCal: a07oct09a-15
Initial Cal: m8290-092309a

Analytical Results
for
Ongoing Precision & Recovery Duplicate Results (OPRD)

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)	Percent Recovery (%)	RT (min.)	Ratio	Qualifier
Extraction Standards			(40-135%)			
13C12-2,3,7,8-TCDD	2	1.69	84.3	31:30	0.78	
13C12-1,2,3,7,8-PeCDD	2	1.80	89.8	34:18	1.57	
13C12-1,2,3,6,7,8-HxCDD	2	1.87	93.3	37:00	1.25	
13C12-1,2,3,4,6,7,8-HpCDD	2	1.95	97.3	40:21	1.06	
13C12-OCDD	4	3.85	96.3	44:40	0.90	
13C12-2,3,7,8-TCDF	2	1.71	85.6	30:55	0.78	
13C12-1,2,3,7,8-PeCDF	2	1.68	84.0	33:30	1.56	
13C12-1,2,3,6,7,8-HxCDF	2	1.79	89.4	36:18	0.53	
13C12-1,2,3,4,6,7,8-HpCDF	2	1.79	89.7	39:04	0.45	
Cleanup Standards			(70-130%)			
37Cl4-2,3,7,8-TCDD	0.4	0.430	108	31:31	-	
13C12-2,3,4,7,8-PeCDF	0.4	0.401	100	34:07	1.55	
13C12-1,2,3,4,7,8-HxCDD	0.4	0.443	111	36:55	1.30	
13C12-1,2,3,4,7,8-HxCDF	0.4	0.437	109	36:12	0.51	
13C12-1,2,3,4,7,8,9-HpCDF	0.4	0.425	106	41:01	0.45	
Injection Standards						
13C12-1,2,3,4-TCDD	2	-	-	31:03	0.79	
13C12-1,2,3,7,8,9-HxCDD	2	-	-	37:15	1.24	

QC Information

OPR Project No: OPRD17335
Extraction Date: 05-Oct-09
Analysis Date: 07-Oct-09
Method: 8290

Sample Information

Matrix: Water

File Information

OPRD Filename : a07oct09a-3
Retchk: a07oct09a-1
Begin ConCal: a07oct09a-1
End ConCal: a07oct09a-15
Initial Cal: m8290-092309a

Form Version:[8290]OPRD

Reviewed By: TM

Date Reviewed: 10-9-09

HRMS2 Sequence Log

SGS Environmental Services

Data File S	Sample ID	Analyst	Acq. Date	Time
a08oct09a;1	;RETCON S33-78D pass	;JWP	8-OCT-09	16:02:08
a08oct09a;2	;OPR17345	;JWP	8-OCT-09	16:50:23
a08oct09a;3	;OPRD17345	;JWP	8-OCT-09	17:38:40
a08oct09a;4	;LMB17345	;JWP	8-OCT-09	18:27:01 ← Method BLK
a08oct09a;5	;G330-42-5C	;JWP	8-OCT-09	19:15:17
a08oct09a;6	;G330-42-6C	;JWP	8-OCT-09	20:03:33
a08oct09a;7	;G330-42-9C	;JWP	8-OCT-09	20:51:54
a08oct09a;8	;G330-42-10C	;JWP	8-OCT-09	21:40:11
a08oct09a;9	;G330-42-11C	;JWP	8-OCT-09	22:28:26
a08oct09a;10	;G330-42-13B	;JWP	8-OCT-09	23:16:47
a08oct09a;11	;G330-42-18B ← MS	;JWP	9-OCT-09	00:05:04
a08oct09a;12	;G330-42-19B ← MSD	;JWP	9-OCT-09	00:53:20
a08oct09a;13	;G1047-9-1B	;JWP	9-OCT-09	01:41:41
a08oct09a;14	;G1047-9-2B	;JWP	9-OCT-09	02:30:04
a08oct09a;15	;RETCON S33-78D pass	;JWP	9-OCT-09	03:18:20

DS
10-9-09

9C - FD-092609-02
13B - NTC215B02-SO-0204
10C - NTC215B09-SO-0001
11C - NTC215B17-SO-0001

JW 10-9-09

8290 CCAL

Sample text; RETCON S33-78D
Filename; a08oct09a -1
ICAL; m8290-092309a

Acquired; 8-OCT-09 16:02:08 Processed; 8-OCT-09 16:50:10
Results; m8290-100809a

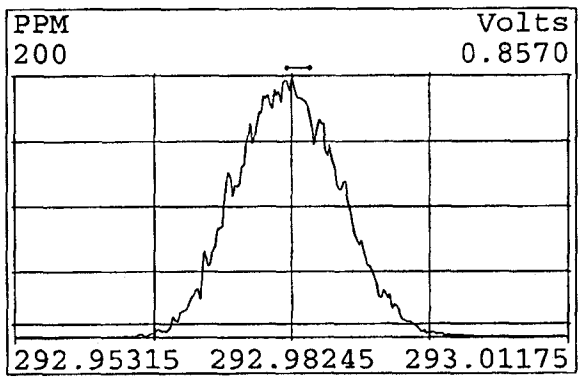
Name;	Resp;	Ion 1;	Ion 2	; RA ;? ;	RT ;	Conc ;	Dev'n;	CCAL RRF;	ICAL RRF	;Mod
2,3,7,8-TCDD;	2.2e+07;	9.72e+06;	1.24e+07	; 0.79 ;y ;	31:31 ;	9.952 ;	-0.5;	1.0244;	1.0293	;n
1,2,3,7,8-PeCDD;	7.9e+07;	4.80e+07;	3.09e+07	; 1.56 ;y ;	34:19 ;	49.60 ;	-0.8;	1.0455;	1.0539	;n
1,2,3,4,7,8-HxCDD;	7.0e+07;	3.97e+07;	3.01e+07	; 1.32 ;y ;	36:56 ;	43.25 ;	-13.5;	0.8372;	0.9679	;n
1,2,3,6,7,8-HxCDD;	8.1e+07;	4.43e+07;	3.69e+07	; 1.20 ;y ;	37:02 ;	49.25 ;	-1.5;	0.9738;	0.9886	;n
1,2,3,7,8,9-HxCDD;	7.2e+07;	3.99e+07;	3.19e+07	; 1.25 ;y ;	37:16 ;	45.10 ;	-9.8;	0.8606;	0.9540	;n
1,2,3,4,6,7,8-HpCDD;	5.6e+07;	2.84e+07;	2.71e+07	; 1.05 ;y ;	40:23 ;	48.19 ;	-3.6;	1.0574;	1.0970	;n
OCDD;	9.5e+07;	4.45e+07;	5.01e+07	; 0.89 ;y ;	44:42 ;	95.77 ;	-4.2;	1.0765;	1.1240	;n
2,3,7,8-TCDF;	3.2e+07;	1.39e+07;	1.79e+07	; 0.78 ;y ;	30:55 ;	9.659 ;	-3.4;	1.0068;	1.0424	;n
1,2,3,7,8-PeCDF;	1.2e+08;	7.52e+07;	4.77e+07	; 1.58 ;y ;	33:31 ;	49.25 ;	-1.5;	0.9846;	0.9997	;n
2,3,4,7,8-PeCDF;	1.3e+08;	7.66e+07;	4.88e+07	; 1.57 ;y ;	34:07 ;	48.32 ;	-3.4;	1.0037;	1.0386	;n
1,2,3,4,7,8-HxCDF;	1.0e+08;	5.70e+07;	4.56e+07	; 1.25 ;y ;	36:13 ;	44.52 ;	-11.0;	0.9656;	1.0846	;n
1,2,3,6,7,8-HxCDF;	1.2e+08;	6.70e+07;	5.36e+07	; 1.25 ;y ;	36:19 ;	49.33 ;	-1.3;	1.1346;	1.1500	;n
2,3,4,6,7,8-HxCDF;	1.1e+08;	5.96e+07;	4.81e+07	; 1.24 ;y ;	36:48 ;	45.98 ;	-8.0;	1.0134;	1.1020	;n
1,2,3,7,8,9-HxCDF;	8.9e+07;	4.97e+07;	3.93e+07	; 1.26 ;y ;	37:36 ;	44.74 ;	-10.5;	0.8383;	0.9369	;n
1,2,3,4,6,7,8-HpCDF;	9.4e+07;	4.80e+07;	4.60e+07	; 1.04 ;y ;	39:06 ;	48.51 ;	-3.0;	1.3402;	1.3813	;n
1,2,3,4,7,8,9-HpCDF;	7.2e+07;	3.68e+07;	3.53e+07	; 1.04 ;y ;	41:04 ;	48.16 ;	-3.7;	1.0281;	1.0673	;n
OCDF;	1.1e+08;	5.40e+07;	5.95e+07	; 0.91 ;y ;	45:00 ;	92.36 ;	-7.6;	1.2908;	1.3977	;n
Extraction Standards										
13C-2,3,7,8-TCDD;	2.2e+08;	9.46e+07;	1.21e+08	; 0.78 ;y ;	31:30 ;	96.68 ;	-3.3;	1.0813;	1.1184	;n
13C-1,2,3,7,8-PeCDD;	1.5e+08;	9.25e+07;	5.85e+07	; 1.58 ;y ;	34:18 ;	93.18 ;	-6.8;	0.7563;	0.8116	;n
13C-1,2,3,6,7,8-HxCDD;	1.7e+08;	9.30e+07;	7.39e+07	; 1.26 ;y ;	37:01 ;	110.8 ;	10.8;	1.1899;	1.0736	;n
13C-1,2,3,4,6,7,8-HpCDD;	1.0e+08;	5.39e+07;	5.11e+07	; 1.05 ;y ;	40:22 ;	101.7 ;	1.7;	0.7485;	0.7360	;n
13C-OCDD;	1.8e+08;	8.28e+07;	9.30e+07	; 0.89 ;y ;	44:40 ;	214.9 ;	7.4;	0.6266;	0.5833	;n
13C-2,3,7,8-TCDF;	3.2e+08;	1.39e+08;	1.77e+08	; 0.78 ;y ;	30:55 ;	92.32 ;	-7.7;	1.5819;	1.7135	;n
13C-1,2,3,7,8-PeCDF;	2.5e+08;	1.53e+08;	9.69e+07	; 1.58 ;y ;	33:30 ;	91.14 ;	-8.9;	1.2514;	1.3731	;n
13C-1,2,3,6,7,8-HxCDF;	2.1e+08;	7.36e+07;	1.39e+08	; 0.53 ;y ;	36:18 ;	105.4 ;	5.4;	1.5149;	1.4379	;n
13C-1,2,3,4,6,7,8-HpCDF;	1.4e+08;	4.35e+07;	9.68e+07	; 0.45 ;y ;	39:05 ;	98.32 ;	-1.7;	1.0003;	1.0173	;n
Injection Standards										
13C-1,2,3,4-TCDD;	2.0e+08;	8.81e+07;	1.12e+08	; 0.79 ;y ;	31:04 ;	432.7 ;	-;	-;	-	;n
13C-1,2,3,7,8,9-HxCDD;	1.4e+08;	7.80e+07;	6.23e+07	; 1.25 ;y ;	37:16 ;	388.7 ;	-;	-;	-	;n
Cleanup Standards										
37Cl-2,3,7,8-TCDD;	2.2e+07;	2.23e+07;	-	; - ;- ;	31:31 ;	9.560 ;	-4.4;	1.1150;	1.1662	;n
13C-2,3,4,7,8-PeCDF;	2.4e+08;	1.49e+08;	9.45e+07	; 1.58 ;y ;	34:07 ;	91.35 ;	-8.6;	1.2217;	1.3373	;n
13C-1,2,3,4,7,8-HxCDD;	1.3e+08;	7.13e+07;	5.62e+07	; 1.27 ;y ;	36:55 ;	92.56 ;	-7.4;	0.9091;	0.9822	;n
13C-1,2,3,4,7,8-HxCDF;	1.8e+08;	6.03e+07;	1.16e+08	; 0.52 ;y ;	36:12 ;	96.75 ;	-3.3;	1.2559;	1.2981	;n
13C-1,2,3,4,7,8,9-HpCDF;	1.1e+08;	3.33e+07;	7.44e+07	; 0.45 ;y ;	41:03 ;	98.21 ;	-1.8;	0.7681;	0.7821	;n
Sampling Standards										
37Cl-2,3,7,8-TCDD;	2.2e+07;	2.23e+07;	-	; - ;- ;	31:31 ;	9.891 ;	-1.1;	1.0312;	1.0425	;n
13C-2,3,4,7,8-PeCDF;	2.4e+08;	1.49e+08;	9.45e+07	; 1.58 ;y ;	34:07 ;	100.2 ;	0.2;	0.9763;	0.9744	;n
13C-1,2,3,4,7,8-HxCDD;	1.3e+08;	7.13e+07;	5.62e+07	; 1.27 ;y ;	36:55 ;	83.48 ;	-16.5;	0.7640;	0.9152	;n
13C-1,2,3,4,7,8-HxCDF;	1.8e+08;	6.03e+07;	1.16e+08	; 0.52 ;y ;	36:12 ;	91.83 ;	-8.2;	0.8290;	0.9028	;n
13C-1,2,3,4,7,8,9-HpCDF;	1.1e+08;	3.33e+07;	7.44e+07	; 0.45 ;y ;	41:03 ;	99.88 ;	-0.1;	0.7679;	0.7688	;n

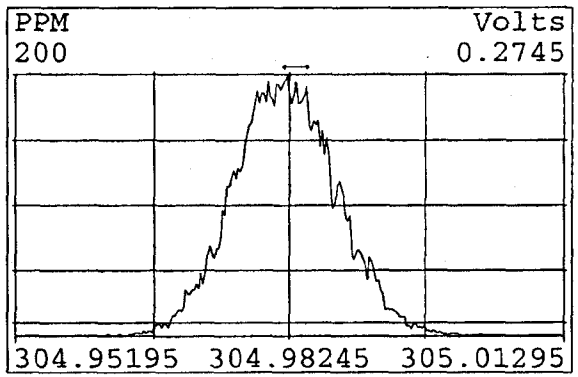
8290 CCAL

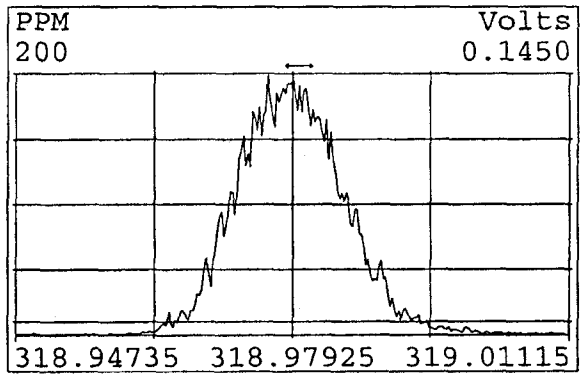
Sample text; RETCON S33-78D
Filename; a08oct09a -15 Acquired; 9-OCT-09 03:18:20 Processed; 9-OCT-09 05:11:04
ICAL; m8290-092309a Results; m8290-100809a

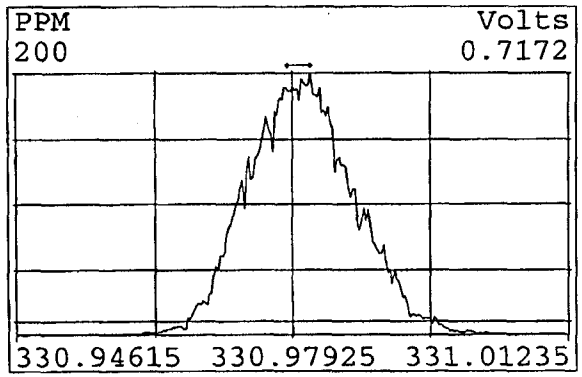
Name;	Resp;	Ion 1;	Ion 2	; RA ;? ;	RT ;	Conc ;	Dev'n;	CCAL RRF;	ICAL RRF	;Mod
2,3,7,8-TCDD;	2.8e+07;	1.22e+07;	1.54e+07	; 0.79 ;y ;	31:30 ;	9.698 ;	-3.0;	0.9982;	1.0293	;n
1,2,3,7,8-PeCDD;	1.1e+08;	6.62e+07;	4.23e+07	; 1.56 ;y ;	34:18 ;	49.51 ;	-1.0;	1.0436;	1.0539	;n
1,2,3,4,7,8-HxCDD;	1.0e+08;	5.64e+07;	4.49e+07	; 1.25 ;y ;	36:55 ;	49.21 ;	-1.6;	0.9526;	0.9679	;n
1,2,3,6,7,8-HxCDD;	1.0e+08;	5.82e+07;	4.63e+07	; 1.26 ;y ;	37:01 ;	49.73 ;	-0.5;	0.9832;	0.9886	;n
1,2,3,7,8,9-HxCDD;	1.0e+08;	5.59e+07;	4.50e+07	; 1.24 ;y ;	37:15 ;	49.75 ;	-0.5;	0.9493;	0.9540	;n
1,2,3,4,6,7,8-HpCDD;	8.3e+07;	4.27e+07;	4.06e+07	; 1.05 ;y ;	40:22 ;	48.41 ;	-3.2;	1.0621;	1.0970	;n
OCDD;	1.4e+08;	6.42e+07;	7.15e+07	; 0.90 ;y ;	44:41 ;	95.45 ;	-4.5;	1.0730;	1.1240	;n
2,3,7,8-TCDF;	3.9e+07;	1.71e+07;	2.17e+07	; 0.79 ;y ;	30:55 ;	9.435 ;	-5.6;	0.9835;	1.0424	;n
1,2,3,7,8-PeCDF;	1.7e+08;	1.01e+08;	6.44e+07	; 1.57 ;y ;	33:30 ;	48.76 ;	-2.5;	0.9750;	0.9997	;n
2,3,4,7,8-PeCDF;	1.7e+08;	1.04e+08;	6.60e+07	; 1.57 ;y ;	34:07 ;	48.19 ;	-3.6;	1.0010;	1.0386	;n
1,2,3,4,7,8-HxCDF;	1.4e+08;	8.06e+07;	6.43e+07	; 1.25 ;y ;	36:12 ;	49.23 ;	-1.5;	1.0679;	1.0846	;n
1,2,3,6,7,8-HxCDF;	1.5e+08;	8.48e+07;	6.78e+07	; 1.25 ;y ;	36:18 ;	48.88 ;	-2.2;	1.1242;	1.1500	;n
2,3,4,6,7,8-HxCDF;	1.5e+08;	8.19e+07;	6.63e+07	; 1.24 ;y ;	36:48 ;	49.55 ;	-0.9;	1.0922;	1.1020	;n
1,2,3,7,8,9-HxCDF;	1.3e+08;	7.05e+07;	5.63e+07	; 1.25 ;y ;	37:35 ;	49.87 ;	-0.3;	0.9345;	0.9369	;n
1,2,3,4,6,7,8-HpCDF;	1.3e+08;	6.70e+07;	6.45e+07	; 1.04 ;y ;	39:05 ;	47.97 ;	-4.1;	1.3254;	1.3813	;n
1,2,3,4,7,8,9-HpCDF;	1.0e+08;	5.31e+07;	5.07e+07	; 1.05 ;y ;	41:03 ;	49.01 ;	-2.0;	1.0462;	1.0673	;n
OCDF;	1.6e+08;	7.74e+07;	8.48e+07	; 0.91 ;y ;	44:59 ;	91.72 ;	-8.3;	1.2819;	1.3977	;n
Extraction Standards										
13C-2,3,7,8-TCDD;	2.8e+08;	1.22e+08;	1.55e+08	; 0.79 ;y ;	31:29 ;	99.40 ;	-0.6;	1.1116;	1.1184	;n
13C-1,2,3,7,8-PeCDD;	2.1e+08;	1.27e+08;	8.09e+07	; 1.57 ;y ;	34:17 ;	103.0 ;	3.0;	0.8361;	0.8116	;n
13C-1,2,3,6,7,8-HxCDD;	2.1e+08;	1.18e+08;	9.44e+07	; 1.25 ;y ;	36:60 ;	100.0 ;	0.0;	1.0740;	1.0736	;n
13C-1,2,3,4,6,7,8-HpCDD;	1.6e+08;	8.06e+07;	7.63e+07	; 1.06 ;y ;	40:21 ;	107.7 ;	7.7;	0.7926;	0.7360	;n
13C-OCDD;	2.5e+08;	1.19e+08;	1.34e+08	; 0.89 ;y ;	44:40 ;	219.0 ;	9.5;	0.6387;	0.5833	;n
13C-2,3,7,8-TCDF;	3.9e+08;	1.72e+08;	2.22e+08	; 0.77 ;y ;	30:54 ;	92.52 ;	-7.5;	1.5854;	1.7135	;n
13C-1,2,3,7,8-PeCDF;	3.4e+08;	2.07e+08;	1.32e+08	; 1.57 ;y ;	33:29 ;	99.26 ;	-0.7;	1.3629;	1.3731	;n
13C-1,2,3,6,7,8-HxCDF;	2.7e+08;	9.34e+07;	1.78e+08	; 0.52 ;y ;	36:17 ;	95.33 ;	-4.7;	1.3708;	1.4379	;n
13C-1,2,3,4,6,7,8-HpCDF;	2.0e+08;	6.18e+07;	1.37e+08	; 0.45 ;y ;	39:04 ;	98.53 ;	-1.5;	1.0024;	1.0173	;n
Injection Standards										
13C-1,2,3,4-TCDD;	2.5e+08;	1.10e+08;	1.39e+08	; 0.79 ;y ;	31:03 ;	539.3 ;	-;	-;	-	;n
13C-1,2,3,7,8,9-HxCDD;	2.0e+08;	1.10e+08;	8.79e+07	; 1.25 ;y ;	37:15 ;	548.7 ;	-;	-;	-	;n
Cleanup Standards										
37Cl-2,3,7,8-TCDD;	2.8e+07;	2.83e+07;	-	; - ;- ;	31:30 ;	9.745 ;	-2.6;	1.1365;	1.1662	;n
13C-2,3,4,7,8-PeCDF;	3.3e+08;	2.01e+08;	1.28e+08	; 1.57 ;y ;	34:06 ;	98.99 ;	-1.0;	1.3238;	1.3373	;n
13C-1,2,3,4,7,8-HxCDD;	1.9e+08;	1.07e+08;	8.49e+07	; 1.26 ;y ;	36:55 ;	98.87 ;	-1.1;	0.9710;	0.9822	;n
13C-1,2,3,4,7,8-HxCDF;	2.5e+08;	8.41e+07;	1.62e+08	; 0.52 ;y ;	36:12 ;	95.70 ;	-4.3;	1.2423;	1.2981	;n
13C-1,2,3,4,7,8,9-HpCDF;	1.6e+08;	4.92e+07;	1.08e+08	; 0.46 ;y ;	41:02 ;	101.5 ;	1.5;	0.7939;	0.7821	;n
Sampling Standards										
37Cl-2,3,7,8-TCDD;	2.8e+07;	2.83e+07;	-	; - ;- ;	31:30 ;	9.807 ;	-1.9;	1.0223;	1.0425	;n
13C-2,3,4,7,8-PeCDF;	3.3e+08;	2.01e+08;	1.28e+08	; 1.57 ;y ;	34:06 ;	99.69 ;	-0.3;	0.9713;	0.9744	;n
13C-1,2,3,4,7,8-HxCDD;	1.9e+08;	1.07e+08;	8.49e+07	; 1.26 ;y ;	36:55 ;	98.79 ;	-1.2;	0.9041;	0.9152	;n
13C-1,2,3,4,7,8-HxCDF;	2.5e+08;	8.41e+07;	1.62e+08	; 0.52 ;y ;	36:12 ;	100.4 ;	0.4;	0.9062;	0.9028	;n
13C-1,2,3,4,7,8,9-HpCDF;	1.6e+08;	4.92e+07;	1.08e+08	; 0.46 ;y ;	41:02 ;	103.0 ;	3.0;	0.7920;	0.7688	;n

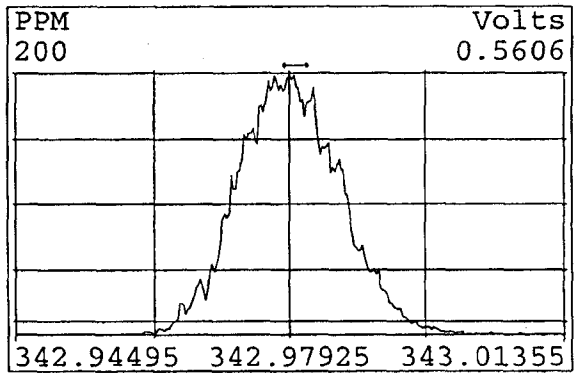
Peak Locate Examination: 8-OCT-2009:16:00 File:A08OCT09A_L
Experiment:EXP_DB5MS Function:1 Reference:PFK

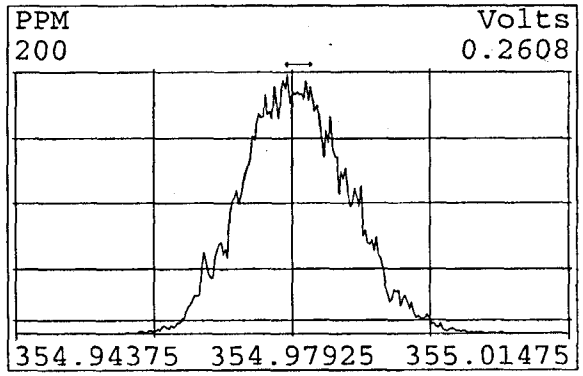


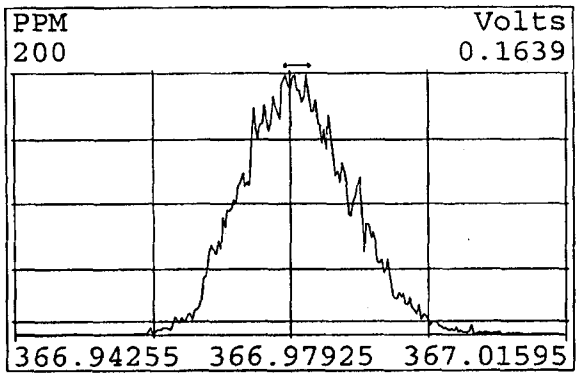


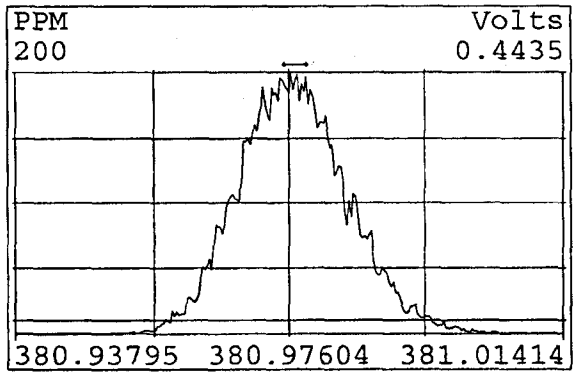




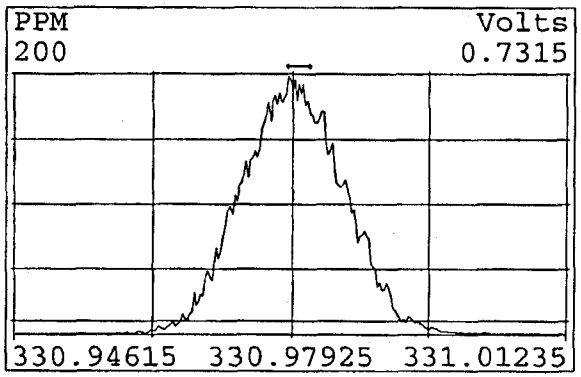


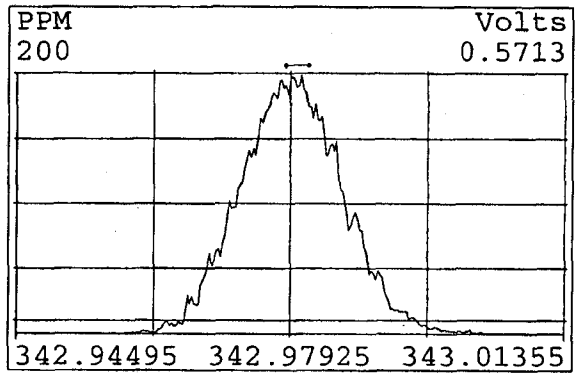


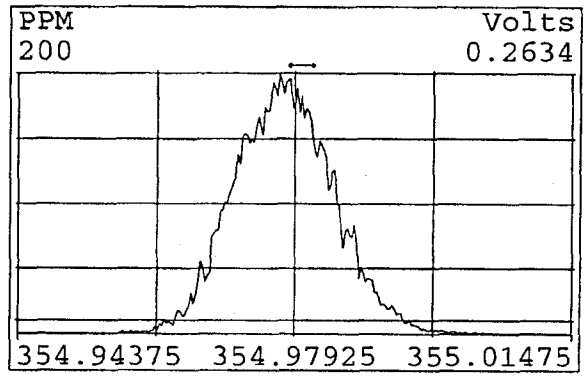


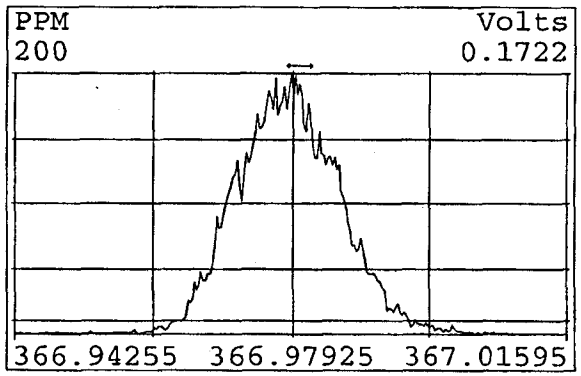


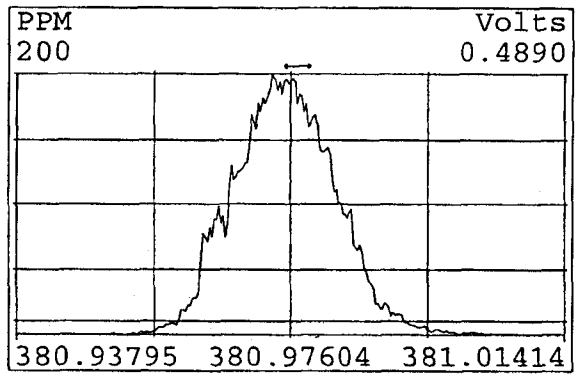
Peak Locate Examination: 8-OCT-2009:16:00 File:A08OCT09A_L
Experiment:EXP_DB5MS Function:2 Reference:PFK

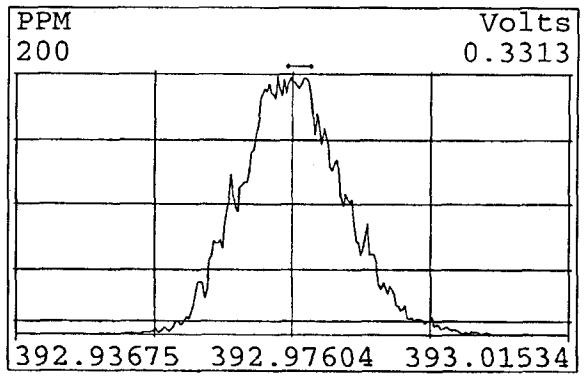


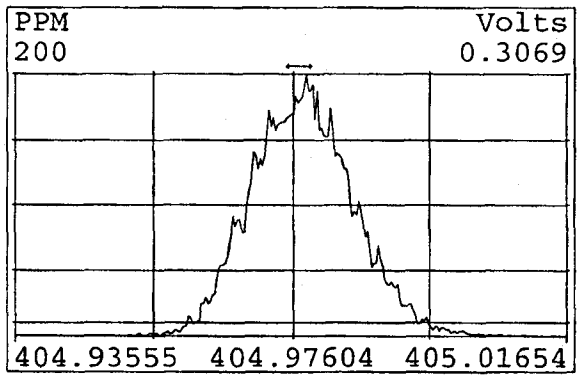


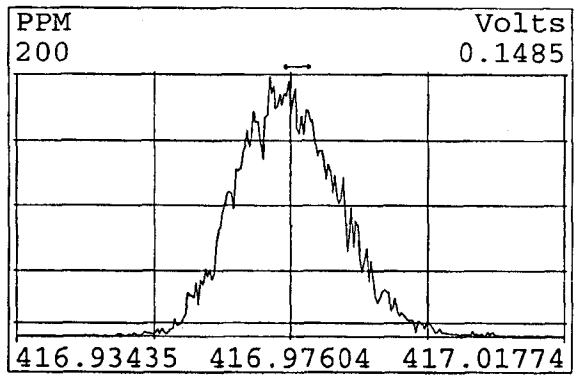




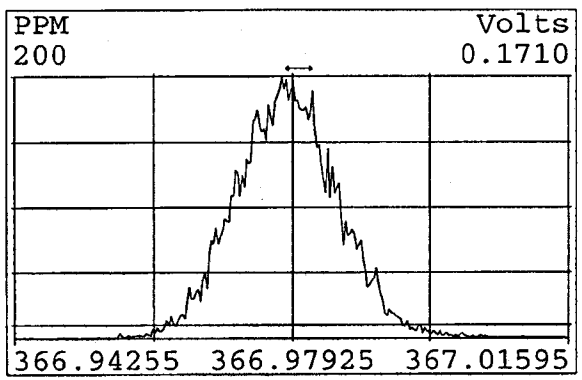


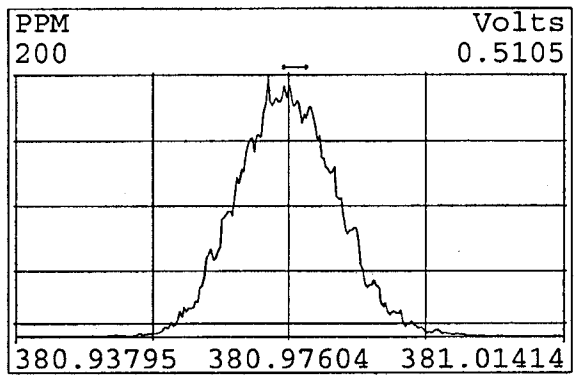


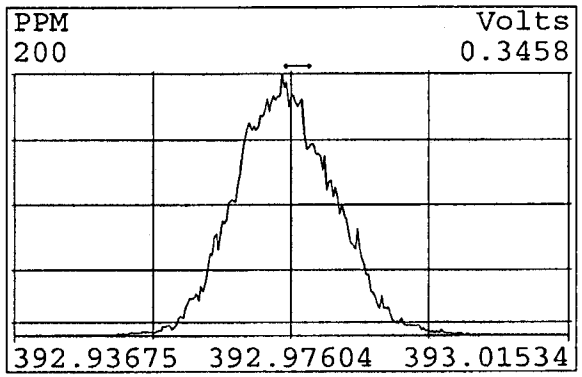


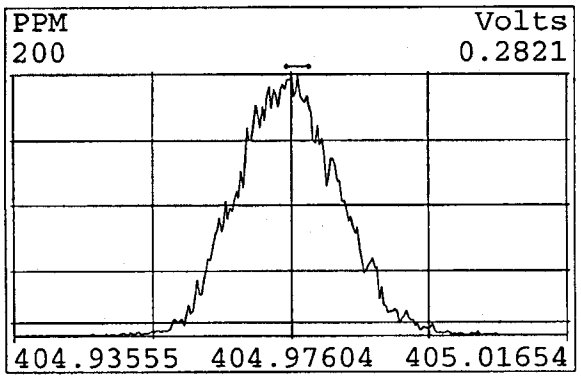


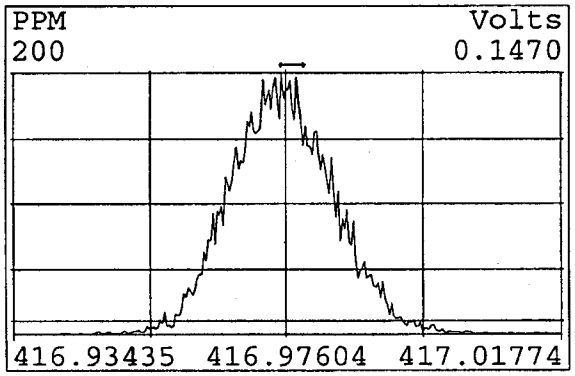
Peak Locate Examination: 8-OCT-2009:16:00 File:A08OCT09A_L
Experiment:EXP_DB5MS Function:3 Reference:PFK

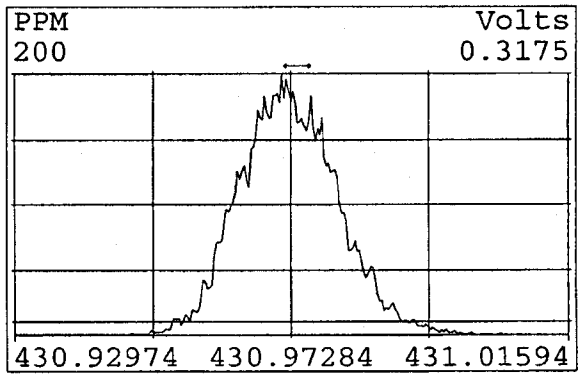


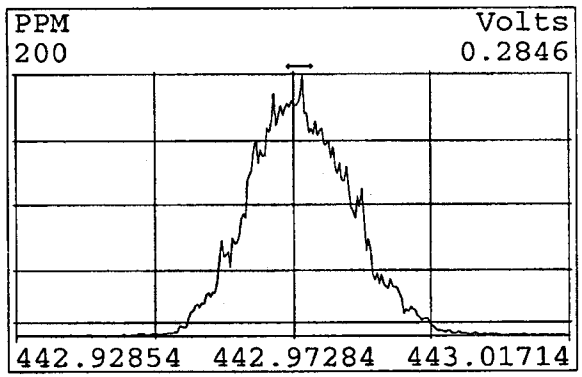


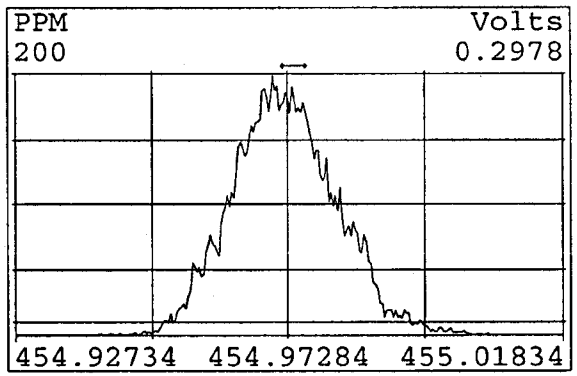




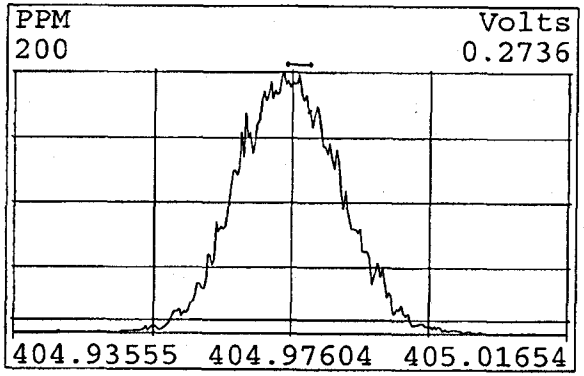


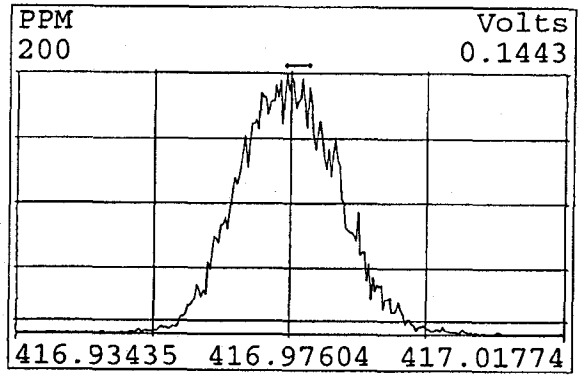


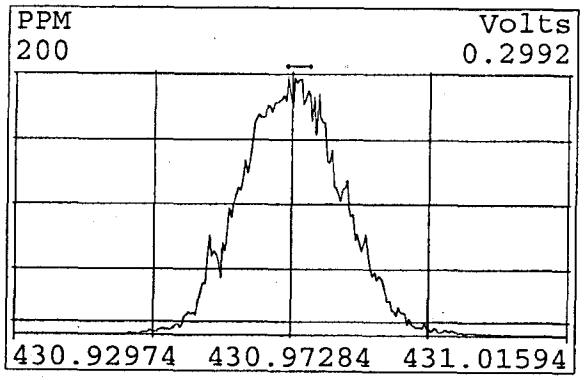


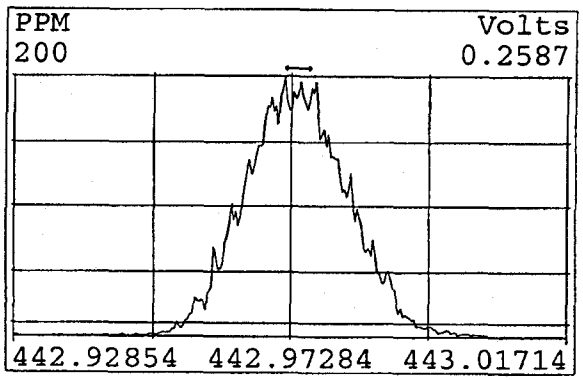


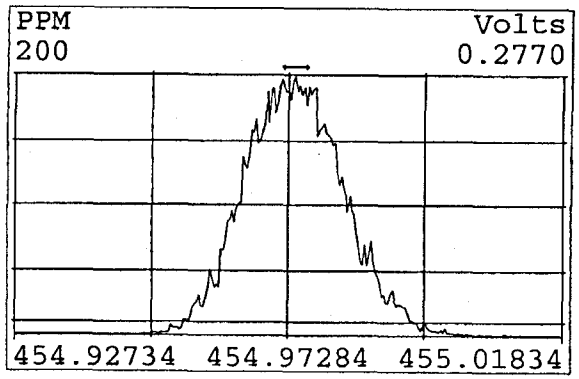
Peak Locate Examination: 8-OCT-2009:16:01 File:A08OCT09A_L
Experiment:EXP_DB5MS Function:4 Reference:PFK

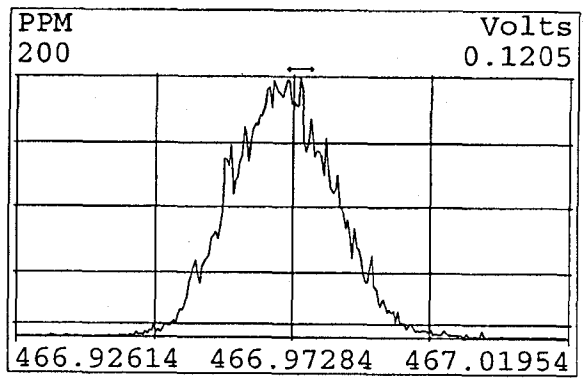


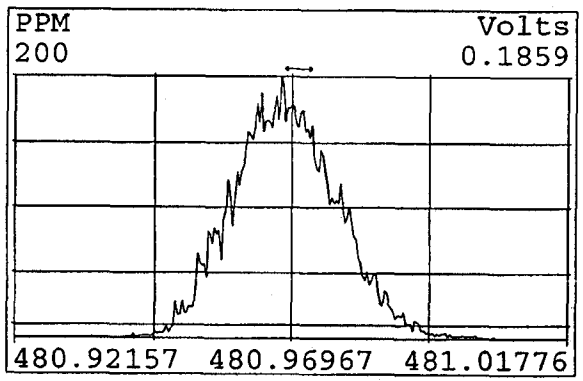




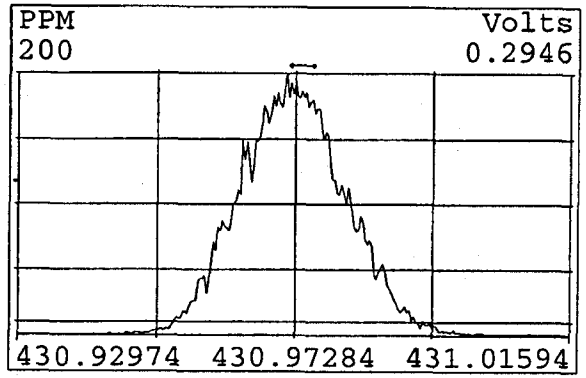


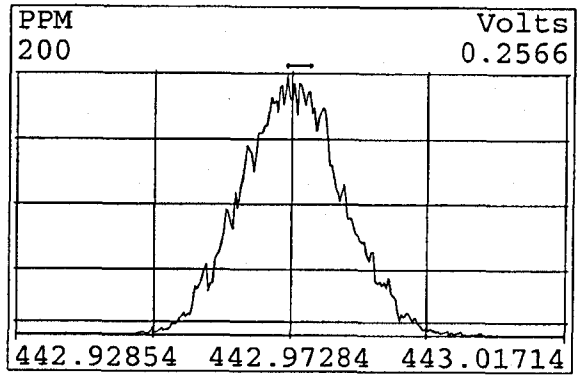


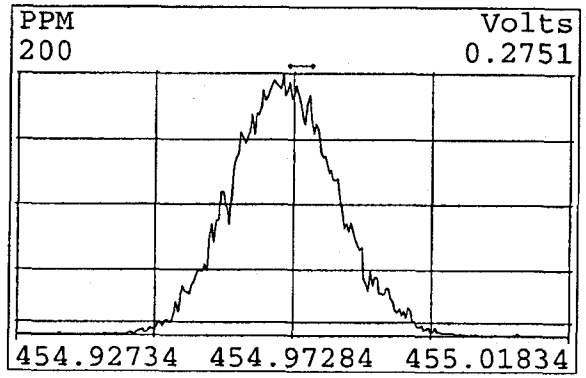


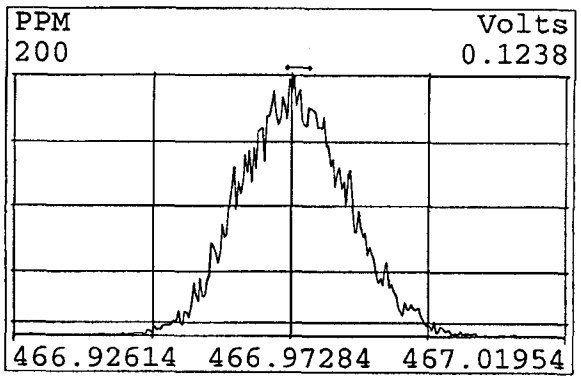


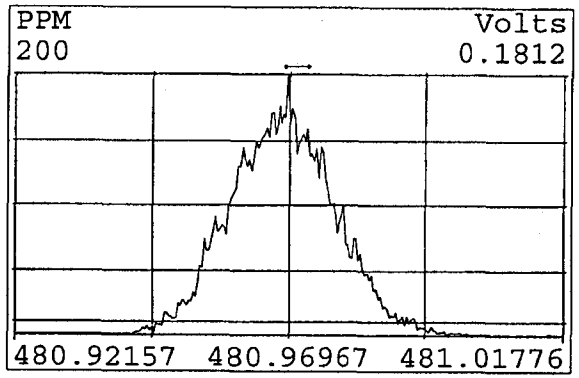
Peak Locate Examination: 8-OCT-2009:16:01 File:A08OCT09A_L
Experiment:EXP_DB5MS Function:5 Reference:PFK

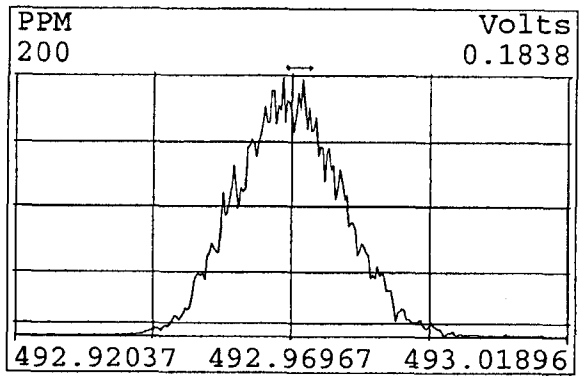


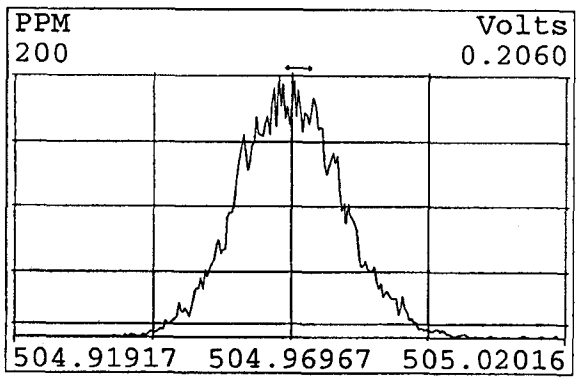


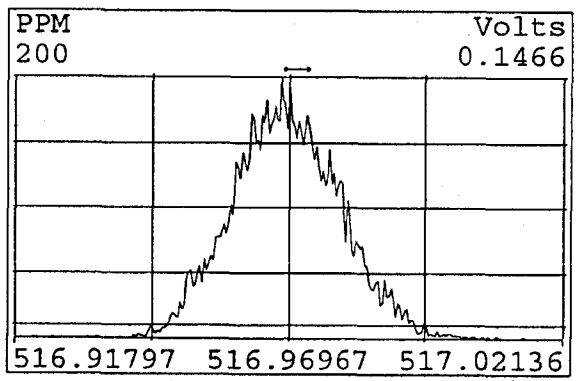




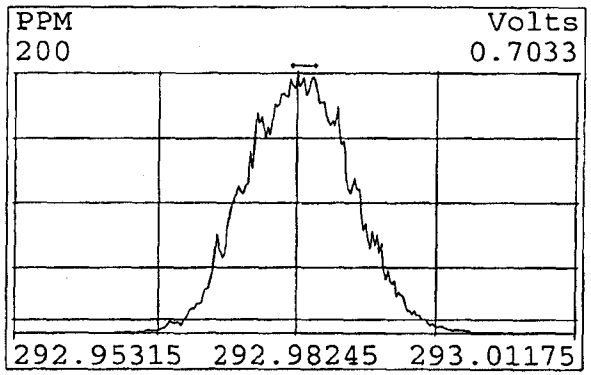


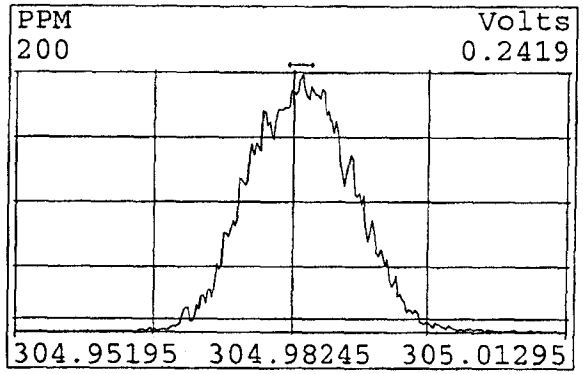


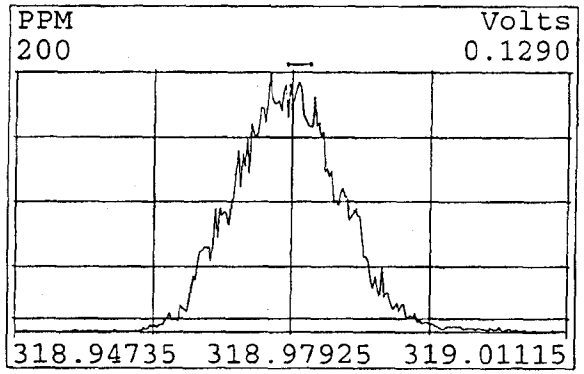


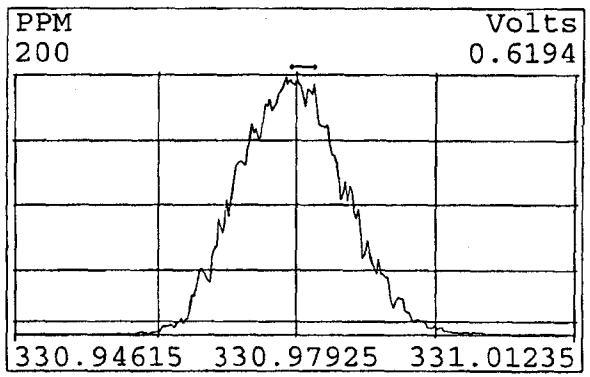


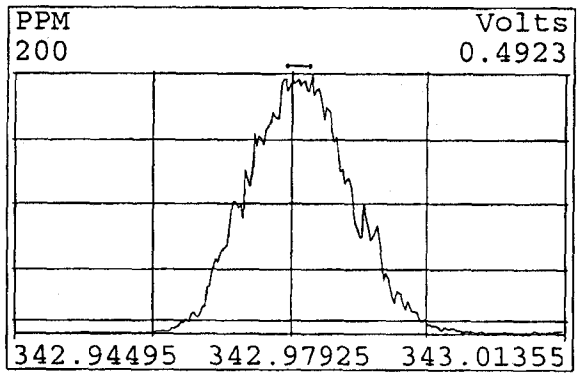
Peak Locate Examination: 9-OCT-2009:04:06 File:A08OCT09A_RES_CHECK
Experiment:EXP_DB5MS Function:1 Reference:PFK

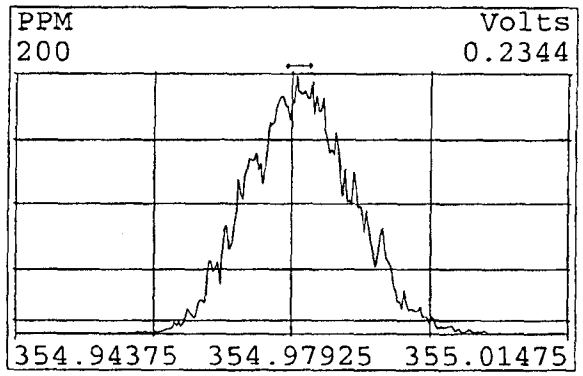


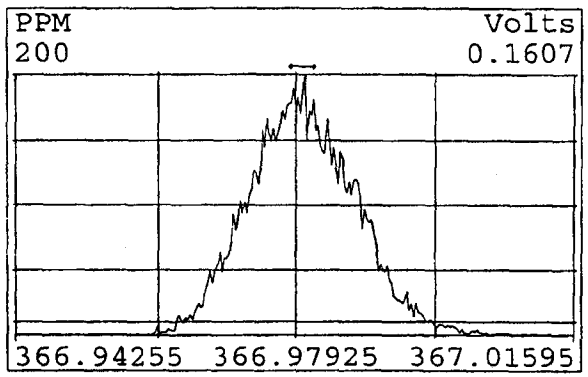


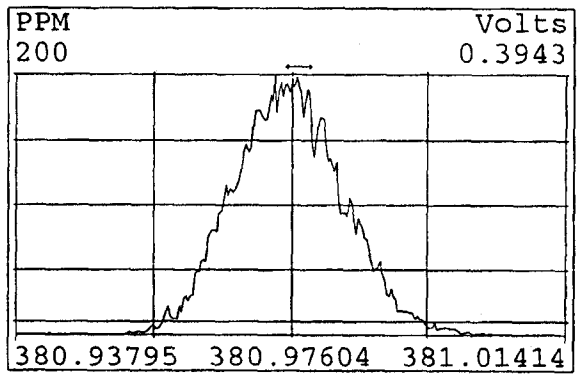




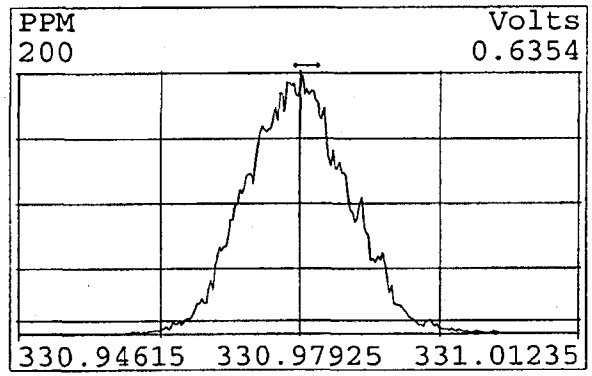


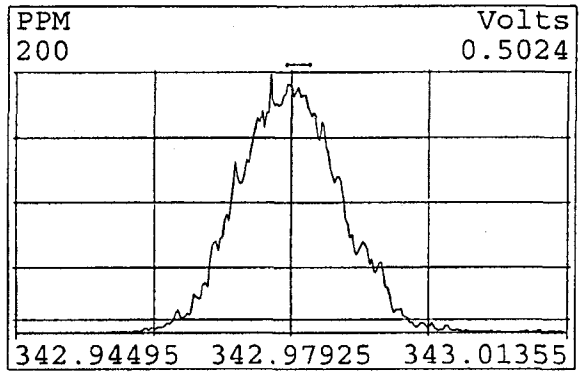


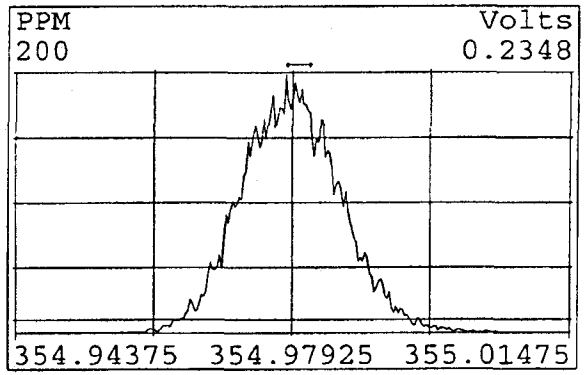


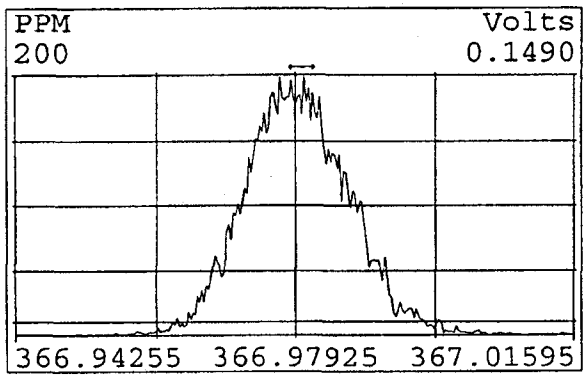


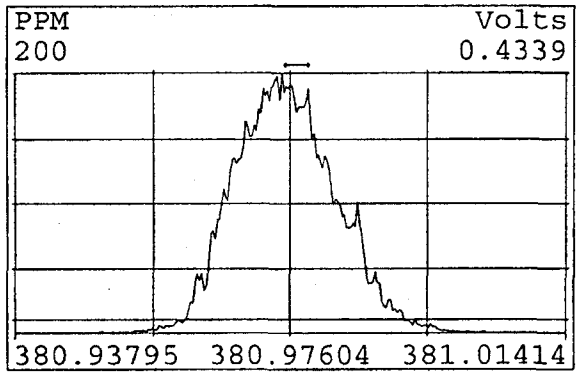
Peak Locate Examination: 9-OCT-2009:04:07 File:A08OCT09A_RES_CHECK
Experiment:EXP_DB5MS Function:2 Reference:PFK

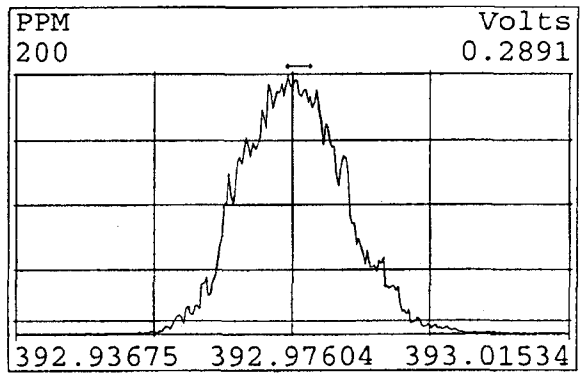


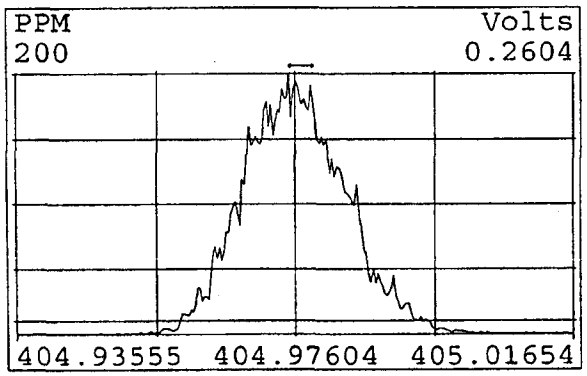


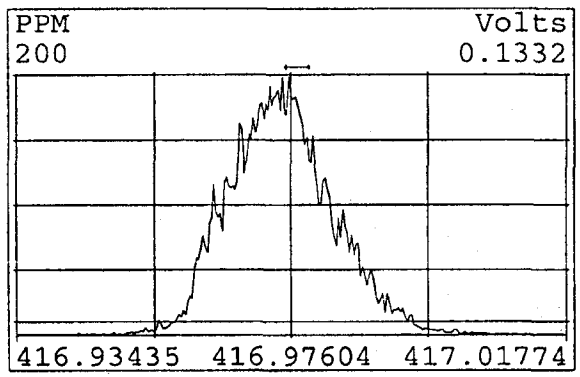




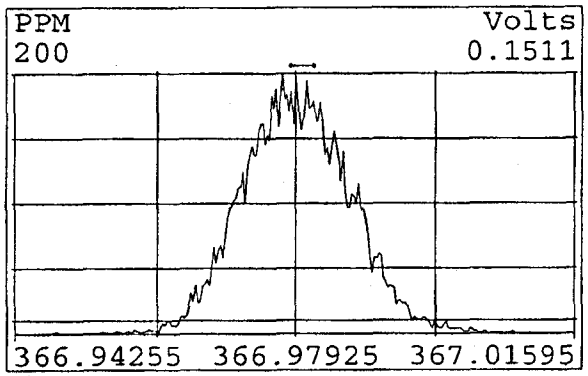


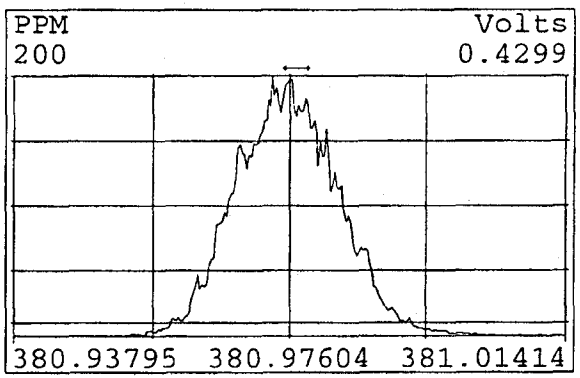


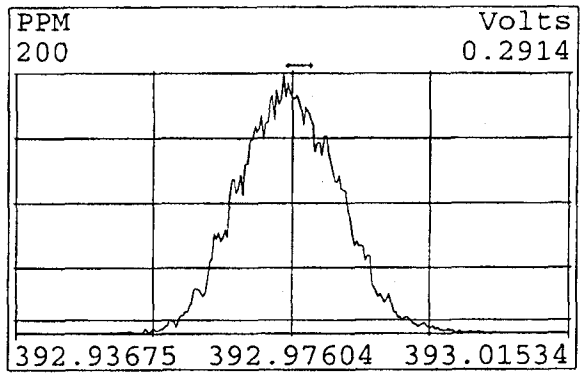


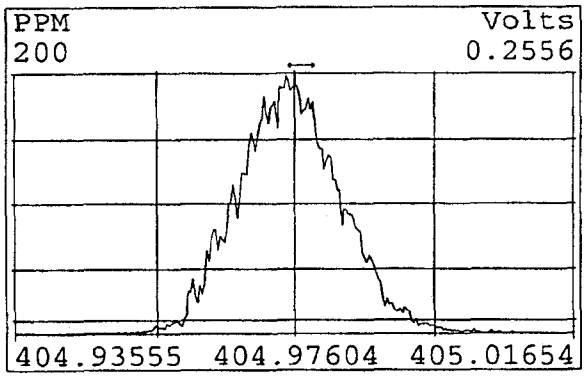


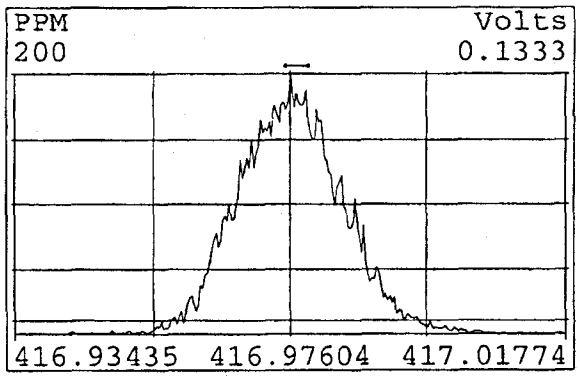
Peak Locate Examination: 9-OCT-2009:04:08 File:A08OCT09A_RES_CHECK
Experiment:EXP_DB5MS Function:3 Reference:PFK

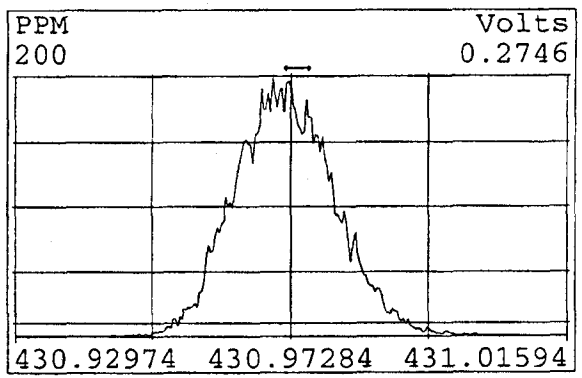


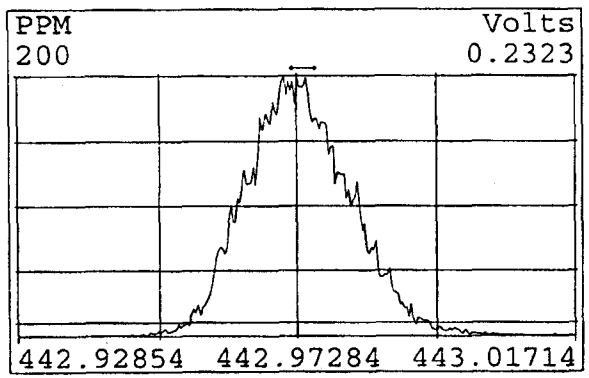


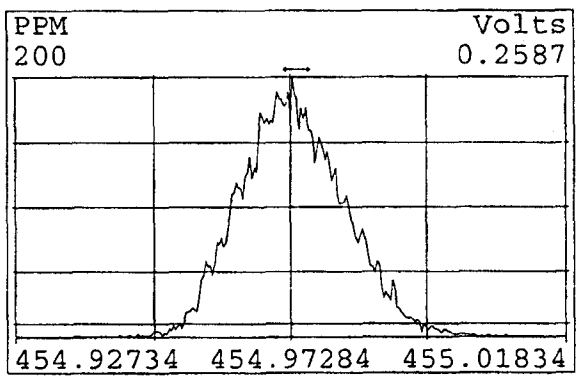




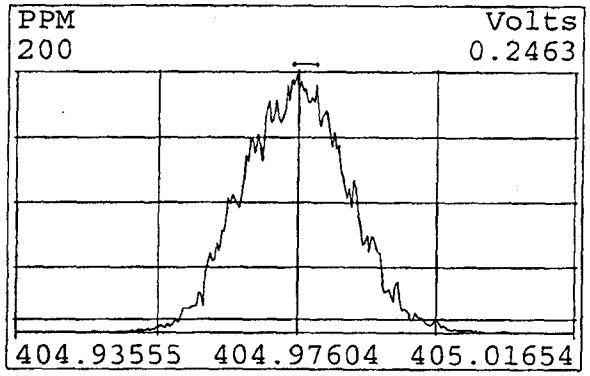


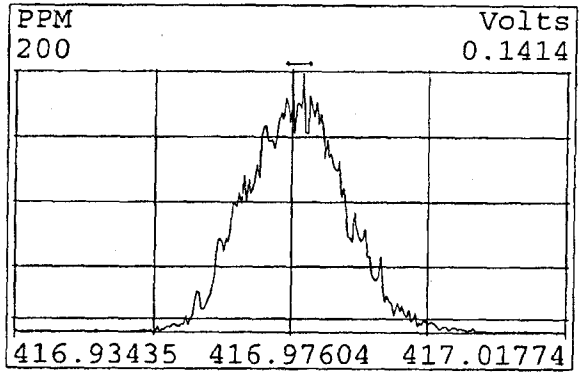


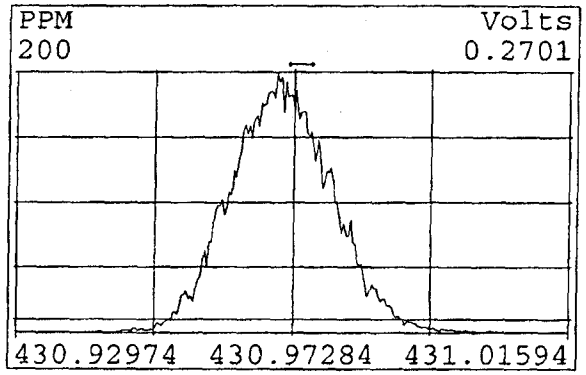


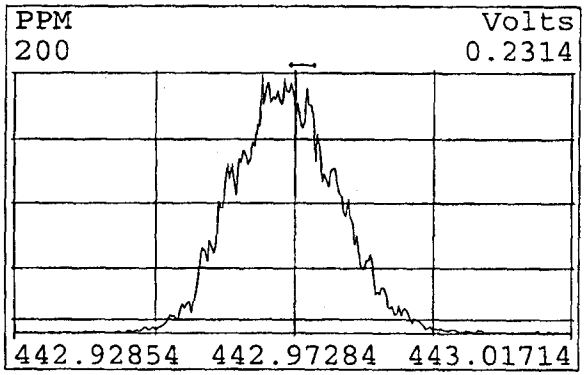


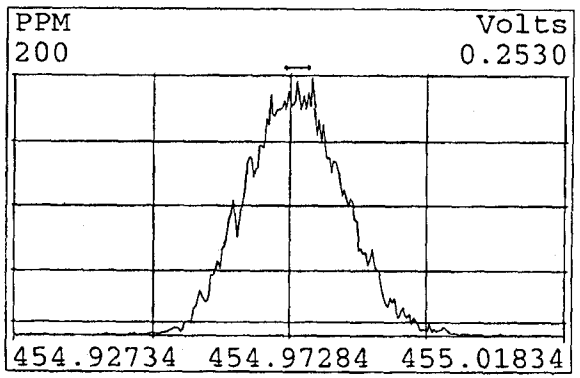
Peak Locate Examination: 9-OCT-2009:04:09 File:A08OCT09A_RES_CHECK
Experiment:EXP_DB5MS Function:4 Reference:PFK

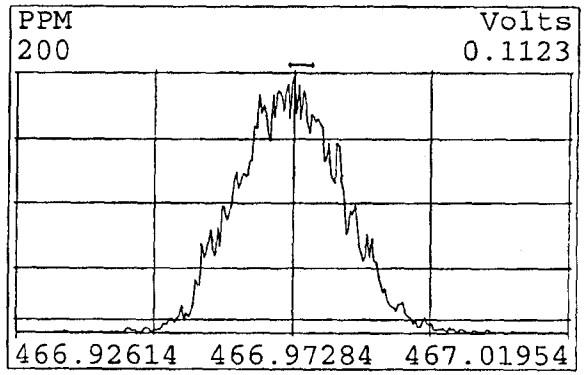


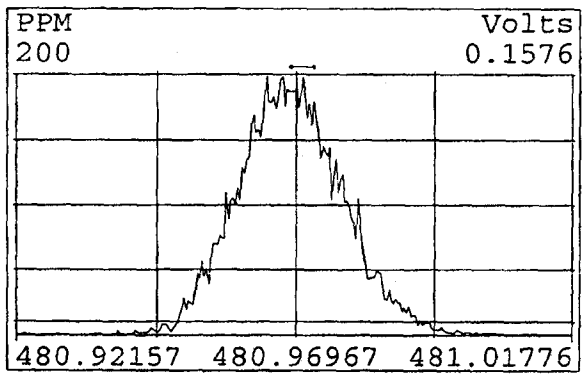




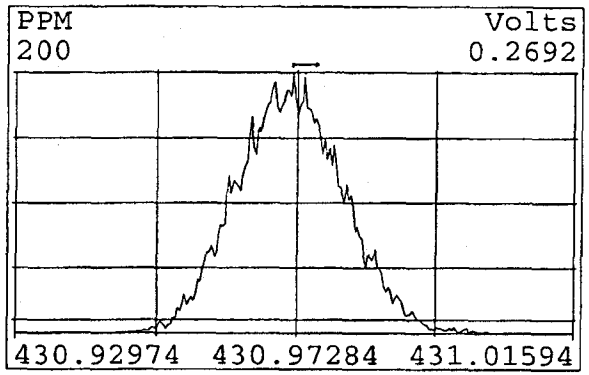


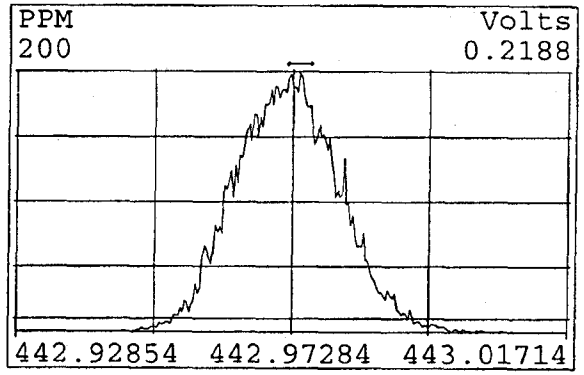


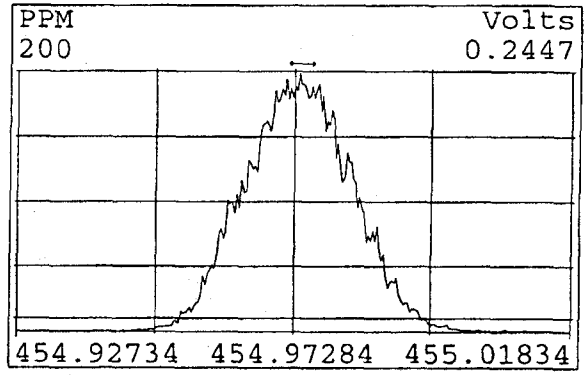


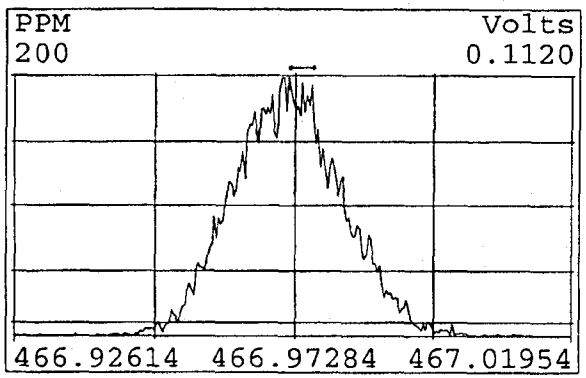


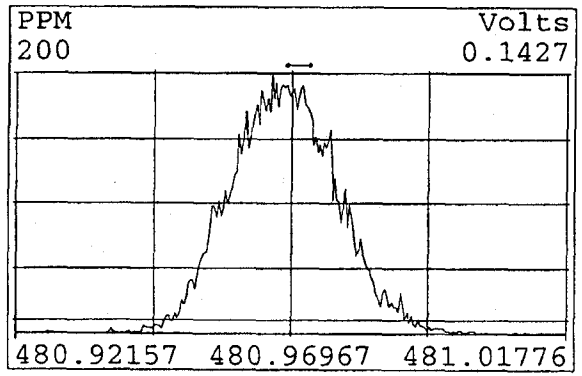
Peak Locate Examination: 9-OCT-2009:04:10 File:A08OCT09A_RES_CHECK
Experiment:EXP_DB5MS Function:5 Reference:PFK

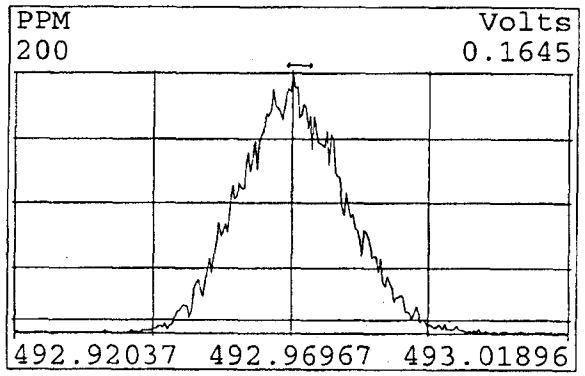


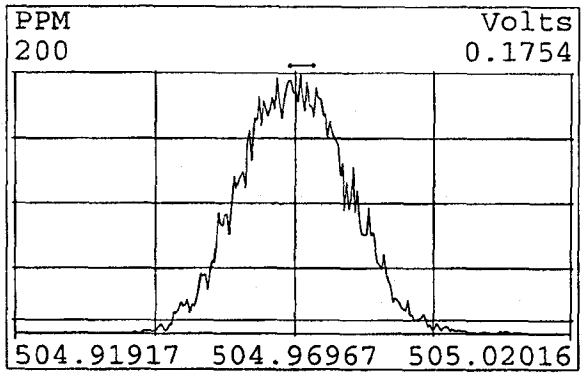


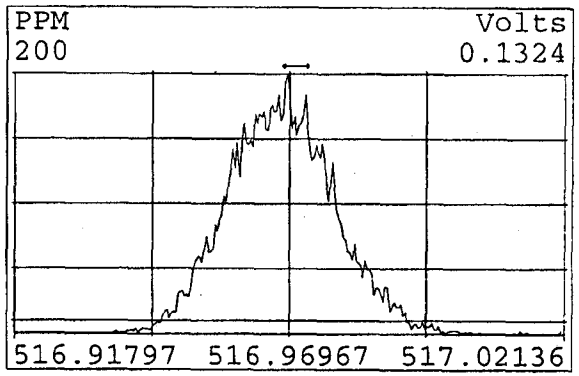








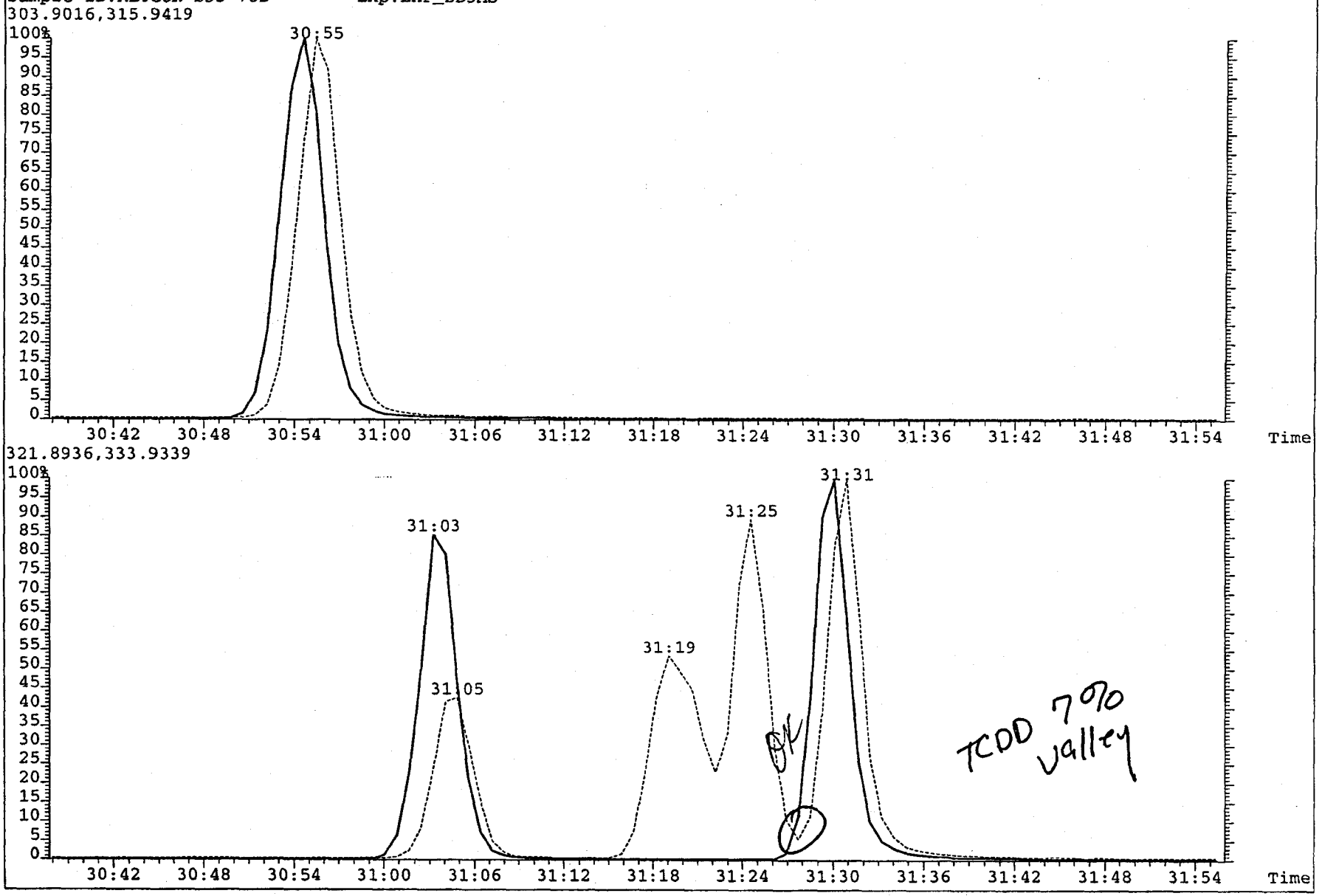




Filename ; a08oct09a
Sample ; 1
Acquired ; 8-OCT-09 16:02:08
Processed ; 9-OCT-09 05:31:19
Sample ID ; RETCON S33-78D

Name	First Eluter RT	Last Eluter RT
TCDD	28:23	32:02
PeCDD	32:58	34:35
HxCDD	35:41	37:16
HpCDD	39:25	40:23
OCDD	44:41	
TCDF	26:40	32:07
PeCDF	32:05	34:46
HxCDF	35:15	37:36
HpCDF	39:05	41:04
OCDF	44:59	

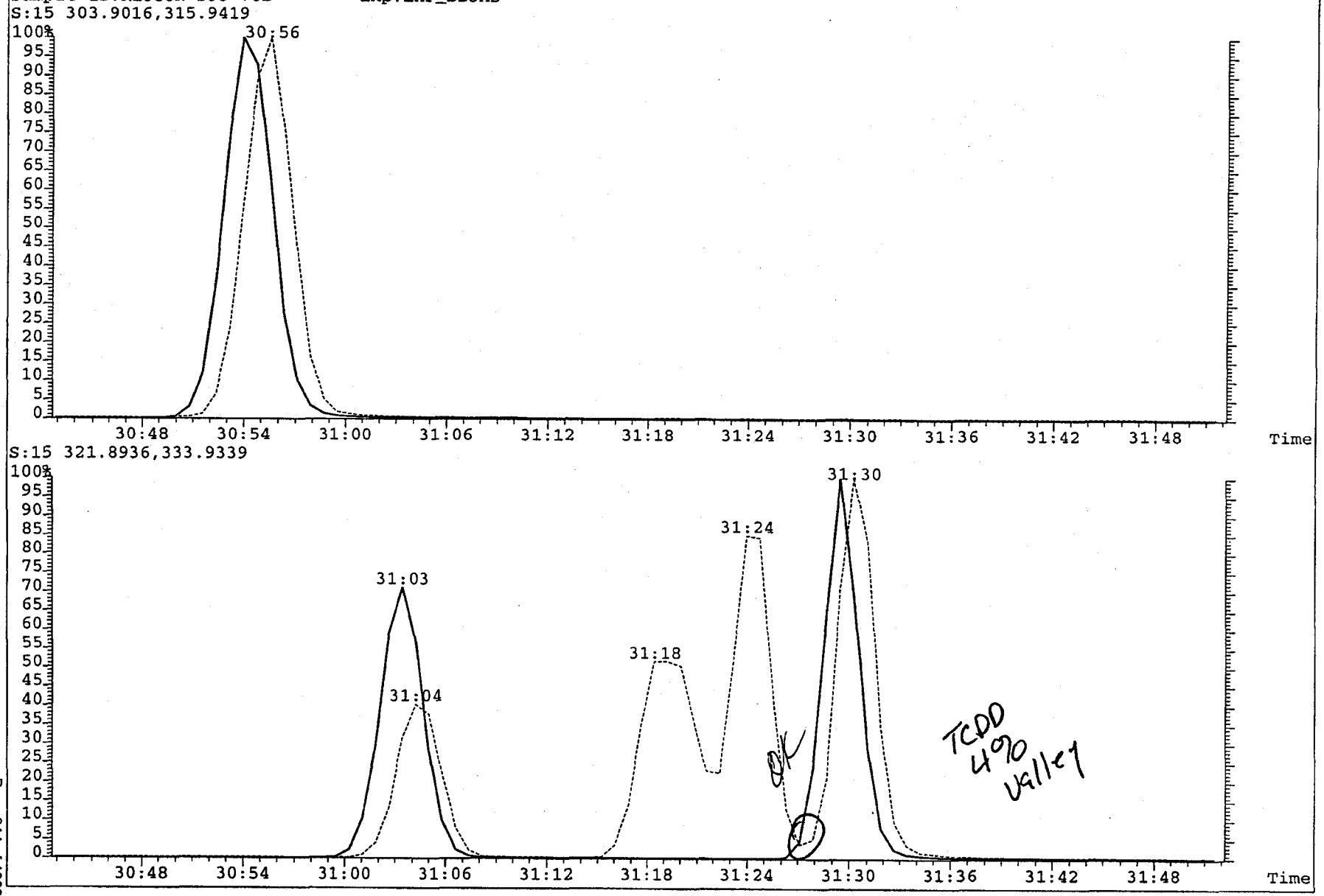
Filename:A08OCT09A -1 Acq: 8-OCT-2009 16:02:08 Inst: HRMS2
Sample ID:RETCON S33-78D Exp:EXP_DB5MS



Filename ; a08oct09a
Sample ; 15
Acquired ; 9-OCT-09 03:18:20
Processed ; 9-OCT-09 05:31:30
Sample ID ; RETCON S33-78D

Name	First Eluter RT	Last Eluter RT
TCDD	28:23	32:02
PeCDD	32:57	34:34
HxCDD	35:40	37:15
HpCDD	39:25	40:21
OCDD	44:41	
TCDF	26:39	32:07
PeCDF	32:05	34:45
HxCDF	35:15	37:35
HpCDF	39:05	41:03
OCDF	44:59	

Filename:A08OCT09A -15 Acq: 9-OCT-2009 03:18:20 Inst: HRMS2
Sample ID:RETCON S33-78D Exp:EXP_DB5MS



Analytical Results
for
Ongoing Precision Result (OPR)

Analyte	Spiked (pg/µL)	AMT (pg/µL)	REC %	Range % Lower	Range % Upper	Qualifier
2,3,7,8-TCDD	10	10.5	105	70.0	130	
1,2,3,7,8-PeCDD	50	50.0	100	70.0	130	
1,2,3,4,7,8-HxCDD	50	46.1	92.2	70.0	130	
1,2,3,6,7,8-HxCDD	50	54.8	110	70.0	130	
1,2,3,7,8,9-HxCDD	50	51.1	102	70.0	130	
1,2,3,4,6,7,8-HpCDD	50	49.3	98.5	70.0	130	
OCDD	100	108	108	70.0	130	
2,3,7,8-TCDF	10	9.64	96.4	70.0	130	
1,2,3,7,8-PeCDF	50	50.7	101	70.0	130	
2,3,4,7,8-PeCDF	50	50.0	100.0	70.0	130	
1,2,3,4,7,8-HxCDF	50	49.2	98.4	70.0	130	
1,2,3,6,7,8-HxCDF	50	53.4	107	70.0	130	
2,3,4,6,7,8-HxCDF	50	50.2	100	70.0	130	
1,2,3,7,8,9-HxCDF	50	48.0	96.1	70.0	130	
1,2,3,4,6,7,8-HpCDF	50	56.2	112	70.0	130	
1,2,3,4,7,8,9-HpCDF	50	47.8	95.7	70.0	130	
OCDF	100	104	104	70.0	130	

= Outside range limits
* = Ion Ratio Out

QC Information

OPR Project No: OPR17345
Extraction Date: 7-Oct-09
Analysis Date: 8-Oct-09
Method: 8290

Sample Information

Matrix: Soil

File Information

OPR Filename: a08oct09a-2
Retchk: a08oct09a-1
Begin ConCal: a08oct09a-1
End ConCal: a08oct09a-15
Initial Cal: m8290-092309a

Analytical Results
for
Ongoing Precision Result (OPR)

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)	Percent Recovery (%)	RT (min.)	Ratio	Qualifier
Extraction Standards						
13C12-2,3,7,8-TCDD	2	1.68	84.0	31:28	0.79	
13C12-1,2,3,7,8-PeCDD	2	1.77	88.5	34:18	1.58	
13C12-1,2,3,6,7,8-HxCDD	2	1.93	96.5	37:00	1.23	
13C12-1,2,3,4,6,7,8-HpCDD	2	1.99	99.5	40:21	1.06	
13C12-OCDD	4	3.68	92.0	44:40	0.90	
13C12-2,3,7,8-TCDF	2	1.81	90.5	30:54	0.78	
13C12-1,2,3,7,8-PeCDF	2	1.67	83.5	33:30	1.58	
13C12-1,2,3,6,7,8-HxCDF	2	1.83	91.5	36:18	0.53	
13C12-1,2,3,4,6,7,8-HpCDF	2	1.83	91.5	39:04	0.45	
Cleanup Standards						
37Cl4-2,3,7,8-TCDD	0.4	0.411	103	31:30	-	
13C12-2,3,4,7,8-PeCDF	0.4	0.404	101	34:06	1.56	
13C12-1,2,3,4,7,8-HxCDD	0.4	0.399	99.8	36:55	1.36	
13C12-1,2,3,4,7,8-HxCDF	0.4	0.412	103	36:12	0.53	
13C12-1,2,3,4,7,8,9-HpCDF	0.4	0.417	104	41:03	0.45	
Injection Standards						
13C12-1,2,3,4-TCDD	2	-	-	31:03	0.79	
13C12-1,2,3,7,8,9-HxCDD	2	-	-	37:15	1.26	

QC Information

OPR Project No: OPR17345
Extraction Date: 7-Oct-09
Analysis Date: 8-Oct-09
Method: 8290

Sample Information

Matrix: Soil

File Information

OPR Filename : a08oct09a-2
Retchk: a08oct09a-1
Begin ConCal: a08oct09a-1
End ConCal: a08oct09a-15
Initial Cal: m8290-092309a

Form Version:[8290]OPR

Reviewed By: TM

Date Reviewed: 10-9-09

Analytical Results
for
Ongoing Precision & Recovery Duplicate Results (OPRD)

Analyte	Spiked (pg/µL)	AMT (pg/µL)	Recovery %	#	Range Lower	Range Upper	OPR Rec(%)	#	RPD (±20%)	Qualifier
2,3,7,8-TCDD	10.0	10.3	103		70.0	130	105		2.22	
1,2,3,7,8-PeCDD	50.0	49.1	98.2		70.0	130	100		1.88	
1,2,3,4,7,8-HxCDD	50.0	46.4	92.7		70.0	130	92.2		0.548	
1,2,3,6,7,8-HxCDD	50.0	53.4	107		70.0	130	110		3.04	
1,2,3,7,8,9-HxCDD	50.0	50.3	101		70.0	130	102		1.33	
1,2,3,4,6,7,8-HpCDD	50.0	49.1	98.2		70.0	130	98.5		0.342	
OCDD	100	106	106		70.0	130	108		1.48	
2,3,7,8-TCDF	10.0	9.49	94.9		70.0	130	96.4		1.54	
1,2,3,7,8-PeCDF	50.0	49.2	98.5		70.0	130	101		2.55	
2,3,4,7,8-PeCDF	50.0	49.4	98.8		70.0	130	100.0		1.19	
1,2,3,4,7,8-HxCDF	50.0	48.8	97.5		70.0	130	98.4		0.873	
1,2,3,6,7,8-HxCDF	50.0	51.6	103		70.0	130	107		3.76	
2,3,4,6,7,8-HxCDF	50.0	49.5	99.0		70.0	130	100		1.03	
1,2,3,7,8,9-HxCDF	50.0	47.7	95.4		70.0	130	96.1		0.755	
1,2,3,4,6,7,8-HpCDF	50.0	50.4	101		70.0	130	112		11.2	
1,2,3,4,7,8,9-HpCDF	50.0	47.5	95.0		70.0	130	95.7		0.724	
OCDF	100	96.5	96.5		70.0	130	104		7.81	

= Outside range limits
* = Ion Ratio Out

QC Information

OPR Project No: OPRD17345
Extraction Date: 7-Oct-09
Analysis Date: 8-Oct-09
Method: 8290

Sample Information

Matrix: Soil

File Information

OPRD Filename : a08oct09a-3
Retchk: a08oct09a-1
Begin ConCal: a08oct09a-1
End ConCal: a08oct09a-15
Initial Cal: m8290-092309a

Analytical Results
for
Ongoing Precision & Recovery Duplicate Results (OPRD)

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)	Percent Recovery (%)	RT (min.)	Ratio	Qualifier
Extraction Standards			(40-135%)			
13C12-2,3,7,8-TCDD	2	1.58	79.0	31:30	0.78	
13C12-1,2,3,7,8-PeCDD	2	1.74	87.0	34:18	1.59	
13C12-1,2,3,6,7,8-HxCDD	2	1.89	94.3	37:00	1.23	
13C12-1,2,3,4,6,7,8-HpCDD	2	1.96	98.2	40:21	1.05	
13C12-OCDD	4	3.61	90.4	44:40	0.89	
13C12-2,3,7,8-TCDF	2	1.72	85.8	30:54	0.78	
13C12-1,2,3,7,8-PeCDF	2	1.65	82.5	33:30	1.56	
13C12-1,2,3,6,7,8-HxCDF	2	1.80	90.2	36:18	0.53	
13C12-1,2,3,4,6,7,8-HpCDF	2	1.82	91.0	39:04	0.45	
Cleanup Standards			(70-130%)			
37Cl4-2,3,7,8-TCDD	0.4	0.400	99.9	31:30	-	
13C12-2,3,4,7,8-PeCDF	0.4	0.402	101	34:06	1.60	
13C12-1,2,3,4,7,8-HxCDD	0.4	0.410	102	36:55	1.34	
13C12-1,2,3,4,7,8-HxCDF	0.4	0.423	106	36:12	0.52	
13C12-1,2,3,4,7,8,9-HpCDF	0.4	0.433	108	41:03	0.45	
Injection Standards						
13C12-1,2,3,4-TCDD	2	-	-	31:03	0.79	
13C12-1,2,3,7,8,9-HxCDD	2	-	-	37:15	1.26	

QC Information

OPR Project No: OPRD17345
Extraction Date: 07-Oct-09
Analysis Date: 08-Oct-09
Method: 8290

Sample Information

Matrix: Soil

File Information

OPRD Filename : a08oct09a-3
Retchk: a08oct09a-1
Begin ConCal: a08oct09a-1
End ConCal: a08oct09a-15
Initial Cal: m8290-092309a

Form Version:[8290]OPRD

Reviewed By: TM

Date Reviewed: 10-9-09

Method 8290
Lab Method Blank

Analytical Data Summary Sheet

Analyte	Amount pg/g	EDL pg/g	RL pg/g	EMPC pg/g	RT (min.)	Ratio		Qualifier
2,3,7,8-TCDD	ND	0.157	1.00					
1,2,3,7,8-PeCDD	ND	0.500	5.00					
1,2,3,4,7,8-HxCDD	ND	0.505	5.00					
1,2,3,6,7,8-HxCDD	ND	0.500	5.00					
1,2,3,7,8,9-HxCDD	ND	0.512	5.00					
1,2,3,4,6,7,8-HpCDD	1.48		5.00		40:22	0.95		A
OCDD	23.9		10.0		44:40	0.89		
2,3,7,8-TCDF	0.264		1.00		30:55	0.68		A
1,2,3,7,8-PeCDF	EMPC	0.500	5.00	0.134	33:30	1.09	*	A
2,3,4,7,8-PeCDF	ND	0.500	5.00					
1,2,3,4,7,8-HxCDF	ND	0.500	5.00					
1,2,3,6,7,8-HxCDF	ND	0.500	5.00					
2,3,4,6,7,8-HxCDF	ND	0.500	5.00					
1,2,3,7,8,9-HxCDF	ND	0.500	5.00					
1,2,3,4,6,7,8-HpCDF	0.720		5.00		39:04	1.06		A
1,2,3,4,7,8,9-HpCDF	ND	0.500	5.00					
OCDF	ND	1.00	10.0					
~~Total TCDDs~~	ND	0.157	1.00	~~0.208~~				
Total PeCDDs	ND	0.500	5.00					
Total HxCDDs	ND	0.512	5.00					
~~Total HpCDDs~~	3.33		5.00					
~~Total TCDFs~~	0.264		1.00	~~0.564~~				
Total PeCDFs	ND	0.500	5.00	~~0.134~~				
Total HxCDFs	0.284		5.00					
Total HpCDFs	0.720		5.00					
WHO-2005 TEQ (ND=0)	0.0556			0.0596				
WHO-2005 TEQ (ND=½)	0.645			0.641				

Client Information		**Sample Information**		
Project Name:		Report Basis:	Wet	
		Matrix:	Soil	
Sample ID:	Lab Method Blank	Weight / Volume:	10.00	g
		Solids / Lipids:	NA	%
		Original pH :	NA	
Laboratory Information		Batch ID:	WG17345	
Project ID:		Instrument:	HRMS1	
Sample ID:		Filename:	a08oct09a-4	
Collection Date/Time:		Retchk:	a08oct09a-1	
Receipt Date/Time:		Begin ConCal:	a08oct09a-1	
Extraction Date:	10/07/09	End ConCal:	a08oct09a-15	
Analysis Date/Time:	10/08/09 18:27	Initial Cal:	m8290-092309a	

Method 8290
Lab Method Blank

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)		Percent Recovery (%)	RT (min.)	Ratio	Qualifier
Extraction Standards							
13C12-2,3,7,8-TCDD	2	1.58		78.9	31:28	0.79	
13C12-1,2,3,7,8-PeCDD	2	1.64		82.2	34:18	1.58	
13C12-1,2,3,6,7,8-HxCDD	2	1.77		88.3	37:00	1.23	
13C12-1,2,3,4,6,7,8-HpCDD	2	1.89		94.7	40:21	1.04	
13C12-OCDD	4.0	3.33		83.1	44:40	0.89	
13C12-2,3,7,8-TCDF	2	1.67		83.4	30:54	0.78	
13C12-1,2,3,7,8-PeCDF	2	1.54		76.7	33:30	1.57	
13C12-1,2,3,6,7,8-HxCDF	2	1.71		85.7	36:18	0.52	
13C12-1,2,3,4,6,7,8-HpCDF	2	1.71		85.7	39:04	0.45	
Cleanup Standards							
37Cl4-2,3,7,8-TCDD	0.4	0.386		96.6	31:30	-	
13C12-2,3,4,7,8-PeCDF	0.4	0.368		92.0	34:06	1.58	
13C12-1,2,3,4,7,8-HxCDD	0.4	0.369		92.2	36:55	1.36	
13C12-1,2,3,4,7,8-HxCDF	0.4	0.383		95.8	36:12	0.52	
13C12-1,2,3,4,7,8,9-HpCDF	0.4	0.384		95.9	41:03	0.45	
Injection Standards							
13C12-1,2,3,4-TCDD	2.0	-		-	31:03	0.79	
13C12-1,2,3,7,8,9-HxCDD	2.0	-		-	37:15	1.26	

Client Information			**Sample Information**		
Project Name:			Report Basis:	Wet	
			Matrix:	Soil	
Sample ID:	Lab Method Blank		Weight / Volume:	10.00	g
			Solids / Lipids:	NA	%
			Original pH :	NA	
Laboratory Information			Batch ID:	WG17345	
Project ID:			Instrument:	HRMS1	
Sample ID:			Filename:	a08oct09a-4	
Collection Date/Time:			Retchk:	a08oct09a-1	
Receipt Date/Time:			Begin ConCal:	a08oct09a-1	
Extraction Date:	10/07/09		End ConCal:	a08oct09a-15	
Analysis Date/Time:	10/08/09	18:27	Initial Cal:	m8290-092309a	

Form Version:[8290]Report

Analyzed by: AS
Date: 10-9-09

Reviewed by: TM
Date: 10-9-09

Method 8290

Results for MS/MSD

NTC21SB02-SO-0204

Analyte	Sample pg/g	Spike pg	MS pg/g	%REC (70-130) #	MSD pg/g	%REC (70-130) #	%RPD (20) #
2,3,7,8-TCDD	0.279	200	22.5	101	23.4	109	3.92
1,2,3,7,8-PeCDD	0.579	1000	109	98.5	109	102	0
1,2,3,4,7,8-HxCDD	1.04	1000	112	101	110	103	1.80
1,2,3,6,7,8-HxCDD	3.62	1000	114	100	112	102	1.77
1,2,3,7,8,9-HxCDD	2.42	1000	117	104	113	104	3.48
1,2,3,4,6,7,8-HpCDD	167	1000	256	80.9	232	61.3 *	9.84
OCDD	1950	2000	1920	-13.6 *	1650	-141 *	15.1
2,3,7,8-TCDF	0.742	200	21.5	94.3	21.1	95.9	1.88
1,2,3,7,8-PeCDF	0.521	1000	109	98.6	106	99.4	2.79
2,3,4,7,8-PeCDF	2.75	1000	109	96.5	107	98.2	1.85
1,2,3,4,7,8-HxCDF	2.56	1000	114	101	110	101	3.57
1,2,3,6,7,8-HxCDF	1.39	1000	111	99.6	110	102	0.905
2,3,4,6,7,8-HxCDF	2.14	1000	112	99.8	112	104	0
1,2,3,7,8,9-HxCDF	0.682	1000	112	101	110	103	1.80
1,2,3,4,6,7,8-HpCDF	18.1	1000	122	94.4	122	97.9	0
1,2,3,4,7,8,9-HpCDF	1.74	1000	105	93.8	104	96.4	0.957
OCDF	44.8	2000	245	90.9	236	90.1	3.74

Client Information

		Solids:	88.9	%
Project ID:	112G01489	Sample amount:	11.62	g
Sample ID:	NTC21SB02-SO-0204	MS amount:	10.22	g
		MSD amount:	10.60	g

Laboratory Information

Project ID:	G330-42
Sample ID:	G330-42-13B
MS ID:	G330-42-18B
MSD ID:	G330-42-19B

Reviewed By: _____

Method 8290
NTC21SB02-SO-0204 MS
Tetra Tech Nus, Inc.

Analytical Data Summary Sheet

Analyte	Amount pg/g	EDL pg/g	RL pg/g	EMPC pg/g	RT (min.)	Ratio	Qualifier
2,3,7,8-TCDD	**22.5**		1.09		31:31	0.78	
1,2,3,7,8-PeCDD	**109**		5.47		34:19	1.55	
1,2,3,4,7,8-HxCDD	**112**		5.47		36:58	1.26	
1,2,3,6,7,8-HxCDD	**114**		5.47		37:04	1.25	
1,2,3,7,8,9-HxCDD	**117**		5.47		37:19	1.24	
1,2,3,4,6,7,8-HpCDD	**256**		5.47		40:22	1.04	
OCDD	**1920**		10.9		44:43	0.90	
2,3,7,8-TCDF	**21.5**		1.09		30:55	0.78	
1,2,3,7,8-PeCDF	**109**		5.47		33:31	1.58	
2,3,4,7,8-PeCDF	**109**		5.47		34:07	1.56	
1,2,3,4,7,8-HxCDF	**114**		5.47		36:13	1.25	
1,2,3,6,7,8-HxCDF	**111**		5.47		36:19	1.24	
2,3,4,6,7,8-HxCDF	**112**		5.47		36:49	1.25	
1,2,3,7,8,9-HxCDF	**112**		5.47		37:37	1.26	
1,2,3,4,6,7,8-HpCDF	**122**		5.47		39:06	1.04	
1,2,3,4,7,8,9-HpCDF	**105**		5.47		41:04	1.05	
OCDF	**245**		10.9		45:01	0.92	

Client Information			**Sample Information**		
Project Name:	112G01797		Report Basis:	Dry	
			Matrix:	Soil	
Sample ID:	NTC21SB02-SO-0204 MS		Weight / Volume:	10.22	g
			Solids / Lipids:	89.4	%
			Original pH :	NA	
Laboratory Information			Batch ID:	WG17345	
Project ID:	G330-42		Instrument:	HRMS1	
Sample ID:	G330-42-18B		Filename:	a08oct09a-11	
Collection Date/Time:	09/28/09	10:30	Retchk:	a08oct09a-1	
Receipt Date/Time:	09/30/09	9:45	Begin ConCal:	a08oct09a-1	
Extraction Date:	10/07/09		End ConCal:	a08oct09a-15	
Analysis Date/Time:	10/09/09	0:05	Initial Cal:	m8290-092309a	

Method 8290
NTC21SB02-SO-0204 MS
Tetra Tech Nus, Inc.

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)		Percent Recovery (%)	RT (min.)	Ratio	Qualifier
Extraction Standards							
13C12-2,3,7,8-TCDD	2	1.70		85.2	31:30	0.78	
13C12-1,2,3,7,8-PeCDD	2	1.77		88.6	34:18	1.57	
13C12-1,2,3,6,7,8-HxCDD	2	1.72		86.1	37:04	1.25	
13C12-1,2,3,4,6,7,8-HpCDD	2	1.91		95.5	40:22	1.05	
13C12-OCDD	4.0	3.66		91.4	44:43	0.89	
13C12-2,3,7,8-TCDF	2	1.75		87.4	30:55	0.78	
13C12-1,2,3,7,8-PeCDF	2	1.65		82.7	33:30	1.57	
13C12-1,2,3,6,7,8-HxCDF	2	1.66		83.2	36:19	0.53	
13C12-1,2,3,4,6,7,8-HpCDF	2	1.74		87.2	39:04	0.45	
Cleanup Standards							
37Cl4-2,3,7,8-TCDD	0.4	0.408		102	31:31	-	
13C12-2,3,4,7,8-PeCDF	0.4	0.389		97.2	34:07	1.57	
13C12-1,2,3,4,7,8-HxCDD	0.4	0.398		99.5	36:58	1.26	
13C12-1,2,3,4,7,8-HxCDF	0.4	0.398		99.5	36:13	0.52	
13C12-1,2,3,4,7,8,9-HpCDF	0.4	0.396		98.9	41:04	0.46	
Injection Standards							
13C12-1,2,3,4-TCDD	2.0	-		-	31:04	0.79	
13C12-1,2,3,7,8,9-HxCDD	2.0	-		-	37:19	1.25	

Client Information			**Sample Information**		
Project Name:	112G01797		Report Basis:	Dry	
			Matrix:	Soil	
Sample ID:	NTC21SB02-SO-0204 MS		Weight / Volume:	10.22	g
			Solids / Lipids:	89.4	%
			Original pH :	NA	
Laboratory Information			Batch ID:	WG17345	
Project ID:	G330-42		Instrument:	HRMS1	
Sample ID:	G330-42-18B		Filename:	a08oct09a-11	
Collection Date/Time:	09/28/09	10:30	Retchk:	a08oct09a-1	
Receipt Date/Time:	09/30/09	9:45	Begin ConCal:	a08oct09a-1	
Extraction Date:	10/07/09		End ConCal:	a08oct09a-15	
Analysis Date/Time:	10/09/09	0:05	Initial Cal:	m8290-092309a	

Form Version:[8290]Report

Analyzed by: DS
Date: 10-12-09

Reviewed by: CBD
Date: 10/13/09

Method 8290
NTC21SB02-SO-0204 MSD
Tetra Tech Nus, Inc.

Analytical Data Summary Sheet

Analyte	Amount pg/g	EDL pg/g	RL pg/g	EMPC pg/g	RT (min.)	Ratio	Qualifier
2,3,7,8-TCDD	**23.4**		1.06		31:31	0.79	
1,2,3,7,8-PeCDD	**109**		5.31		34:19	1.58	
1,2,3,4,7,8-HxCDD	**110**		5.31		36:58	1.30	
1,2,3,6,7,8-HxCDD	**112**		5.31		37:04	1.21	
1,2,3,7,8,9-HxCDD	**113**		5.31		37:19	1.26	
1,2,3,4,6,7,8-HpCDD	**232**		5.31		40:22	1.03	
OCDD	**1650**		10.6		44:43	0.89	
2,3,7,8-TCDF	**21.1**		1.06		30:55	0.79	
1,2,3,7,8-PeCDF	**106**		5.31		33:31	1.58	
2,3,4,7,8-PeCDF	**107**		5.31		34:07	1.56	
1,2,3,4,7,8-HxCDF	**110**		5.31		36:13	1.23	
1,2,3,6,7,8-HxCDF	**110**		5.31		36:19	1.24	
2,3,4,6,7,8-HxCDF	**112**		5.31		36:49	1.25	
1,2,3,7,8,9-HxCDF	**110**		5.31		37:37	1.25	
1,2,3,4,6,7,8-HpCDF	**122**		5.31		39:06	1.04	
1,2,3,4,7,8,9-HpCDF	**104**		5.31		41:04	1.04	
OCDF	**236**		10.6		45:01	0.91	

Client Information			**Sample Information**		
Project Name:	112G01797		Report Basis:	Dry	
			Matrix:	Soil	
Sample ID:	NTC21SB02-SO-0204 MSD		Weight / Volume:	10.60	g
			Solids / Lipids:	88.9	%
			Original pH :	NA	
Laboratory Information			Batch ID:	WG17345	
Project ID:	G330-42		Instrument:	HRMS1	
Sample ID:	G330-42-19B		Filename:	a08oct09a-12	
Collection Date/Time:	09/28/09	10:30	Retchk:	a08oct09a-1	
Receipt Date/Time:	09/30/09	9:45	Begin ConCal:	a08oct09a-1	
Extraction Date:	10/07/09		End ConCal:	a08oct09a-15	
Analysis Date/Time:	10/09/09	0:53	Initial Cal:	m8290-092309a	

Method 8290
NTC21SB02-SO-0204 MSD
Tetra Tech Nus, Inc.

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)		Percent Recovery (%)	RT (min.)	Ratio	Qualifier
Extraction Standards							
13C12-2,3,7,8-TCDD	2	1.74		86.9	31:30	0.78	
13C12-1,2,3,7,8-PeCDD	2	1.84		92.2	34:18	1.58	
13C12-1,2,3,6,7,8-HxCDD	2	1.82		91.1	37:03	1.25	
13C12-1,2,3,4,6,7,8-HpCDD	2	1.99		99.5	40:22	1.06	
13C12-OCDD	4.0	3.76		94.1	44:43	0.89	
13C12-2,3,7,8-TCDF	2	1.80		90.0	30:55	0.78	
13C12-1,2,3,7,8-PeCDF	2	1.74		87.0	33:30	1.57	
13C12-1,2,3,6,7,8-HxCDF	2	1.72		85.8	36:19	0.53	
13C12-1,2,3,4,6,7,8-HpCDF	2	1.76		88.0	39:04	0.45	
Cleanup Standards							
37Cl4-2,3,7,8-TCDD	0.4	0.428		107	31:31	-	
13C12-2,3,4,7,8-PeCDF	0.4	0.408		102	34:07	1.57	
13C12-1,2,3,4,7,8-HxCDD	0.4	0.403		101	36:57	1.25	
13C12-1,2,3,4,7,8-HxCDF	0.4	0.422		105	36:12	0.52	
13C12-1,2,3,4,7,8,9-HpCDF	0.4	0.410		103	41:04	0.44	
Injection Standards							
13C12-1,2,3,4-TCDD	2.0	-		-	31:04	0.78	
13C12-1,2,3,7,8,9-HxCDD	2.0	-		-	37:18	1.25	

Client Information			**Sample Information**		
Project Name:	112G01797		Report Basis:	Dry	
			Matrix:	Soil	
Sample ID:	NTC21SB02-SO-0204 MSD		Weight / Volume:	10.60	g
			Solids / Lipids:	88.9	%
			Original pH :	NA	
Laboratory Information			Batch ID:	WG17345	
Project ID:	G330-42		Instrument:	HRMS1	
Sample ID:	G330-42-19B		Filename:	a08oct09a-12	
Collection Date/Time:	09/28/09	10:30	Retchk:	a08oct09a-1	
Receipt Date/Time:	09/30/09	9:45	Begin ConCal:	a08oct09a-1	
Extraction Date:	10/07/09		End ConCal:	a08oct09a-15	
Analysis Date/Time:	10/09/09	0:53	Initial Cal:	m8290-092309a	

Form Version:[8290]Report

Analyzed by: DS
Date: 10-12-09

Reviewed by: [illegible]
Date: 10/12/09

mcf-c 042709a

Paradigm Analytical Runlog

Instrument: HRMS3 2,3,7,8 TCDF CAL

Data File	Sample ID	Analyst	Acqusistion Date/Time	Inj.Vol
c27apr09a-1	225 CPM	HMP	2009-04-27 08:28:01	1 uL
c27apr09a-1	225 CPM	HMP	2009-04-27 08:28:01	1 uL
c27apr09a-2	SB	HMP	2009-04-27 08:52:59	1 uL
c27apr09a-3	CS0.5 S29-232P 0.25 pg/ml	HMP	2009-04-27 09:18:42	1 uL
c27apr09a-4	CS2 S23-210G 2.0 pg/ml	HMP	2009-04-27 09:44:27	1 uL
c27apr09a-5	CS3 S32-114R 10 pg/ml	HMP	2009-04-27 10:10:17	1 uL
c27apr09a-6	CS4 S29-01U 40 pg/ml	HMP	2009-04-27 10:36:03	1 uL
c27apr09a-7	CS5 S29-01V 200 pg/ml	HMP	2009-04-27 11:01:58	1 uL

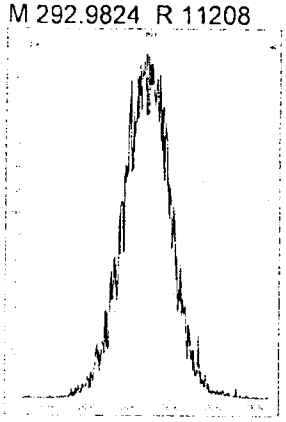
4-27-09

Experiment Calibration Report **MassLynx 4.1**

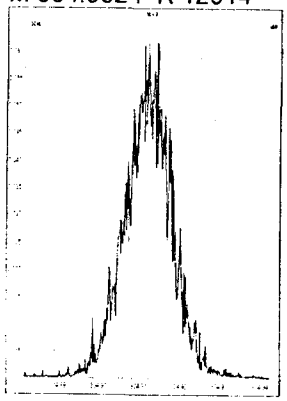
File: Experiment: tcdf_confirms.exp Reference: Pfk.ref Function: 1 @ 200 (ppm)

Printed: Monday, April 27, 2009 08:21:19 Eastern Standard Time

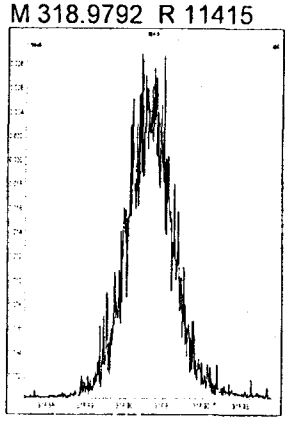
M 292.9824 R 11208



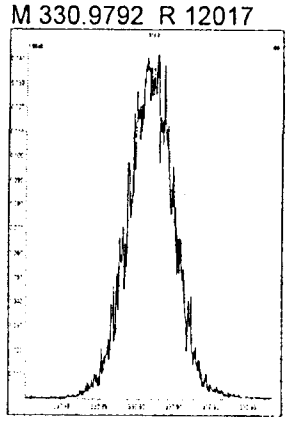
M 304.9824 R 12014



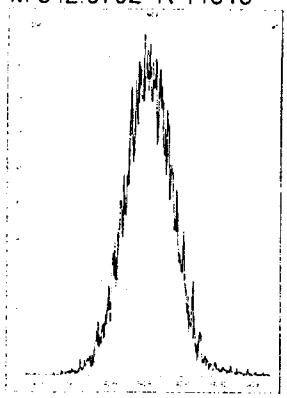
M 318.9792 R 11415



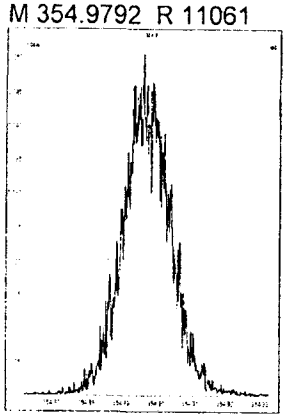
M 330.9792 R 12017



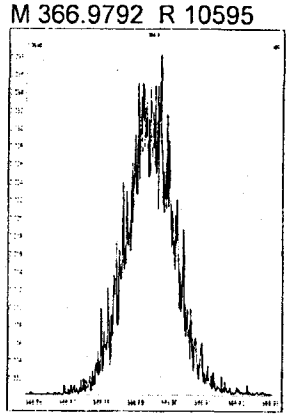
M 342.9792 R 11313



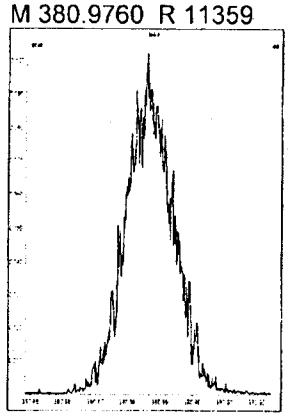
M 354.9792 R 11061



M 366.9792 R 10595



M 380.9760 R 11359

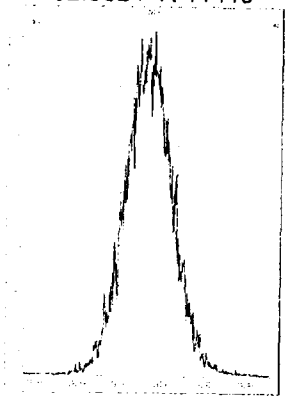


Experiment Calibration Report **MassLynx 4.1**

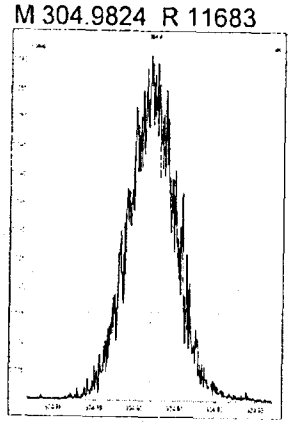
File: Experiment: tcdf_confirms.exp Reference: Pfk.ref Function: 1 @ 200 (ppm)

Printed: Monday, April 27, 2009 13:00:04 Eastern Standard Time

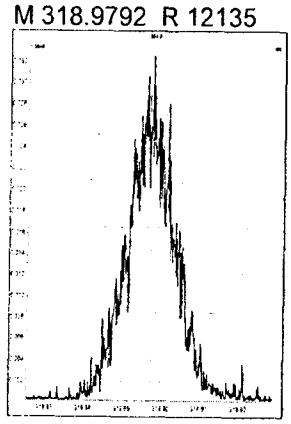
M 292.9824 R 11419



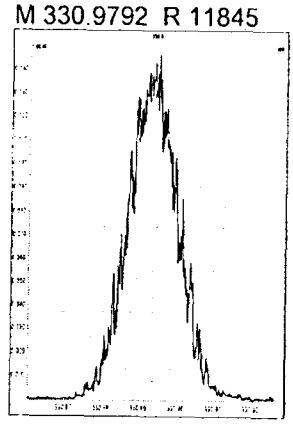
M 304.9824 R 11683



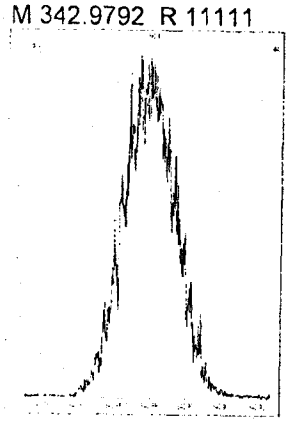
M 318.9792 R 12135



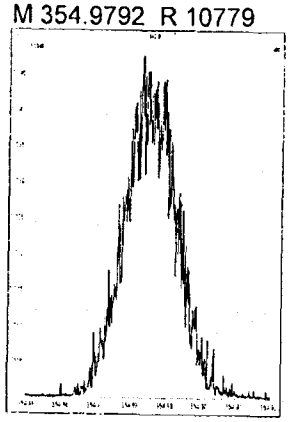
M 330.9792 R 11845



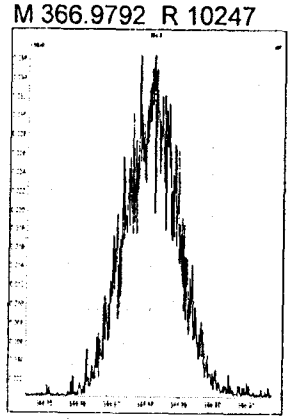
M 342.9792 R 11111



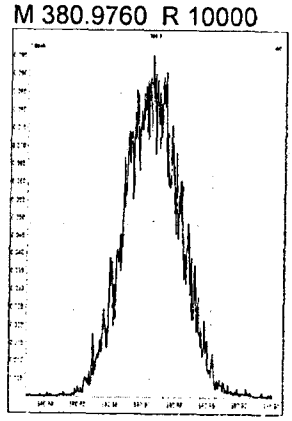
M 354.9792 R 10779

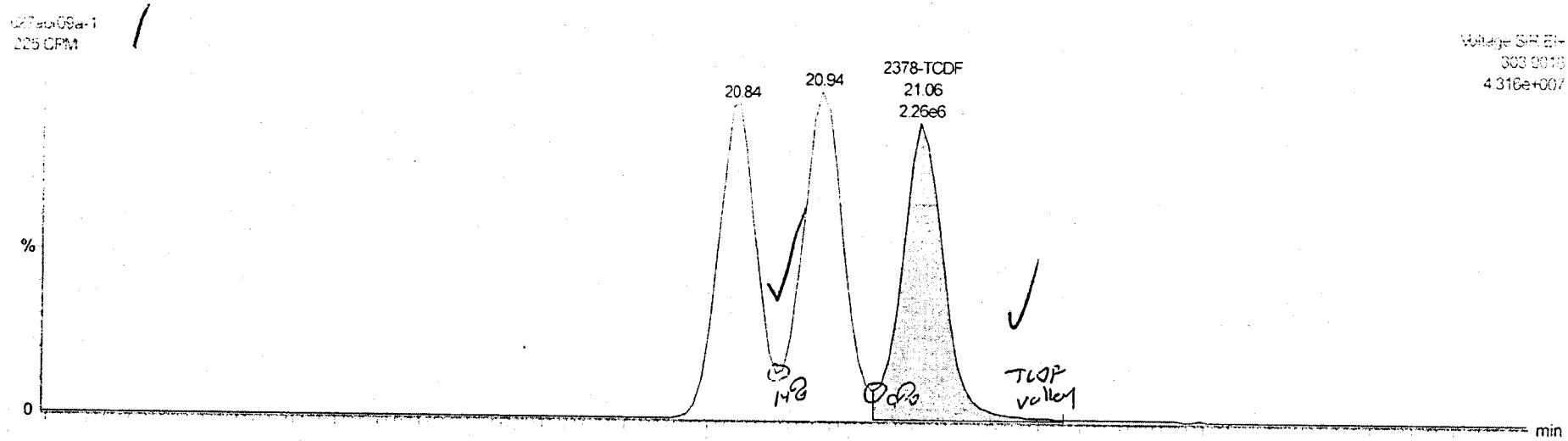


M 366.9792 R 10247



M 380.9760 R 10000

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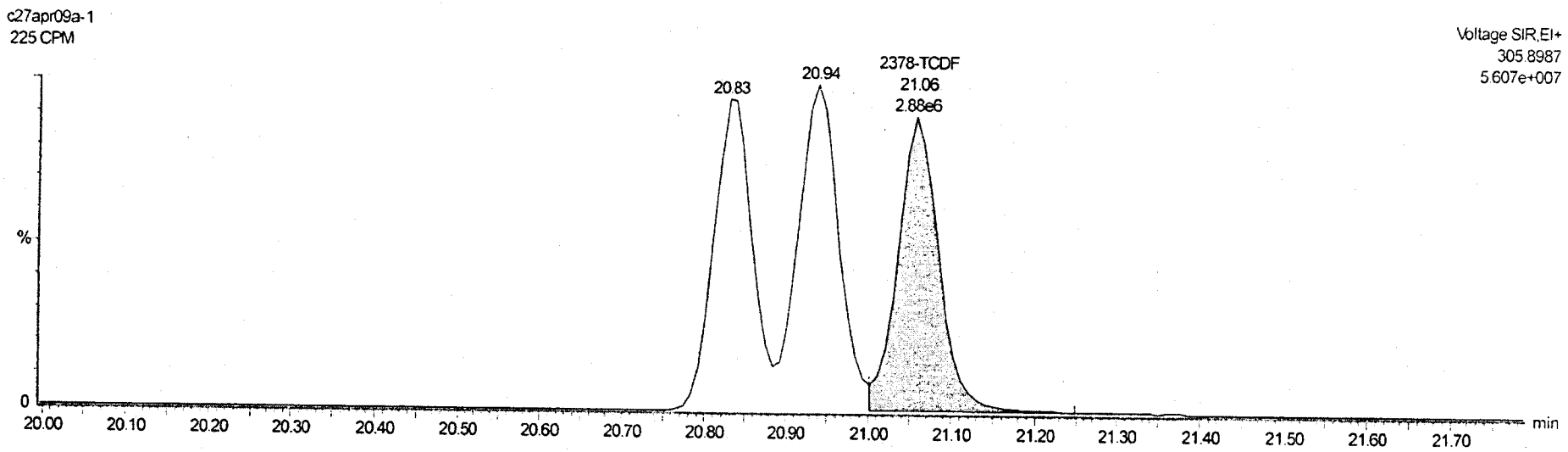
225 CPM
Voltage SIR,EI+
305.8987
4.316e+007
20.84
20.94
2378-TCDF
21.06
2.26e6
%
0
min
TCDF valley


c27apr09a-1
225 CPM
Voltage SIR,EI+
305.8987
5.607e+007
20.83
20.94
2378-TCDF
21.06
2.88e6
%
0
min
20.00
20.10
20.20
20.30
20.40
20.50
20.60
20.70
20.80
20.90
21.00
21.10
21.20
21.30
21.40
21.50
21.60
21.70

Quantify Compound Summary Report MassLynx 4.1
CF ICAL Summary

Dataset: C:\MassLynx\Default.pro\Results\mCF-c042709a.qld

Last Altered: Monday, April 27, 2009 13:01:32 Eastern Standard Time
Printed: Monday, April 27, 2009 13:04:24 Eastern Standard Time

2,3,7,8 TCDF VERIFY CAL.

Method: Untitled 10 Apr 2009 16:04:41
Calibration: C:\MassLynx\Default.pro\Curvedb\mcf-c042708a.cdb 27 Apr 2009 13:01:32

Compound name: 2378-TCDF
Response Factor: 1.22917
RRF SD: 0.0993226, Relative SD: 8.08047
Response type: Internal Std (Ref 2), Area * (IS Conc. / IS Area)
Curve type: RF

$Avg RF = \frac{\Sigma RRF}{5} = \frac{6.147}{5} = 1.229$ cjm 4-27-09

Filename	Sample ID	Response	Ion1Area	Ion2Area	RA	RAFail?	RT	pg/uL	RRF	Height1	Noise1	SN1	Height2	Noise2	SN2	Acq.Date	Acq.Time	M
c27apr09a-3	CS0.5 S29-232P	7.675e3	3.117e3	4.558e3	0.68	NO	20.93	0.250	1.407	5.126e4	1356	37.8	8.276e4	1696	48.8	27-Apr-09	09:18:42	MM
c27apr09a-4	CS2 S23-210G	5.979e4	2.649e4	3.330e4	0.80	NO	20.93	2.000	1.188	4.474e5	1798	248.9	6.060e5	1835	330.2	27-Apr-09	09:44:27	bd
c27apr09a-5	CS3 S32-114R	2.253e5	9.832e4	1.270e5	0.77	NO	20.93	10.000	1.182	1.610e6	2516	640.1	2.088e6	1646	1268.5	27-Apr-09	10:10:17	bd
c27apr09a-6	CS4 S29-01U	1.212e6	5.321e5	6.800e5	0.78	NO	20.93	40.000	1.188	8.909e6	2698	3302.8	1.140e7	2389	4772.2	27-Apr-09	10:36:03	bd
c27apr09a-7	CS5 S29-01V	4.772e6	2.096e6	2.676e6	0.78	NO	20.93	200.000	1.182	3.632e7	4383	8286.2	4.622e7	3719	1243...	27-Apr-09	11:01:58	bs

Compound name: ES:13C-2378-TCDF
Response Factor: 1.47768
RRF SD: 0.079132, Relative SD: 5.35516
Response type: Internal Std (Ref 3), Area * (IS Conc. / IS Area)
Curve type: RF

$Avg RF = \frac{\Sigma RRF}{5} = \frac{7.388}{5} = 1.4776$ cjm 4-27-09

Filename	Sample ID	Response	Ion1Area	Ion2Area	RA	RAFail?	RT	pg/uL	RRF	Height1	Noise1	SN1	Height2	Noise2	SN2	Acq.Date	Acq.Time	M
c27apr09a-3	CS0.5 S29-232P	2.182e6	9.557e5	1.227e6	0.78	NO	20.91	100.000	1.463	1.566e7	5725	2735.8	2.058e7	5363	3837.0	27-Apr-09	09:18:42	bd
c27apr09a-4	CS2 S23-210G	2.517e6	1.112e6	1.405e6	0.79	NO	20.92	100.000	1.413	1.871e7	6464	2894.4	2.333e7	8038	2902.0	27-Apr-09	09:44:27	bd
c27apr09a-5	CS3 S32-114R	1.906e6	8.340e5	1.072e6	0.78	NO	20.92	100.000	1.423	1.380e7	5697	2422.8	1.809e7	6105	2963.0	27-Apr-09	10:10:17	bb
c27apr09a-6	CS4 S29-01U	2.551e6	1.109e6	1.443e6	0.77	NO	20.91	100.000	1.478	1.878e7	7245	2592.7	2.489e7	6699	3715.7	27-Apr-09	10:36:03	bs
c27apr09a-7	CS5 S29-01V	2.020e6	8.850e5	1.135e6	0.78	NO	20.91	100.000	1.611	1.514e7	5998	2525.0	1.921e7	6530	2941.8	27-Apr-09	11:01:58	bb

Compound name: JS:13C-1234-TCDD
Response Factor: 15182.9
RRF SD: 2316.58, Relative SD: 15.2578
Response type: External Std, Area
Curve type: RF

Filename	Sample ID	Response	Ion1Area	Ion2Area	RA	RAFail?	RT	pg/uL	RRF	Height1	Noise1	SN1	Height2	Noise2	SN2	Acq.Date	Acq.Time	M

Quantify Compound Summary Report MassLynx 4.1
CF ICAL Summary

Dataset: C:\MassLynx\Default.pro\Results\mCF-c042709a.qld

Last Altered: Monday, April 27, 2009 13:01:32 Eastern Standard Time
Printed: Monday, April 27, 2009 13:04:24 Eastern Standard Time

Compound name: JS:13C-1234-TCDD

Filename	Sample ID	Response	Ion1Area	Ion2Area	RA	RAFail?	RT	pg/uL	RRF	Height1	Noise1	SN1	Height2	Noise2	SN2	Acq.Date	Acq.Time	M
c27apr09a-3	CS0.5 S29-232P	1.492e6	6.549e5	8.371e5	0.78	NO	20.01	100.000	1491...	1.169e7	4779	2445.9	1.499e7	3946	3799.8	27-Apr-09	09:18:42	db
c27apr09a-4	CS2 S23-210G	1.781e6	7.739e5	1.007e6	0.77	NO	20.01	100.000	1780...	1.421e7	4627	3070.6	1.880e7	3824	4917.0	27-Apr-09	09:44:27	db
c27apr09a-5	CS3 S32-114R	1.339e6	5.963e5	7.429e5	0.80	NO	20.01	100.000	1339...	1.013e7	4611	2197.0	1.246e7	3782	3294.4	27-Apr-09	10:10:17	db
c27apr09a-6	CS4 S29-01U	1.726e6	7.551e5	9.706e5	0.78	NO	20.01	100.000	1725...	1.322e7	4762	2775.5	1.694e7	4531	3737.8	27-Apr-09	10:36:03	db
c27apr09a-7	CS5 S29-01V	1.254e6	5.584e5	6.954e5	0.80	NO	20.01	100.000	1253...	9.849e6	4882	2017.3	1.209e7	4005	3019.0	27-Apr-09	11:01:58	ds

Compound name: Hexa Ether
Response Factor: 19.0944
RRF SD: 7.53946, Relative SD: 39.4852
Response type: External Std, Area
Curve type: RF

Filename	Sample ID	Response	Ion1Area	Ion2Area	RA	RAFail?	RT	pg/uL	RRF	Height1	Noise1	SN1	Height2	Noise2	SN2	Acq.Date	Acq.Time	M
c27apr09a-3	CS0.5 S29-232P	1.487e1	1.487e1				15.35	1.000	14.868	6.390e2	0	0.0				27-Apr-09	09:18:42	bb
c27apr09a-4	CS2 S23-210G	2.053e1	2.053e1				15.19	1.000	20.533	9.840e2	0	0.0				27-Apr-09	09:44:27	bb
c27apr09a-5	CS3 S32-114R	2.344e1	2.344e1				15.78	1.000	23.436	1.192e3	0	0.0				27-Apr-09	10:10:17	bb
c27apr09a-6	CS4 S29-01U	2.800e1	2.800e1				15.04	1.000	27.997	1.754e3	0	0.0				27-Apr-09	10:36:03	bb
c27apr09a-7	CS5 S29-01V	8.638e0	8.638e0				15.12	1.000	8.638	8.420e2	0	0.0				27-Apr-09	11:01:58	bb

Compound name: F1 Lock Mass
Response Factor: 59637.2
RRF SD: 36856.3, Relative SD: 61.8009
Response type: External Std, Area
Curve type: RF

Filename	Sample ID	Response	Ion1Area	Ion2Area	RA	RAFail?	RT	pg/uL	RRF	Height1	Noise1	SN1	Height2	Noise2	SN2	Acq.Date	Acq.Time	M
c27apr09a-3	CS0.5 S29-232P	7.894e4	7.894e4				15.33	1.000	7893...	2.625e5	0	0.0				27-Apr-09	09:18:42	bb
c27apr09a-4	CS2 S23-210G	8.573e4	8.573e4				15.28	1.000	8573...	5.619e5	0	0.0				27-Apr-09	09:44:27	bb
c27apr09a-5	CS3 S32-114R	2.939e3	2.939e3				15.14	1.000	2939...	1.121e5	0	0.0				27-Apr-09	10:10:17	bb
c27apr09a-6	CS4 S29-01U	8.876e4	8.876e4				15.28	1.000	8875...	4.978e5	0	0.0				27-Apr-09	10:36:03	bb
c27apr09a-7	CS5 S29-01V	4.182e4	4.182e4				15.21	1.000	4182...	7.095e5	0	0.0				27-Apr-09	11:01:58	bd

Quantify Sample Summary Report **MassLynx 4.1**
CF ICAL Summary

Dataset: C:\MassLynx\Default.pro\Results\mCF-c042709a.qld

Last Altered: Monday, April 27, 2009 13:01:32 Eastern Standard Time
Printed: Monday, April 27, 2009 13:04:24 Eastern Standard Time

Method: Untitled 10 Apr 2009 16:04:41
Calibration: C:\MassLynx\Default.pro\Curvedb\mcf-c042708a.cdb 27 Apr 2009 13:01:32

Name: c27apr09a-3
ID: CS0.5 S29-232P 0.25 pg/ml
Date: 27-Apr-2009
Time: 09:18:42
Submitter:
Task: HRMS3

$$RRF\ TCDF = \frac{7.675e3}{2.182e4}\left(\frac{100\ pg/ml}{0.25\ pg/ml}\right) = 1.407$$

TM 4-27-09

	Name	Response	Ion1Area	Ion2Area	RA	RAFail?	RT	RRF	Ical RRF	%RSD	Height1	Noise1	Height2	Noise2	SN1	SN2	M
1	2378-TCDF	7.675e3	3.117e3	4.558e3	0.68	NO	20.93	1.407	1.229	8.1	5.126e4	1356.0	8.276e4	1695.7	37.8	48.8	MM
2	ES:13C-2378-TCDF	2.182e6	9.557e5	1.227e6	0.78	NO	20.91	1.463	1.478	5.4	1.566e7	5724.9	2.058e7	5362.8	2735.8	3837.0	bd
3	JS:13C-1234-TCDD	1.492e6	6.549e5	8.371e5	0.78	NO	20.01	14919....	15182....	15.3	1.169e7	4778.6	1.499e7	3945.9	2445.9	3799.8	db
4	Hexa Ether	1.487e1	1.487e1				15.35	14.868			6.390e2	0.0			0.0		bb
5	F1 Lock Mass	7.894e4	7.894e4				15.33	78935....			2.625e5	0.0			0.0		bb

$$RRF\ {}^{13}C_{12}TCDF = \frac{2.182e6}{1.492e6}\left(\frac{100\ pg/ml}{100\ pg/ml}\right) = 1.4624$$

TM 4-27-09

SGS North America, Inc.

Instrument: HRMS3

Data File	Sample ID	Analyst	Acquisition Date/Time	Inj.Vol
c12oct09a-1	225 CS3 pass	JWP	2009-10-12 05:57:21	1 uL
c12oct09a-2	225 CPM	JWP	2009-10-12 06:23:35	1 uL
c12oct09a-5	G1110-3-4B	JWP	2009-10-12 07:42:14	1 uL
c12oct09a-6	G1110-3-6B	JWP	2009-10-12 08:08:22	1 uL
c12oct09a-7	G1110-3-7B Reshoot *	JWP	2009-10-12 08:34:30	1 uL
c12oct09a-8	G330-42-4C	JWP	2009-10-12 09:00:37	1 uL
c12oct09a-9	G330-42-10C	JWP	2009-10-12 09:26:44	1 uL
c12oct09a-10	G330-42-9C	JWP	2009-10-12 09:52:52	1 uL
c12oct09a-11	G1047-9-2B	JWP	2009-10-12 10:19:05	1 uL
c12oct09a-12	225 CS3 misinject	JWP	2009-10-12 10:45:14	1 uL
c12oct09a-3	SB Reshoot	JWP	2009-10-12 11:13:20	1 uL
c12oct09a-4	G383-766-1E	JWP	2009-10-12 11:39:33	1 uL
c12oct09a-13	225 CS3 pass	JWP	2009-10-12 13:17:28	1 uL
c12oct09a_2-1	SB	JWP	2009-10-12 13:45:33	1 uL
c12oct09a_2-2	G383-766-1B	JWP	2009-10-12 14:11:44	1 uL
c12oct09a_2-3	G1110-3-6B	JWP	2009-10-12 14:37:57	1 uL
c12oct09a_2-4	G1110-3-7B	JWP	2009-10-12 15:44:04	1 uL
c12oct09a_2-5	G330-42-4C	JWP	2009-10-12 16:10:11	1 uL
c12oct09a_2-6	225 CS3 pass	JWP	2009-10-12 16:52:05	1 uL

*- Lost Lock mass

2,3,7,8-TCDF Confirmation

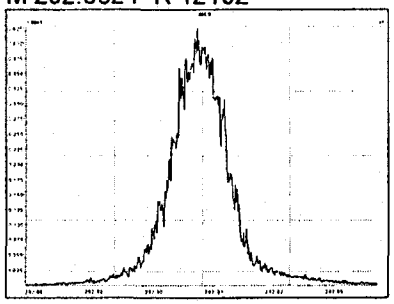
DS 10-13-09

Experiment Calibration Report **MassLynx 4.1**

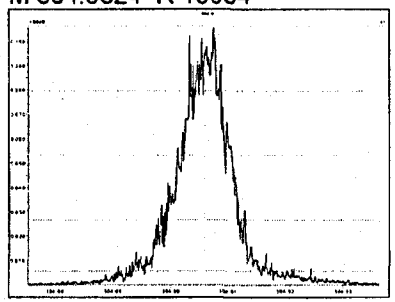
File: Experiment: tcdf_confirms2.exp Reference: Pfk.ref Function: 1 @ 200 (ppm)

Printed: Monday, October 12, 2009 05:57:02 Eastern Standard Time

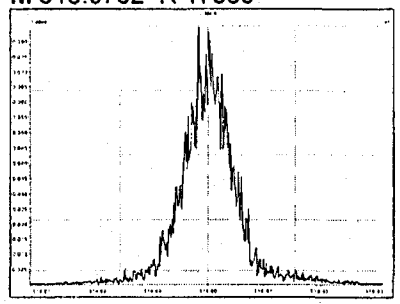
M 292.9824 R 12192



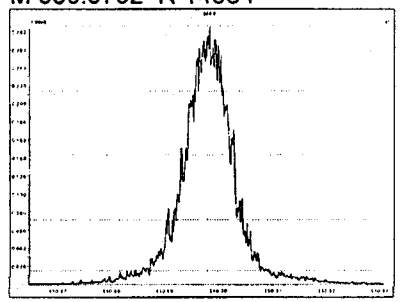
M 304.9824 R 15054



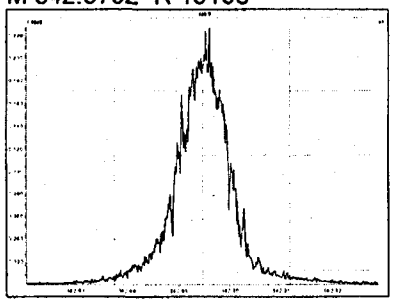
M 318.9792 R 17360



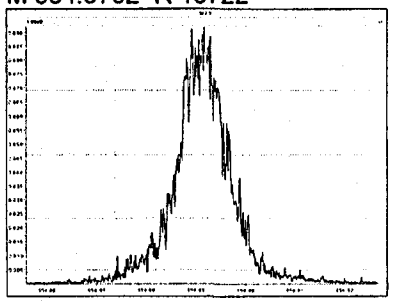
M 330.9792 R 14884



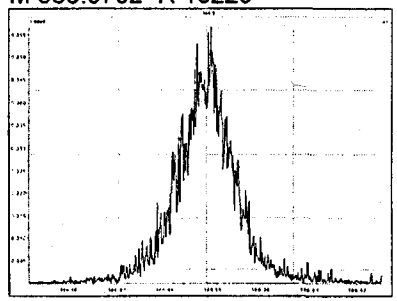
M 342.9792 R 13158



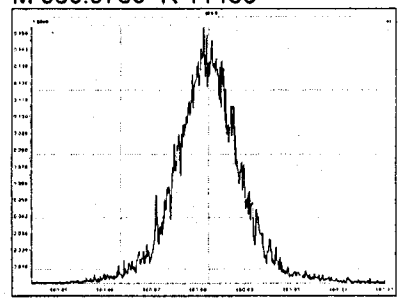
M 354.9792 R 15722



M 366.9792 R 13229

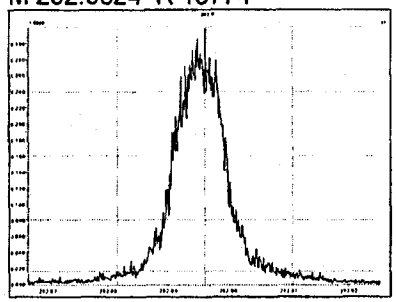


M 380.9760 R 11468

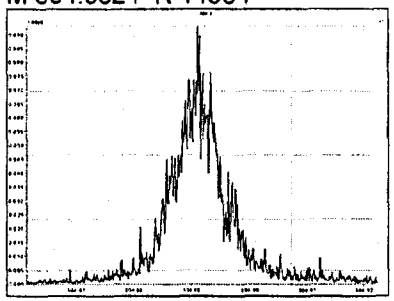


Printed: Monday, October 12, 2009 13:45:31 Eastern Standard Time

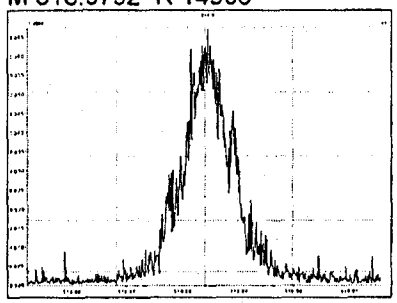
M 292.9824 R 13774



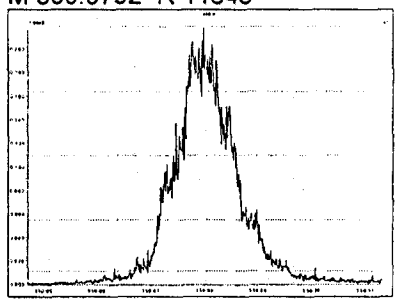
M 304.9824 R 14384



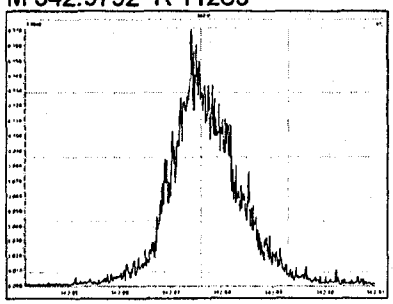
M 318.9792 R 14906



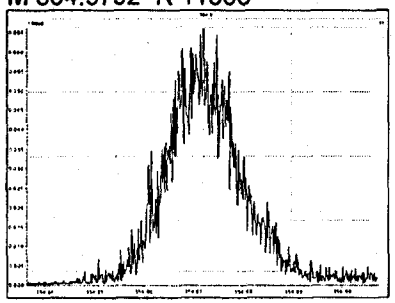
M 330.9792 R 11643



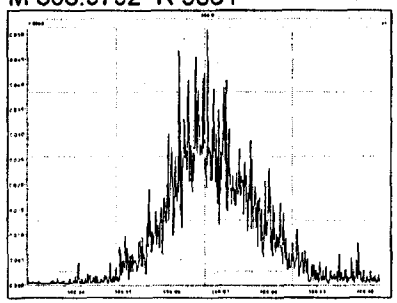
M 342.9792 R 11263



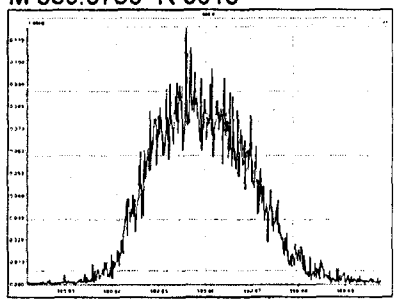
M 354.9792 R 11358



M 366.9792 R 9861

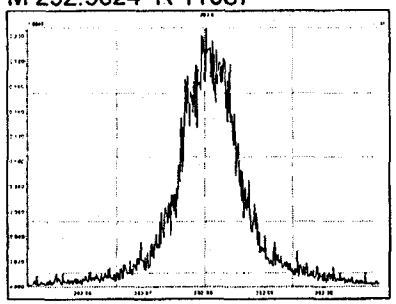


M 380.9760 R 9015

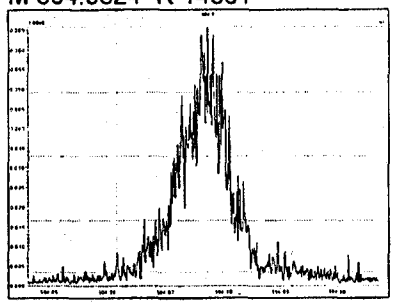


Printed: Monday, October 12, 2009 17:20:06 Eastern Standard Time

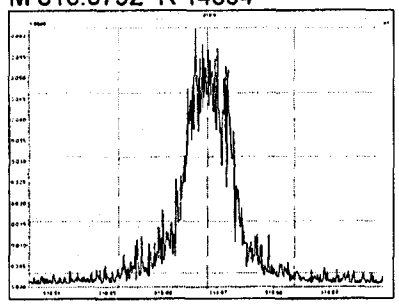
M 292.9824 R 11037



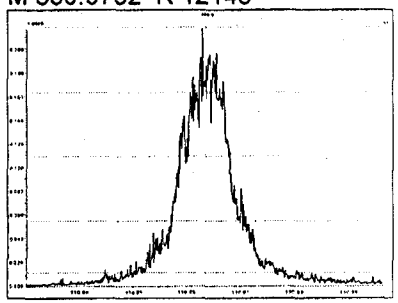
M 304.9824 R 14881



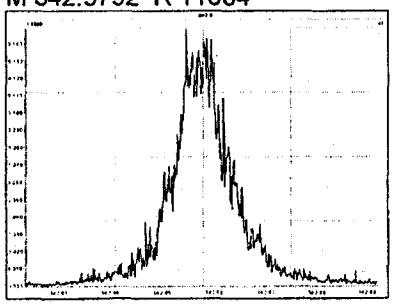
M 318.9792 R 14894



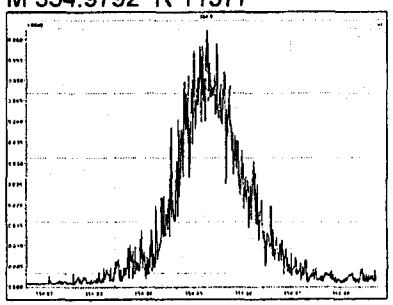
M 330.9792 R 12146



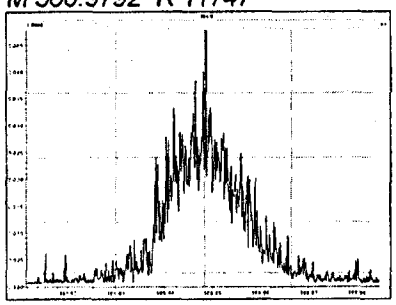
M 342.9792 R 11604



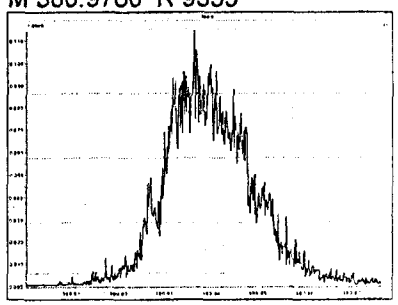
M 354.9792 R 11577

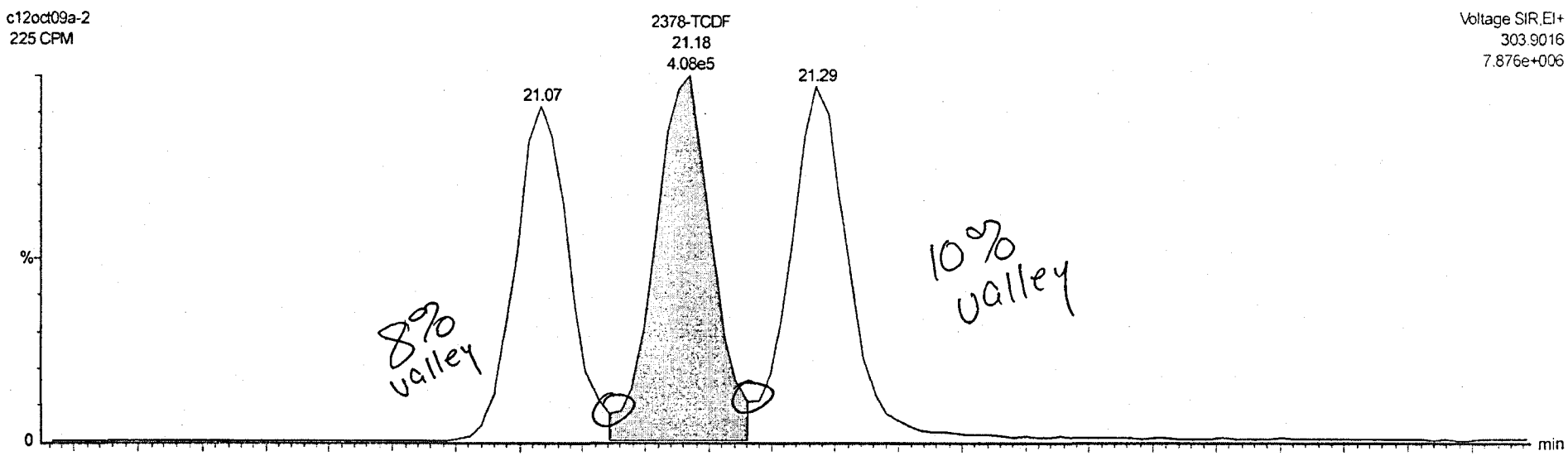


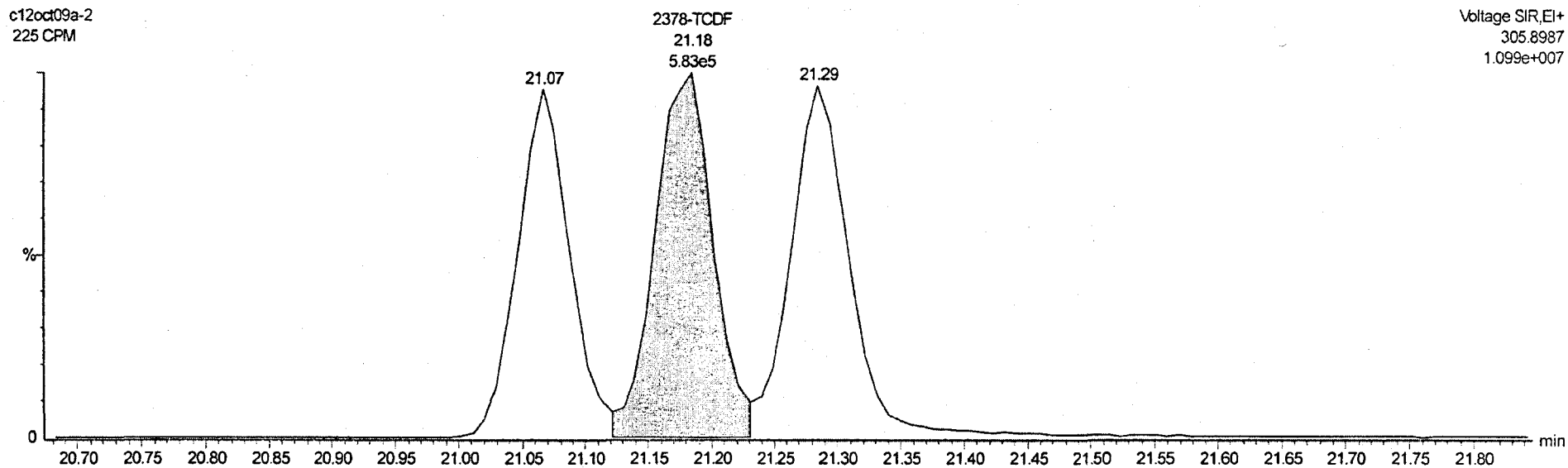
M 366.9792 R 11747



M 380.9760 R 9355




c12oct09a-2
225 CPM
2378-TCDF
21.18
4.08e5
Voltage SIR,EI+
303.9016
7.876e+006
21.07
21.29
8% valley
10% valley
%
0
min


c12oct09a-2
225 CPM
2378-TCDF
21.18
5.83e5
Voltage SIR,EI+
305.8987
1.099e+007
21.07
21.29
%
0
min
20.70
20.75
20.80
20.85
20.90
20.95
21.00
21.05
21.10
21.15
21.20
21.25
21.30
21.35
21.40
21.45
21.50
21.55
21.60
21.65
21.70
21.75
21.80

Quantify Sample Summary Report **MassLynx 4.1**
CF CCAL Summary

Dataset: C:\MassLynx\Default.pro\Concals\c12oct09a-1.qld

Last Altered: Monday, October 12, 2009 10:54:45 Eastern Standard Time
Printed: Monday, October 12, 2009 10:55:09 Eastern Standard Time

Method: C:\MassLynx\DEFAULT.PRO\MethDB\confirms.mdb 12 Oct 2009 10:54:39
Calibration: C:\MassLynx\DEFAULT.PRO\CurveDB\mcf-c042709a.cdb 27 Apr 2009 13:01:32

Name: c12oct09a-1
Date: 12-Oct-2009
Time: 05:57:21
ID: 225 CS3
Instrument:
User: JWP

	Name	Response	Ion1Area	Ion2Area	RA	RAFail?	RT	pg/µL	%Dev	RRF	Ical RRF	EDL	SN1	Height1	Noise1	SN2	Height2	Noise2	M
1	2378-TCDF	1.881e5	7.800e4	1.101e5	0.71	NO	21.18	8.8400	-11.6	1.087	1.229	0.048	511.5	1.498e6	2929	601.2	2.065e6	3435	bs
2	ES:13C-2378-TCDF	1.731e6	7.194e5	1.012e6	0.71	NO	21.17	77.6128	-22.4	1.147	1.478	0.149	1300.5	1.339e7	10296	1796.3	1.845e7	10273	bs
3	JS:13C-1234-TCDD	1.510e6	6.749e5	8.347e5	0.81	NO	20.23	99.4236	-0.6	1509...	15182....	0.157	1652.2	1.252e7	7579	2083.9	1.501e7	7201	dd
4	Hexa Ether	4.112e1	4.112e1	-	-	-	15.11			41.115			0.0	4.161e3	0	-	-	-	bb
5	F1 Lock Mass	1.528e5	1.528e5	-	-	-	15.45			1527...			0.0	2.530e5	0	-	-	-	bb

Quantify Sample Summary Report **MassLynx 4.1**
CF CCAL Summary

Dataset: C:\MassLynx\Default.pro\Concals\c12oct09a-13.qld

Last Altered: Monday, October 12, 2009 13:48:33 Eastern Standard Time
Printed: Monday, October 12, 2009 13:48:56 Eastern Standard Time

Method: C:\MassLynx\DEFAULT.PRO\MethDB\confirms.mdb 12 Oct 2009 10:54:39
Calibration: C:\MassLynx\DEFAULT.PRO\CurveDB\mcf-c042709a.cdb 27 Apr 2009 13:01:32

Name: c12oct09a-13
Date: 12-Oct-2009
Time: 13:17:28
ID: 225 CS3
Instrument:
User: JWP

	Name	Response	Ion1Area	Ion2Area	RA	RAFail?	RT	pg/µL	%Dev	RRF	Ical RRF	EDL	SN1	Height1	Noise1	SN2	Height2	Noise2	M
1	2378-TCDF	2.136e5	8.777e4	1.258e5	0.70	NO	21.17	9.6902	-3.1	1.191	1.229	0.042	684.3	1.815e6	2652	706.0	2.484e6	3518	bd
2	ES:13C-2378-TCDF	1.793e6	7.483e5	1.045e6	0.72	NO	21.16	89.9945	-10.0	1.330	1.478	0.134	1631.3	1.512e7	9270	2222.3	2.048e7	9214	bd
3	JS:13C-1234-TCDD	1.349e6	5.959e5	7.528e5	0.79	NO	20.23	88.8253	-11.2	1348...	15182....	0.105	2168.6	1.239e7	5714	2834.1	1.527e7	5388	dd
4	Hexa Ether	8.357e1	8.357e1	-	-	-	15.51			83.567			0.0	5.640e3	0	-	-	-	bb
5	F1 Lock Mass	4.797e3	4.797e3	-	-	-	15.18			4797....			0.0	1.653e5	0	-	-	-	bb

SGS North America, Inc.

Instrument: HRMS3

Data File	Sample ID	Analyst	Acquisition Date/Time	Inj.Vol
c13oct09b-1	225 CS3 pass	JWP	2009-10-13 06:55:22	1 uL
c13oct09b-2	225 CPM	JWP	2009-10-13 07:21:36	1 uL
c13oct09b-3	SB	JWP	2009-10-13 07:47:47	1 uL
c13oct09b-4	G330-42-10C	JWP	2009-10-13 08:13:56	1 uL
c13oct09b-5	~~G1110-2-1B~~ reshoot *	JWP	2009-10-13 10:48:43	1 uL
c13oct09b-6	225 CS3	JWP	2009-10-13 11:14:55	1 uL
c13oct09b-7	G1110-2-1B	JWP	2009-10-13 14:12:07	1 uL
c13oct09b-8	225 ~~CS3~~ pass	JWP	2009-10-13 14:38:16	1 uL

* - Lost lock mass

2,3,7,8-TCDF
Confirm

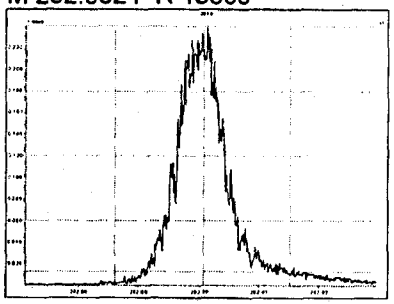
DS
10-13-09

Experiment Calibration Report **MassLynx 4.1**

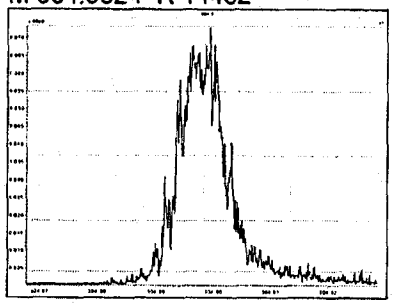
File: Experiment: tcdf_confirms2.exp Reference: Pfk.ref Function: 1 @ 200 (ppm)

Printed: Tuesday, October 13, 2009 06:54:54 Eastern Standard Time

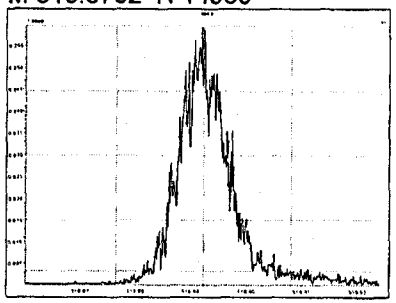
M 292.9824 R 13658



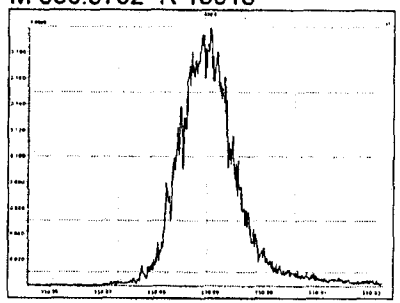
M 304.9824 R 14452



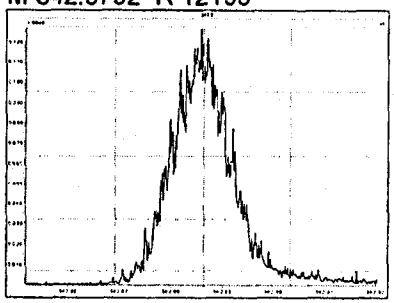
M 318.9792 R 14969



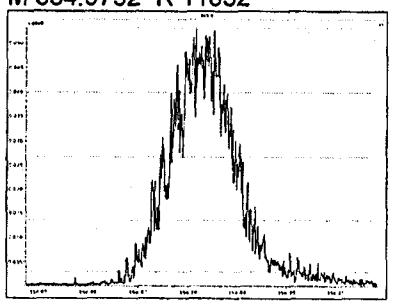
M 330.9792 R 13018



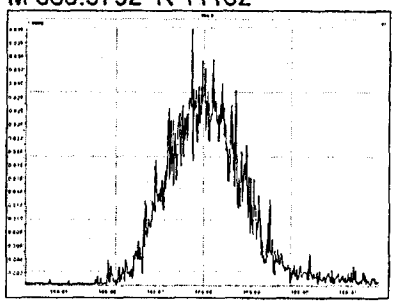
M 342.9792 R 12195



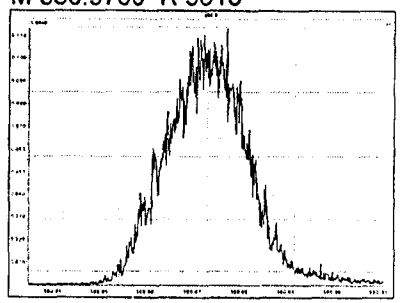
M 354.9792 R 11852



M 366.9792 R 11162

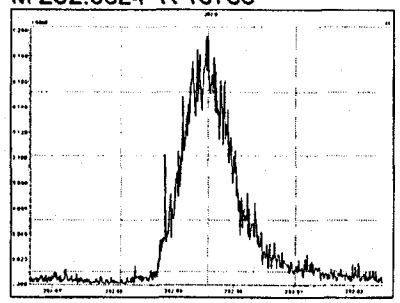


M 380.9760 R 9615

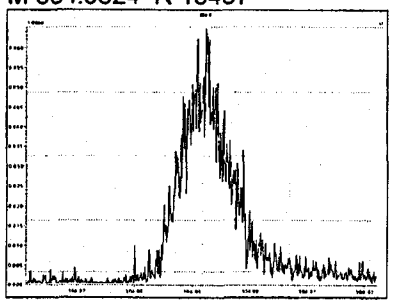


Printed: Tuesday, October 13, 2009 15:06:17 Eastern Standard Time

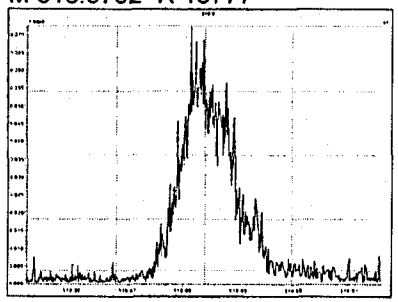
M 292.9824 R 13786



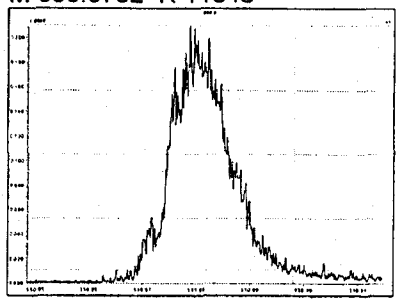
M 304.9824 R 15437



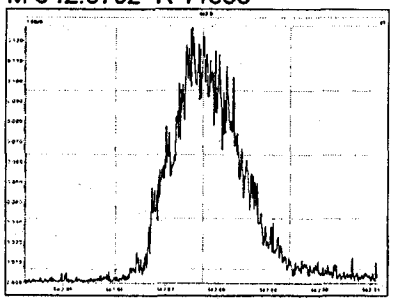
M 318.9792 R 13777



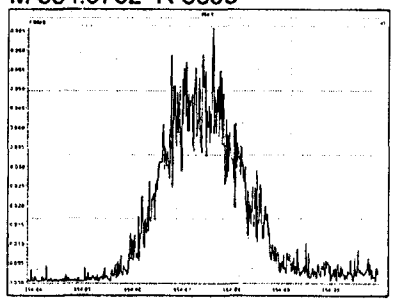
M 330.9792 R 11848



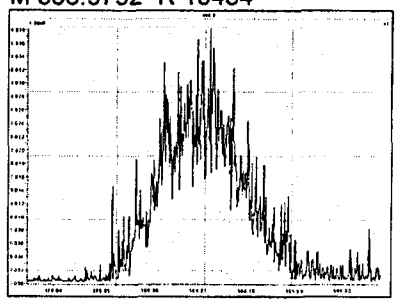
M 342.9792 R 11653



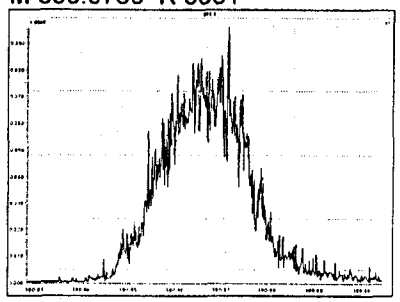
M 354.9792 R 8898



M 366.9792 R 10454



M 380.9760 R 9561



Quantify Sample Summary Report **MassLynx 4.1**
CF CCAL Summary

Dataset: C:\MassLynx\Default.pro\Concals\c13oct09b-1.qld

Last Altered: Tuesday, October 13, 2009 14:06:39 Eastern Standard Time
Printed: Tuesday, October 13, 2009 14:07:45 Eastern Standard Time

Method: C:\MassLynx\DEFAULT.PRO\MethDB\confirms.mdb 12 Oct 2009 10:54:39
Calibration: C:\MassLynx\DEFAULT.PRO\CurveDB\mcf-c042709a.cdb 27 Apr 2009 13:01:32

Name: c13oct09b-1
Date: 13-Oct-2009
Time: 06:55:22
ID: 225 CS3
Instrument:
User: JWP

	Name	Response	Ion1Area	Ion2Area	RA	RAFail?	RT	pg/µL	%Dev	RRF	Ical RRF	EDL	SN1	Height1	Noise1	SN2	Height2	Noise2	M
1	2378-TCDF	3.172e5	1.335e5	1.837e5	0.73	NO	21.15	9.3580	-6.4	1.150	1.229	0.032	722.8	2.644e6	3659	1092.6	3.596e6	3291	bs
2	ES:13C-2378-TCDF	2.757e6	1.155e6	1.602e6	0.72	NO	21.14	88.4418	-11.6	1.307	1.478	0.098	2380.8	2.253e7	9465	3086.4	3.220e7	10433	bb
3	JS:13C-1234-TCDD	2.110e6	9.295e5	1.180e6	0.79	NO	20.22	138.9622	39.0	2109...	15182....	0.129	2683.6	1.815e7	6765	3950.4	2.368e7	5994	ds
4	Hexa Ether	8.314e1	8.314e1	-	-	-	15.62			83.143			0.0	7.778e3	0	-	-	-	bb
5	F1 Lock Mass	1.781e4	1.781e4	-	-	-	15.20			1781...			0.0	2.682e5	0	-	-	-	bb

Quantify Sample Summary Report **MassLynx 4.1**
CF CCAL Summary

Dataset: C:\MassLynx\Default.pro\Concals\c13oct09b-8.qld

Last Altered: Tuesday, October 13, 2009 15:07:03 Eastern Standard Time
Printed: Tuesday, October 13, 2009 15:07:35 Eastern Standard Time

Method: C:\MassLynx\DEFAULT.PRO\MethDB\confirms.mdb 12 Oct 2009 10:54:39
Calibration: C:\MassLynx\DEFAULT.PRO\CurveDB\mcf-c042709a.cdb 27 Apr 2009 13:01:32

Name: c13oct09b-8
Date: 13-Oct-2009
Time: 14:38:16
ID: 225 CS3
Instrument:
User: JWP

	Name	Response	Ion1Area	Ion2Area	RA	RAFail?	RT	pg/µL	%Dev	RRF	Ical RRF	EDL	SN1	Height1	Noise1	SN2	Height2	Noise2	M
1	2378-TCDF	5.028e5	2.126e5	2.901e5	0.73	NO	21.13	9.4897	-5.1	1.166	1.229	0.020	1297.5	4.290e6	3307	1495.6	5.937e6	3969	bb
2	ES:13C-2378-TCDF	4.310e6	1.792e6	2.518e6	0.71	NO	21.12	91.3651	-8.6	1.350	1.478	0.059	3505.5	3.700e7	10555	5934.2	5.305e7	8941	bs
3	JS:13C-1234-TCDD	3.193e6	1.418e6	1.774e6	0.80	NO	20.20	210.2801	110.3	3192...	15182....	0.133	4312.5	2.967e7	6881	5198.2	3.744e7	7202	ds
4	Hexa Ether	5.101e2	5.101e2	-	-	-	16.49			510.1...			0.0	1.604e4	0	-	-	-	bb
5	F1 Lock Mass	7.659e4	7.659e4	-	-	-	15.25			7659...			0.0	4.114e5	0	-	-	-	bb

NTC GREAT LAKES
SOIL DATA
G330-42B

FRACTION	CHEMICAL	FD-092609-02	UNITS	NTC21SB09-SO-0001	RPD	D
DIOX	1,2,3,4,6,7,8,9-OCDD	1840 J	NG/KG	1310 J	33.65	530.00
DIOX	1,2,3,4,6,7,8,9-OCDF	143	NG/KG	141	1.41	2.00
DIOX	1,2,3,4,6,7,8-HPCDD	224 J	NG/KG	169 J	27.99	55.00
DIOX	1,2,3,4,6,7,8-HPCDF	89.9 J	NG/KG	82.4 J	8.71	7.50
DIOX	1,2,3,4,7,8,9-HPCDF	4.32 J	NG/KG	4.08 J	5.71	0.24
DIOX	1,2,3,4,7,8-HXCDD	1.95 J	NG/KG	1.9 J	2.60	0.05
DIOX	1,2,3,4,7,8-HXCDF	6.27	NG/KG	5.91	5.91	0.36
DIOX	1,2,3,6,7,8-HXCDD	8.99	NG/KG	7.9	12.91	1.09
DIOX	1,2,3,6,7,8-HXCDF	11.1	NG/KG	11.6	4.41	0.50
DIOX	1,2,3,7,8,9-HXCDD	5.18 J	NG/KG	5.17	0.19	0.01
DIOX	1,2,3,7,8,9-HXCDF	2.67 J	NG/KG	2.68 QA	0.37	0.01
DIOX	1,2,3,7,8-PECDD	4.99 J	NG/KG	5.9	16.71	0.91
DIOX	1,2,3,7,8-PECDF	2.11 J	NG/KG	1.92 J	9.43	0.19
DIOX	2,3,4,6,7,8-HXCDF	24.7	NG/KG	26.2	5.89	1.50
DIOX	2,3,4,7,8-PECDF	51.5	NG/KG	57.5	11.01	6.00
DIOX	2,3,7,8-TCDD	0.694 J	NG/KG	0.816 J	16.16	0.12
DIOX	2,3,7,8-TCDF	3.99 J	NG/KG	3.61 J	10.00	0.38
DIOX	TEQ WHO-2005	26.5	NG/KG	27.6	4.07	1.10
DIOX	TEQ WHO-2005 - HALFND	26.7	NG/KG	27.9	4.40	1.20
DIOX	TOTAL HPCDD	437 J	NG/KG	326 J	29.10	111.00
DIOX	TOTAL HPCDF	221 J	NG/KG	202 J	8.98	19.00
DIOX	TOTAL HXCDD	73.7	NG/KG	67	9.52	6.70
DIOX	TOTAL HXCDF	376 J	NG/KG	393 JQ	4.42	17.00
DIOX	TOTAL PECDD	20.1 Q	NG/KG	19.4 Q	3.54	0.70
DIOX	TOTAL PECDF	616	NG/KG	712 DPE	14.46	96.00
DIOX	TOTAL TCDD	11.4 Q	NG/KG	10.8	5.41	0.60
DIOX	TOTAL TCDF	197 J Q	NG/KG	215 J Q DPE	8.74	18.00

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NTC GREAT LAKES
SOIL DATA
G330-42B

FRACTION	CHEMICAL	FD-092609-02-RE	UNITS	NTC21SB09-SO-0001-RE	RPD	D
DIOX	2,3,7,8-TCDF	3.79	NG/KG	3.17	17.82	0.62

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE 1 OF 1

CLIENT NTC Great Lakes		JOB NUMBER Ø1797	
SUBJECT Calculation Check for SDG G33Ø-42B			
BASED ON		DRAWING NUMBER	
BY J. Kalinyk	CHECKED BY	APPROVED BY	DATE 11/18/Ø9

2,3,7,8-TCDD Sample NTC21SB09-SO-0001

$$\frac{(4.19E+5)(1000g/Kg \times .1ng/ul \times 20ul)}{(1.02E+8)(1.0293)(11.1g)(0.878)} \approx 0.818 ng/Kg$$

% Solids

$\frac{(4.85)(2000)}{(5.38)(1.097)(11.11)(.878)} = 148.49$

NTC215B59-SO-0001

Filename ; a08oct09a
Sample ; 8
Acquired ; 8-OCT-09 21:40:11
Processed ; 9-OCT-09 05:15:42
Sample ID ; G330-42-10C
Cal Table ; m8290-092309a
Results Table ; m8290-100809a
Comments ;

;*8290*
;INST: HRMS2

Ent;	Name;	Resp;	Ion 1;	Ion 2;	RA;?;	RT;	Conc;	EDL;	S/N1;?;	S/N2;?;M; Signal1; Noise 1; Signal2; Noise 2
1 ;	2,3,7,8-TCDD;	4.19e+05;	1.67e+05;	2.51e+05;	0.67;y;	31:31;	0.398;	0.0564;	18;y;	25;y;y;6.80e+04;3.72e+03;1.04e+05;4.10e+03
2 ;	1,2,3,7,8-PeCDD;	2.33e+06;	4.95e+05;	1.83e+06;	0.27;n;	34:19;	2.875;	0.1328;	25;y;	116;y;y;2.18e+05;8.82e+03;7.79e+05;6.72e+03
3 ;	1,2,3,4,7,8-HxCDD;	6.28e+05;	3.46e+05;	2.82e+05;	1.23;y;	37:00;	0.926;	0.2251;	15;y;	14;y;n;1.29e+05;8.89e+03;1.04e+05;7.67e+03
4 ;	1,2,3,6,7,8-HxCDD;	2.67e+06;	1.49e+06;	1.18e+06;	1.27;y;	37:05;	3.853;	0.2204;	53;y;	48;y;n;4.75e+05;8.89e+03;3.68e+05;7.67e+03
5 ;	1,2,3,7,8,9-HxCDD;	1.68e+06;	9.35e+05;	7.50e+05;	1.25;y;	37:21;	2.520;	0.2284;	36;y;	30;y;n;3.19e+05;8.89e+03;2.29e+05;7.67e+03
6 ;	1,2,3,4,6,7,8-HpCDD;	4.85e+07;	2.48e+07;	2.37e+07;	1.05;y;	40:23;	82.152;	0.2212;	1253;y;	1074;y;n;6.75e+06;5.39e+03;6.30e+06;5.87e+03
7 ;	OCDD;	2.86e+08;	1.35e+08;	1.51e+08;	0.90;y;	44:42;	637.579;	0.2428;	7975;y;	8320;y;n;2.83e+07;3.55e+03;3.14e+07;3.77e+03
8 ;	2,3,7,8-TCDF;	2.90e+06;	1.27e+06;	1.62e+06;	0.78;y;	30:56;	1.761;	0.0849;	70;y;	61;y;n;4.21e+05;6.02e+03;4.97e+05;8.16e+03
9 ;	1,2,3,7,8-PeCDF;	1.15e+06;	7.01e+05;	4.49e+05;	1.56;y;	33:30;	0.938;	0.2083;	17;y;	10;y;y;3.29e+05;1.92e+04;2.21e+05;2.20e+04
10 ;	2,3,4,7,8-PeCDF;	3.57e+07;	2.17e+07;	1.40e+07;	1.55;y;	34:08;	28.027;	0.2005;	476;y;	264;y;y;9.14e+06;1.92e+04;5.81e+06;2.20e+04
11 ;	1,2,3,4,7,8-HxCDF;	2.92e+06;	1.65e+06;	1.27e+06;	1.30;y;	36:14;	2.882;	0.3154;	22;y;	37;y;n;5.53e+05;2.51e+04;4.32e+05;1.16e+04
12 ;	1,2,3,6,7,8-HxCDF;	6.07e+06;	3.32e+06;	2.76e+06;	1.20;y;	36:20;	5.662;	0.2975;	47;y;	81;y;n;1.17e+06;2.51e+04;9.38e+05;1.16e+04
13 ;	2,3,4,6,7,8-HxCDF;	1.31e+07;	7.27e+06;	5.85e+06;	1.24;y;	36:51;	12.765;	0.3104;	89;y;	155;y;n;2.24e+06;2.51e+04;1.80e+06;1.16e+04
14 ;	1,2,3,7,8,9-HxCDF;	1.14e+06;	6.25e+05;	5.17e+05;	1.21;y;	37:40;	1.306;	0.3651;	11;y;	18;y;n;2.69e+05;2.51e+04;2.05e+05;1.16e+04
15 ;	1,2,3,4,6,7,8-HpCDF;	3.75e+07;	1.92e+07;	1.83e+07;	1.05;y;	39:06;	40.159;	0.1442;	1173;y;	646;y;n;6.11e+06;5.20e+03;5.75e+06;8.90e+03
16 ;	1,2,3,4,7,8,9-HpCDF;	1.43e+06;	7.55e+05;	6.79e+05;	1.11;y;	41:04;	1.987;	0.1866;	38;y;	20;y;n;1.97e+05;5.20e+03;1.79e+05;8.90e+03
17 ;	OCDF;	3.82e+07;	1.81e+07;	2.02e+07;	0.90;y;	45:01;	68.643;	0.1911;	967;y;	1136;y;n;3.54e+06;3.66e+03;3.97e+06;3.50e+03
Extraction Standards										
18 ;	13C-2,3,7,8-TCDD;	1.02e+08;	4.48e+07;	5.74e+07;	0.78;y;	31:30;	90.313;	0.0692;	3778;y;	5689;y;n;1.77e+07;4.67e+03;2.28e+07;4.00e+03
19 ;	13C-1,2,3,7,8-PeCDD;	7.68e+07;	4.71e+07;	2.97e+07;	1.58;y;	34:18;	93.521;	0.0982;	4590;y;	2873;y;n;2.03e+07;4.42e+03;1.30e+07;4.52e+03
20 ;	13C-1,2,3,6,7,8-HxCDD;	7.01e+07;	3.90e+07;	3.11e+07;	1.25;y;	37:05;	91.126;	0.1031;	2687;y;	2446;y;n;1.27e+07;4.72e+03;1.01e+07;4.14e+03
21 ;	13C-1,2,3,4,6,7,8-HpCDD;	5.38e+07;	2.77e+07;	2.61e+07;	1.06;y;	40:22;	102.128;	0.1433;	1756;y;	1552;y;n;7.11e+06;4.05e+03;6.81e+06;4.39e+03
22 ;	13C-OCDD;	7.97e+07;	3.77e+07;	4.20e+07;	0.90;y;	44:41;	190.810;	0.1405;	2288;y;	2623;y;n;7.58e+06;3.31e+03;8.51e+06;3.24e+03
23 ;	13C-2,3,7,8-TCDF;	1.58e+08;	6.95e+07;	8.82e+07;	0.79;y;	30:55;	90.930;	0.0402;	5387;y;	7078;y;n;2.11e+07;3.92e+03;2.70e+07;3.81e+03
24 ;	13C-1,2,3,7,8-PeCDF;	1.23e+08;	7.48e+07;	4.77e+07;	1.57;y;	33:30;	88.189;	0.1720;	4064;y;	1307;y;n;3.67e+07;9.03e+03;2.28e+07;1.75e+04
25 ;	13C-1,2,3,6,7,8-HxCDF;	9.33e+07;	3.20e+07;	6.13e+07;	0.52;y;	36:19;	90.580;	0.0743;	3045;y;	4293;y;n;1.10e+07;3.62e+03;2.11e+07;4.92e+03
26 ;	13C-1,2,3,4,6,7,8-HpCDF;	6.76e+07;	2.10e+07;	4.66e+07;	0.45;y;	39:05;	92.820;	0.1404;	1303;y;	2302;y;n;6.64e+06;5.09e+03;1.46e+07;6.33e+03
Injection Standards										
27 ;	13C-1,2,3,4-TCDD;	1.01e+08;	4.48e+07;	5.65e+07;	0.79;y;	31:04;	219.484;	-;	3183;y;	4690;y;n;1.49e+07;4.67e+03;1.88e+07;4.00e+03
28 ;	13C-1,2,3,7,8,9-HxCDD;	7.16e+07;	3.97e+07;	3.19e+07;	1.25;y;	37:20;	198.471;	-;	2825;y;	2578;y;n;1.33e+07;4.72e+03;1.07e+07;4.14e+03
Cleanup Standards										
29 ;	37Cl-2,3,7,8-TCDD;	2.52e+07;	2.52e+07;	-;	-;-;	31:31;	21.340;	0.0241;	3230;y;	-;-;n;1.02e+07;3.16e+03; -; -
30 ;	13C-2,3,4,7,8-PeCDF;	2.72e+07;	1.65e+07;	1.06e+07;	1.56;y;	34:07;	20.069;	0.1766;	833;y;	282;y;n;7.52e+06;9.03e+03;4.93e+06;1.75e+04
31 ;	13C-1,2,3,4,7,8-HxCDD;	1.44e+07;	8.07e+06;	6.37e+06;	1.27;y;	36:59;	20.540;	0.1127;	577;y;	525;y;n;2.72e+06;4.72e+03;2.17e+06;4.14e+03
32 ;	13C-1,2,3,4,7,8-HxCDF;	1.93e+07;	6.65e+06;	1.27e+07;	0.53;y;	36:13;	20.773;	0.0823;	649;y;	892;y;n;2.35e+06;3.62e+03;4.39e+06;4.92e+03
33 ;	13C-1,2,3,4,7,8,9-HpCDF;	1.14e+07;	3.54e+06;	7.87e+06;	0.45;y;	41:03;	20.373;	0.1826;	184;y;	314;y;n;9.37e+05;5.09e+03;1.99e+06;6.33e+03
Sampling Standards										
34 ;	37Cl-2,3,7,8-TCDD;	2.52e+07;	2.52e+07;	-;	-;-;	31:31;	23.637;	0.0225;	3230;y;	-;-;n;1.02e+07;3.16e+03; -; -
35 ;	13C-2,3,4,7,8-PeCDF;	2.72e+07;	1.65e+07;	1.06e+07;	1.56;y;	34:07;	22.747;	0.1374;	833;y;	282;y;n;7.52e+06;9.03e+03;4.93e+06;1.75e+04
36 ;	13C-1,2,3,4,7,8-HxCDD;	1.44e+07;	8.07e+06;	6.37e+06;	1.27;y;	36:59;	22.531;	0.1273;	577;y;	525;y;n;2.72e+06;4.72e+03;2.17e+06;4.14e+03
37 ;	13C-1,2,3,4,7,8-HxCDF;	1.93e+07;	6.65e+06;	1.27e+07;	0.53;y;	36:13;	22.933;	0.0883;	649;y;	892;y;n;2.35e+06;3.62e+03;4.39e+06;4.92e+03
38 ;	13C-1,2,3,4,7,8,9-HpCDF;	1.14e+07;	3.54e+06;	7.87e+06;	0.45;y;	41:03;	21.947;	0.2097;	184;y;	314;y;n;9.37e+05;5.09e+03;1.99e+06;6.33e+03

Cal: m8290-092309a CAL

Results: Version: V3.6 6-JAN-2000 17:51:42

Ent	Name	Mean RRF	Std	%RSD	a23sep09a-2 RRF#1 (0.25)	a23sep09a-4 RRF#2 (2.00)	a23sep09a-5 RRF#3 (10.0)	a23sep09a-6 RRF#4 (40.0)	a23sep09a-7 RRF#5 (200 pg/ml)
1	2,3,7,8-TCDD	1.0293	18	3.24 %	1.05	0.98	1.02	1.03	1.07
2	1,2,3,7,8-PeCDD	1.0539	19	4.18 %	0.99	1.03	1.06	1.07	1.11
3	1,2,3,4,7,8-HxCDD	0.9679	20	1.64 %	0.95	0.96	0.96	0.99	0.98
4	1,2,3,6,7,8-HxCDD	0.9886	20	2.54 %	1.01	0.95	0.98 calc.	1.00	1.00
5	1,2,3,7,8,9-HxCDD	0.9540	20	3.13 %	1.00	0.93	0.94	0.95	0.95
6	1,2,3,4,6,7,8-HpCDD	1.0970	21	3.94 %	1.15	1.04	1.08	1.09	1.13
7	OCDD	1.1240	22	6.39 %	1.24 calc.	1.05	1.08	1.11	1.14
8	2,3,7,8-TCDF	1.0424	23	6.47 %	1.14	0.96	1.00	1.05	1.07 calc.
9	1,2,3,7,8-PeCDF	0.9997	24	3.89 %	0.94	0.99	1.01	1.02	1.04
10	2,3,4,7,8-PeCDF	1.0386	24	2.02 %	1.03	1.03 calc.	1.01	1.06	1.06
11	1,2,3,4,7,8-HxCDF	1.0846	25	1.83 %	1.11	1.06	1.09	1.09	1.07
12	1,2,3,6,7,8-HxCDF	1.1500	25	3.25 %	1.13	1.10	1.15	1.17	1.20
13	2,3,4,6,7,8-HxCDF	1.1020	25	1.44 %	1.08	1.09	1.11	1.11	1.12
14	1,2,3,7,8,9-HxCDF	0.9369	25	6.28 %	0.88	0.89	0.94	0.94 calc.	1.03
15	1,2,3,4,6,7,8-HpCDF	1.3813	26	3.02 %	1.40	1.31	1.37	1.41	1.42
16	1,2,3,4,7,8,9-HpCDF	1.0673	26	5.37 %	1.08	0.97	1.11	1.09	1.10
17	OCDF	1.3977	22	9.03 %	1.34	1.29	1.31	1.47	1.59
18	13C-2,3,7,8-TCDD	1.1184	27	1.49 %	1.13	1.10 calc.	1.10	1.12	1.14
19	13C-1,2,3,7,8-PeCDD	0.8116	27	5.64 %	0.84	0.76	0.77	0.82	0.87
20	13C-1,2,3,6,7,8-HxCDD	1.0736	28	2.09 %	1.05	1.06	1.08	1.07 calc.	1.11
21	13C-1,2,3,4,6,7,8-HpCDD	0.7360	28	2.32 %	0.76	0.71	0.74	0.73	0.75
22	13C-OCDD	0.5833	28	5.91 %	0.58 calc.	0.53	0.61	0.58	0.62
23	13C-2,3,7,8-TCDF	1.7135	27	1.08 %	1.73	1.74	1.71 calc.	1.70	1.69
24	13C-1,2,3,7,8-PeCDF	1.3731	27	5.15 %	1.42	1.28	1.34	1.37	1.46
25	13C-1,2,3,6,7,8-HxCDF	1.4379	28	0.42 %	1.43	1.44	1.43	1.45	1.44
26	13C-1,2,3,4,6,7,8-HpCDF	1.0173	28	2.10 %	1.05	1.00	1.01	1.00	1.03 calc.
27	13C-1,2,3,4-TCDD	-		- %	-	-	-	-	-
28	13C-1,2,3,7,8,9-HxCDD	-		- %	-	-	-	-	-
29	37Cl-2,3,7,8-TCDD	1.1662	27	5.09 %	1.15	1.10	1.13	1.21	1.24
30	13C-2,3,4,7,8-PeCDF	1.3373	27	4.37 %	1.38	1.27	1.28	1.35	1.41
31	13C-1,2,3,4,7,8-HxCDD	0.9822	28	1.16 %	0.99	0.99	0.96	0.98	0.99
32	13C-1,2,3,4,7,8-HxCDF	1.2981	28	3.16 %	1.32	1.33	1.31	1.29	1.23
33	13C-1,2,3,4,7,8,9-HpCDF	0.7821	28	2.85 %	0.79	0.75 calc.	0.80	0.77	0.79
34	37Cl-2,3,7,8-TCDD	1.0425	18	3.95 %	1.02	0.99	1.03 calc.	1.07	1.09
35	13C-2,3,4,7,8-PeCDF	0.9744	24	1.74 %	0.97	1.00	0.96	0.99	0.96
36	13C-1,2,3,4,7,8-HxCDD	0.9152	20	2.68 %	0.94	0.93	0.89	0.92	0.89
37	13C-1,2,3,4,7,8-HxCDF	0.9028	25	3.19 %	0.92	0.92	0.91	0.89	0.86
38	13C-1,2,3,4,7,8,9-HpCDF	0.7688	26	2.52 %	0.76	0.75	0.80	0.78	0.77
39	Total Tetra-Furans	1.0424		6.47 %	1.14	0.96	1.00	1.05	1.07
40	Total Tetra-Dioxins	1.0293		3.24 %	1.05	0.98	1.02	1.03	1.07
41	Total Penta-Furans Fn1	1.0191	9 10	2.59 %	0.98	1.01	1.01	1.04	1.05
42	Total Penta-Furans Fn2	1.0191		2.59 %	0.98	1.01	1.01	1.04	1.05
43	Total Penta-Dioxins	1.0539		4.18 %	0.99	1.03	1.06	1.07	1.11
44	Total Hexa-Furans	1.0684		2.58 %	1.05	1.03	1.07	1.08	1.11
45	Total Hexa-Dioxins	0.9702		1.90 %	0.99	0.95	0.96	0.98	0.98

SM 9-27-09

Extraction by Modified Method 3540C

(Soxhlet with Dean-Stark Adapter - SDS)

Analytical Method: 8290 1613 8280
1668A DLM Other_____

QC Date	QC Batch*	Prev. WG	Workgroup*	Logbook#	Page#
07-Oct-09		N/A	WG	17	345

Glassware #	QC #/20	Sample Identification: Client* ID	Project* ID	Sample* ID	Container* ID	Sample Matrix	Sample Weight*	ES Amt.* (µL)	MX Amt. (µL)	Analyst (initials)
		N/A	N/A	LMB17345	A	Soil	10.00	40		lmc
		G330	42	5	A	Soil	11.36	40		lmc
		G330	42	6	A	Soil	10.91	40		lmc
		G330	42	9	A	Soil	10.83	40		lmc
		G330	42	10	A	Soil	11.11	40		lmc
		G330	42	11	A	Soil	11.07	40		lmc
		G330	42	13	A	Soil	11.102	40		lmc
		G330	42	18	A-MS	Soil	10.22	40	40	lmc
		G330	42	19	A-MSD	Soil	10.100	40	40	lmc
		G1047	9	1	A	Soil	10.19	40		lmc
		G1047	9	2	A	Soil	10.38	40		lmc
		G1047	9	3	A	Soil	11.73	40		lmc
		G1047	9	4	A	Soil	10.17	40		lmc
		G1047	9	5	A	Soil	11.109	40		lmc
		G1047	9	6	A	Soil	11.07	40		lmc
		N/A	N/A	OPR17345	A	Soil	10.00	40	40	lmc
		N/A	N/A	OPRD17345	A	Soil	10.00	40	40	lmc

lmc 10/7/09

Items	Lot #	Conc. (ng/µL)	Witness
Toluene	SPL2-213A		
Tridecane	SPL2-202		
Salt	SPL2-205B		
Thimbles	9112113		
Extraction Std.	534-77	0.05	DS
Matrix Spike	534-78	0.005	DS

✓ Pre-Sox? ✓ Tridecane added? 500 µL

Start Date/Time: 07 Oct 2009 17:00

Finish Date/Time: 08 Oct 2009 8:00

Comments: _____

* = To be entered in the Prep Table.

Balance Reference: WB1 ✓SB1

Data in prep table?

DC7.082508.7

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**B. CUMMINGS**	**DATE:**	**JANUARY 6, 2010**
FROM:	**JOSEPH KALINYAK**	**COPIES:**	**DV FILE**
SUBJECT:	**ORGANIC DATA VALIDATION – PCDD/PCDF NTC GREAT LAKES, CTO C064 SDG G330-47**		
SAMPLES:	1 / Aqueous / PCDD/PCDF NTC21MW0501		

OVERVIEW

The sample set for CTO C064, NTC GREAT LAKES, SDG G330-47 consisted of one (1) aqueous environmental sample. There were no field duplicate pairs associated with this sample delivery group (SDG). The sample was analyzed for polychlorinated dibenzyldioxins (PCDDs) and polychlorinated dibenzylfurans (PCDF).

The sample was collected by TetraTech NUS on November 15, 2009 and analyzed by SGS North America Inc. All analyses were conducted in accordance with USEPA SW 846 Method 8290 analytical and reporting protocols. The data contained in this SDG were validated with regard to the following parameters:

* • Data completeness
* • Hold times
* • Mass Calibration
* • HRGC/HRMS Tuning and System Performance
* • Chromatographic Resolution (Window Defining Mix)
* • Initial and continuing calibration
* • Blank results
* • Internal Standard Recoveries
* • Clean-up Standard Recoveries
* • Blank Spike/Blank Spike Duplicate Results
* • Matrix Spike/Matrix Spike Duplicate Results
* • Detection Limits
* • Compound Quantitation
* • Compound Identification

The symbol (*) indicates that all quality control criteria were met for this parameter. Problems affecting data quality are discussed below; documentation supporting these findings is presented in Appendix C. Qualified Analytical results are presented in Appendix A. Results as reported by the laboratory are presented in Appendix B.

PCDD/PCDF

No data quality issues were noted.

EXECUTIVE SUMMARY

Laboratory Performance Issues: No issues were identified.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the EPA National Functional Guidelines for Chlorinated Dibenzo-p-dioxins and Chlorinated Dibenzofurans (Sept. 2005) and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (January 2006). The text of this report has been formulated to address only those problem areas affecting data quality.

Tetra Tech NUS
Joseph Kalinyak
Chemist/Data Validator

TetraTech NUS
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:
1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

PROJ_NO: 01797	NSAMPLE	NTC21MW0501
SDG: G330-47	LAB_ID	G330-47-1C
FRACTION: DIOX	SAMP_DATE	11/15/2009
MEDIA: WATER	QC_TYPE	NM
	UNITS	NG/L
	PCT_SOLIDS	0.0
	DUP_OF	

PARAMETER	RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD	0.0107	U	
1,2,3,4,6,7,8,9-OCDF	0.0107	U	
1,2,3,4,6,7,8-HPCDD	0.00534	U	
1,2,3,4,6,7,8-HPCDF	0.00534	U	
1,2,3,4,7,8,9-HPCDF	0.00534	U	
1,2,3,4,7,8-HXCDD	0.00534	U	
1,2,3,4,7,8-HXCDF	0.00534	U	
1,2,3,6,7,8-HXCDD	0.00534	U	
1,2,3,6,7,8-HXCDF	0.00534	U	
1,2,3,7,8,9-HXCDD	0.00534	U	
1,2,3,7,8,9-HXCDF	0.00534	U	
1,2,3,7,8-PECDD	0.00534	U	
1,2,3,7,8-PECDF	0.00534	U	
2,3,4,6,7,8-HXCDF	0.00534	U	
2,3,4,7,8-PECDF	0.00534	U	
2,3,7,8-TCDD	0.00123	U	
2,3,7,8-TCDF	0.00107	U	
TEQ WHO-2005	0	U	
TEQ WHO-2005 - HALFND	0.00617		
TOTAL HPCDD	0.00534	U	
TOTAL HPCDF	0.00534	U	
TOTAL HXCDD	0.00534	U	
TOTAL HXCDF	0.00534	U	
TOTAL PECDD	0.00534	U	
TOTAL PECDF	0.00534	U	
TOTAL TCDD	0.00123	U	
TOTAL TCDF	0.00107	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

Method 8290
NTC21MW0501
Tetra Tech Nus, Inc.

Analytical Data Summary Sheet

Analyte	Amount ng/L	EDL ng/L	RL ng/L	EMPC ng/L	RT (min.)	Ratio	Qualifier
2,3,7,8-TCDD	ND	0.00123	0.0107				
1,2,3,7,8-PeCDD	ND	0.00534	0.0534				
1,2,3,4,7,8-HxCDD	ND	0.00534	0.0534				
1,2,3,6,7,8-HxCDD	ND	0.00534	0.0534				
1,2,3,7,8,9-HxCDD	ND	0.00534	0.0534				
1,2,3,4,6,7,8-HpCDD	ND	0.00534	0.0534				
OCDD	ND	0.0107	0.107				
2,3,7,8-TCDF	ND	0.00107	0.0107				
1,2,3,7,8-PeCDF	ND	0.00534	0.0534				
2,3,4,7,8-PeCDF	ND	0.00534	0.0534				
1,2,3,4,7,8-HxCDF	ND	0.00534	0.0534				
1,2,3,6,7,8-HxCDF	ND	0.00534	0.0534				
2,3,4,6,7,8-HxCDF	ND	0.00534	0.0534				
1,2,3,7,8,9-HxCDF	ND	0.00534	0.0534				
1,2,3,4,6,7,8-HpCDF	ND	0.00534	0.0534				
1,2,3,4,7,8,9-HpCDF	ND	0.00534	0.0534				
OCDF	ND	0.0107	0.107				
Total TCDDs	ND	0.00123	0.0107				
Total PeCDDs	ND	0.00534	0.0534				
Total HxCDDs	ND	0.00534	0.0534				
Total HpCDDs	ND	0.00534	0.0534				
Total TCDFs	ND	0.00107	0.0107				
Total PeCDFs	ND	0.00534	0.0534				
Total HxCDFs	ND	0.00534	0.0534				
Total HpCDFs	ND	0.00534	0.0534				
WHO-2005 TEQ (ND=0)	ND			ND			
WHO-2005 TEQ (ND=½)	**0.00617**			0.00617			

Client Information			**Sample Information**		
Project Name:	Great Lakes NTC		Report Basis:	Wet	
			Matrix:	Water	
Sample ID:	NTC21MW0501		Weight / Volume:	936	mL
			Solids / Lipids:	NA	%
			Original pH :	7.00	
Laboratory Information			Batch ID:	WG17452	
Project ID:	G330-47		Instrument:	HRMS1	
Sample ID:	G330-47-1C		Filename:	a20nov09a_4-10	
Collection Date/Time:	11/15/09	16:26	Retchk:	a20nov09a_3-14	
Receipt Date/Time:	11/17/09	10:15	Begin ConCal:	a20nov09a_3-14	
Extraction Date:	11/18/09		End ConCal:	a20nov09a_4-14	
Analysis Date/Time:	11/22/09	9:03	Initial Cal:	m8290-092309a	

Method 8290
NTC21MW0501
Tetra Tech Nus, Inc.

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)		Percent Recovery (%)	RT (min.)	Ratio	Qualifier
Extraction Standards							
13C12-2,3,7,8-TCDD	2	1.51		75.4	31:28	0.78	
13C12-1,2,3,7,8-PeCDD	2	1.14		57.0	34:18	1.59	
13C12-1,2,3,6,7,8-HxCDD	2	1.77		88.7	36:58	1.25	
13C12-1,2,3,4,6,7,8-HpCDD	2	1.85		92.4	40:19	1.06	
13C12-OCDD	4.0	3.66		91.4	44:39	0.90	
13C12-2,3,7,8-TCDF	2	1.70		85.1	30:52	0.79	
13C12-1,2,3,7,8-PeCDF	2	1.04		51.9	33:28	1.58	
13C12-1,2,3,6,7,8-HxCDF	2	1.75		87.3	36:16	0.52	
13C12-1,2,3,4,6,7,8-HpCDF	2	1.73		86.5	39:01	0.45	
Cleanup Standards							
37Cl4-2,3,7,8-TCDD	0.4	0.389		97.3	31:28	-	
13C12-2,3,4,7,8-PeCDF	0.4	0.251		62.7	34:06	1.59	
13C12-1,2,3,4,7,8-HxCDD	0.4	0.387		96.7	36:52	1.29	
13C12-1,2,3,4,7,8-HxCDF	0.4	0.412		103	36:10	0.52	
13C12-1,2,3,4,7,8,9-HpCDF	0.4	0.377		94.3	41:01	0.45	
Injection Standards							
13C12-1,2,3,4-TCDD	2.0	-		-	31:01	0.80	
13C12-1,2,3,7,8,9-HxCDD	2.0	-		-	37:13	1.26	

Client Information			**Sample Information**		
Project Name:	Great Lakes NTC		Report Basis:	Wet	
			Matrix:	Water	
Sample ID:	NTC21MW0501		Weight / Volume:	936	mL
			Solids / Lipids:	NA	%
			Original pH :	7.00	
Laboratory Information			Batch ID:	WG17452	
Project ID:	G330-47		Instrument:	HRMS1	
Sample ID:	G330-47-1C		Filename:	a20nov09a_4-10	
Collection Date/Time:	11/15/09	16:26	Retchk:	a20nov09a_3-14	
Receipt Date/Time:	11/17/09	10:15	Begin ConCal:	a20nov09a_3-14	
Extraction Date:	11/18/09		End ConCal:	a20nov09a_4-14	
Analysis Date/Time:	11/22/09	9:03	Initial Cal:	m8290-092309a	

Form Version:[8290]Report

Analyzed by: DS
Date: 11-24-09

Reviewed by: [illegible]
Date: 11/24/09

APPENDIX C

SUPPORT DOCUMENTATION

HOLDTIME

SDG G330-47

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
DIOX	NG/L	NTC21MW0501	G330-47-1C	NM	11/15/2009	11/18/2009	11/22/2009	3.024	3.669	6.692

TETRA TECH NUS, INC

CHAIN OF CUSTODY
NUMBER: ED00000105-5

Project No:	Facility:	Project Manager:	Carrier:	Laboratory Name:
112G01797	**GREAT LAKES NTC**	**Biff Cummings**	**Federal Express**	**SGS North American Inc.** **5500 Business Drive** **Wilmington, NC 28405**
Task No:	Turn Around Time:	Field Ops Leader:	Carrier/Waybill No.	Point of Contact:
0064	**Standard**	**Shannon Hill**	**8631 3888 3722 0215**	**Linda McWhirter** **910.350.1903**

Date	Sample ID #	Time	Analysis	Loc ID	Matrix	Description	Preservative	Container Count	Container Type	Container Reqs	Comments
11/15/2009	NTC21MW0501	16:26	**SW-846 8290**	NTC21-MW05	GW	Dioxins/Furans	4°C	6	Glass - Amber	1L	MS/MSD

1. Relinquished By: **Shannon Hill**	Date: 11/16/2009	Time: 17:54	Received By: **Federal Express**	Date: 11/16/2009	Time: 18:54
2. Relinquished By: M. Cole Rochna	Date: 11/16/2009	Time:	Received By: Julie Jenson	Date: 11/17/09	Time: 1015
3. Relinquished By:	Date:	Time:	Received By:	Date:	Time:

5.8°C Custody tape intact

Comments:

SGS Environmental Services, Inc.

Cust Proj ID: Great Lakes NTC
Client Name: Tetra Tech Nus, Inc. PO:

G330-47

Due Date: 2009-11-30 17:00:00
Login Date: 2009-11-18 08:26:46

Sample ID		Cust Sample ID	PRI	Date Collected	Date Received	Date Due	Matrix	LOC	Report	Analysis	Status
G330-47-1	A	NTC21MW0501	STD	2009-11-15 16:26:00	2009-11-17	2009-11-30	Water	W2	Full	8290	LG::REVW
	B					2009-11-30	Water	W2	Full	8290	LG::REVW
G330-47-2	A	NTC21MW0501 MS	STD	2009-11-15 16:26:00	2009-11-17	2009-11-30	Water	W2	Full	8290	LG::REVW
	B					2009-11-30	Water	W2	Full	8290	LG::REVW
G330-47-3	A	NTC21MW0501 MSD	STD	2009-11-15 16:26:00	2009-11-17	2009-11-30	Water	W2	Full	8290	LG::REVW
	B					2009-11-30	Water	W2	Full	8290	LG::REVW

SGS North America Inc.

Sample Receipt Checklist (SRC)

Client: Tetra Tech

Lab Proj. ID: G330-47

Client Proj. ID:

1. ✓ Shipped
   ___ Hand Delivered
   Notes:

2. ✓ COC Present on Receipt
   ___ No COC
   ___ Additional Transmittal Forms
   Notes:

3. ✓ Custody Tape on Container
   ___ No Custody Tape
   Notes:

4. ✓ Samples Intact
   ___ Samples Broken / Leaking
   ___ VOA Vials Checked for Air Bubbles
   Notes:

5. ✓ Chilled on Receipt Actual Temp.(s) in °C: 5.8
   ___ Ambient on Receipt
   ___ Walk-in on Ice; Coming down to temp.
   Notes:

6. ✓ Sufficient Sample Submitted
   ___ Insufficient Sample Submitted
   Notes:

7. ___ Samples Preserved Correctly
   ___ Improper Preservative(s)
   ✓ None recommended (N/A)
   (see preservative checklist where applicable)
   Notes:

8. ✓ Received Within Holding Time
   ___ Not Received Within Holding Time
   ___ N/A
   Notes:

9. ✓ No Discrepancies Noted
   ___ Discrepancies Noted
   ___ No COC Received
   Notes:

10. ___ No Headspace present in VOC vials
    ___ Headspace present in VOC vials >6mm
    ✓ N/A
    Notes:

Comments:

Inspected and Logged in by: [signature]

Date / Time: 4/17/09

SGS

Case Narrative
SGS Project: **G330-47**
Project Name: **CTO064**
Site Name: **Great Lakes, Site 21**
Contract Number: **N62472-03-0057**
Project Manager: **Biff Cummings**

SGS North America; Inc.

November 24th, 2009

- Three water samples were accepted into the laboratory on November 17th, 2009 at 1015 for analyses as indicated on the chain of custody. The samples were received in good condition, with a temperature of 5.8°C.
- All extractions and analyses were completed within holding time limits, with the following quality control exceptions.

8290 Analysis

- No analytical issues were encountered.

_____ Date_____

Craig R Tronzo
Data Validation/QC

SGS

List of Qualifiers: Dioxin's

B Analyte was detected in the Lab Method Blank at a level above the Reporting Limit.

EDL "Estimated Detection Limit"

EMPC "Estimated Maximum Possible Concentration"

RL Report Limit

CL Control Limit

U Undetected

ppt Parts-per-trillion (pg/g; ng/L)

V Recovery is below quality control limit. The data has been validated based on a favorable signal-to-noise and detection limit.

Outside quality control limits

* Indicates that the ion-ratio fails high or low; analyte reported as an EMPC

An average uncertainty of 30% can be routinely achieved as concluded from the evaluation of HRGC-HRMS standard operating procedures. The following flags warn the data user of situations where the uncertainty may be greater than stated.

A Amount detected is less than the Lower Method Calibration Limit.

J Amount detected is between the Method Detection Limit and the Lower Calibration Limit.

O The recovery of this analyte in the OPR is above the Method QC Limits and the reported concentration in the sample may be biased high.

E Amount detected is greater than the Upper Calibration Limit.

S The amount of analyte present has saturated the detector. This situation results in an underestimation of the affected analyte(s).

Q Indicates the presence of a quantitative interference. This situation may result in an underestimation of the affected analyte(s).

I Indicates the presence of a qualitative interference that could cause a false positive or an overestimation of the affected analyte(s).

DPE Indicates the presence of a peak in the polychlorinated diphenylether channel that could cause a false positive or an overestimation of the affected analyte(s).

DC250.081908.1

SGS

Toxic Equivalency Factors

Analyte	WHO* 1998	WHO* 2005	International-89	MADEP+
2,3,7,8-TCDD	1	1	1	1
1,2,3,7,8-PeCDD	1	1	0.5	0.5
1,2,3,4,7,8-HxCDD	0.1	0.1	0.1	0.1
1,2,3,6,7,8-HxCDD	0.1	0.1	0.1	0.1
1,2,3,7,8,9-HxCDD	0.1	0.1	0.1	0.1
1,2,3,4,6,7,8-HpCDD	0.01	0.01	0.01	0.1
OCDD	0.0001	0.0003	0.001	0.001
2,3,7,8-TCDF	0.1	0.1	0.1	0.1
1,2,3,7,8-PeCDF	0.05	0.03	0.05	0.5
2,3,4,7,8-PeCDF	0.5	0.3	0.5	0.5
1,2,3,4,7,8-HxCDF	0.1	0.1	0.1	0.1
1,2,3,6,7,8-HxCDF	0.1	0.1	0.1	0.1
2,3,4,6,7,8-HxCDF	0.1	0.1	0.1	0.1
1,2,3,7,8,9-HxCDF	0.1	0.1	0.1	0.1
1,2,3,4,6,7,8-HpCDF	0.01	0.01	0.01	0.1
1,2,3,4,7,8,9-HpCDF	0.01	0.01	0.01	0.1
OCDF	0.0001	0.0003	0.001	0.001

* World Health Organization
+ Massachusetts Department of Environmental Protection

Method 8290
Lab Method Blank

Analytical Data Summary Sheet

Analyte	Amount ng/L	EDL ng/L	RL ng/L	EMPC ng/L	RT (min.)	Ratio	Qualifier
2,3,7,8-TCDD	ND	0.00121	0.0100				
1,2,3,7,8-PeCDD	ND	0.00500	0.0500				
1,2,3,4,7,8-HxCDD	ND	0.00500	0.0500				
1,2,3,6,7,8-HxCDD	ND	0.00500	0.0500				
1,2,3,7,8,9-HxCDD	ND	0.00500	0.0500				
1,2,3,4,6,7,8-HpCDD	ND	0.00500	0.0500				
OCDD	ND	0.0100	0.100				
2,3,7,8-TCDF	ND	0.001000	0.0100				
1,2,3,7,8-PeCDF	ND	0.00500	0.0500				
2,3,4,7,8-PeCDF	ND	0.00500	0.0500				
1,2,3,4,7,8-HxCDF	ND	0.00500	0.0500				
1,2,3,6,7,8-HxCDF	ND	0.00500	0.0500				
2,3,4,6,7,8-HxCDF	ND	0.00500	0.0500				
1,2,3,7,8,9-HxCDF	ND	0.00500	0.0500				
1,2,3,4,6,7,8-HpCDF	ND	0.00500	0.0500				
1,2,3,4,7,8,9-HpCDF	ND	0.00500	0.0500				
OCDF	ND	0.0100	0.100				
Total TCDDs	ND	0.00121	0.0100				
Total PeCDDs	ND	0.00500	0.0500				
Total HxCDDs	ND	0.00500	0.0500				
Total HpCDDs	ND	0.00500	0.0500				
Total TCDFs	ND	0.001000	0.0100				
Total PeCDFs	ND	0.00500	0.0500				
Total HxCDFs	ND	0.00500	0.0500				
Total HpCDFs	ND	0.00500	0.0500				
WHO-2005 TEQ (ND=0)	ND			ND			
WHO-2005 TEQ (ND=½)	**0.00581**			0.00581			

Client Information			**Sample Information**		
Project Name:			Report Basis:	Wet	
			Matrix:	Water	
Sample ID:	Lab Method Blank		Weight / Volume:	1000	mL
			Solids / Lipids:	NA	%
			Original pH :	5.00	
Laboratory Information			Batch ID:	WG17452	
Project ID:			Instrument:	HRMS1	
Sample ID:			Filename:	a20nov09a_3-3	
Collection Date/Time:			Retchk:	a20nov09a_2-14	
Receipt Date/Time:			Begin ConCal:	a20nov09a_2-14	
Extraction Date:	11/18/09		End ConCal:	a20nov09a_3-14	
Analysis Date/Time:	11/21/09	16:02	Initial Cal:	m8290-092309a	

Method 8290
Lab Method Blank

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)		Percent Recovery (%)	RT (min.)	Ratio	Qualifier
Extraction Standards							
13C12-2,3,7,8-TCDD	2	1.49		74.4	31:28	0.79	
13C12-1,2,3,7,8-PeCDD	2	1.09		54.5	34:18	1.58	
13C12-1,2,3,6,7,8-HxCDD	2	1.72		86.1	36:58	1.25	
13C12-1,2,3,4,6,7,8-HpCDD	2	1.81		90.3	40:19	1.05	
13C12-OCDD	4.0	3.58		89.5	44:39	0.91	
13C12-2,3,7,8-TCDF	2	1.73		86.6	30:52	0.79	
13C12-1,2,3,7,8-PeCDF	2	1.00		50.0	33:28	1.60	
13C12-1,2,3,6,7,8-HxCDF	2	1.77		88.3	36:16	0.53	
13C12-1,2,3,4,6,7,8-HpCDF	2	1.71		85.5	39:03	0.45	
Cleanup Standards							
37Cl4-2,3,7,8-TCDD	0.4	0.384		96.1	31:28	-	
13C12-2,3,4,7,8-PeCDF	0.4	0.245		61.2	34:06	1.60	
13C12-1,2,3,4,7,8-HxCDD	0.4	0.402		100	36:52	1.26	
13C12-1,2,3,4,7,8-HxCDF	0.4	0.425		106	36:10	0.52	
13C12-1,2,3,4,7,8,9-HpCDF	0.4	0.376		94.1	41:01	0.45	
Injection Standards							
13C12-1,2,3,4-TCDD	2.0	-		-	31:01	0.79	
13C12-1,2,3,7,8,9-HxCDD	2.0	-		-	37:13	1.25	

Client Information			**Sample Information**		
Project Name:			Report Basis:	Wet	
			Matrix:	Water	
Sample ID:	Lab Method Blank		Weight / Volume:	1000	mL
			Solids / Lipids:	NA	%
			Original pH :	5.00	
Laboratory Information			Batch ID:	WG17452	
Project ID:			Instrument:	HRMS1	
Sample ID:			Filename:	a20nov09a_3-3	
Collection Date/Time:			Retchk:	a20nov09a_2-14	
Receipt Date/Time:			Begin ConCal:	a20nov09a_2-14	
Extraction Date:	11/18/09		End ConCal:	a20nov09a_3-14	
Analysis Date/Time:	11/21/09	16:02	Initial Cal:	m8290-092309a	

Form Version:[8290]Report

Analyzed by: DS
Date: 11-23-09

Reviewed by: [illegible]
Date: 11/23/09

Analytical Results
for
Ongoing Precision Result (OPR)

Analyte	Spiked (pg/µL)	AMT (pg/µL)	REC %	Range % Lower	Range % Upper	Qualifier
2,3,7,8-TCDD	10	10.3	103	70.0	130	
1,2,3,7,8-PeCDD	50	50.5	101	70.0	130	
1,2,3,4,7,8-HxCDD	50	46.9	93.9	70.0	130	
1,2,3,6,7,8-HxCDD	50	49.9	99.7	70.0	130	
1,2,3,7,8,9-HxCDD	50	48.8	97.5	70.0	130	
1,2,3,4,6,7,8-HpCDD	50	47.9	95.8	70.0	130	
OCDD	100	94.6	94.6	70.0	130	
2,3,7,8-TCDF	10	9.37	93.7	70.0	130	
1,2,3,7,8-PeCDF	50	49.7	99.5	70.0	130	
2,3,4,7,8-PeCDF	50	48.2	96.5	70.0	130	
1,2,3,4,7,8-HxCDF	50	47.2	94.4	70.0	130	
1,2,3,6,7,8-HxCDF	50	49.7	99.3	70.0	130	
2,3,4,6,7,8-HxCDF	50	45.4	90.8	70.0	130	
1,2,3,7,8,9-HxCDF	50	39.8	79.7	70.0	130	
1,2,3,4,6,7,8-HpCDF	50	48.4	96.8	70.0	130	
1,2,3,4,7,8,9-HpCDF	50	44.0	87.9	70.0	130	
OCDF	100	89.0	89.0	70.0	130	

= Outside range limits
* = Ion Ratio Out

QC Information

OPR Project No: OPR17452
Extraction Date: 18-Nov-09
Analysis Date: 21-Nov-09
Method: 8290

Sample Information

Matrix: Water

File Information

OPR Filename: a20nov09a_3-1
Retchk: a20nov09a_2-14
Begin ConCal: a20nov09a_2-14
End ConCal: a20nov09a_3-14
Initial Cal: m8290-092309a

Analytical Results
for
Ongoing Precision Result (OPR)

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)	Percent Recovery (%)	RT (min.)	Ratio	Qualifier
Extraction Standards						
13C12-2,3,7,8-TCDD	2	1.52	76.0	31:28	0.79	
13C12-1,2,3,7,8-PeCDD	2	1.17	58.5	34:18	1.62	
13C12-1,2,3,6,7,8-HxCDD	2	1.82	91.0	36:58	1.26	
13C12-1,2,3,4,6,7,8-HpCDD	2	1.85	92.5	40:19	1.06	
13C12-OCDD	4	3.83	95.8	44:39	0.91	
13C12-2,3,7,8-TCDF	2	1.74	87.0	30:52	0.80	
13C12-1,2,3,7,8-PeCDF	2	1.08	54.0	33:28	1.59	
13C12-1,2,3,6,7,8-HxCDF	2	1.87	93.5	36:16	0.53	
13C12-1,2,3,4,6,7,8-HpCDF	2	1.74	87.0	39:01	0.45	
Cleanup Standards						
37Cl4-2,3,7,8-TCDD	0.4	0.395	98.8	31:28	-	
13C12-2,3,4,7,8-PeCDF	0.4	0.262	65.5	34:06	1.64	
13C12-1,2,3,4,7,8-HxCDD	0.4	0.410	103	36:52	1.27	
13C12-1,2,3,4,7,8-HxCDF	0.4	0.439	110	36:10	0.52	
13C12-1,2,3,4,7,8,9-HpCDF	0.4	0.384	96.0	41:01	0.44	
Injection Standards						
13C12-1,2,3,4-TCDD	2	-	-	31:01	0.81	
13C12-1,2,3,7,8,9-HxCDD	2	-	-	37:13	1.26	

QC Information

OPR Project No: OPR17452
Extraction Date: 18-Nov-09
Analysis Date: 21-Nov-09
Method: 8290

Sample Information

Matrix: Water

File Information

OPR Filename : a20nov09a_3-1
Retchk: a20nov09a_2-14
Begin ConCal: a20nov09a_2-14
End ConCal: a20nov09a_3-14
Initial Cal: m8290-092309a

Form Version [8290]OPR

Reviewed By: [illegible]

Date Reviewed: 11/23/09

Analytical Results
for
Ongoing Precision & Recovery Duplicate Results (OPRD)

Analyte	Spiked (pg/µL)	AMT (pg/µL)	Recovery %	#	Range Lower	Range Upper	OPR Rec(%)	#	RPD (±20%)	Qualifier
2,3,7,8-TCDD	10.0	10.4	104		70.0	130	103		0.723	
1,2,3,7,8-PeCDD	50.0	50.4	101		70.0	130	101		0.220	
1,2,3,4,7,8-HxCDD	50.0	46.4	92.8		70.0	130	93.9		1.20	
1,2,3,6,7,8-HxCDD	50.0	51.0	102		70.0	130	99.7		2.21	
1,2,3,7,8,9-HxCDD	50.0	49.3	98.6		70.0	130	97.5		1.13	
1,2,3,4,6,7,8-HpCDD	50.0	47.6	95.2		70.0	130	95.8		0.654	
OCDD	100	94.3	94.3		70.0	130	94.6		0.337	
2,3,7,8-TCDF	10.0	9.37	93.7		70.0	130	93.7		0.0213	
1,2,3,7,8-PeCDF	50.0	51.3	103		70.0	130	99.5		3.08	
2,3,4,7,8-PeCDF	50.0	49.3	98.6		70.0	130	96.5		2.14	
1,2,3,4,7,8-HxCDF	50.0	46.9	93.8		70.0	130	94.4		0.610	
1,2,3,6,7,8-HxCDF	50.0	49.9	99.8		70.0	130	99.3		0.551	
2,3,4,6,7,8-HxCDF	50.0	45.9	91.7		70.0	130	90.8		0.984	
1,2,3,7,8,9-HxCDF	50.0	40.3	80.6		70.0	130	79.7		1.11	
1,2,3,4,6,7,8-HpCDF	50.0	48.6	97.2		70.0	130	96.8		0.387	
1,2,3,4,7,8,9-HpCDF	50.0	43.7	87.3		70.0	130	87.9		0.657	
OCDF	100	89.1	89.1		70.0	130	89.0		0.139	

= Outside range limits
* = Ion Ratio Out

QC Information

OPR Project No: OPRD17452
Extraction Date: 18-Nov-09
Analysis Date: 21-Nov-09
Method: 8290

Sample Information

Matrix: Water

File Information

OPRD Filename : a20nov09a_3-2
Retchk: a20nov09a_2-14
Begin ConCal: a20nov09a_2-14
End ConCal: a20nov09a_3-14
Initial Cal: m8290-092309a

Analytical Results
for
Ongoing Precision & Recovery Duplicate Results (OPRD)

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)	Percent Recovery (%)	RT (min.)	Ratio	Qualifier
Extraction Standards			(40-135%)			
13C12-2,3,7,8-TCDD	2	1.54	76.8	31:28	0.78	
13C12-1,2,3,7,8-PeCDD	2	1.16	58.0	34:16	1.58	
13C12-1,2,3,6,7,8-HxCDD	2	1.83	91.6	36:58	1.26	
13C12-1,2,3,4,6,7,8-HpCDD	2	1.86	92.8	40:19	1.06	
13C12-OCDD	4	3.75	93.7	44:37	0.91	
13C12-2,3,7,8-TCDF	2	1.76	87.9	30:52	0.79	
13C12-1,2,3,7,8-PeCDF	2	1.04	52.2	33:28	1.59	
13C12-1,2,3,6,7,8-HxCDF	2	1.87	93.4	36:16	0.53	
13C12-1,2,3,4,6,7,8-HpCDF	2	1.73	86.3	39:01	0.46	
Cleanup Standards			(70-130%)			
37Cl4-2,3,7,8-TCDD	0.4	0.365	91.4	31:28	-	
13C12-2,3,4,7,8-PeCDF	0.4	0.240	60.1	34:06	1.60	
13C12-1,2,3,4,7,8-HxCDD	0.4	0.374	93.5	36:52	1.28	
13C12-1,2,3,4,7,8-HxCDF	0.4	0.407	102	36:10	0.52	
13C12-1,2,3,4,7,8,9-HpCDF	0.4	0.352	87.9	41:01	0.44	
Injection Standards						
13C12-1,2,3,4-TCDD	2	-	-	31:01	0.79	
13C12-1,2,3,7,8,9-HxCDD	2	-	-	37:13	1.25	

QC Information

OPR Project No: OPRD17452
Extraction Date: 18-Nov-09
Analysis Date: 21-Nov-09
Method: 8290

Sample Information

Matrix: Water

File Information

OPRD Filename : a20nov09a_3-2
Retchk: a20nov09a_2-14
Begin ConCal: a20nov09a_2-14
End ConCal: a20nov09a_3-14
Initial Cal: m8290-092309a

Form Version.[8290]OPRD

Reviewed By: [signature]

Date Reviewed: 11/23/09

Method 8290

Results for MS/MSD

NTC21MW0501

Analyte	Sample ng/L	Spike pg	MS ng/L	%REC (70-130) #	MSD ng/L	%REC (70-130) #	%RPD (20) #
2,3,7,8-TCDD	ND	200	0.233	102	0.203	101	13.8
1,2,3,7,8-PeCDD	ND	1000	1.15	101	1.00	99.8	14.0
1,2,3,4,7,8-HxCDD	ND	1000	1.06	92.9	0.954	95.2	10.5
1,2,3,6,7,8-HxCDD	ND	1000	1.13	99.0	0.987	98.5	13.5
1,2,3,7,8,9-HxCDD	ND	1000	1.12	98.1	0.975	97.3	13.8
1,2,3,4,6,7,8-HpCDD	ND	1000	1.09	95.5	0.968	96.6	11.9
OCDD	ND	2000	2.14	93.7	1.90	94.8	11.9
2,3,7,8-TCDF	ND	200	0.213	93.3	0.189	94.3	11.9
1,2,3,7,8-PeCDF	ND	1000	1.13	99.0	0.993	99.1	12.9
2,3,4,7,8-PeCDF	ND	1000	1.11	97.2	0.977	97.5	12.7
1,2,3,4,7,8-HxCDF	ND	1000	1.10	96.4	0.944	94.2	15.3
1,2,3,6,7,8-HxCDF	ND	1000	1.16	102	0.994	99.2	15.4
2,3,4,6,7,8-HxCDF	ND	1000	1.07	93.7	0.943	94.1	12.6
1,2,3,7,8,9-HxCDF	ND	1000	0.966	84.6	0.836	83.4	14.4
1,2,3,4,6,7,8-HpCDF	ND	1000	1.10	96.4	0.975	97.3	12.0
1,2,3,4,7,8,9-HpCDF	ND	1000	0.989	86.6	0.870	86.8	12.8
OCDF	ND	2000	2.07	90.7	1.82	90.8	12.9

Client Information

Project ID:	Great Lakes NTC	Sample amount:	936	mL
Sample ID:	NTC21MW0501	MS amount:	876	mL
		MSD amount:	998	mL

Laboratory Information

Project ID:	G330-47
Sample ID:	G330-47-1C
MS ID:	G330-47-2C
MSD ID:	G330-47-3C

Reviewed By:

Method 8290
NTC21MW0501 MS
Tetra Tech Nus, Inc.

Analytical Data Summary Sheet

Analyte	Amount ng/L	EDL ng/L	RL ng/L	EMPC ng/L	RT (min.)	Ratio	Qualifier
2,3,7,8-TCDD	**0.233**		0.0114		31:30	0.78	
1,2,3,7,8-PeCDD	**1.15**		0.0571		34:19	1.59	
1,2,3,4,7,8-HxCDD	**1.06**		0.0571		36:54	1.25	
1,2,3,6,7,8-HxCDD	**1.13**		0.0571		36:58	1.26	
1,2,3,7,8,9-HxCDD	**1.12**		0.0571		37:13	1.25	
1,2,3,4,6,7,8-HpCDD	**1.09**		0.0571		40:19	1.04	
OCDD	**2.14**		0.114		44:39	0.89	
2,3,7,8-TCDF	**0.213**		0.0114		30:54	0.77	
1,2,3,7,8-PeCDF	**1.13**		0.0571		33:30	1.55	
2,3,4,7,8-PeCDF	**1.11**		0.0571		34:07	1.56	
1,2,3,4,7,8-HxCDF	**1.10**		0.0571		36:10	1.23	
1,2,3,6,7,8-HxCDF	**1.16**		0.0571		36:16	1.24	
2,3,4,6,7,8-HxCDF	**1.07**		0.0571		36:46	1.25	
1,2,3,7,8,9-HxCDF	**0.966**		0.0571		37:33	1.26	
1,2,3,4,6,7,8-HpCDF	**1.10**		0.0571		39:03	1.04	
1,2,3,4,7,8,9-HpCDF	**0.989**		0.0571		41:01	1.05	
OCDF	**2.07**		0.114		44:58	0.90	

Client Information			**Sample Information**		
Project Name:	Great Lakes NTC		Report Basis:	Wet	
			Matrix:	Water	
Sample ID:	NTC21MW0501 MS		Weight / Volume:	876	mL
			Solids / Lipids:	NA	%
			Original pH :	7.00	
Laboratory Information			Batch ID:	WG17452	
Project ID:	G330-47		Instrument:	HRMS1	
Sample ID:	G330-47-2C		Filename:	a20nov09a_4-11	
Collection Date/Time:	11/15/09	16:26	Retchk:	a20nov09a_3-14	
Receipt Date/Time:	11/17/09	10:15	Begin ConCal:	a20nov09a_3-14	
Extraction Date:	11/18/09		End ConCal:	a20nov09a_4-14	
Analysis Date/Time:	11/22/09	9:51	Initial Cal:	m8290-092309a	

Method 8290
NTC21MW0501 MS
Tetra Tech Nus, Inc.

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)		Percent Recovery (%)	RT (min.)	Ratio	Qualifier
Extraction Standards							
13C12-2,3,7,8-TCDD	2	1.58		78.9	31:28	0.79	
13C12-1,2,3,7,8-PeCDD	2	1.19		59.3	34:18	1.57	
13C12-1,2,3,6,7,8-HxCDD	2	1.85		92.3	36:58	1.26	
13C12-1,2,3,4,6,7,8-HpCDD	2	1.89		94.6	40:19	1.06	
13C12-OCDD	4.0	3.85		96.3	44:39	0.90	
13C12-2,3,7,8-TCDF	2	1.76		88.2	30:52	0.79	
13C12-1,2,3,7,8-PeCDF	2	1.08		54.0	33:30	1.58	
13C12-1,2,3,6,7,8-HxCDF	2	1.82		90.8	36:16	0.53	
13C12-1,2,3,4,6,7,8-HpCDF	2	1.79		89.6	39:01	0.45	
Cleanup Standards							
37Cl4-2,3,7,8-TCDD	0.4	0.397		99.2	31:30	-	
13C12-2,3,4,7,8-PeCDF	0.4	0.257		64.4	34:06	1.61	
13C12-1,2,3,4,7,8-HxCDD	0.4	0.403		101	36:52	1.28	
13C12-1,2,3,4,7,8-HxCDF	0.4	0.419		105	36:10	0.52	
13C12-1,2,3,4,7,8,9-HpCDF	0.4	0.387		96.8	41:01	0.45	
Injection Standards							
13C12-1,2,3,4-TCDD	2.0	-		-	31:01	0.79	
13C12-1,2,3,7,8,9-HxCDD	2.0	-		-	37:13	1.26	

Client Information			**Sample Information**		
Project Name:	Great Lakes NTC		Report Basis:	Wet	
			Matrix:	Water	
Sample ID:	NTC21MW0501 MS		Weight / Volume:	876	mL
			Solids / Lipids:	NA	%
			Original pH :	7.00	
Laboratory Information			Batch ID:	WG17452	
Project ID:	G330-47		Instrument:	HRMS1	
Sample ID:	G330-47-2C		Filename:	a20nov09a_4-11	
Collection Date/Time:	11/15/09	16:26	Retchk:	a20nov09a_3-14	
Receipt Date/Time:	11/17/09	10:15	Begin ConCal:	a20nov09a_3-14	
Extraction Date:	11/18/09		End ConCal:	a20nov09a_4-14	
Analysis Date/Time:	11/22/09	9:51	Initial Cal:	m8290-092309a	

Form Version:[8290]Report

Analyzed by: DS
Date: 11-24-09

Reviewed by: [illegible]
Date: 11/24/09

Method 8290
NTC21MW0501 MSD
Tetra Tech Nus, Inc.

Analytical Data Summary Sheet

Analyte	Amount ng/L	EDL ng/L	RL ng/L	EMPC ng/L	RT (min.)	Ratio	Qualifier
2,3,7,8-TCDD	**0.203**		0.0100		31:28	0.78	
1,2,3,7,8-PeCDD	**1.00**		0.0501		34:18	1.60	
1,2,3,4,7,8-HxCDD	**0.954**		0.0501		36:52	1.25	
1,2,3,6,7,8-HxCDD	**0.987**		0.0501		36:58	1.25	
1,2,3,7,8,9-HxCDD	**0.975**		0.0501		37:13	1.26	
1,2,3,4,6,7,8-HpCDD	**0.968**		0.0501		40:19	1.04	
OCDD	**1.90**		0.100		44:39	0.89	
2,3,7,8-TCDF	**0.189**		0.0100		30:54	0.79	
1,2,3,7,8-PeCDF	**0.993**		0.0501		33:30	1.56	
2,3,4,7,8-PeCDF	**0.977**		0.0501		34:07	1.55	
1,2,3,4,7,8-HxCDF	**0.944**		0.0501		36:10	1.23	
1,2,3,6,7,8-HxCDF	**0.994**		0.0501		36:16	1.25	
2,3,4,6,7,8-HxCDF	**0.943**		0.0501		36:46	1.26	
1,2,3,7,8,9-HxCDF	**0.836**		0.0501		37:33	1.24	
1,2,3,4,6,7,8-HpCDF	**0.975**		0.0501		39:03	1.05	
1,2,3,4,7,8,9-HpCDF	**0.870**		0.0501		41:01	1.04	
OCDF	**1.82**		0.100		44:58	0.91	

Client Information			**Sample Information**		
Project Name:	Great Lakes NTC		Report Basis:	Wet	
			Matrix:	Water	
Sample ID:	NTC21MW0501 MSD		Weight / Volume:	998	mL
			Solids / Lipids:	NA	%
			Original pH :	7.00	
Laboratory Information			Batch ID:	WG17452	
Project ID:	G330-47		Instrument:	HRMS1	
Sample ID:	G330-47-3C		Filename:	a20nov09a_4-12	
Collection Date/Time:	11/15/09	16:26	Retchk:	a20nov09a_3-14	
Receipt Date/Time:	11/17/09	10:15	Begin ConCal:	a20nov09a_3-14	
Extraction Date:	11/18/09		End ConCal:	a20nov09a_4-14	
Analysis Date/Time:	11/22/09	10:39	Initial Cal:	m8290-092309a	

Method 8290
NTC21MW0501 MSD
Tetra Tech Nus, Inc.

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)		Percent Recovery (%)	RT (min.)	Ratio	Qualifier
Extraction Standards							
13C12-2,3,7,8-TCDD	2	1.59		79.4	31:28	0.79	
13C12-1,2,3,7,8-PeCDD	2	1.21		60.4	34:16	1.60	
13C12-1,2,3,6,7,8-HxCDD	2	1.81		90.3	36:58	1.25	
13C12-1,2,3,4,6,7,8-HpCDD	2	1.82		91.1	40:19	1.05	
13C12-OCDD	4.0	3.76		94.0	44:37	0.91	
13C12-2,3,7,8-TCDF	2	1.74		87.2	30:52	0.79	
13C12-1,2,3,7,8-PeCDF	2	1.09		54.5	33:28	1.59	
13C12-1,2,3,6,7,8-HxCDF	2	1.78		89.1	36:16	0.53	
13C12-1,2,3,4,6,7,8-HpCDF	2	1.74		86.9	39:01	0.45	
Cleanup Standards							
37Cl4-2,3,7,8-TCDD	0.4	0.406		102	31:28	-	
13C12-2,3,4,7,8-PeCDF	0.4	0.265		66.1	34:06	1.60	
13C12-1,2,3,4,7,8-HxCDD	0.4	0.409		102	36:52	1.27	
13C12-1,2,3,4,7,8-HxCDF	0.4	0.418		104	36:10	0.52	
13C12-1,2,3,4,7,8,9-HpCDF	0.4	0.386		96.5	41:01	0.45	
Injection Standards							
13C12-1,2,3,4-TCDD	2.0	-		-	31:01	0.78	
13C12-1,2,3,7,8,9-HxCDD	2.0	-		-	37:13	1.25	

Client Information			**Sample Information**		
Project Name:	Great Lakes NTC		Report Basis:	Wet	
			Matrix:	Water	
Sample ID:	NTC21MW0501 MSD		Weight / Volume:	998	mL
			Solids / Lipids:	NA	%
			Original pH :	7.00	
Laboratory Information			Batch ID:	WG17452	
Project ID:	G330-47		Instrument:	HRMS1	
Sample ID:	G330-47-3C		Filename:	a20nov09a_4-12	
Collection Date/Time:	11/15/09	16:26	Retchk:	a20nov09a_3-14	
Receipt Date/Time:	11/17/09	10:15	Begin ConCal:	a20nov09a_3-14	
Extraction Date:	11/18/09		End ConCal:	a20nov09a_4-14	
Analysis Date/Time:	11/22/09	10:39	Initial Cal:	m8290-092309a	

Form Version:[8290]Report

Analyzed by: DS
Date: 11-24-09

Reviewed by: [illegible]
Date: 11/24/09

HRMS2 Sequence Log

SGS Environmental Services

Data File S	Sample ID	Analyst	Acq. Date	Time
a23sep09a;1	;SB	;JWP	23-SEP-09	06:57:45
a23sep09a;2	;CS0.5 S30-144A	;JWP	23-SEP-09	07:46:05
a23sep09a;3	;CS1 S30-144B	;JWP	23-SEP-09	08:34:22
a23sep09a;4	;CS2 S30-144C	;JWP	23-SEP-09	09:22:38
a23sep09a;5	;CS3 S30-144D	;JWP	23-SEP-09	10:10:54
a23sep09a;6	;CS4 S30-144E	;JWP	23-SEP-09	10:59:11
a23sep09a;7	;CS5 S30-144F	;JWP	23-SEP-09	11:47:31

CAL.

CAL.

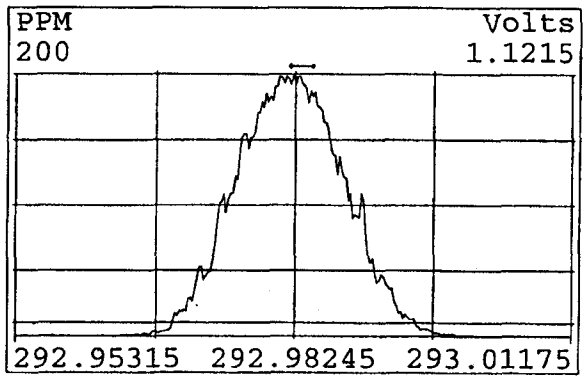
Cal: m8290-092309a

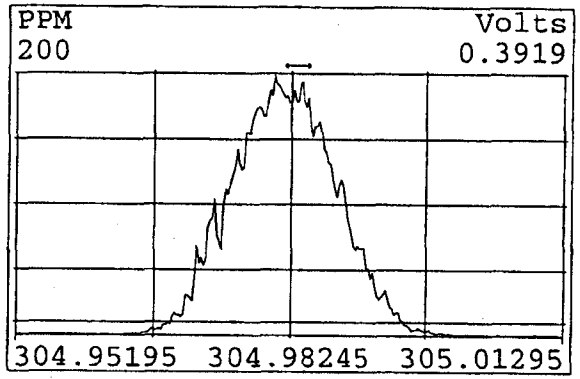
Results: · Version: V1.6 6-JAN-2000 17:51:42

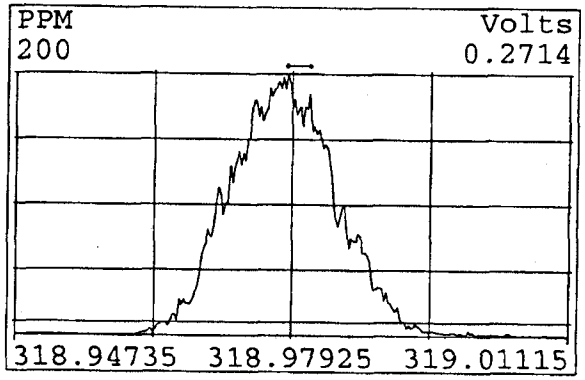
Ent	Name	Mean RRF	Std	%RSD	a23sep09a-2 RRF#1 (0.25)	a23sep09a-4 RRF#2 (2.00)	a23sep09a-5 RRF#3 (10.0)	a23sep09a-6 RRF#4 (40.0)	a23sep09a-7 RRF#5 (200 pg/ul)
1	2,3,7,8-TCDD	1.0293	18	3.24 %	1.05	0.98	1.02	1.03	1.07
2	1,2,3,7,8-PeCDD	1.0539	19	4.18 %	0.99	1.03	1.06	1.07	1.11
3	1,2,3,4,7,8-HxCDD	0.9679	20	1.64 %	0.95	0.96	0.96	0.99	0.98
4	1,2,3,6,7,8-HxCDD	0.9886	20	2.54 %	1.01	0.95	0.98 calc.	1.00	1.00
5	1,2,3,7,8,9-HxCDD	0.9540	20	3.13 %	1.00	0.93	0.94	0.95	0.95
6	1,2,3,4,6,7,8-HpCDD	1.0970	21	3.94 %	1.15	1.04	1.08	1.09	1.13
7	OCDD	1.1240	22	6.39 %	1.24 calc.	1.05	1.08	1.11	1.14
8	2,3,7,8-TCDF	1.0424	23	6.47 %	1.14	0.96	1.00	1.05	1.07 calc.
9	1,2,3,7,8-PeCDF	0.9997	24	3.89 %	0.94	0.99	1.01	1.02	1.04
10	2,3,4,7,8-PeCDF	1.0386	24	2.02 %	1.03	1.03 calc.	1.01	1.06	1.06
11	1,2,3,4,7,8-HxCDF	1.0846	25	1.83 %	1.11	1.06	1.09	1.09	1.07
12	1,2,3,6,7,8-HxCDF	1.1500	25	3.25 %	1.13	1.10	1.15	1.17	1.20
13	2,3,4,6,7,8-HxCDF	1.1020	25	1.44 %	1.08	1.09	1.11	1.11	1.12
14	1,2,3,7,8,9-HxCDF	0.9369	25	6.28 %	0.88	0.89	0.94	0.94 calc.	1.03
15	1,2,3,4,6,7,8-HpCDF	1.3813	26	3.02 %	1.40	1.31	1.37	1.41	1.42
16	1,2,3,4,7,8,9-HpCDF	1.0673	26	5.37 %	1.08	0.97	1.11	1.09	1.10
17	OCDF	1.3977	22	9.03 %	1.34	1.29	1.31	1.47	1.59
18	13C-2,3,7,8-TCDD	1.1184	27	1.49 %	1.13	1.10 calc	1.10	1.12	1.14
19	13C-1,2,3,7,8-PeCDD	0.8116	27	5.64 %	0.84	0.76	0.77	0.82	0.87
20	13C-1,2,3,6,7,8-HxCDD	1.0736	28	2.09 %	1.05	1.06	1.08	1.07 calc.	1.11
21	13C-1,2,3,4,6,7,8-HpCDD	0.7360	28	2.32 %	0.76	0.71	0.74	0.73	0.75
22	13C-OCDD	0.5833	28	5.91 %	0.58 calc.	0.53	0.61	0.58	0.62
23	13C-2,3,7,8-TCDF	1.7135	27	1.08 %	1.73	1.74	1.71 calc	1.70	1.69
24	13C-1,2,3,7,8-PeCDF	1.3731	27	5.15 %	1.42	1.28	1.34	1.37	1.46
25	13C-1,2,3,6,7,8-HxCDF	1.4379	28	0.42 %	1.43	1.44	1.43	1.45	1.44
26	13C-1,2,3,4,6,7,8-HpCDF	1.0173	28	2.10 %	1.05	1.00	1.01	1.00	1.03 calc.
27	13C-1,2,3,4-TCDD	-		- %	-	-	-	-	-
28	13C-1,2,3,7,8,9-HxCDD	-		- %	-	-	-	-	-
29	37Cl-2,3,7,8-TCDD	1.1662	27	5.09 %	1.15	1.10	1.13	1.21	1.24
30	13C-2,3,4,7,8-PeCDF	1.3373	27	4.37 %	1.38	1.27	1.28	1.35	1.41
31	13C-1,2,3,4,7,8-HxCDD	0.9822	28	1.16 %	0.99	0.99	0.96	0.98	0.99
32	13C-1,2,3,4,7,8-HxCDF	1.2981	28	3.16 %	1.32	1.33	1.31	1.29	1.23
33	13C-1,2,3,4,7,8,9-HpCDF	0.7821	28	2.85 %	0.79	0.75 calc	0.80	0.77	0.79
34	37Cl-2,3,7,8-TCDD	1.0425	18	3.95 %	1.02	0.99	1.03 calc.	1.07	1.09
35	13C-2,3,4,7,8-PeCDF	0.9744	24	1.74 %	0.97	1.00	0.96	0.99	0.96
36	13C-1,2,3,4,7,8-HxCDD	0.9152	20	2.68 %	0.94	0.93	0.89	0.92	0.89
37	13C-1,2,3,4,7,8-HxCDF	0.9028	25	3.19 %	0.92	0.92	0.91	0.89	0.86
38	13C-1,2,3,4,7,8,9-HpCDF	0.7688	26	2.52 %	0.76	0.75	0.80	0.78	0.77
39	Total Tetra-Furans	1.0424		6.47 %	1.14	0.96	1.00	1.05	1.07
40	Total Tetra-Dioxins	1.0293		3.24 %	1.05	0.98	1.02	1.03	1.07
41	Total Penta-Furans Fn1	1.0191	9 10	2.59 %	0.98	1.01	1.01	1.04	1.05
42	Total Penta-Furans Fn2	1.0191		2.59 %	0.98	1.01	1.01	1.04	1.05
43	Total Penta-Dioxins	1.0539		4.18 %	0.99	1.03	1.06	1.07	1.11
44	Total Hexa-Furans	1.0684		2.58 %	1.05	1.03	1.07	1.08	1.11
45	Total Hexa-Dioxins	0.9702		1.90 %	0.99	0.95	0.96	0.98	0.98

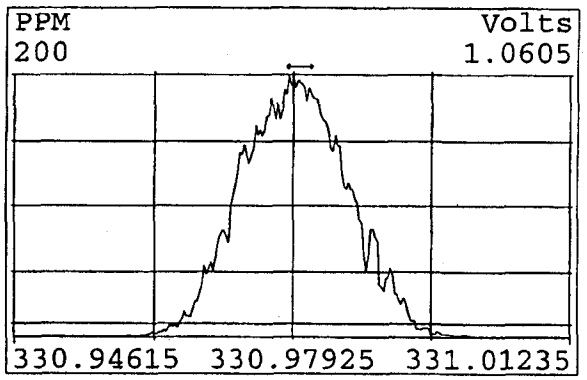
TM 9-27-09

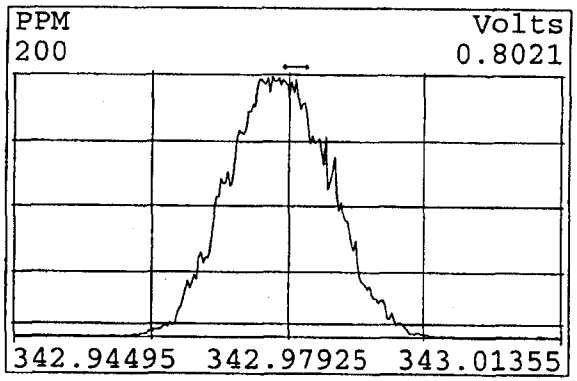
Peak Locate Examination:23-SEP-2009:06:55 File:A23SEP09A_L
Experiment:EXP_DB5MS Function:1 Reference:PFK

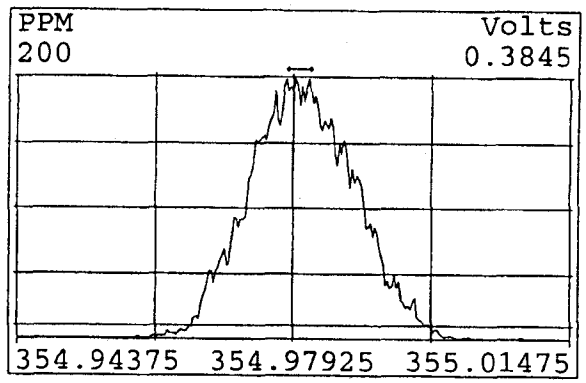


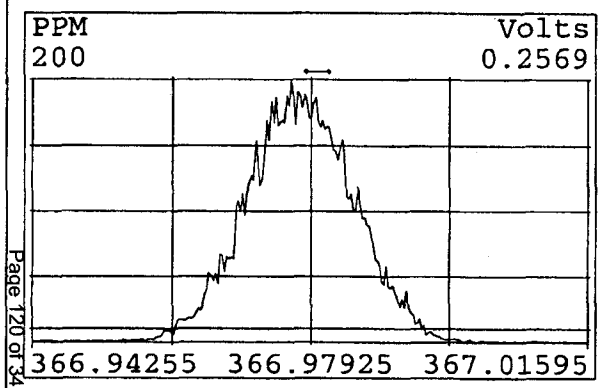


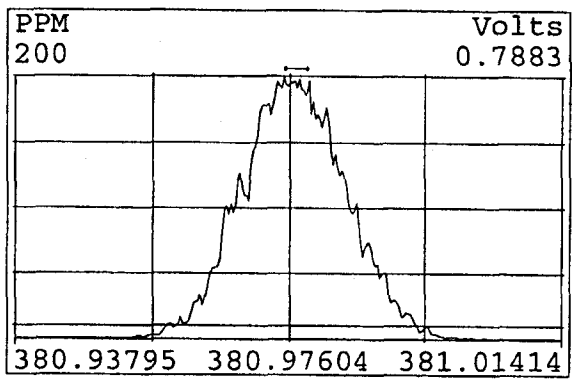




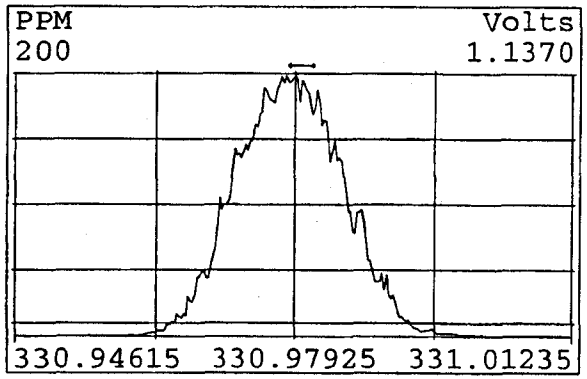


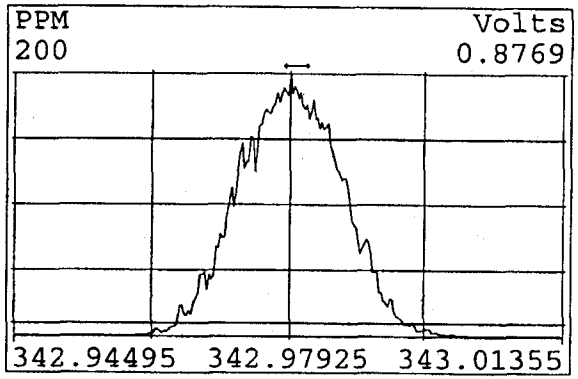


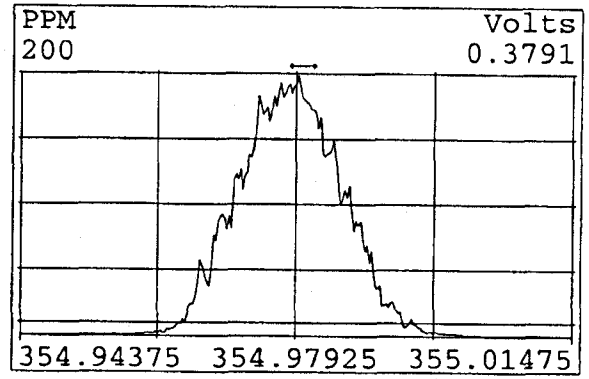


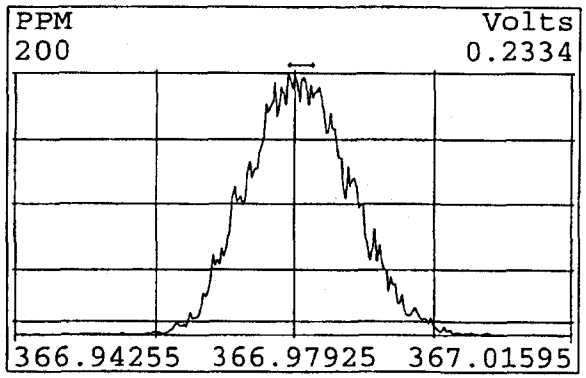


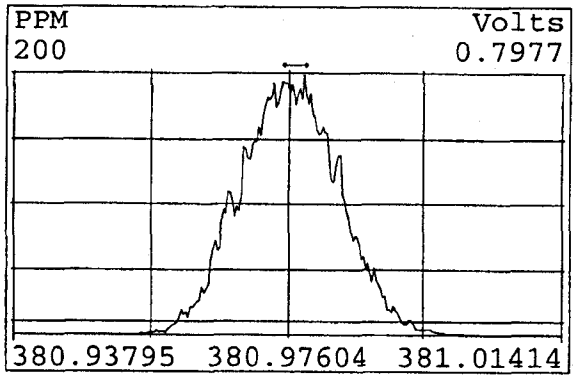
Peak Locate Examination:23-SEP-2009:06:56 File:A23SEP09A_L
Experiment:EXP_DB5MS Function:2 Reference:PFK

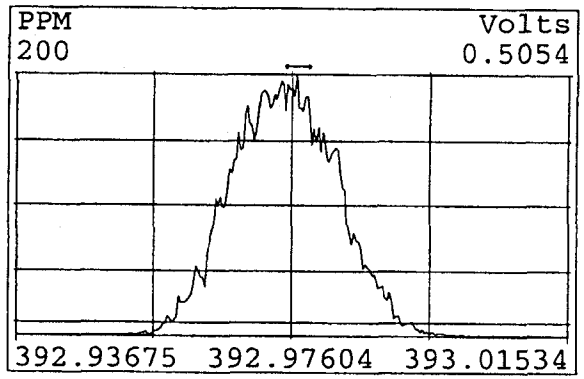


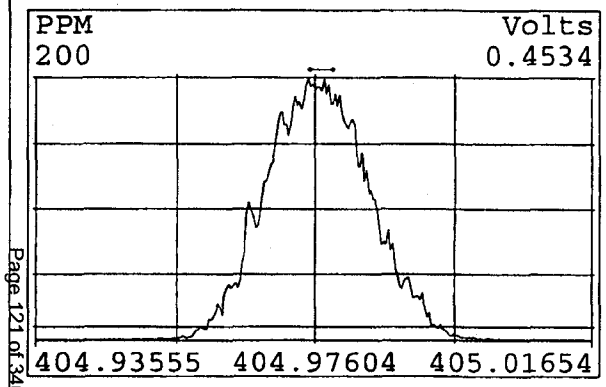


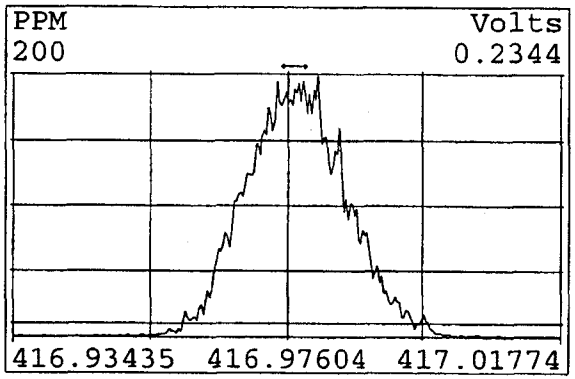




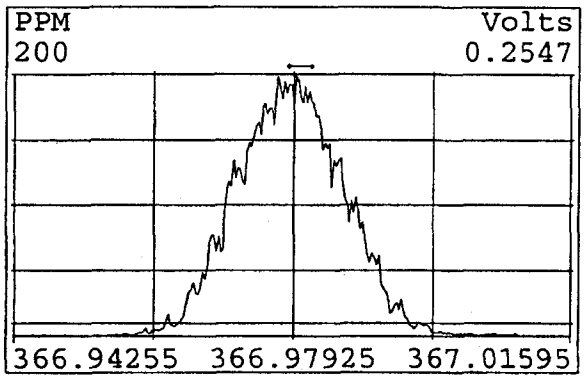


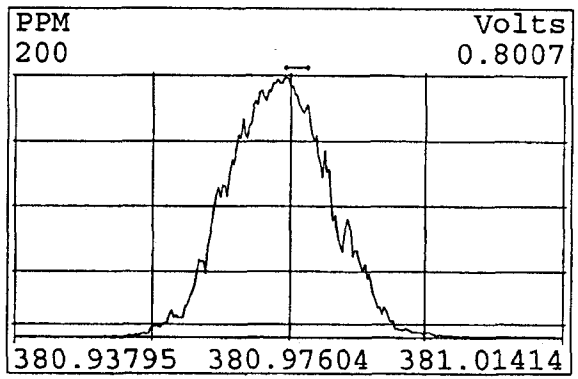


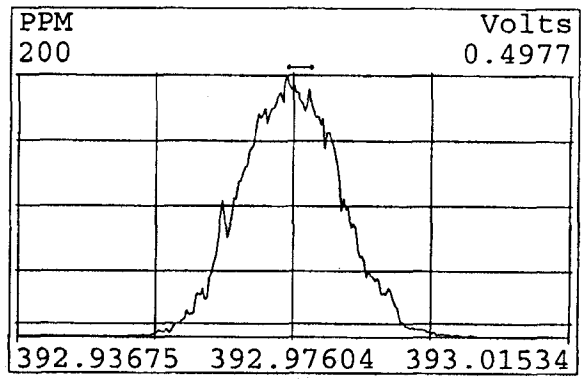


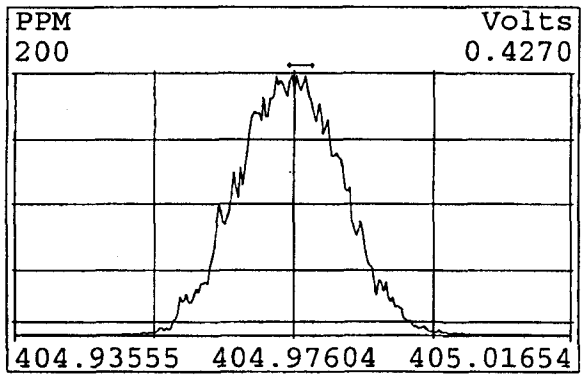


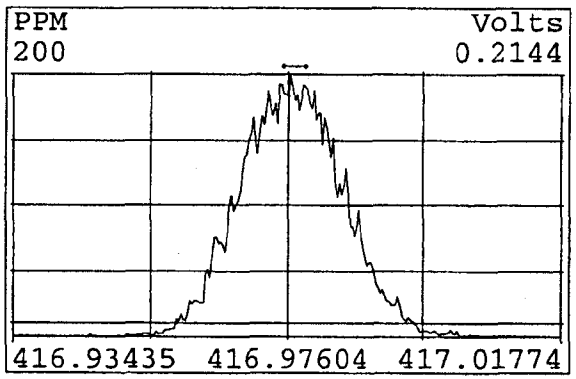
Peak Locate Examination:23-SEP-2009:06:56 File:A23SEP09A_L
Experiment:EXP_DB5MS Function:3 Reference:PFK

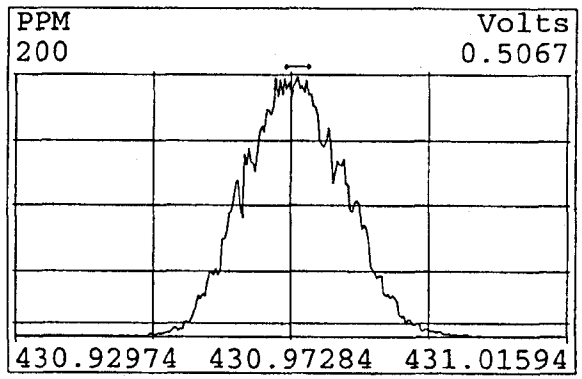


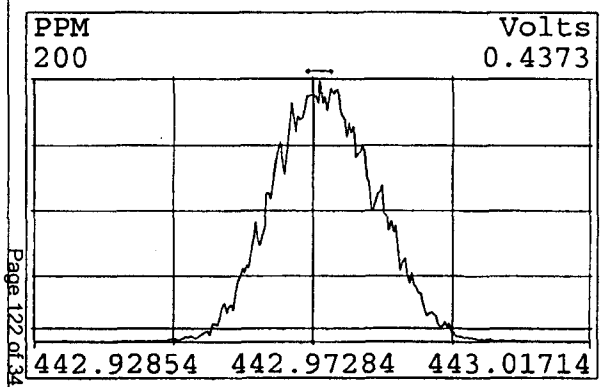


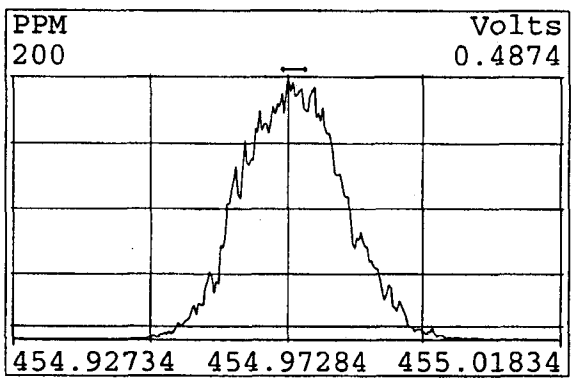




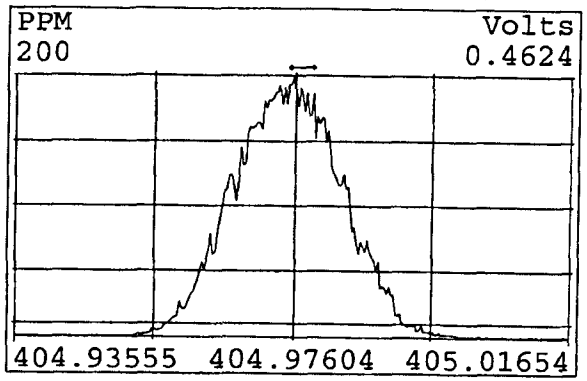


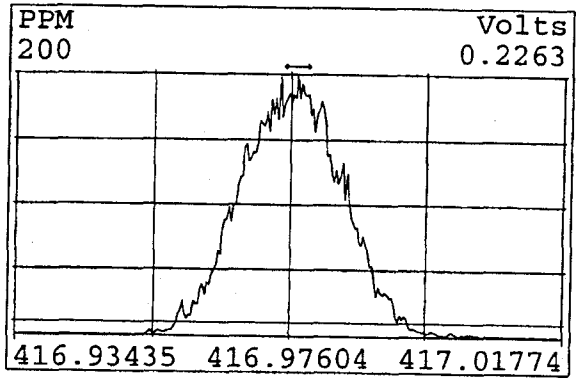


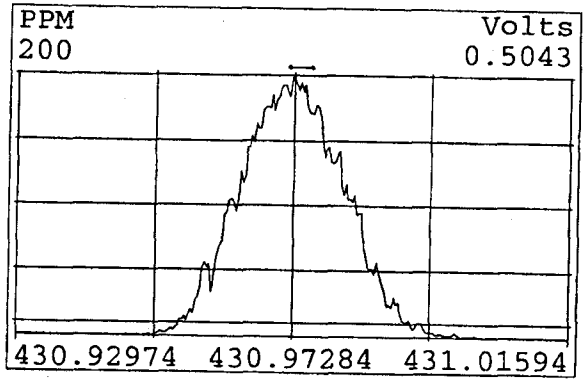


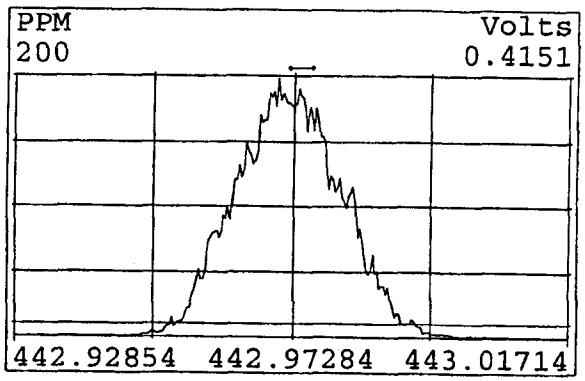


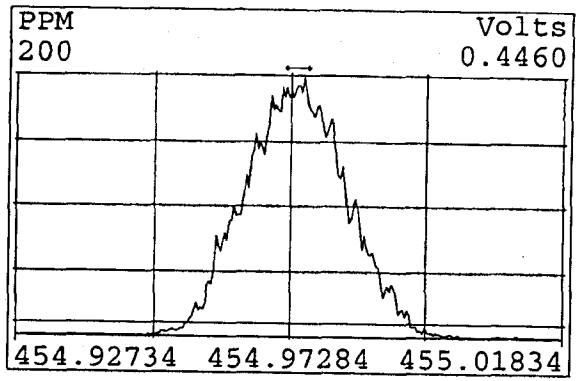
Peak Locate Examination:23-SEP-2009:06:56 File:A23SEP09A_L
Experiment:EXP_DB5MS Function:4 Reference:PFK

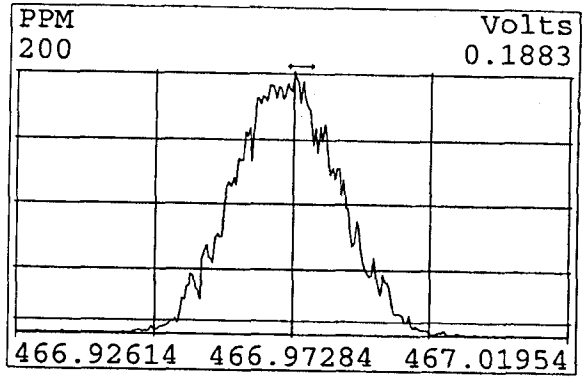


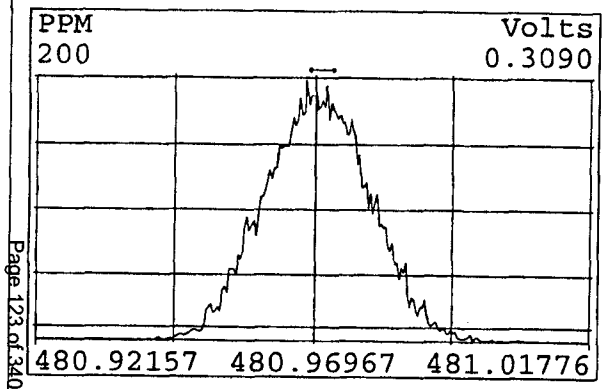




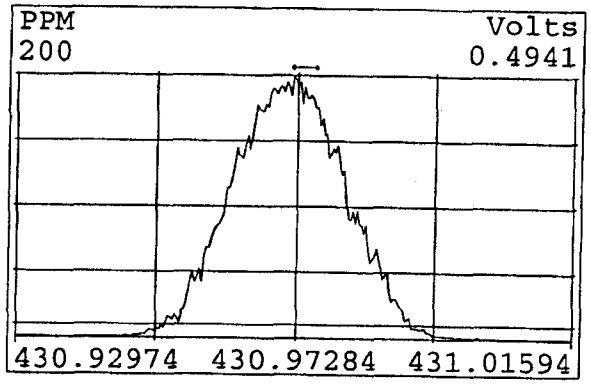


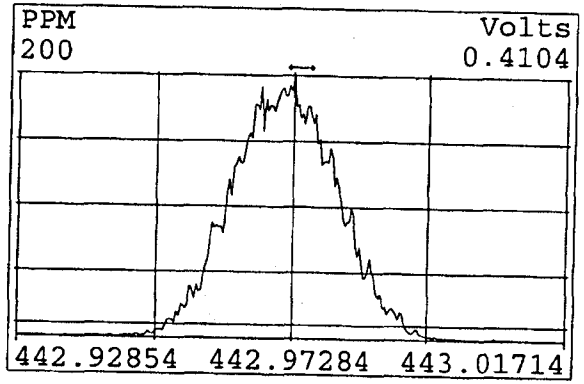


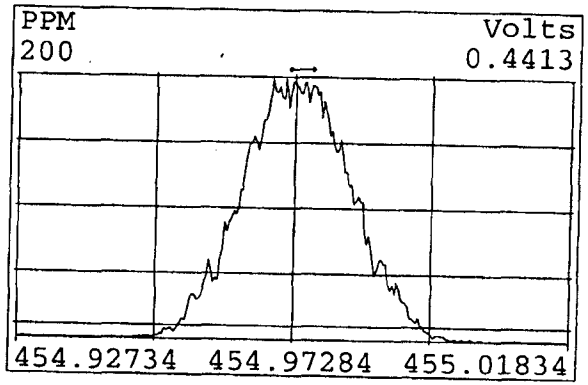


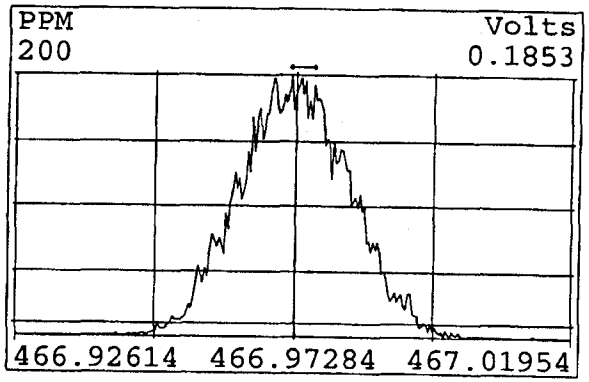


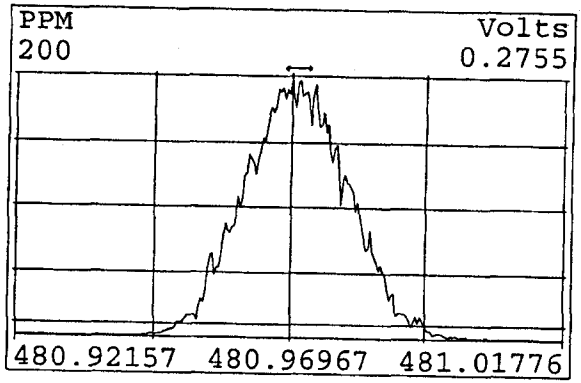
Peak Locate Examination:23-SEP-2009:06:57 File:A23SEP09A_L
Experiment:EXP_DB5MS Function:5 Reference:PFK

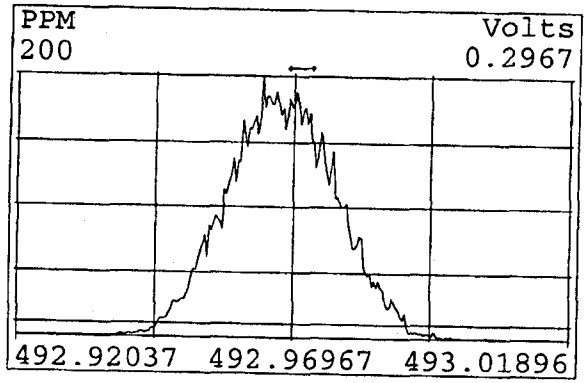


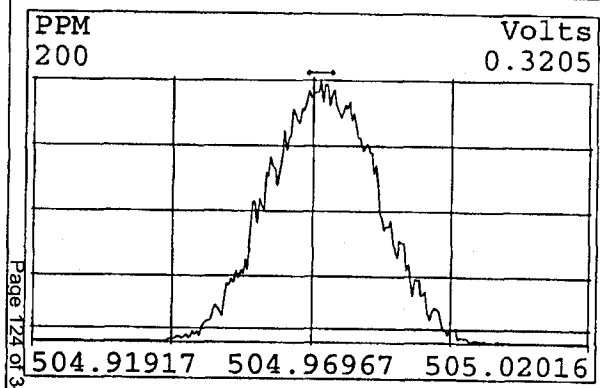


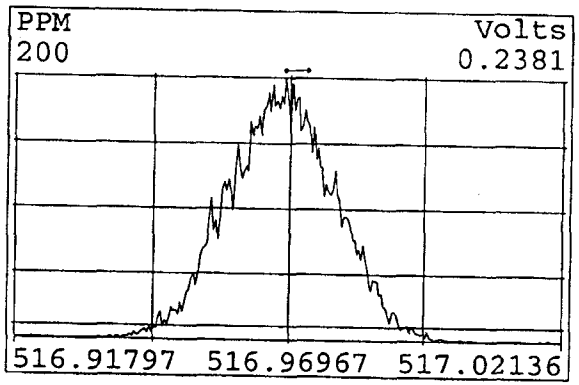




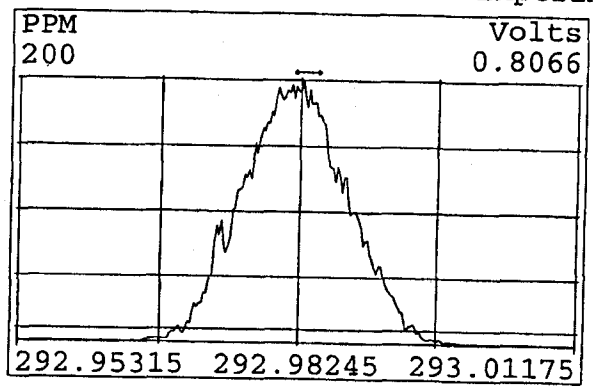


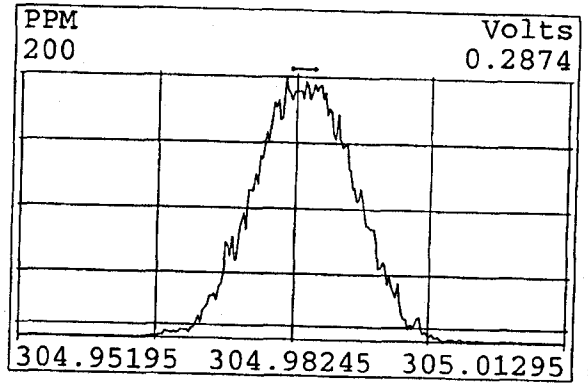


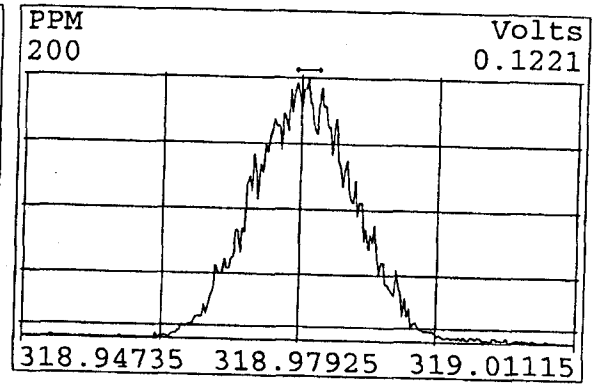


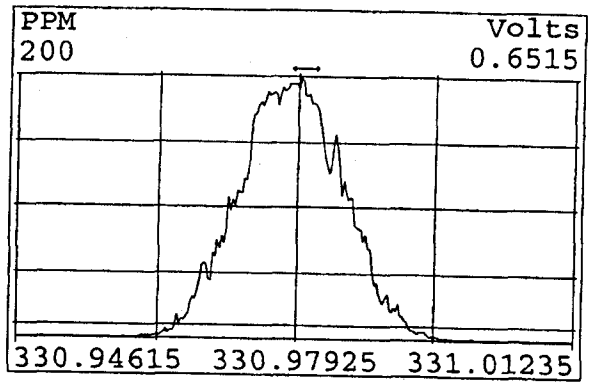


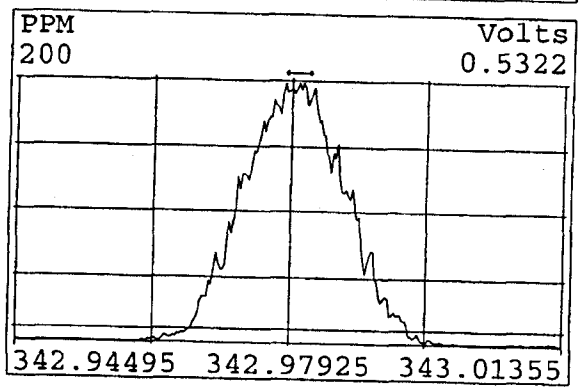
Peak Locate Examination:23-SEP-2009:12:35 File:A23SEP09A_RES_CHECK
Experiment:EXP_DB5MS Function:1 Reference:PFK

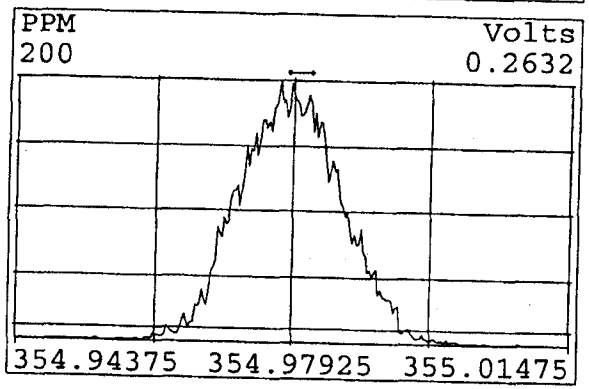


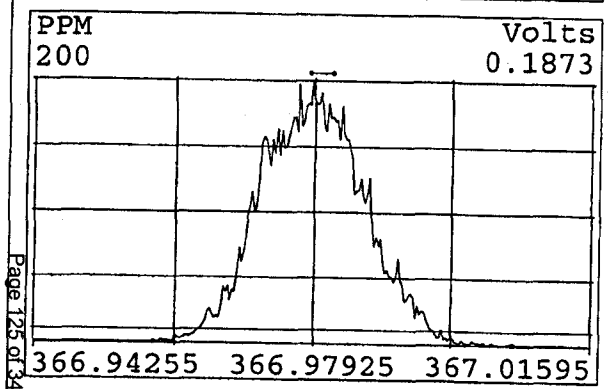


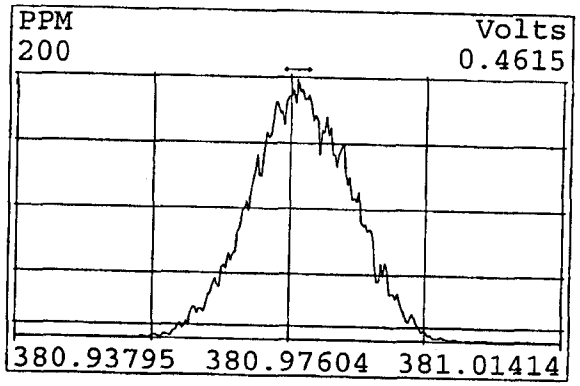




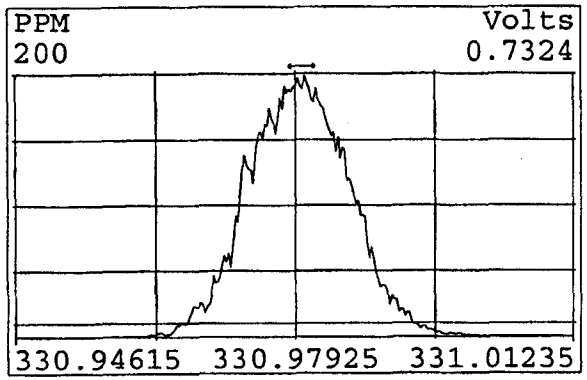


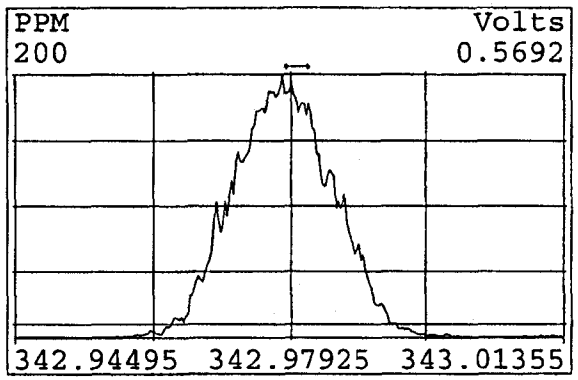


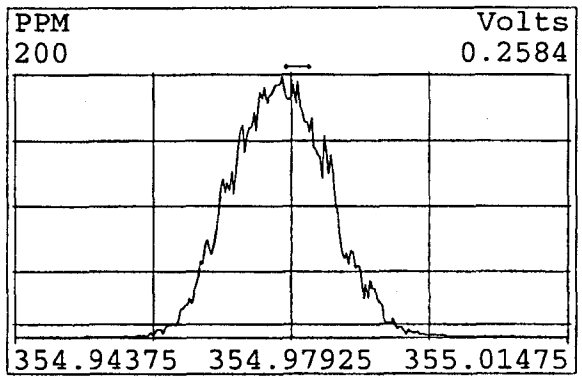


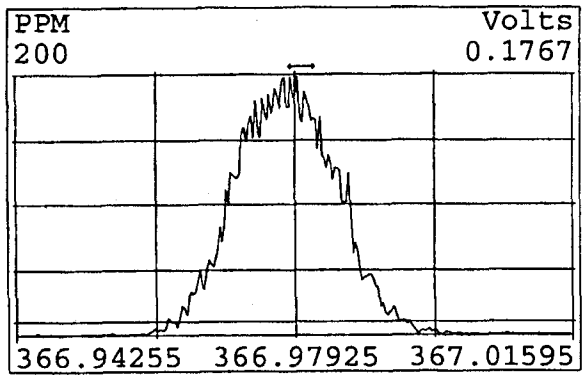


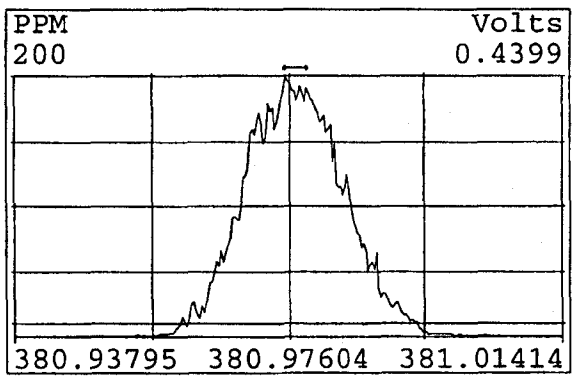
Peak Locate Examination:23-SEP-2009:12:36 File:A23SEP09A_RES_CHECK
Experiment:EXP_DB5MS Function:2 Reference:PFK

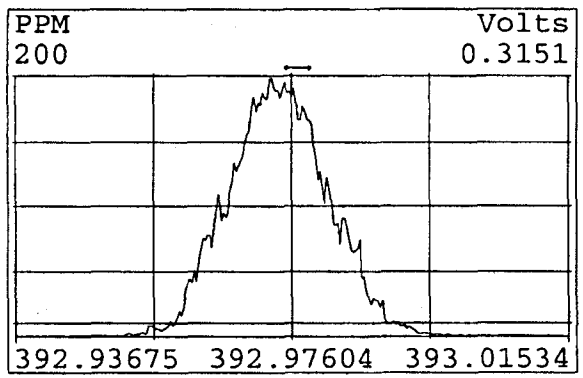


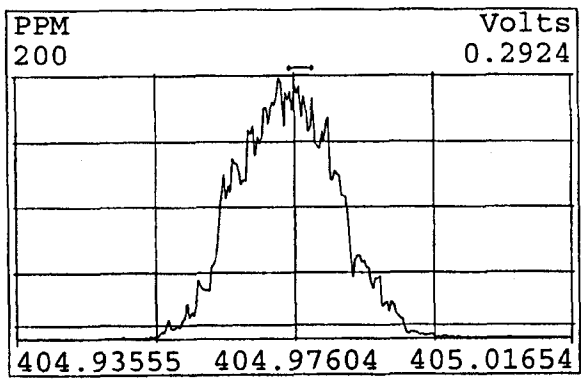


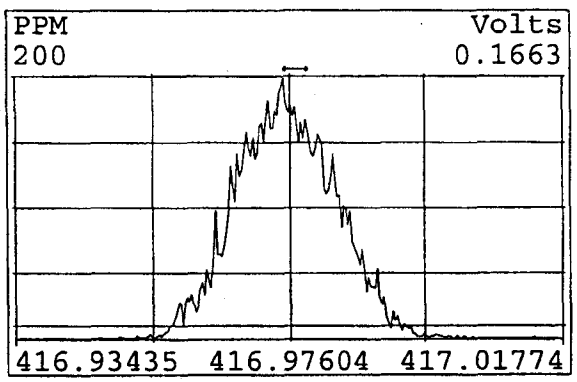




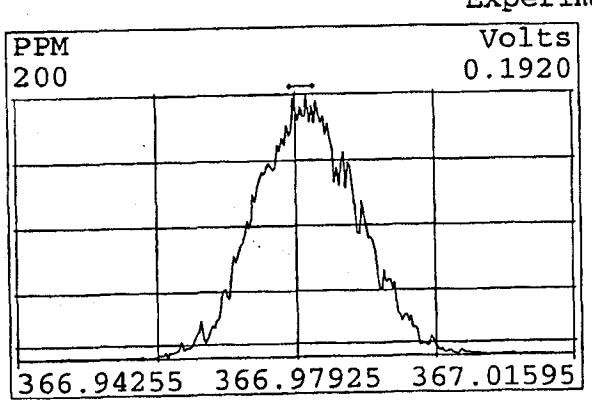


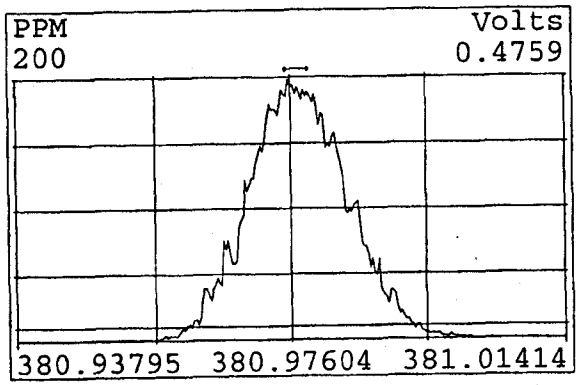


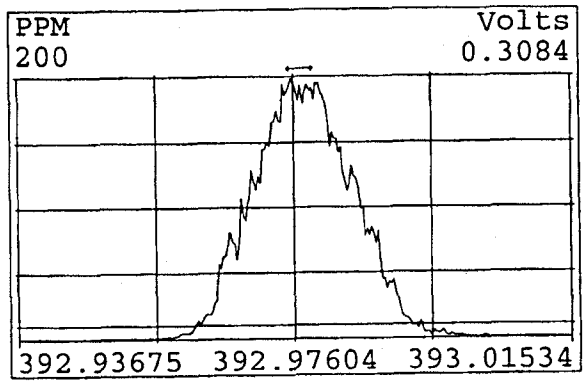


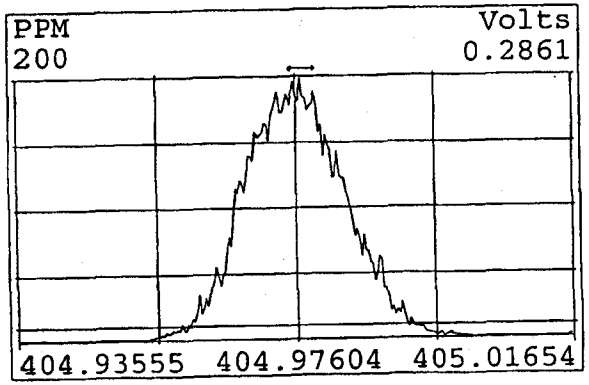


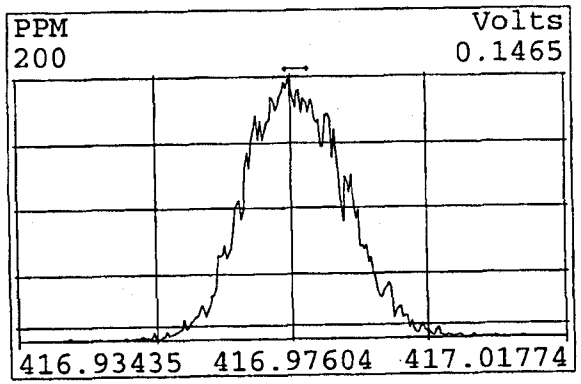
Peak Locate Examination:23-SEP-2009:12:37 File:A23SEP09A_RES_CHECK
Experiment:EXP_DB5MS Function:3 Reference:PFK

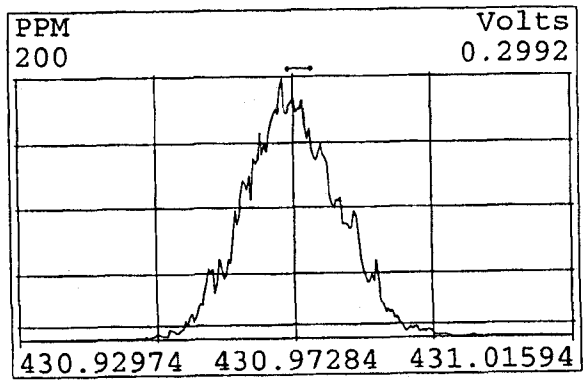


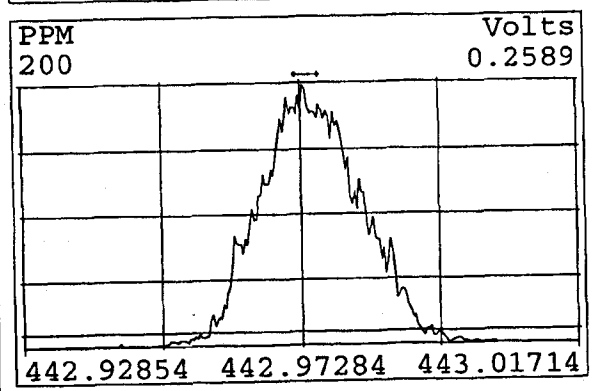


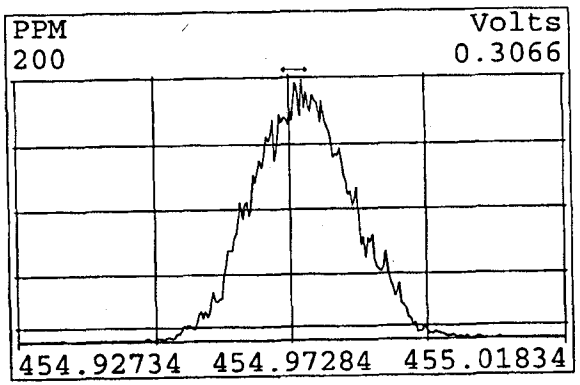




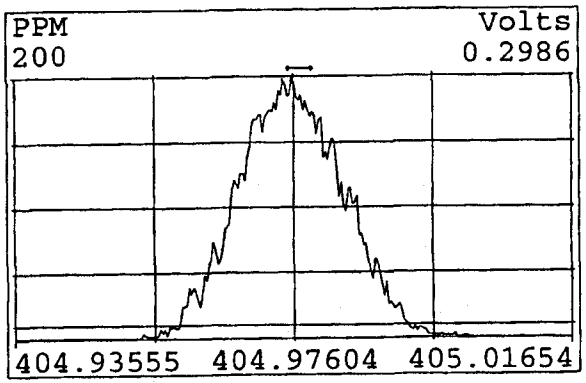


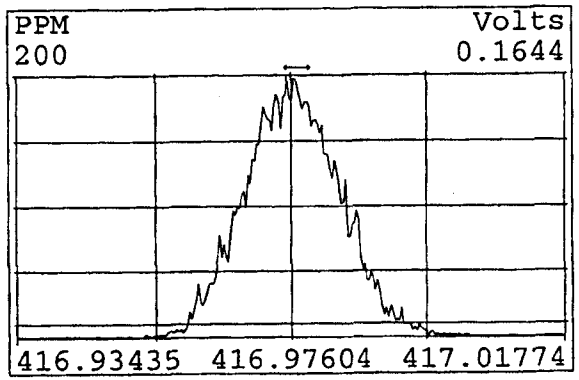


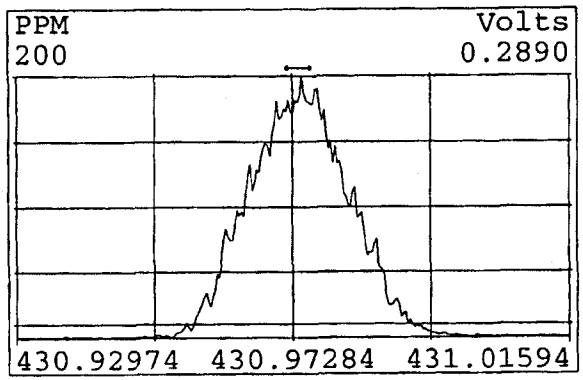


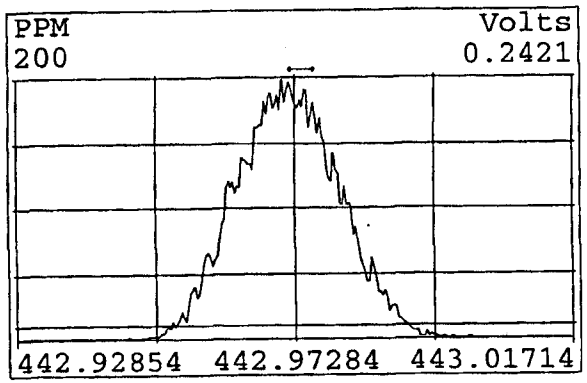


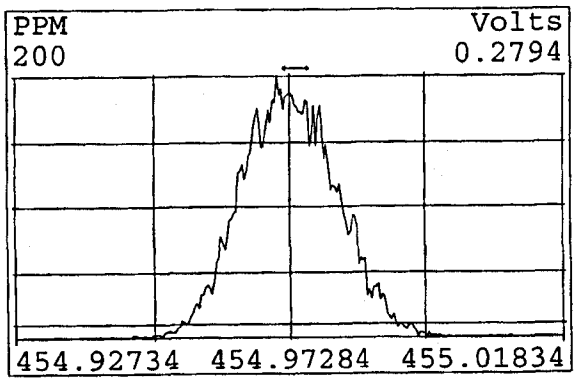
Peak Locate Examination:23-SEP-2009:12:38 File:A23SEP09A_RES_CHECK
Experiment:EXP_DB5MS Function:4 Reference:PFK

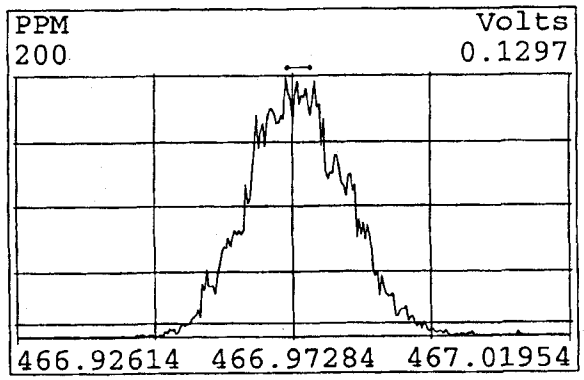


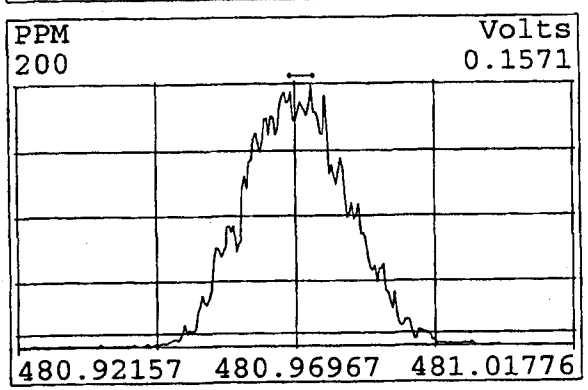




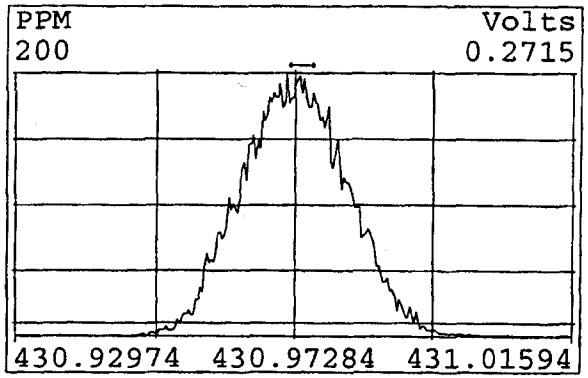


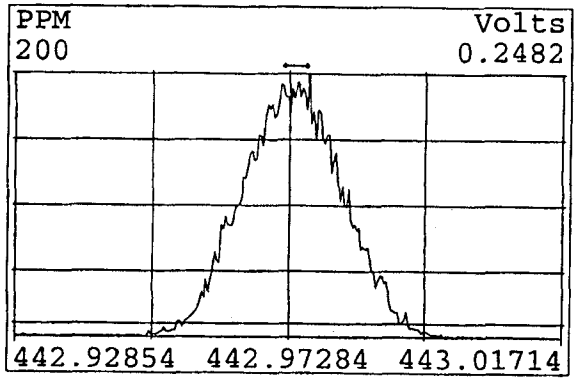


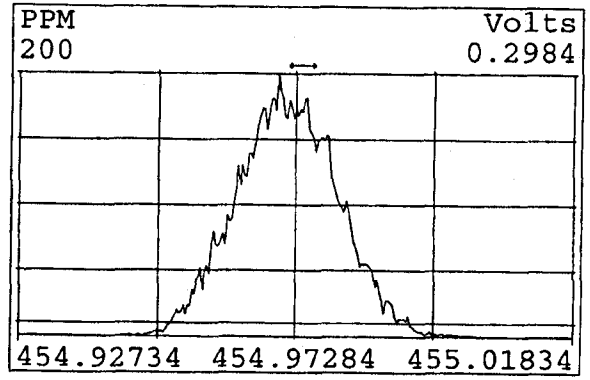


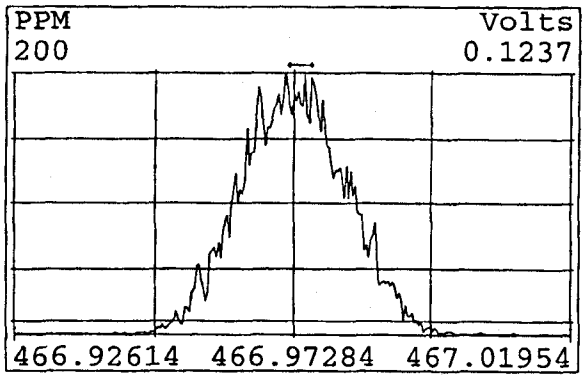


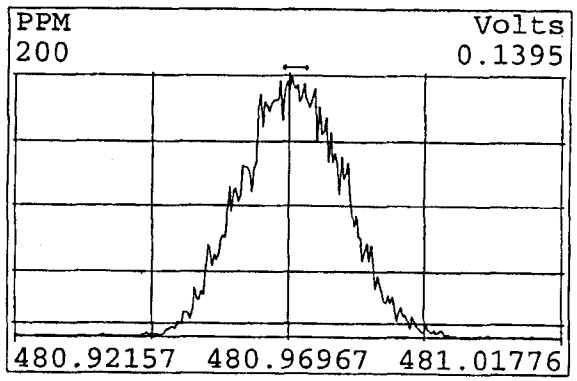
Peak Locate Examination:23-SEP-2009:12:39 File:A23SEP09A_RES_CHECK
Experiment:EXP_DB5MS Function:5 Reference:PFK

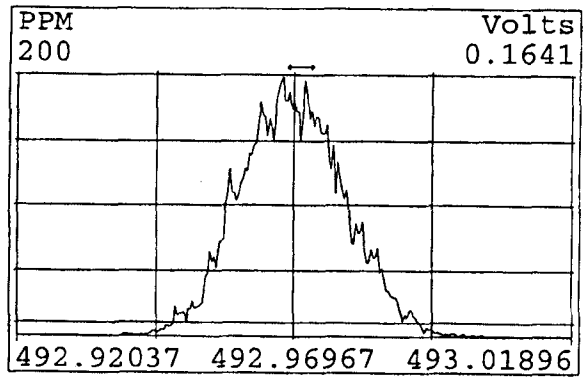


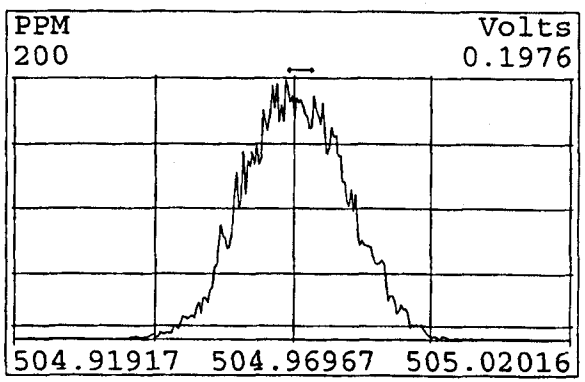


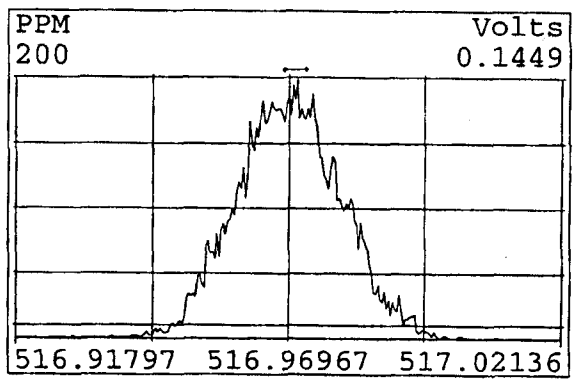












HRMS2 Sequence Log

SGS Environmental Services

Data File S	Sample ID	Analyst	Acq. Date	Time
a20nov09a_2;1	;OPR17447	;JWP	21-NOV-09	03:04:15
a20nov09a_2;2	;OPRD17447	;JWP	21-NOV-09	03:52:32
a20nov09a_2;3	;LMB17447	;JWP	21-NOV-09	04:40:50
a20nov09a_2;4	;G556-194-2D	;JWP	21-NOV-09	05:29:07
a20nov09a_2;5	;D546-1613	;JWP	21-NOV-09	06:17:25
a20nov09a_2;6	;OPR17449	;JWP	21-NOV-09	07:05:43
a20nov09a_2;7	;OPRD17449	;JWP	21-NOV-09	07:54:00
a20nov09a_2;8	;LMB17449	;JWP	21-NOV-09	08:42:18
a20nov09a_2;9	;G1122-1-1C	;JWP	21-NOV-09	09:30:36
a20nov09a_2;10	;G1122-1-2C	;JWP	21-NOV-09	10:18:53
a20nov09a_2;11	;G489-61-11B REX *	;JWP	21-NOV-09	11:07:11
a20nov09a_2;12	;G489-61-12B	;JWP	21-NOV-09	11:55:28
a20nov09a_2;13	;G489-61-13C	;JWP	21-NOV-09	12:43:45
a20nov09a_2;14	;RETCON S33-78E PASS	;JWP	21-NOV-09	13:32:02

*- Low ES in samples & LMB

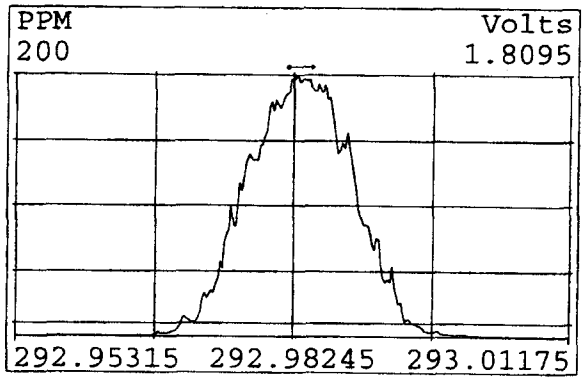
DS
11-22-09

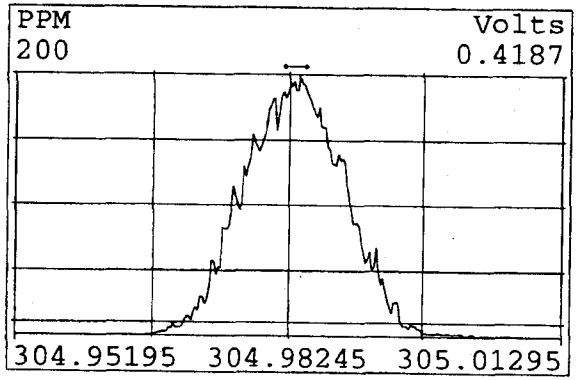
8290 CCAL

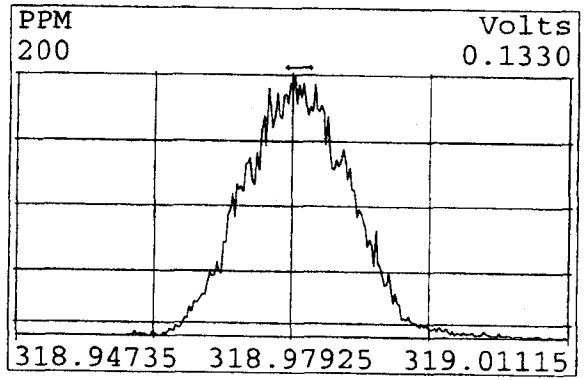
Sample text: RETCON S33-78E
Filename: a20nov09a_2 -14 Acquired: 21-NOV-09 13:32:02 Processed: 22-NOV-09 08:35:06
ICAL: m8290-092309a Results: m8290-112009a_2

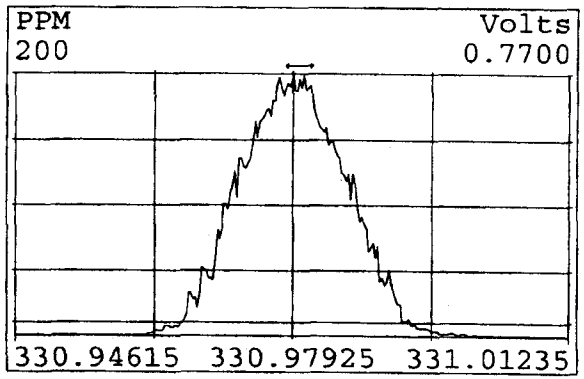
Name;	Resp;	Ion 1;	Ion 2	; RA ;? ;	RT ;	Conc ;	Dev'n;	CCAL RRF;	ICAL RRF	;Mod
2,3,7,8-TCDD;	2.4e+07;	1.05e+07;	1.35e+07	; 0.78 ;y ;	31:28 ;	9.870 ;	-1.3;	1.0158;	1.0293	;n
1,2,3,7,8-PeCDD;	9.0e+07;	5.50e+07;	3.52e+07	; 1.56 ;y ;	34:16 ;	49.97 ;	-0.1;	1.0533;	1.0539	;n
1,2,3,4,7,8-HxCDD;	7.9e+07;	4.40e+07;	3.54e+07	; 1.24 ;y ;	36:53 ;	46.01 ;	-8.0;	0.8907;	0.9679	;n
1,2,3,6,7,8-HxCDD;	8.7e+07;	4.87e+07;	3.88e+07	; 1.25 ;y ;	36:58 ;	49.59 ;	-0.8;	0.9805;	0.9886	;n
1,2,3,7,8,9-HxCDD;	8.0e+07;	4.41e+07;	3.55e+07	; 1.24 ;y ;	37:13 ;	46.79 ;	-6.4;	0.8927;	0.9540	;n
1,2,3,4,6,7,8-HpCDD;	6.4e+07;	3.27e+07;	3.12e+07	; 1.05 ;y ;	40:20 ;	48.67 ;	-2.7;	1.0679;	1.0970	;n
OCDD;	1.0e+08;	4.88e+07;	5.48e+07	; 0.89 ;y ;	44:39 ;	95.28 ;	-4.7;	1.0710;	1.1240	;n
2,3,7,8-TCDF;	3.5e+07;	1.51e+07;	1.95e+07	; 0.78 ;y ;	30:52 ;	9.559 ;	-4.4;	0.9964;	1.0424	;n
1,2,3,7,8-PeCDF;	1.5e+08;	8.91e+07;	5.65e+07	; 1.58 ;y ;	33:28 ;	49.04 ;	-1.9;	0.9806;	0.9997	;n
2,3,4,7,8-PeCDF;	1.4e+08;	8.80e+07;	5.68e+07	; 1.55 ;y ;	34:04 ;	46.92 ;	-6.2;	0.9747;	1.0386	;n
1,2,3,4,7,8-HxCDF;	1.2e+08;	6.65e+07;	5.33e+07	; 1.25 ;y ;	36:10 ;	47.76 ;	-4.5;	1.0361;	1.0846	;n
1,2,3,6,7,8-HxCDF;	1.3e+08;	7.26e+07;	5.79e+07	; 1.26 ;y ;	36:16 ;	49.07 ;	-1.9;	1.1286;	1.1500	;n
2,3,4,6,7,8-HxCDF;	1.2e+08;	6.70e+07;	5.40e+07	; 1.24 ;y ;	36:46 ;	47.50 ;	-5.0;	1.0470;	1.1020	;n
1,2,3,7,8,9-HxCDF;	9.9e+07;	5.53e+07;	4.42e+07	; 1.25 ;y ;	37:33 ;	45.91 ;	-8.2;	0.8604;	0.9369	;n
1,2,3,4,6,7,8-HpCDF;	1.1e+08;	5.40e+07;	5.21e+07	; 1.04 ;y ;	39:03 ;	48.35 ;	-3.3;	1.3358;	1.3813	;n
1,2,3,4,7,8,9-HpCDF;	7.8e+07;	3.95e+07;	3.80e+07	; 1.04 ;y ;	41:01 ;	45.75 ;	-8.5;	0.9766;	1.0673	;n
OCDF;	1.2e+08;	5.92e+07;	6.56e+07	; 0.90 ;y ;	44:58 ;	92.29 ;	-7.7;	1.2898;	1.3977	;n
Extraction Standards										
13C-2,3,7,8-TCDD;	2.4e+08;	1.03e+08;	1.32e+08	; 0.78 ;y ;	31:27 ;	101.6 ;	1.6;	1.1361;	1.1184	;n
13C-1,2,3,7,8-PeCDD;	1.7e+08;	1.05e+08;	6.65e+07	; 1.58 ;y ;	34:15 ;	101.7 ;	1.7;	0.8252;	0.8116	;n
13C-1,2,3,6,7,8-HxCDD;	1.8e+08;	9.95e+07;	7.89e+07	; 1.26 ;y ;	36:58 ;	103.5 ;	3.5;	1.1109;	1.0736	;n
13C-1,2,3,4,6,7,8-HpCDD;	1.2e+08;	6.16e+07;	5.81e+07	; 1.06 ;y ;	40:19 ;	101.3 ;	1.3;	0.7454;	0.7360	;n
13C-OCDD;	1.9e+08;	9.19e+07;	1.02e+08	; 0.90 ;y ;	44:38 ;	206.6 ;	3.3;	0.6027;	0.5833	;n
13C-2,3,7,8-TCDF;	3.5e+08;	1.54e+08;	1.93e+08	; 0.79 ;y ;	30:51 ;	97.46 ;	-2.5;	1.6699;	1.7135	;n
13C-1,2,3,7,8-PeCDF;	3.0e+08;	1.82e+08;	1.15e+08	; 1.57 ;y ;	33:27 ;	104.2 ;	4.2;	1.4311;	1.3731	;n
13C-1,2,3,6,7,8-HxCDF;	2.3e+08;	8.00e+07;	1.51e+08	; 0.53 ;y ;	36:15 ;	100.1 ;	0.1;	1.4400;	1.4379	;n
13C-1,2,3,4,6,7,8-HpCDF;	1.6e+08;	4.96e+07;	1.09e+08	; 0.45 ;y ;	39:02 ;	97.22 ;	-2.8;	0.9890;	1.0173	;n
Injection Standards										
13C-1,2,3,4-TCDD;	2.1e+08;	9.22e+07;	1.15e+08	; 0.80 ;y ;	31:00 ;	450.0 ;	-;	-;	-	;n
13C-1,2,3,7,8,9-HxCDD;	1.6e+08;	8.94e+07;	7.12e+07	; 1.26 ;y ;	37:13 ;	445.0 ;	-;	-;	-	;n
Cleanup Standards										
37Cl-2,3,7,8-TCDD;	2.4e+07;	2.44e+07;	-	; - ;- ;	31:28 ;	10.07 ;	0.7;	1.1741;	1.1662	;n
13C-2,3,4,7,8-PeCDF;	2.8e+08;	1.74e+08;	1.10e+08	; 1.59 ;y ;	34:04 ;	102.2 ;	2.2;	1.3668;	1.3373	;n
13C-1,2,3,4,7,8-HxCDD;	1.5e+08;	8.51e+07;	6.71e+07	; 1.27 ;y ;	36:52 ;	96.48 ;	-3.5;	0.9476;	0.9822	;n
13C-1,2,3,4,7,8-HxCDF;	2.0e+08;	7.01e+07;	1.34e+08	; 0.52 ;y ;	36:09 ;	98.11 ;	-1.9;	1.2736;	1.2981	;n
13C-1,2,3,4,7,8,9-HpCDF;	1.2e+08;	3.61e+07;	7.96e+07	; 0.45 ;y ;	41:01 ;	92.13 ;	-7.9;	0.7206;	0.7821	;n
Sampling Standards										
37Cl-2,3,7,8-TCDD;	2.4e+07;	2.44e+07;	-	; - ;- ;	31:28 ;	9.914 ;	-0.9;	1.0335;	1.0425	;n
13C-2,3,4,7,8-PeCDF;	2.8e+08;	1.74e+08;	1.10e+08	; 1.59 ;y ;	34:04 ;	98.01 ;	-2.0;	0.9550;	0.9744	;n
13C-1,2,3,4,7,8-HxCDD;	1.5e+08;	8.51e+07;	6.71e+07	; 1.27 ;y ;	36:52 ;	93.21 ;	-6.8;	0.8531;	0.9152	;n
13C-1,2,3,4,7,8-HxCDF;	2.0e+08;	7.01e+07;	1.34e+08	; 0.52 ;y ;	36:09 ;	97.97 ;	-2.0;	0.8845;	0.9028	;n
13C-1,2,3,4,7,8,9-HpCDF;	1.2e+08;	3.61e+07;	7.96e+07	; 0.45 ;y ;	41:01 ;	94.76 ;	-5.2;	0.7286;	0.7688	;n

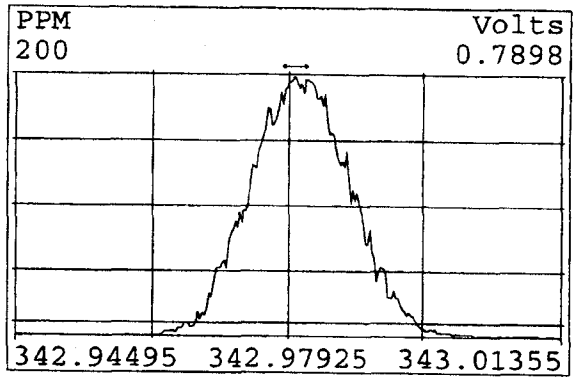
Peak Locate Examination:21-NOV-2009:02:59 File:A20NOV09A_RES_CHECK
Experiment:EXP_DB5MS Function:1 Reference:PFK

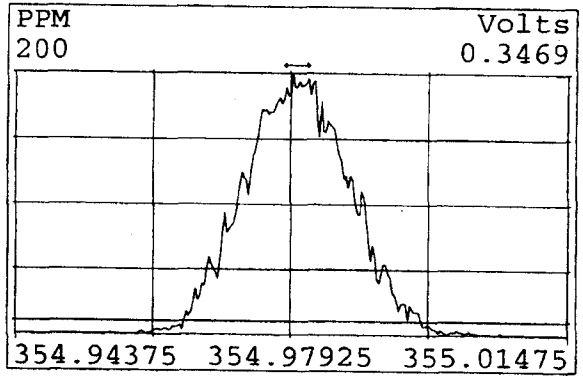


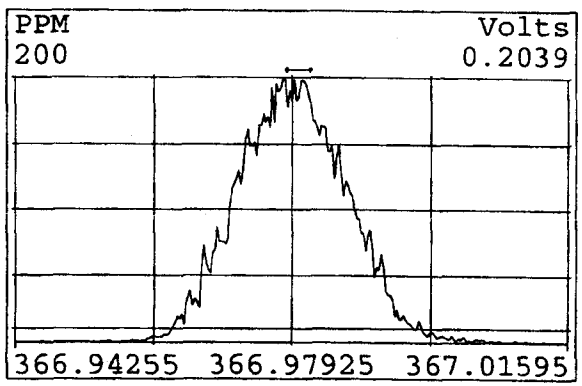


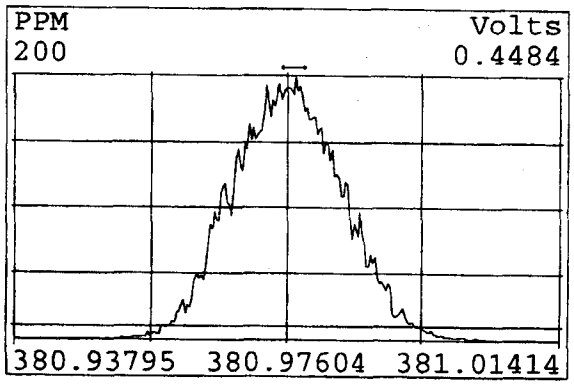




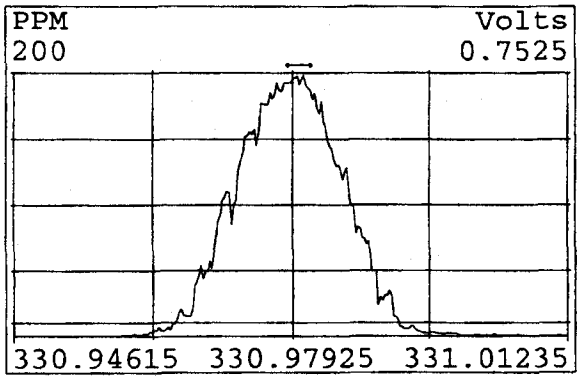


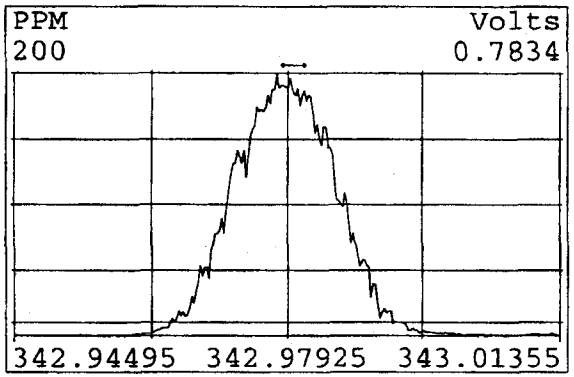


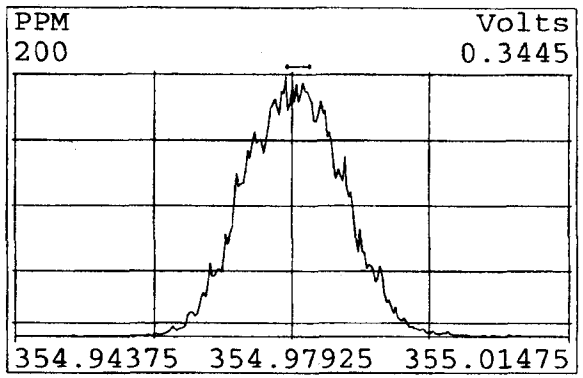


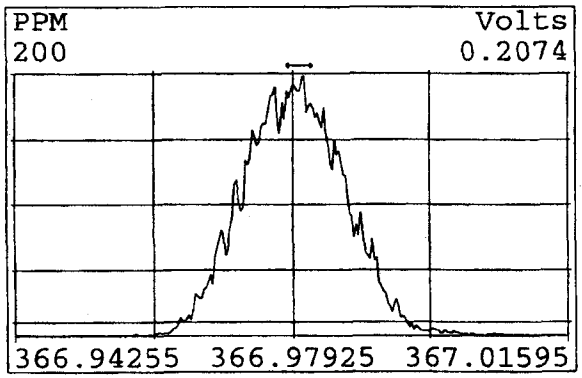


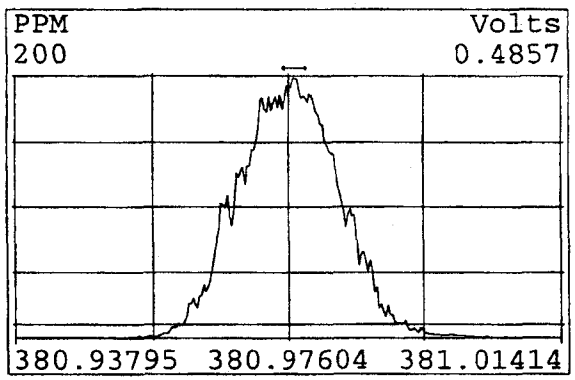
Peak Locate Examination:21-NOV-2009:03:00 File:A20NOV09A_RES_CHECK
Experiment:EXP_DB5MS Function:2 Reference:PFK

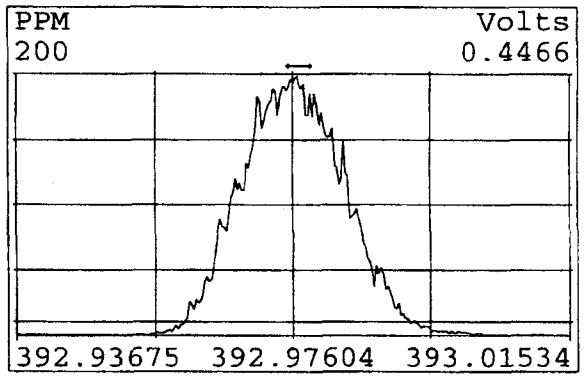


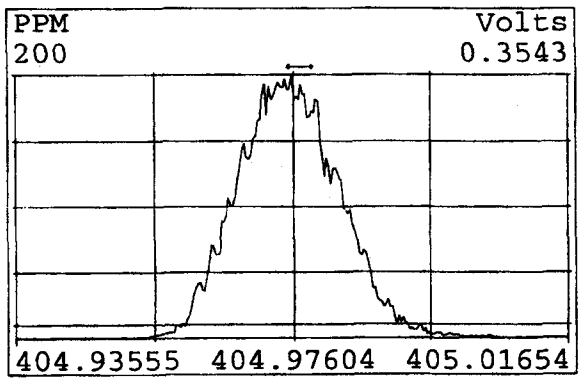


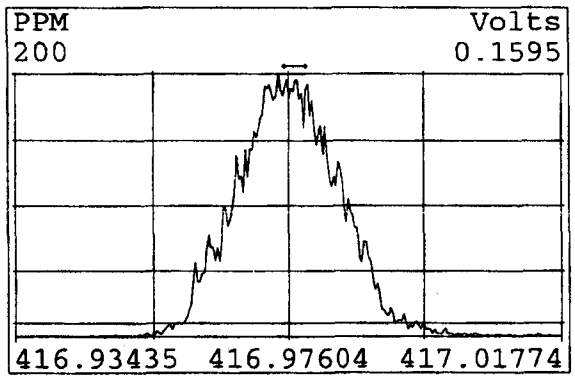




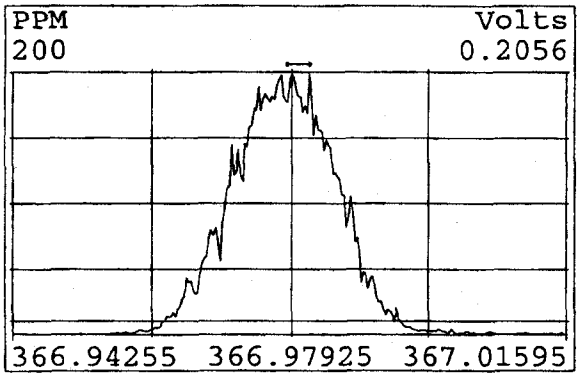


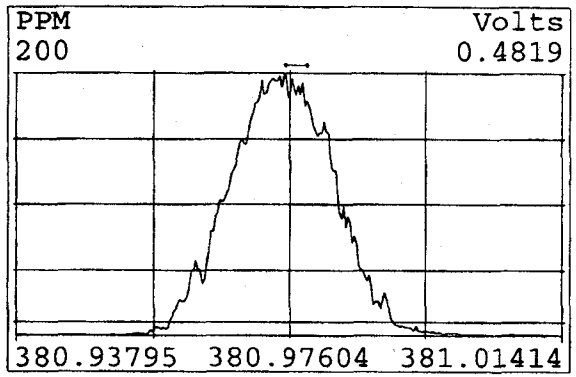


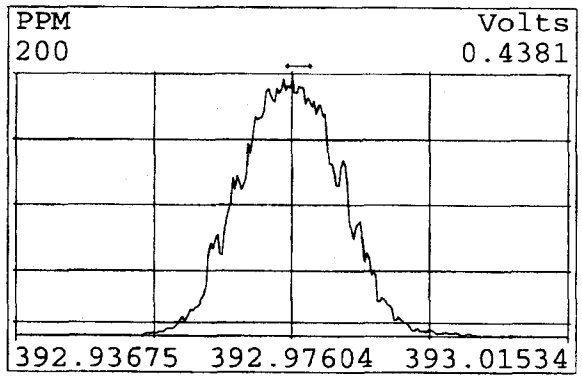


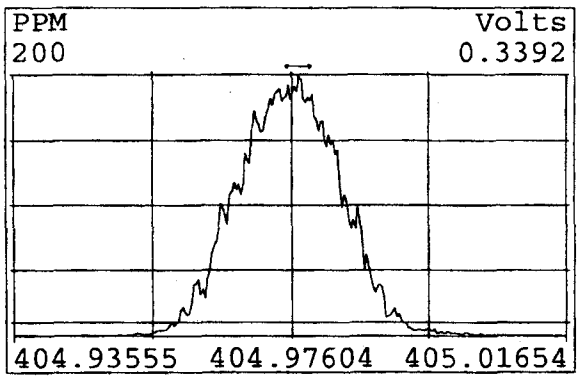


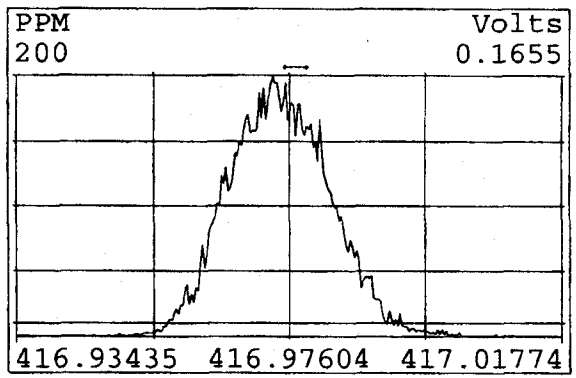
Peak Locate Examination:21-NOV-2009:03:01 File:A20NOV09A_RES_CHECK
Experiment:EXP_DB5MS Function:3 Reference:PFK

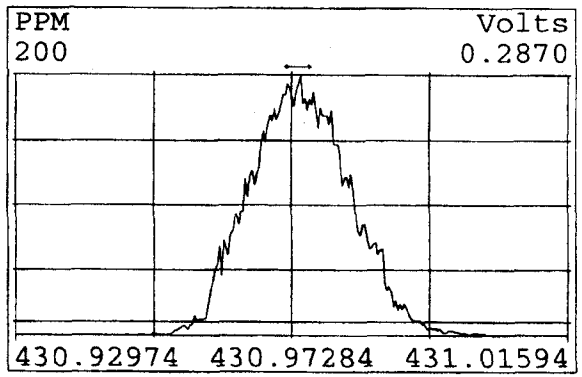


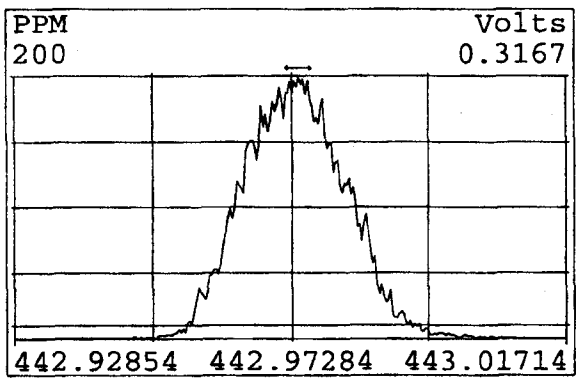


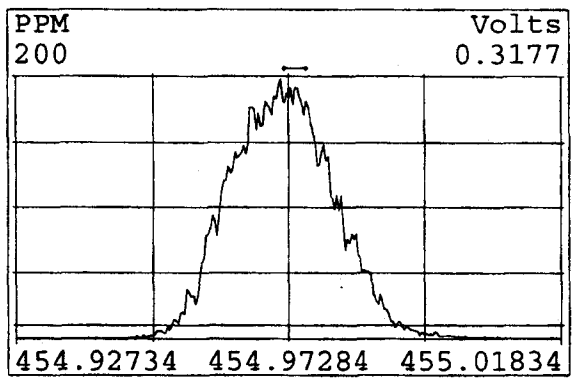




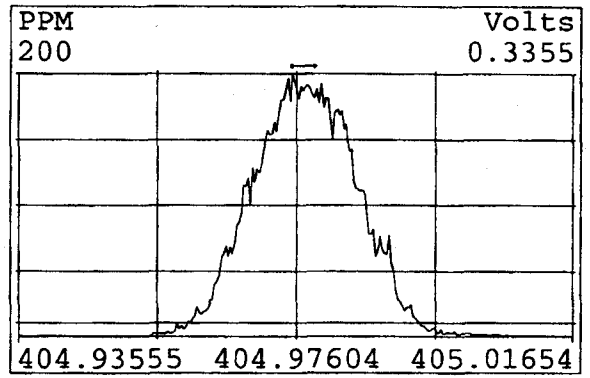


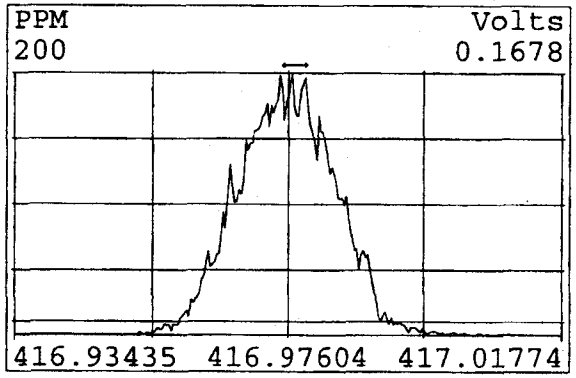


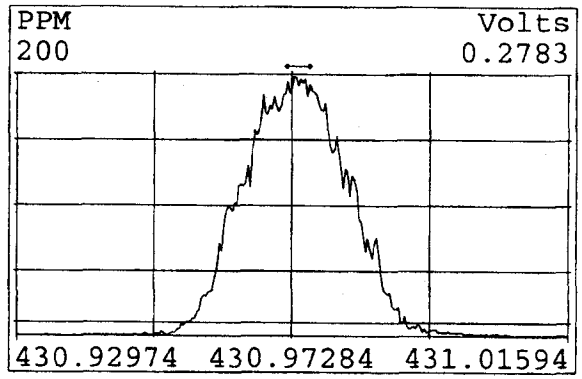


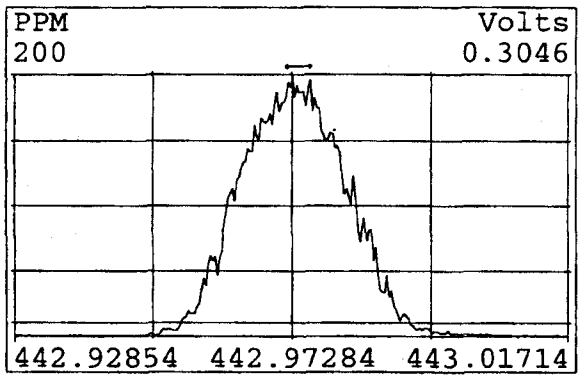


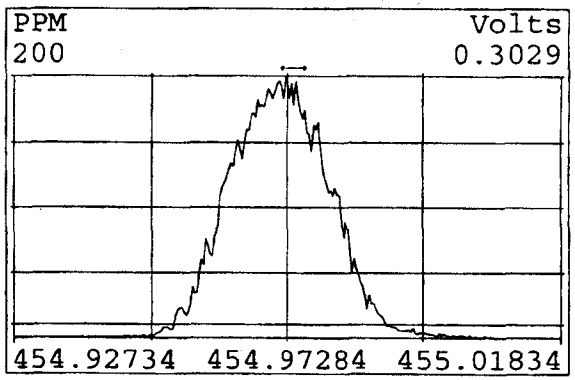
Peak Locate Examination:21-NOV-2009:03:02 File:A20NOV09A_RES_CHECK
Experiment:EXP_DB5MS Function:4 Reference:PFK

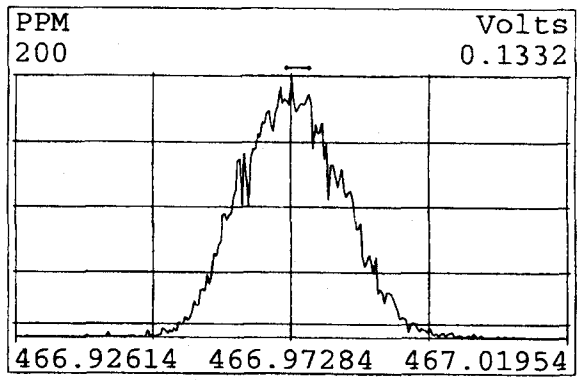


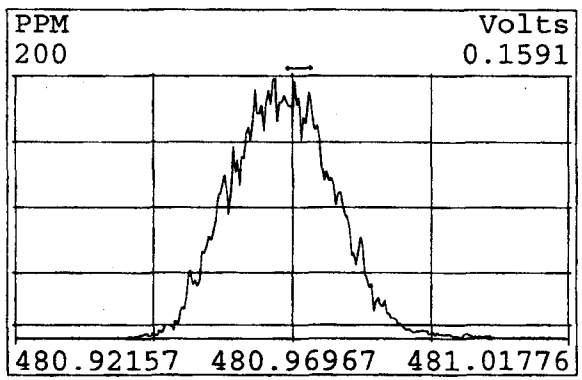




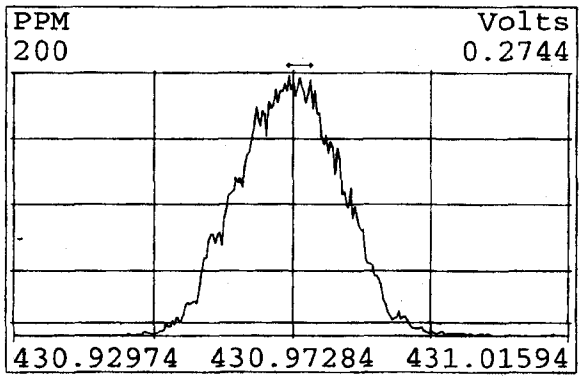


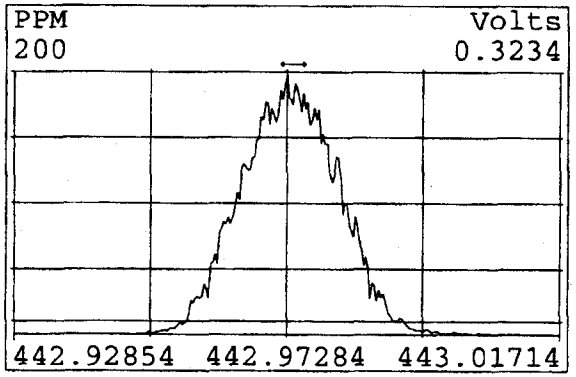


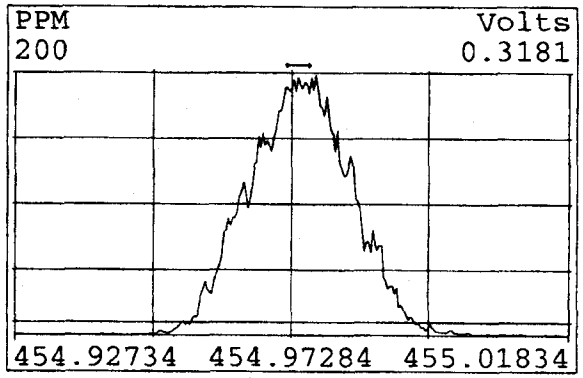


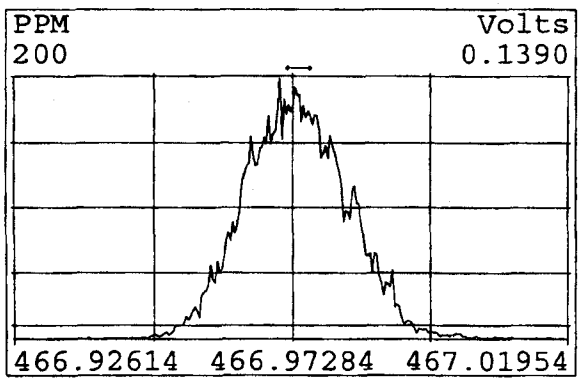


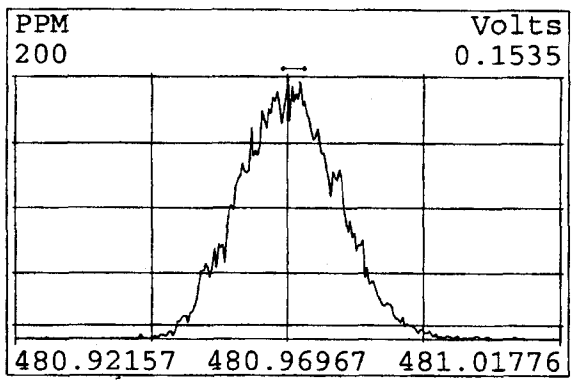
Peak Locate Examination:21-NOV-2009:03:03 File:A20NOV09A_RES_CHECK
Experiment:EXP_DB5MS Function:5 Reference:PFK

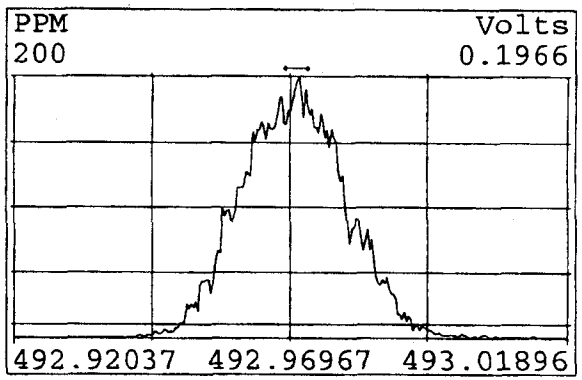


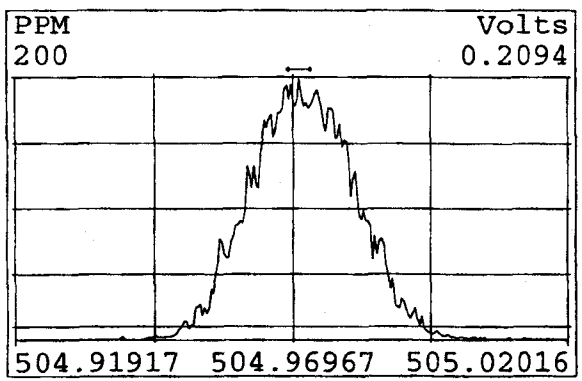


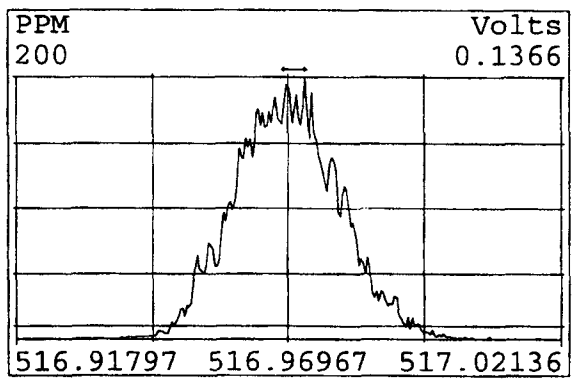




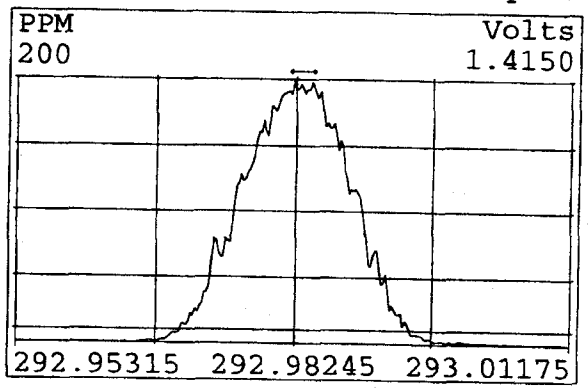


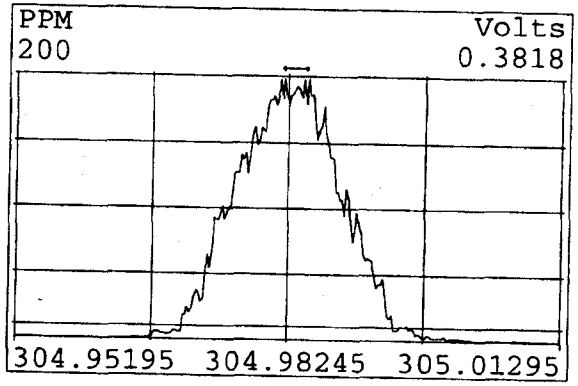


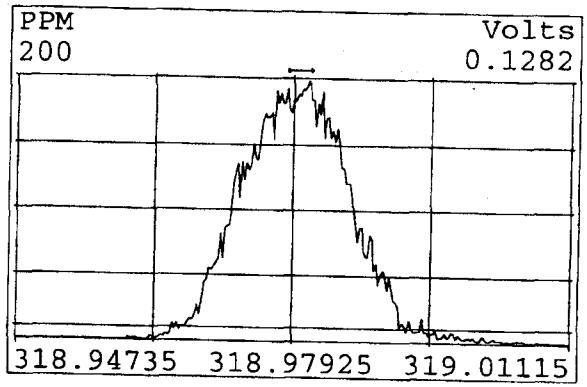


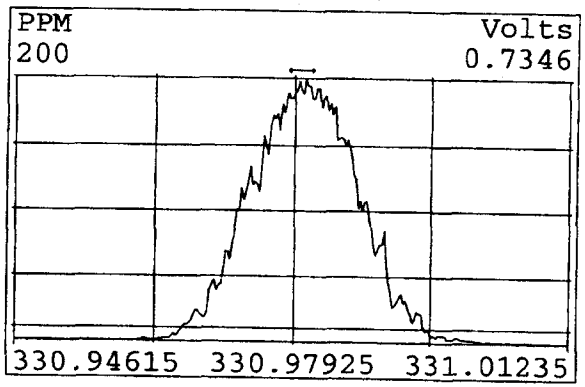


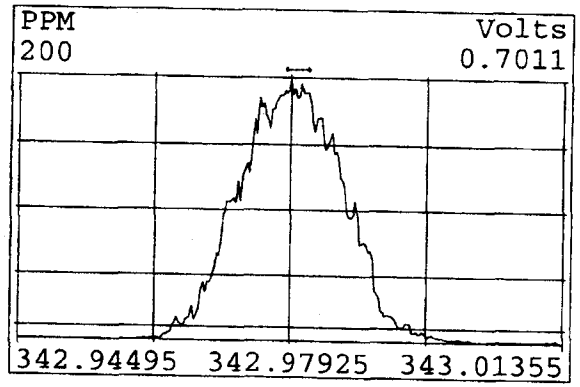
Peak Locate Examination:21-NOV-2009:14:21 File:A20NOV09A_2_RES_CHECK
Experiment:EXP_DB5MS Function:1 Reference:PFK

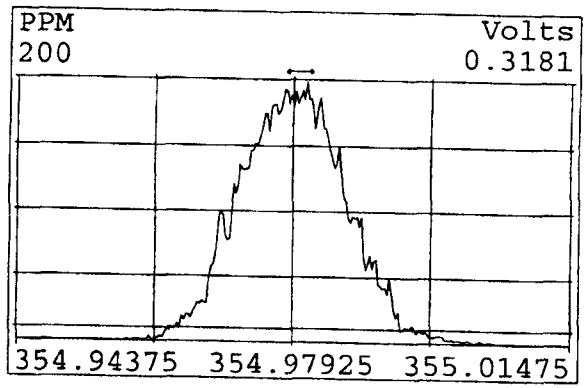


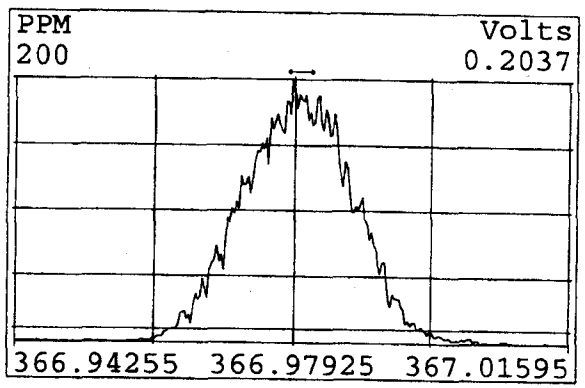


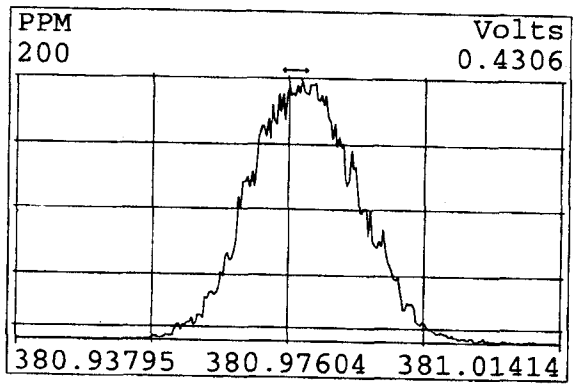




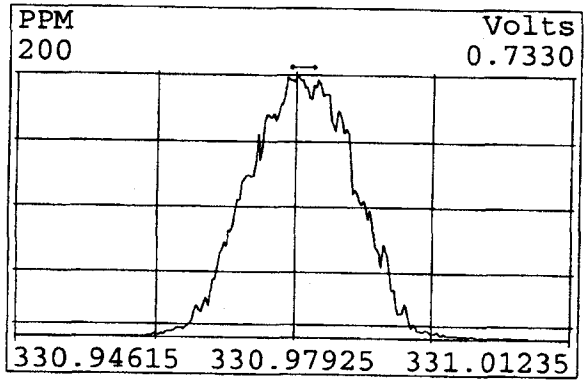


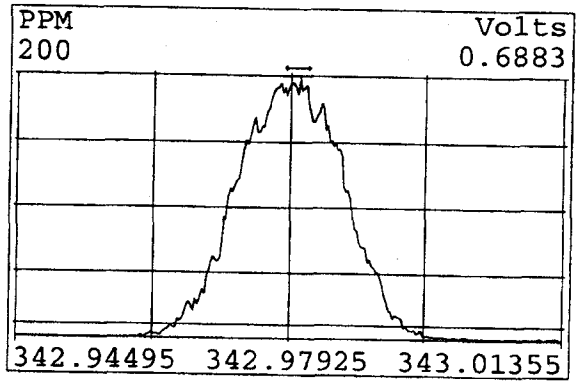


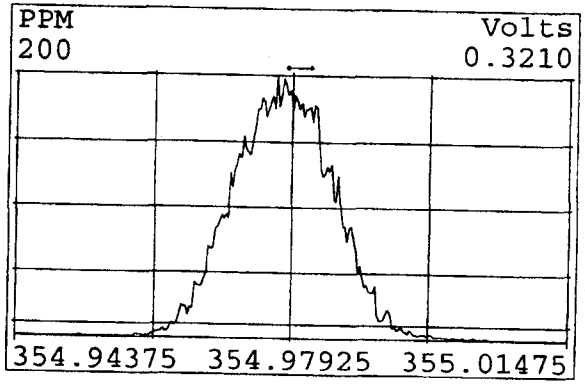


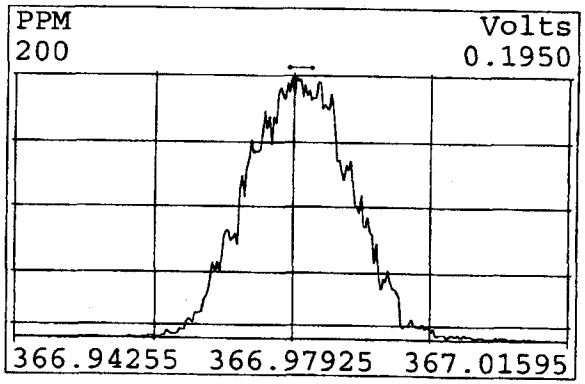


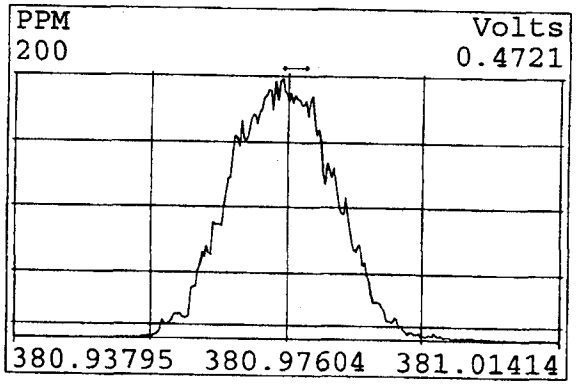
Peak Locate Examination:21-NOV-2009:14:22 File:A20NOV09A_2_RES_CHECK
Experiment:EXP_DB5MS Function:2 Reference:PFK

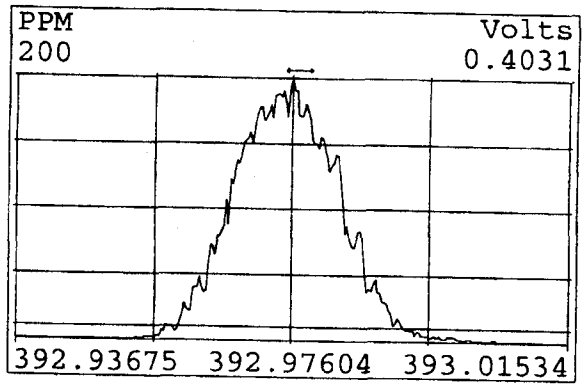


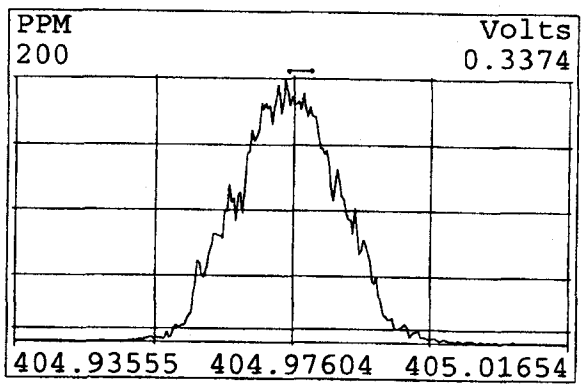


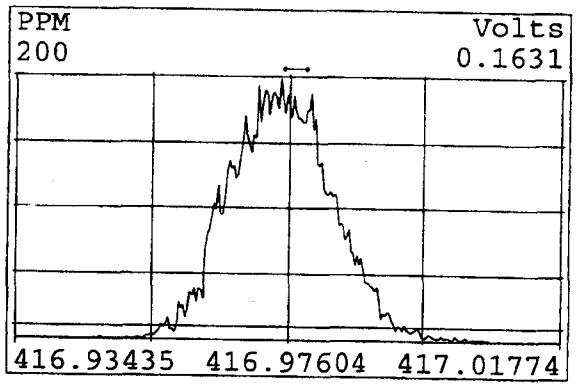




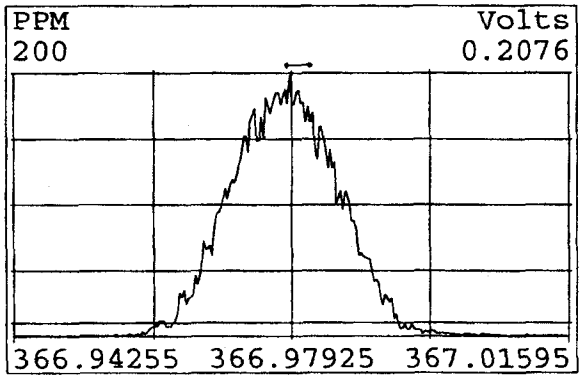


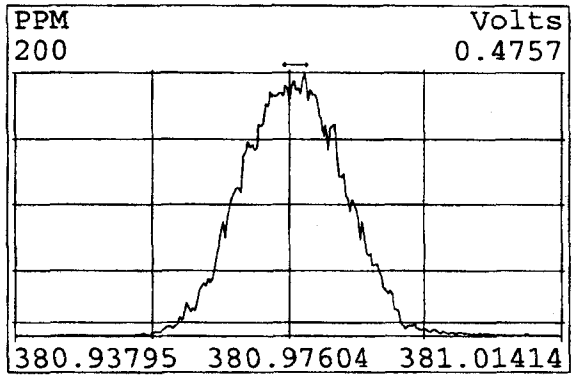


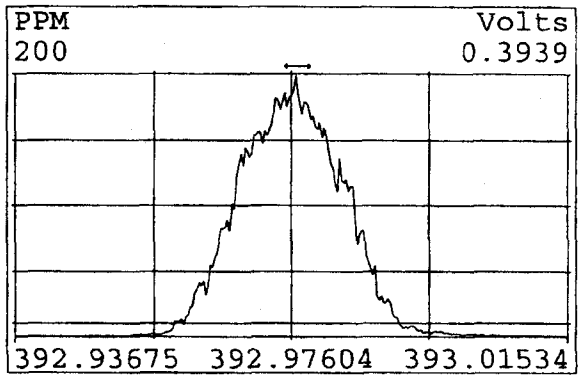


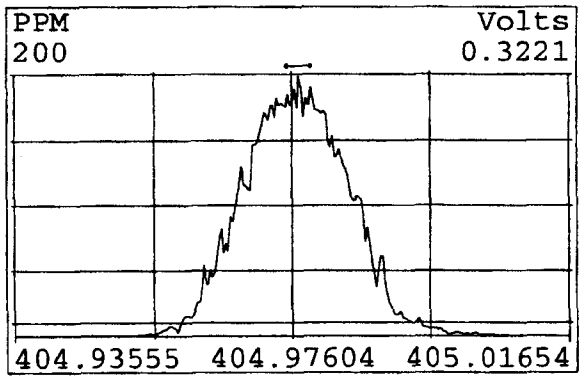


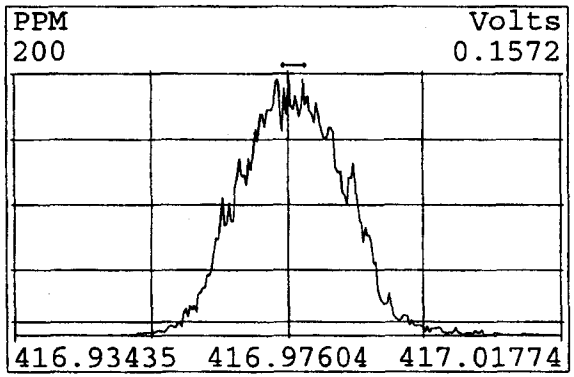
Peak Locate Examination:21-NOV-2009:14:23 File:A20NOV09A_2_RES_CHECK
Experiment:EXP_DB5MS Function:3 Reference:PFK

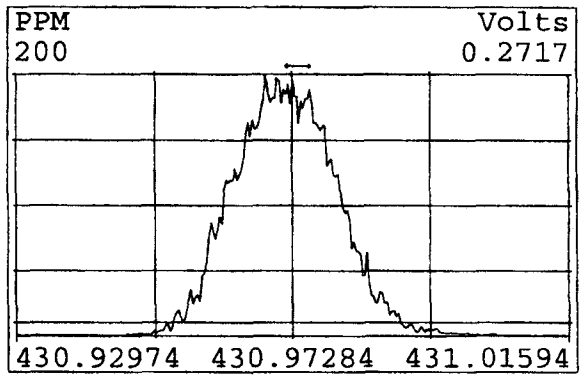


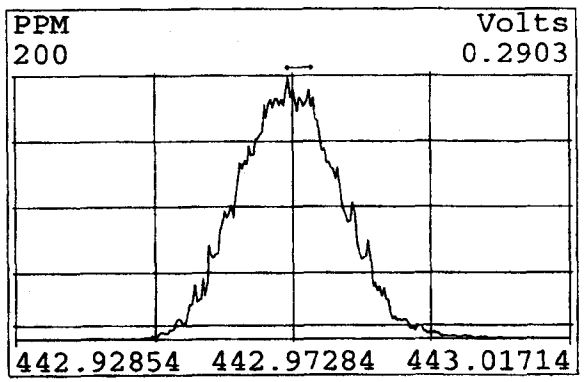


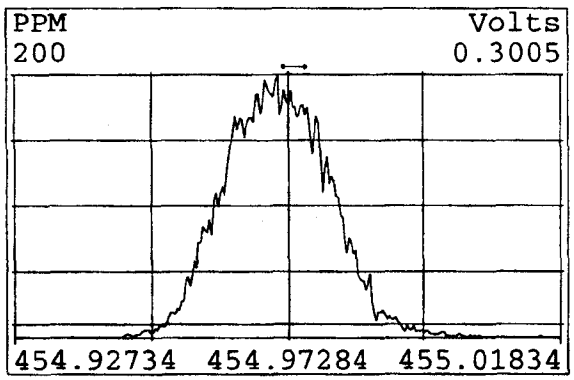




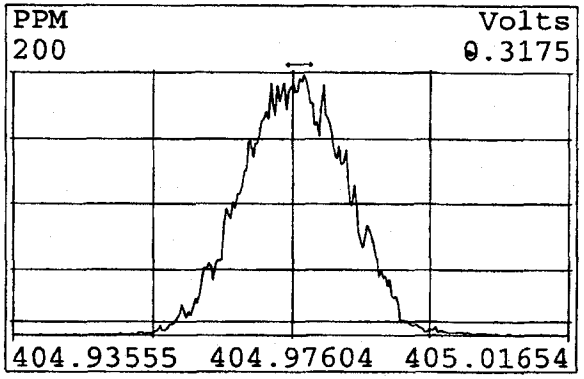


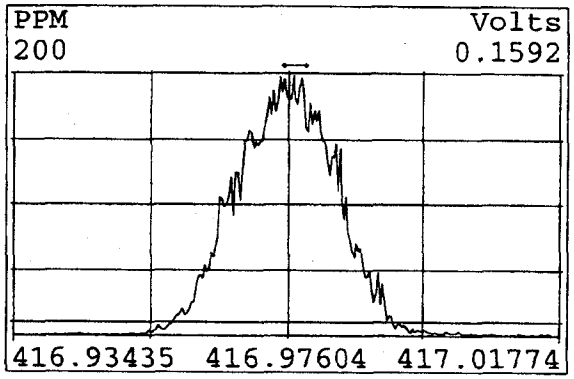


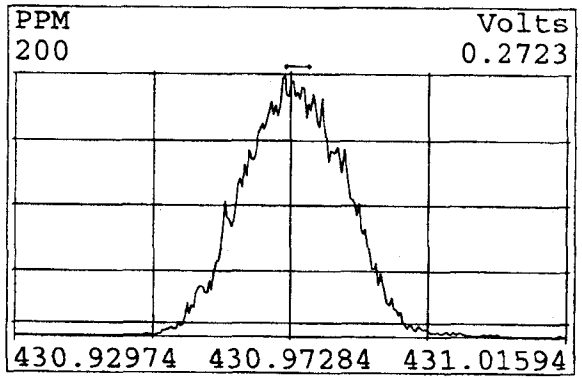


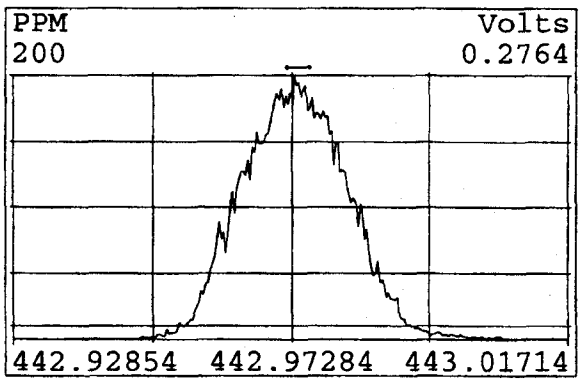


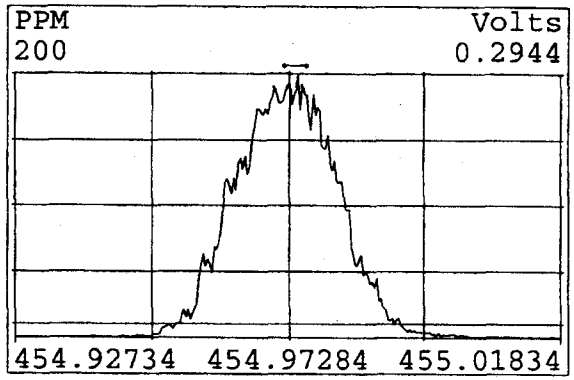
Peak Locate Examination:21-NOV-2009:14:24 File:A20NOV09A_2_RES_CHECK
Experiment:EXP_DB5MS Function:4 Reference:PFK

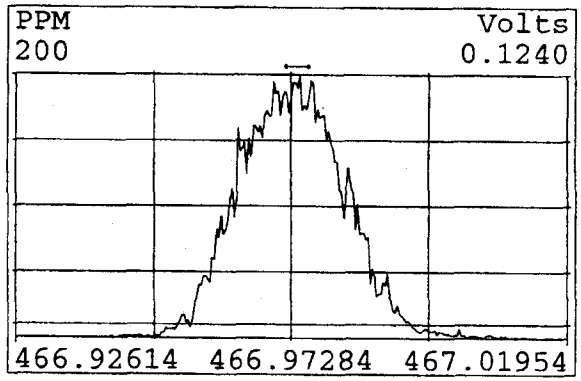


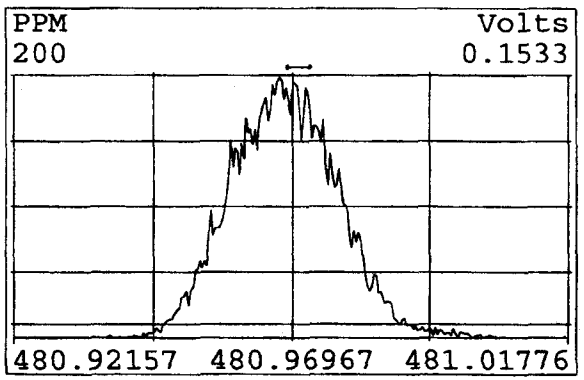




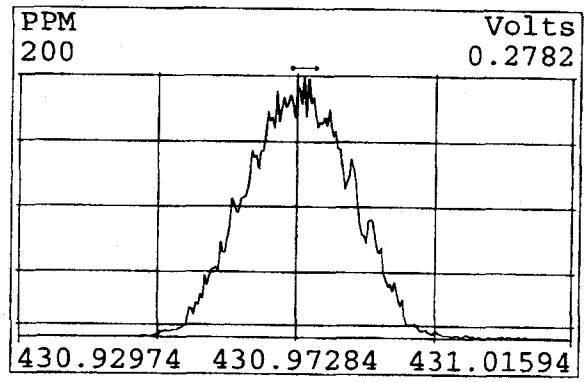


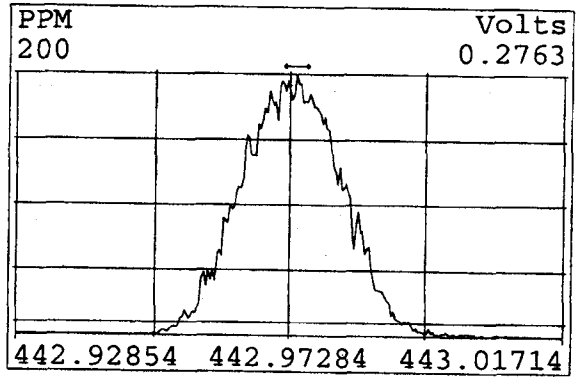


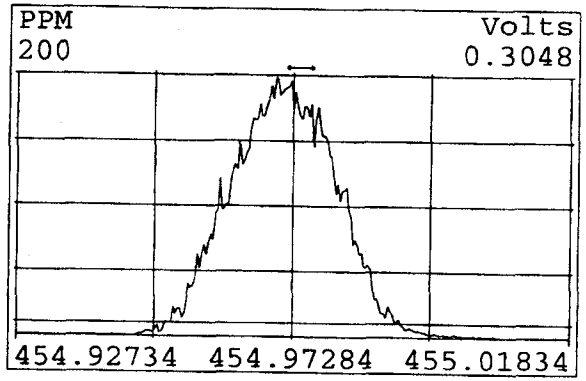


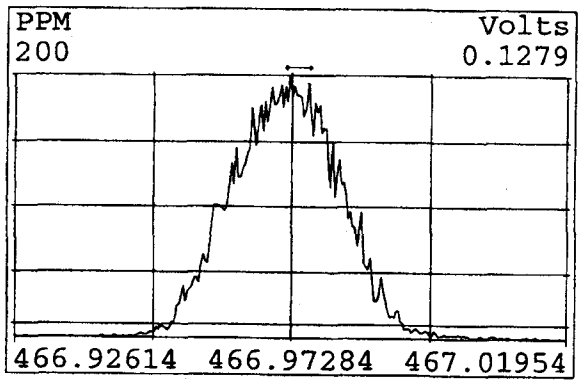


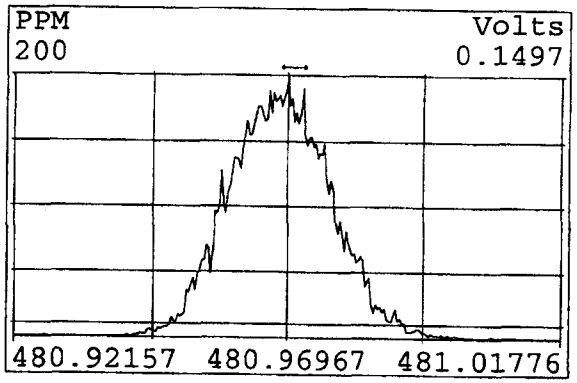
Peak Locate Examination:21-NOV-2009:14:25 File:A20NOV09A_2_RES_CHECK
Experiment:EXP_DB5MS Function:5 Reference:PFK

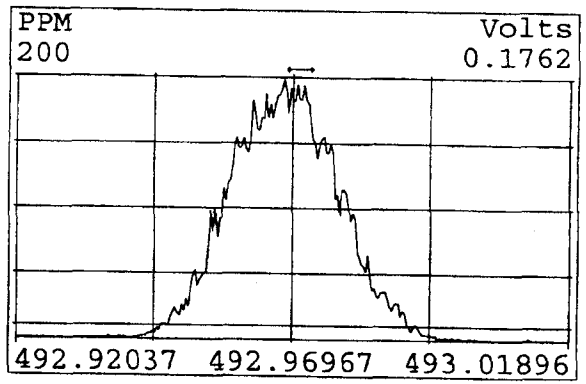


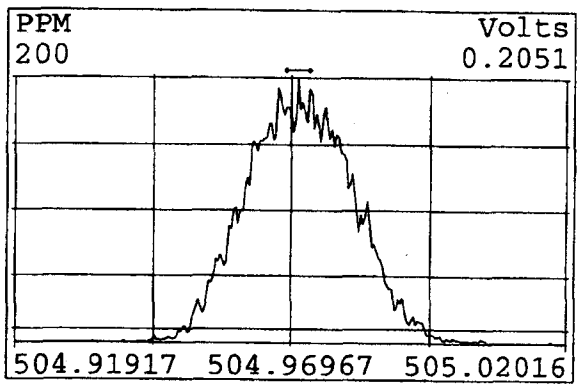


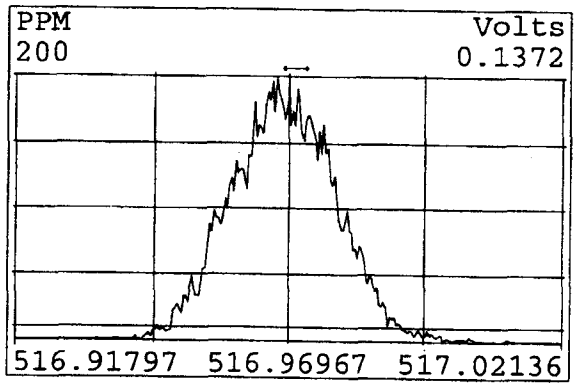












Filename ; a20nov09a
Sample ; 15
Acquired ; 21-NOV-09 02:11:08
Processed ; 21-NOV-09 13:09:22
Sample ID ; RETCON S33-78E

Name	First Eluter RT	Last Eluter RT
TCDD	28:19	31:59
PeCDD	32:55	34:32
HxCDD	35:38	37:13
HpCDD	39:22	40:20
OCDD	44:38	
TCDF	26:34	32:04
PeCDF	32:03	34:43
HxCDF	35:12	37:33
HpCDF	39:03	41:01
OCDF	44:58	

USEPA FORM 5DFA & 5DFB
WINDOW DEFINING MIX & CHROMATOGRAPHIC RESOLUTION SUMMARIES

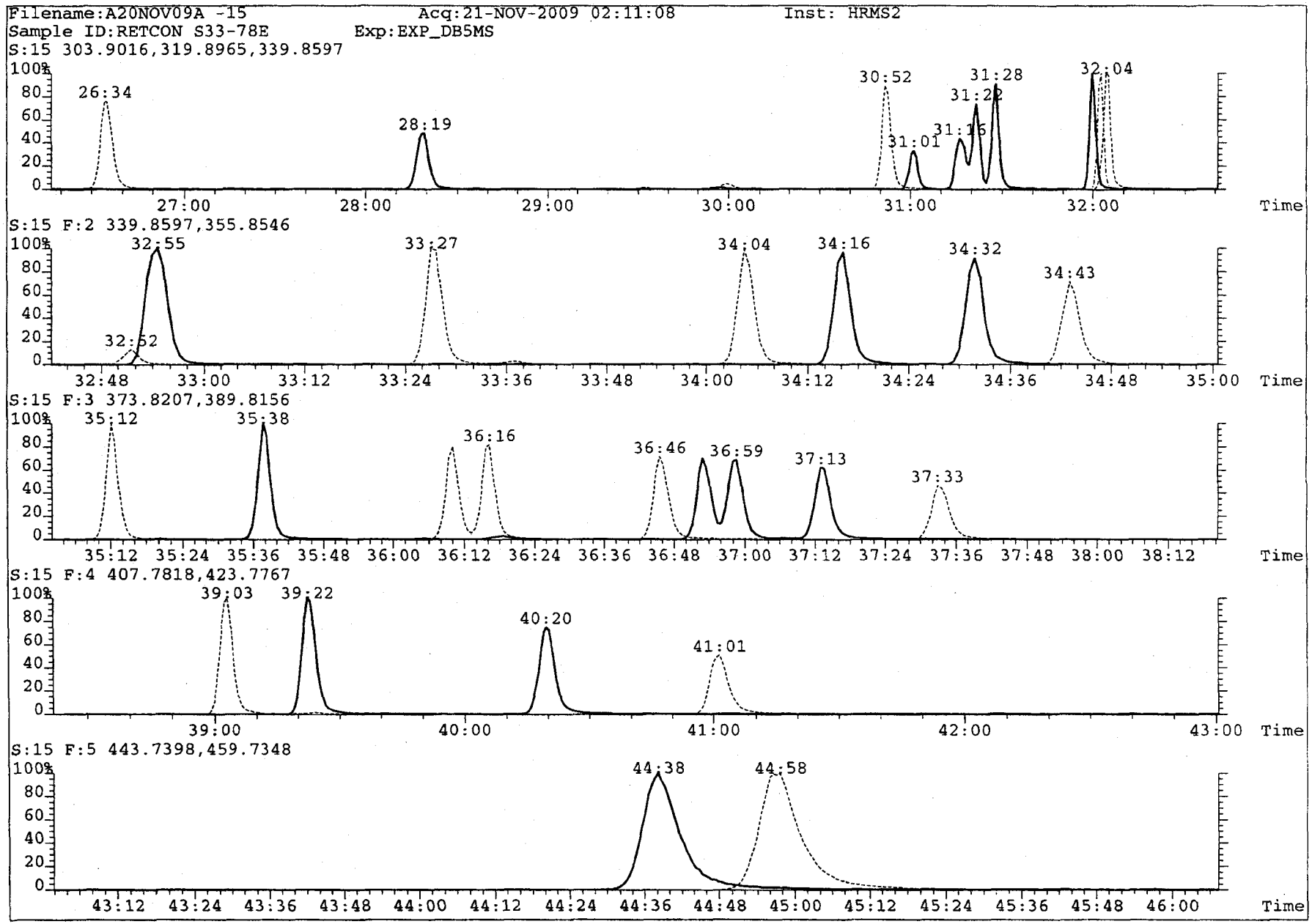
Lab Name ; Paradigm Analytical
Inst. ID ; HRMS2

Filename ; a20nov09a -15
Date Analyzed ; 21-NOV-09
Time Analyzed ; 02:11:08

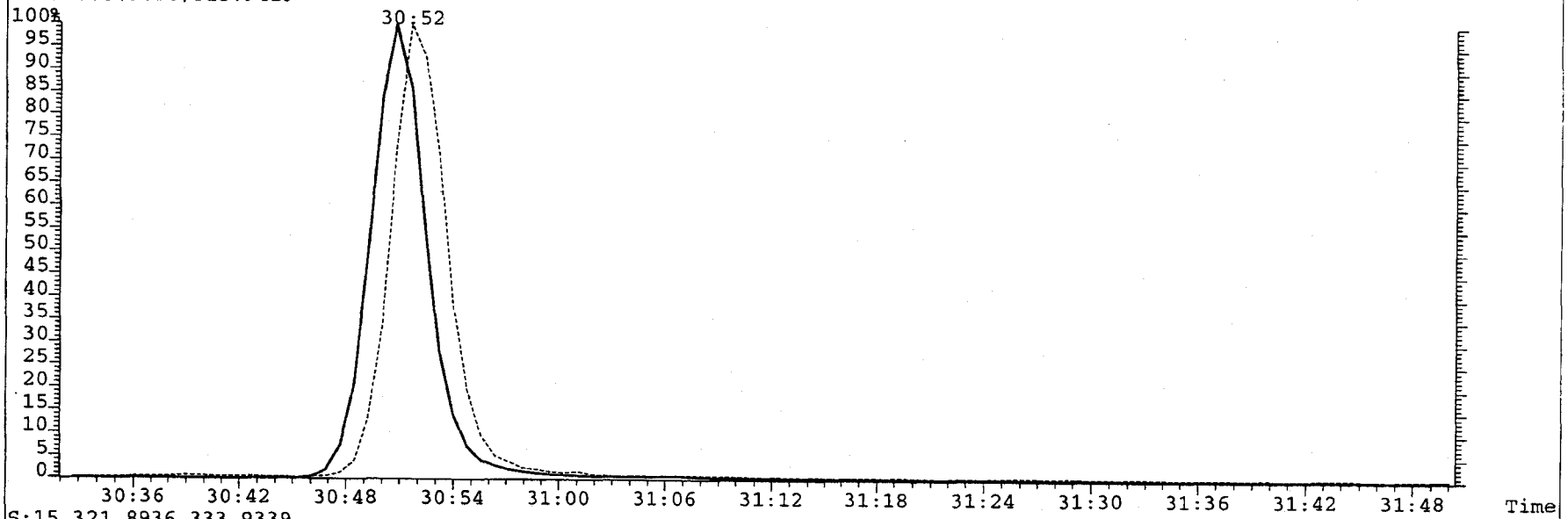
Name	First Eluter RT	Last Eluter RT
TCDD	28:19	31:59
PeCDD	32:55	34:32
HxCDD	35:38	37:13
HpCDD	39:22	40:20
OCDD	44:38	
TCDF	26:34	32:04
PeCDF	32:03	34:43
HxCDF	35:12	37:33
HpCDF	39:03	41:01
OCDF	44:58	

Percent Valley determination for DB-5ms column -
For the column performance solution beginning the 12-hour period

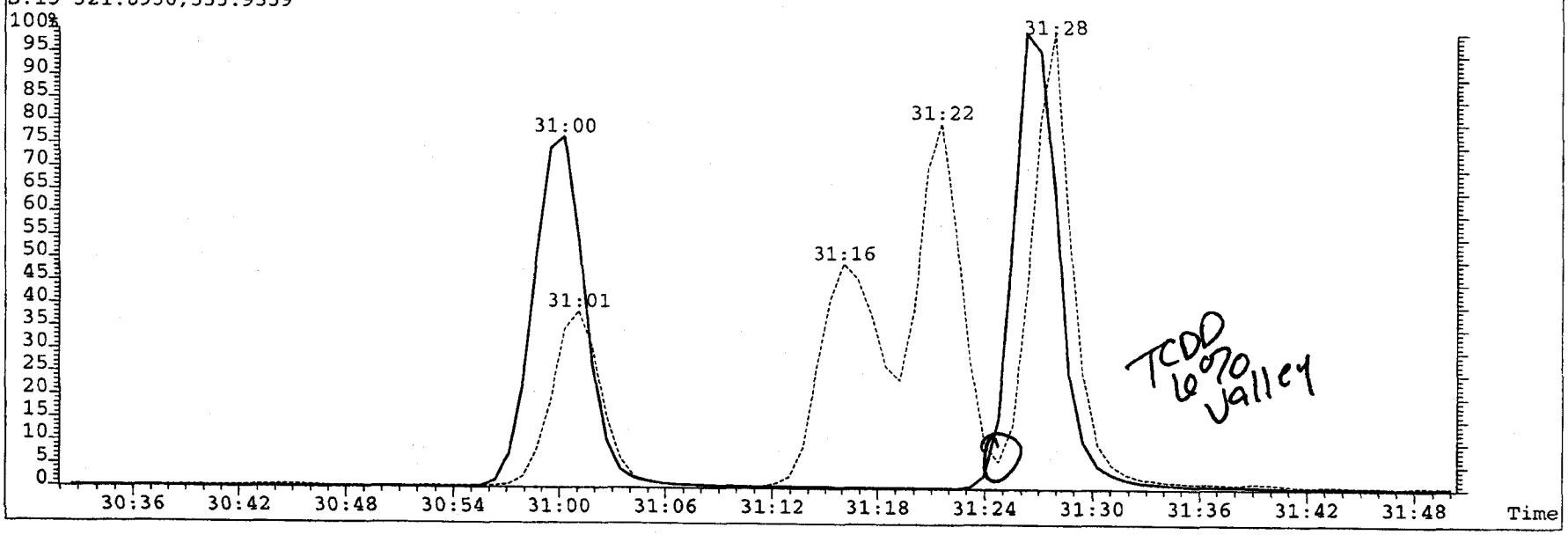
1239-TCDD / 2378-TCDD ; _____ 6%


Filename:A20NOV09A -15
Acq:21-NOV-2009 02:11:08
Inst: HRMS2
Sample ID:RETCON S33-78E
Exp:EXP_DB5MS
S:15 303.9016,319.8965,339.8597
26:34
28:19
30:52
31:01
31:15
31:22
31:28
32:04
S:15 F:2 339.8597,355.8546
32:52
32:55
33:27
34:04
34:16
34:32
34:43
S:15 F:3 373.8207,389.8156
35:12
35:38
36:16
36:46
36:59
37:13
37:33
S:15 F:4 407.7818,423.7767
39:03
39:22
40:20
41:01
S:15 F:5 443.7398,459.7348
44:38
44:58
Time

Filename:A20NOV09A -15 Acq:21-NOV-2009 02:11:08 Inst: HRMS2
Sample ID:RETCON S33-78E Exp:EXP_DB5MS
S:15 303.9016,315.9419



S:15 321.8936,333.9339



Filename ; a20nov09a_2
Sample ; 14
Acquired ; 21-NOV-09 13:32:02
Processed ; 22-NOV-09 08:55:16
Sample ID ; RETCON S33-78E

Name	First Eluter RT	Last Eluter RT
TCDD	28:19	31:59
PeCDD	32:55	34:32
HxCDD	35:38	37:13
HpCDD	39:23	40:20
OCDD	44:38	
TCDF	26:35	32:05
PeCDF	32:03	34:43
HxCDF	35:12	37:34
HpCDF	39:03	41:01
OCDF	44:57	

USEPA FORM 5DFA & 5DFB
WINDOW DEFINING MIX & CHROMATOGRAPHIC RESOLUTION SUMMARIES

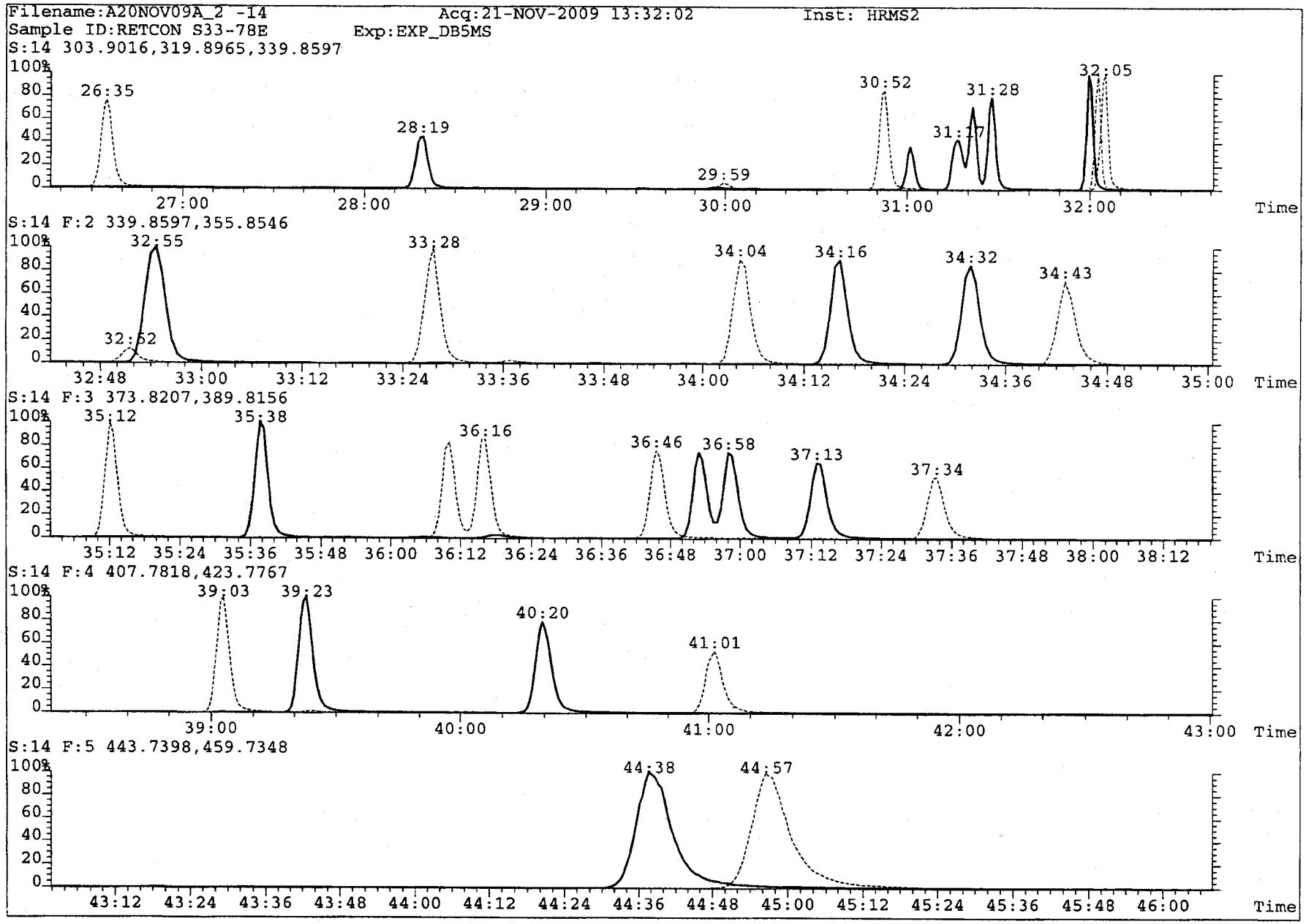
Lab Name ; Paradigm Analytical
Inst. ID ; HRMS2

Filename ; a20nov09a_2-14
Date Analyzed ; 21-NOV-09
Time Analyzed ; 13:32:02

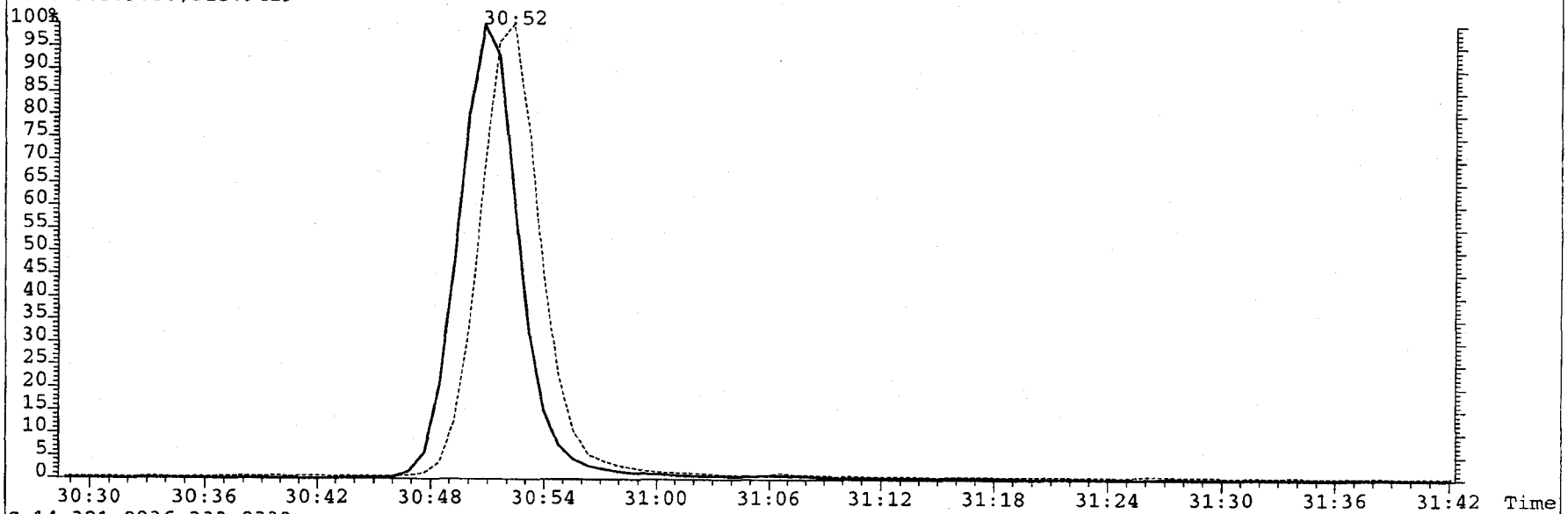
Name	First Eluter RT	Last Eluter RT
TCDD	28:19	31:59
PeCDD	32:55	34:32
HxCDD	35:38	37:13
HpCDD	39:23	40:20
OCDD	44:38	
TCDF	26:35	32:05
PeCDF	32:03	34:43
HxCDF	35:12	37:34
HpCDF	39:03	41:01
OCDF	44:57	

Percent Valley determination for DB-5ms column -
For the column performance solution beginning the 12-hour period

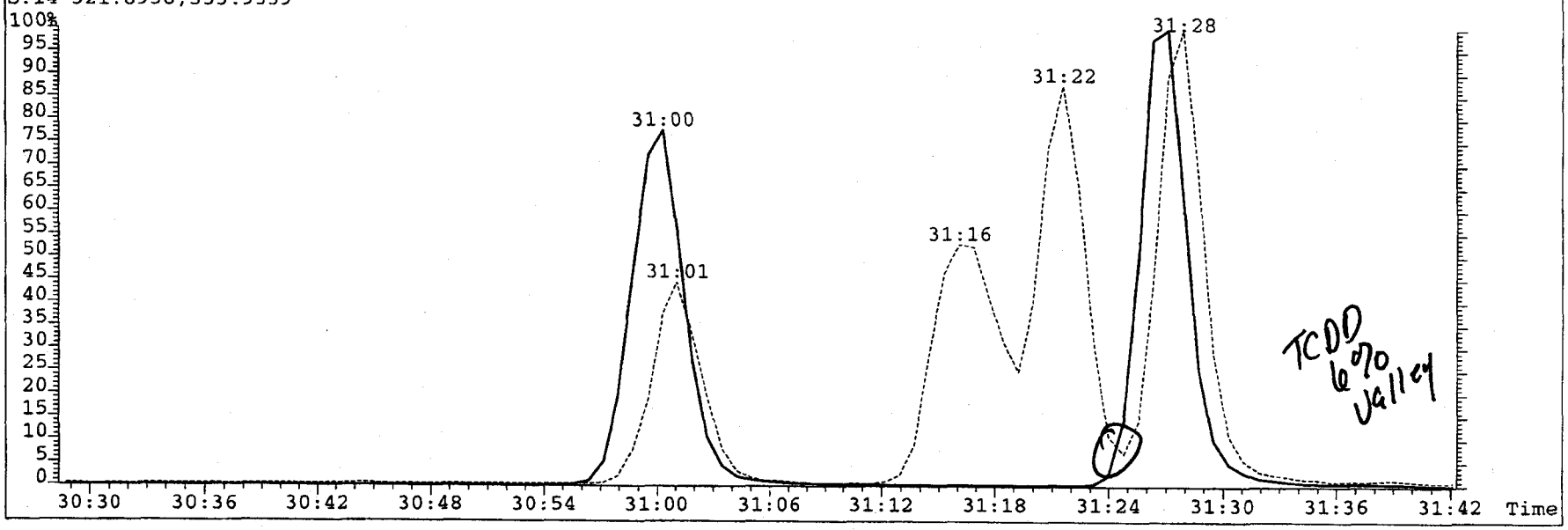
1239-TCDD / 2378-TCDD ; _____ 6%


Filename:A20NOV09A_2 -14
Acq:21-NOV-2009 13:32:02
Inst: HRMS2
Sample ID:RETCON S33-78E
Exp:EXP_DB5MS
S:14 303.9016,319.8965,339.8597
26:35
28:19
29:59
30:52
31:17
31:28
32:05
S:14 F:2 339.8597,355.8546
32:52
32:55
33:28
34:04
34:16
34:32
34:43
S:14 F:3 373.8207,389.8156
35:12
35:38
36:16
36:46
36:58
37:13
37:34
S:14 F:4 407.7818,423.7767
39:03
39:23
40:20
41:01
S:14 F:5 443.7398,459.7348
44:38
44:57
Time

Filename:A20NOV09A_2 -14 Acq:21-NOV-2009 13:32:02 Inst: HRMS2
Sample ID:RETCON S33-78E Exp:EXP_DB5MS
S:14 303.9016,315.9419



S:14 321.8936,333.9339



TCDD
6070
Valley

HRMS2 Sequence Log

SGS Environmental Services

Data File S	Sample ID	Analyst	Acq. Date	Time
a20nov09a_3;1	;OPR17452	;JWP	21-NOV-09	14:26:13
a20nov09a_3;2	;OPRD17452	;JWP	21-NOV-09	15:14:31
a20nov09a_3;3	;LMB17452	;JWP	21-NOV-09	16:02:50
a20nov09a_3;4	;G1047-28-1B	;JWP	21-NOV-09	16:51:09
a20nov09a_3;5	;G383-781-1C	;JWP	21-NOV-09	17:39:28
a20nov09a_3;6	;G383-781-2C	;JWP	21-NOV-09	18:27:47
a20nov09a_3;7	;G383-781-3C	;JWP	21-NOV-09	19:16:04
a20nov09a_3;8	;G383-781-4C	;JWP	21-NOV-09	20:04:24
a20nov09a_3;9	;G383-781-5C	;JWP	21-NOV-09	20:52:42
a20nov09a_3;10	;G383-781-6C	;JWP	21-NOV-09	21:41:00
a20nov09a_3;11	;G383-781-7C	;JWP	21-NOV-09	22:29:19
a20nov09a_3;12	;G383-781-8C	;JWP	21-NOV-09	23:17:38
a20nov09a_3;13	;G895-36-1B	;JWP	22-NOV-09	00:05:57
a20nov09a_3;14	;RETCON S33-78E pass	;JWP	22-NOV-09	00:54:13

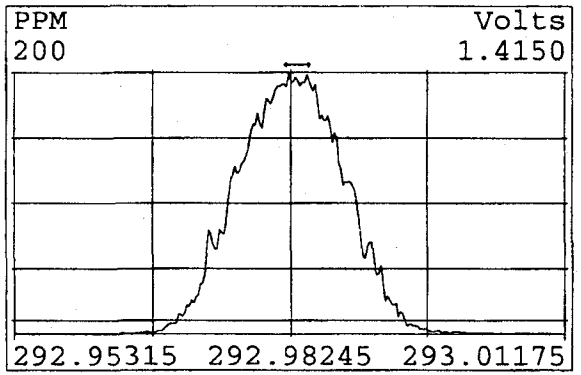
DS
11-22-09

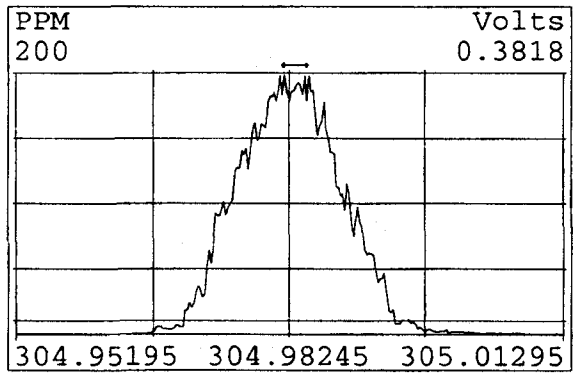
8290 CCAL

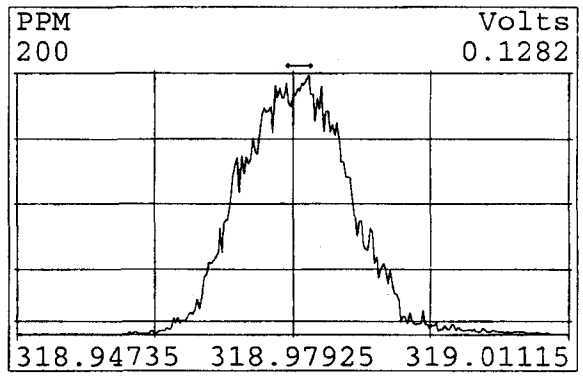
Sample text; RETCON S33-78E
Filename; a20nov09a_3 -14
ICAL; m8290-092309a
Acquired; 22-NOV-09 00:54:13 Processed; 22 NOV 09 09:00:44
Results;

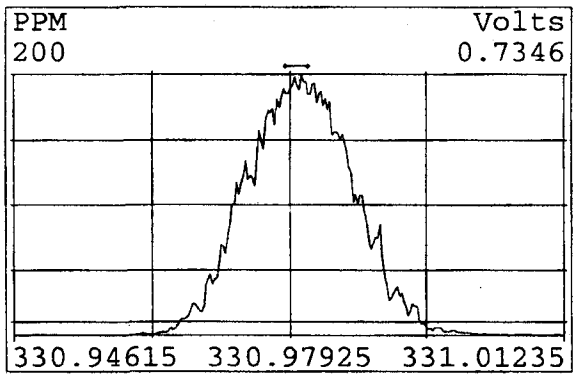
Name;	Resp;	Ion 1;	Ion 2	; RA ;? ;	RT ;	Conc ;	Dev'n;	CCAL RRF;	ICAL RRF	;Mod
2,3,7,8-TCDD;	2.1e+07;	9.23e+06;	1.18e+07	; 0.78 ;y ;	31:28 ;	10.06 ;	0.6;	1.0349;	1.0293	;n
1,2,3,7,8-PeCDD;	8.3e+07;	5.06e+07;	3.20e+07	; 1.58 ;y ;	34:16 ;	50.04 ;	0.1;	1.0547;	1.0539	;n
1,2,3,4,7,8-HxCDD;	7.3e+07;	4.04e+07;	3.22e+07	; 1.26 ;y ;	36:53 ;	47.80 ;	4.4;	0.9252;	0.9679	;n
1,2,3,6,7,8-HxCDD;	7.5e+07;	4.15e+07;	3.31e+07	; 1.25 ;y ;	36:59 ;	48.04 ;	-3.9;	0.9499;	0.9886	;n
1,2,3,7,8,9-HxCDD;	7.2e+07;	3.98e+07;	3.20e+07	; 1.25 ;y ;	37:14 ;	47.95 ;	4.1;	0.9150;	0.9540	;n
1,2,3,4,6,7,8-HpCDD;	5.6e+07;	2.85e+07;	2.72e+07	; 1.05 ;y ;	40:20 ;	48.15 ;	-3.7;	1.0565;	1.0970	;n
OCDD;	8.9e+07;	4.22e+07;	4.72e+07	; 0.89 ;y ;	44:40 ;	94.67 ;	-5.3;	1.0641;	1.1240	;n
2,3,7,8-TCDF;	2.8e-07;	1.24e+07;	1.58e+07	; 0.78 ;y ;	30:52 ;	9.595 ;	-4.1;	1.0001;	1.0424	;n
1,2,3,7,8-PeCDF;	1.3e+08;	7.88e+07;	5.02e+07	; 1.57 ;y ;	33:28 ;	49.71 ;	0.6;	0.9939;	0.9997	;n
2,3,4,7,8-PeCDF;	1.3e-08;	7.84e+07;	5.02e+07	; 1.56 ;y ;	34:05 ;	47.70 ;	-4.6;	0.9908;	1.0386	;n
1,2,3,4,7,8-HxCDF;	1.0e+08;	5.79e+07;	4.66e+07	; 1.24 ;y ;	36:10 ;	47.31 ;	-5.4;	1.0263;	1.0846	;n
1,2,3,6,7,8-HxCDF;	1.1e-08;	6.33e+07;	5.07e+07	; 1.25 ;y ;	36:16 ;	48.67 ;	-2.7;	1.1195;	1.1500	;n
2,3,4,6,7,8-HxCDF;	1.1e-08;	5.90e+07;	4.75e+07	; 1.24 ;y ;	36:46 ;	47.45 ;	5.1;	1.0459;	1.1020	;n
1,2,3,7,8,9-HxCDF;	8.5e-07;	4.76e+07;	3.79e+07	; 1.26 ;y ;	37:34 ;	44.80 ;	-10.4;	0.8395;	0.9369	;n
1,2,3,4,6,7,8-HpCDF;	9.1e+07;	4.63e+07;	4.49e+07	; 1.03 ;y ;	39:03 ;	47.73 ;	-4.5;	1.3187;	1.3813	;n
1,2,3,4,7,8,9-HpCDF;	5.6e+07;	3.37e+07;	3.27e+07	; 1.03 ;y ;	41:02 ;	44.95 ;	10.1;	0.9595;	1.0673	;n
OCDF;	1.0e+08;	4.95e+07;	5.49e+07	; 0.90 ;y ;	44:59 ;	88.97 ;	-11.0;	1.2435;	1.3977	;n
Extraction Standards										
13C-2,3,7,8-TCDD;	2.0e+08;	8.92e+07;	1.14e+08	; 0.78 ;y ;	31:27 ;	102.3 ;	2.3;	1.1445;	1.1184	;n
13C-1,2,3,7,8-PeCDD;	1.6e+08;	9.58e+07;	6.08e+07	; 1.57 ;y ;	34:16 ;	108.7 ;	8.7;	0.8819;	0.8116	;n
13C-1,2,3,6,7,8-HxCDD;	1.6e+08;	8.61e+07;	7.08e+07	; 1.22 ;y ;	36:58 ;	101.6 ;	1.6;	1.0913;	1.0736	;n
13C-1,2,3,4,6,7,8-HpCDD;	1.1e+08;	5.41e+07;	5.13e+07	; 1.05 ;y ;	40:19 ;	99.61 ;	-0.4;	0.7331;	0.7360	;n
13C-OCDD;	1.7e+08;	7.95e+07;	8.84e+07	; 0.90 ;y ;	44:39 ;	200.2 ;	0.1;	0.5840;	0.5833	;n
13C-2,3,7,8-TCDF;	2.8e+08;	1.24e+08;	1.58e+08	; 0.78 ;y ;	30:51 ;	92.40 ;	-7.6;	1.5833;	1.7135	;n
13C-1,2,3,7,8-PeCDF;	2.6e+08;	1.59e+08;	1.01e+08	; 1.58 ;y ;	33:27 ;	106.5 ;	6.5;	1.4625;	1.3731	;n
13C-1,2,3,6,7,8-HxCDF;	2.0e+08;	7.02e+07;	1.33e+08	; 0.53 ;y ;	36:15 ;	98.51 ;	-1.5;	1.4165;	1.4379	;n
13C-1,2,3,4,6,7,8-HpCDF;	1.4e+08;	4.31e+07;	9.52e+07	; 0.45 ;y ;	39:02 ;	94.55 ;	5.4;	0.9619;	1.0173	;n
Injection Standards										
13C-1,2,3,4-TCDD;	1.8e+08;	7.75e+07;	1.00e+08	; 0.77 ;y ;	31:00 ;	385.0 ;	-;	-;	-	;n
13C-1,2,3,7,8,9-HxCDD;	1.4e+08;	7.98e+07;	6.39e+07	; 1.25 ;y ;	37:13 ;	398.4 ;	-;	-;	-	;n
Cleanup Standards										
37Cl-2,3,7,8-TCDD;	2.1e+07;	2.10e+07;	-	; - ;- ;	31:28 ;	10.15 ;	1.5;	1.1837;	1.1662	;n
13C-2,3,4,7,8-PeCDF;	2.5e+08;	1.56e+08;	9.88e+07	; 1.57 ;y ;	34:04 ;	107.2 ;	7.2;	1.4331;	1.3373	;n
13C-1,2,3,4,7,8-HxCDD;	1.4e+08;	7.74e+07;	5.85e+07	; 1.32 ;y ;	36:53 ;	96.30 ;	-3.7;	0.9459;	0.9822	;n
13C-1,2,3,4,7,8-HxCDF;	1.8e+08;	6.16e+07;	1.19e+08	; 0.52 ;y ;	36:09 ;	96.64 ;	-3.4;	1.2544;	1.2981	;n
13C-1,2,3,4,7,8,9-HpCDF;	1.0e+08;	3.11e+07;	6.87e+07	; 0.45 ;y ;	41:01 ;	88.75 ;	-11.3;	0.6941;	0.7821	;n
Sampling Standards										
37Cl-2,3,7,8-TCDD;	2.1e+07;	2.10e+07;	-	; - ; ;	31:28 ;	9.922 ;	-0.8;	1.0343;	1.0425	;n
13C-2,3,4,7,8-PeCDF;	2.5e+08;	1.56e+08;	9.88e+07	; 1.57 ;y ;	34:04 ;	100.6 ;	0.6;	0.9798;	0.9744	;n
13C-1,2,3,4,7,8-HxCDD;	1.4e+08;	7.74e+07;	5.85e+07	; 1.32 ;y ;	36:53 ;	94.71 ;	-5.3;	0.8668;	0.9152	;n
13C-1,2,3,4,7,8-HxCDF;	1.8e+08;	6.16e+07;	1.19e+08	; 0.52 ;y ;	36:09 ;	98.10 ;	-1.9;	0.8856;	0.9028	;n
13C-1,2,3,4,7,8,9-HpCDF;	1.0e+08;	3.11e+07;	6.87e+07	; 0.45 ;y ;	41:01 ;	93.85 ;	-6.1;	0.7216;	0.7688	;n

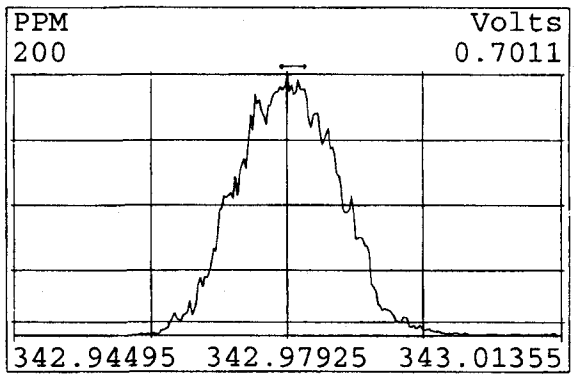
Peak Locate Examination:21-NOV-2009:14:21 File:A20NOV09A_2_RES_CHECK
Experiment:EXP_DB5MS Function:1 Reference:PFK

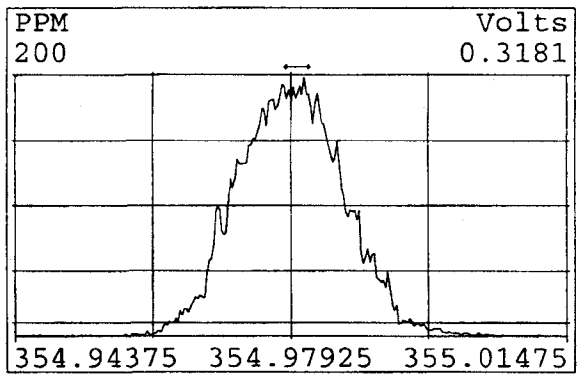


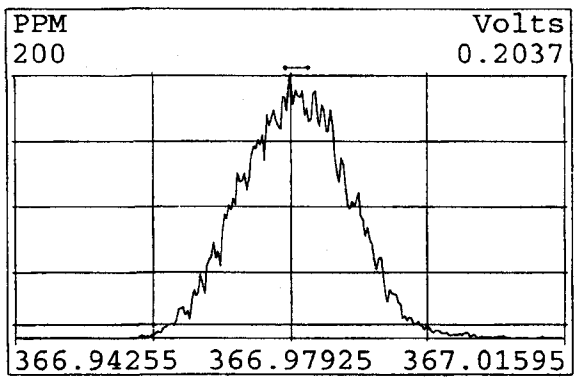


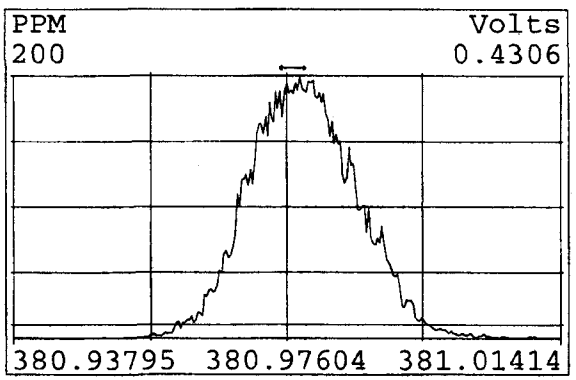




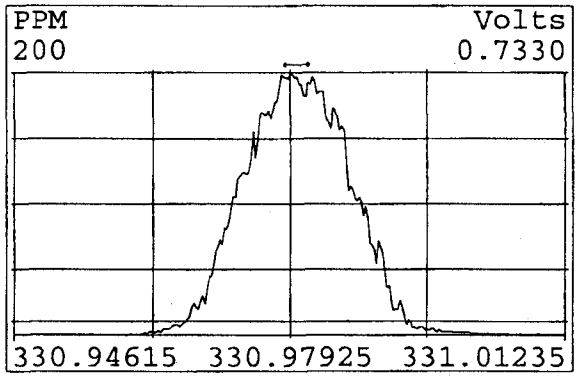


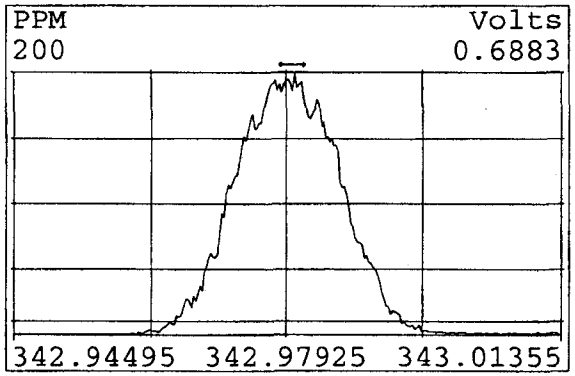


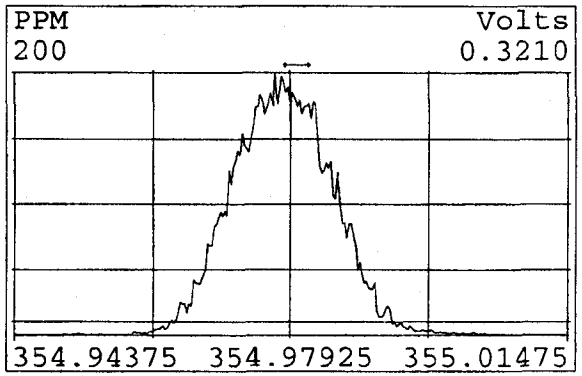


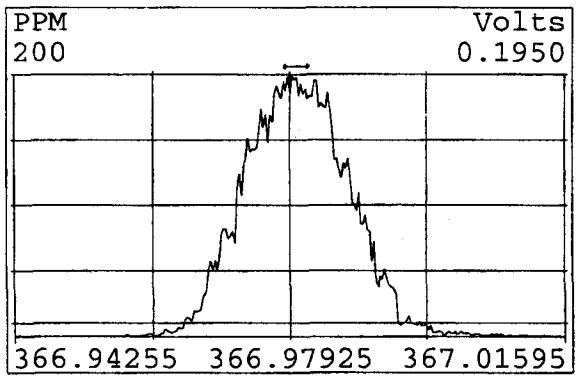


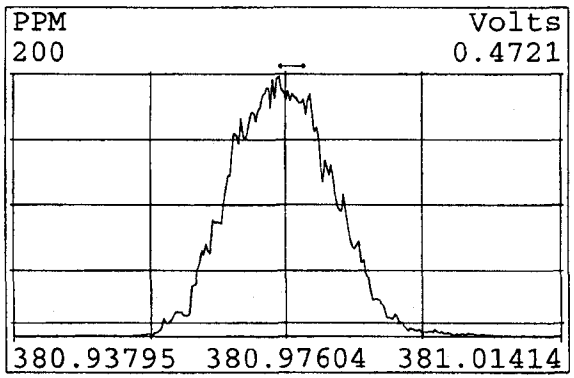
Peak Locate Examination:21-NOV-2009:14:22 File:A20NOV09A_2_RES_CHECK
Experiment:EXP_DB5MS Function:2 Reference:PFK

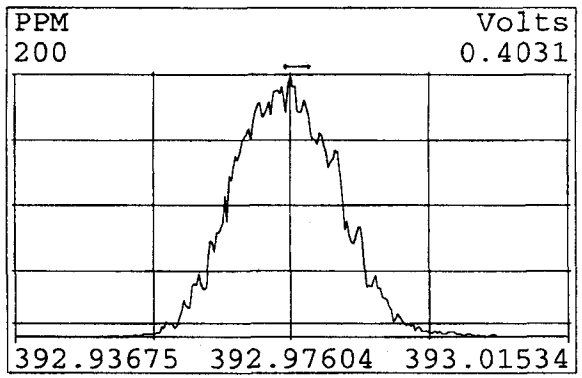


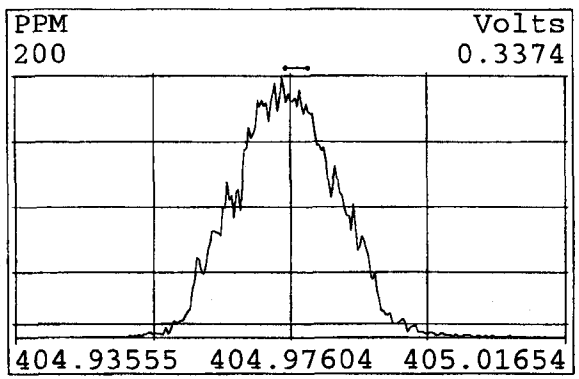


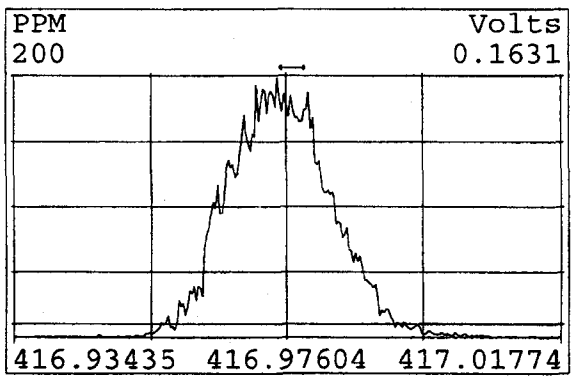




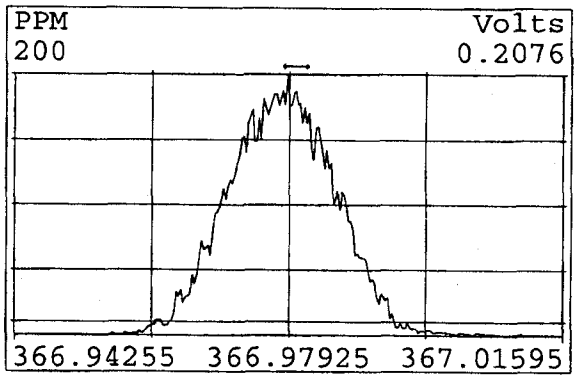


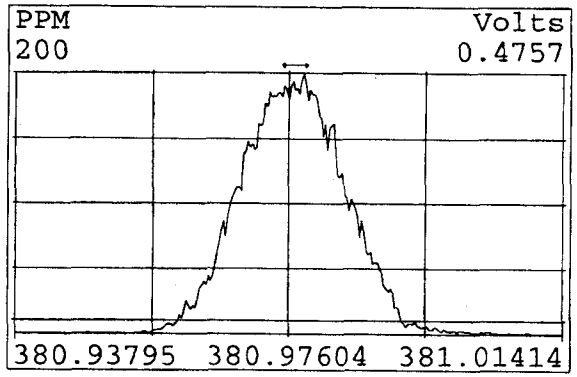


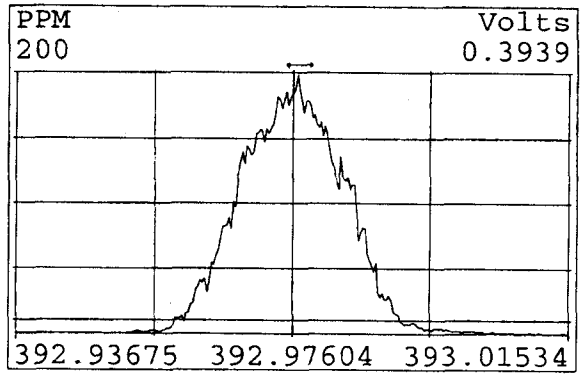


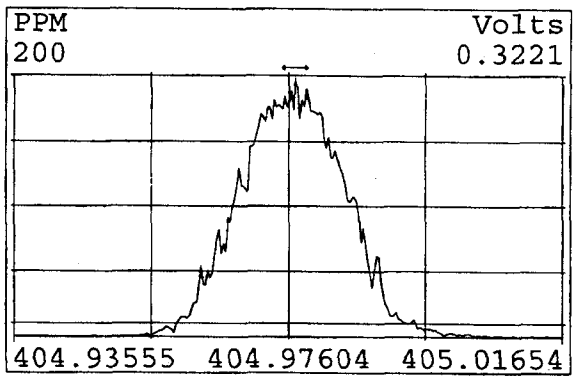


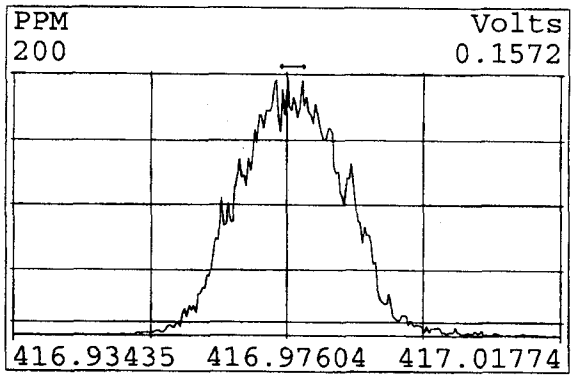
Peak Locate Examination:21-NOV-2009:14:23 File:A20NOV09A_2_RES_CHECK
Experiment:EXP_DB5MS Function:3 Reference:PFK

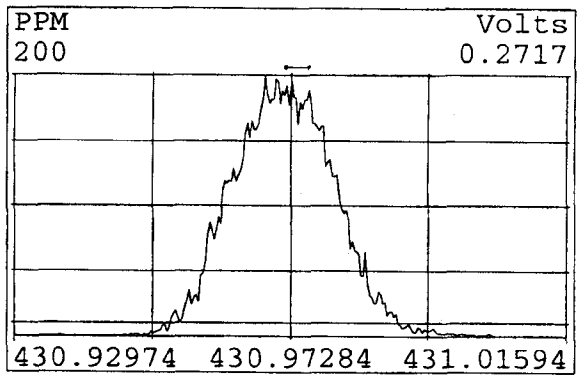


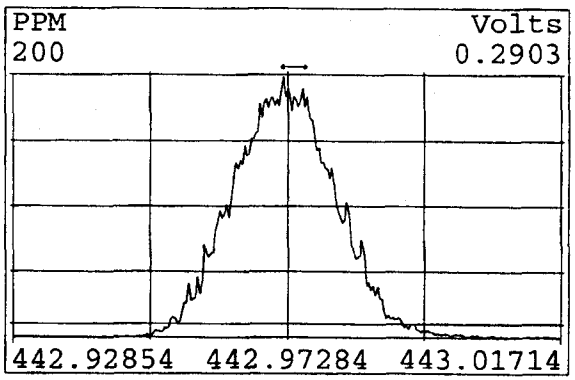


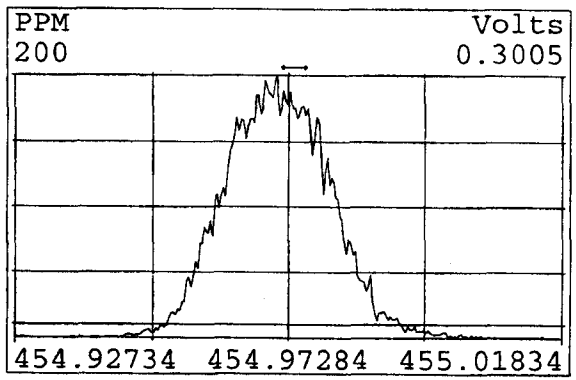




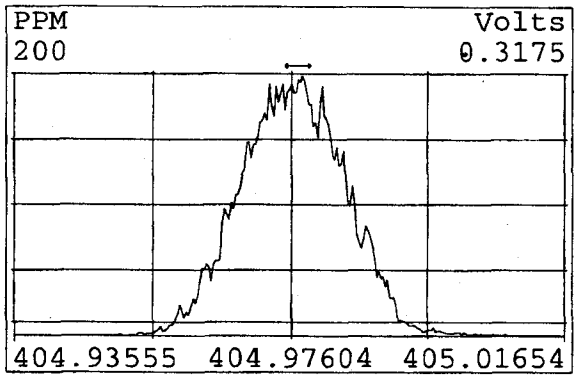


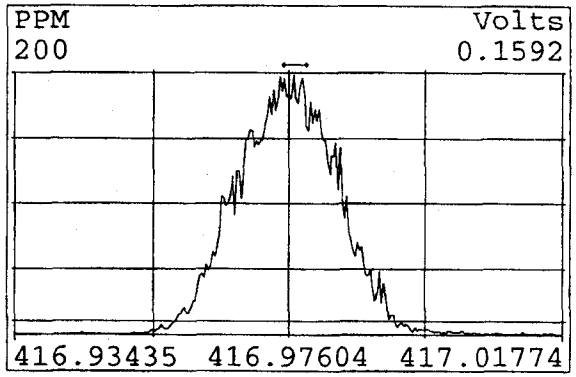


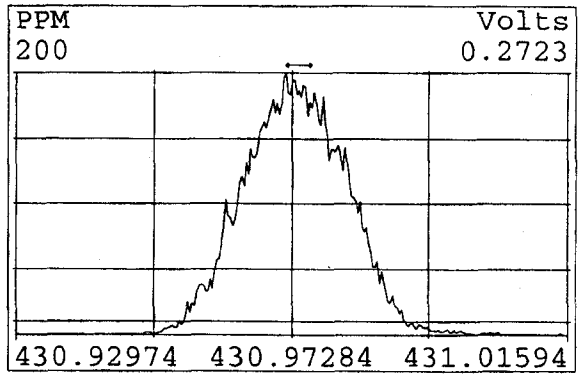


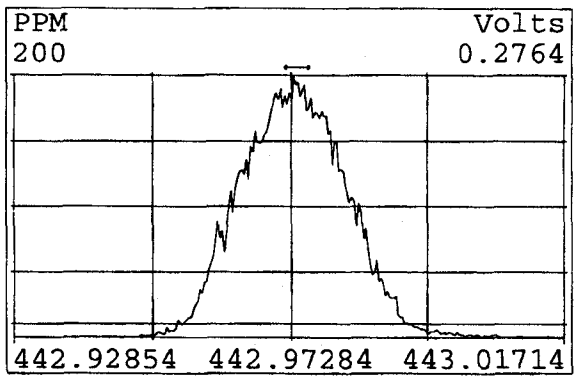


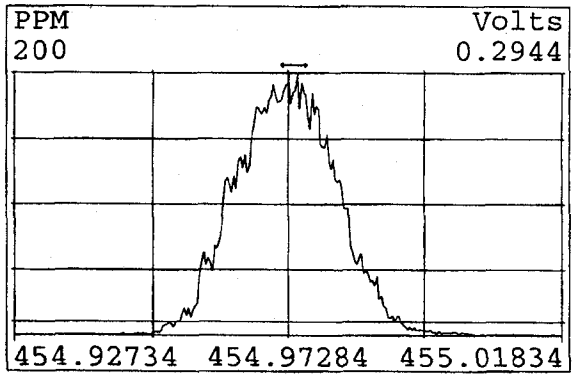
Peak Locate Examination:21-NOV-2009:14:24 File:A20NOV09A_2_RES_CHECK
Experiment:EXP_DB5MS Function:4 Reference:PFK

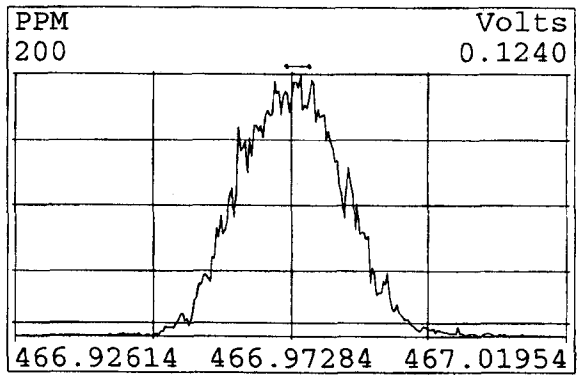


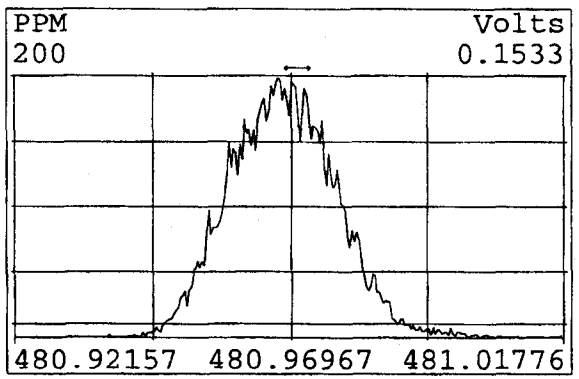




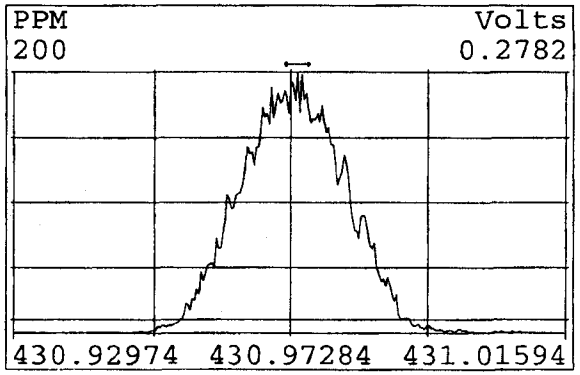


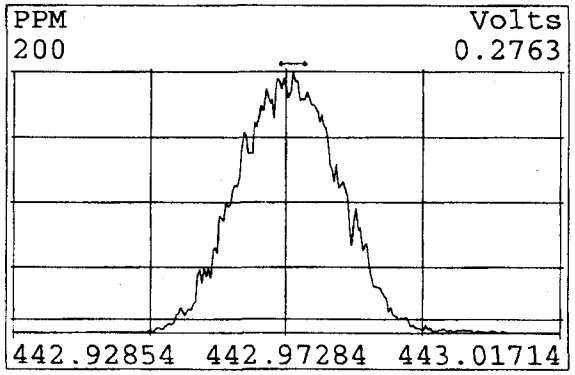


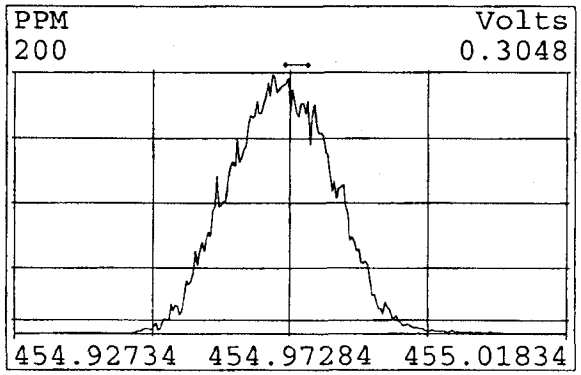


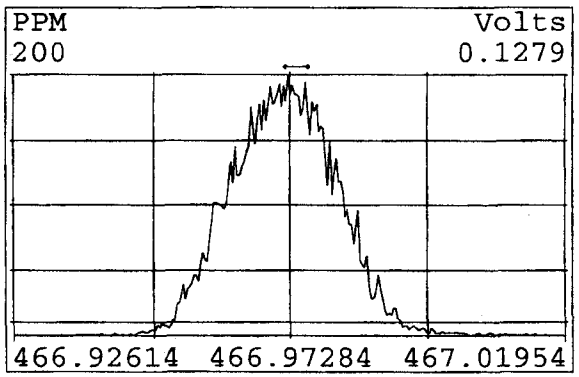


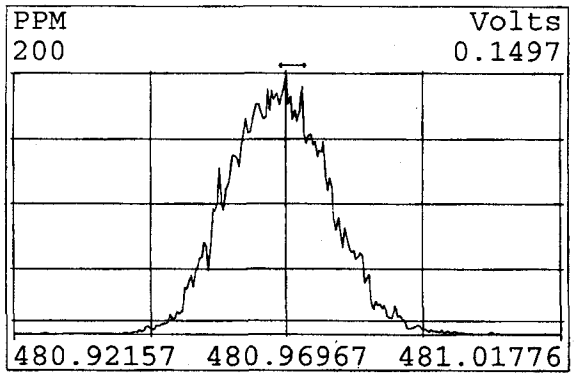
Peak Locate Examination:21-NOV-2009:14:25 File:A20NOV09A_2_RES_CHECK
Experiment:EXP_DB5MS Function:5 Reference:PFK

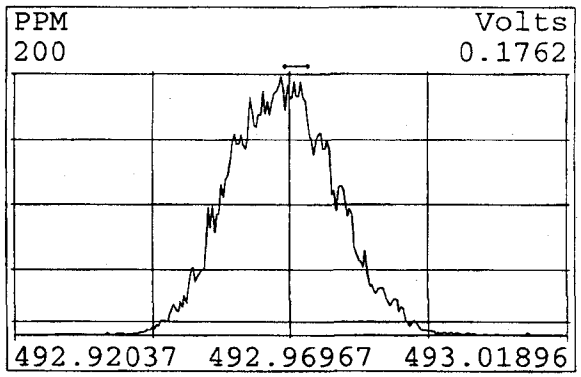


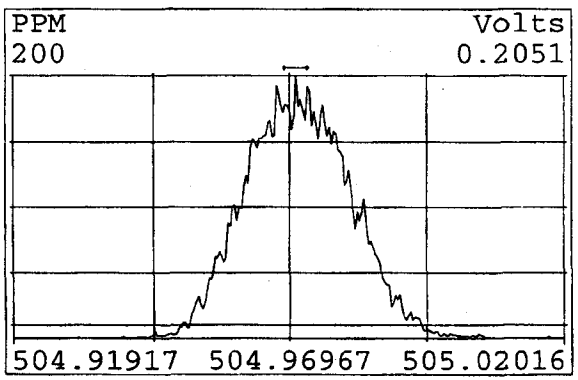


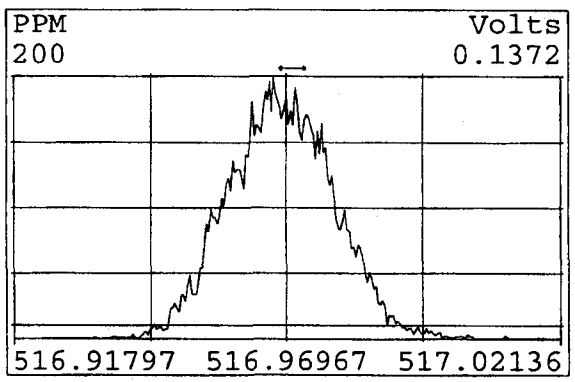




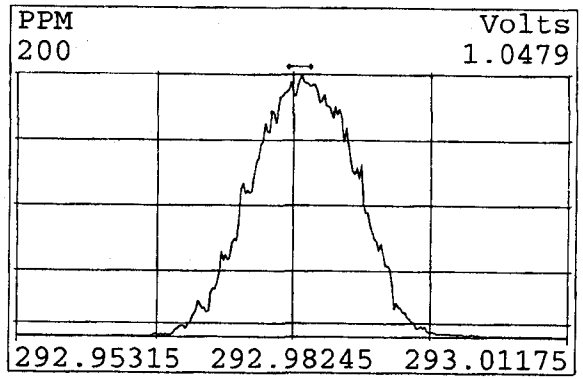


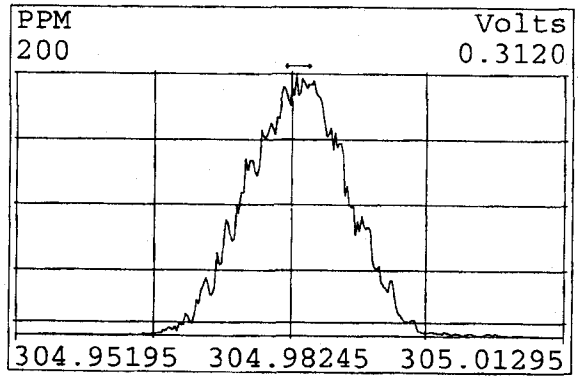


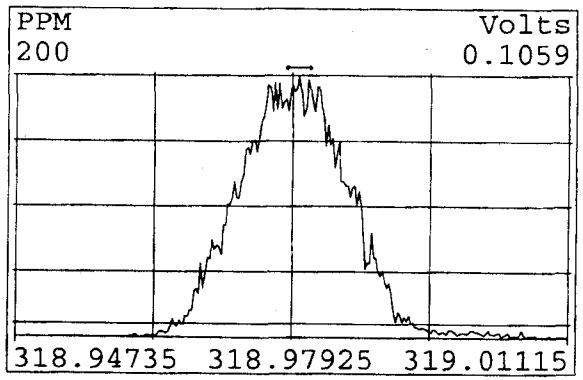


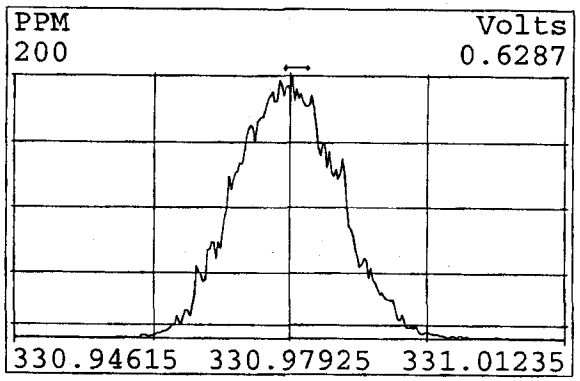


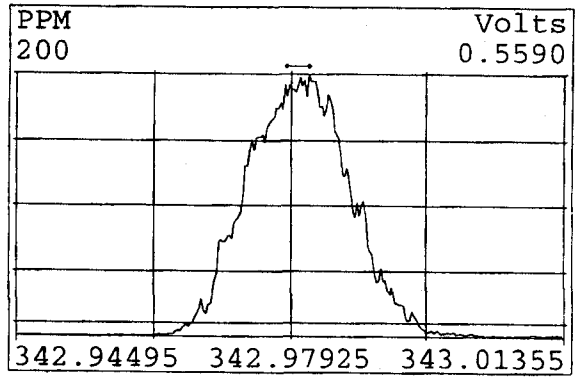
Peak Locate Examination:22-NOV-2009:01:43 File:A20NOV09A_3_RES_CHECK
Experiment:EXP_DB5MS Function:1 Reference:PFK

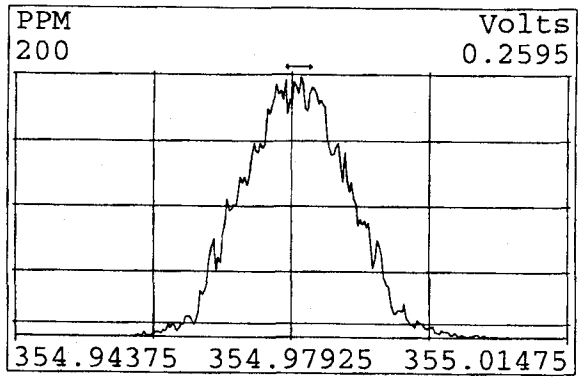


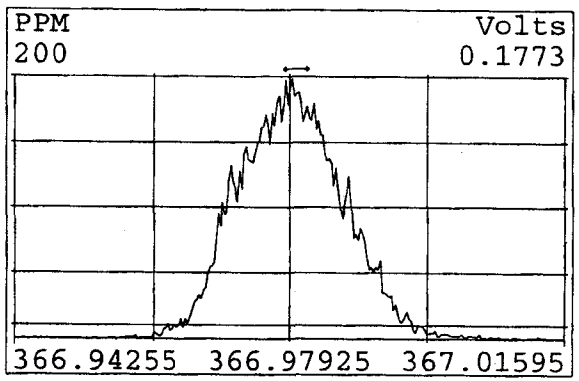


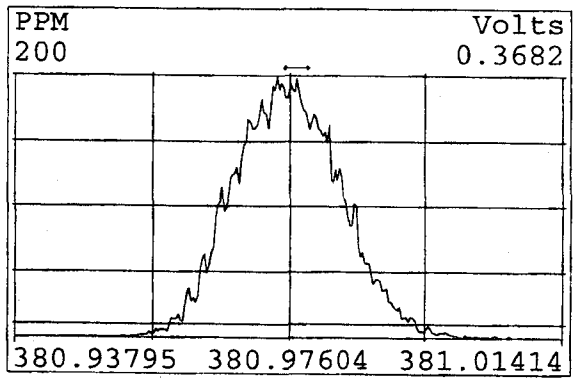




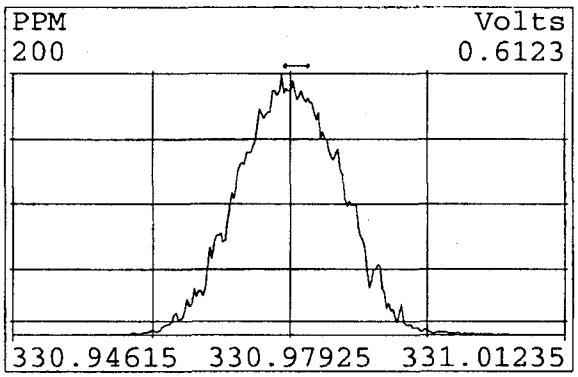


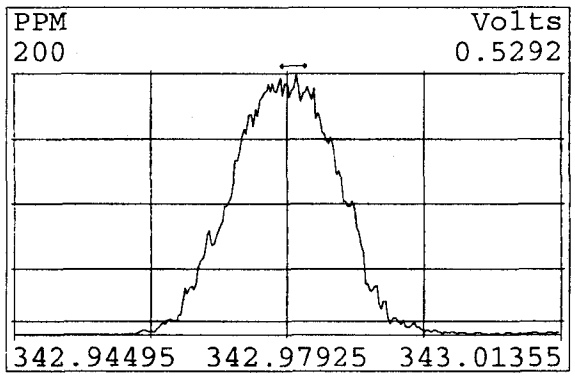


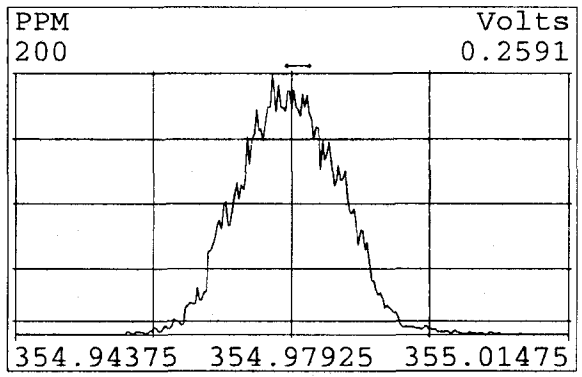


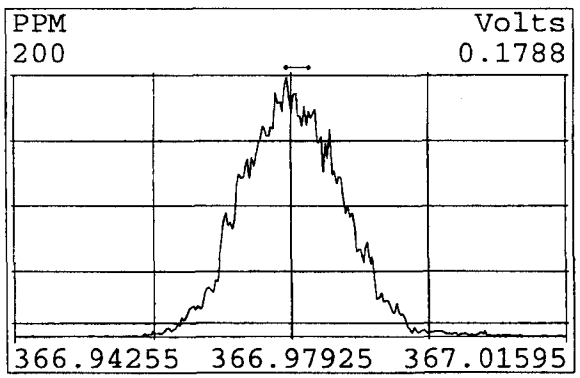


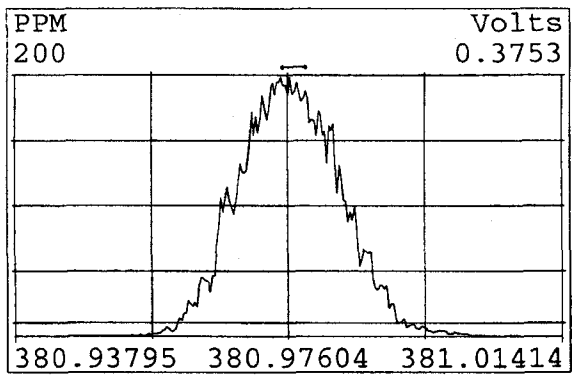
Peak Locate Examination:22-NOV-2009:01:44 File:A20NOV09A_3_RES_CHECK
Experiment:EXP_DB5MS Function:2 Reference:PFK

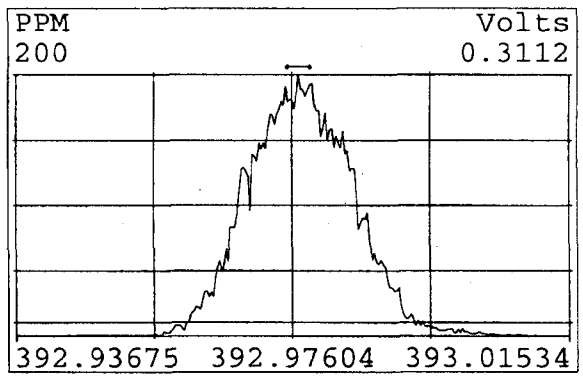


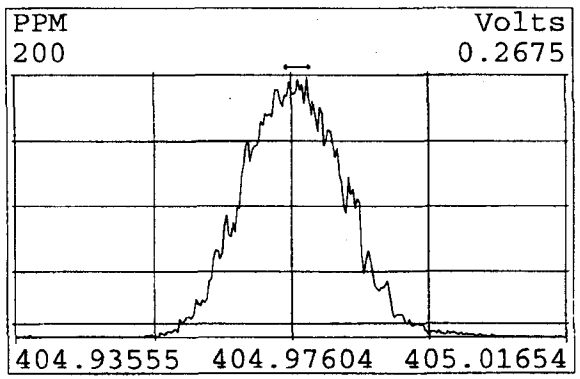


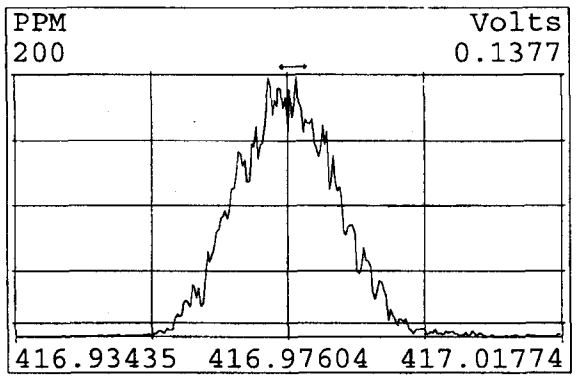




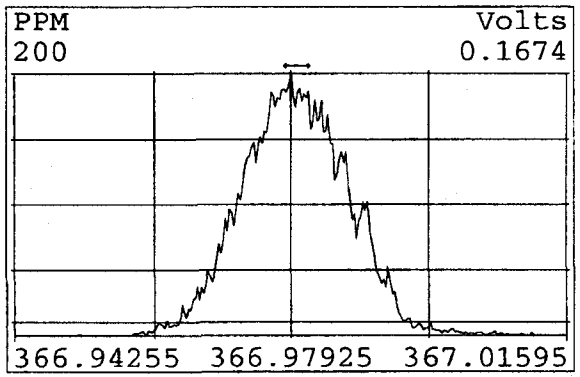


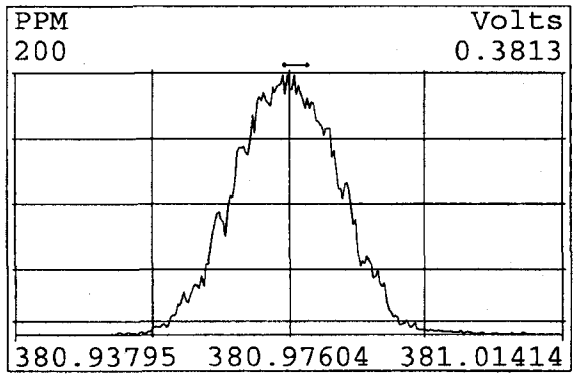


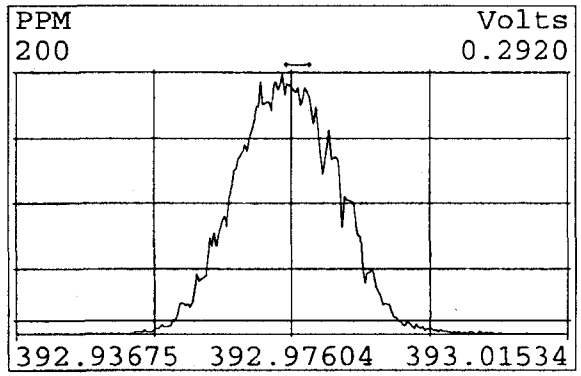


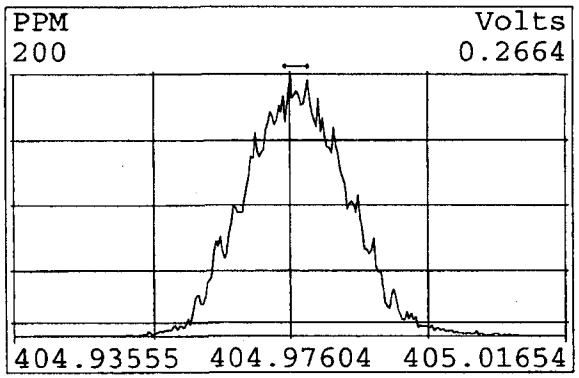


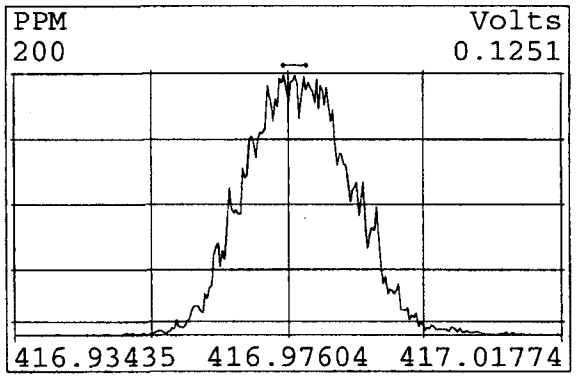
Peak Locate Examination:22-NOV-2009:01:45 File:A20NOV09A_3_RES_CHECK
Experiment:EXP_DB5MS Function:3 Reference:PFK

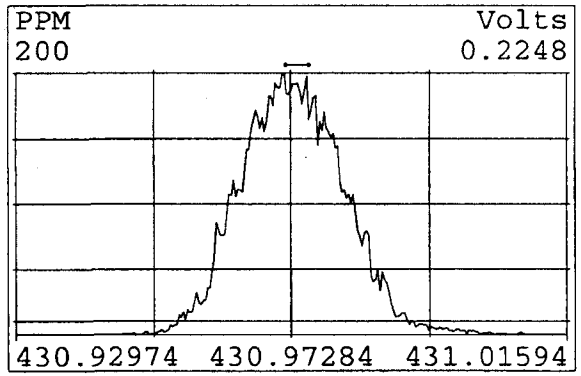


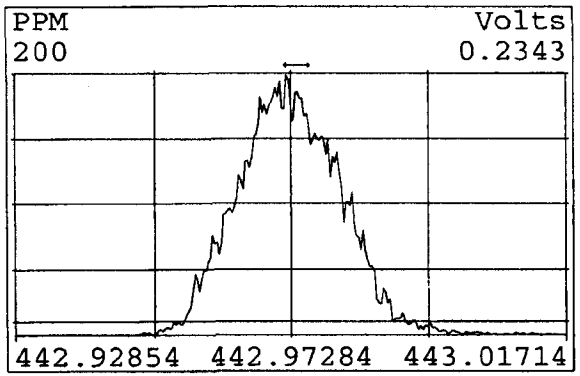


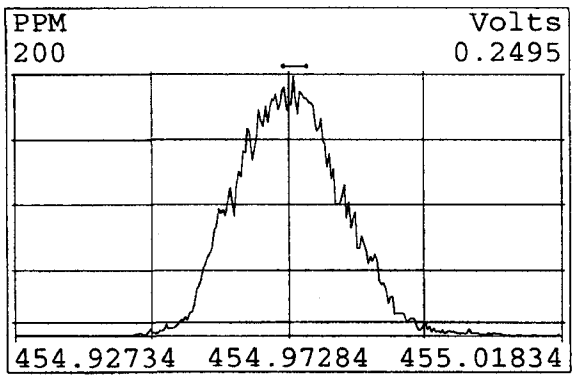




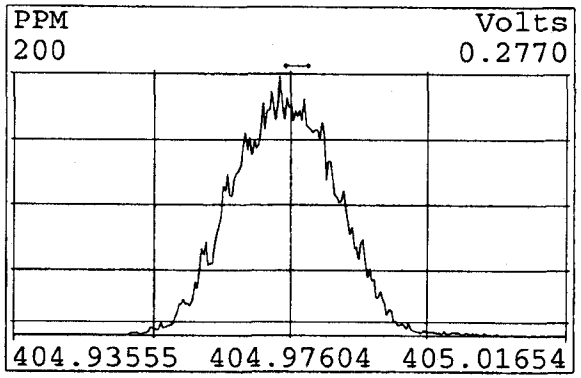


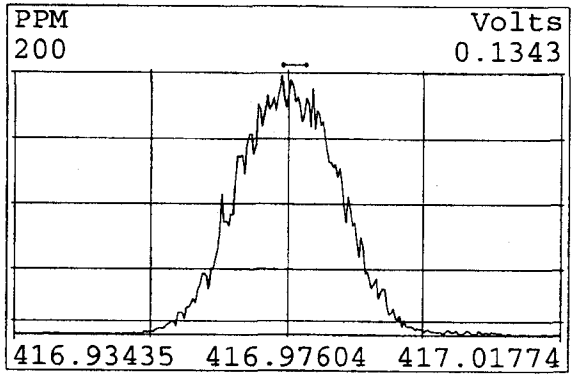


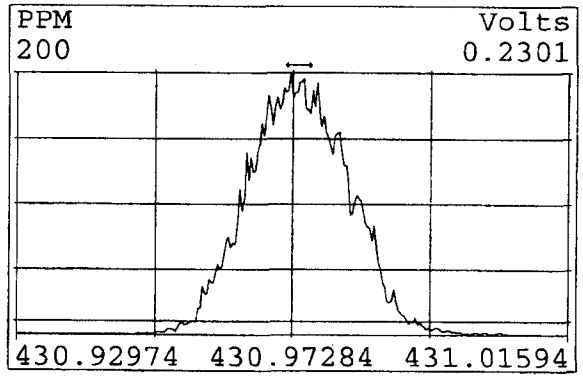


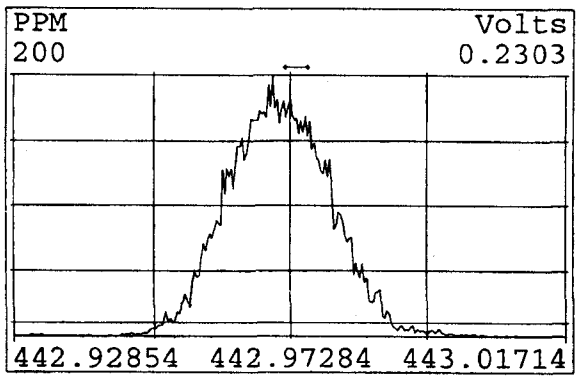


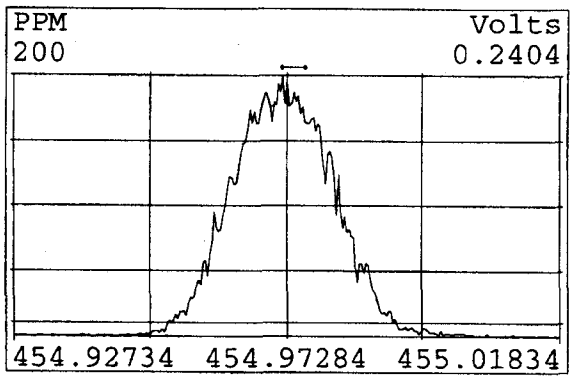
Peak Locate Examination:22-NOV-2009:01:46 File:A20NOV09A_3_RES_CHECK
Experiment:EXP_DB5MS Function:4 Reference:PFK

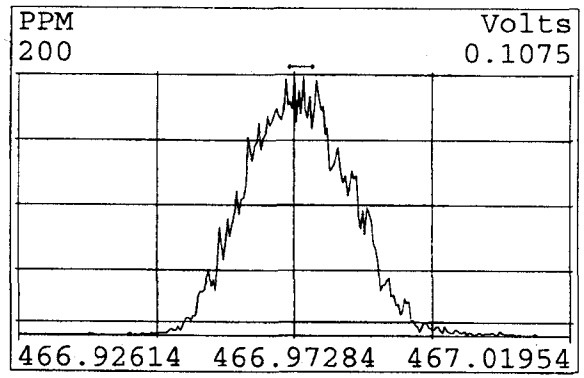


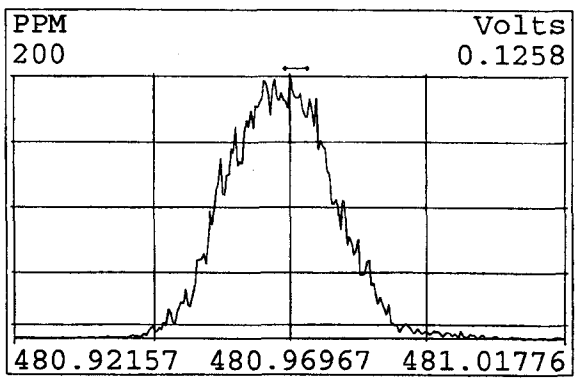




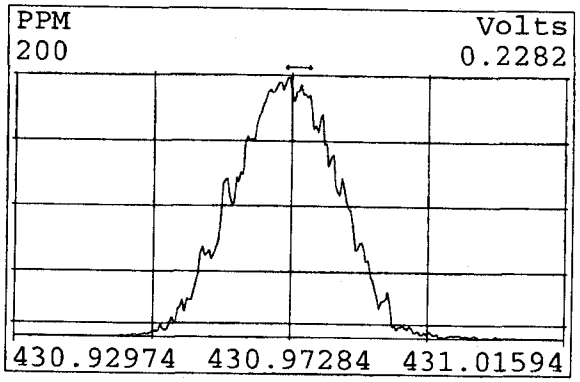


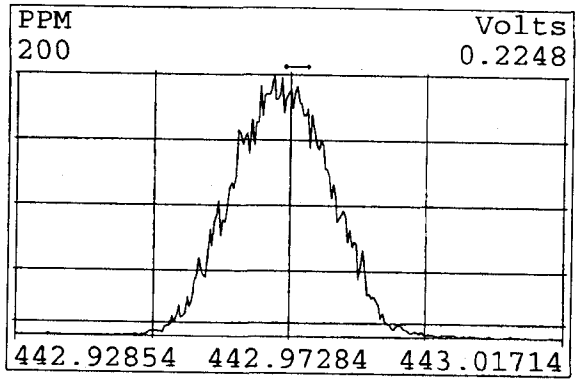


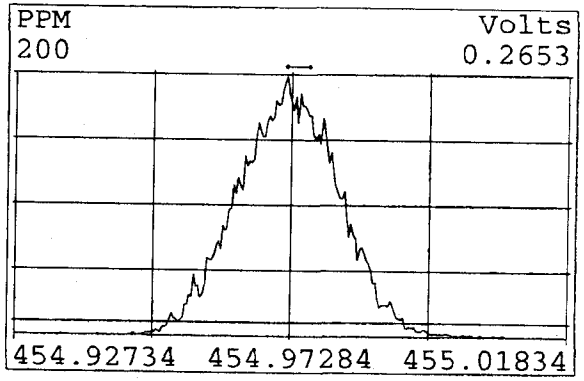


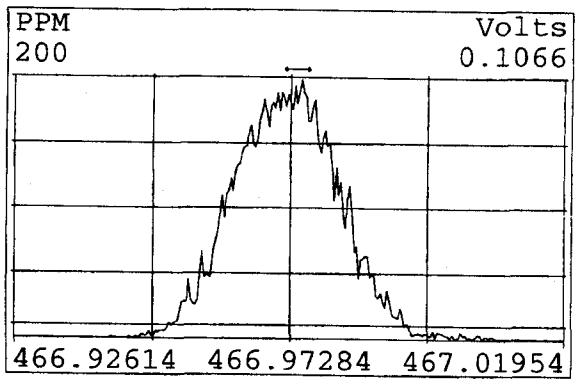


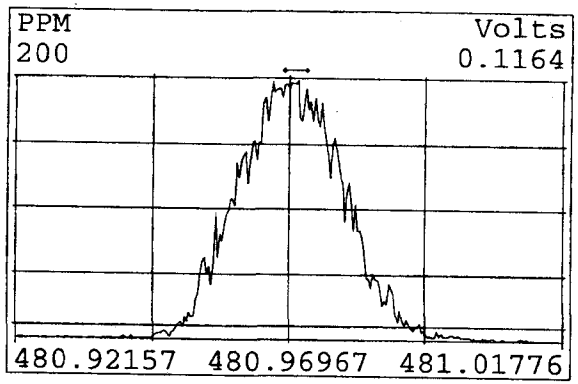
Peak Locate Examination:22-NOV-2009:01:47 File:A20NOV09A_3_RES_CHECK
Experiment:EXP_DB5MS Function:5 Reference:PFK

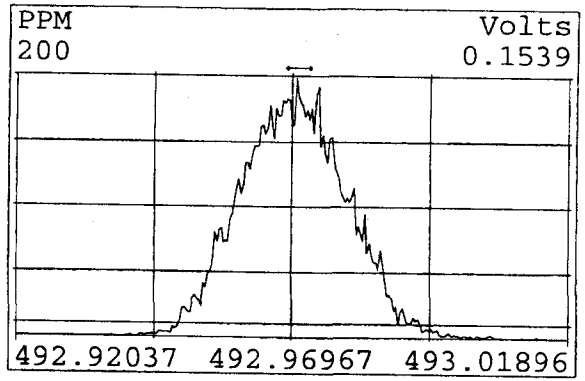


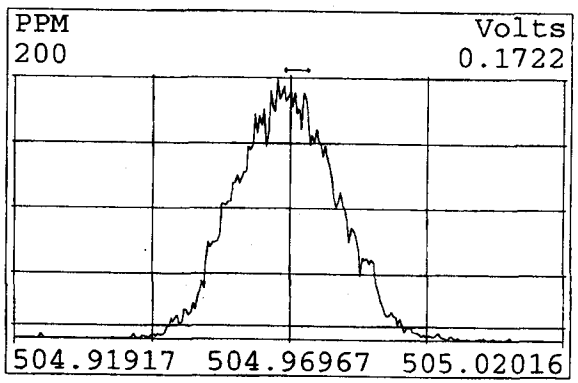


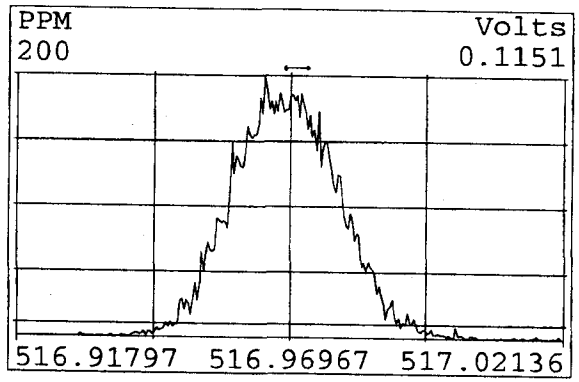








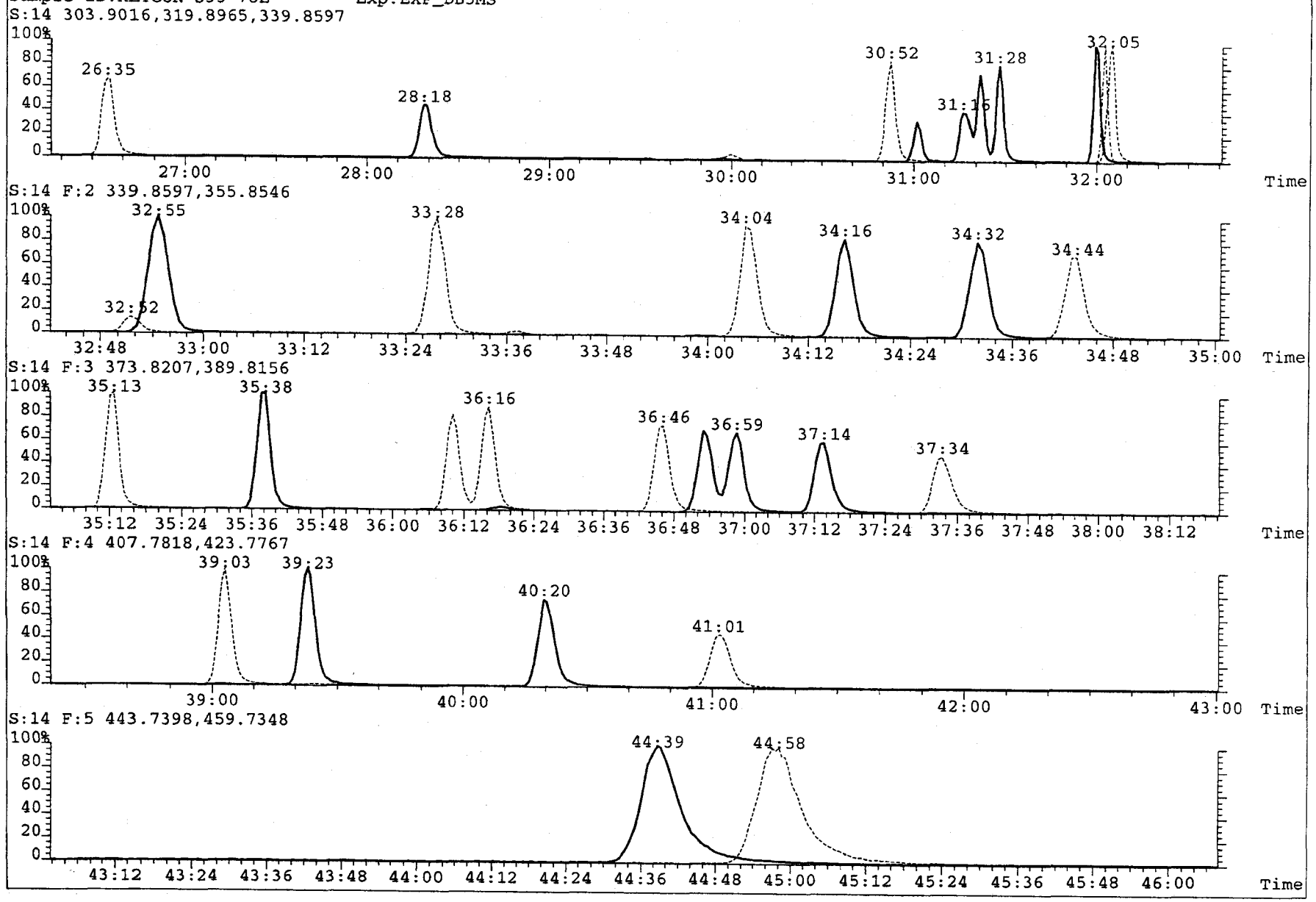




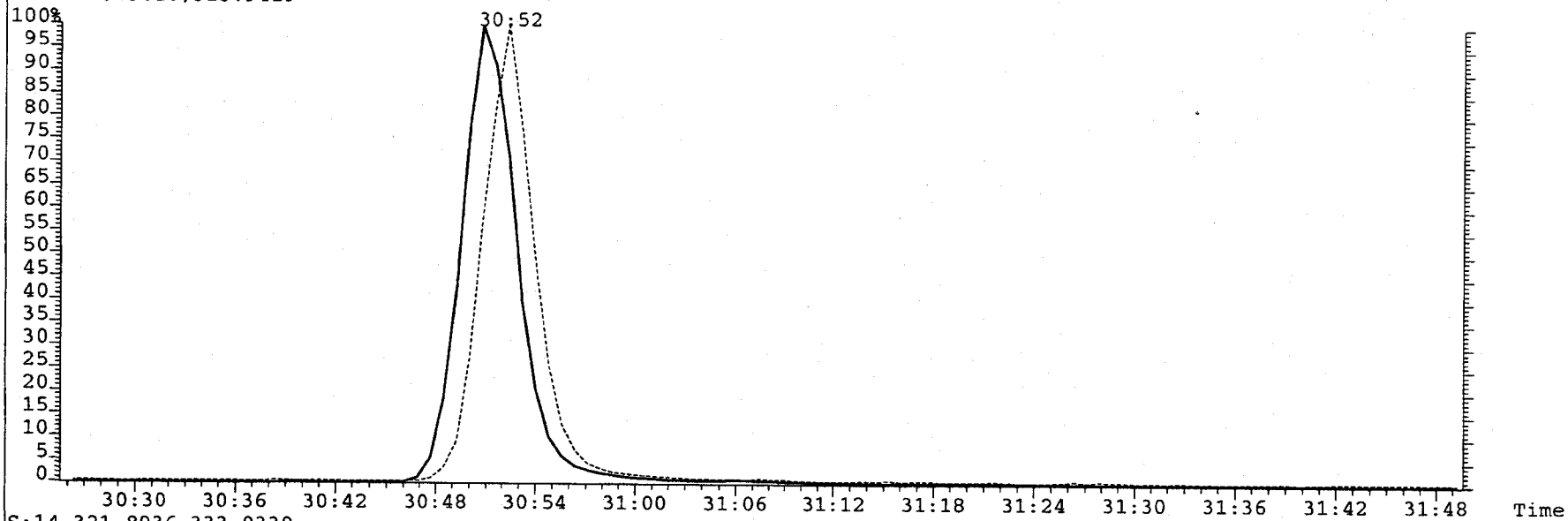
Filename ; a20nov09a_3
Sample ; 14
Acquired ; 22-NOV-09 00:54:13
Processed ; 22-NOV-09 09:21:45
Sample ID ; RETCON S33-78E

Name	First Eluter RT	Last Eluter RT
TCDD	28:18	31:60
PeCDD	32:55	34:32
HxCDD	35:38	37:14
HpCDD	39:23	40:20
OCDD	44:39	
TCDF	26:35	32:05
PeCDF	32:03	34:44
HxCDF	35:13	37:34
HpCDF	39:03	41:01
OCDF	44:58	

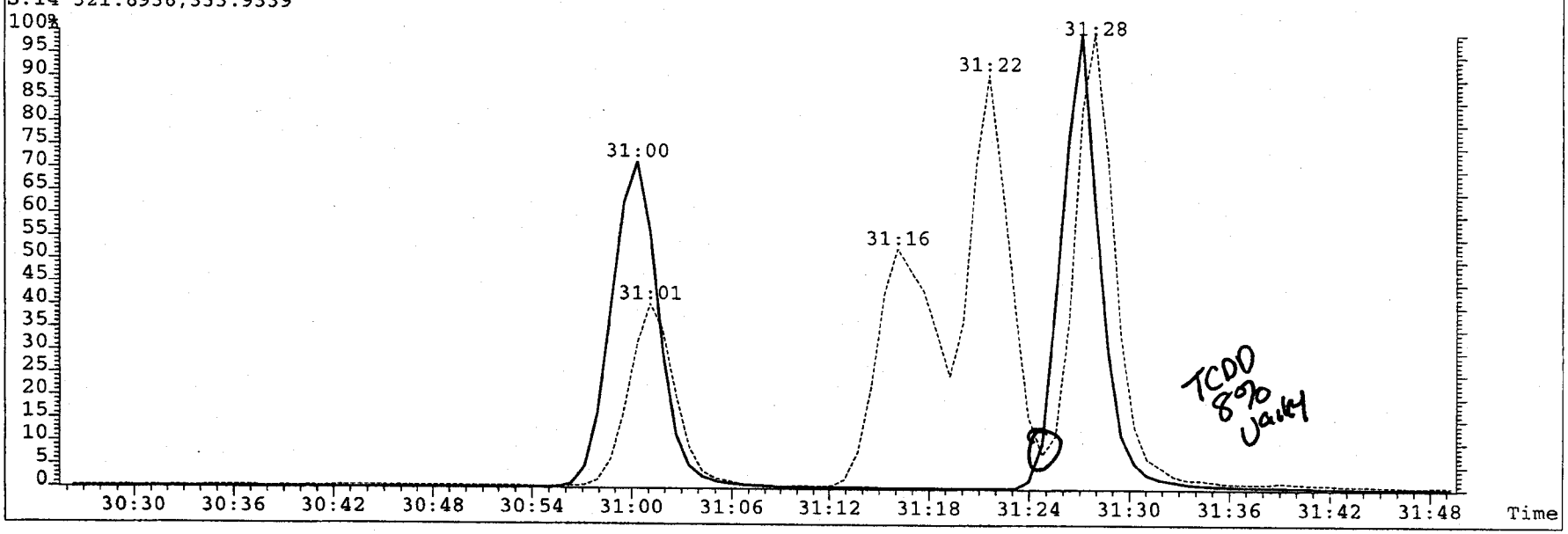
Filename:A20NOV09A_3 -14 Acq:22-NOV-2009 00:54:13 Inst: HRMS2
Sample ID:RETCON S33-78E Exp:EXP_DB5MS



Filename:A20NOV09A_3 -14 Acq:22-NOV-2009 00:54:13 Inst: HRMS2
Sample ID:RETCON S33-78E Exp:EXP_DB5MS
S:14 303.9016,315.9419



S:14 321.8936,333.9339



HRMS2 Sequence Log

SGS Environmental Services

Data File S	Sample ID	Analyst	Acq. Date	Time
a20nov09a_4;1	;OPR17446	;JWP	22-NOV-09	01:48:36
a20nov09a_4;2	;OPRD17446	;JWP	22-NOV-09	02:36:51
a20nov09a_4;3	;LMB17446	;JWP	22-NOV-09	03:25:08
a20nov09a_4;4	;G895-36-2B	;JWP	22-NOV-09	04:13:23
a20nov09a_4;5	;G895-36-3B	;JWP	22-NOV-09	05:01:40
a20nov09a_4;6	;G895-36-4B	;JWP	22-NOV-09	05:49:56
a20nov09a_4;7	;G895-36-5B	;JWP	22-NOV-09	06:38:12
a20nov09a_4;8	;G330-46-1C	;JWP	22-NOV-09	07:26:29
a20nov09a_4;9	;G330-46-2C	;JWP	22-NOV-09	08:14:45
a20nov09a_4;10	;G330-47-1C	;JWP	22-NOV-09	09:03:01
a20nov09a_4;11	;G330-47-2C	;JWP	22-NOV-09	09:51:17
a20nov09a_4;12	;G330-47-3C	;JWP	22-NOV-09	10:39:33
a20nov09a_4;13	;G895-37-1C	;JWP	22-NOV-09	11:27:51
a20nov09a_4;14	;RETCON S33-78E	;JWP	22-NOV-09	12:16:07

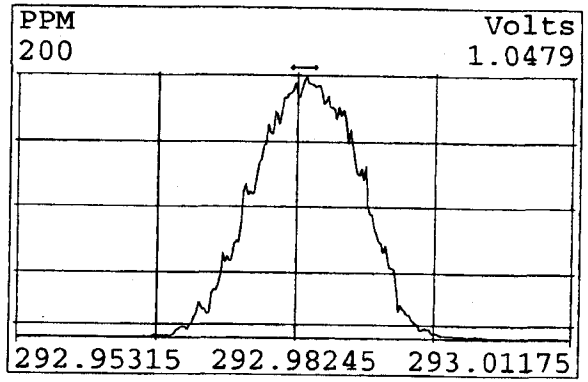
PASS

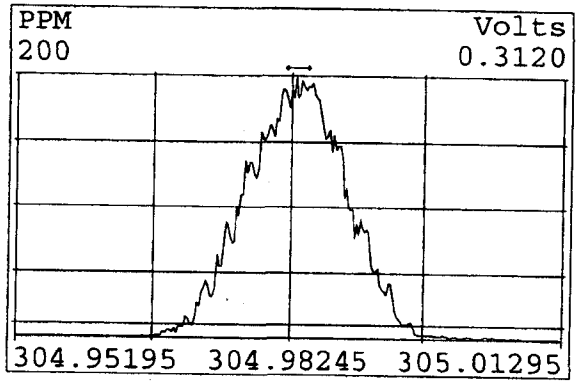
DS
11-22-09

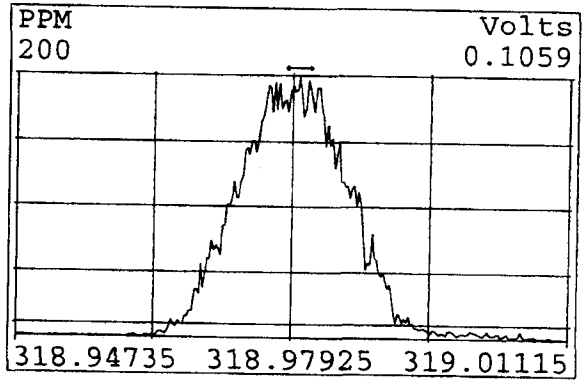
Sample text; RETCON S33-78E
Filename; a20nov09a_4 14 Acquired; 22-NOV-09 12:16:07 Processed; 22-NOV-09 14:00:31
ICAL; m8290-092309a Results; m8290-112009a_4

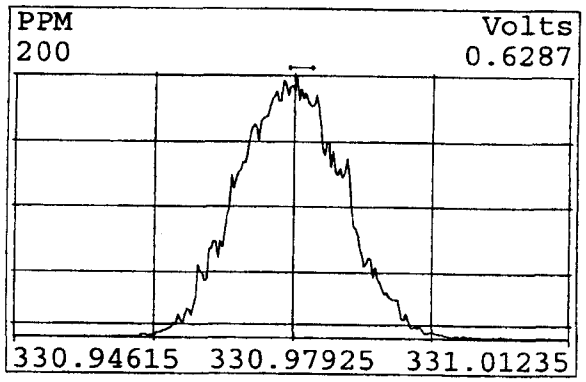
Name;	Resp;	Ion 1;	Ion 2	; RA	;?	; RT	; Conc	; Dev'n;	CCAL RRF;	ICAL RRF	;Mod
2,3,7,8-TCDD;	2.2e+07;	9.74e+06;	1.26e+07	; 0.77	;y	; 31:28	; 9.692	; -3.1;	0.9976;	1.0293	;n
1,2,3,7,8-PeCDD;	8.9e+07;	5.46e+07;	3.46e+07	; 1.58	;y	; 34:16	; 50.28	; 0.6;	1.0599;	1.0539	;n
1,2,3,4,7,8-HxCDD;	7.6e+07;	4.25e+07;	3.38e+07	; 1.25	;y	; 36:53	; 46.21	; -7.6;	0.8945;	0.9679	;n
1,2,3,6,7,8-HxCDD;	8.3e+07;	4.64e+07;	3.68e+07	; 1.26	;y	; 36:58	; 49.28	; -1.4;	0.9744;	0.9886	;n
1,2,3,7,8,9-HxCDD;	7.8e+07;	4.34e+07;	3.46e+07	; 1.26	;y	; 37:13	; 47.90	; -4.2;	0.9139;	0.9540	;n
1,2,3,4,6,7,8-HpCDD;	5.9e+07;	3.04e+07;	2.90e+07	; 1.05	;y	; 40:20	; 48.83	; -2.3;	1.0713;	1.0970	;n
OCDD;	9.4e+07;	4.46e+07;	4.99e+07	; 0.89	;y	; 44:40	; 94.90	; -5.1;	1.0668;	1.1240	;n
2,3,7,8-TCDF;	3.1e+07;	1.35e+07;	1.71e+07	; 0.79	;y	; 30:52	; 9.578	; -4.2;	0.9984;	1.0424	;n
1,2,3,7,8-PeCDF;	1.3e+08;	8.14e+07;	5.28e+07	; 1.54	;y	; 33:27	; 48.43	; -3.1;	0.9683;	0.9997	;n
2,3,4,7,8-PeCDF;	1.4e+08;	8.48e+07;	5.43e+07	; 1.56	;y	; 34:04	; 48.30	; -3.4;	1.0032;	1.0386	;n
1,2,3,4,7,8-HxCDF;	1.1e+08;	6.26e+07;	5.03e+07	; 1.24	;y	; 36:10	; 47.77	; -4.5;	1.0361;	1.0846	;n
1,2,3,6,7,8-HxCDF;	1.2e+08;	6.81e+07;	5.45e+07	; 1.25	;y	; 36:16	; 48.92	; -2.2;	1.1251;	1.1500	;n
2,3,4,6,7,8-HxCDF;	1.1e+08;	6.34e+07;	5.11e+07	; 1.24	;y	; 36:46	; 47.68	; -4.6;	1.0509;	1.1020	;n
1,2,3,7,8,9-HxCDF;	9.2e+07;	5.15e+07;	4.10e+07	; 1.25	;y	; 37:33	; 45.30	; -9.4;	0.8489;	0.9369	;n
1,2,3,4,6,7,8-HpCDF;	9.9e+07;	5.06e+07;	4.85e+07	; 1.04	;y	; 39:03	; 48.43	; -3.1;	1.3381;	1.3813	;n
1,2,3,4,7,8,9-HpCDF;	7.2e+07;	3.64e+07;	3.51e+07	; 1.04	;y	; 41:02	; 45.27	; -9.5;	0.9663;	1.0673	;n
OCDF;	1.1e+08;	5.46e+07;	6.04e+07	; 0.90	;y	; 44:59	; 92.89	; -7.1;	1.2983;	1.3977	;y
Extraction Standards											
13C-2,3,7,8-TCDD;	2.2e+08;	9.86e+07;	1.26e+08	; 0.78	;y	; 31:27	; 103.4	; 3.4;	1.1564;	1.1184	;n
13C-1,2,3,7,8-PeCDD;	1.7e+08;	1.03e+08;	6.51e+07	; 1.59	;y	; 34:15	; 106.9	; 6.9;	0.8680;	0.8116	;n
13C-1,2,3,6,7,8-HxCDD;	1.7e+08;	9.50e+07;	7.57e+07	; 1.26	;y	; 36:58	; 102.2	; 2.2;	1.0970;	1.0736	;n
13C-1,2,3,4,6,7,8-HpCDD;	1.1e+08;	5.73e+07;	5.37e+07	; 1.07	;y	; 40:19	; 96.90	; -3.1;	0.7132;	0.7360	;n
13C-OCDD;	1.8e+08;	8.40e+07;	9.30e+07	; 0.90	;y	; 44:39	; 195.1	; -2.4;	0.5691;	0.5833	;n
13C-2,3,7,8-TCDF;	3.1e+08;	1.36e+08;	1.71e+08	; 0.79	;y	; 30:51	; 92.41	; -7.6;	1.5834;	1.7135	;n
13C-1,2,3,7,8-PeCDF;	2.8e+08;	1.69e+08;	1.08e+08	; 1.57	;y	; 33:27	; 104.1	; 4.1;	1.4291;	1.3731	;n
13C-1,2,3,6,7,8-HxCDF;	2.2e+08;	7.38e+07;	1.44e+08	; 0.51	;y	; 36:15	; 97.43	; -2.6;	1.4010;	1.4379	;n
13C-1,2,3,4,6,7,8-HpCDF;	1.5e+08;	4.60e+07;	1.02e+08	; 0.45	;y	; 39:02	; 93.57	; -6.4;	0.9519;	1.0173	;n
Injection Standards											
13C-1,2,3,4-TCDD;	1.9e+08;	8.56e+07;	1.08e+08	; 0.79	;y	; 31:00	; 420.6	; -;	-;	-	;n
13C-1,2,3,7,8,9-HxCDD;	1.6e+08;	8.65e+07;	6.91e+07	; 1.25	;y	; 37:13	; 431.1	; -;	-;	-	;n
Cleanup Standards											
37Cl-2,3,7,8-TCDD;	2.3e+07;	2.30e+07;	-	; -	;-	; 31:28	; 10.16	; 1.6;	1.1853;	1.1662	;n
13C-2,3,4,7,8-PeCDF;	2.7e+08;	1.66e+08;	1.05e+08	; 1.57	;y	; 34:04	; 104.5	; 4.5;	1.3973;	1.3373	;n
13C-1,2,3,4,7,8-HxCDD;	1.5e+08;	8.16e+07;	6.42e+07	; 1.27	;y	; 36:52	; 95.46	; -4.5;	0.9375;	0.9822	;n
13C-1,2,3,4,7,8-HxCDF;	1.9e+08;	6.65e+07;	1.25e+08	; 0.53	;y	; 36:09	; 94.71	; -5.3;	1.2294;	1.2981	;n
13C-1,2,3,4,7,8,9-HpCDF;	1.1e+08;	3.32e+07;	7.34e+07	; 0.45	;y	; 41:01	; 87.65	; -12.3;	0.6855;	0.7821	;n
Sampling Standards											
37Cl-2,3,7,8-TCDD;	2.3e+07;	2.30e+07;	-	; -	;-	; 31:28	; 9.832	; -1.7;	1.0250;	1.0425	;n
13C-2,3,4,7,8-PeCDF;	2.7e+08;	1.66e+08;	1.05e+08	; 1.57	;y	; 34:04	; 100.3	; 0.3;	0.9778;	0.9744	;n
13C-1,2,3,4,7,8-HxCDD;	1.5e+08;	8.16e+07;	6.42e+07	; 1.27	;y	; 36:52	; 93.38	; -6.6;	0.8546;	0.9152	;n
13C-1,2,3,4,7,8-HxCDF;	1.9e+08;	6.65e+07;	1.25e+08	; 0.53	;y	; 36:09	; 97.21	; -2.8;	0.8776;	0.9028	;n
13C-1,2,3,4,7,8,9-HpCDF;	1.1e+08;	3.32e+07;	7.34e+07	; 0.45	;y	; 41:01	; 93.67	; -6.3;	0.7201;	0.7688	;n

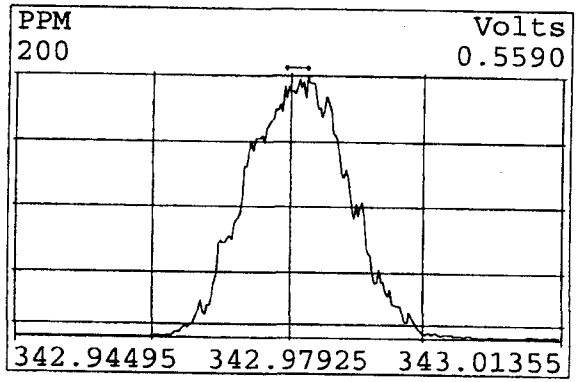
Peak Locate Examination:22-NOV-2009:01:43 File:A20NOV09A_3_RES_CHECK
Experiment:EXP_DB5MS Function:1 Reference:PFK

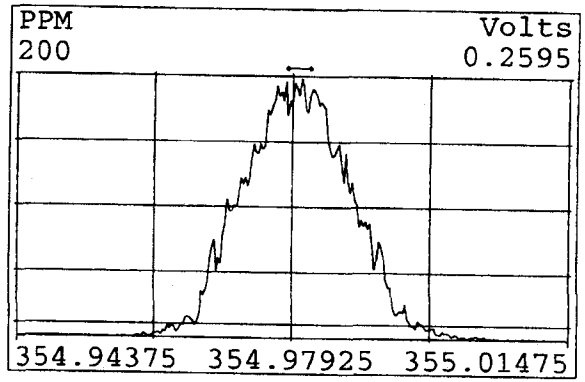


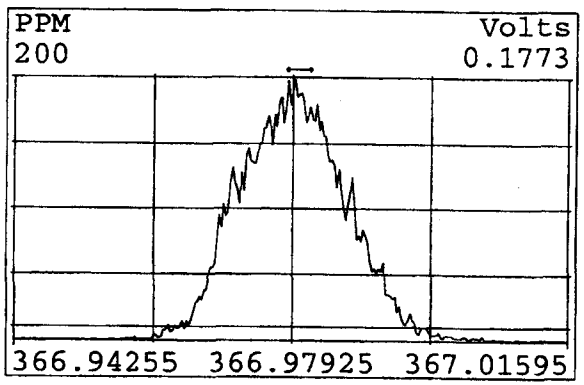


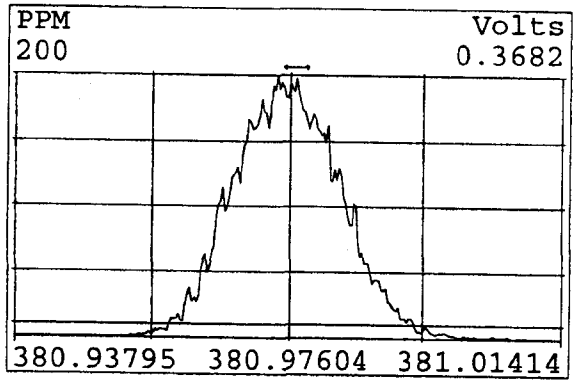




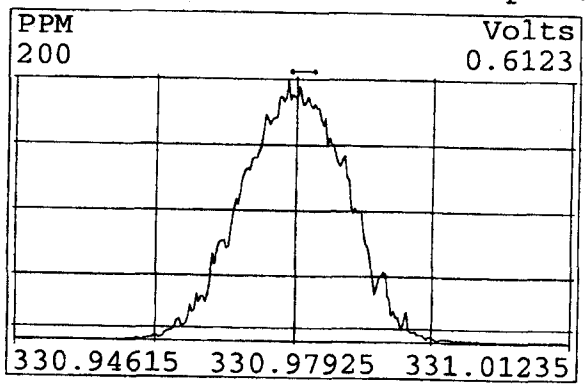


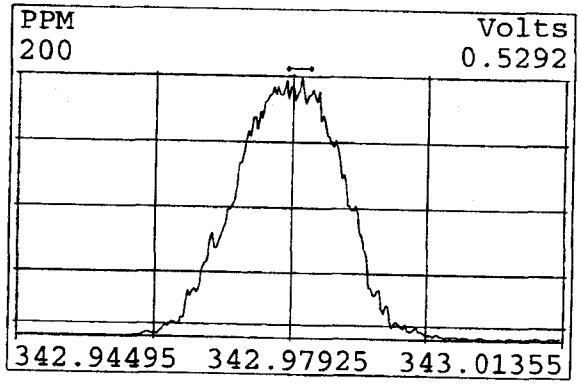


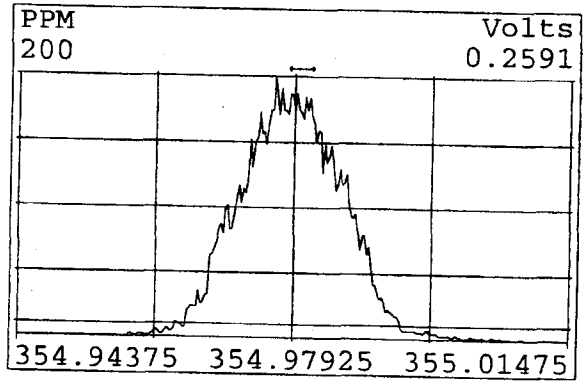


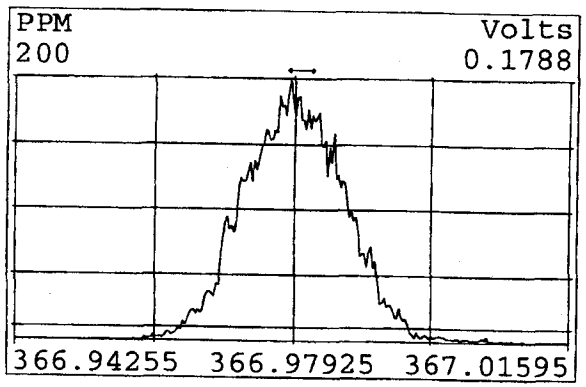


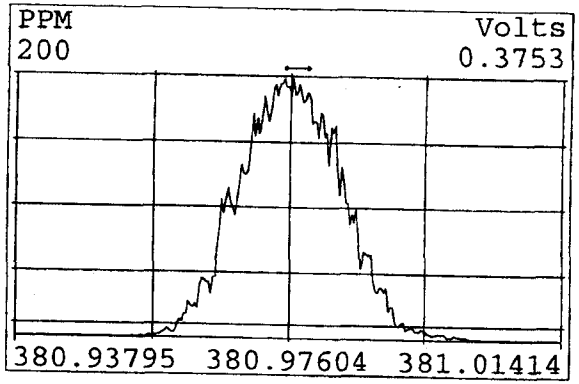
Peak Locate Examination:22-NOV-2009:01:44 File:A20NOV09A_3_RES_CHECK
Experiment:EXP_DB5MS Function:2 Reference:PFK

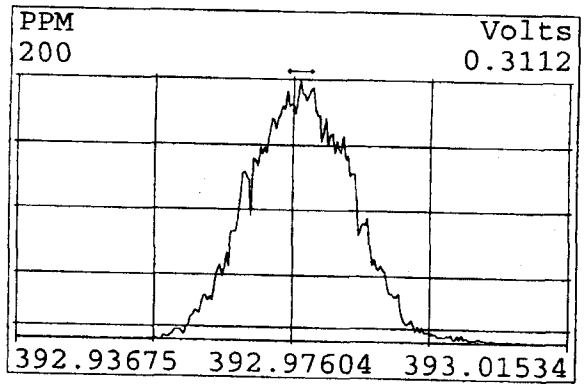


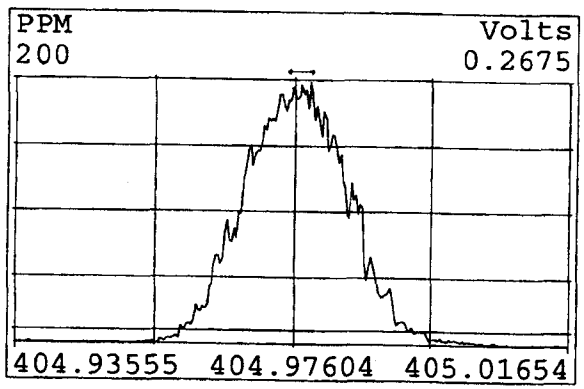


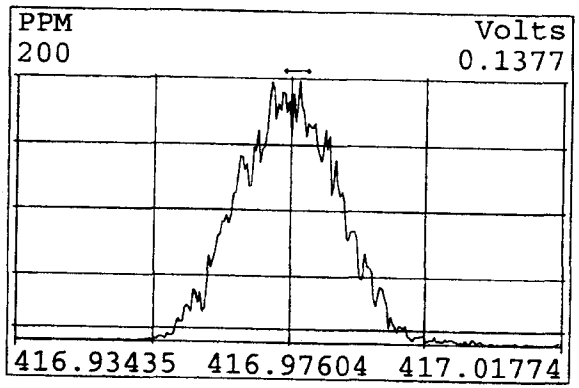




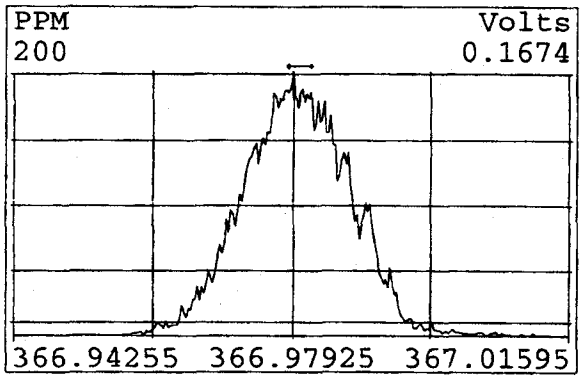


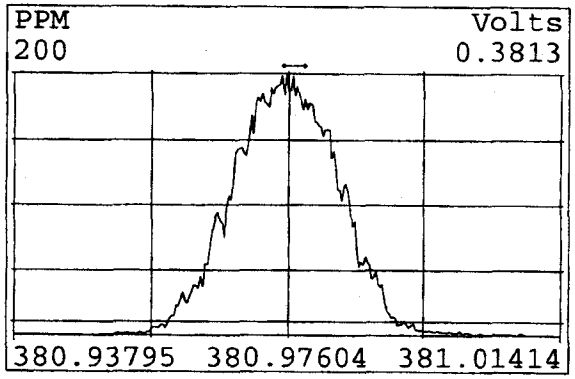


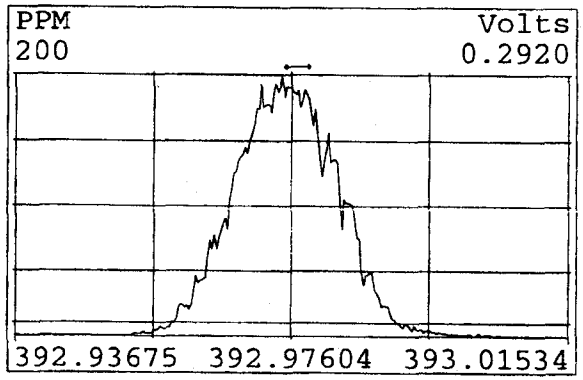


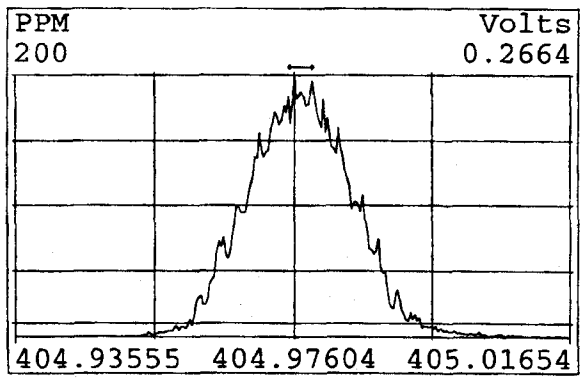


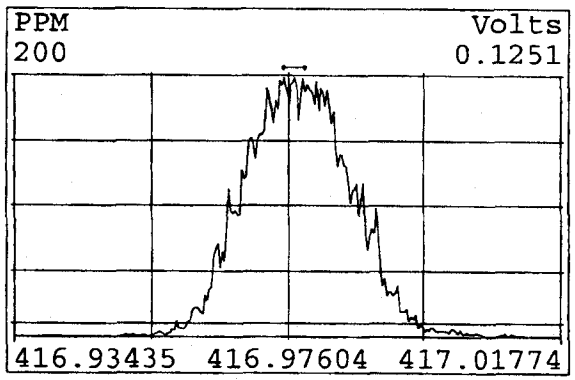
Peak Locate Examination:22-NOV-2009:01:45 File:A20NOV09A_3_RES_CHECK
Experiment:EXP_DB5MS Function:3 Reference:PFK

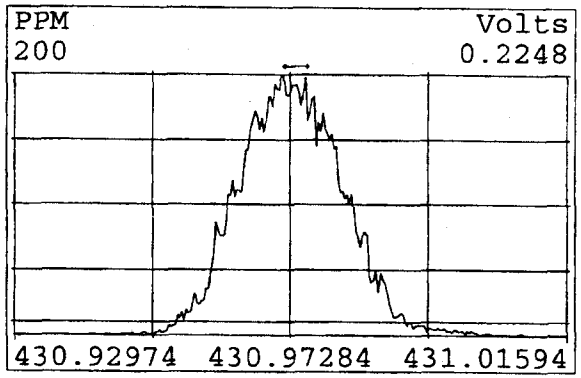


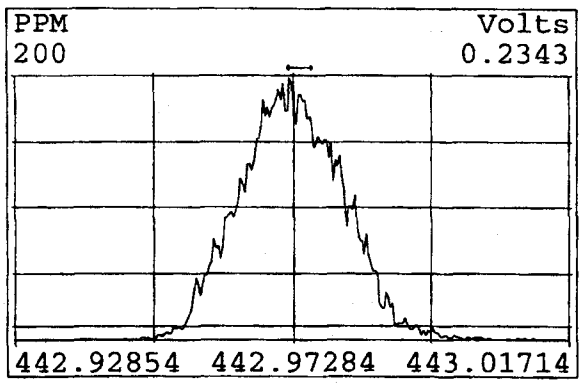


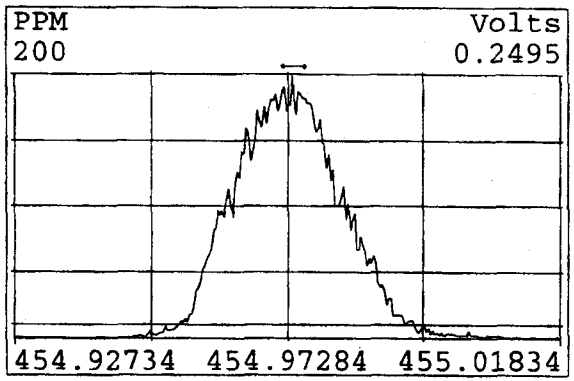




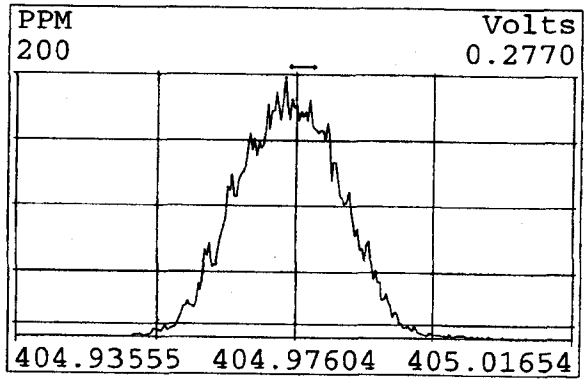


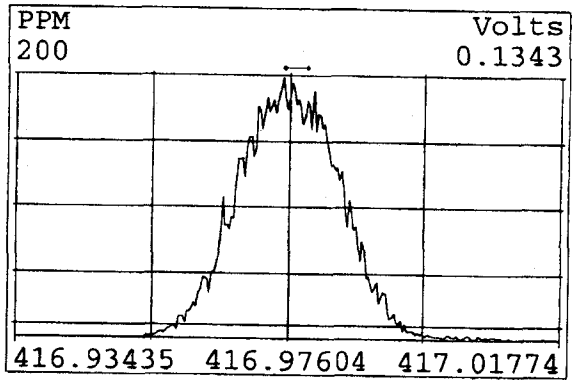


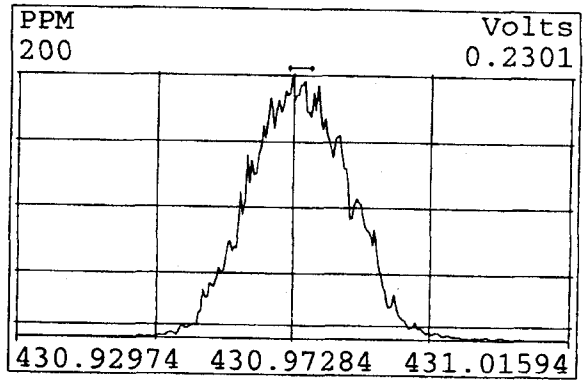


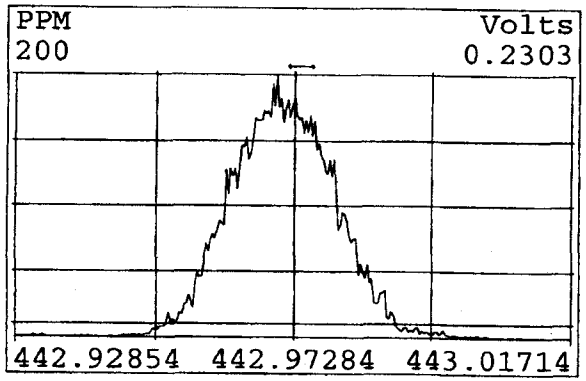


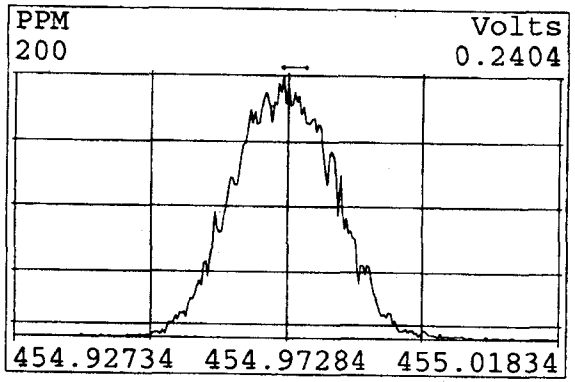
Peak Locate Examination:22-NOV-2009:01:46 File:A20NOV09A_3_RES_CHECK
Experiment:EXP_DB5MS Function:4 Reference:PFK

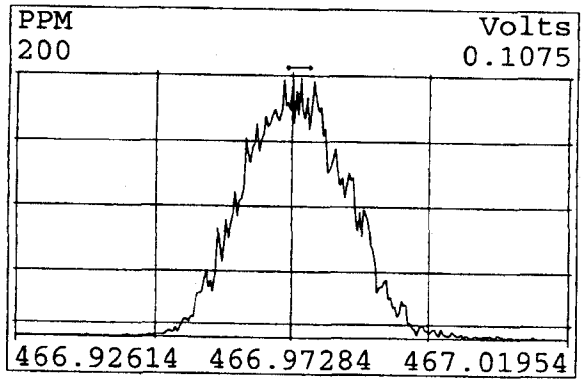


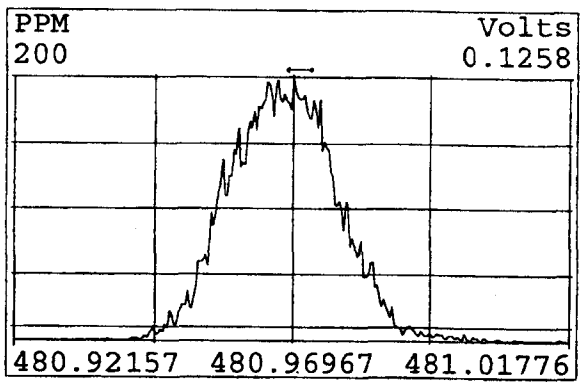




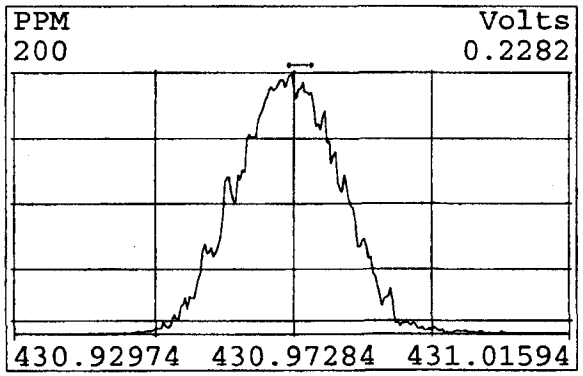


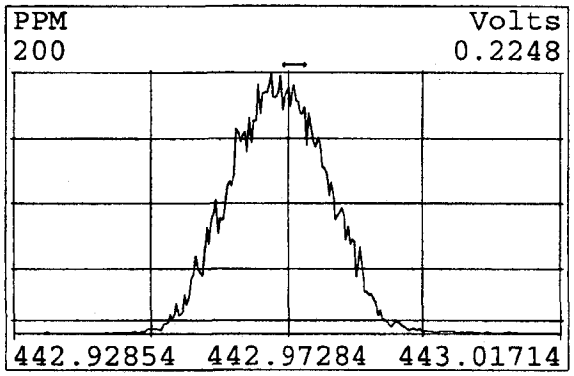


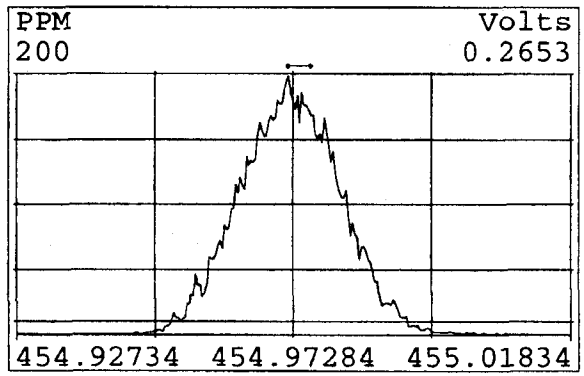


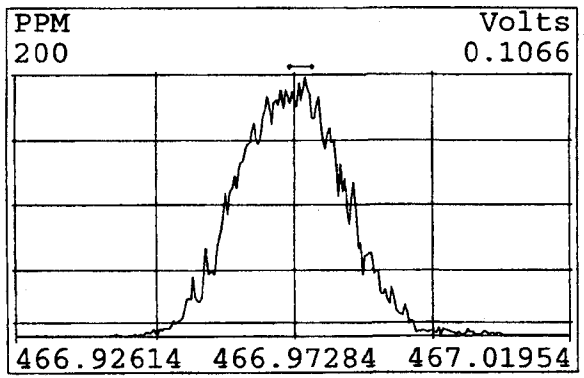


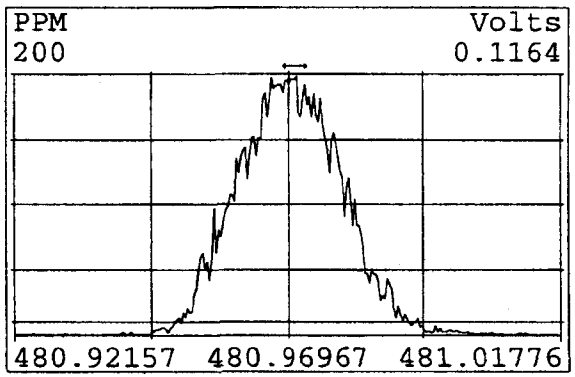
Peak Locate Examination:22-NOV-2009:01:47 File:A20NOV09A_3_RES_CHECK
Experiment:EXP_DB5MS Function:5 Reference:PFK

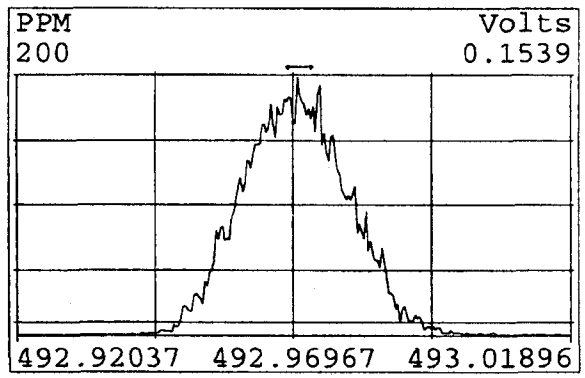


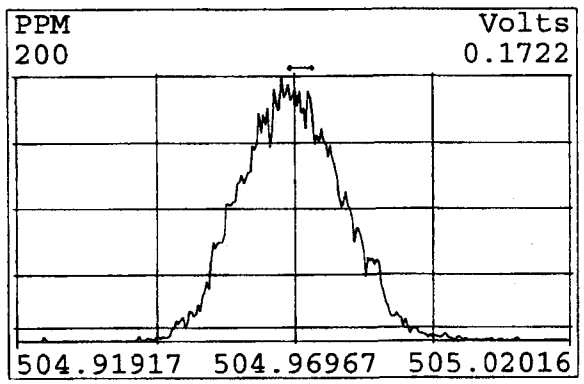


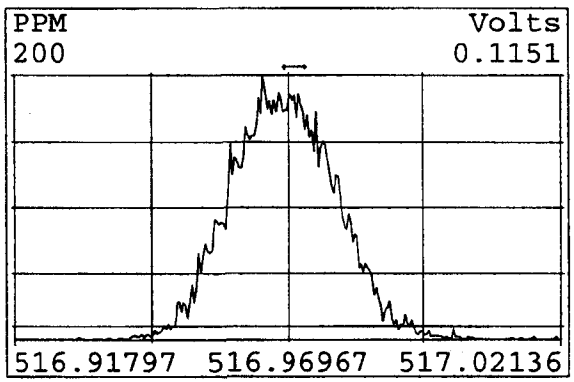




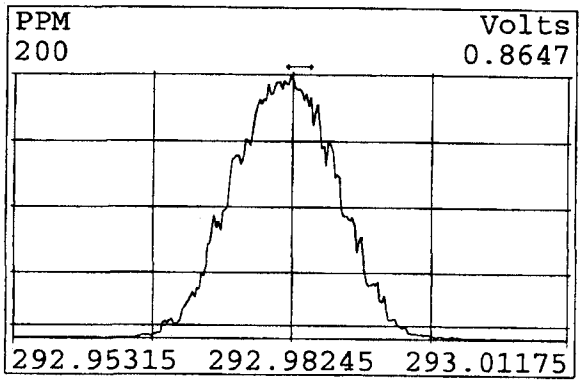


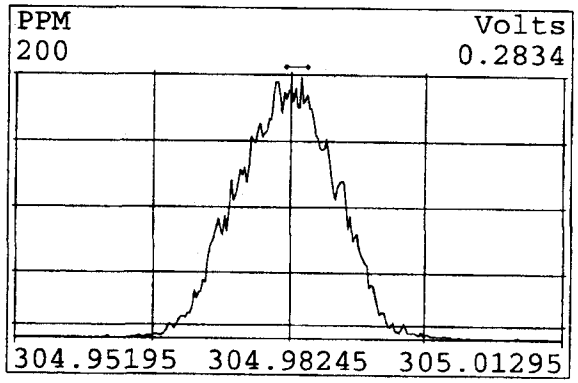


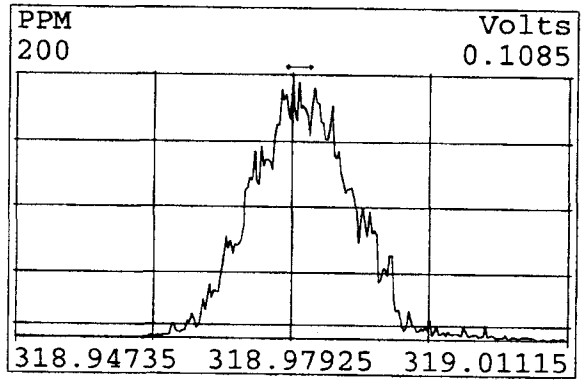


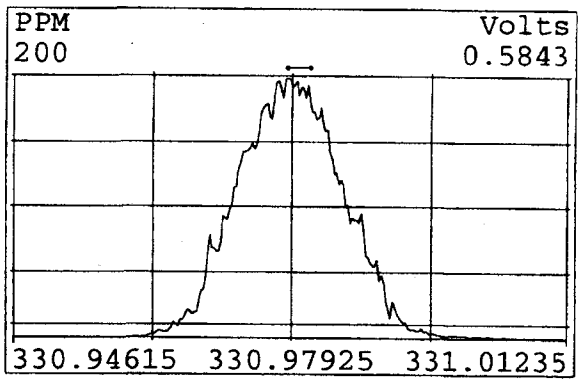


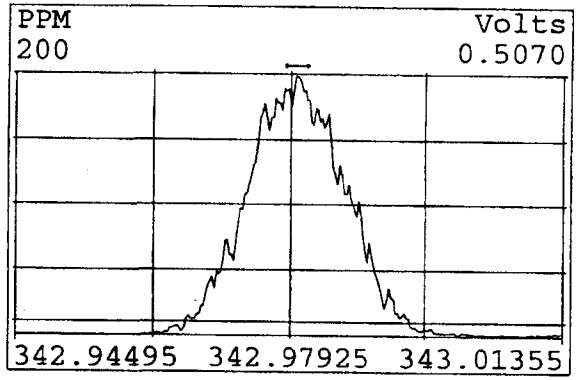
Peak Locate Examination:22-NOV-2009:13:05 File:A20NOV09A_4_RES_CHECK
Experiment:EXP_DB5MS Function:1 Reference:PFK

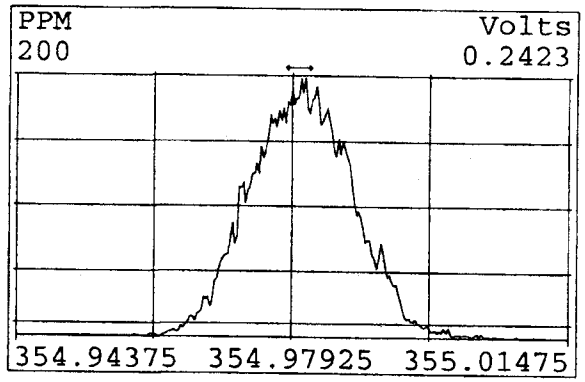


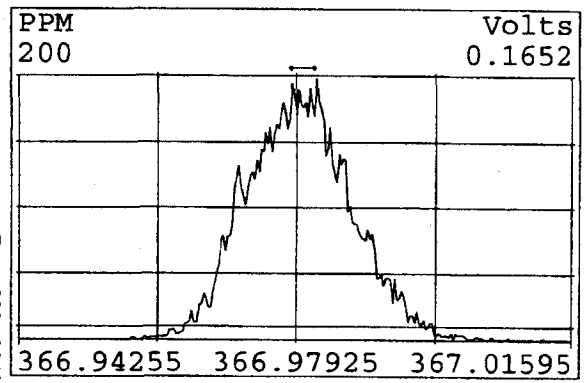


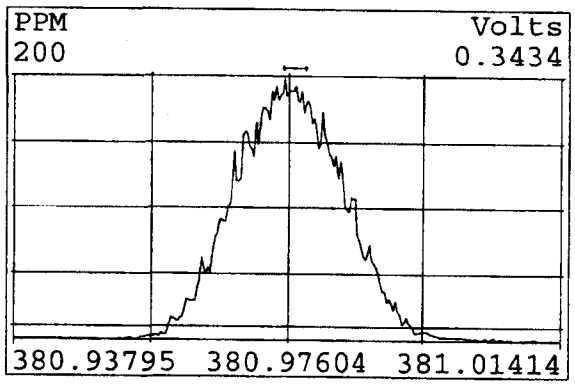




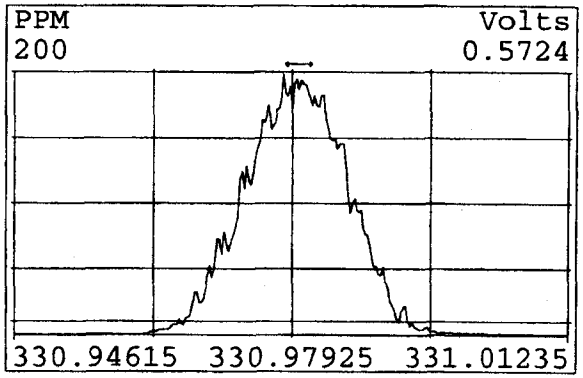


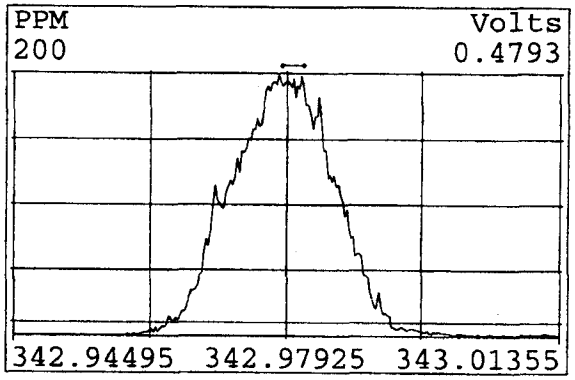


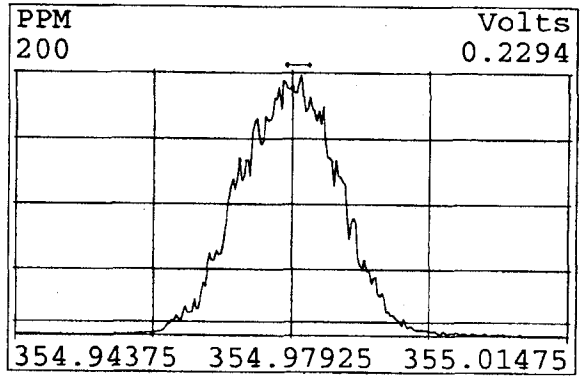


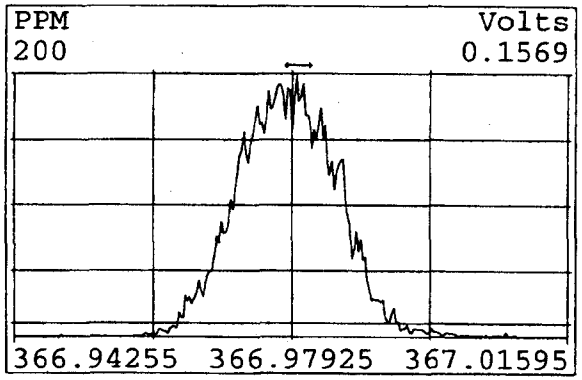


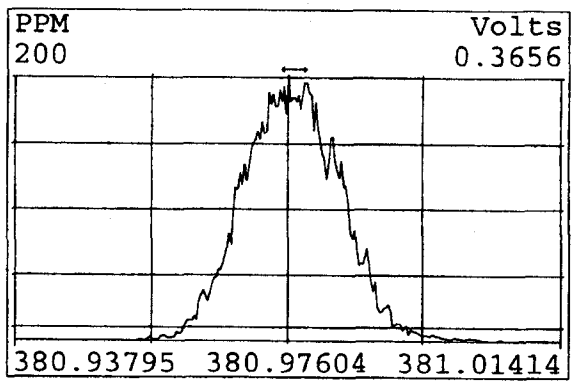
Peak Locate Examination:22-NOV-2009:13:06 File:A20NOV09A_4_RES_CHECK
Experiment:EXP_DB5MS Function:2 Reference:PFK

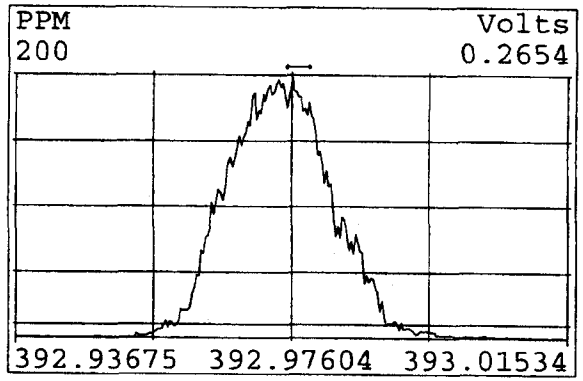


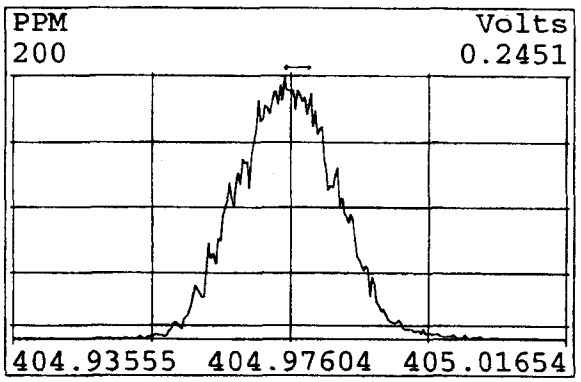


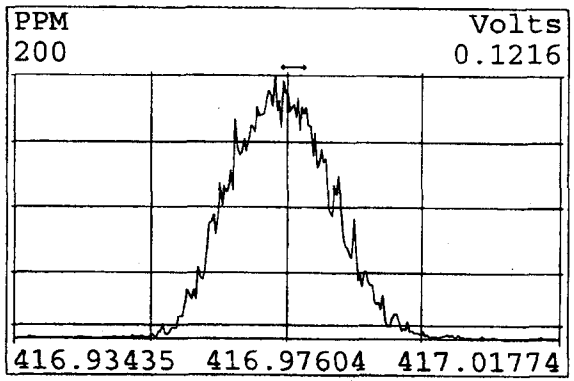




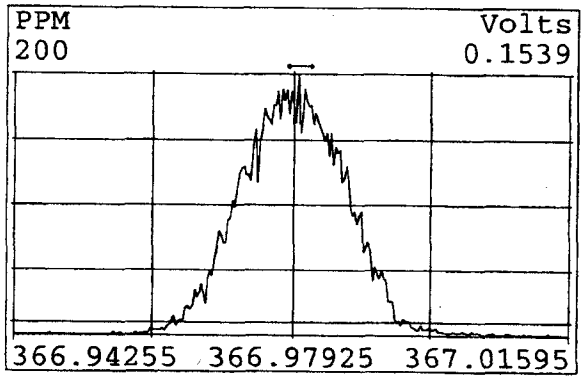


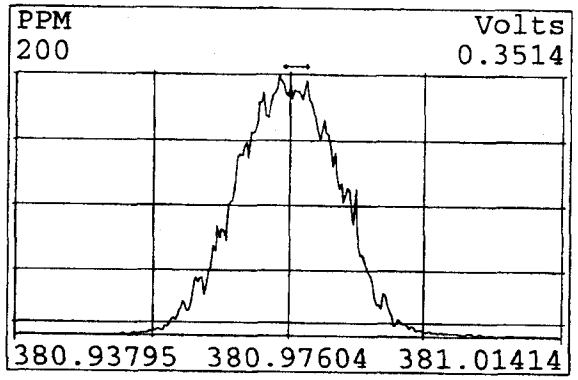


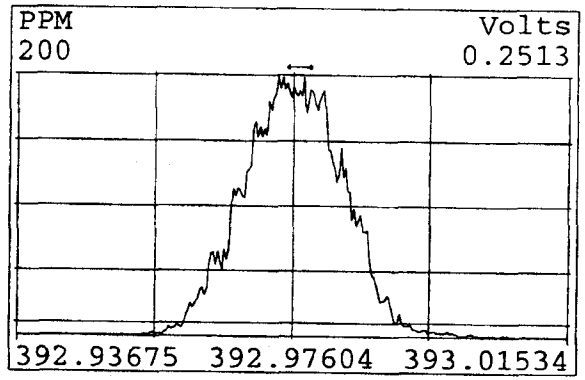


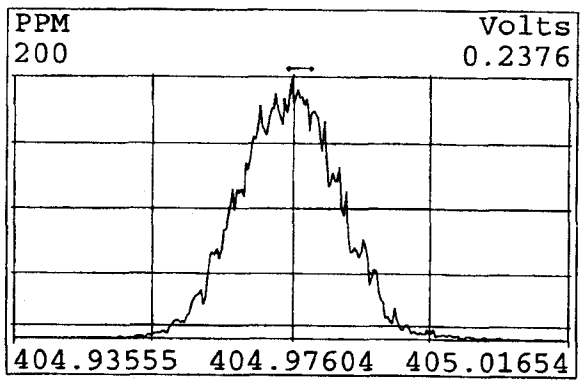


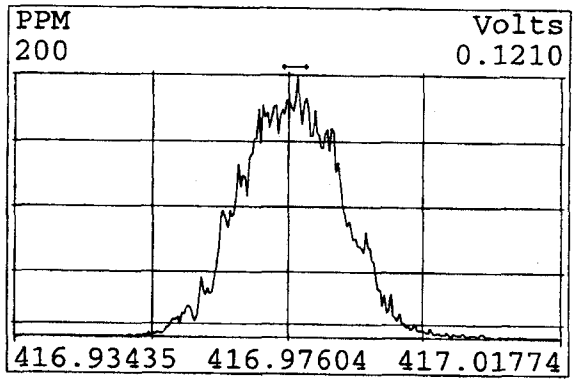
Peak Locate Examination:22-NOV-2009:13:07 File:A20NOV09A_4_RES_CHECK
Experiment:EXP_DB5MS Function:3 Reference:PFK

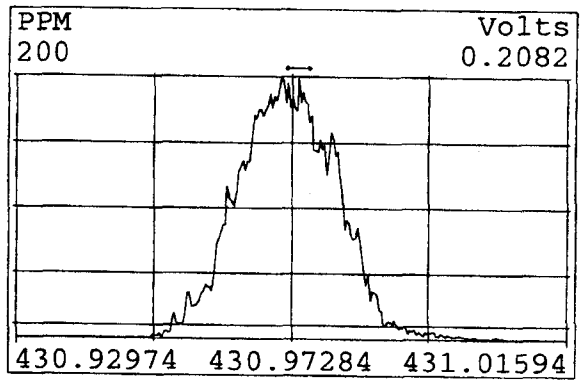


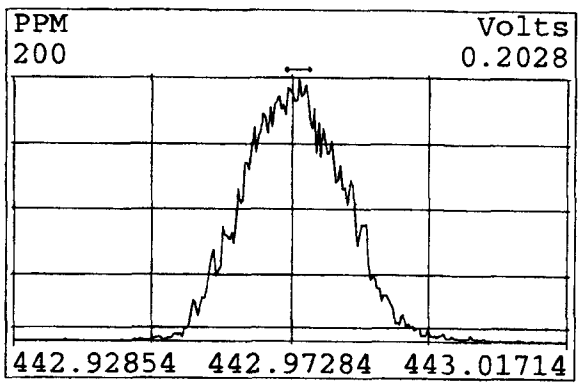


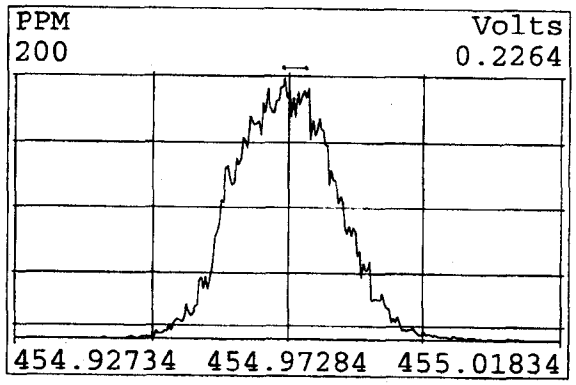




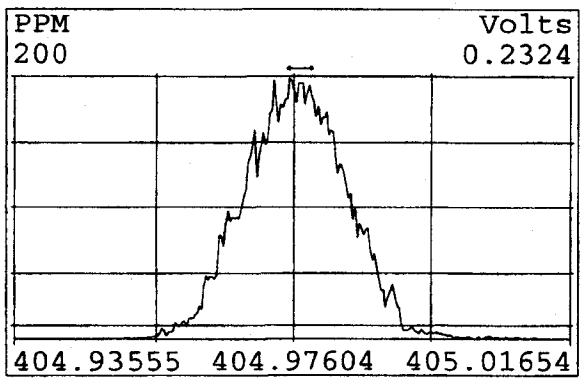


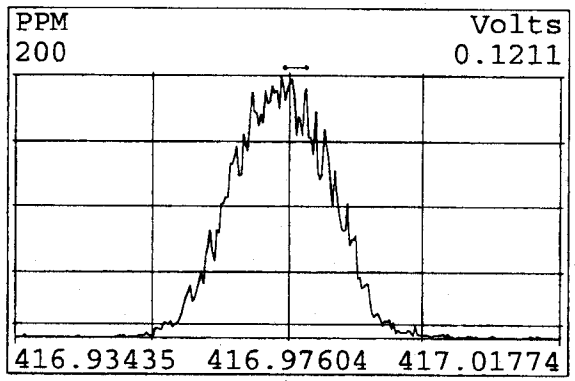


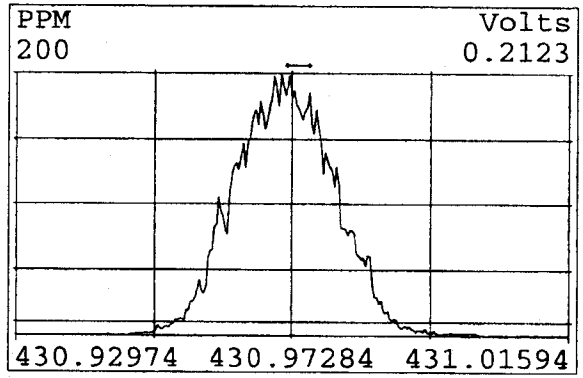


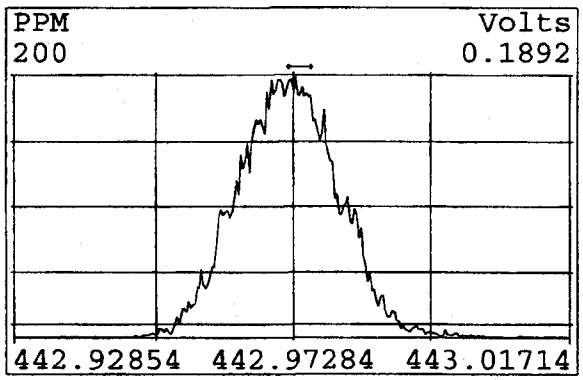


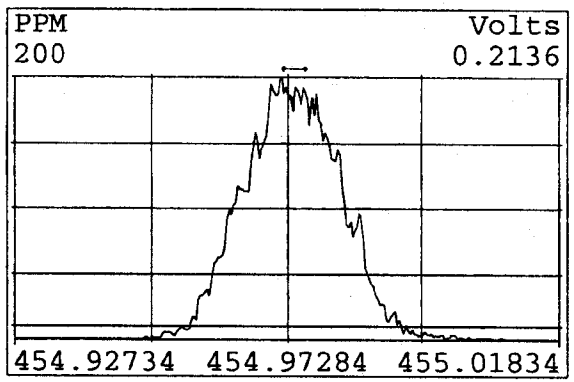
Peak Locate Examination:22-NOV-2009:13:08 File:A20NOV09A_4_RES_CHECK
Experiment:EXP_DB5MS Function:4 Reference:PFK

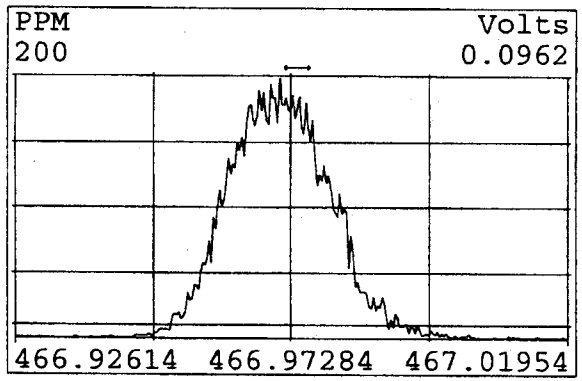


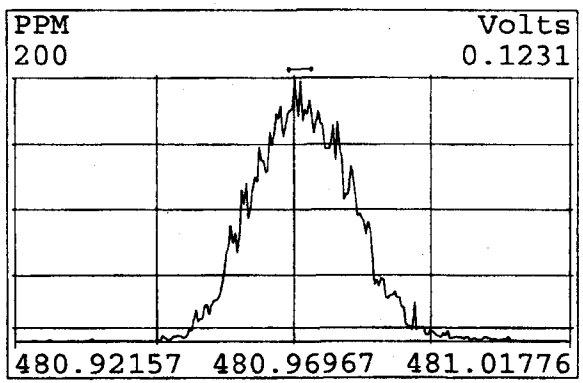




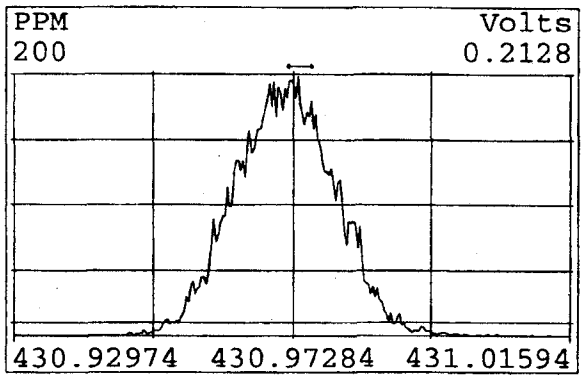


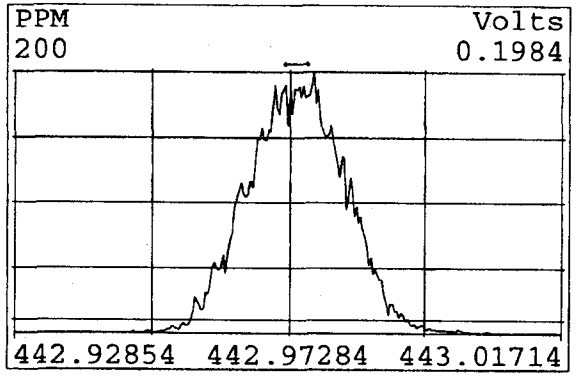


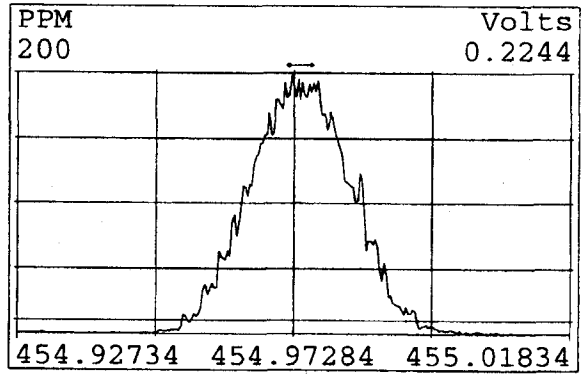


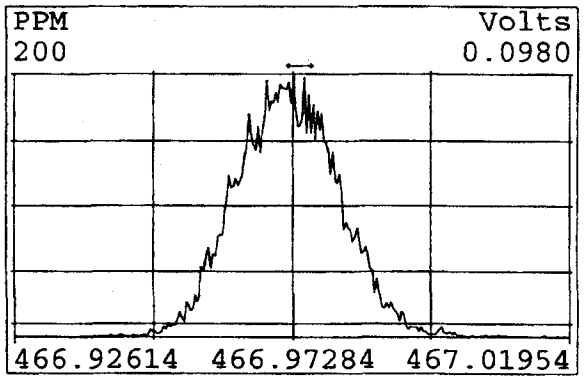


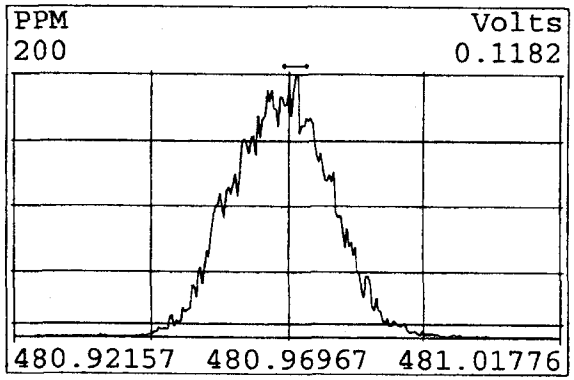
Peak Locate Examination:22-NOV-2009:13:09 File:A20NOV09A_4_RES_CHECK
Experiment:EXP_DB5MS Function:5 Reference:PFK

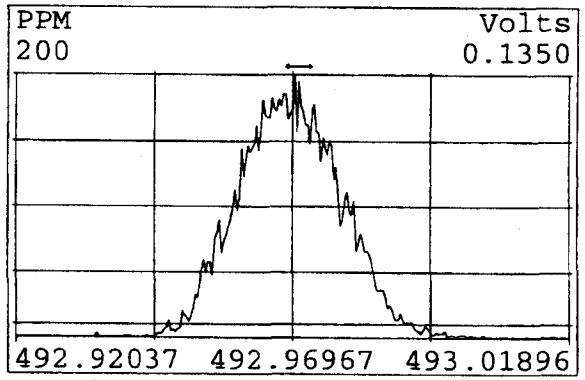


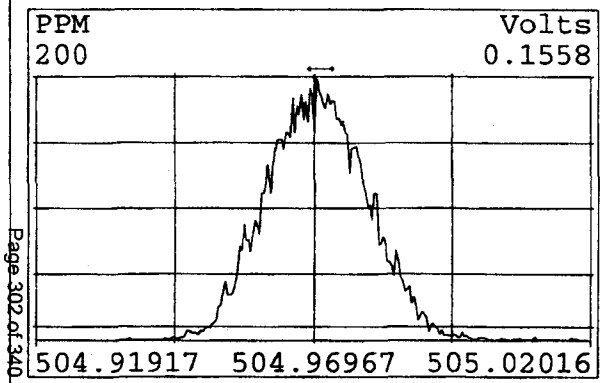


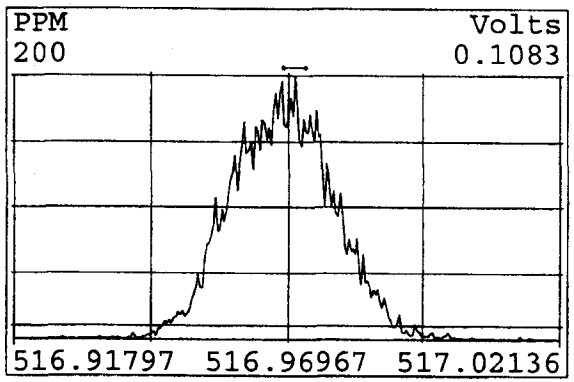












USEPA FORM 5DFA & 5DFB
WINDOW DEFINING MIX & CHROMATOGRAPHIC RESOLUTION SUMMARIES

Lab Name ; Paradigm Analytical
Inst. ID ; HRMS2

Filename ; a20nov09a_4-14
Date Analyzed ; 22-NOV-09
Time Analyzed ; 12:16:07

Name	First Eluter RT	Last Eluter RT
TCDD	28:19	31:59
PeCDD	32:55	34:32
HxCDD	35:38	37:13
HpCDD	39:22	40:20
OCDD	44:39	
TCDF	26:35	32:04
PeCDF	32:03	34:43
HxCDF	35:12	37:33
HpCDF	39:03	41:01
OCDF	44:58	

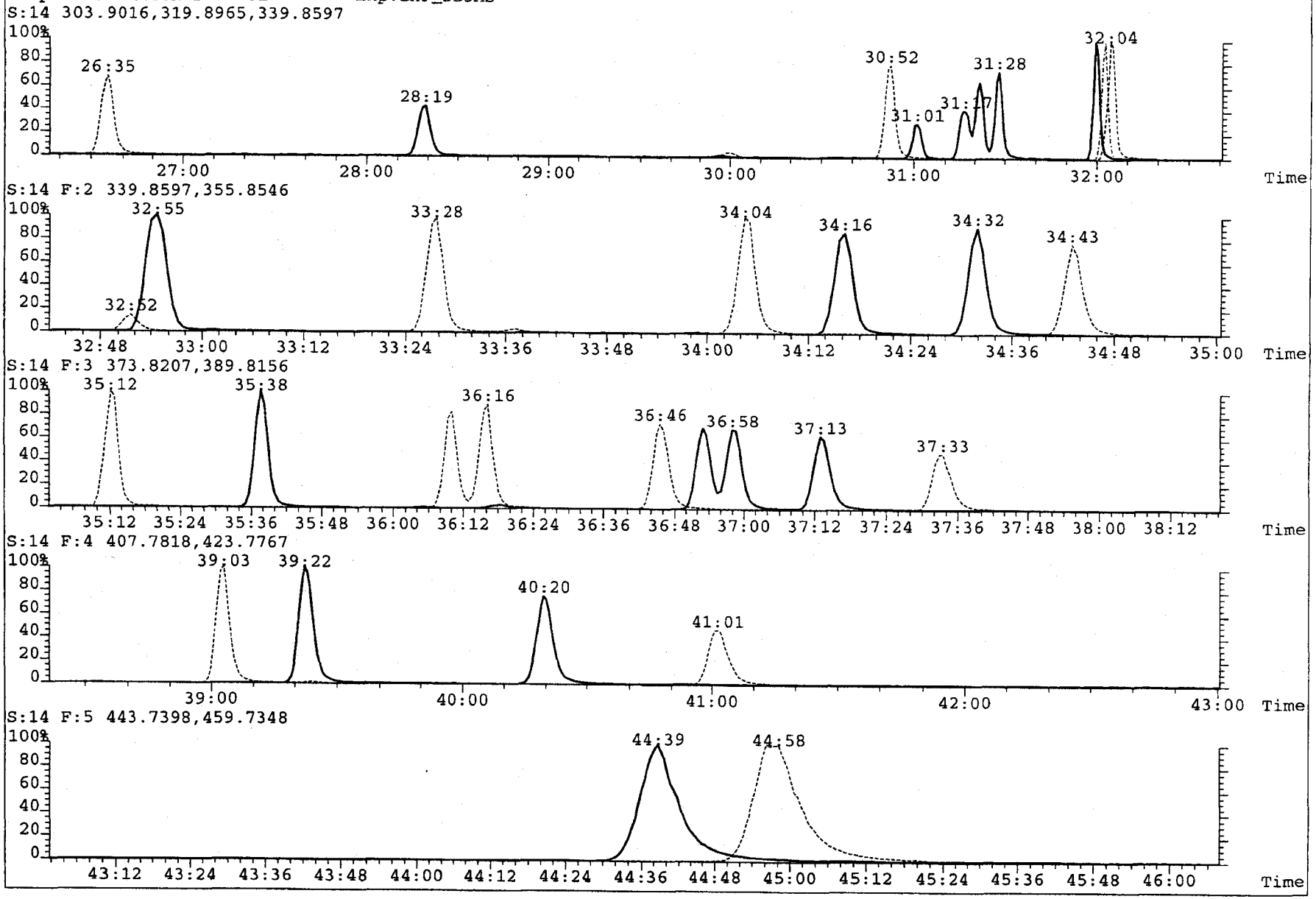
Percent Valley determination for DB-5ms column -
For the column performance solution beginning the 12-hour period

1239-TCDD / 2378-TCDD ; _____ 6%

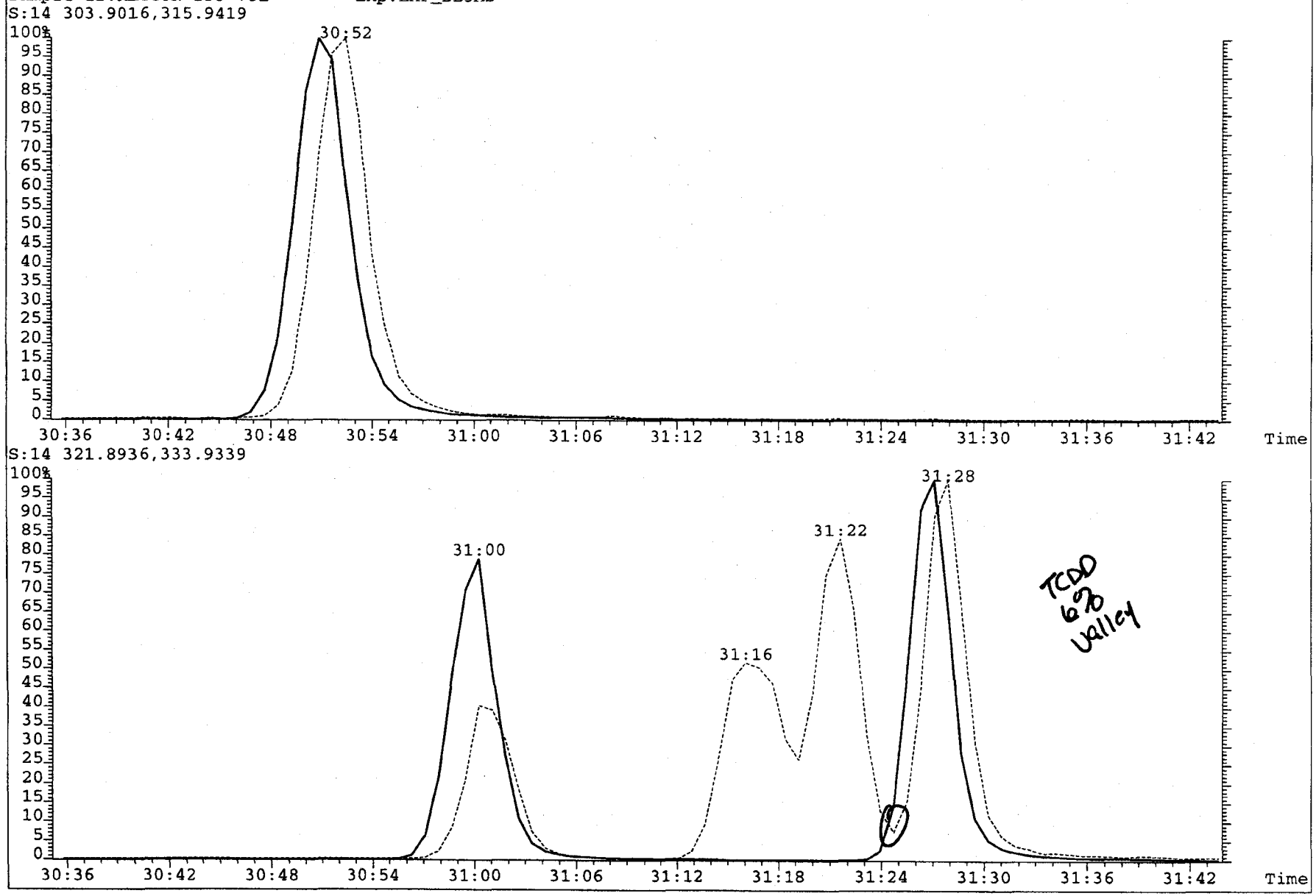
Filename ; a20nov09a_4
Sample ; 14
Acquired ; 22-NOV-09 12:16:07
Processed ; 22-NOV-09 14:18:51
Sample ID ; RETCON S33-78E

Name	First Eluter RT	Last Eluter RT
TCDD	28:19	31:59
PeCDD	32:55	34:32
HxCDD	35:38	37:13
HpCDD	39:22	40:20
OCDD	44:39	
TCDF	26:35	32:04
PeCDF	32:03	34:43
HxCDF	35:12	37:33
HpCDF	39:03	41:01
OCDF	44:58	

Filename:A20NOV09A_4 -14 Acq:22-NOV-2009 12:16:07 Inst: HRMS2
Sample ID:RETCON S33-78E Exp:EXP_DB5MS



Filename:A20NOV09A_4 -14 Acq:22-NOV-2009 12:16:07 Inst: HRMS2
Sample ID:RETCON S33-78E Exp:EXP_DB5MS



Injection Prep Log

	Sample ID	IJ STD Lot#	IJ Amt (µL)	IJ Conc. (ng/µL)	Final Vol.* (µL)	Analyst (initials)	Date	Comments
1	OPRD 17447	S34-220	20	0.1	20	CN	11/19/09	
2	G556-194-2D	↓	↓	↓	↓	↓	↓	white particulate matter added 20 µL nonane.
3	LMB 17436	S34-183	2.0	1.0	20	CN	11/19/09	
4	OPR 17436	↓	↓	↓	↓	↓	↓	
5	OPRD 17436	↓	↓	↓	↓	↓	↓	
6	G330-43-2B	↓	↓	↓	↓	↓	↓	
7	G330-45-7B	↓	↓	↓	↓	↓	↓	
8	OPR17450	S34-174	100	0.5	100	DS	11-20-09	
9	OPRD17450	↓	↓	↓	↓	↓	↓	
10	LMB17450	↓	↓	↓	↓	↓	↓	
11	G185-431-1B	↓	↓	↓	↓	↓	↓	
12	OPR 17449	S34-220	20	0.1	20	CN	11/20/09	
13	OPRD 17449	↓	↓	↓	↓	↓	↓	
14	LMB 17449	↓	↓	↓	↓	↓	↓	
15	G1122-1-1C	↓	↓	↓	↓	↓	↓	
16	G1122-1-2C	↓	↓	↓	↓	↓	↓	
17	OPR 17452	↓	↓	↓	↓	↓	↓	
18	OPRD 17452	S34-243	20	0.1	20	CN	11/20/09	
19	LMB 17452	↓	↓	↓	↓	↓	↓	
20	G1047-28-1B	↓	↓	↓	↓	↓	↓	

DC17.021800.1

* = to be entered in the Prep table.

Logbook: 14 Page: 409

Injection Prep Log

	Sample ID	IJ STD Lot#	IJ Amt (µL)	IJ Conc. (ng/µL)	Final Vol.* (µL)	Analyst (initials)	Date	Comments
1	G383-781-1C	S34-243	20	0.1	20	CN	11/20/09	
2	G383-781-2C							
3	G383-781-3C							
4	G383-781-4C							
5	G383-781-5C							
6	G383-781-6C							
7	G383-781-7C MS							MS
8	G383-781-8C MSD							MSD
9	G895-36-1B							
10	G895-36-2B							
11	G895-36-3B							
12	G895-36-4B MS							MS
13	G895-36-5B MSD							MSD
14	G330-46-1C							
15	G330-46-2C							
16	G330-47-1C							
17	G330-47-2C MS							MS
18	G330-47-3C MSD							MSD
19	G895-37-1C							
20	OPR17431	S34-243	20	0.1	20	DS	11-20-09	

DC17.021800.1

* = to be entered in the Prep table.

Logbook: 14 Page: 410

Extraction by Modified Method 3520C

(Continuous Liquid/Liquid - CLLE)

Analytical Method: 8290 1613 8280 1613DW
1668A DLM Other _____

QC Date	QC Batch*	Prev. WG	Workgroup*	Logbook#	Page#
18-Nov-09		N/A	WG	17	452

Glassware #	QC #/20	Sample Identification: Client ID* ID	Project* ID	Sample* ID	Container* ID	Volume* (mL)	Sample* pH	pH* (<2?)	ES Amt.* (µL)	MX Amt. (µL)	Tridecane (100 µL)	CS Amt. (µL)	Analyst (initials)
		N/A	N/A	LMB17452	A	1000	5.00	✓	40		✓	40	Lne
		G1047	28	1	A	917 ✓	7	✓	40		✓	40	
		G383	781	1	A	1037 ✓	7	✓	40		✓	40	
		G383	781	2	A	1035 ✓	7	✓	40		✓	40	
		G383	781	3	A	1028 ✓	7	✓	40		✓	40	
		G383	781	4	A	1039 ✓	7	✓	40		✓	40	
		G383	781	5	A	1046 ✓	7	✓	40		✓	40	
		G383	781	6	A	1042 ✓	7	✓	40		✓	40	
		G383	781	7	A-MS	1035 ✓	7	✓	40	40	✓	40	
		G383	781	8	A-MSD	1037 ✓	7	✓	40	40	✓	40	
		G895	36	1	A	1008 ✓	7	✓	40		✓	40	
		G895	36	2	A	945 ✓	7	✓	40		✓	40	
		G895	36	3	A	977 ✓	7	✓	40		✓	* 40	
		G895	36	4	A-MS	994 ✓	7	✓	40	40	✓	40	
		G895	36	5	A-MSD	985 ✓	7	✓	40	40	✓	40	
		G330	46	1	A	866	7	✓	40		✓	40	
		G330	46	2	A	878	7	✓	40		✓	40	
		G330	47	1	A	936	7	✓	40		✓	40	
		G330	47	2	A-MS	876	7	✓	40	* 40	✓	40	
		G330	47	3	A-MSD	998	7	✓	40	40	✓	40	
		G895	37	1	A	1017	7	✓	40		✓	40	
		N/A	N/A	OPR17452	A	1000	5.00	✓	40	40	✓	40	
		N/A	N/A	OPRD17452	A	1000	5.00	✓	40	40	✓	40	

Items	Lot #	Conc. (ng/µL)	Witness
MeCl	SPL2-174		
Tridecane	SPL2-163		
Salt	SPL2-172A		
H_2SO_4	SPL2-100		
Extraction Std.	534-230	0.05	JHL
Matrix Spike	534-228	0.005	JHL
Clean-up Std.	534-226	0.01	JHL

☐ Pre-Sox? ☑ Tridecane added? JHL

Balance Reference:
☑ WB1
☐ SB1

Start Date/Time: 11/18/09 17:00

Finish Date/Time: 11/19/09 9:00

Comments: * 534-232 1613/8290 MX
* 534-235A 8290 CS

DC61.082508.5

* = To be entered in the Prep Table.

☐ Data in prep table?

Water Observation Form

Analyst: LMC Logbook: 17 Reference Page: 462

Sample ID	Sample Characteristics	Extract Color (1-4)
N/A-N/A-LMB17452A	☑ Clear/Colorless ☐ Brown ☐ Odor ☐ Yellow ☐ Particulates ☐ Black ☐ Oily ☐ Cloudy ☐ Other?	☑ Clear/Colorless ☐ Brown ☐ Black ☐ Yellow ☐ Cloudy ☐
G1047-28-1A	☑ Clear/Colorless ☐ Brown ☐ Odor ☐ Yellow ☐ Particulates ☐ Black ☐ Oily ☐ Cloudy ☐ Other?	☑ Clear/Colorless ☐ Brown ☐ Black ☐ Yellow ☐ Cloudy ☐
G383-781-1A	☑ Clear/Colorless ☐ Brown ☐ Odor ☐ Yellow ☐ Particulates ☐ Black ☐ Oily ☐ Cloudy ☐ Other?	☑ Clear/Colorless ☐ Brown ☐ Black ☐ Yellow ☐ Cloudy ☐
G383-781-2A	☑ Clear/Colorless ☐ Brown ☐ Odor ☐ Yellow ☐ Particulates ☐ Black ☐ Oily ☐ Cloudy ☐ Other?	☑ Clear/Colorless ☐ Brown ☐ Black ☐ Yellow ☐ Cloudy ☐
G383-781-3A	☑ Clear/Colorless ☐ Brown ☐ Odor ☐ Yellow ☐ Particulates ☐ Black ☐ Oily ☐ Cloudy ☐ Other?	☑ Clear/Colorless ☐ Brown ☐ Black ☐ Yellow ☐ Cloudy ☐
G383-781-4A	☑ Clear/Colorless ☐ Brown ☐ Odor ☐ Yellow ☐ Particulates ☐ Black ☐ Oily ☐ Cloudy ☐ Other?	☑ Clear/Colorless ☐ Brown ☐ Black ☐ Yellow ☐ Cloudy ☐
G383-781-5A	☑ Clear/Colorless ☐ Brown ☐ Odor ☐ Yellow ☐ Particulates ☐ Black ☐ Oily ☐ Cloudy ☐ Other?	☑ Clear/Colorless ☐ Brown ☐ Black ☐ Yellow ☐ Cloudy ☐
G383-781-6A	☑ Clear/Colorless ☐ Brown ☐ Odor ☐ Yellow ☐ Particulates ☐ Black ☐ Oily ☐ Cloudy ☐ Other?	☑ Clear/Colorless ☐ Brown ☐ Black ☐ Yellow ☐ Cloudy ☐
G383-781-7A-MS	☑ Clear/Colorless ☐ Brown ☐ Odor ☐ Yellow ☐ Particulates ☐ Black ☐ Oily ☐ Cloudy ☐ Other?	☑ Clear/Colorless ☐ Brown ☐ Black ☐ Yellow ☐ Cloudy ☐
G383-781-8A-MSD	☑ Clear/Colorless ☐ Brown ☐ Odor ☐ Yellow ☐ Particulates ☐ Black ☐ Oily ☐ Cloudy ☐ Other?	☑ Clear/Colorless ☐ Brown ☐ Black ☐ Yellow ☐ Cloudy ☐
G895-36-1A	☐ Clear/Colorless ☐ Brown ☐ Odor ☑ Yellow ☐ Particulates ☐ Black ☐ Oily ☐ Cloudy ☐ Other?	☑ Clear/Colorless ☐ Brown ☐ Black ☐ Yellow ☐ Cloudy ☐
G895-36-2A	☐ Clear/Colorless ☐ Brown ☐ Odor ☑ Yellow ☐ Particulates ☐ Black ☐ Oily ☐ Cloudy ☐ Other?	☑ Clear/Colorless ☐ Brown ☐ Black ☐ Yellow ☐ Cloudy ☐
G895-36-3A	☐ Clear/Colorless ☐ Brown ☐ Odor ☑ Yellow ☐ Particulates ☐ Black ☐ Oily ☐ Cloudy ☐ Other?	☑ Clear/Colorless ☐ Brown ☐ Black ☐ Yellow ☐ Cloudy ☐
G895-36-4A-MS	☐ Clear/Colorless ☐ Brown ☐ Odor ☑ Yellow ☐ Particulates ☐ Black ☐ Oily ☐ Cloudy ☐ Other?	☑ Clear/Colorless ☐ Brown ☐ Black ☐ Yellow ☐ Cloudy ☐
G895-36-5A-MSD	☐ Clear/Colorless ☐ Brown ☐ Odor ☑ Yellow ☐ Particulates ☐ Black ☐ Oily ☐ Cloudy ☐ Other?	☑ Clear/Colorless ☐ Brown ☐ Black ☐ Yellow ☐ Cloudy ☐
G330-46-1A	☑ Clear/Colorless ☐ Brown ☐ Odor ☐ Yellow ☐ Particulates ☐ Black ☐ Oily ☐ Cloudy ☐ Other?	☑ Clear/Colorless ☐ Brown ☐ Black ☐ Yellow ☐ Cloudy ☐
G330-46-2A	☑ Clear/Colorless ☐ Brown ☐ Odor ☐ Yellow ☐ Particulates ☐ Black ☐ Oily ☐ Cloudy ☐ Other?	☑ Clear/Colorless ☐ Brown ☐ Black ☐ Yellow ☐ Cloudy ☐
G330-47-1A	☑ Clear/Colorless ☐ Brown ☐ Odor ☐ Yellow ☐ Particulates ☐ Black ☐ Oily ☐ Cloudy ☐ Other?	☑ Clear/Colorless ☐ Brown ☐ Black ☐ Yellow ☐ Cloudy ☐
G330-47-2A-MS	☑ Clear/Colorless ☐ Brown ☐ Odor ☐ Yellow ☐ Particulates ☐ Black ☐ Oily ☐ Cloudy ☐ Other?	☑ Clear/Colorless ☐ Brown ☐ Black ☐ Yellow ☐ Cloudy ☐
G330-47-3A-MSD	☑ Clear/Colorless ☐ Brown ☐ Odor ☐ Yellow ☐ Particulates ☐ Black ☐ Oily ☐ Cloudy ☐ Other?	☑ Clear/Colorless ☐ Brown ☐ Black ☐ Yellow ☐ Cloudy ☐
G895-37-1A	☑ Clear/Colorless ☐ Brown ☐ Odor ☐ Yellow ☐ Particulates ☐ Black ☐ Oily ☐ Cloudy ☐ Other?	☑ Clear/Colorless ☐ Brown ☐ Black ☐ Yellow ☐ Cloudy ☐
N/A-N/A-OPR17452A	☑ Clear/Colorless ☐ Brown ☐ Odor ☐ Yellow ☐ Particulates ☐ Black ☐ Oily ☐ Cloudy ☐ Other?	☑ Clear/Colorless ☐ Brown ☐ Black ☐ Yellow ☐ Cloudy ☐
N/A-N/A-OPRD17452A	☑ Clear/Colorless ☐ Brown ☐ Odor ☐ Yellow ☐ Particulates ☐ Black ☐ Oily ☐ Cloudy ☐ Other?	☑ Clear/Colorless ☐ Brown ☐ Black ☐ Yellow ☐ Cloudy ☐
--	☐ Clear/Colorless ☐ Brown ☐ Odor ☐ Yellow ☐ Particulates ☐ Black ☐ Oily ☐ Cloudy ☐ Other?	☐ Clear/Colorless ☐ Brown ☐ Black ☐ Yellow ☐ Cloudy ☐

DC222.082307.1

Extract Clean Up
(Acid Silica and Florisil)

Step	mL	Solvent	Complete
Rinse Column with DCM			
1	10_10_	DCM	✓
Flush Column with Hexane			
2	10_10_	Hexane	✓
Load Sample with Hexane			
Rinse with Hexane			
3	20_20_	Hexane	
Position Collection Vial			
Elute Sample with DCM			
3	20_20_10_	DCM	

Comments: _____

*Cleanup info on extraction sheet.

Item	Lot #	Conc. (ng/µL)
DCM	SPL2-217B	
Glass Wool	SPL2-130	
Acid silica	SPL2-216	
Silica	SPL2-201A	
Salt	SPL2-215B	
Hexane	SPL2-217D	
Florisil	SPL2-201C	
Tridecane	SPL2-202	
Cleanup Std		

Train	Sample Identification				CS Amt. (µL)	Witness	Method
	Client ID	Project ID	Sample ID	Container ID			
1	-	-	LMB17452	-	*	*	8290
2	G1047	28	1	B	*	*	8290
3	G383	781	1	C	*	*	8290
4	G383	781	2	C	*	*	8290
5	G383	781	3	C	*	*	8290
6	G383	781	4	C	*	*	8290
7	G383	781	5	C	*	*	8290
8	G383	781	6	C	*	*	8290
9	G383	781	7 MS	C	*	*	8290
10	G383	781	8 MSD	C	*	*	8290
11	G895	36	1	B	*	*	8290
12	G895	36	2	B	*	*	8290
13	G895	36	3	B	*	*	8290
14	G895	36	4 MS	B	*	*	8290
15	G895	36	5 MSD	B	*	*	8290
16	G330	46	1	C	*	*	8290
17	G330	46	2	C	*	*	8290
18	G330	47	1	C	*	*	8290
19	G330	47	2 MS	C	*	*	8290
20	G330	47	3 MSD	C	*	*	8290
21	G895	37	1	C	*	*	8290
22	-	-	OPR17452	-	*	*	8290
23	-	-	OPRD17452	-	*	*	8290
24	-	-	-	-	-	-	-

Analyst: [illegible] Date: 11/19/05

Log Book: 28 Page: 98

DC189.092205.1

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**B. CUMMINGS**	**DATE:**	**JANUARY 7, 2010**
FROM:	**JOSEPH KALINYAK**	**COPIES:**	**DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – PCDD/PCDF**
NTC GREAT LAKES, CTO C064
SDG G330-48

SAMPLES: 1 / Soil / PCDD/PCDF

NTC09SB15-SO-0001

OVERVIEW

The sample set for CTO C064, NTC GREAT LAKES, SDG G330-48 consisted of one (1) soil environmental sample. There were no field duplicate pairs associated with this sample delivery group (SDG). The sample was analyzed for polychlorinated dibenzyldioxins (PCDDs) and polychlorinated dibenzylfurans (PCDF).

The sample was collected by TetraTech NUS November 18, 2009 and analyzed by SGS North America Inc. All analyses were conducted in accordance with USEPA SW 846 Method 8290 analytical and reporting protocols. The data contained in this SDG were validated with regard to the following parameters:

- Data completeness
- * Hold times
- * Mass Calibration
- * HRGC/HRMS Tuning and System Performance
- * Chromatographic Resolution (Window Defining Mix)
- * Initial and continuing calibration
- Blank results
- * Internal Standard Recoveries
- * Clean-up Standard Recoveries
- * Blank Spike/Blank Spike Duplicate Results
- * Detection Limits
- Compound Quantitation
- Compound Identification

The symbol (*) indicates that all quality control criteria were met for this parameter. Problems affecting data quality are discussed below; documentation supporting these findings is presented in Appendix C. Qualified Analytical results are presented in Appendix A. Results as reported by the laboratory are presented in Appendix B.

PCDD/PCDF

The following compounds were detected in the method blank associated with batch WG17473 at the maximum concentration indicated below affecting the soil sample.

Compound	Maximum Conc. ng/kg	Action Level ng/kg
2,3,7,8-TCDD	0.296*	1.480*

1,2,3,4,6,7,8-HpCDD	0.210	1.050
OCDD	0.944	4.720
2,3,7,8-TCDF	0.206	1.030
1,2,3,7,8-PeCDF	0.0840	0.4200
2,3,4,7,8-PeCDF	0.0600	0.3000
1,2,3,4,7,8-HxCDF	0.0700	0.3500
1,2,3,6,7,8-HxCDF	0.0820	0.4100
2,3,4,6,7,8-HxCDF	0.0600*	0.3000*
1,2,3,4,6,7,8-HpCDF	0.128*	0.640*
OCDF	0.0680*	0.3400*
Total HpCDD	0.210	1.050
Total TCDF	0.464	2.320
Total PeCDF	0.144	0.720
Total HxCDF	0.216	1.080

*EMPC result (estimated maximum possible concentration)

An action level of 5X the maximum contaminant level for the PCDD/PCDFs has been used to evaluate sample data for blank contamination. Sample aliquot, percent moisture and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination for each individual sample. Positive results below the blank action level were qualified as non-detected, (U).

Positive sample analyte results below the lower method calibration limit were qualified estimated, (J).

Sample NTC09SB15-SO-0001 had estimated maximum possible concentration (EMPC) results reported for 1,2,3,7,8-PeCDD and 1,2,3,6,7,8-HxCDD. Sample EMPC results were qualified estimated, (J).

Notes

The 2,3,7,8-TCDF positive results were not verified and were not reported from a confirmation column/analysis. The 2,3,7,8-TCDF positive results were qualified due to method blank contamination and were qualified as non-detected, (U), for the sample.

Percent moisture was reported in the database instead of % solids.

EXECUTIVE SUMMARY

Laboratory Performance Issues: Method blank contamination resulted in sample data qualification.

Other Factors Affecting Data Quality: The presence of EMPC results resulted in data qualification. Positive analyte results less than the lower calibration limit were qualified estimated, (J). Percent moisture was reported in the database instead of % solids.

The data for these analyses were reviewed with reference to the EPA National Functional Guidelines for Chlorinated Dibenzo-p-dioxins and Chlorinated Dibenzofurans (Sept. 2005) and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (January 2006). The text of this report has been formulated to address only those problem areas affecting data quality.

Tetra Tech NUS
Joseph Kalinyak
Chemist/Data Validator

TetraTech NUS
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

VALUE QUALIFIER KEY (VAL QUAL)

U – The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ – The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R – The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

DATA QUALIFICATION CODE (QUAL CODE)

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$ / ICP PDS Recovery Noncompliance
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (e.g. base-line drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 01797	NSAMPLE	NTC09SB15-SO-0001		
SDG: G330-48	LAB_ID	G330-48-1D		
FRACTION: DIOX	SAMP_DATE	11/18/2009		
MEDIA: SOIL	QC_TYPE	NM		
	UNITS	NG/KG		
	PCT_SOLIDS	81.5		
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
1,2,3,4,6,7,8,9-OCDD		39.5		
1,2,3,4,6,7,8,9-OCDF		2.47	J	P
1,2,3,4,6,7,8-HPCDD		5.38	J	P
1,2,3,4,6,7,8-HPCDF		1.69	J	P
1,2,3,4,7,8,9-HPCDF		0	U	
1,2,3,4,7,8-HXCDD		0	U	
1,2,3,4,7,8-HXCDF		0.313	U	A
1,2,3,6,7,8-HXCDD		0.825	J	PW
1,2,3,6,7,8-HXCDF		0.303	U	A
1,2,3,7,8,9-HXCDD		4.12	J	P
1,2,3,7,8,9-HXCDF		0	U	
1,2,3,7,8-PECDD		0.524	J	PW
1,2,3,7,8-PECDF		0.252	U	A
2,3,4,6,7,8-HXCDF		0.325	U	A
2,3,4,7,8-PECDF		0.313	U	A
2,3,7,8-TCDD		0.507	U	A
2,3,7,8-TCDF		0.772	U	A
TOTAL HPCDD		10.7		
TOTAL HPCDF		3.23		
TOTAL HXCDD		12.1		
TOTAL HXCDF		2.95		
TOTAL PECDD		1.32		
TOTAL PECDF		3.14		
TOTAL TCDD		0.524		
TOTAL TCDF		4.52		

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

Method 8290
NTC09SB15-SO-0001
Tetra Tech NUS, Inc.

Analytical Data Summary Sheet

Analyte	Amount pg/g	EDL pg/g	RL pg/g	EMPC pg/g	RT (min.)	Ratio		Qualifier
2,3,7,8-TCDD	EMPC	0.121	1.21	0.507	31:24	0.65	*	A
1,2,3,7,8-PeCDD	EMPC	0.607	6.07	0.524	34:13	1.28	*	A
1,2,3,4,7,8-HxCDD	ND	0.607	6.07					
1,2,3,6,7,8-HxCDD	EMPC	0.607	6.07	0.825	36:55	1.43	*	A
1,2,3,7,8,9-HxCDD	**4.12**		6.07		37:10	1.24		A
1,2,3,4,6,7,8-HpCDD	**5.38**		6.07		40:15	0.96		A
OCDD	**39.5**		12.1		44:31	0.89		
2,3,7,8-TCDF	**0.772**		1.21		30:46	0.77		A
1,2,3,7,8-PeCDF	**0.252**		6.07		33:24	1.35		A
2,3,4,7,8-PeCDF	**0.313**		6.07		34:01	1.78		A
1,2,3,4,7,8-HxCDF	EMPC	0.607	6.07	0.313	36:06	1.64	*	A
1,2,3,6,7,8-HxCDF	**0.303**		6.07		36:12	1.21		A
2,3,4,6,7,8-HxCDF	EMPC	0.607	6.07	0.325	36:42	1.46	*	A
1,2,3,7,8,9-HxCDF	ND	0.607	6.07					
1,2,3,4,6,7,8-HpCDF	**1.69**		6.07		38:58	1.13		A
1,2,3,4,7,8,9-HpCDF	ND	0.607	6.07					
OCDF	**2.47**		12.1		44:49	0.84		A
Total TCDDs	**0.524**		1.21	1.31				
Total PeCDDs	**1.32**		6.07	2.67				
Total HxCDDs	**12.1**		6.07	12.9				
Total HpCDDs	**10.7**		6.07					
Total TCDFs	**4.52**		1.21	5.25				
Total PeCDFs	**3.14**		6.07	3.34				
Total HxCDFs	**2.95**		6.07	3.59				
Total HpCDFs	**3.23**		6.07					
WHO-2005 TEQ (ND=0)	**0.704**			1.88				
WHO-2005 TEQ (ND=½)	**1.22**			1.95				

Client Information			**Sample Information**		
Project Name:	Great Lakes NTC		Report Basis:	Dry	
			Matrix:	Soil	
Sample ID:	NTC09SB15-SO-0001		Weight / Volume:	10.11	g
			Solids / Lipids:	81.5	%
			Original pH :	NA	
Laboratory Information			Batch ID:	WG17473	
Project ID:	G330-48		Instrument:	HRMS1	
Sample ID:	G330-48-1D		Filename:	a03dec09e-7	
Collection Date/Time:	11/18/09	10:00	Retchk:	a03dec09e-1	
Receipt Date/Time:	11/19/09	10:00	Begin ConCal:	a03dec09e-1	
Extraction Date:	12/01/09		End ConCal:	a03dec09e-15	
Analysis Date/Time:	12/03/09	22:30	Initial Cal:	m8290-092309a	

Method 8290
NTC09SB15-SO-0001
Tetra Tech NUS, Inc.

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)		Percent Recovery (%)	RT (min.)	Ratio	Qualifier
Extraction Standards							
13C12-2,3,7,8-TCDD	2	1.22		61.0	31:22	0.78	
13C12-1,2,3,7,8-PeCDD	2	1.24		62.0	34:12	1.59	
13C12-1,2,3,6,7,8-HxCDD	2	1.17		58.6	36:55	1.25	
13C12-1,2,3,4,6,7,8-HpCDD	2	1.25		62.7	40:13	1.07	
13C12-OCDD	4.0	2.38		59.6	44:30	0.90	
13C12-2,3,7,8-TCDF	2	1.29		64.3	30:45	0.79	
13C12-1,2,3,7,8-PeCDF	2	1.21		60.7	33:24	1.57	
13C12-1,2,3,6,7,8-HxCDF	2	1.09		54.7	36:12	0.52	
13C12-1,2,3,4,6,7,8-HpCDF	2	1.11		55.7	38:58	0.45	
Cleanup Standards							
37Cl4-2,3,7,8-TCDD	0.4	0.297		74.3	31:24	-	
13C12-2,3,4,7,8-PeCDF	0.4	0.274		68.6	34:01	1.56	
13C12-1,2,3,4,7,8-HxCDD	0.4	0.250		62.5	36:49	1.35	
13C12-1,2,3,4,7,8-HxCDF	0.4	0.251		62.8	36:06	0.51	
13C12-1,2,3,4,7,8,9-HpCDF	0.4	0.234		58.6	40:55	0.44	
Injection Standards							
13C12-1,2,3,4-TCDD	2.0	-		-	30:55	0.79	
13C12-1,2,3,7,8,9-HxCDD	2.0	-		-	37:09	1.25	

Client Information			**Sample Information**		
Project Name:	Great Lakes NTC		Report Basis:	Dry	
			Matrix:	Soil	
Sample ID:	NTC09SB15-SO-0001		Weight / Volume:	10.11	g
			Solids / Lipids:	81.5	%
			Original pH :	NA	
Laboratory Information			Batch ID:	WG17473	
Project ID:	G330-48		Instrument:	HRMS1	
Sample ID:	G330-48-1D		Filename:	a03dec09e-7	
Collection Date/Time:	11/18/09	10:00	Retchk:	a03dec09e-1	
Receipt Date/Time:	11/19/09	10:00	Begin ConCal:	a03dec09e-1	
Extraction Date:	12/01/09		End ConCal:	a03dec09e-15	
Analysis Date/Time:	12/03/09	22:30	Initial Cal:	m8290-092309a	

Form Version:[8290]Report

Analyzed by: DS
Date: 12-9-09

Reviewed by: TM
Date: 12-9-09

APPENDIX C

SUPPORT DOCUMENTATION

HOLDTIME

SDG G330-48

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
DIOX	PERCE	NTC09SB15-SO-0001	G330-48-1D	NM	11/18/2009	12/01/2009	12/03/2009	13	2	15
DIOX	PERCE	Batch MSD	G330-48-1F	NM	11/18/2009	12/01/2009	12/04/2009	13	3	16
DIOX	PERCE	Batch MS	G330-48-1E	NM	11/18/2009	12/01/2009	12/04/2009	13	3	16
DIOX	PG/G	NTC09SB15-SO-0001	G330-48-1D	NM	11/18/2009	12/01/2009	12/03/2009	13	2	15
DIOX	PG/G	Batch MSD	G330-48-1F	NM	11/18/2009	12/01/2009	12/04/2009	13	3	16
DIOX	PG/G	Batch MS	G330-48-1E	NM	11/18/2009	12/01/2009	12/04/2009	13	3	16

G330-48

TETRA TECH NUS, INC

CHAIN OF CUSTODY
NUMBER: ED00000104-9

Project No:	Facility:	Project Manager:	Carrier:	Laboratory Name:
112G01489	**GREAT LAKES NTC**	**Bob Davis**	**Federal Express**	**SGS North America Inc.** **5500 Business Drive** **Wilmington, NC 28405**
Task No:	Turn Around Time:	Field Ops Leader:	Carrier/Waybill No.	Point of Contact:
0510	**Standard**	**Shannon Hill**	**8631 3888 0860**	**Linda McWhirter** **910.350.1903**

Date	Sample ID #	Time	Analysis	Loc ID	Matrix	Description	Preservative	Container Count	Container Type	Container Reqs	Comments
11/18/2009	NTC09SB15-SO-0001	10:00	SW-846 8290	NTC09SB15	SO	Dioxins/Furans	4°C	3	Glass - Amber	4 oz. wide-mouth w/Teflon cap	

1. Relinquished By: **Shannon Hill**	Date: 11/18/2009	Time: 13:24	Received By: **Federal Express**	Date: 11/18/2009	Time: 14:24
2. Relinquished By:	Date:	Time:	Received By:	Date: 11/19/09	Time: 1000
3. Relinquished By:	Date:	Time:	Received By:	Date:	Time:

5.2°C custody tape intact

Comments:

Case Narrative
SGS Project: **G330-48**
Project number: **112G01489**
Project Name: **Great Lakes NTC**

For Method: 8290

- The submitted sample was accepted into the lab on November 19th, 2009 and extracted on December 1st, 2009 by method 3540C. The sample extract and associated QC extracts were then processed through clean-up as prescribed in the SGS standard operating procedures and analyzed by HRGC/HRMS for method 8290.

- No analytical issues were encountered.

Tamara Morgan 12/9/09

Tamara Morgan
Data Validation

Date

B Analyte was detected in the Lab Method Blank at a level above the Reporting Limit.

EDL "Estimated Detection Limit"

EMPC "Estimated Maximum Possible Concentration"

RL Report Limit

CL Control Limit

U Undetected

ppt Parts-per-trillion (pg/g; ng/L)

V Recovery is below quality control limit. The data has been validated based on a favorable signal-to-noise and detection limit.

Outside quality control limits

* Indicates that the ion-ratio fails high or low; analyte reported as an EMPC

An average uncertainty of 30% can be routinely achieved as concluded from the evaluation of HRGC-HRMS standard operating procedures. The following flags warn the data user of situations where the uncertainty may be greater than stated.

A Amount detected is less than the Lower Method Calibration Limit.

J Amount detected is between the Method Detection Limit and the Lower Calibration Limit.

O The recovery of this analyte in the OPR is above the Method QC Limits and the reported concentration in the sample may be biased high.

E Amount detected is greater than the Upper Calibration Limit.

S The amount of analyte present has saturated the detector. This situation results in an underestimation of the affected analyte(s).

Q Indicates the presence of a quantitative interference. This situation may result in an underestimation of the affected analyte(s).

I Indicates the presence of a qualitative interference that could cause a false positive or an overestimation of the affected analyte(s).

DPE Indicates the presence of a peak in the polychlorinated diphenylether channel that could cause a false positive or an overestimation of the affected analyte(s).

DC250.081908.1

Toxic Equivalency Factors

Analyte	WHO* 1998	WHO* 2005	International-89	MADEP+
2,3,7,8-TCDD	1	1	1	1
1,2,3,7,8-PeCDD	1	1	0.5	0.5
1,2,3,4,7,8-HxCDD	0.1	0.1	0.1	0.1
1,2,3,6,7,8-HxCDD	0.1	0.1	0.1	0.1
1,2,3,7,8,9-HxCDD	0.1	0.1	0.1	0.1
1,2,3,4,6,7,8-HpCDD	0.01	0.01	0.01	0.1
OCDD	0.0001	0.0003	0.001	0.001
2,3,7,8-TCDF	0.1	0.1	0.1	0.1
1,2,3,7,8-PeCDF	0.05	0.03	0.05	0.5
2,3,4,7,8-PeCDF	0.5	0.3	0.5	0.5
1,2,3,4,7,8-HxCDF	0.1	0.1	0.1	0.1
1,2,3,6,7,8-HxCDF	0.1	0.1	0.1	0.1
2,3,4,6,7,8-HxCDF	0.1	0.1	0.1	0.1
1,2,3,7,8,9-HxCDF	0.1	0.1	0.1	0.1
1,2,3,4,6,7,8-HpCDF	0.01	0.01	0.01	0.1
1,2,3,4,7,8,9-HpCDF	0.01	0.01	0.01	0.1
OCDF	0.0001	0.0003	0.001	0.001

* World Health Organization
+ Massachusetts Department of Environmental Protection

Method 8290
Lab Method Blank

Analytical Data Summary Sheet

Analyte	Amount pg/g	EDL pg/g	RL pg/g	EMPC pg/g	RT (min.)	Ratio		Qualifier
2,3,7,8-TCDD	EMPC	0.100	1.00	0.296	31:24	0.59	*	A
1,2,3,7,8-PeCDD	ND	0.500	5.00					
1,2,3,4,7,8-HxCDD	ND	0.500	5.00					
1,2,3,6,7,8-HxCDD	ND	0.500	5.00					
1,2,3,7,8,9-HxCDD	ND	0.500	5.00					
1,2,3,4,6,7,8-HpCDD	0.210		5.00		40:15	0.98		A
OCDD	0.944		10.0		44:31	0.96		A
2,3,7,8-TCDF	0.206		1.00		30:46	0.74		A
1,2,3,7,8-PeCDF	0.0840		5.00		33:25	1.32		A
2,3,4,7,8-PeCDF	0.0600		5.00		34:01	1.69		A
1,2,3,4,7,8-HxCDF	0.0700		5.00		36:06	1.24		A
1,2,3,6,7,8-HxCDF	0.0820		5.00		36:12	1.41		A
2,3,4,6,7,8-HxCDF	EMPC	0.500	5.00	0.0600	36:42	1.43	*	A
1,2,3,7,8,9-HxCDF	ND	0.500	5.00					
1,2,3,4,6,7,8-HpCDF	EMPC	0.500	5.00	0.128	38:58	1.36	*	A
1,2,3,4,7,8,9-HpCDF	ND	0.500	5.00					
OCDF	EMPC	1.00	10.0	0.0680	44:49	0.38	*	A
Total TCDDs	ND	0.100	1.00	0.422				
Total PeCDDs	ND	0.500	5.00	0.114				
Total HxCDDs	ND	0.500	5.00					
Total HpCDDs	0.210		5.00	0.374				
Total TCDFs	0.464		1.00					
Total PeCDFs	0.144		5.00					
Total HxCDFs	0.216		5.00	0.324				
Total HpCDFs	ND	0.500	5.00	0.128				
WHO-2005 TEQ (ND=0)	0.0587			0.362				
WHO-2005 TEQ (ND=½)	0.489			0.715				

Client Information			**Sample Information**		
Project Name:			Report Basis:	Wet	
			Matrix:	Soil	
Sample ID:	Lab Method Blank		Weight / Volume:	10.00	g
			Solids / Lipids:	NA	%
			Original pH :	NA	
Laboratory Information			Batch ID:	WG17473	
Project ID:			Instrument:	HRMS1	
Sample ID:			Filename:	a03dec09e-4	
Collection Date/Time:			Retchk:	a03dec09e-1	
Receipt Date/Time:			Begin ConCal:	a03dec09e-1	
Extraction Date:	12/01/09		End ConCal:	a03dec09e-15	
Analysis Date/Time:	12/03/09	20:05	Initial Cal:	m8290-092309a	

Method 8290
Lab Method Blank

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)		Percent Recovery (%)	RT (min.)	Ratio	Qualifier
Extraction Standards							
13C12-2,3,7,8-TCDD	2	1.70		85.1	31:22	0.78	
13C12-1,2,3,7,8-PeCDD	2	1.78		88.9	34:12	1.59	
13C12-1,2,3,6,7,8-HxCDD	2	1.79		89.6	36:55	1.25	
13C12-1,2,3,4,6,7,8-HpCDD	2	1.94		96.9	40:13	1.06	
13C12-OCDD	4.0	3.91		97.8	44:30	0.89	
13C12-2,3,7,8-TCDF	2	1.79		89.6	30:45	0.79	
13C12-1,2,3,7,8-PeCDF	2	1.72		86.0	33:24	1.58	
13C12-1,2,3,6,7,8-HxCDF	2	1.71		85.6	36:12	0.52	
13C12-1,2,3,4,6,7,8-HpCDF	2	1.75		87.6	38:58	0.44	
Cleanup Standards							
37Cl4-2,3,7,8-TCDD	0.4	0.398		99.4	31:24	-	
13C12-2,3,4,7,8-PeCDF	0.4	0.385		96.1	34:01	1.60	
13C12-1,2,3,4,7,8-HxCDD	0.4	0.381		95.2	36:49	1.28	
13C12-1,2,3,4,7,8-HxCDF	0.4	0.379		94.7	36:06	0.51	
13C12-1,2,3,4,7,8,9-HpCDF	0.4	0.365		91.2	40:55	0.43	
Injection Standards							
13C12-1,2,3,4-TCDD	2.0	-		-	30:55	0.78	
13C12-1,2,3,7,8,9-HxCDD	2.0	-		-	37:09	1.25	

Client Information			**Sample Information**		
Project Name:			Report Basis:	Wet	
			Matrix:	Soil	
Sample ID:	Lab Method Blank		Weight / Volume:	10.00	g
			Solids / Lipids:	NA	%
			Original pH :	NA	
Laboratory Information			Batch ID:	WG17473	
Project ID:			Instrument:	HRMS1	
Sample ID:			Filename:	a03dec09e-4	
Collection Date/Time:			Retchk:	a03dec09e-1	
Receipt Date/Time:			Begin ConCal:	a03dec09e-1	
Extraction Date:	12/01/09		End ConCal:	a03dec09e-15	
Analysis Date/Time:	12/03/09	20:05	Initial Cal:	m8290-092309a	

Form Version:[8290]Report

Analyzed by: DS
Date: 12-8-09

Reviewed by: YM
Date: 12-8-09

Analytical Results
for
Ongoing Precision Result (OPR)

Analyte	Spiked (pg/µL)	AMT (pg/µL)	REC %	Range % Lower	Range % Upper	Qualifier
2,3,7,8-TCDD	10	9.97	99.7	70.0	130	
1,2,3,7,8-PeCDD	50	49.0	98.0	70.0	130	
1,2,3,4,7,8-HxCDD	50	48.6	97.2	70.0	130	
1,2,3,6,7,8-HxCDD	50	48.7	97.5	70.0	130	
1,2,3,7,8,9-HxCDD	50	50.3	101	70.0	130	
1,2,3,4,6,7,8-HpCDD	50	47.7	95.3	70.0	130	
OCDD	100	92.3	92.3	70.0	130	
2,3,7,8-TCDF	10	9.35	93.5	70.0	130	
1,2,3,7,8-PeCDF	50	49.1	98.2	70.0	130	
2,3,4,7,8-PeCDF	50	48.7	97.5	70.0	130	
1,2,3,4,7,8-HxCDF	50	49.4	98.8	70.0	130	
1,2,3,6,7,8-HxCDF	50	50.5	101	70.0	130	
2,3,4,6,7,8-HxCDF	50	50.8	102	70.0	130	
1,2,3,7,8,9-HxCDF	50	48.1	96.2	70.0	130	
1,2,3,4,6,7,8-HpCDF	50	49.0	98.1	70.0	130	
1,2,3,4,7,8,9-HpCDF	50	46.1	92.2	70.0	130	
OCDF	100	90.1	90.1	70.0	130	

= Outside range limits
* = Ion Ratio Out

QC Information

OPR Project No:	OPR17473
Extraction Date:	1-Dec-09
Analysis Date:	3-Dec-09
Method:	8290

File Information

OPR Filename:	a03dec09e-2
Retchk:	a03dec09e-1
Begin ConCal:	a03dec09e-1
End ConCal:	a03dec09e-15
Initial Cal:	m8290-092309a

Sample Information

Matrix: Soil

Analytical Results
for
Ongoing Precision Result (OPR)

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)	Percent Recovery (%)	RT (min.)	Ratio	Qualifier
Extraction Standards						
13C12-2,3,7,8-TCDD	2	1.68	84.0	31:22	0.78	
13C12-1,2,3,7,8-PeCDD	2	1.78	89.0	34:12	1.58	
13C12-1,2,3,6,7,8-HxCDD	2	1.76	88.0	36:55	1.25	
13C12-1,2,3,4,6,7,8-HpCDD	2	1.94	97.0	40:13	1.07	
13C12-OCDD	4	4.02	101	44:30	0.90	
13C12-2,3,7,8-TCDF	2	1.76	88.0	30:45	0.79	
13C12-1,2,3,7,8-PeCDF	2	1.71	85.5	33:24	1.57	
13C12-1,2,3,6,7,8-HxCDF	2	1.69	84.5	36:12	0.52	
13C12-1,2,3,4,6,7,8-HpCDF	2	1.79	89.5	38:58	0.45	
Cleanup Standards						
37Cl4-2,3,7,8-TCDD	0.4	0.403	101	31:24	-	
13C12-2,3,4,7,8-PeCDF	0.4	0.399	99.8	34:01	1.59	
13C12-1,2,3,4,7,8-HxCDD	0.4	0.386	96.5	36:49	1.28	
13C12-1,2,3,4,7,8-HxCDF	0.4	0.385	96.3	36:06	0.51	
13C12-1,2,3,4,7,8,9-HpCDF	0.4	0.391	97.8	40:55	0.45	
Injection Standards						
13C12-1,2,3,4-TCDD	2	-	-	30:55	0.80	
13C12-1,2,3,7,8,9-HxCDD	2	-	-	37:09	1.25	

QC Information

OPR Project No: OPR17473
Extraction Date: 1-Dec-09
Analysis Date: 3-Dec-09
Method: 8290

Sample Information

Matrix: Soil

File Information

OPR Filename : a03dec09e-2
Retchk: a03dec09e-1
Begin ConCal: a03dec09e-1
End ConCal: a03dec09e-15
Initial Cal: m8290-092309a

Form Version:[8290]OPR

Reviewed By: TM

Date Reviewed: 12-8-09

Analytical Results
for
Ongoing Precision & Recovery Duplicate Results (OPRD)

Analyte	Spiked (pg/µL)	AMT (pg/µL)	Recovery %	#	Range Lower	Range Upper	OPR Rec(%)	#	RPD (±20%)	Qualifier
2,3,7,8-TCDD	10.0	9.92	99.2		70.0	130	99.7		0.494	
1,2,3,7,8-PeCDD	50.0	48.0	96.0		70.0	130	98.0		2.06	
1,2,3,4,7,8-HxCDD	50.0	46.8	93.7		70.0	130	97.2		3.74	
1,2,3,6,7,8-HxCDD	50.0	49.6	99.2		70.0	130	97.5		1.69	
1,2,3,7,8,9-HxCDD	50.0	49.7	99.5		70.0	130	101		1.55	
1,2,3,4,6,7,8-HpCDD	50.0	47.1	94.3		70.0	130	95.3		1.08	
OCDD	100	91.3	91.3		70.0	130	92.3		1.06	
2,3,7,8-TCDF	10.0	9.25	92.5		70.0	130	93.5		1.06	
1,2,3,7,8-PeCDF	50.0	48.2	96.3		70.0	130	98.2		1.95	
2,3,4,7,8-PeCDF	50.0	47.2	94.3		70.0	130	97.5		3.38	
1,2,3,4,7,8-HxCDF	50.0	49.3	98.6		70.0	130	98.8		0.195	
1,2,3,6,7,8-HxCDF	50.0	49.5	99.0		70.0	130	101		1.99	
2,3,4,6,7,8-HxCDF	50.0	49.8	99.6		70.0	130	102		2.45	
1,2,3,7,8,9-HxCDF	50.0	48.7	97.4		70.0	130	96.2		1.25	
1,2,3,4,6,7,8-HpCDF	50.0	48.6	97.2		70.0	130	98.1		0.934	
1,2,3,4,7,8,9-HpCDF	50.0	45.7	91.3		70.0	130	92.2		0.959	
OCDF	100	90.2	90.2		70.0	130	90.1		0.139	

= Outside range limits
* = Ion Ratio Out

QC Information

OPR Project No:	OPRD17473
Extraction Date:	1-Dec-09
Analysis Date:	3-Dec-09
Method:	8290

Sample Information

Matrix:	Soil

File Information

OPRD Filename :	a03dec09e-3
Retchk:	a03dec09e-1
Begin ConCal:	a03dec09e-1
End ConCal:	a03dec09e-15
Initial Cal:	m8290-092309a

Analytical Results
for
Ongoing Precision & Recovery Duplicate Results (OPRD)

Labeled Standard	Expected Amount (ng)	Measured Amount (ng)	Percent Recovery (%)	RT (min.)	Ratio	Qualifier
Extraction Standards			(40-135%)			
13C12-2,3,7,8-TCDD	2	1.16	58.2	31:22	0.78	
13C12-1,2,3,7,8-PeCDD	2	1.20	59.8	34:12	1.58	
13C12-1,2,3,6,7,8-HxCDD	2	1.18	59.1	36:55	1.24	
13C12-1,2,3,4,6,7,8-HpCDD	2	1.28	64.0	40:13	1.07	
13C12-OCDD	4	2.62	65.6	44:30	0.90	
13C12-2,3,7,8-TCDF	2	1.23	61.7	30:45	0.79	
13C12-1,2,3,7,8-PeCDF	2	1.19	59.3	33:24	1.58	
13C12-1,2,3,6,7,8-HxCDF	2	1.13	56.3	36:12	0.52	
13C12-1,2,3,4,6,7,8-HpCDF	2	1.18	59.2	38:58	0.44	
Cleanup Standards			(70-130%)			
37Cl4-2,3,7,8-TCDD	0.4	0.283	70.8	31:24	-	
13C12-2,3,4,7,8-PeCDF	0.4	0.272	68.0	34:01	1.57	
13C12-1,2,3,4,7,8-HxCDD	0.4	0.255	63.7	36:49	1.35	
13C12-1,2,3,4,7,8-HxCDF	0.4	0.261	65.1	36:06	0.51	
13C12-1,2,3,4,7,8,9-HpCDF	0.4	0.255	63.7	40:55	0.44	
Injection Standards						
13C12-1,2,3,4-TCDD	2	-	-	30:55	0.80	
13C12-1,2,3,7,8,9-HxCDD	2	-	-	37:09	1.25	

QC Information

OPR Project No: OPRD17473
Extraction Date: 01-Dec-09
Analysis Date: 03-Dec-09
Method: 8290

Sample Information

Matrix: Soil

File Information

OPRD Filename : a03dec09e-3
Retchk: a03dec09e-1
Begin ConCal: a03dec09e-1
End ConCal: a03dec09e-15
Initial Cal: m8290-092309a

Form Version:(8290)OPRD

Reviewed By: TM

Date Reviewed: 12-8-09

HRMS2 Sequence Log

SGS Environmental Services

Data File S	Sample ID	Analyst	Acq. Date	Time
a23sep09a;1	;SB	;JWP	23-SEP-09	06:57:45
a23sep09a;2	;CS0.5 S30-144A	;JWP	23-SEP-09	07:46:05
a23sep09a;3	;CS1 S30-144B	;JWP	23-SEP-09	08:34:22
a23sep09a;4	;CS2 S30-144C	;JWP	23-SEP-09	09:22:38
a23sep09a;5	;CS3 S30-144D	;JWP	23-SEP-09	10:10:54
a23sep09a;6	;CS4 S30-144E	;JWP	23-SEP-09	10:59:11
a23sep09a;7	;CS5 S30-144F	;JWP	23-SEP-09	11:47:31

CAL

Cal: m8290-092309a CAL

Results: Version: V3.6 6-JAN-2000 17:51:42

Ent	Name	Mean RRF	Std	%RSD	a23sep09a-2 RRF#1 (0.25)	a23sep09a-4 RRF#2 (2.00)	a23sep09a-5 RRF#3 (10.0)	a23sep09a-6 RRF#4 (40.0)	a23sep09a-7 RRF#5 (200 pg/ml)
1	2,3,7,8-TCDD	1.0293	18	3.24 %	1.05	0.98	1.02	1.03	1.07
2	1,2,3,7,8-PeCDD	1.0539	19	4.18 %	0.99	1.03	1.06	1.07	1.11
3	1,2,3,4,7,8-HxCDD	0.9679	20	1.64 %	0.95	0.96	0.96	0.99	0.98
4	1,2,3,6,7,8-HxCDD	0.9886	20	2.54 %	1.01	0.95	0.98 calc.	1.00	1.00
5	1,2,3,7,8,9-HxCDD	0.9540	20	3.13 %	1.00	0.93	0.94	0.95	0.95
6	1,2,3,4,6,7,8-HpCDD	1.0970	21	3.94 %	1.15	1.04	1.08	1.09	1.13
7	OCDD	1.1240	22	6.39 %	1.24 calc.	1.05	1.08	1.11	1.14
8	2,3,7,8-TCDF	1.0424	23	6.47 %	1.14	0.96	1.00	1.05	1.07 calc.
9	1,2,3,7,8-PeCDF	0.9997	24	3.89 %	0.94	0.99	1.01	1.02	1.04
10	2,3,4,7,8-PeCDF	1.0386	24	2.02 %	1.03	1.03 calc.	1.01	1.06	1.06
11	1,2,3,4,7,8-HxCDF	1.0846	25	1.83 %	1.11	1.06	1.09	1.09	1.07
12	1,2,3,6,7,8-HxCDF	1.1500	25	3.25 %	1.13	1.10	1.15	1.17	1.20
13	2,3,4,6,7,8-HxCDF	1.1020	25	1.44 %	1.08	1.09	1.11	1.11	1.12
14	1,2,3,7,8,9-HxCDF	0.9369	25	6.28 %	0.88	0.89	0.94	0.94 calc.	1.03
15	1,2,3,4,6,7,8-HpCDF	1.3813	26	3.02 %	1.40	1.31	1.37	1.41	1.42
16	1,2,3,4,7,8,9-HpCDF	1.0673	26	5.37 %	1.08	0.97	1.11	1.09	1.10
17	OCDF	1.3977	22	9.03 %	1.34	1.29	1.31	1.47	1.59
18	13C-2,3,7,8-TCDD	1.1184	27	1.49 %	1.13	1.10 calc.	1.10	1.12	1.14
19	13C-1,2,3,7,8-PeCDD	0.8116	27	5.64 %	0.84	0.76	0.77	0.82	0.87
20	13C-1,2,3,6,7,8-HxCDD	1.0736	28	2.09 %	1.05	1.06	1.08	1.07 calc.	1.11
21	13C-1,2,3,4,6,7,8-HpCDD	0.7360	28	2.32 %	0.76	0.71	0.74	0.73	0.75
22	13C-OCDD	0.5833	28	5.91 %	0.58 calc.	0.53	0.61	0.58	0.62
23	13C-2,3,7,8-TCDF	1.7135	27	1.08 %	1.73	1.74	1.71 calc.	1.70	1.69
24	13C-1,2,3,7,8-PeCDF	1.3731	27	5.15 %	1.42	1.28	1.34	1.37	1.46
25	13C-1,2,3,6,7,8-HxCDF	1.4379	28	0.42 %	1.43	1.44	1.43	1.45	1.44
26	13C-1,2,3,4,6,7,8-HpCDF	1.0173	28	2.10 %	1.05	1.00	1.01	1.00	1.03 calc.
27	13C-1,2,3,4-TCDD	-		- %	-	-	-	-	-
28	13C-1,2,3,7,8,9-HxCDD	-		- %	-	-	-	-	-
29	37Cl-2,3,7,8-TCDD	1.1662	27	5.09 %	1.15	1.10	1.13	1.21	1.24
30	13C-2,3,4,7,8-PeCDF	1.3373	27	4.37 %	1.38	1.27	1.28	1.35	1.41
31	13C-1,2,3,4,7,8-HxCDD	0.9822	28	1.16 %	0.99	0.99	0.96	0.98	0.99
32	13C-1,2,3,4,7,8-HxCDF	1.2981	28	3.16 %	1.32	1.33	1.31	1.29	1.23
33	13C-1,2,3,4,7,8,9-HpCDF	0.7821	28	2.85 %	0.79	0.75 calc.	0.80	0.77	0.79
34	37Cl-2,3,7,8-TCDD	1.0425	18	3.95 %	1.02	0.99	1.03 calc.	1.07	1.09
35	13C-2,3,4,7,8-PeCDF	0.9744	24	1.74 %	0.97	1.00	0.96	0.99	0.96
36	13C-1,2,3,4,7,8-HxCDD	0.9152	20	2.68 %	0.94	0.93	0.89	0.92	0.89
37	13C-1,2,3,4,7,8-HxCDF	0.9028	25	3.19 %	0.92	0.92	0.91	0.89	0.86
38	13C-1,2,3,4,7,8,9-HpCDF	0.7688	26	2.52 %	0.76	0.75	0.80	0.78	0.77
39	Total Tetra-Furans	1.0424		6.47 %	1.14	0.96	1.00	1.05	1.07
40	Total Tetra-Dioxins	1.0293		3.24 %	1.05	0.98	1.02	1.03	1.07
41	Total Penta-Furans Fn1	1.0191	9 10	2.59 %	0.98	1.01	1.01	1.04	1.05
42	Total Penta-Furans Fn2	1.0191		2.59 %	0.98	1.01	1.01	1.04	1.05
43	Total Penta-Dioxins	1.0539		4.18 %	0.99	1.03	1.06	1.07	1.11
44	Total Hexa-Furans	1.0684		2.58 %	1.05	1.03	1.07	1.08	1.11
45	Total Hexa-Dioxins	0.9702		1.90 %	0.99	0.95	0.96	0.98	0.98

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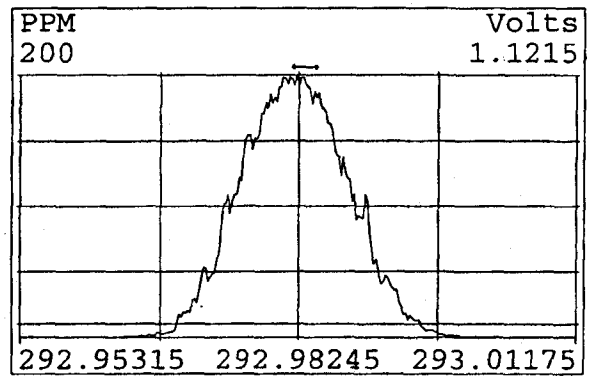
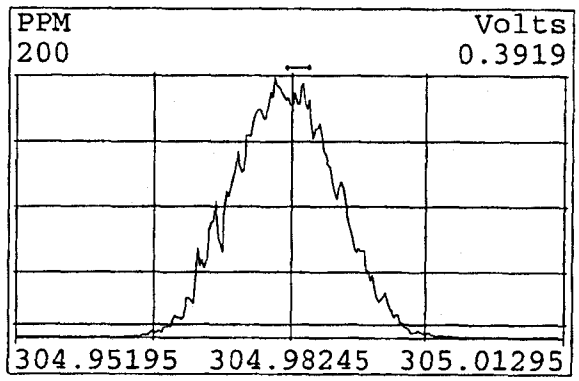
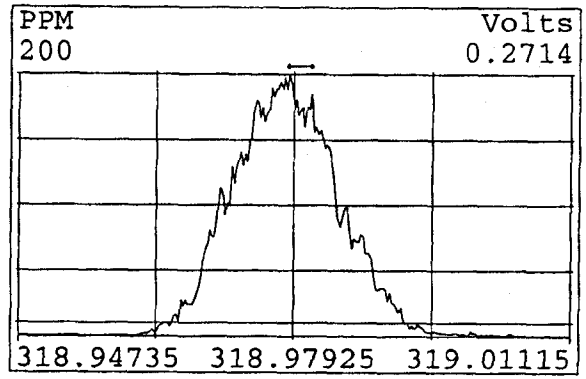
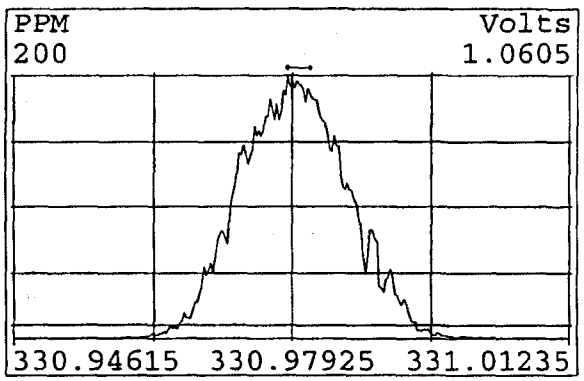
46	Total Hepta-Furans	1.2243	3.90 %	1.24	1.14	1.24	1.25	1.26
47	Total Hepta-Dioxins	1.0970	3.94 %	1.15	1.04	1.08	1.09	1.13
48	HxCDPE	-	- %	-	-	-	-	-
49	HpCDPE	-	- %	-	-	-	-	-
50	OCDPE	-	- %	-	-	-	-	-
51	NCDPE	-	- %	-	-	-	-	-
52	DCDPE	-	- %	-	-	-	-	-
53	QC CHK ION (Tetra)	-	- %	-	-	-	-	-
54	QC CHK ION (Penta)	-	- %	-	-	-	-	-
55	QC CHK ION (Hexa)	-	- %	-	-	-	-	-
56	QC CHK ION (Hepta)	-	- %	-	-	-	-	-
57	QC CHK ION (Octa)	-	- %	-	-	-	-	-

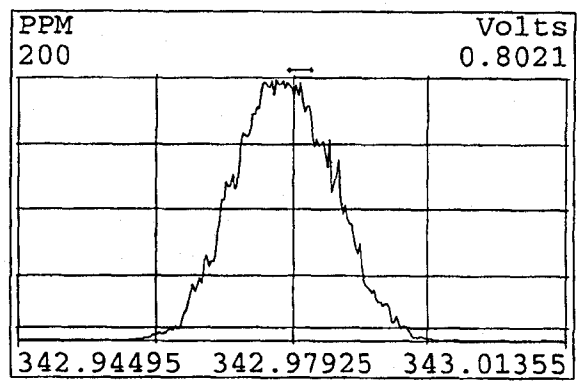
Peak Locate Examination:23-SEP-2009:06:55 File:A23SEP09A_L
Experiment:EXP_DB5MS Function:1 Reference:PFK

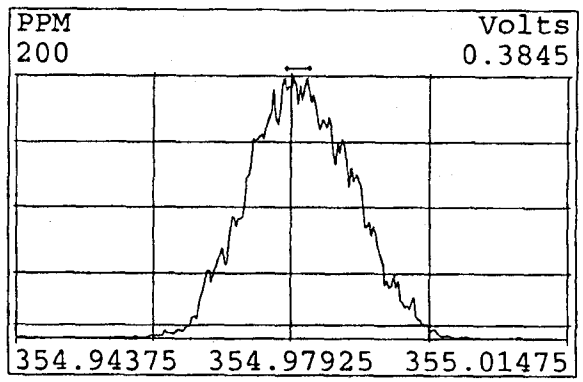


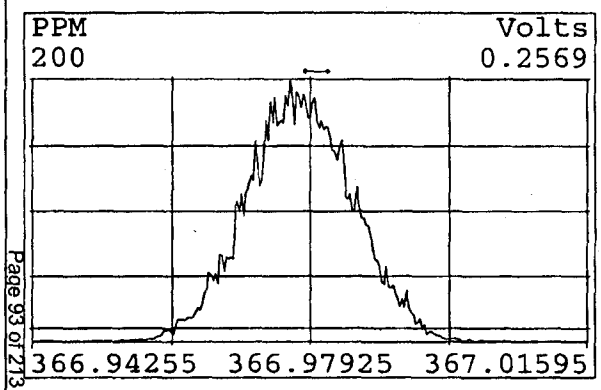


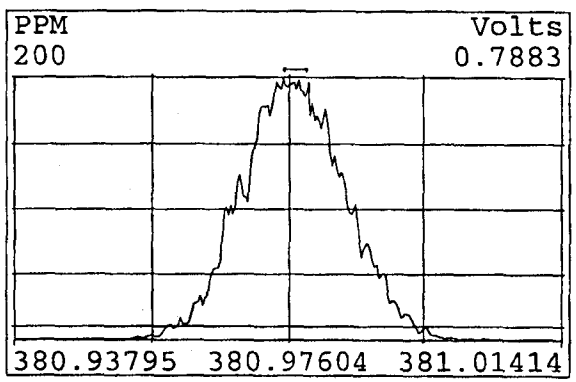




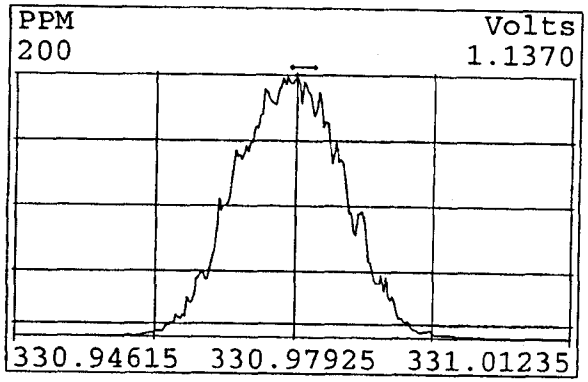


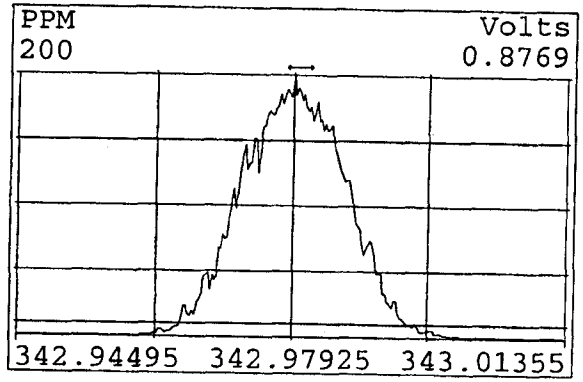


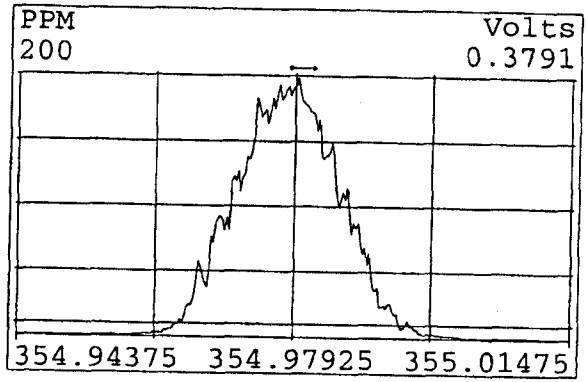


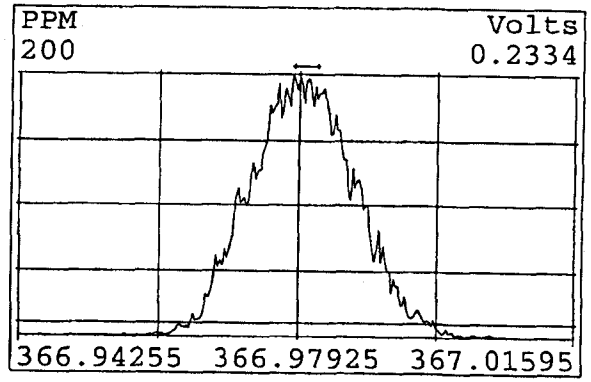


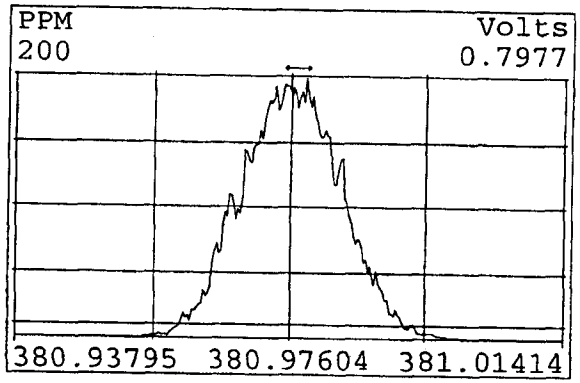
Peak Locate Examination:23-SEP-2009:06:56 File:A23SEP09A_L
Experiment:EXP_DB5MS Function:2 Reference:PFK

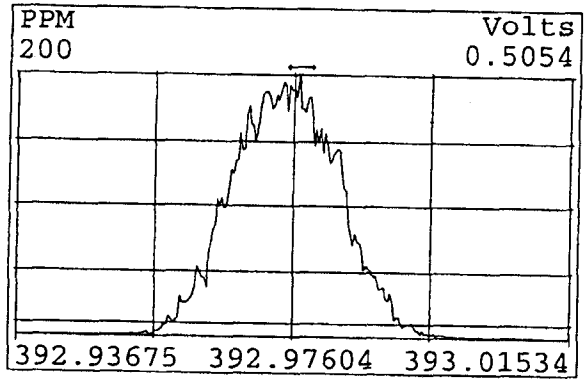


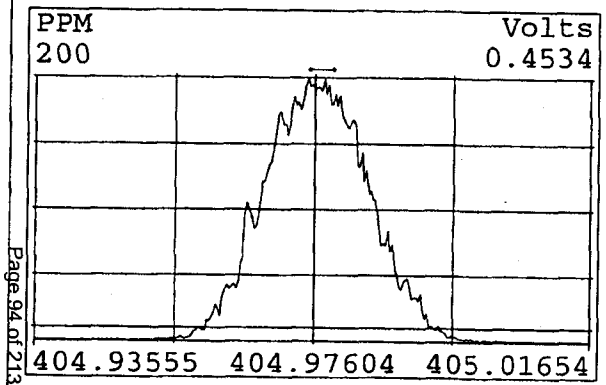


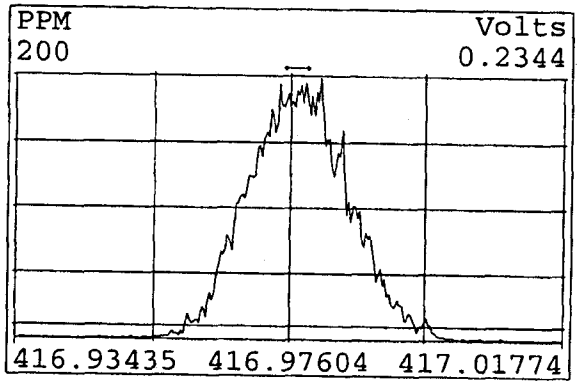




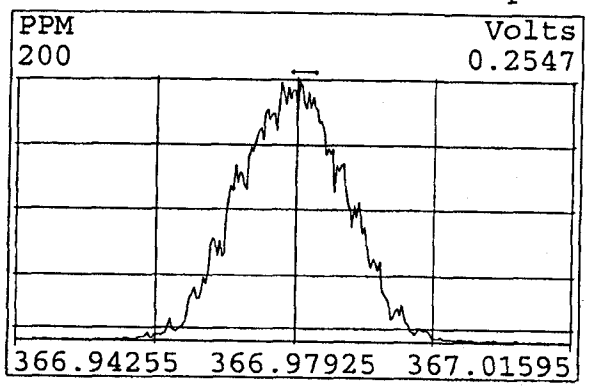


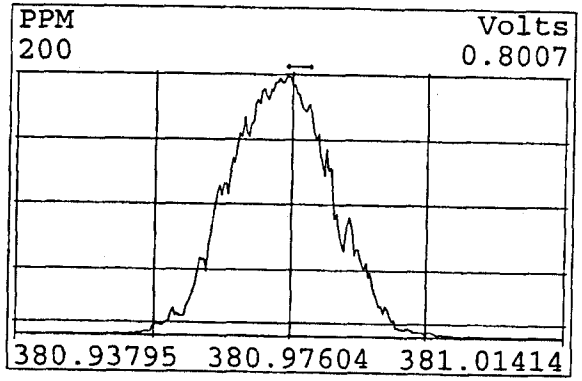


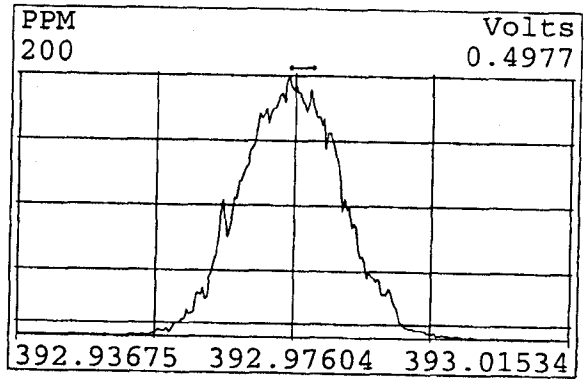


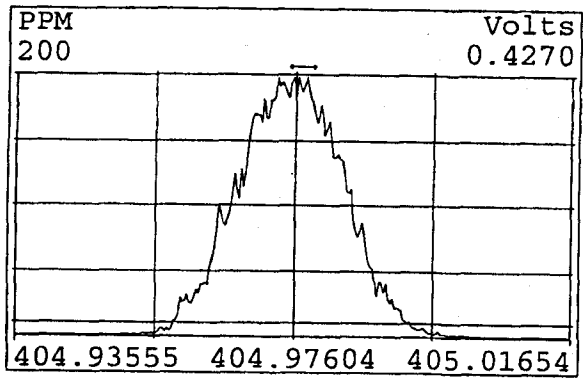


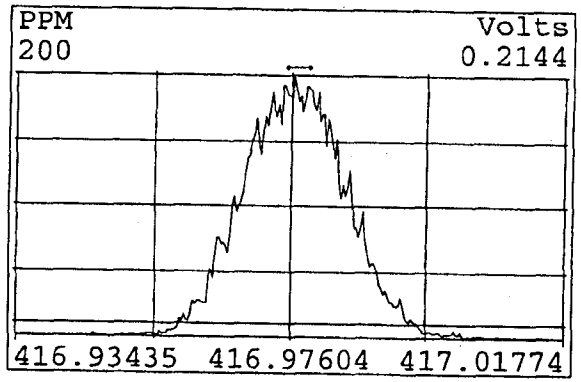
Peak Locate Examination:23-SEP-2009:06:56 File:A23SEP09A_L
Experiment:EXP_DB5MS Function:3 Reference:PFK

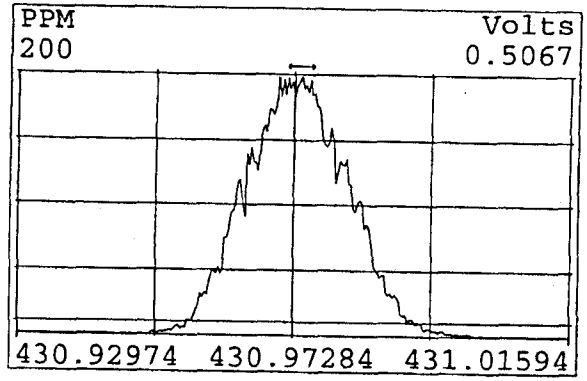


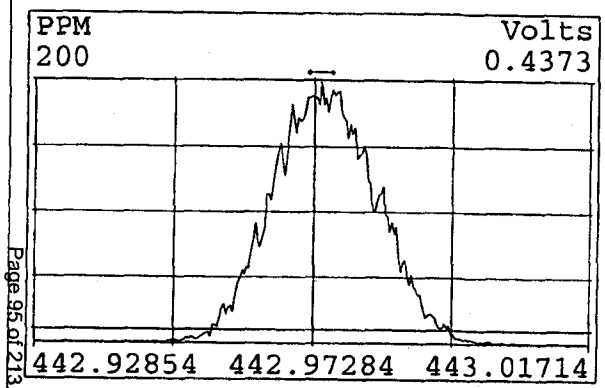


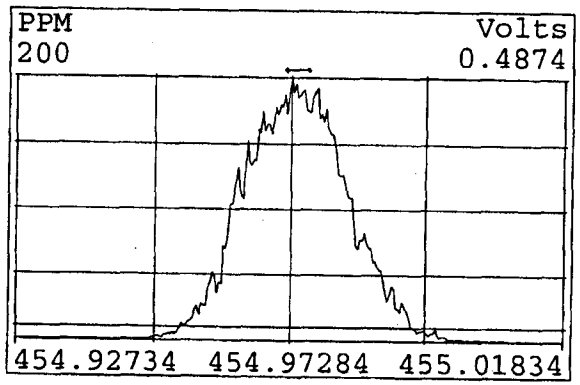




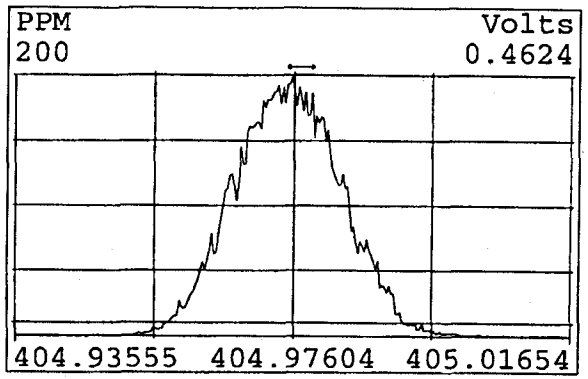


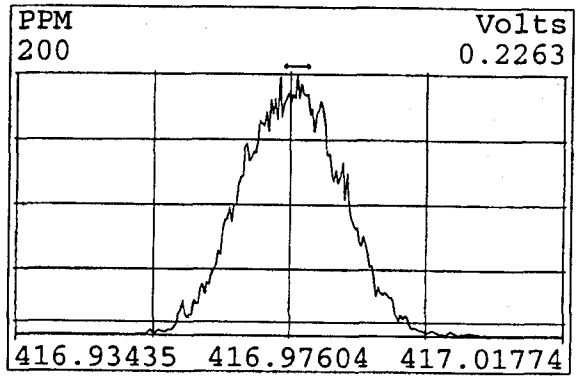


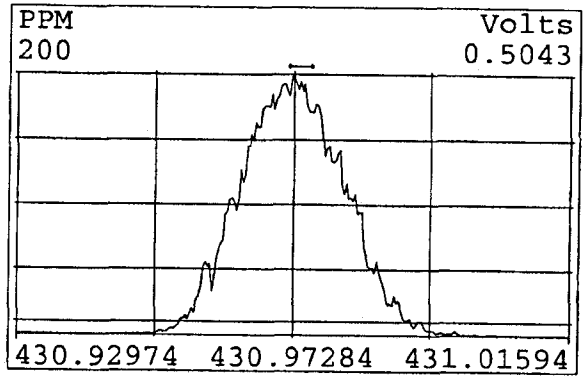


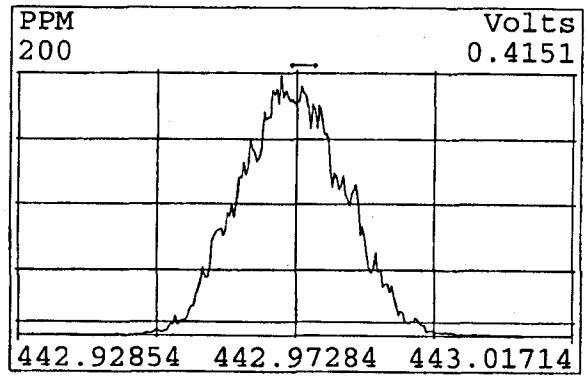


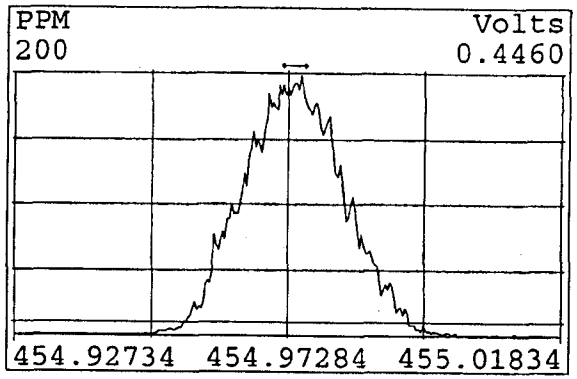
Peak Locate Examination:23-SEP-2009:06:56 File:A23SEP09A_L
Experiment:EXP_DB5MS Function:4 Reference:PFK

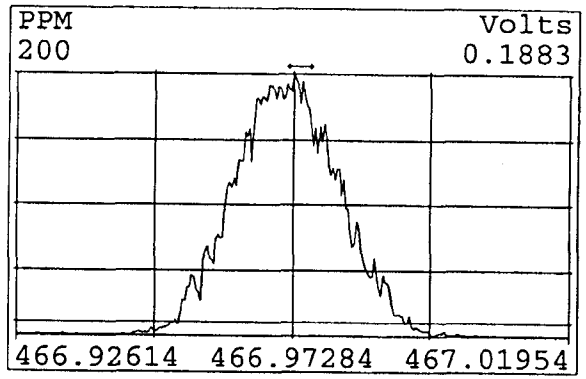


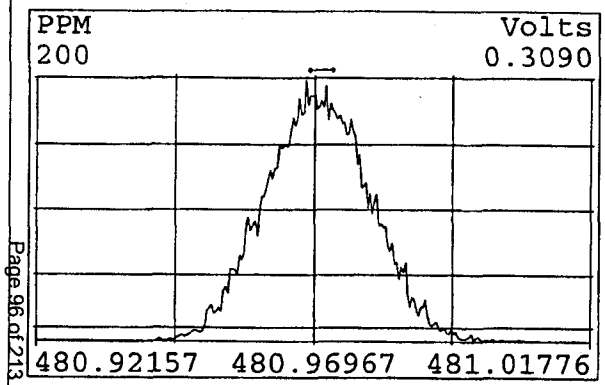




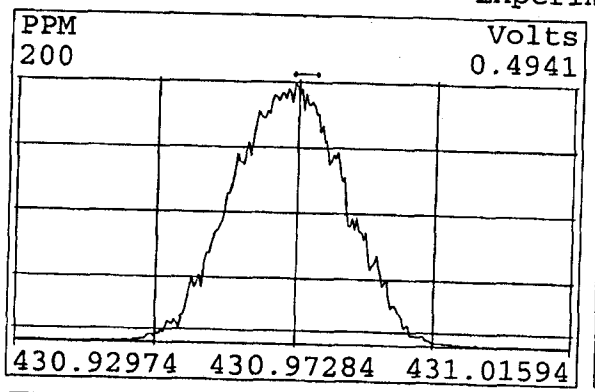


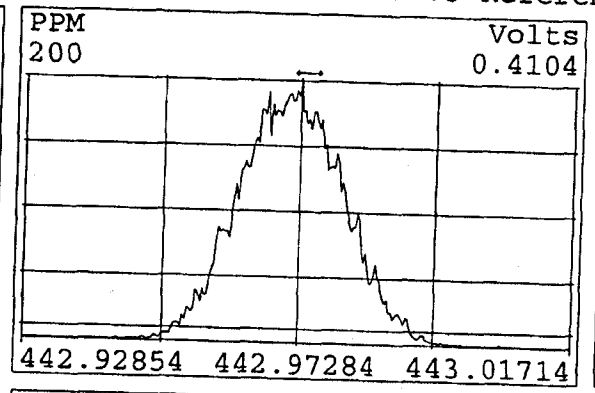


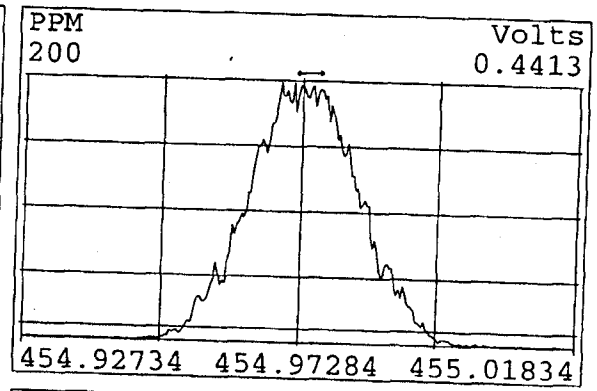


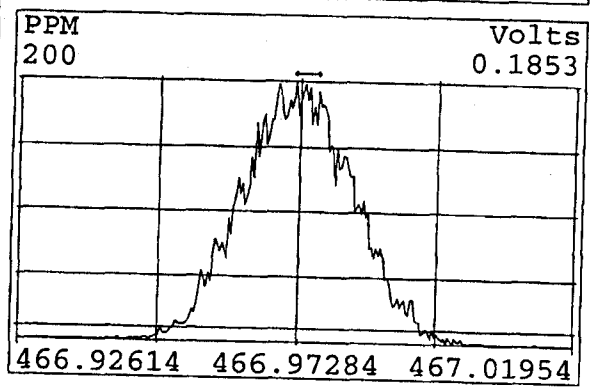


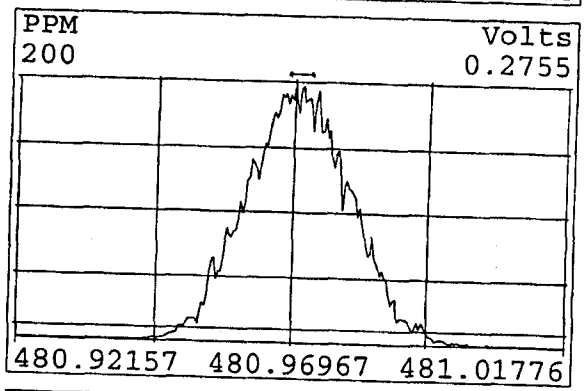
Peak Locate Examination:23-SEP-2009:06:57 File:A23SEP09A_L
Experiment:EXP_DB5MS Function:5 Reference:PFK

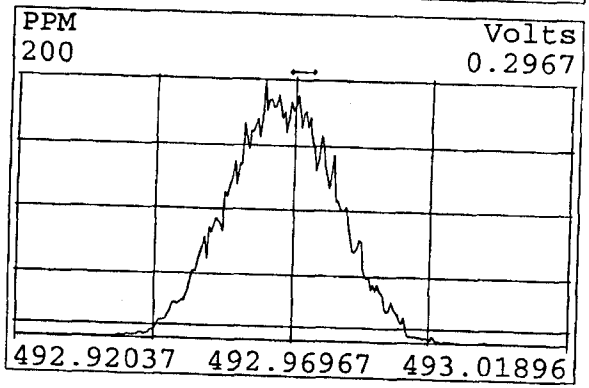


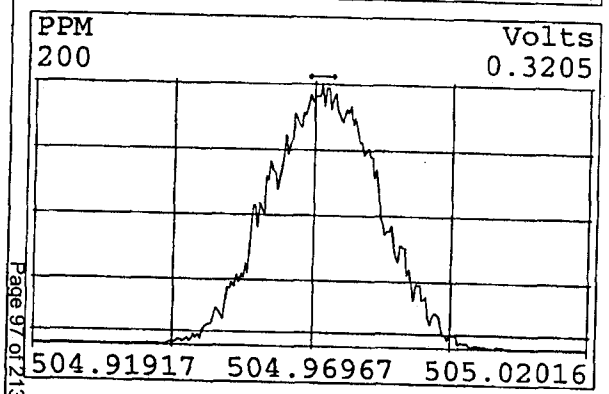


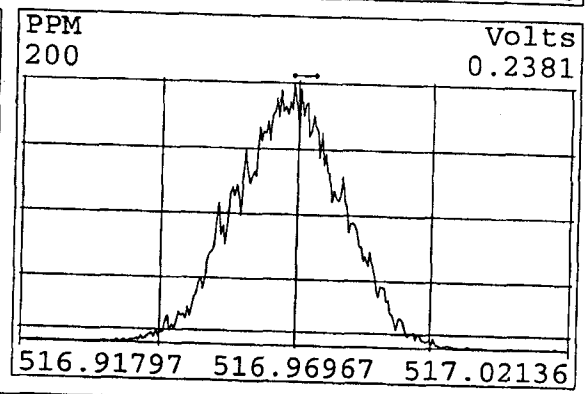




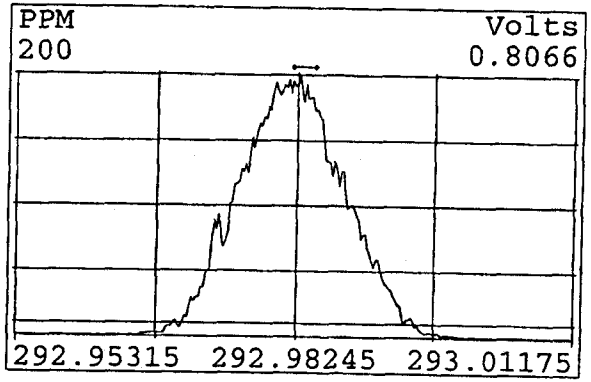


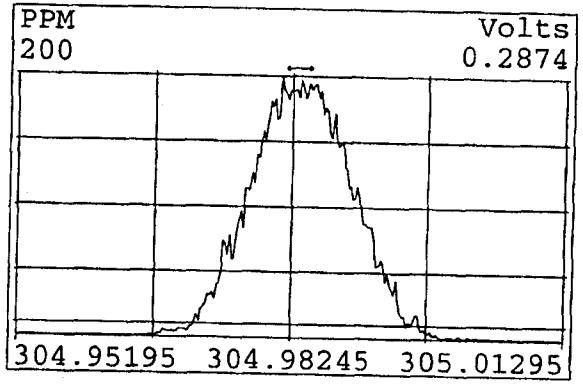


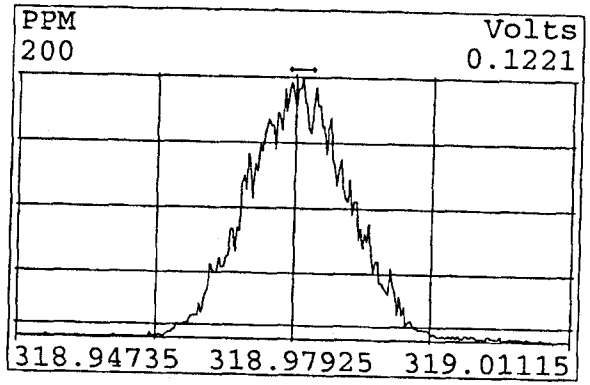


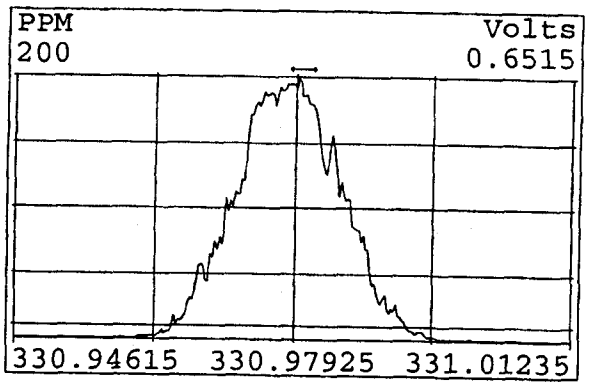


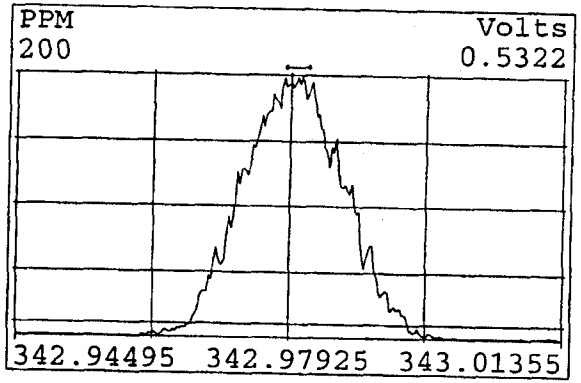
Peak Locate Examination:23-SEP-2009:12:35 File:A23SEP09A_RES_CHECK
Experiment:EXP_DB5MS Function:1 Reference:PFK

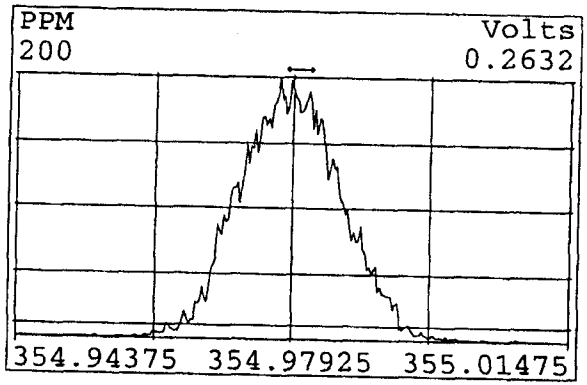


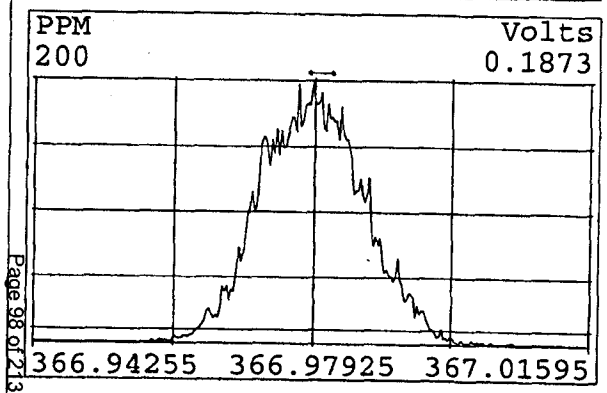


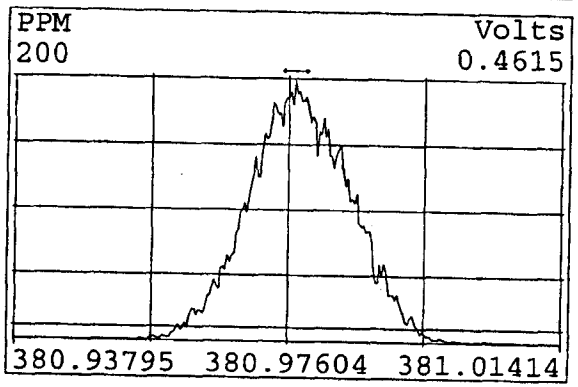




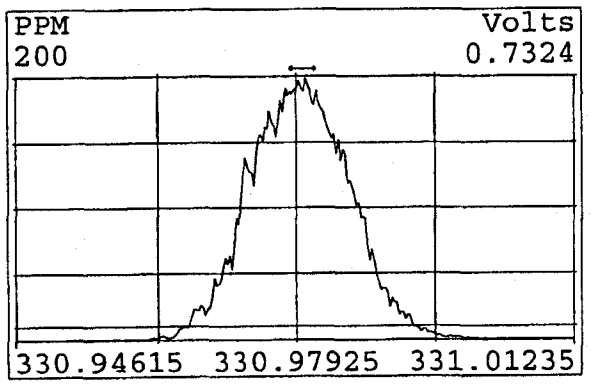


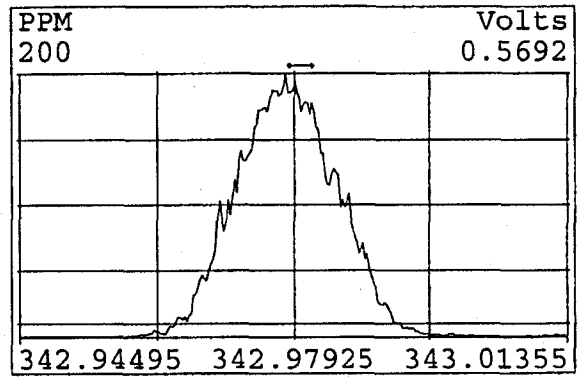


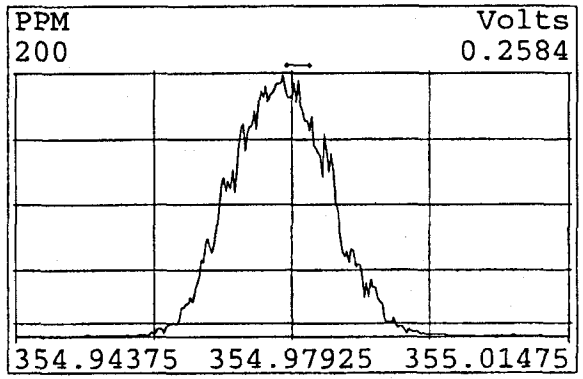


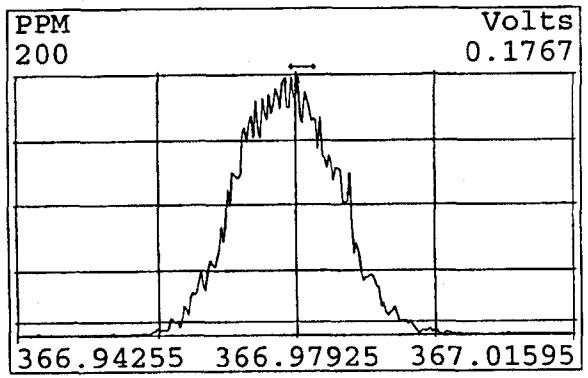


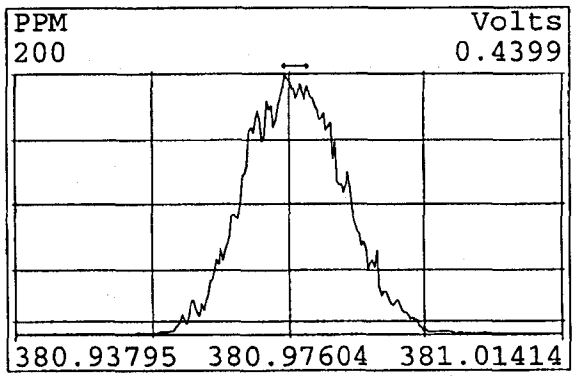
Peak Locate Examination:23-SEP-2009:12:36 File:A23SEP09A_RES_CHECK
Experiment:EXP_DB5MS Function:2 Reference:PFK

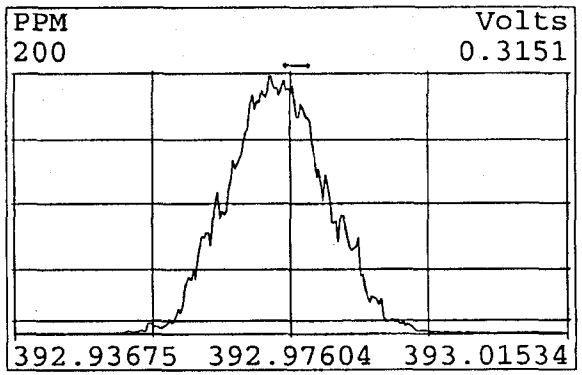


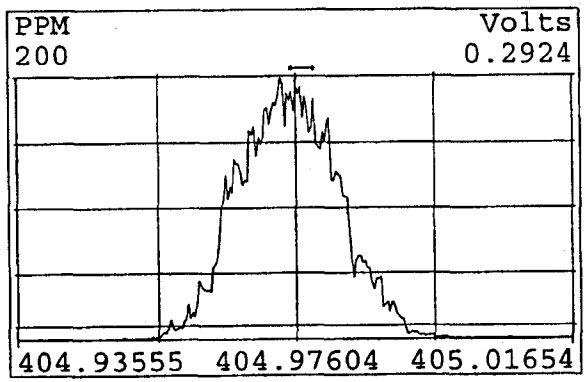


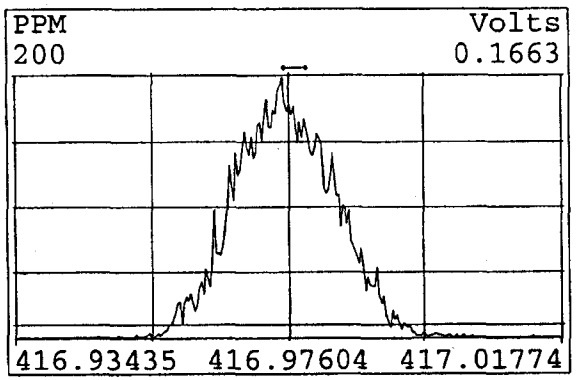




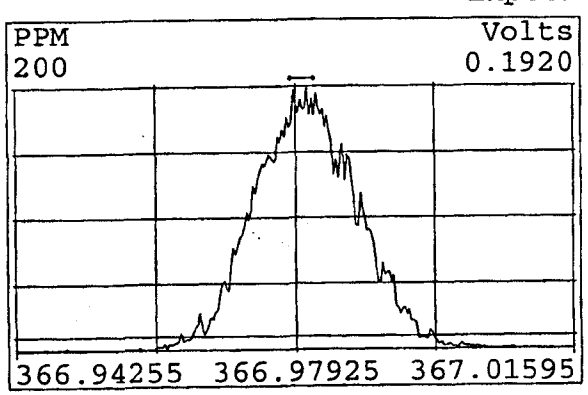


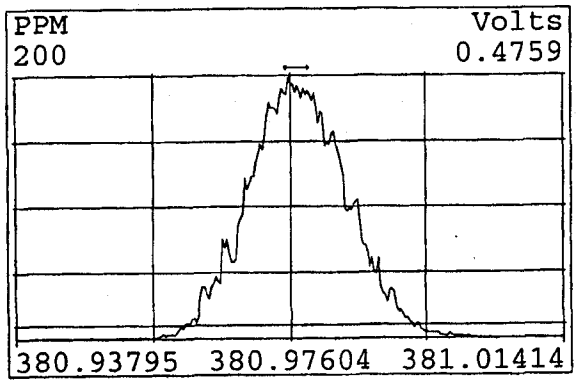


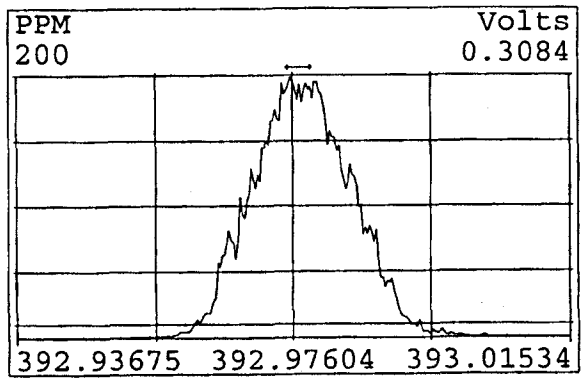


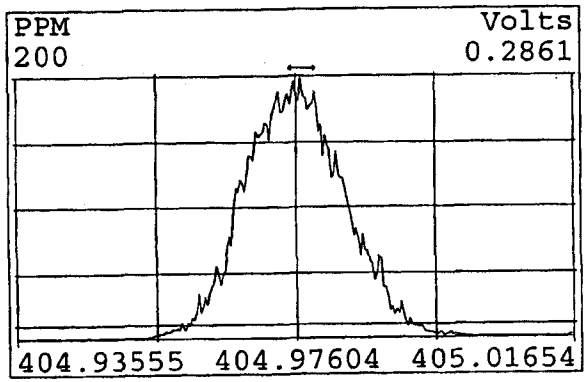


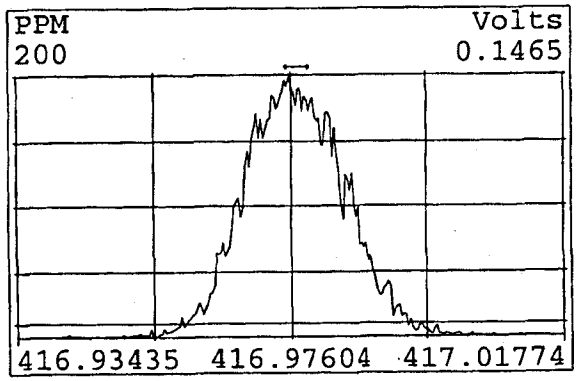
Peak Locate Examination:23-SEP-2009:12:37 File:A23SEP09A_RES_CHECK
Experiment:EXP_DB5MS Function:3 Reference:PFK

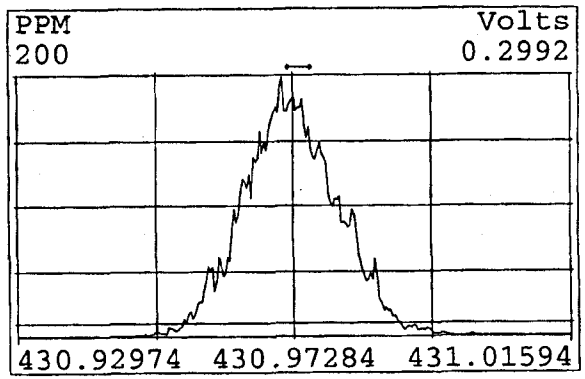


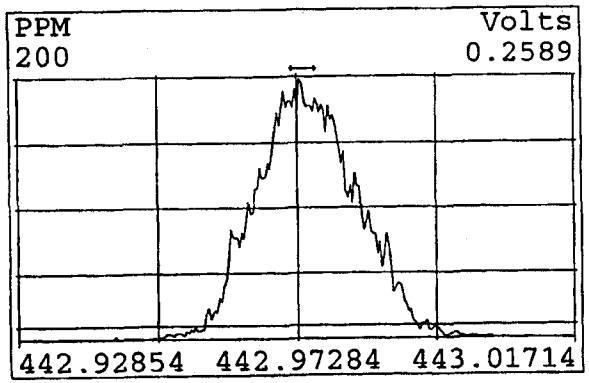


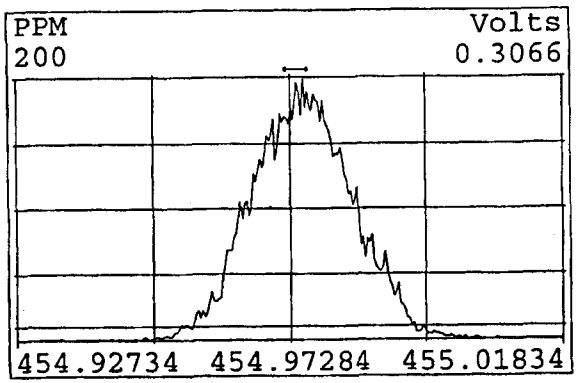




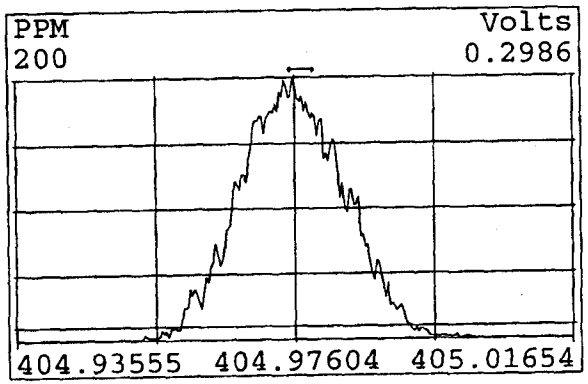


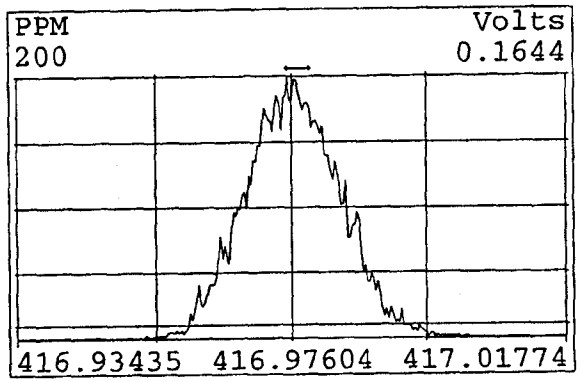


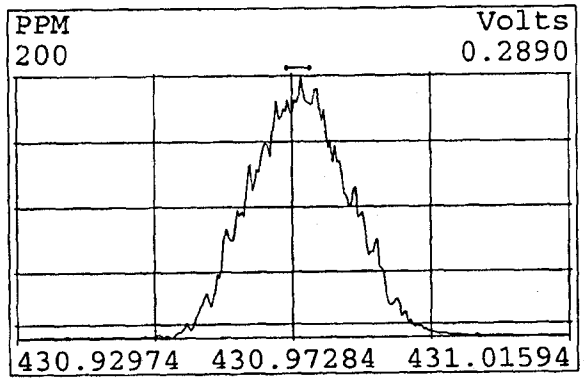


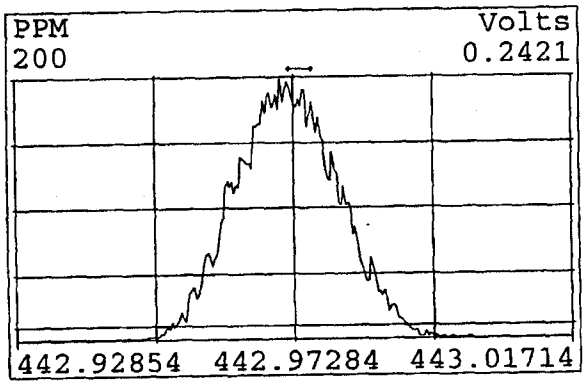


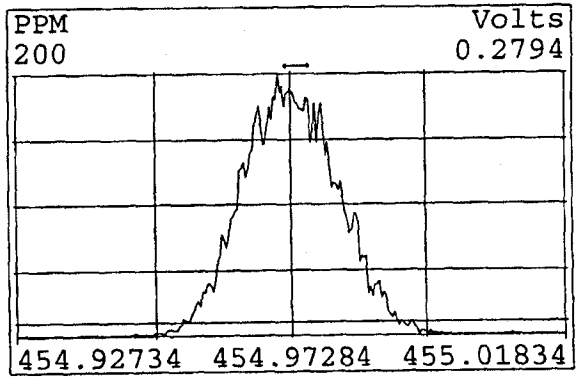
Peak Locate Examination:23-SEP-2009:12:38 File:A23SEP09A_RES_CHECK
Experiment:EXP_DB5MS Function:4 Reference:PFK

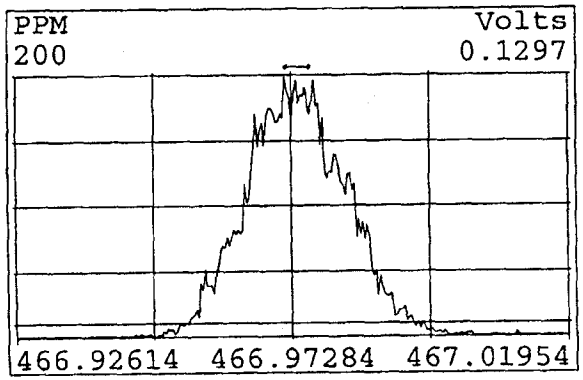


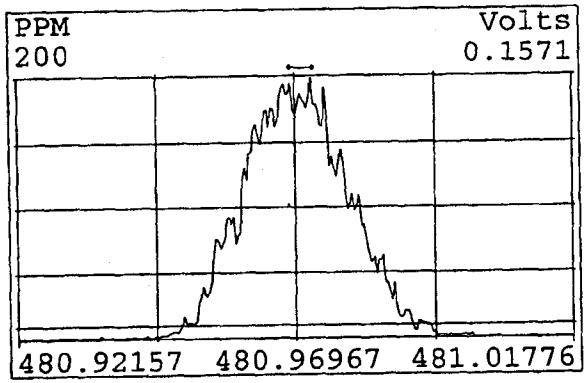




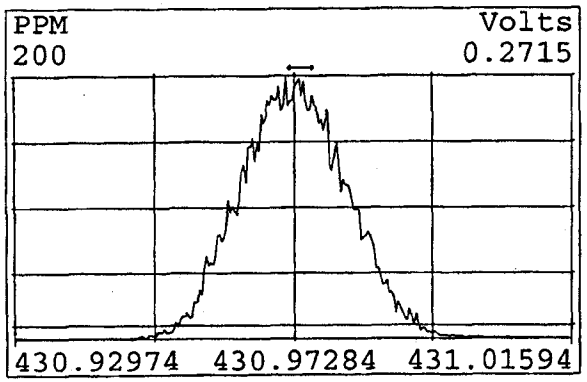


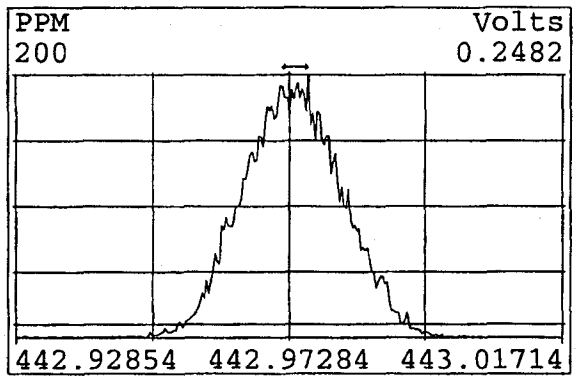


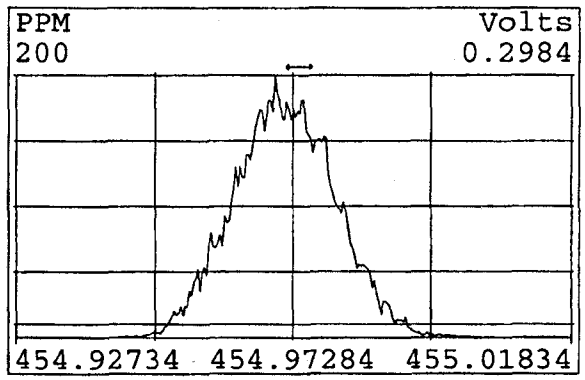


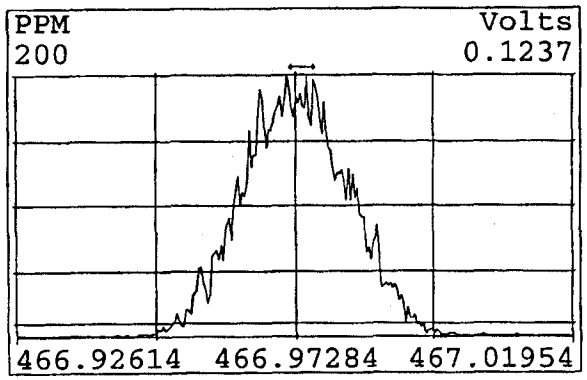


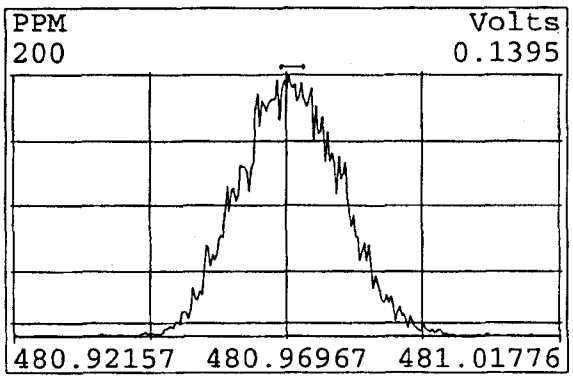
Peak Locate Examination:23-SEP-2009:12:39 File:A23SEP09A_RES_CHECK
Experiment:EXP_DB5MS Function:5 Reference:PFK

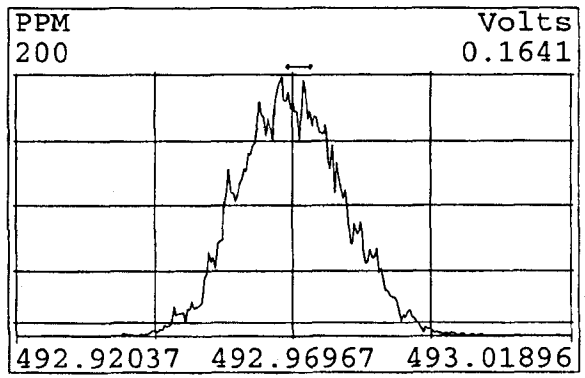


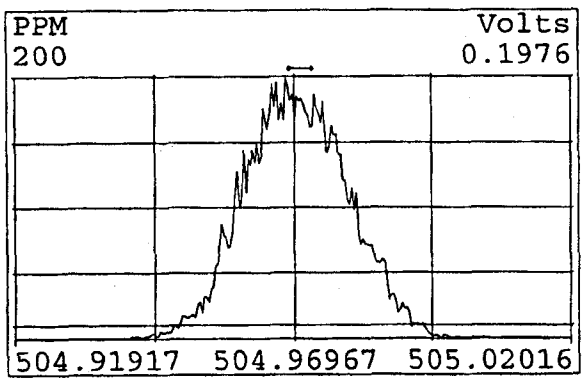


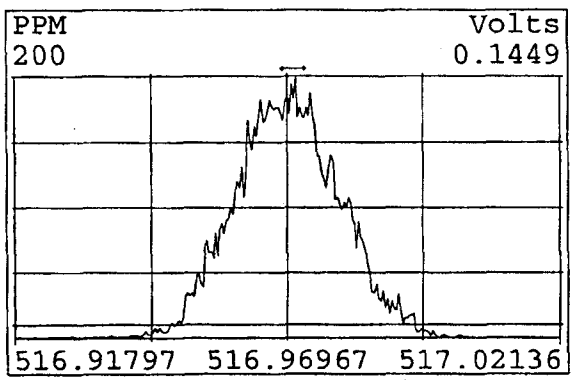












HRMS2 Sequence Log

SGS Environmental Services

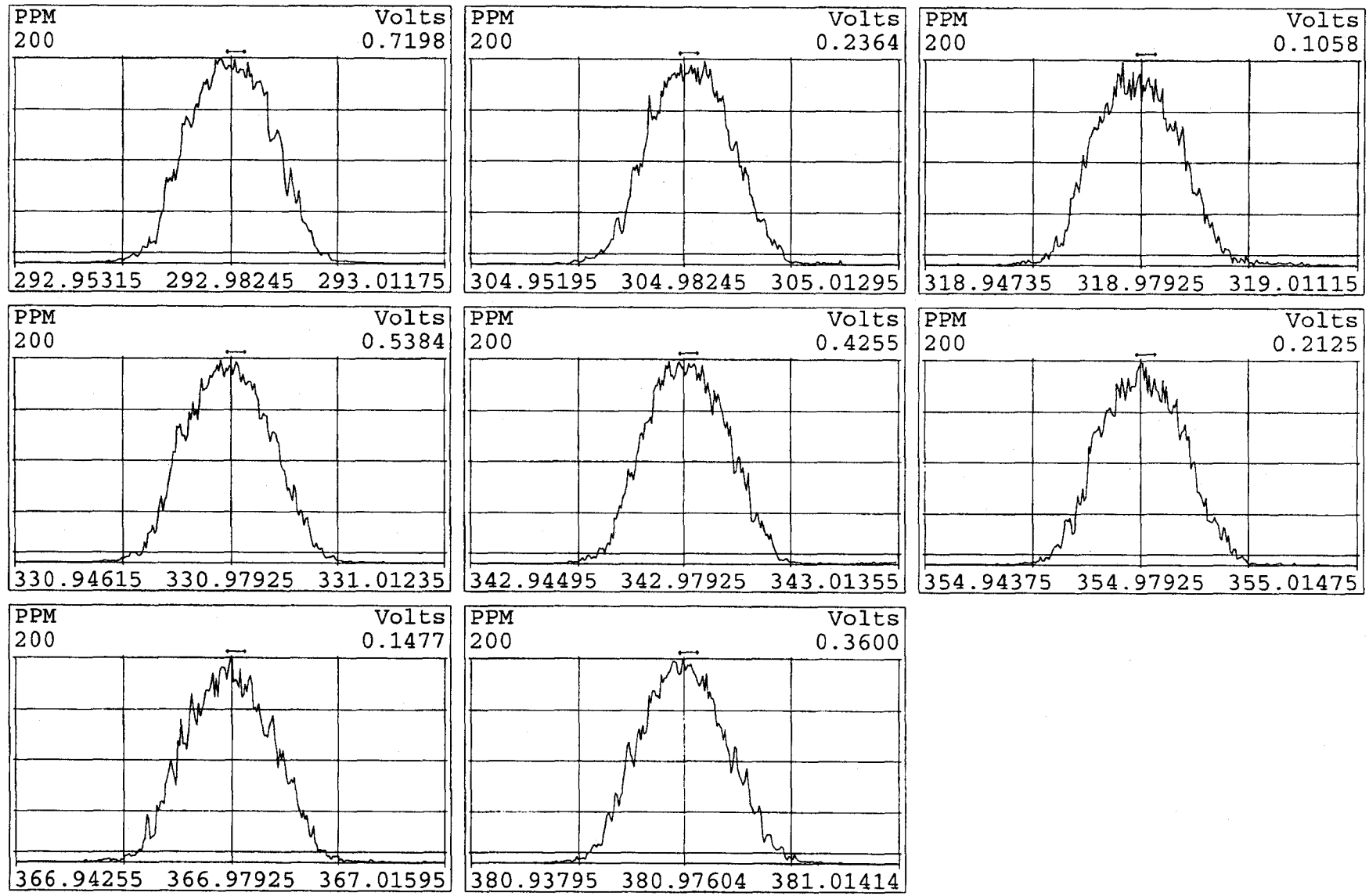
Data File S	Sample ID	Analyst	Acq. Date	Time
a03dec09e;1	;RETCON S33-78E pass	;JWP	3-DEC-09	17:40:40
a03dec09e;2	;OPR17473	;JWP	3-DEC-09	18:28:56
a03dec09e;3	;OPRD17473	;JWP	3-DEC-09	19:17:14
a03dec09e;4	;LMB17473	;JWP	3-DEC-09	20:05:31
a03dec09e;5	;G1047-30-8D	;JWP	3-DEC-09	20:53:54
a03dec09e;6	;G1047-30-9D	;JWP	3-DEC-09	21:42:12
a03dec09e;7	;G330-48-1D	;JWP	3-DEC-09	22:30:29
a03dec09e;8	;G1047-32-1D	;JWP	3-DEC-09	23:18:47
a03dec09e;9	;G330-48-1E	;JWP	4-DEC-09	00:07:05
a03dec09e;10	;G330-48-1F	;JWP	4-DEC-09	00:55:22
a03dec09e;11	;G462-36-1C	;JWP	4-DEC-09	01:43:40
a03dec09e;12	;G341-612-4C	;JWP	4-DEC-09	02:31:57
a03dec09e;13	;G341-612-4D	;JWP	4-DEC-09	03:20:15
a03dec09e;14	;G341-612-4E	;JWP	4-DEC-09	04:08:34
a03dec09e;15	;RETCON S33-78E pass	;JWP	4-DEC-09	04:56:55

8290 CCAL

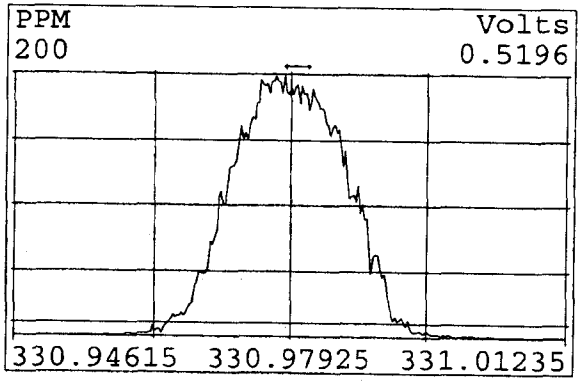
Sample text; RETCON S33-78E
Filename; a03dec09e -1 Acquired; 3-DEC-09 17:40:40 Processed; 3-DEC-09 18:27:08
ICAL; m8290-092309a Results;

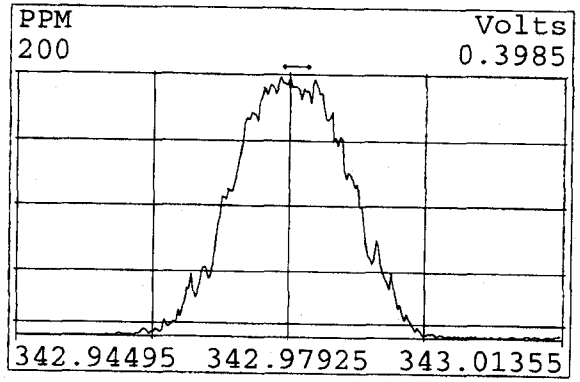
Name;	Resp;	Ion 1;	Ion 2	; RA ;? ;	RT ;	Conc ;	Dev'n;	CCAL RRF;	ICAL RRF	;Mod
2,3,7,8-TCDD;	2.6e+07;	1.14e+07;	1.47e+07	; 0.77 ;y ;	31:24 ;	9.822 ;	-1.8;	1.0109;	1.0293	;n
1,2,3,7,8-PeCDD;	1.0e+08;	6.21e+07;	3.92e+07	; 1.58 ;y ;	34:14 ;	49.82 ;	-0.4;	1.0501;	1.0539	;n
1,2,3,4,7,8-HxCDD;	9.6e+07;	5.37e+07;	4.24e+07	; 1.27 ;y ;	36:50 ;	49.64 ;	-0.7;	0.9609;	0.9679	;n
1,2,3,6,7,8-HxCDD;	9.7e+07;	5.39e+07;	4.27e+07	; 1.26 ;y ;	36:56 ;	48.88 ;	-2.2;	0.9664;	0.9886	;n
1,2,3,7,8,9-HxCDD;	9.6e+07;	5.33e+07;	4.28e+07	; 1.25 ;y ;	37:10 ;	50.36 ;	0.7;	0.9609;	0.9540	;n
1,2,3,4,6,7,8-HpCDD;	8.1e+07;	4.12e+07;	3.96e+07	; 1.04 ;y ;	40:16 ;	48.20 ;	-3.6;	1.0575;	1.0970	;n
OCDD;	1.4e+08;	6.58e+07;	7.34e+07	; 0.90 ;y ;	44:32 ;	93.61 ;	-6.4;	1.0523;	1.1240	;n
2,3,7,8-TCDF;	3.8e+07;	1.65e+07;	2.13e+07	; 0.77 ;y ;	30:47 ;	9.572 ;	-4.3;	0.9978;	1.0424	;n
1,2,3,7,8-PeCDF;	1.6e+08;	9.66e+07;	6.19e+07	; 1.56 ;y ;	33:25 ;	49.41 ;	-1.2;	0.9879;	0.9997	;n
2,3,4,7,8-PeCDF;	1.6e+08;	9.73e+07;	6.24e+07	; 1.56 ;y ;	34:02 ;	47.90 ;	-4.2;	0.9950;	1.0386	;n
1,2,3,4,7,8-HxCDF;	1.4e+08;	7.78e+07;	6.27e+07	; 1.24 ;y ;	36:07 ;	49.69 ;	-0.6;	1.0779;	1.0846	;n
1,2,3,6,7,8-HxCDF;	1.5e+08;	8.27e+07;	6.60e+07	; 1.25 ;y ;	36:13 ;	49.59 ;	-0.8;	1.1407;	1.1500	;n
2,3,4,6,7,8-HxCDF;	1.4e+08;	7.90e+07;	6.34e+07	; 1.25 ;y ;	36:43 ;	49.53 ;	-0.9;	1.0917;	1.1020	;n
1,2,3,7,8,9-HxCDF;	1.2e+08;	6.67e+07;	5.35e+07	; 1.25 ;y ;	37:30 ;	49.19 ;	-1.6;	0.9218;	0.9369	;n
1,2,3,4,6,7,8-HpCDF;	1.3e+08;	6.63e+07;	6.40e+07	; 1.04 ;y ;	38:59 ;	48.81 ;	-2.4;	1.3485;	1.3813	;n
1,2,3,4,7,8,9-HpCDF;	1.0e+08;	5.28e+07;	5.08e+07	; 1.04 ;y ;	40:56 ;	50.18 ;	0.4;	1.0712;	1.0673	;n
OCDF;	1.7e+08;	7.89e+07;	8.72e+07	; 0.90 ;y ;	44:50 ;	89.87 ;	-10.1;	1.2561;	1.3977	;n
Extraction Standards										
13C-2,3,7,8-TCDD;	2.6e+08;	1.13e+08;	1.45e+08	; 0.78 ;y ;	31:23 ;	101.2 ;	1.2;	1.1320;	1.1184	;n
13C-1,2,3,7,8-PeCDD;	1.9e+08;	1.18e+08;	7.48e+07	; 1.58 ;y ;	34:13 ;	104.2 ;	4.2;	0.8457;	0.8116	;n
13C-1,2,3,6,7,8-HxCDD;	2.0e+08;	1.11e+08;	8.89e+07	; 1.25 ;y ;	36:55 ;	96.74 ;	-3.3;	1.0386;	1.0736	;n
13C-1,2,3,4,6,7,8-HpCDD;	1.5e+08;	7.87e+07;	7.42e+07	; 1.06 ;y ;	40:15 ;	107.9 ;	7.9;	0.7939;	0.7360	;n
13C-OCDD;	2.6e+08;	1.25e+08;	1.39e+08	; 0.90 ;y ;	44:31 ;	235.5 ;	17.7;	0.6868;	0.5833	;n
13C-2,3,7,8-TCDF;	3.8e+08;	1.68e+08;	2.11e+08	; 0.79 ;y ;	30:46 ;	97.08 ;	-2.9;	1.6635;	1.7135	;n
13C-1,2,3,7,8-PeCDF;	3.2e+08;	1.96e+08;	1.25e+08	; 1.57 ;y ;	33:25 ;	102.5 ;	2.5;	1.4074;	1.3731	;n
13C-1,2,3,6,7,8-HxCDF;	2.6e+08;	8.97e+07;	1.71e+08	; 0.52 ;y ;	36:13 ;	94.16 ;	-5.8;	1.3539;	1.4379	;n
13C-1,2,3,4,6,7,8-HpCDF;	1.9e+08;	6.00e+07;	1.33e+08	; 0.45 ;y ;	38:59 ;	98.67 ;	-1.3;	1.0038;	1.0173	;n
Injection Standards										
13C-1,2,3,4-TCDD;	2.3e+08;	1.01e+08;	1.27e+08	; 0.79 ;y ;	30:56 ;	494.4 ;	-;	-;	-	;n
13C-1,2,3,7,8,9-HxCDD;	1.9e+08;	1.07e+08;	8.56e+07	; 1.25 ;y ;	37:10 ;	533.7 ;	-;	-;	-	;n
Cleanup Standards										
37Cl-2,3,7,8-TCDD;	2.7e+07;	2.67e+07;	-	; - ;- ;	31:24 ;	10.05 ;	0.5;	1.1718;	1.1662	;n
13C-2,3,4,7,8-PeCDF;	3.1e+08;	1.89e+08;	1.20e+08	; 1.57 ;y ;	34:01 ;	101.5 ;	1.5;	1.3570;	1.3373	;n
13C-1,2,3,4,7,8-HxCDD;	1.9e+08;	1.04e+08;	8.15e+07	; 1.27 ;y ;	36:50 ;	97.86 ;	-2.1;	0.9611;	0.9822	;n
13C-1,2,3,4,7,8-HxCDF;	2.4e+08;	8.20e+07;	1.57e+08	; 0.52 ;y ;	36:06 ;	95.57 ;	-4.4;	1.2406;	1.2981	;n
13C-1,2,3,4,7,8,9-HpCDF;	1.5e+08;	4.74e+07;	1.06e+08	; 0.45 ;y ;	40:56 ;	101.6 ;	1.6;	0.7947;	0.7821	;n
Sampling Standards										
37Cl-2,3,7,8-TCDD;	2.7e+07;	2.67e+07;	-	; - ;- ;	31:24 ;	9.930 ;	-0.7;	1.0351;	1.0425	;n
13C-2,3,4,7,8-PeCDF;	3.1e+08;	1.89e+08;	1.20e+08	; 1.57 ;y ;	34:01 ;	98.95 ;	-1.1;	0.9641;	0.9744	;n
13C-1,2,3,4,7,8-HxCDD;	1.9e+08;	1.04e+08;	8.15e+07	; 1.27 ;y ;	36:50 ;	101.1 ;	1.1;	0.9253;	0.9152	;n
13C-1,2,3,4,7,8-HxCDF;	2.4e+08;	8.20e+07;	1.57e+08	; 0.52 ;y ;	36:06 ;	101.5 ;	1.5;	0.9163;	0.9028	;n
13C-1,2,3,4,7,8,9-HpCDF;	1.5e+08;	4.74e+07;	1.06e+08	; 0.45 ;y ;	40:56 ;	103.0 ;	3.0;	0.7917;	0.7688	;n

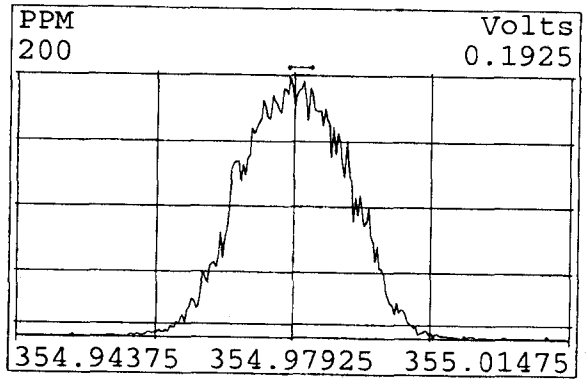
Peak Locate Examination: 3-DEC-2009:17:38 File:A03DEC09E_L
Experiment:EXP_DB5MS Function:1 Reference:PFK

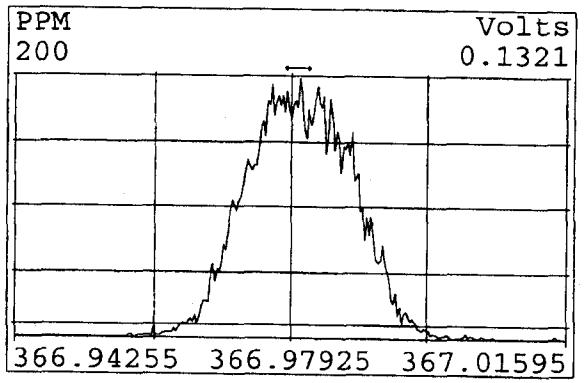


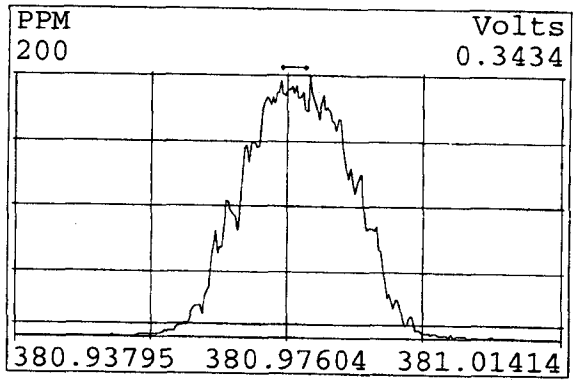
Peak Locate Examination: 3-DEC-2009:17:38 File:A03DEC09E_L
Experiment:EXP_DB5MS Function:2 Reference:PFK

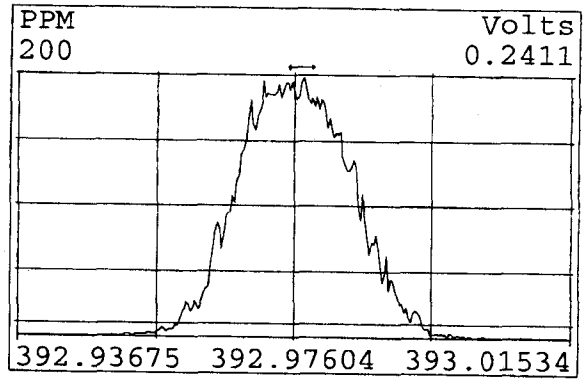


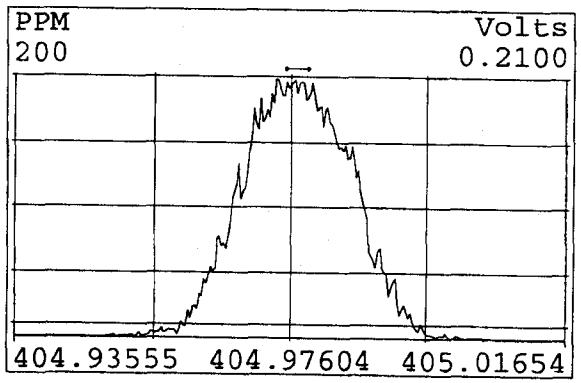


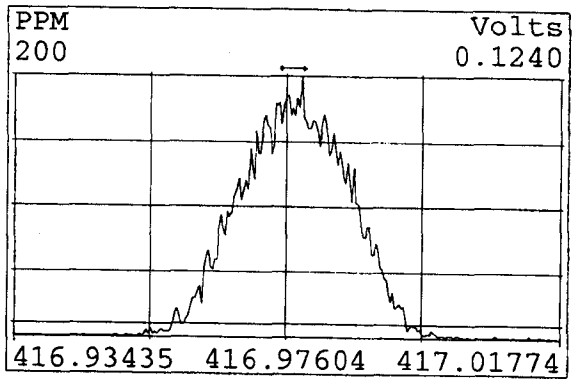




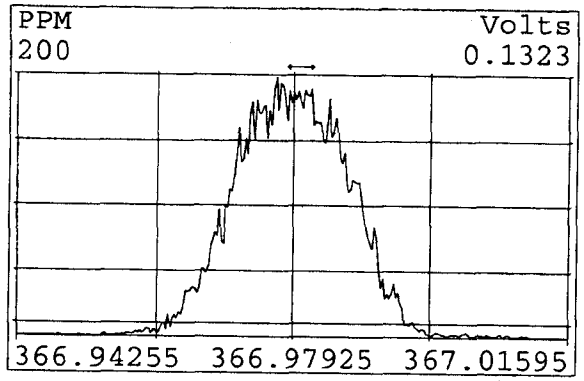


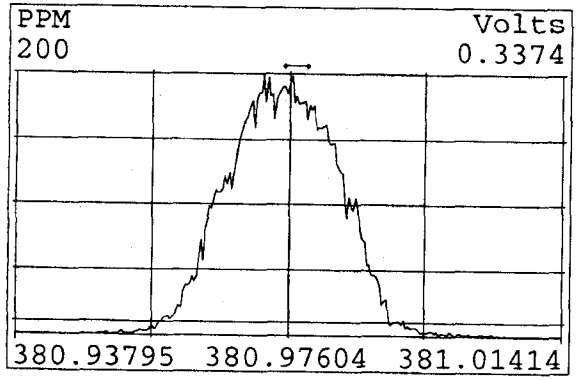


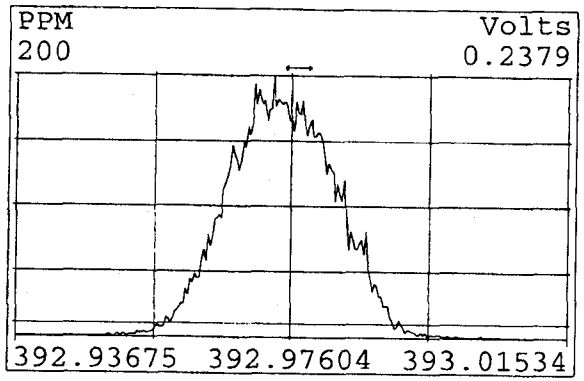


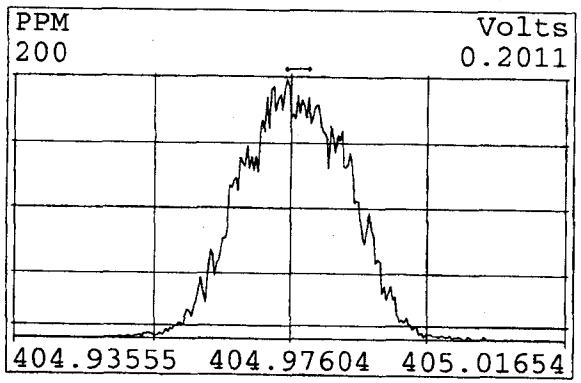


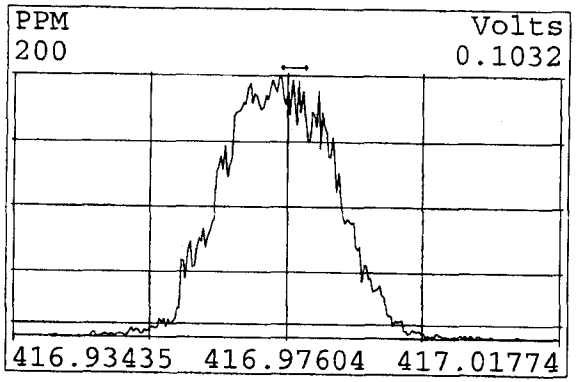
Peak Locate Examination: 3-DEC-2009:17:39 File:A03DEC09E_L
Experiment:EXP_DB5MS Function:3 Reference:PFK

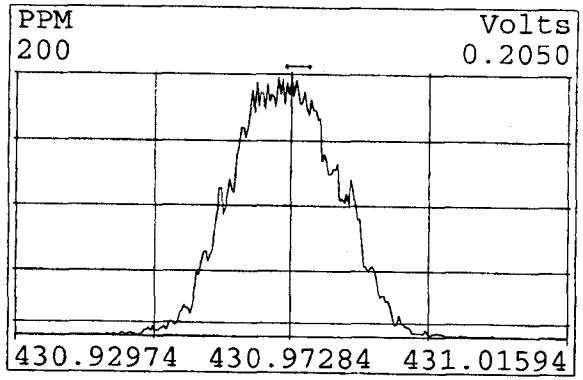


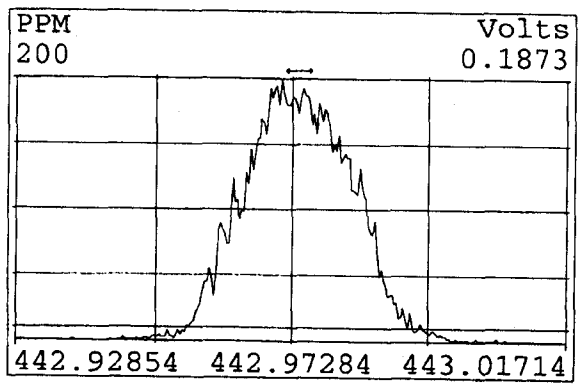


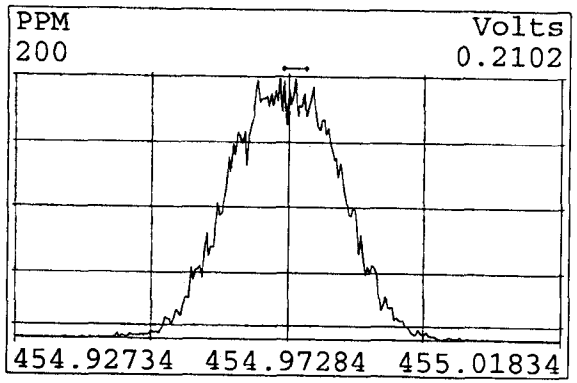




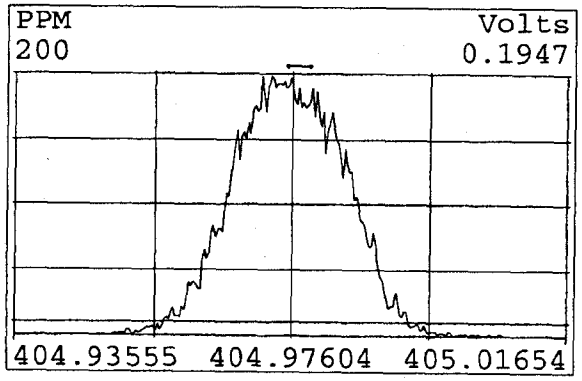


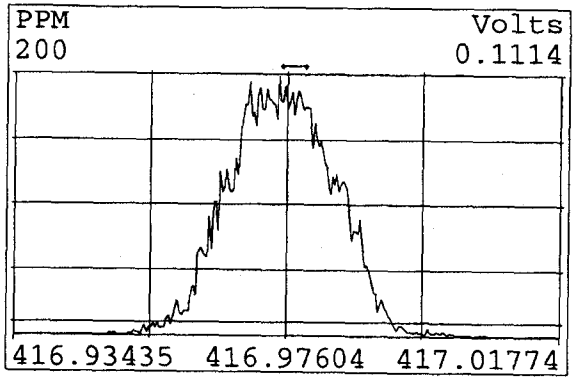


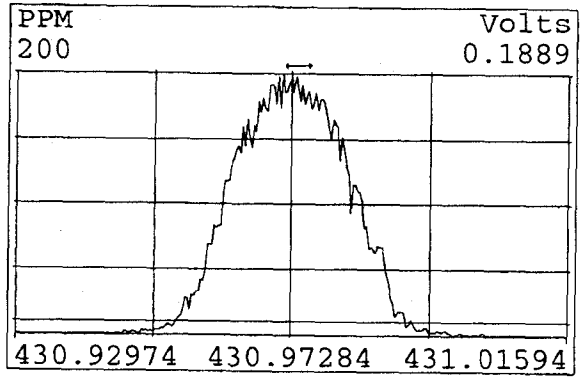


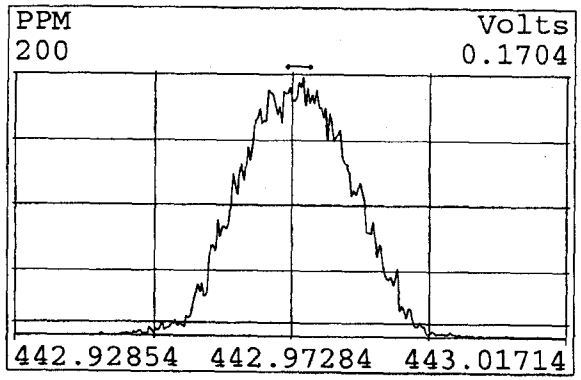


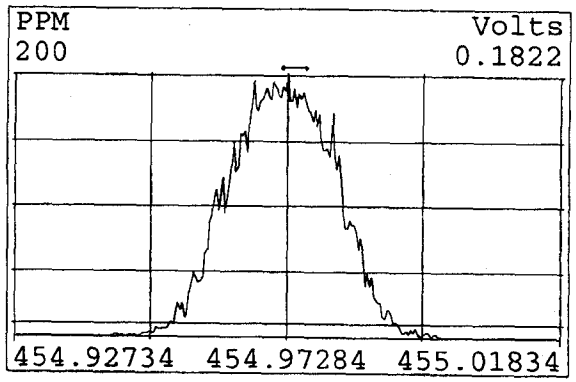
Peak Locate Examination: 3-DEC-2009:17:39 File:A03DEC09E_L
Experiment:EXP_DB5MS Function:4 Reference:PFK

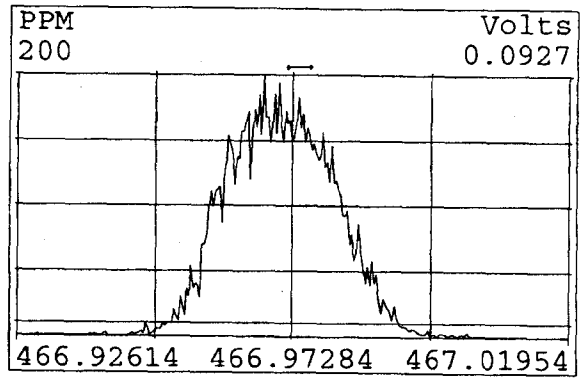


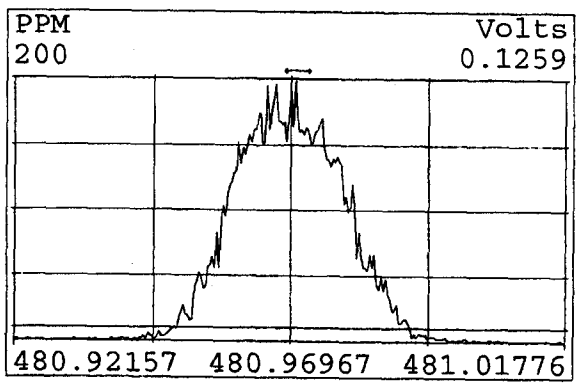




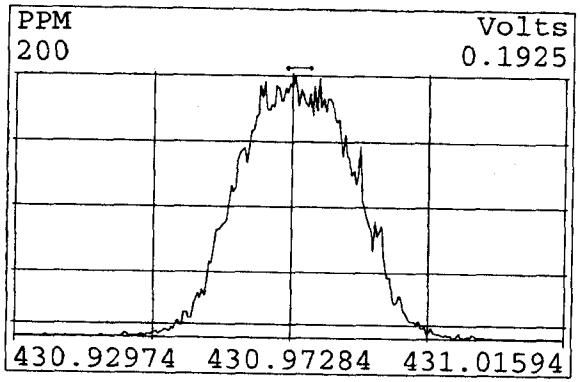


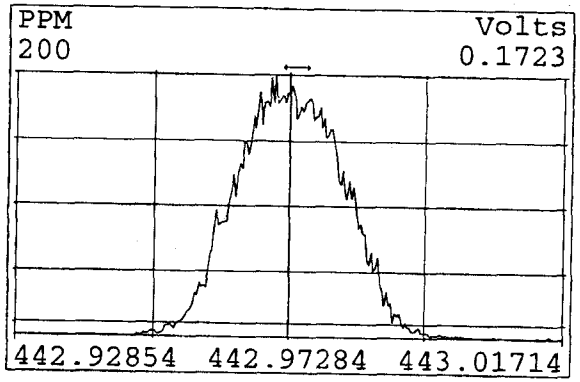


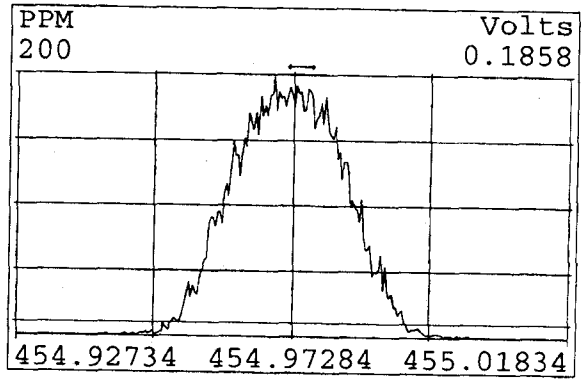


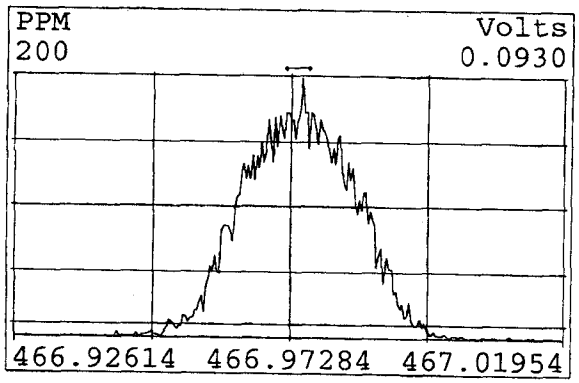


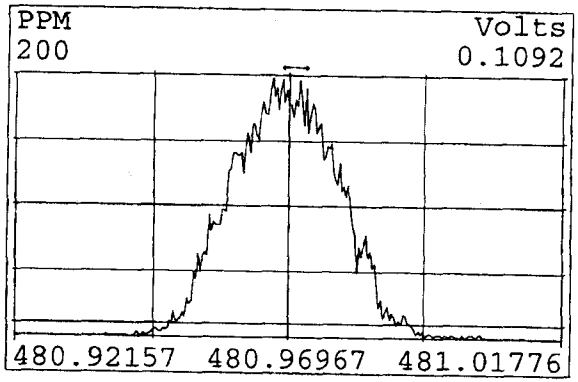
Peak Locate Examination: 3-DEC-2009:17:39 File:A03DEC09E_L
Experiment:EXP_DB5MS Function:5 Reference:PFK

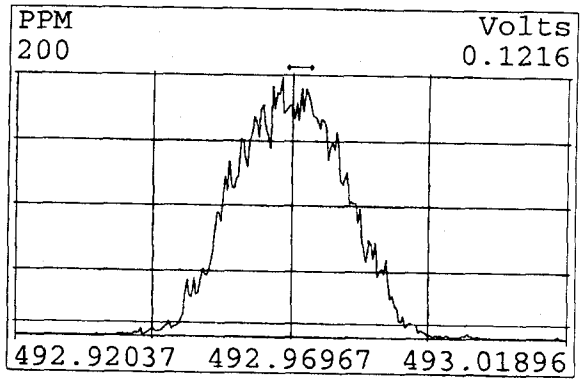


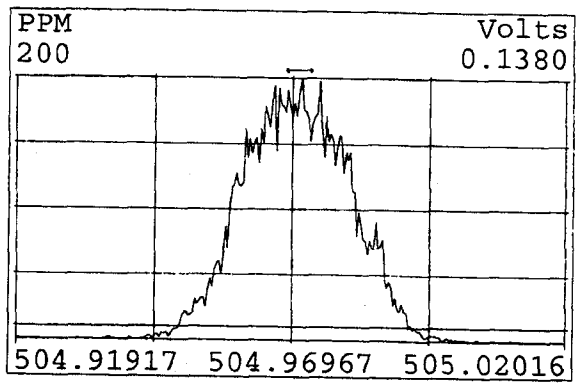


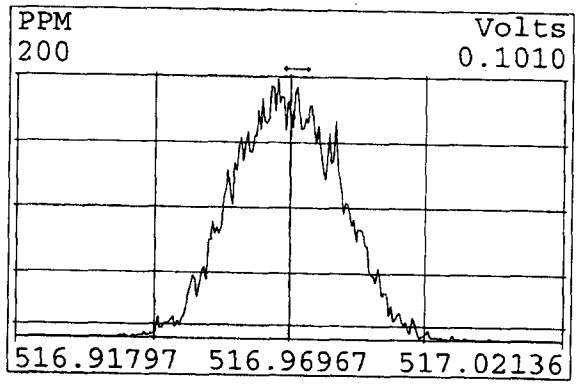




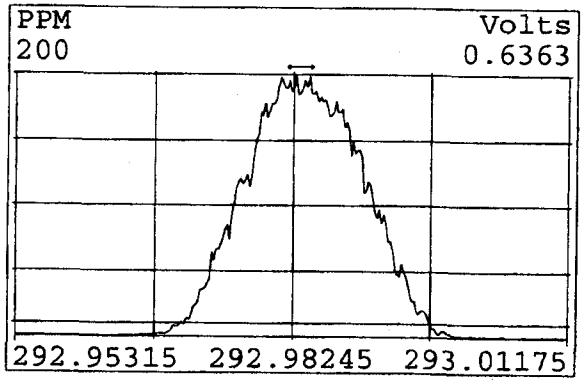


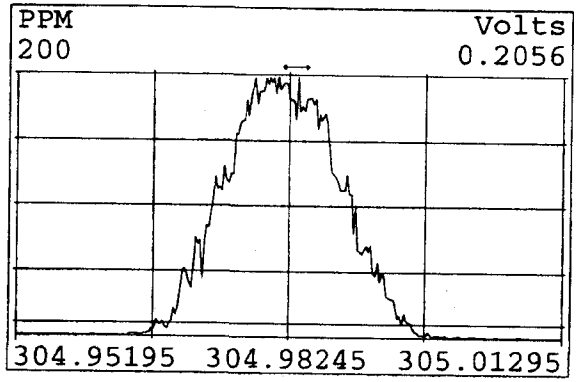


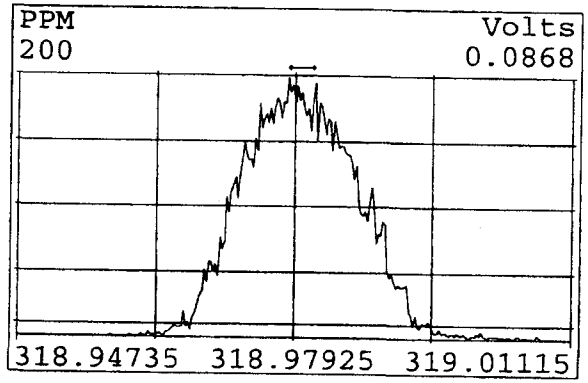


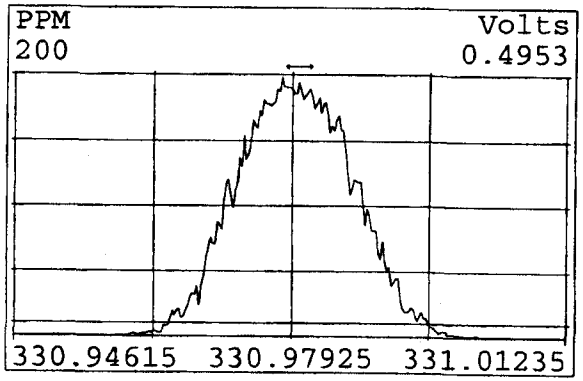


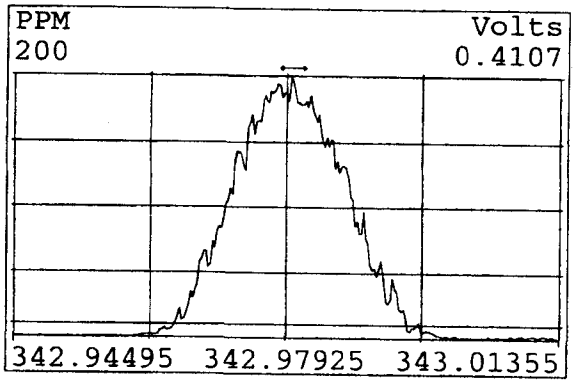
Peak Locate Examination: 4-DEC-2009:05:45 File:A03DEC09E_RES_CHECK
Experiment:EXP_DB5MS Function:1 Reference:PFK

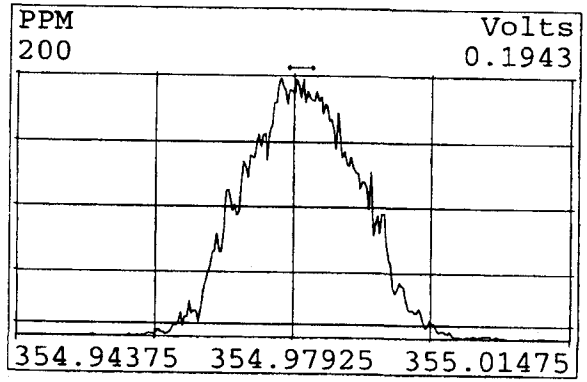


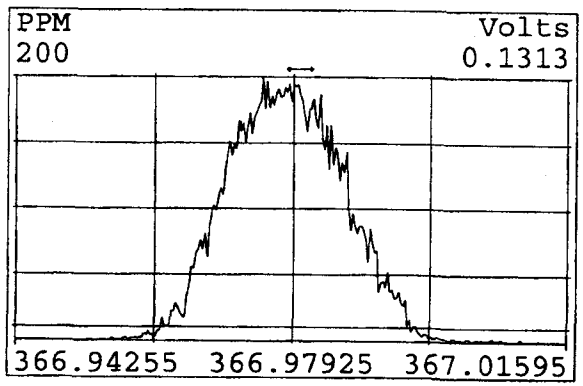


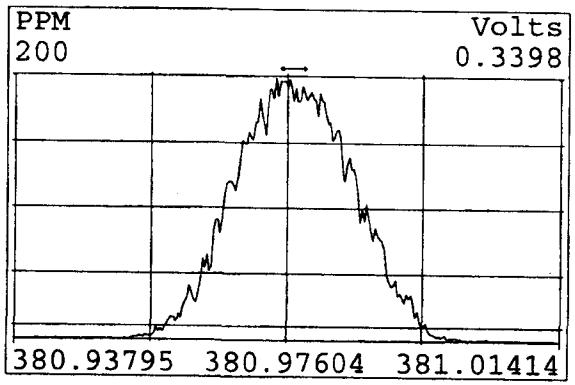




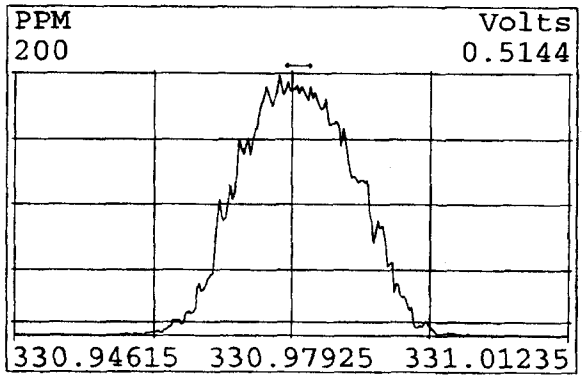


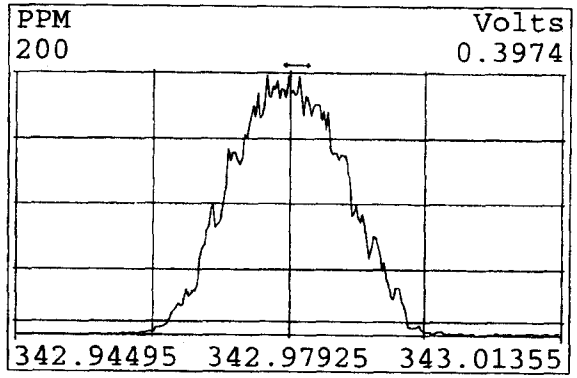


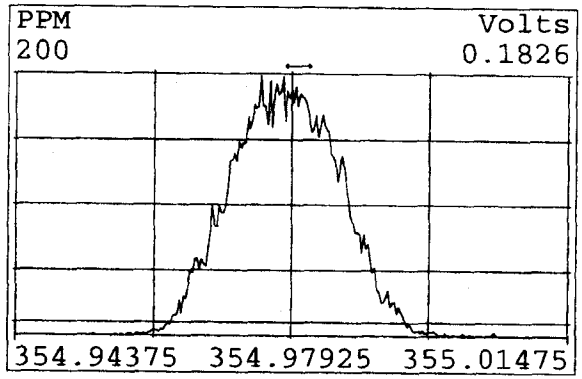


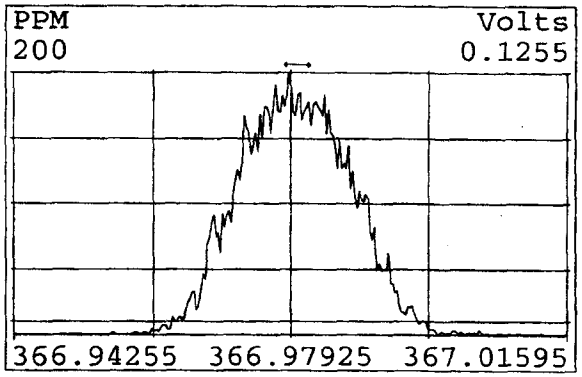


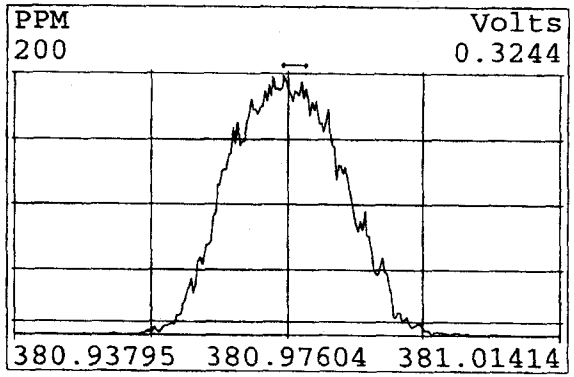
Peak Locate Examination: 4-DEC-2009:05:46 File:A03DEC09E_RES_CHECK
Experiment:EXP_DB5MS Function:2 Reference:PFK

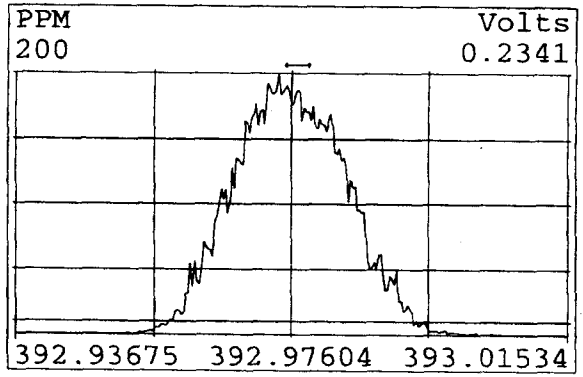


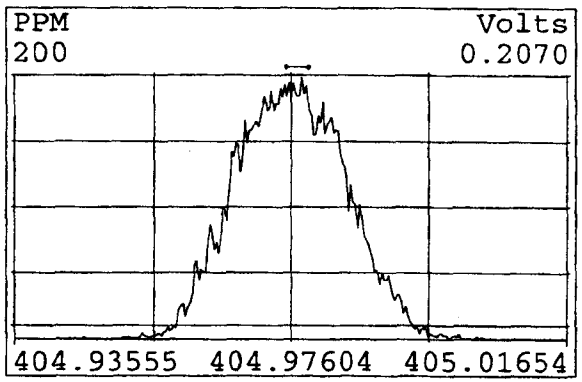


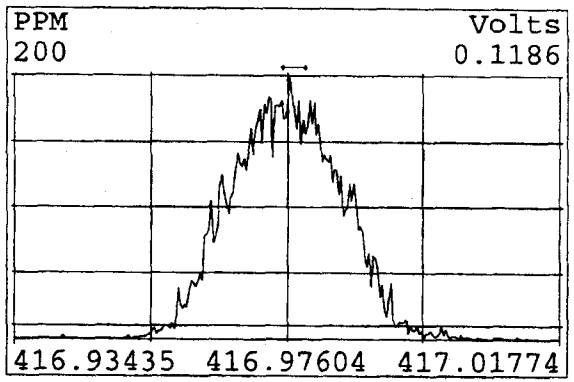




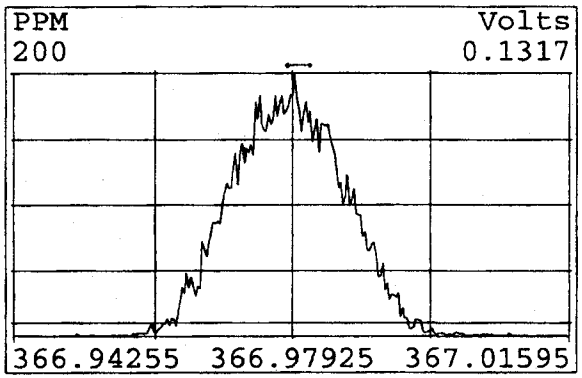


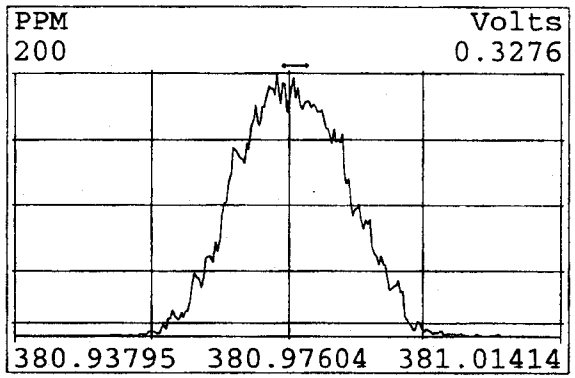


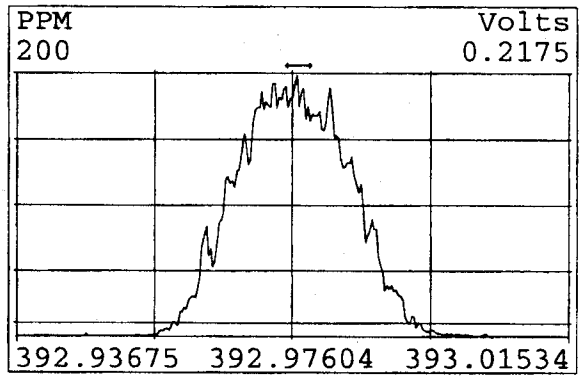


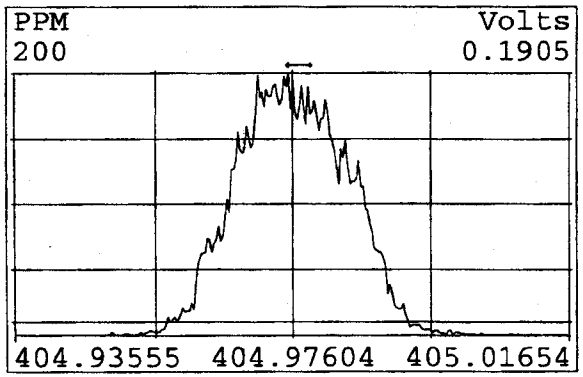


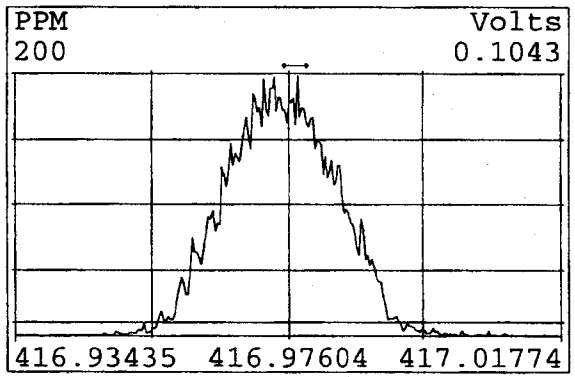
Peak Locate Examination: 4-DEC-2009:05:47 File:A03DEC09E_RES_CHECK
Experiment:EXP_DB5MS Function:3 Reference:PFK

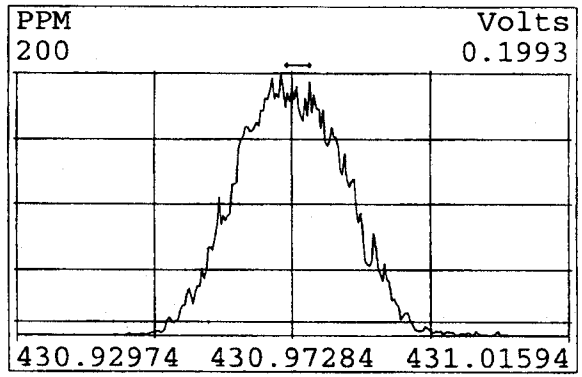


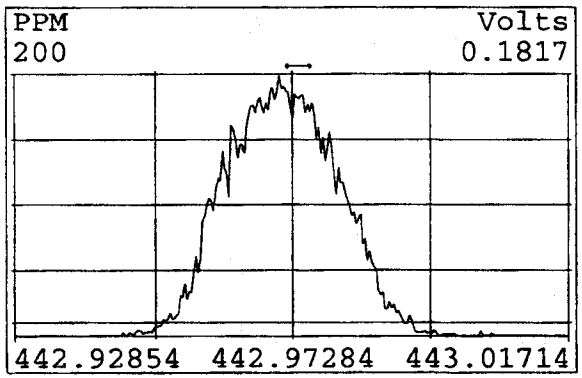


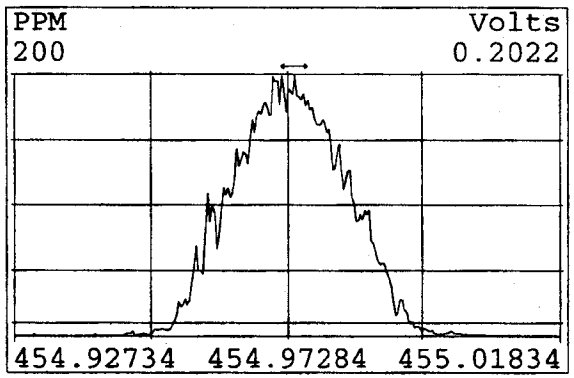




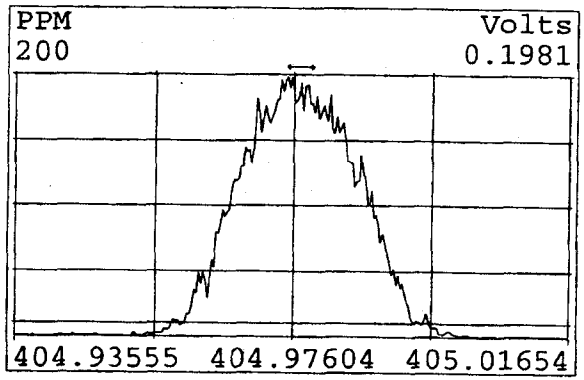


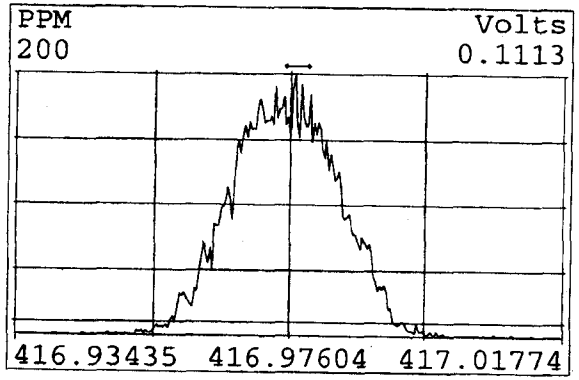


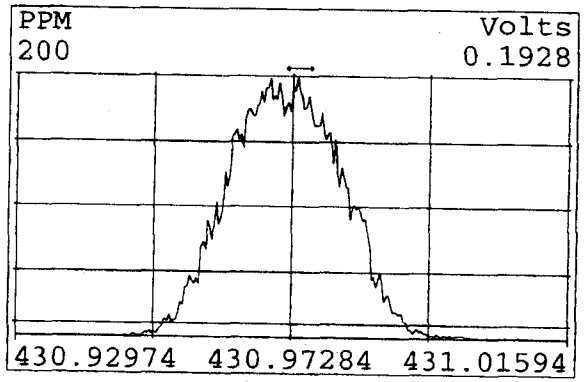


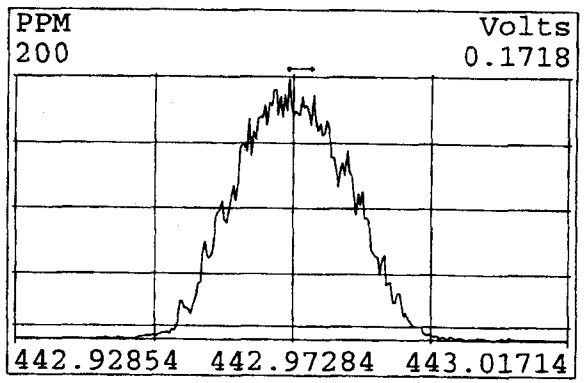


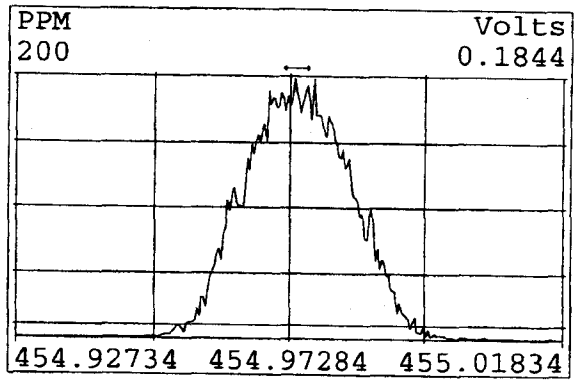
Peak Locate Examination: 4-DEC-2009:05:48 File:A03DEC09E_RES_CHECK
Experiment:EXP_DB5MS Function:4 Reference:PFK

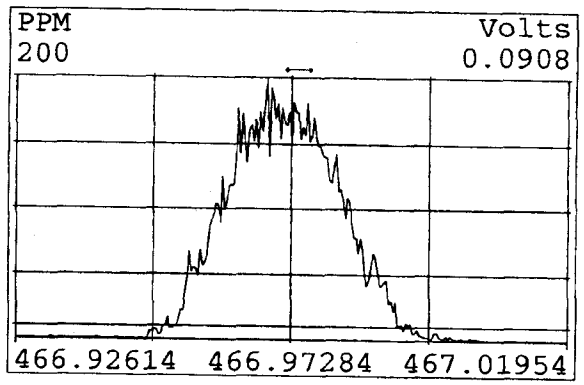


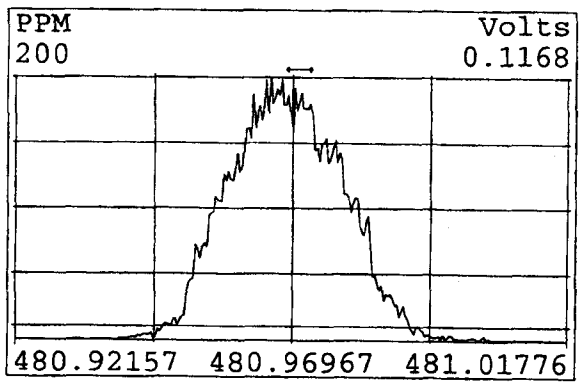




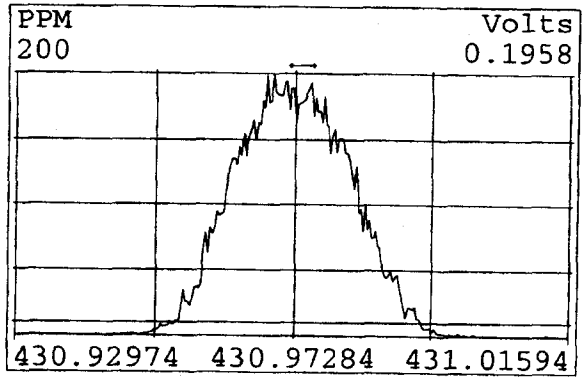


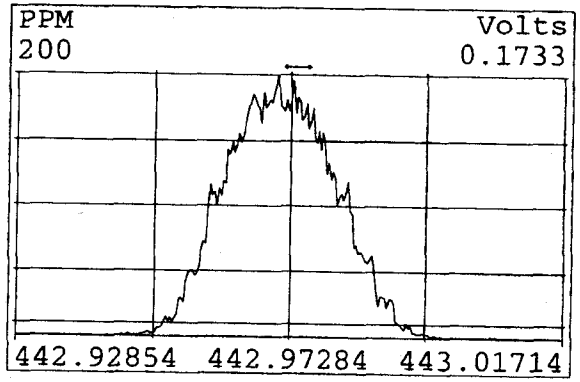


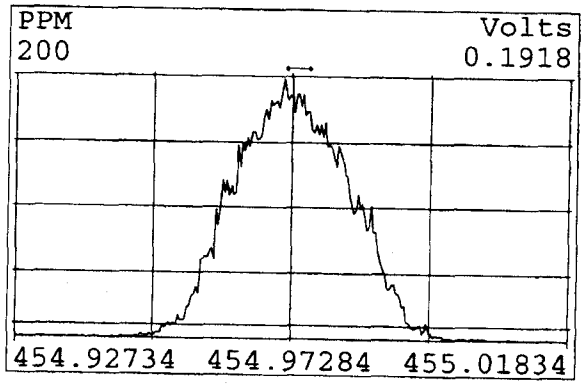


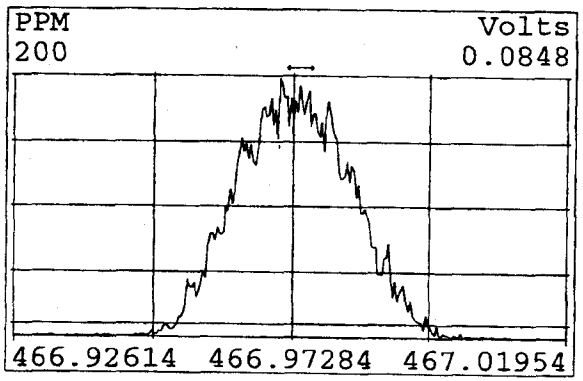


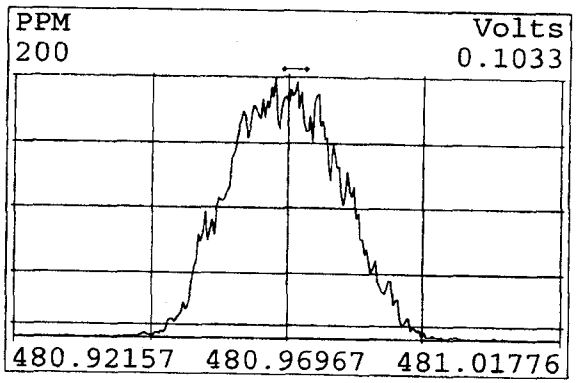
Peak Locate Examination: 4-DEC-2009:05:49 File:A03DEC09E_RES_CHECK
Experiment:EXP_DB5MS Function:5 Reference:PFK

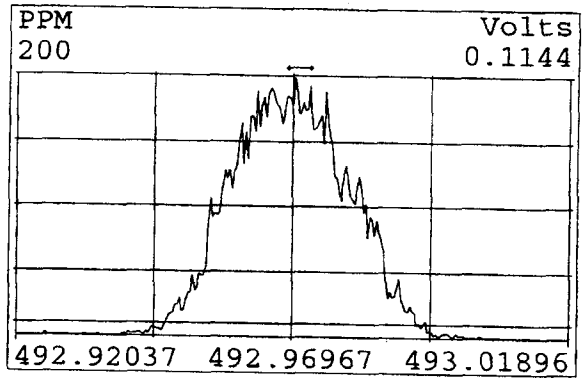


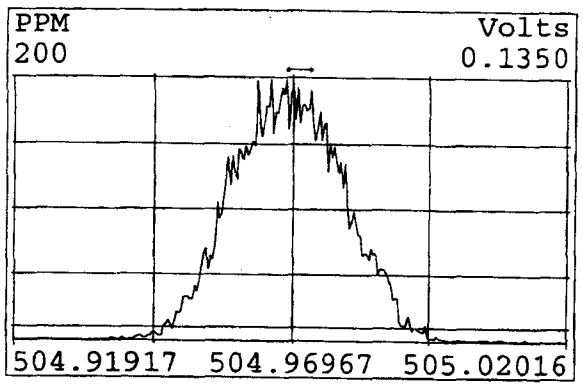


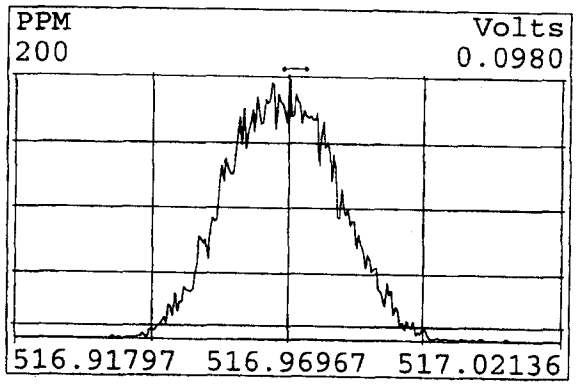






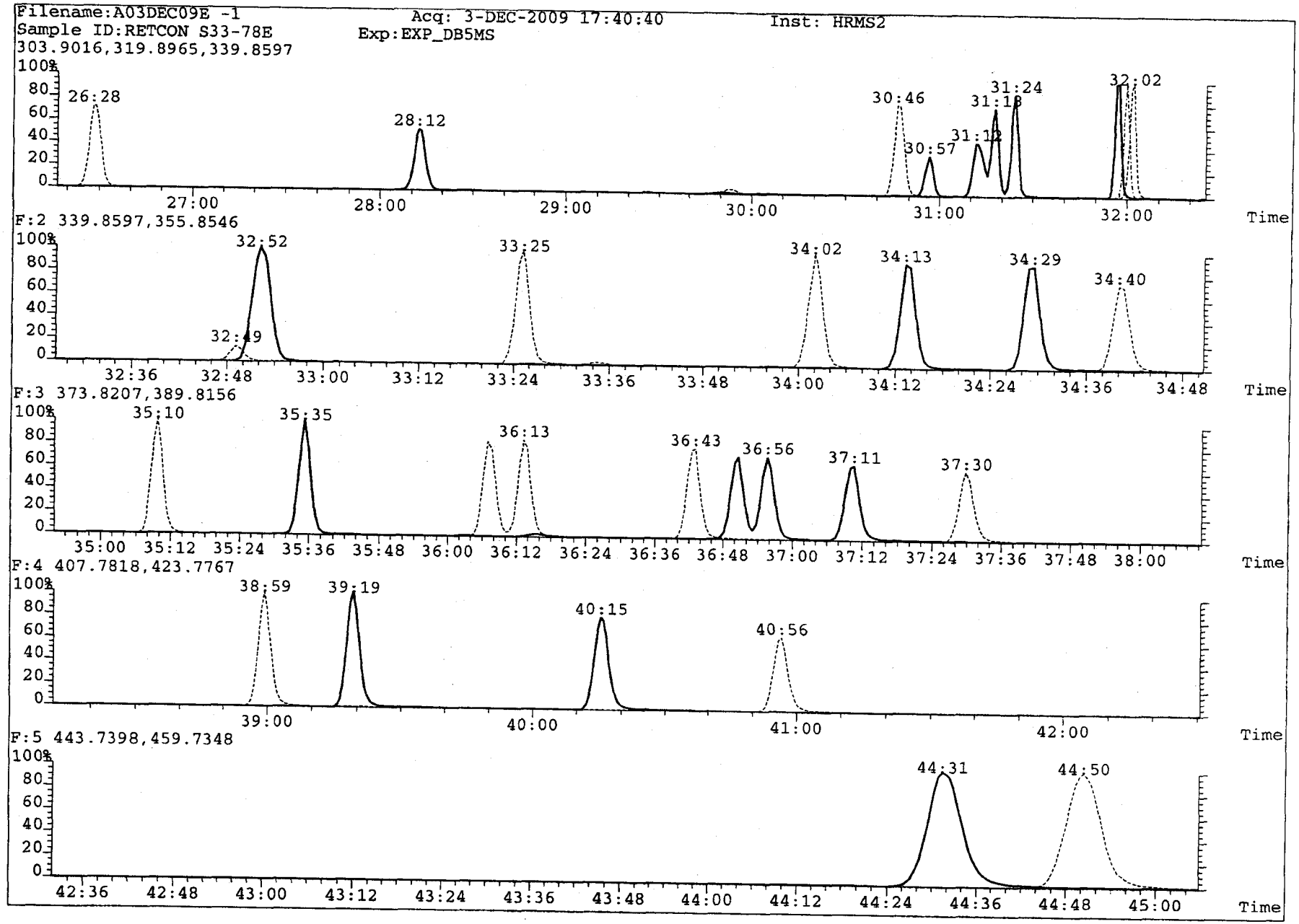




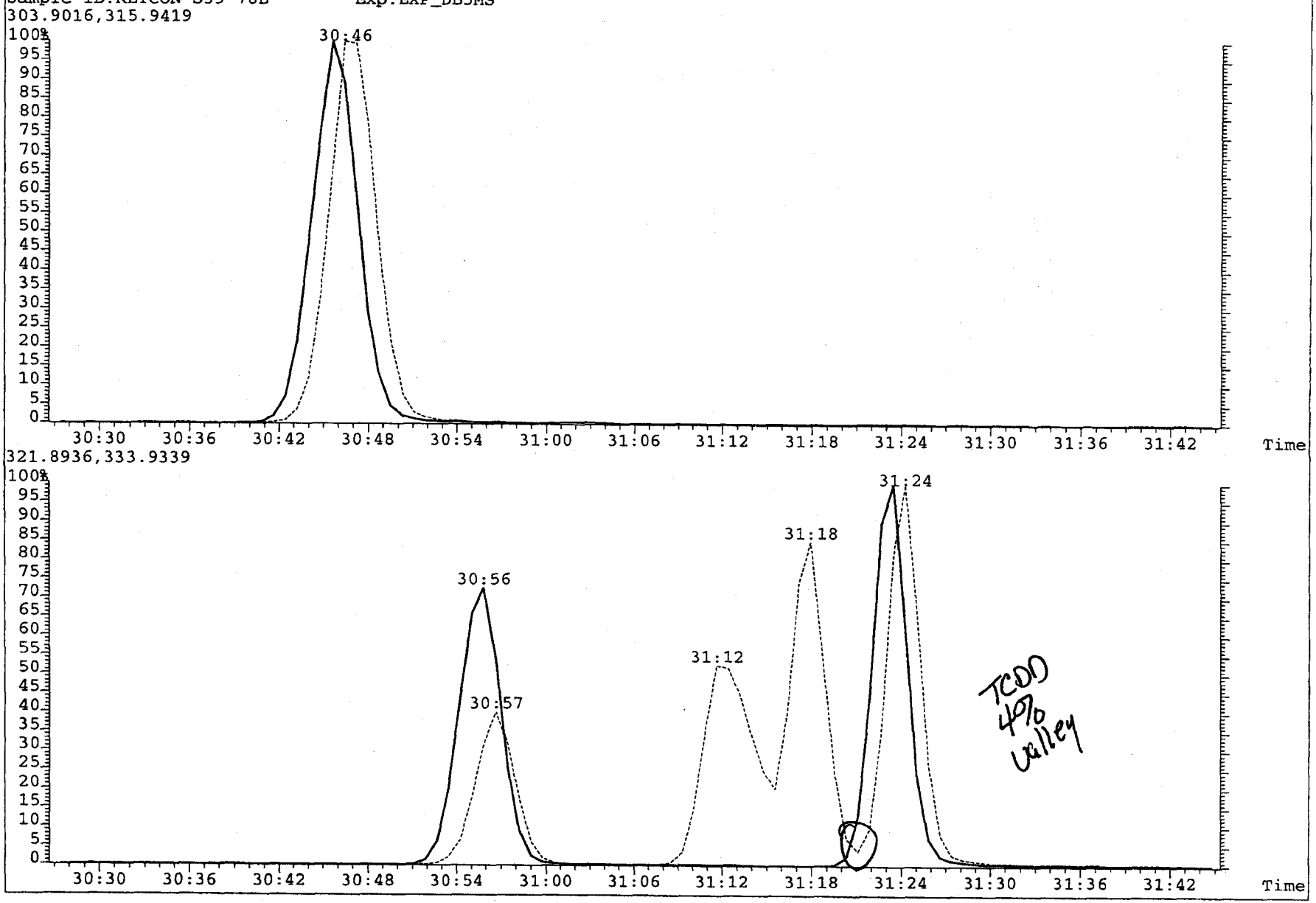


Filename ; a03dec09e
Sample ; 1
Acquired ; 3-DEC-09 17:40:40
Processed ; 4-DEC-09 06:35:43
Sample ID ; RETCON S33-78E

Name	First Eluter RT	Last Eluter RT
TCDD	28:12	31:57
PeCDD	32:52	34:29
HxCDD	35:35	37:11
HpCDD	39:19	40:15
OCDD	44:32	
TCDF	26:28	32:02
PeCDF	31:60	34:40
HxCDF	35:10	37:30
HpCDF	38:59	40:56
OCDF	44:50	


Filename:A03DEC09E -1
Acq: 3-DEC-2009 17:40:40
Inst: HRMS2
Sample ID:RETCON S33-78E
Exp:EXP_DB5MS
303.9016,319.8965,339.8597
26:28
28:12
30:46
30:57
31:24
32:02
F:2 339.8597,355.8546
32:52
32:49
33:25
34:02
34:13
34:29
34:40
F:3 373.8207,389.8156
35:10
35:35
36:13
36:43
36:56
37:11
37:30
F:4 407.7818,423.7767
38:59
39:19
40:15
40:56
F:5 443.7398,459.7348
44:31
44:50
Time

Filename:A03DEC09E -1 Acq: 3-DEC-2009 17:40:40 Inst: HRMS2
Sample ID:RETCON S33-78E Exp:EXP_DB5MS



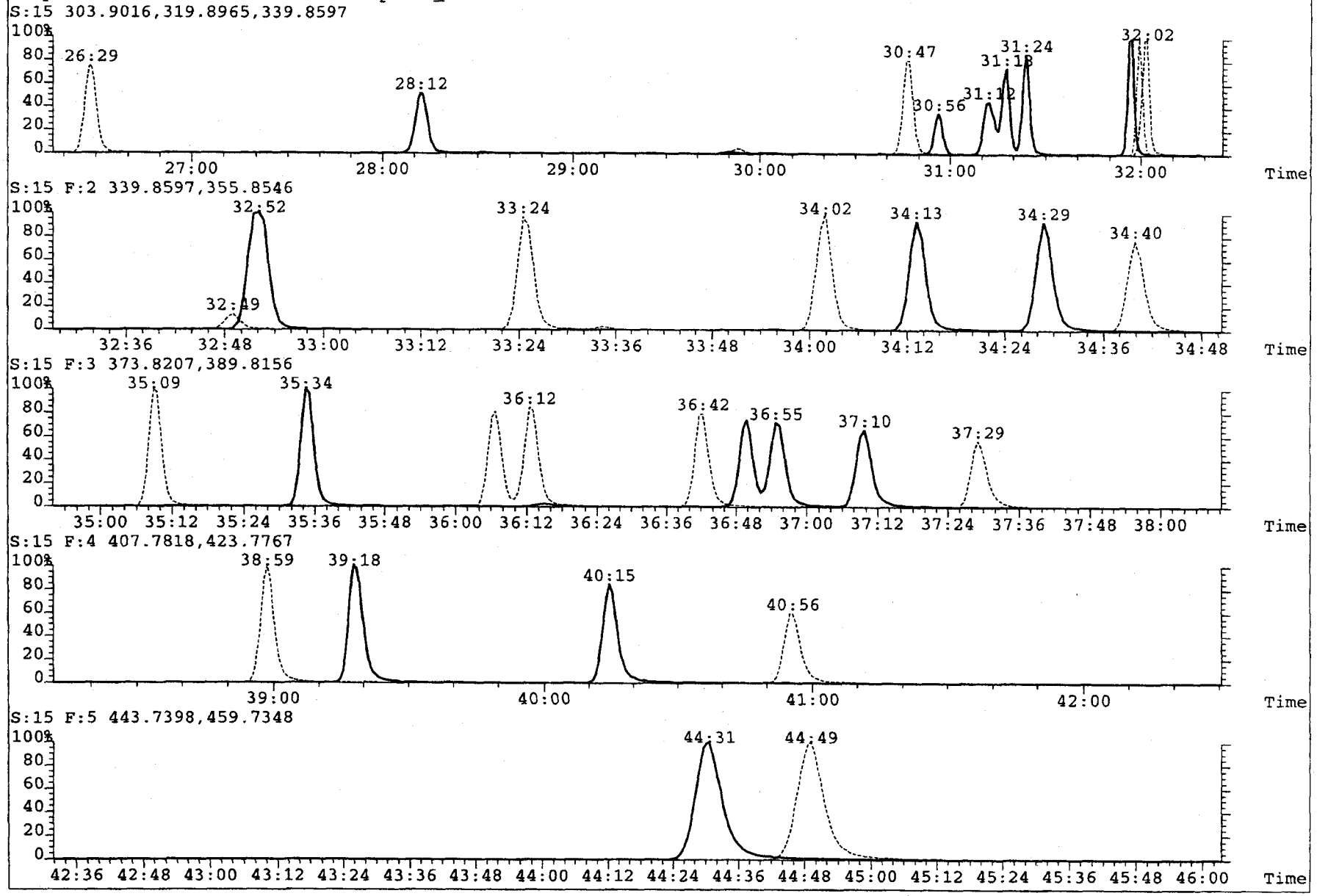
Sample text; RETCON S33-78E
Filename; a03dec09e -15 Acquired; 4-DEC-09 04:56:55 Processed; 4-DEC-09 06:05:34
ICAL; m8290-092309e Results; m8290-120309e

Name;	Resp;	Ion 1;	Ion 2	; RA ;? ;	RT ;	Conc ;	Dev'n;	CCAL RRF;	ICAL RRF	;Mod
2,3,7,8-TCDD;	2.6e+07;	1.13e+07;	1.46e+07	; 0.77 ;y ;	31:24 ;	9.937 ;	-0.6;	1.0228;	1.0293	;n
1,2,3,7,8-PeCDD;	9.3e+07;	5.71e+07;	3.63e+07	; 1.57 ;y ;	34:13 ;	50.22 ;	0.4;	1.0587;	1.0539	;n
1,2,3,4,7,8-HxCDD;	8.5e+07;	4.72e+07;	3.76e+07	; 1.26 ;y ;	36:50 ;	46.68 ;	-6.6;	0.9036;	0.9679	;n
1,2,3,6,7,8-HxCDD;	9.2e+07;	5.09e+07;	4.06e+07	; 1.25 ;y ;	36:55 ;	49.33 ;	-1.3;	0.9752;	0.9886	;n
1,2,3,7,8,9-HxCDD;	8.4e+07;	4.69e+07;	3.74e+07	; 1.25 ;y ;	37:10 ;	47.04 ;	-5.9;	0.8975;	0.9540	;n
1,2,3,4,6,7,8-HpCDD;	6.6e+07;	3.38e+07;	3.25e+07	; 1.04 ;y ;	40:15 ;	49.04 ;	-1.9;	1.0758;	1.0970	;n
OCDD;	1.1e+08;	5.24e+07;	5.82e+07	; 0.90 ;y ;	44:31 ;	94.59 ;	-5.4;	1.0633;	1.1240	;n
2,3,7,8-TCDF;	3.7e+07;	1.65e+07;	2.10e+07	; 0.79 ;y ;	30:47 ;	9.643 ;	-3.6;	1.0052;	1.0424	;n
1,2,3,7,8-PeCDF;	1.5e+08;	8.99e+07;	5.77e+07	; 1.56 ;y ;	33:25 ;	49.59 ;	-0.8;	0.9915;	0.9997	;n
2,3,4,7,8-PeCDF;	1.5e+08;	9.21e+07;	5.94e+07	; 1.55 ;y ;	34:02 ;	48.98 ;	-2.0;	1.0174;	1.0386	;n
1,2,3,4,7,8-HxCDF;	1.3e+08;	7.04e+07;	5.69e+07	; 1.24 ;y ;	36:07 ;	48.43 ;	-3.1;	1.0505;	1.0846	;n
1,2,3,6,7,8-HxCDF;	1.4e+08;	7.74e+07;	6.20e+07	; 1.25 ;y ;	36:13 ;	50.00 ;	0.0;	1.1501;	1.1500	;n
2,3,4,6,7,8-HxCDF;	1.3e+08;	7.28e+07;	5.84e+07	; 1.25 ;y ;	36:42 ;	49.11 ;	-1.8;	1.0825;	1.1020	;n
1,2,3,7,8,9-HxCDF;	1.1e+08;	5.88e+07;	4.74e+07	; 1.24 ;y ;	37:29 ;	46.76 ;	-6.5;	0.8763;	0.9369	;n
1,2,3,4,6,7,8-HpCDF;	1.1e+08;	5.84e+07;	5.65e+07	; 1.03 ;y ;	38:59 ;	49.62 ;	-0.8;	1.3709;	1.3813	;n
1,2,3,4,7,8,9-HpCDF;	8.6e+07;	4.38e+07;	4.18e+07	; 1.05 ;y ;	40:56 ;	47.86 ;	-4.3;	1.0216;	1.0673	;n
OCDF;	1.4e+08;	6.57e+07;	7.28e+07	; 0.90 ;y ;	44:49 ;	95.21 ;	-4.8;	1.3306;	1.3977	;n
Extraction Standards										
13C-2,3,7,8-TCDD;	2.5e+08;	1.12e+08;	1.42e+08	; 0.79 ;y ;	31:23 ;	100.0 ;	0.0;	1.1189;	1.1184	;n
13C-1,2,3,7,8-PeCDD;	1.8e+08;	1.08e+08;	6.80e+07	; 1.59 ;y ;	34:12 ;	95.76 ;	-4.2;	0.7772;	0.8116	;n
13C-1,2,3,6,7,8-HxCDD;	1.9e+08;	1.05e+08;	8.31e+07	; 1.26 ;y ;	36:54 ;	103.8 ;	3.8;	1.1139;	1.0736	;n
13C-1,2,3,4,6,7,8-HpCDD;	1.2e+08;	6.36e+07;	5.97e+07	; 1.07 ;y ;	40:14 ;	99.43 ;	-0.6;	0.7318;	0.7360	;n
13C-OCDD;	2.1e+08;	9.86e+07;	1.10e+08	; 0.90 ;y ;	44:30 ;	211.7 ;	5.9;	0.6174;	0.5833	;n
13C-2,3,7,8-TCDF;	3.7e+08;	1.65e+08;	2.08e+08	; 0.79 ;y ;	30:45 ;	95.89 ;	-4.1;	1.6430;	1.7135	;n
13C-1,2,3,7,8-PeCDF;	3.0e+08;	1.82e+08;	1.16e+08	; 1.57 ;y ;	33:24 ;	95.54 ;	-4.5;	1.3118;	1.3731	;n
13C-1,2,3,6,7,8-HxCDF;	2.4e+08;	8.36e+07;	1.59e+08	; 0.53 ;y ;	36:12 ;	100.0 ;	0.0;	1.4382;	1.4379	;n
13C-1,2,3,4,6,7,8-HpCDF;	1.7e+08;	5.18e+07;	1.16e+08	; 0.45 ;y ;	38:58 ;	97.76 ;	-2.2;	0.9945;	1.0173	;n
Injection Standards										
13C-1,2,3,4-TCDD;	2.3e+08;	1.01e+08;	1.26e+08	; 0.80 ;y ;	30:55 ;	492.2 ;	-;	-;	-	;n
13C-1,2,3,7,8,9-HxCDD;	1.7e+08;	9.37e+07;	7.49e+07	; 1.25 ;y ;	37:09 ;	467.1 ;	-;	-;	-	;n
Cleanup Standards										
37Cl-2,3,7,8-TCDD;	2.7e+07;	2.67e+07;	-	; - ;- ;	31:24 ;	10.07 ;	0.7;	1.1744;	1.1662	;n
13C-2,3,4,7,8-PeCDF;	2.9e+08;	1.78e+08;	1.13e+08	; 1.57 ;y ;	34:01 ;	95.75 ;	-4.2;	1.2805;	1.3373	;n
13C-1,2,3,4,7,8-HxCDD;	1.6e+08;	9.08e+07;	7.16e+07	; 1.27 ;y ;	36:49 ;	98.07 ;	-1.9;	0.9632;	0.9822	;n
13C-1,2,3,4,7,8-HxCDF;	2.2e+08;	7.35e+07;	1.42e+08	; 0.52 ;y ;	36:06 ;	98.28 ;	-1.7;	1.2758;	1.2981	;n
13C-1,2,3,4,7,8,9-HpCDF;	1.2e+08;	3.87e+07;	8.60e+07	; 0.45 ;y ;	40:55 ;	94.63 ;	-5.4;	0.7401;	0.7821	;n
Sampling Standards										
37Cl-2,3,7,8 TCDD;	2.7e+07;	2.67e+07;	-	; - ;- ;	31:24 ;	10.07 ;	0.7;	1.0497;	1.0425	;n
13C-2,3,4,7,8-PeCDF;	2.9e+08;	1.78e+08;	1.13e+08	; 1.57 ;y ;	34:01 ;	100.2 ;	0.2;	0.9762;	0.9744	;n
13C-1,2,3,4,7,8-HxCDD;	1.6e+08;	9.08e+07;	7.16e+07	; 1.27 ;y ;	36:49 ;	94.48 ;	-5.5;	0.8647;	0.9152	;n
13C-1,2,3,4,7,8-HxCDF;	2.2e+08;	7.35e+07;	1.42e+08	; 0.52 ;y ;	36:06 ;	98.26 ;	-1.7;	0.8871;	0.9028	;n
13C-1,2,3,4,7,8,9-HpCDF;	1.2e+08;	3.87e+07;	8.60e+07	; 0.45 ;y ;	40:55 ;	96.80 ;	-3.2;	0.7442;	0.7688	;n

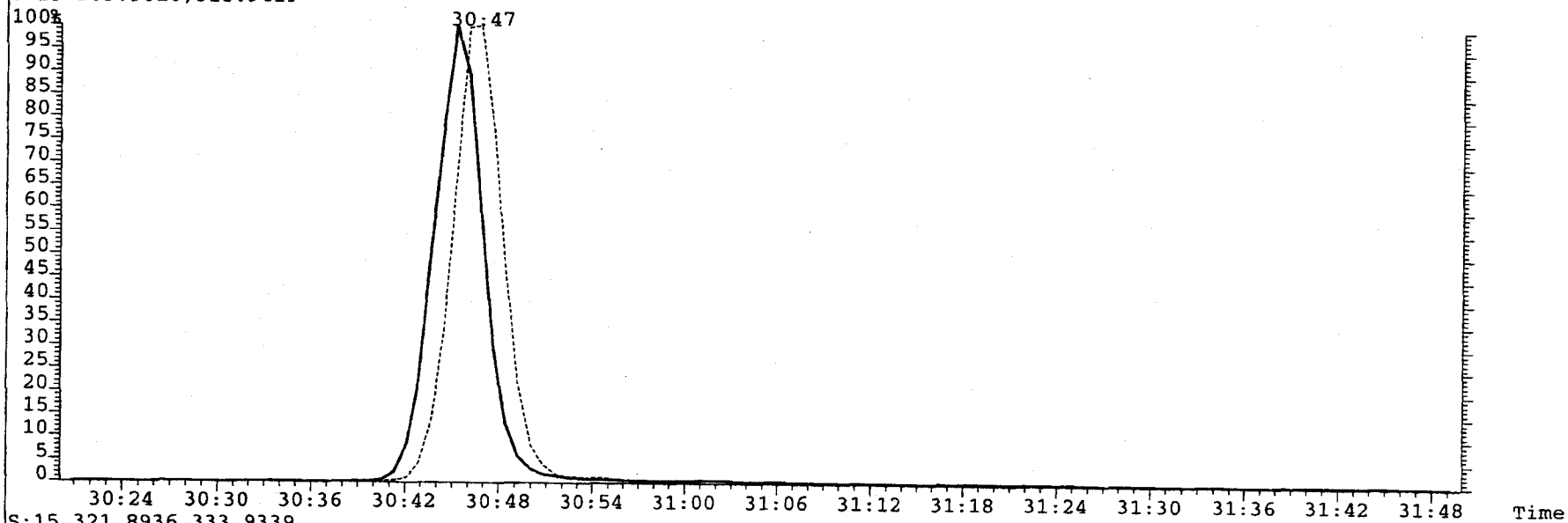
Filename ; a03dec09e
Sample ; 15
Acquired ; 4-DEC-09 04:56:55
Processed ; 4-DEC-09 06:35:58
Sample ID ; RETCON S33-78E

Name	First Eluter RT	Last Eluter RT
TCDD	28:12	31:57
PeCDD	32:52	34:29
HxCDD	35:34	37:10
HpCDD	39:18	40:15
OCDD	44:31	
TCDF	26:29	32:02
PeCDF	31:59	34:40
HxCDF	35:09	37:29
HpCDF	38:59	40:56
OCDF	44:49	

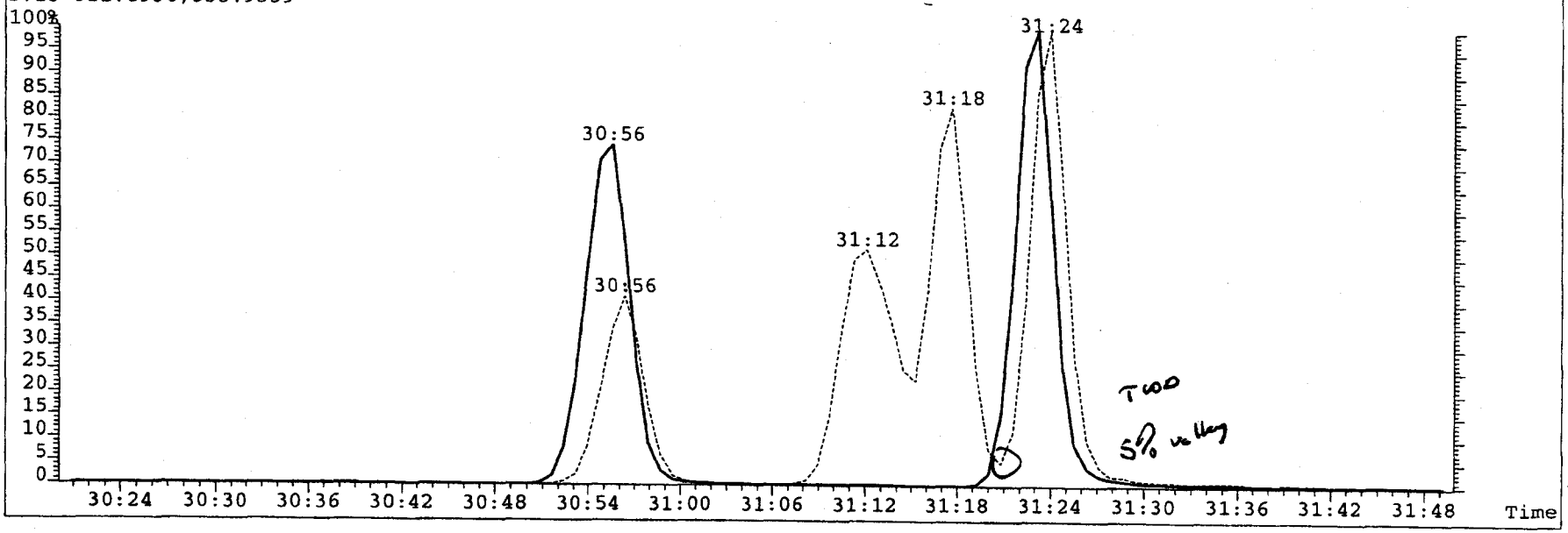
Filename:A03DEC09E -15 Acq: 4-DEC-2009 04:56:55 Inst: HRMS2
Sample ID:RETCON S33-78E Exp:EXP_DB5MS



Filename:A03DEC09E -15 Acq: 4-DEC-2009 04:56:55 Inst: HRMS2
Sample ID:RETCON S33-78E Exp:EXP_DB5MS
S:15 303.9016,315.9419



S:15 321.8936,333.9339



Extraction by Modified Method 3540C

(Soxhlet with Dean-Stark Adapter - SDS)

Analytical Method: 8290 1613 8280
1668A DLM Other_____

QC Date	QC Batch*	Prev. WG	Workgroup*	Logbook#	Page#
01-Dec-09		N/A	WG	17	473

Glassware #	QC #/20	Sample Identification: Client* ID	Project* ID	Sample* ID	Container* ID	Sample Matrix	Sample Weight*	ES Amt.* (µL)	MX Amt. (µL)	Analyst (initials)
		N/A	N/A	LMB17473	A	Soil	10.00	40		JHL
		G921	126	2	A	Soil	10.20	40		JHL
		G921	126	6	A	Soil	10.24	40		JHL
	☐	G1047	30	8	A	Soil	✓10.08	40		JHL
		G1047	30	9	A	Soil	✓11.06	40		JHL
		G1047	32	1	A	Soil	✓10.49	40		JHL
		G330	48	1	A	Soil	10.11	40		JHL
		G330	48	1	A-MS	Soil	10.79	40		JHL
		G330	48	1	A-MSD	Soil	10.08	40		JHL
		N/A	N/A	OPR17473	A	Soil	10.00	40	40	JHL
		N/A	N/A	OPRD17473	A	Soil	10.00	40	40	JHL

12/7/09

Items	Lot #	Conc. (ng/µL)	Witness
Toluene	SPL2-213A		
Tridecane	SPL2-202		
Salt	SPL2-205E		
Thimbles	JHL		
Extraction Std.	534-249	0.05	DS
Matrix Spike	534-257	0.005	DS

* = To be entered in the Prep Table.

☑ Pre-Sox? ☑ Tridecane added?

Start Date/Time: 12/01/09 17:00

Finish Date/Time: 12/02/09 9:00

Comments: ☐ - USED ALL OF SAMPLE JAR PER PM - JHL

Balance Reference:
☐ WB1
☑ SB1

☐ Data in prep table?

DC7.082508.7

Extract cleanup by modified method 3630/3620

Silica/florisil

	Sample Identification											
	Client ID	Project ID	Sample ID	Container ID	Train	CS Amt.* (µL)	Witness (initials)	Analyzed (%)	Analyst (initials)	Date	Method	Matrix
A	-	-	LMB17473	-	1	40	UMC	100	JD	02-Dec-09	8290	Soil
	G921	126	2	B	2	40		100		02-Dec-09	8290	Soil
	G921	126	6	B	3	40		100		02-Dec-09	8290	Soil
	G1047	30	8	D	4	40		100		02-Dec-09	8290	Soil
B	G1047	30	9	D	5	40		100		02-Dec-09	8290	Soil
	G1047	32	1	D	6	40		100		02-Dec-09	8290	Soil
	G330	48	1	D	7	40		100		02-Dec-09	8290	Soil
	G330	48	1 MS	E	8	40		100		02-Dec-09	8290	Soil
C	G330	48	1 MSD	F	9	40		100		02-Dec-09	8290	Soil
	-	-	OPR17473	-	10	40		100		02-Dec-09	8290	Soil
	-	-	OPRD17473	-	11	40		100		02-Dec-09	8290	Soil
	-	-	-	-	12	-	-	-	-	-	-	-

Item	Lot #'s
Hexane	SPL2-217E
Methylene Chloride	SPL2-217C
Acid Silica	SPL2-216
Base Silica	SPL2-214
Silica	SPL2-205A
Florisil	SPL2-201C
Salt	SPL2-215B
Tridecane	SPL2-202
Cleanup Std.	S35-09

Conc. (ng/µL)
0.01

☐ PCU 1

☑ PCU 2

Comments:

DC1.090203.6

* = to be entered in the Prep table.

Log Book: 28 Page: 141

Cleanup Observation Form

Reference: PCU Log

Log:	Page:
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	Train 1	2	3	4	5	6
Silica	☑ Clear/Colorless ☐ ____ ____ ☐ ____ ____ ☐ ____ ____ Travel____	☐ Clear/Colorless ☐ Brown 2/1 ☐ ____ ____ ☐ ____ ____ Travel____	☐ Clear/Colorless ☐ ____ ____ ☐ ____ ____ ☐ ____ ____ Travel____	☐ Clear/Colorless ☐ ____ ____ ☐ ____ ____ ☐ ____ ____ Travel____	☐ Clear/Colorless ☐ Brown 4/4 ☐ ____ ____ ☐ ____ ____ Travel____	☐ Clear/Colorless ☐ Brown 2/1 ☐ ____ ____ ☐ ____ ____ Travel____
Acid	☑ Clear/Colorless ☐ ____ ____ ☐ ____ ____ ☐ ____ ____ Travel____	☐ Clear/Colorless ☐ Gray 2/2 ☐ ____ ____ ☐ ____ ____ Travel____	☐ Clear/Colorless ☐ ____ ____ ☐ ____ ____ ☐ ____ ____ Travel____	☐ Clear/Colorless ☐ ____ ____ ☐ ____ ____ ☐ ____ ____ Travel____	☐ Clear/Colorless ☐ Brown 3/4 ☐ ____ ____ ☐ ____ ____ Travel____	☐ Clear/Colorless ☐ Brown / Gray 2/2 ☐ ____ ____ ☐ ____ ____ Travel____
Base	☑ Clear/Colorless ☐ ____ ____ ☐ ____ ____ ☐ ____ ____ Travel____	☑ Clear/Colorless ☐ ____ ____ ☐ ____ ____ ☐ ____ ____ Travel____	☐ Clear/Colorless ☐ ____ ____ ☐ ____ ____ ☐ ____ ____ Travel____	☐ Clear/Colorless ☐ ____ ____ ☐ ____ ____ ☐ ____ ____ Travel____	☑ Clear/Colorless ☐ ____ ____ ☐ ____ ____ ☐ ____ ____ Travel____	☐ Clear/Colorless ☐ ____ ____ ☐ ____ ____ ☐ ____ ____ Travel____
Florisil	☑ Clear/Colorless ☐ ____ ____ ☐ ____ ____ ☐ ____ ____ Travel____	☑ Clear/Colorless ☐ ____ ____ ☐ ____ ____ ☐ ____ ____ Travel____	☐ Clear/Colorless ☐ ____ ____ ☐ ____ ____ ☐ ____ ____ Travel____	☐ Clear/Colorless ☐ ____ ____ ☐ ____ ____ ☐ ____ ____ Travel____	☑ Clear/Colorless ☐ ____ ____ ☐ ____ ____ ☐ ____ ____ Travel____	☐ Clear/Colorless ☐ ____ ____ ☐ ____ ____ ☐ ____ ____ Travel____
Extract	☑ Clear/Colorless ☐ ____ ____	☑ Clear/Colorless ☐ ____ ____	☐ Clear/Colorless ☐ ____ ____	☐ Clear/Colorless ☐ ____ ____	☑ Clear/Colorless ☐ ____ ____	☐ Clear/Colorless ☐ ____ ____
Sx	----LMB17473-	G921-126-2B	G921-126-6B	G1047-30-8D	G1047-30-9D	G1047-32-1D
Comments						

DC29.071105.4

☐ Continued on next page.

Cleanup Observation Form

Reference: PCU Log

Log:	Page:
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	Train 7	Train 8	Train 9	Train 10	Train 11	Train 12
Silica	☐ Clear/Colorless ☐ Brown 2/1 ☐ ☐ Travel	☐ Clear/Colorless ☐ ☐ ☐ Travel	☐ Clear/Colorless ☐ ☐ ☐ Travel	☑ Clear/Colorless ☐ ☐ ☐ Travel	☑ Clear/Colorless ☐ ☐ ☐ Travel	☐ Clear/Colorless ☐ ☐ ☐ Travel
Acid	☐ Clear/Colorless ☐ Brown/Green 1/2 ☐ ☐ Travel	☐ Clear/Colorless ☐ ☐ ☐ Travel	☐ Clear/Colorless ☐ ☐ ☐ Travel	☑ Clear/Colorless ☐ ☐ ☐ Travel	☑ Clear/Colorless ☐ ☐ ☐ Travel	☐ Clear/Colorless ☐ ☐ ☐ Travel
Base	☑ Clear/Colorless ☐ ☐ ☐ Travel	☐ Clear/Colorless ☐ ☐ ☐ Travel	☐ Clear/Colorless ☐ ☐ ☐ Travel	☑ Clear/Colorless ☐ ☐ ☐ Travel	☑ Clear/Colorless ☐ ☐ ☐ Travel	☐ Clear/Colorless ☐ ☐ ☐ Travel
Florisil	☑ Clear/Colorless ☐ ☐ ☐ Travel	☐ Clear/Colorless ☐ ☐ ☐ Travel	☐ Clear/Colorless ☐ ☐ ☐ Travel	☑ Clear/Colorless ☐ ☐ ☐ Travel	☑ Clear/Colorless ☐ ☐ ☐ Travel	☐ Clear/Colorless ☐ ☐ ☐ Travel
Extract	☑ Clear/Colorless ☐	☐ Clear/Colorless ☐	☐ Clear/Colorless ☐	☑ Clear/Colorless ☐	☑ Clear/Colorless ☐	☐ Clear/Colorless ☐
Sx	G330-48-1D	G330-48-1 MSE	G330-48-1 MSDF	----OPR17473-	----OPRD17473-	----
Comments						

12/2/07

DC29.071105.4

Tetra Tech NUS

INTERNAL CORRESPONDENCE

TO: B. CUMMINGS

DATE: DECEMBER 17, 2009

FROM: LEANNE M. GANSER

COPIES: DV FILE

SUBJECT: INORGANIC DATA VALIDATION – TOTAL AND DISSOLVED METALS, GRAIN SIZE, PERCENT CLAY, PERCENT GRAVEL, PERCENT SAND, AND PERCENT SILT
NTC GREAT LAKES CTO C064
SAMPLE DELIVERY GROUP (SDG) – CTO064_001

SAMPLES:

47/Soil/Metals/Misc

FD-092609-01	FD-092609-02	FD-092709-01
FD-092809-01	NTC21SB01-SO-0102	NTC21SB02-SO-0001
NTC21SB02-SO-0204	NTC21SB03-SO-0001	NTC21SB03-SO-0204
NTC21SB04-SO-0001	NTC21SB04-SO-0406	NTC21SB05-SO-0001
NTC21SB05-SO-0204	NTC21SB06-SO-0001	NTC21SB06-SO-0204
NTC21SB07-SO-0001	NTC21SB07-SO-0204	NTC21SB08-SO-0001
NTC21SB08-SO-0204	NTC21SB09-SO-0001	NTC21SB09-SO-0204
NTC21SB10-SO-0001	NTC21SB10-SO-0406	NTC21SB11-SO-0001
NTC21SB11-SO-0204	NTC21SB12-SO-0001	NTC21SB12-SO-0204
NTC21SB13-SO-0001	NTC21SB13-SO-0204	NTC21SB14-SO-0001
NTC21SB14-SO-0204	NTC21SB15-SO-0001	NTC21SB15-SO-0204
NTC21SB16-SO-0001	NTC21SB16-SO-0204	NTC21SB17-SO-0001
NTC21SB17-SO-0507	NTC21SB18-SO-0001	NTC21SB18-SO-0507
NTC21SB19-SO-0001	NTC21SB19-SO-0204	NTC21SB20-SO-0001
NTC21SB20-SO-0406	NTC21SB21-SO-0001	NTC21SB21-SO-0608
NTC21SB22-SO-0001	NTC21SB22-SO-0204	

3/Aqueous/Metals/Misc

RB-092909-01	RB-092909-02	SB-092909-01

Overview

The sample set for NTC Great Lakes CTO C064, SDG CTO064_001, consists of forty-seven (47) environmental soil samples, two rinsate blanks, and one source blank. Four (4) field duplicate pairs were included in this sample delivery group (SDG): NTC21SB18-SO-0507/FD-092609-01, NTC21SB09-SO-0001/FD-092609-02, NTC21SB15-SO-0204/FD-092709-01, and NTC21SB05-SO-0001/FD-092809-01.

All soil samples were analyzed for total target analyte list (TAL) metals, grain size, percent clay, percent gravel, percent sand, and percent silt. All aqueous samples were analyzed for dissolved TAL metals. The samples were collected by Tetra Tech NUS on September 26-29, 2009 and analyzed by Empirical Laboratories, LLC. Metals analyses were conducted using SW-846 methods 6010B. Mercury analyses were conducted using SW-846 method 7471A and 7470A.

These data were evaluated based on the following parameters:

* • Data Completeness
* • Holding Times
• Initial and Continuing Calibrations
• Laboratory Method / Preparation Blanks
* • ICP Interference Analysis
* • Laboratory Control Sample Results
• Matrix Spike Results
• Laboratory Duplicate Results
• Field Duplicate Results
• ICP Serial Dilution Results
* • Detection Limits
* • Analyte Quantitation

* - All quality control criteria were met for this parameter.

Qualified (if applicable) analytical results are summarized in Appendix A. Results as reported by the laboratory are presented in Appendix B. Appendix C contains the documentation to support the findings as discussed in this validation report.

Initial and Continuing Calibrations

The continuing calibration percent recoveries on 10/21/2009 at 2:15, 3:47, and 4:47, instrument ME-ICP for barium (89.1%) and iron (111-114%) were outside of 90-110% quality control limits affecting all samples in preparation batch 9J13003. Positive results for barium and iron were qualified as estimated, "J" in the affected samples.

The continuing calibration percent recoveries on 10/21/2009 at 4:47, 6:18, and 7:14, instrument ME-ICP for barium (87.9%), calcium (111%), iron (113-118%), lead (87.7%), and zinc (86.2-89.4%) were outside of 90-110% quality control limits affecting all samples in preparation batch 9J13004, except samples FD-092809-01, NTC21SB15-SO-0204, and NTC21SB19-SO-0001 analyzed for calcium, lead, and zinc at 5X and 10X dilutions.

The continuing calibration percent recoveries on 10/21/2009 at 7:14 and 8:27, instrument ME-ICP for barium (85.5-87.9%), calcium (111%), iron (118%), lead (86.9-87.7%), and zinc (85.8-86.2%) were outside of 90-110% quality control limits affecting all samples in preparation batch 9J13005, except samples NTC21SB01-SO-0102, NTC21SB03-SO-0001, and NTC21SB05-SO-0001 analyzed for calcium, lead, and zinc at 5X dilutions.

The continuing calibration percent recoveries on 10/21/2009 at 8:27 and 9:12, instrument ME-ICP for barium (85.5-86.7%), iron (116-118%), lead (86.9-87.4%), vanadium (89.5%), and zinc (85.8-86.3%) were outside of 90-110% quality control limits affecting all samples in preparation batch 9J20002, except samples NTC21SB08-SO-0001 and NTC21SB08-SO-0204 analyzed for lead and zinc at 5X and 10X dilutions.

The continuing calibration percent recoveries on 10/21/2009 at 6:18, 7:14, 8:27, and 9:12, instrument ME-ICP for selenium (%) were > 110% quality control limit affecting samples FD-092709-01, NTC21SB02-SO-0204, NTC21SB03-SO-0204, NTC21SB04-SO-0001, NTC21SB04-SO-0406, NTC21SB05-SO-0204, NTC21SB06-SO-0001, NTC21SB06-SO-0204, NTC21SB07-SO-0001, NTC21SB07-SO-0204, NTC21SB13-SO-0001, NTC21SB14-SO-0001, NTC21SB14-SO-0204, NTC21SB15-SO-0001, NTC21SB15-SO-0204, NTC21SB16-SO-0001, NTC21SB16-SO-0204, NTC21SB22-SO-0001, and NTC21SB22-SO-0204 analyzed for selenium.

The continuing calibration percent recoveries on 10/21/2009 at 15:24, 16:27, and 17:00, instrument ME-ICP for selenium (112-115%) were > 110% quality control limit affecting samples FD-092809-01, NTC21SB01-SO-0102, NTC21SB02-SO-0001, NTC21SB03-SO-0001, NTC21SB05-SO-0001,

NTC21SB08-SO-0001, NTC21SB08-SO-0204, NTC21SB19-SO-0001, and NTC21SB19-SO-0204 analyzed for selenium at 5X and 10X dilutions.

Laboratory Method / Preparation Blanks

The following metal contaminants were detected in the laboratory method/preparation blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level
Sodium(1)	1460 ug/L	7300 ug/L
Zinc(2)	0.253 mg/kg	1.265 mg/kg
Zinc(3)	0.278 mg/kg	1.39 mg/kg
Zinc(4)	0.274 mg/kg	1.37 mg/kg
Zinc(5)	0.267 mg/kg	1.335 mg/kg

1 Maximum concentration affecting samples RB-092909-01, RB-092909-02, and SB-092909-01.
2 Maximum concentration in preparation blank affecting all samples in batch 9J13003.
3 Maximum concentration in preparation blank affecting all samples in batch 9J13004.
4 Maximum concentration in preparation blank affecting all samples in batch 9J13005.
5 Maximum concentration in preparation blank affecting all samples in batch 9J20002.

An action level of 5X the maximum contaminant level has been used to evaluate sample data for blank contamination. Sample aliquot and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination. No action was necessary as positive results were greater than the blank action level or results were nondetects.

Matrix Spike Results

Matrix spike (MS) recoveries for antimony, arsenic, and thallium were < 75% quality control limit affecting batch 9J13004. Positive and nondetected results reported for antimony, arsenic, and thallium were qualified as estimated, "J" and "UJ", respectively.

MS recoveries for barium, beryllium, chromium, copper, and nickel were > 125% quality control limit affecting batch 9J13004. Positive results reported for barium, beryllium, chromium, copper, and nickel were qualified as estimated, "J".

MS recoveries for antimony, copper, and lead were < 75% quality control limit affecting batch 9J13005. Positive and nondetected results reported for antimony, copper, and lead were qualified as estimated, "J" and "UJ", respectively.

MS recoveries for potassium and zinc were > 125% quality control limit affecting batch 9J13005. Positive results reported for potassium and zinc were qualified as estimated, "J".

Laboratory Duplicate Results

Laboratory duplicate relative percent differences (RPDs) for arsenic, nickel, and zinc were >35% quality control limit affecting batch 9J13004. Positive and nondetected results reported for arsenic, nickel, and zinc were qualified as estimated, "J" and "UJ", respectively.

Laboratory duplicate RPDs for copper and zinc were >35% quality control limit affecting batch 9J13005. Positive and nondetected results reported for copper and zinc were qualified as estimated, "J" and "UJ", respectively.

Laboratory duplicate RPD for mercury was >35% quality control limit affecting batch 9J14017. Positive and nondetected results reported for mercury were qualified as estimated, "J" and "UJ", respectively.

Field Duplicate Results

Field duplicate imprecision (RPD > 50%) was noted for arsenic in sample pair NTC21SB18-SO-0507/FD-092609-01. Positive results for arsenic in samples NTC21SB18-SO-0507 and FD-092609-01 were qualified as estimated, "J".

Field duplicate imprecision (RPD > 50%) was noted for calcium, chromium, copper, iron, lead, magnesium, and nickel in sample pair NTC21SB09-SO-0001/FD-092609-02. Positive results for the aforementioned analytes in samples NTC21SB09-SO-0001 and FD-092609-02 were qualified as estimated, "J".

Field duplicate imprecision (RPD > 50%) was noted for calcium, cobalt, iron, and magnesium in sample pair NTC21SB15-SO-0204/FD-092709-01. Positive results for the aforementioned analytes in samples NTC21SB15-SO-0204 and FD-092709-01 were qualified as estimated, "J".

Field duplicate imprecision (RPD > 50%) was noted for calcium, chromium, lead, magnesium, and nickel in sample pair NTC21SB05-SO-0001/FD-092809-01. Positive results for the aforementioned analytes in samples NTC21SB05-SO-0001 and FD-092809-01 were qualified as estimated, "J".

ICP Serial Dilution Results

ICP serial dilution percent difference was >10% for barium, iron, lead, manganese, and zinc affecting batch 9J13004. Positive and nondetected results reported for barium, iron, lead, manganese, and zinc were qualified as estimated, "J" and "UJ", respectively.

ICP serial dilution percent difference was >10% for zinc affecting batch 9J13005. Positive and nondetected results reported for zinc were qualified as estimated, "J" and "UJ", respectively.

Notes

All analytes in soil samples, except mercury, were analyzed at dilution.

Executive Summary

Laboratory Performance: Calibration noncompliance was noted for several analytes. Sodium and zinc were present in the laboratory method / preparation blanks. Laboratory duplicate imprecision was noted for several analytes. ICP serial dilution results for several analytes were outside of quality control limits

Other Factors Affecting Data Quality: MS recoveries for several analytes were outside of quality control limits. Field duplicate imprecision was noted for several analytes.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Review", October 2004 and the DOD document entitled "Quality System Manual (QSM) for Environmental Laboratories" (Jan 2006).

The text of this report has been formulated to address only those problem areas affecting data quality.

Tetra Tech NUS
Leanne M. Ganser
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Tetra Tech NUS
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Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A
QUALIFIED ANALYTICAL RESULTS

Data Validation Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS-GFAA MSA's r < 0.995 / ICP PDS Recovery Noncompliance
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (e.g. base-line drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient r < 0.995
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 01797	NSAMPLE	FD-092609-01			FD-092609-02			FD-092709-01			FD-092809-01		
SDG: CTO064_001	LAB_ID	0910006-01			0910006-02			0910006-20			0910006-40		
FRACTION: M	SAMP_DATE	9/26/2009			9/26/2009			9/27/2009			9/28/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	92.6			92.8			75.6			80.0		
	DUP_OF	NTC21SB18-SO-0507			NTC21SB09-SO-0001			NTC21SB15-SO-0204			NTC21SB05-SO-0001		
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		3490			3390			20200			4500		
ANTIMONY		0.517	U		0.802			1.67	UJ	D	0.604	UJ	D
ARSENIC		23.2	J	G	4.78			123	J	DF	7.05	J	DF
BARIUM		18.4	J	C	124	J	C	197	J	CDI	32.1	J	CDI
BERYLLIUM		0.233			0.477			4.44	J	D	0.331	J	D
CADMIUM		0.322			2.62			7.72			0.935		
CALCIUM		78500			95500	J	G	119000	J	CG	162000	J	G
CHROMIUM		7.36			16.2	J	G	12.2	J	D	7.9	J	DG
COBALT		5.64			3.36			11.4	J	G	4.04		
COPPER		26.1			72.3	J	G	84.3	J	D	21.8	J	D
IRON		25800	J	C	11200	J	CG	111000	J	CGI	11900	J	CI
LEAD		12.4			88	J	G	17.8	J	CI	24.8	J	GI
MAGNESIUM		48800			55600	J	G	10500	J	G	92500	J	G
MANGANESE		732			206			1020	J	I	479	J	I
MERCURY		0.0169			0.655			0.0266			0.0184	J	F
NICKEL		14.8			23.5	J	G	35.8	J	DF	8.26	J	DFG
POTASSIUM		690			612			740			972		
SELENIUM		0.775	U		0.796	U		1.68	J	C	1.81	UJ	C
SILVER		0.103	U		0.172			0.334	U		0.121	U	
SODIUM		349			609			1130			706		
THALLIUM		0.413	U		0.318	U		1	UJ	D	0.362	UJ	D
VANADIUM		13.9			20.6			18.2			9.81		
ZINC		73.5			115			404	J	CFI	76.6	J	FI

PROJ_NO: 01797	NSAMPLE	NTC21SB01-SO-0102			NTC21SB02-SO-0001			NTC21SB02-SO-0204			NTC21SB03-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-41			0910006-42			0910006-43			0910006-44		
FRACTION: M	SAMP_DATE	9/28/2009			9/28/2009			9/28/2009			9/28/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	84.2			89.7			88.7			94.9		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		9140			10400			4590			8950		
ANTIMONY		0.585	UJ	D	0.566	UJ	D	1.42	UJ	D	0.627	J	D
ARSENIC		21.1			11.1			8.57			9.93		
BARIUM		52.9	J	C	91.7	J	C	42.6	J	C	68.3	J	C
BERYLLIUM		0.521			0.793			0.985			0.846		
CADMIUM		0.554			0.44			0.283	U		0.605		
CALCIUM		54000			56300			86600	J	C	57000		
CHROMIUM		17.3			15.1			10.1			14.1		
COBALT		8.64			11			3.18			7.43		
COPPER		37.9	J	DF	30.2	J	DF	23.8	J	DF	49.4	J	DF
IRON		48600	J	C	24100	J	C	15000	J	C	23300	J	C
LEAD		29.6	J	D	57.3	J	D	35.6	J	CD	106	J	D
MAGNESIUM		30600			36300			36700			34500		
MANGANESE		733			965			294			652		
MERCURY		0.0548	J	F	0.092	J	F	0.0963	J	F	0.144	J	F
NICKEL		25.4			21.1			10.2			18.9		
POTASSIUM		1180	J	D	1240	J	D	658	J	D	1060	J	D
SELENIUM		0.877	UJ	C	0.849	UJ	C	0.849	UJ	C	0.79	UJ	C
SILVER		0.117	U		0.113	U		0.283	U		0.105	U	
SODIUM		1010			833			817			1220		
THALLIUM		0.351	U		0.34	U		0.849	U		0.527	U	
VANADIUM		24.2			19.3			12.8			16.8		
ZINC		114	J	DFI	151	J	DFI	110	J	CDFI	252	J	DFI

PROJ_NO: 01797	NSAMPLE	NTC21SB03-SO-0204			NTC21SB04-SO-0001			NTC21SB04-SO-0406			NTC21SB05-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-45			0910006-21			0910006-22			0910006-46		
FRACTION: M	SAMP_DATE	9/28/2009			9/27/2009			9/27/2009			9/28/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	92.2			92.2			57.8			93.6		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		4830			2470			13200			5750		
ANTIMONY		1.36	UJ	D	1.38	UJ	D	0.892	UJ	D	0.513	UJ	D
ARSENIC		10.4			13.4	J	DF	14.6	J	DF	6.05		
BARIUM		44.6	J	C	34.8	J	CDI	115	J	CDI	44.9	J	C
BERYLLIUM		0.694			0.429	J	D	1.26	J	D	0.47		
CADMIUM		0.395			0.338			2.49			0.395		
CALCIUM		109000	J	C	89000	J	C	36100	J	C	62700		
CHROMIUM		10.8			7.16	J	D	34.3	J	D	13.7	J	G
COBALT		4.52			2.31			15.8			6.12		
COPPER		34.4	J	DF	25.3	J	D	72.6	J	D	24.6	J	DF
IRON		18600	J	C	26000	J	CI	30500	J	CI	18200	J	C
LEAD		63.2	J	CD	43	J	CI	184	J	CI	42.2	J	DG
MAGNESIUM		58300			47600			15800			37900	J	G
MANGANESE		413			178	J	I	267	J	I	503		
MERCURY		0.215	J	F	0.0517			0.0897			0.0693	J	F
NICKEL		13.4			7.18	J	DF	34	J	DF	17.2	J	G
POTASSIUM		785	J	D	763			1320			970	J	D
SELENIUM		0.818	UJ	C	0.83	UJ	C	0.535	UJ	C	0.77	UJ	C
SILVER		0.273	U		0.277	U		0.178	U		0.103	U	
SODIUM		1590			845			1460			798		
THALLIUM		0.818	U		0.83	UJ	D	0.535	UJ	D	0.411	U	
VANADIUM		15.2			11.3			33.5			12.5		
ZINC		115	J	CDFI	53.1	J	CFI	1010	J	CFI	87.8	J	DFI

PROJ_NO: 01797 SDG: CTO064_001 FRACTION: M MEDIA: SOIL	NSAMPLE	NTC21SB05-SO-0204			NTC21SB06-SO-0001			NTC21SB06-SO-0204			NTC21SB07-SO-0001		
	LAB_ID	0910006-47			0910006-23			0910006-24			0910006-25		
	SAMP_DATE	9/28/2009			9/27/2009			9/27/2009			9/27/2009		
	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	90.7			82.5			76.6			91.6		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		7820			7130			4450			5320		
ANTIMONY		0.54	U		0.586	UJ	D	1.62	U		1.36	UJ	D
ARSENIC		7.32			7.93	J	DF	6.39			7.46	J	DF
BARIUM		48	J	C	43.1	J	CDI	55.3	J	C	42.3	J	CDI
BERYLLIUM		0.604			0.469	J	D	0.603			0.445	J	D
CADMIUM		0.449			0.132			1.51			0.644		
CALCIUM		50200			2240	J	C	133000			98600	J	C
CHROMIUM		14.2			11.3	J	D	16.5			12.6	J	D
COBALT		8.23			8.67			3.59			5.79		
COPPER		31.7			18.3	J	D	77.1			37.9	J	D
IRON		20700	J	C	18500	J	CI	15100	J	CI	18900	J	CI
LEAD		37	J	C	25.9	J	CI	100	J	C	81.5	J	CI
MAGNESIUM		24100			1440			57900			53800		
MANGANESE		419			318	J	I	354			597	J	I
MERCURY		0.0375	J	F	0.0332			0.237			0.0854		
NICKEL		22.5			13.7	J	DF	13.1			15.9	J	DF
POTASSIUM		956			461			746			981		
SELENIUM		0.54	UJ	C	0.351	UJ	C	1.29	UJ	C	1.36	UJ	C
SILVER		0.108	U		0.117	U		0.323	U		0.271	U	
SODIUM		922			594			792			384		
THALLIUM		0.432	U		0.469	UJ	D	0.97	U		0.814	UJ	D
VANADIUM		16.8	J	C	22			15.4	J	C	14.2		
ZINC		90.6	J	C	80.9	J	CFI	151	J	C	119	J	CFI

PROJ_NO: 01797	NSAMPLE	NTC21SB07-SO-0204			NTC21SB08-SO-0001			NTC21SB08-SO-0204			NTC21SB09-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-26			0910006-48			0910006-49			0910006-03		
FRACTION: M	SAMP_DATE	9/27/2009			9/28/2009			9/28/2009			9/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	86.0			92.7			73.7			91.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		6830			5200			9510			4350		
ANTIMONY		0.556	UJ	D	0.933			0.671	U		2.06		
ARSENIC		8.88	J	DF	9.53			12			8.14		
BARIUM		44.9	J	CDI	55.6	J	C	61.7	J	C	86.6	J	C
BERYLLIUM		0.397	J	D	0.485			0.844			0.929		
CADMIUM		0.606			1.24			0.898			3.81		
CALCIUM		24900	J	C	76300			59000			32000	J	G
CHROMIUM		10.9	J	D	9.71			16			163	J	G
COBALT		6.25			6.07			10.3			5.19		
COPPER		124	J	D	47			46.5			129	J	G
IRON		26600	J	CI	18400	J	C	27600	J	C	23400	J	CG
LEAD		228	J	CI	65.3			66.5			167	J	G
MAGNESIUM		14600			38800			38000			13800	J	G
MANGANESE		465	J	I	456			583			173		
MERCURY		0.0778			0.0612	J	F	0.047	J	F	0.495		
NICKEL		14.6	J	DF	15.9			28.4			56.2	J	G
POTASSIUM		558			749			1110			642		
SELENIUM		0.334	UJ	C	0.809	UJ	C	1.01	UJ	C	0.827	U	
SILVER		0.111	U		0.108	U		0.134	U		0.515		
SODIUM		427			230			210			868		
THALLIUM		0.445	UJ	D	0.431	U		0.537	U		0.827	U	
VANADIUM		17.4			12.5	J	C	20.2	J	C	25.7		
ZINC		181	J	CFI	172			229			190		

PROJ_NO: 01797	NSAMPLE	NTC21SB09-SO-0204			NTC21SB10-SO-0001			NTC21SB10-SO-0406			NTC21SB11-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-04			0910006-05			0910006-06			0910006-07		
FRACTION: M	SAMP_DATE	9/26/2009			9/26/2009			9/26/2009			9/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	79.5			89.6			82.8			92.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		17400			6720			9450			2790		
ANTIMONY		0.645	U		5.22			0.643			1.37	U	
ARSENIC		7.34			11.9			9.71			5.6		
BARIUM		140	J	C	161	J	C	60.9	J	C	82.3	J	C
BERYLLIUM		1.46			0.826			0.506			0.646		
CADMIUM		0.653			13			0.414			1.94		
CALCIUM		26600			42200			57800			62100		
CHROMIUM		19.3			36.9			16.2			11.1		
COBALT		9.54			6.67			9.49			2.9		
COPPER		37.8			835			66.6			104		
IRON		25800	J	C	35000	J	C	24900	J	C	15000	J	C
LEAD		29.1			428			38.4			118		
MAGNESIUM		5180			13600			29200			29100		
MANGANESE		1690			416			650			206		
MERCURY		0.0822			8.98			0.0742			0.0648		
NICKEL		23.2			52.3			25.9			10.9		
POTASSIUM		1780			846			1570			438		
SELENIUM		0.387	U		0.764	U		0.924	U		0.823	U	
SILVER		0.129	U		1.41			0.123	U		0.274	U	
SODIUM		2920			1000			483			986		
THALLIUM		2.26	U		0.764	U		0.493	U		0.823	U	
VANADIUM		28			21.2			21.7			11.2		
ZINC		156			1230			116			125		

PROJ_NO: 01797	NSAMPLE	NTC21SB11-SO-0204			NTC21SB12-SO-0001			NTC21SB12-SO-0204			NTC21SB13-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-08			0910006-09			0910006-10			0910006-27		
FRACTION: M	SAMP_DATE	9/26/2009			9/26/2009			9/26/2009			9/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	84.1			84.9			77.0			77.7		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		4900			3280			12300			6210		
ANTIMONY		1.46	U		1.51	U		1.69	U		2.51	J	D
ARSENIC		6			12.9			7.09			10.7	J	DF
BARIUM		81.2	J	C	49.6	J	C	103	J	C	69.8	J	CDI
BERYLLIUM		1.35			0.508			4.05			2.44	J	D
CADMIUM		0.979			0.507			4.15			8.45		
CALCIUM		10500			83300			24200			21100	J	C
CHROMIUM		10.7			12.6			12.1			14.8	J	D
COBALT		6.8			3.27			23.8			17.7		
COPPER		69.9			31.6			59.8			296	J	D
IRON		40100	J	C	25800	J	C	32900	J	C	52200	J	CI
LEAD		94.3			51.3			41.3			407	J	CI
MAGNESIUM		3150			39600			10700			8120		
MANGANESE		203			226			760			494	J	I
MERCURY		0.0889			0.585			0.484			0.106		
NICKEL		19.2			10.4			42.7			43.1	J	DF
POTASSIUM		607			428			683			435		
SELENIUM		0.878	U		0.906	U		1.01	U		0.924	UJ	C
SILVER		0.293	U		0.302	U		0.338	U		0.308	U	
SODIUM		885			378			601			588		
THALLIUM		0.878	U		0.906	U		1.01	U		0.924	UJ	D
VANADIUM		15.5			13.8			20.5			22.3		
ZINC		244			70.9			358			884	J	CFI

PROJ_NO: 01797	NSAMPLE	NTC21SB13-SO-0204			NTC21SB14-SO-0001			NTC21SB14-SO-0204			NTC21SB15-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-28			0910006-29			0910006-30			0910006-31		
FRACTION: M	SAMP_DATE	9/27/2009			9/27/2009			9/27/2009			9/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	84.3			81.8			75.3			83.3		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		6440			29500			16400			18400		
ANTIMONY		0.546	UJ	D	1.57	UJ	D	0.645	UJ	D	1.49	UJ	D
ARSENIC		8.73	J	DF	48.4	J	DF	9.51	J	DF	48.3	J	DF
BARIUM		28.1	J	CDI	234	J	CDI	119	J	CDI	164	J	CDI
BERYLLIUM		0.425	J	D	4.71	J	D	1.16	J	D	3.69	J	D
CADMIUM		0.909			2.63			0.799			4.18		
CALCIUM		30100	J	C	85900	J	C	6730	J	C	114000	J	C
CHROMIUM		12.7	J	D	17.7	J	D	22.3	J	D	10.8	J	D
COBALT		7.28			5.29			9.89			9.12		
COPPER		24.5	J	D	50.6	J	D	40.5	J	D	45.8	J	D
IRON		22900	J	CI	47000	J	CI	34900	J	CI	69500	J	CI
LEAD		18.3	J	CI	67.2	J	CI	21.4	J	CI	31.7	J	CI
MAGNESIUM		18400			3940			4070			21500		
MANGANESE		744	J	I	2420	J	I	1200	J	I	1250	J	I
MERCURY		0.0545			0.0618			0.0835			0.0472		
NICKEL		22.5	J	DF	20.1	J	DF	33	J	DF	34.6	J	DF
POTASSIUM		953			1930			1430			763		
SELENIUM		0.82	U		0.94	UJ	C	0.387	UJ	C	0.892	UJ	C
SILVER		0.109	U		0.313	U		0.129	U		0.297	U	
SODIUM		521			1590			801			1020		
THALLIUM		0.437	UJ	D	2.82	UJ	D	1.03	UJ	D	0.892	UJ	D
VANADIUM		18.4			15.8			28			15.1		
ZINC		216	J	CFI	186	J	CFI	130	J	CFI	352	J	CFI

PROJ_NO: 01797	NSAMPLE	NTC21SB15-SO-0204			NTC21SB16-SO-0001			NTC21SB16-SO-0204			NTC21SB17-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-32			0910006-33			0910006-34			0910006-11		
FRACTION: M	SAMP_DATE	9/27/2009			9/27/2009			9/27/2009			9/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	77.2			89.1			77.4			82.8		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		24300			5180			18200			11400		
ANTIMONY		0.671	UJ	D	1.31	UJ	D	0.595	U		0.575	U	
ARSENIC		85	J	DF	4.86	J	DF	9.1	J	DF	8.23		
BARIUM		157	J	CDI	55.9	J	CDI	99.5	J	CDI	71.6	J	C
BERYLLIUM		3.77	J	D	1.04	J	D	1.27	J	D	0.836		
CADMIUM		9.62			0.262	U		0.569			0.845		
CALCIUM		63600	J	G	113000	J	C	4530	J	C	33600		
CHROMIUM		16.7	J	D	8.17	J	D	26.8	J	D	17.4		
COBALT		22	J	G	5.51			10.6			8.5		
COPPER		110	J	D	17	J	D	39.8	J	D	26.4		
IRON		65800	J	CGI	17300	J	CI	34800	J	CI	27200	J	C
LEAD		19.9	J	I	29.2	J	CI	21	J	CI	29.2		
MAGNESIUM		3860	J	G	62900			4640			20400		
MANGANESE		1230	J	I	321	J	I	863	J	I	464		
MERCURY		0.0206			0.0702	J	F	0.0711	J	F	0.0477		
NICKEL		44.4	J	DF	13.2	J	DF	39.2	J	DF	21.7		
POTASSIUM		1180			753			1930			1270		
SELENIUM		1.31	J	C	1.05	UJ	C	0.357	UJ	C	0.345	U	
SILVER		0.134	U		0.262	U		0.119	U		0.115	U	
SODIUM		1310			1260			3370			2080		
THALLIUM		1.07	UJ	D	0.787	UJ	D	0.595	UJ	D	0.345	U	
VANADIUM		21.4			11.5			26.9			23.8		
ZINC		263	J	FI	73.6	J	CFI	186	J	CFI	134		

PROJ_NO: 01797	NSAMPLE	NTC21SB17-SO-0507			NTC21SB18-SO-0001			NTC21SB18-SO-0507			NTC21SB19-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-12			0910006-13			0910006-14			0910006-35		
FRACTION: M	SAMP_DATE	9/26/2009			9/26/2009			9/26/2009			9/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	89.6			85.8			89.3			92.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		3720			11800			4230			3030		
ANTIMONY		0.534	U		0.595	U		0.569	U		0.515	UJ	D
ARSENIC		12.5			7.73			8.65	J	G	5.95	J	DF
BARIUM		23.4	J	C	97.7	J	C	18.6	J	C	29.3	J	CDI
BERYLLIUM		0.244			0.774			0.266			0.29	J	D
CADMIUM		0.175			0.621			0.153			1.25		
CALCIUM		68400			10700			79300			120000		
CHROMIUM		7.9			17.1			8.66			5.38	J	D
COBALT		5.71			11.5			7.93			3.55		
COPPER		29.3			27.8			22.4			16.8	J	D
IRON		29400	J	C	23500	J	C	21100	J	C	18500	J	CI
LEAD		19.6			27.2			14.6			60.3	J	I
MAGNESIUM		42600			6180			48800			75800		
MANGANESE		438			1070			887			327	J	I
MERCURY		0.0156			0.0641			0.0151	U		0.0374	J	F
NICKEL		16.6			21.3			18.6			9.26	J	DF
POTASSIUM		864			1130			936			571		
SELENIUM		0.801	U		0.357	U		1.71	U		0.772	UJ	C
SILVER		0.107	U		0.119	U		0.114	U		0.103	U	
SODIUM		984			1100			347			1750		
THALLIUM		0.32	U		2.08	U		0.569	U		0.309	UJ	D
VANADIUM		11.5			21.8			12.9			8.94		
ZINC		56.8			111			68			148	J	FI

PROJ_NO: 01797	NSAMPLE	NTC21SB19-SO-0204			NTC21SB20-SO-0001			NTC21SB20-SO-0406			NTC21SB21-SO-0001		
SDG: CTO064_001	LAB_ID	0910006-36			0910006-15			0910006-16			0910006-17		
FRACTION: M	SAMP_DATE	9/27/2009			9/26/2009			9/26/2009			9/26/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	83.1			94.1			86.7			93.1		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		14500			3530			8380			2590		
ANTIMONY		0.602	UJ	D	0.553	U		0.577	U		1.6		
ARSENIC		9.59	J	DF	3.12			8.39			4.87		
BARIUM		105	J	CDI	33	J	C	59.5	J	C	50.5	J	C
BERYLLIUM		0.818	J	D	0.254			0.479			0.332		
CADMIUM		0.3			0.678			0.338			5.25		
CALCIUM		4280	J	C	133000			55900			130000		
CHROMIUM		24	J	D	6.46			13.5			9.75		
COBALT		11.3			2.51			9.18			3.4		
COPPER		25.3	J	D	12.9			27.3			131		
IRON		33200	J	CI	6660	J	C	21200	J	C	16400	J	C
LEAD		16.6	J	CI	16.7			28.6			124		
MAGNESIUM		4910			70700			36600			75500		
MANGANESE		1190	J	I	332			803			270		
MERCURY		0.0627	J	F	0.0359			0.0499			1.07		
NICKEL		31.9	J	DF	5.56			21.5			32		
POTASSIUM		1660			581			1010			782		
SELENIUM		0.902	UJ	C	1.38	U		0.866	U		1.38	U	
SILVER		0.12	U		0.111	U		0.115	U		0.233		
SODIUM		1210			395			1470			530		
THALLIUM		0.842	UJ	D	0.443	U		0.577	U		0.33	U	
VANADIUM		25			10.8			19.5			14.2		
ZINC		80.4	J	CFI	46.5			90.1			746		

PROJ_NO: 01797	NSAMPLE	NTC21SB21-SO-0608			NTC21SB22-SO-0001			NTC21SB22-SO-0204		
SDG: CTO064_001	LAB_ID	0910006-18			0910006-37			0910006-38		
FRACTION: M	SAMP_DATE	9/26/2009			9/27/2009			9/27/2009		
MEDIA: SOIL	QC_TYPE	NM			NM			NM		
	UNITS	MG/KG			MG/KG			MG/KG		
	PCT_SOLIDS	89.7			81.0			80.4		
	DUP_OF									
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		3770			4570			5240		
ANTIMONY		0.581	U		1.63	UJ	D	1.64	UJ	D
ARSENIC		5.7			6.96	J	DF	5.69	J	DF
BARIUM		12.4	J	C	61.3	J	CDI	56.2	J	CDI
BERYLLIUM		0.225			0.878	J	D	1.08	J	D
CADMIUM		0.124			1.13			0.809		
CALCIUM		72300			97300	J	C	26700	J	C
CHROMIUM		8.23			13.6	J	D	13	J	D
COBALT		4.85			3.84			3.38		
COPPER		16			64.7	J	D	57.2	J	D
IRON		14300	J	C	15300	J	CI	31300	J	CI
LEAD		8.86			215	J	CI	102	J	CI
MAGNESIUM		43300			43900			9310		
MANGANESE		568			579	J	I	263	J	I
MERCURY		0.0138			0.233	J	F	0.251	J	F
NICKEL		13.9			16.2	J	DF	17.9	J	DF
POTASSIUM		834			493			600		
SELENIUM		1.16	U		1.63	UJ	C	0.982	UJ	C
SILVER		0.116	U		0.325	U		0.327	U	
SODIUM		241			933			1300		
THALLIUM		0.349	U		0.975	UJ	D	0.982	UJ	D
VANADIUM		11.2			18.1			15.8		
ZINC		49.7			103	J	CFI	119	J	CFI

PROJ_NO: 01797	NSAMPLE	RB-092909-01			RB-092909-02			SB-092909-01		
SDG: CTO064_001	LAB_ID	0910006-51			0910006-52			0910006-53		
FRACTION: M	SAMP_DATE	9/29/2009			9/29/2009			9/29/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0		
	DUP_OF									
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		731			12.5	U		12.5	U	
ANTIMONY		1.25	U		1.25	U		1.25	U	
ARSENIC		0.75	U		0.75	U		0.75	U	
BARIUM		3.73			1.25	U		1.25	U	
BERYLLIUM		0.25	U		0.25	U		0.25	U	
CADMIUM		0.25	U		0.25	U		0.25	U	
CALCIUM		5100			250	U		250	U	
CHROMIUM		9.77			0.5	U		0.5	U	
COBALT		1.25	U		1.25	U		1.25	U	
COPPER		2.18			1.25	U		1.25	U	
IRON		1980			7.5	U		7.5	U	
LEAD		0.375	U		0.375	U		0.375	U	
MAGNESIUM		2610			250	U		250	U	
MANGANESE		46.4			0.75	U		0.75	U	
MERCURY		0.08	U		0.08	U		0.08	U	
NICKEL		5.35			0.75	U		0.75	U	
POTASSIUM		388			250	U		250	U	
SELENIUM		0.75	U		0.75	U		0.75	U	
SILVER		0.25	U		0.25	U		0.25	U	
SODIUM		250	U		250	U		250	U	
THALLIUM		0.75	U		0.75	U		0.75	U	
VANADIUM		1.93			1.25	U		1.25	U	
ZINC		7.5			1.25	U		1.25	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB08-SO-0204
SDG: CTO064_001	LAB_ID	0910006-49
FRACTION: MISC	SAMP_DATE	9/28/2009
MEDIA: SOIL	QC_TYPE	NM
	UNITS	%
	PCT_SOLIDS	
	DUP_OF	

PARAMETER	RESULT	VQL	QLCD
PERCENT CLAY	11		
PERCENT GRAVEL	39		
PERCENT SAND	29		
PERCENT SILT	21		
SIEVE 1"	100		
SIEVE 1/2"	81		
SIEVE 3/4"	93		
SIEVE NO. 004	61		
SIEVE NO. 010	51		
SIEVE NO. 040	43		
SIEVE NO. 100	36		
SIEVE NO. 200	32		

APPENDIX B
RESULTS AS REPORTED BY THE LABORATORY

ANALYSIS DATA SHEET

RB-092909-01

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Water
Sampled: 09/29/09 11:26
% Solids: 0.00

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-51
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (ug/L)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0800	0.200	1	U	SW7470A	9J07004	10/12/09 07:24
7429-90-5	Aluminum	731	12.5	50.0	1		SW6010B	9J07001	10/09/09 12:24
7440-36-0	Antimony		1.25	3.75	1	U	SW6010B	9J07001	10/09/09 12:24
7440-38-2	Arsenic		0.750	1.25	1	U	SW6010B	9J07001	10/09/09 12:24
7440-39-3	Barium	3.73	1.25	10.0	1	J	SW6010B	9J07001	10/09/09 12:24
7440-41-7	Beryllium		0.250	1.25	1	U	SW6010B	9J07001	10/09/09 12:24
7440-43-9	Cadmium		0.250	1.25	1	U	SW6010B	9J07001	10/09/09 12:24
7440-70-2	Calcium	5100	250	1250	1		SW6010B	9J07001	10/09/09 12:24
7440-47-3	Chromium	9.77	0.500	1.25	1		SW6010B	9J07001	10/09/09 12:24
7440-48-4	Cobalt		1.25	3.12	1	U	SW6010B	9J07001	10/09/09 12:24
7440-50-8	Copper	2.18	1.25	2.50	1	J	SW6010B	9J07001	10/09/09 12:24
7439-89-6	Iron	1980	7.50	25.0	1		SW6010B	9J07001	10/09/09 12:24
7439-92-1	Lead		0.375	0.750	1	U	SW6010B	9J07001	10/09/09 12:24
7439-95-4	Magnesium	2610	250	1250	1		SW6010B	9J07001	10/09/09 12:24
7439-96-5	Manganese	46.4	0.750	3.75	1		SW6010B	9J07001	10/09/09 12:24
7440-02-0	Nickel	5.35	0.750	2.50	1		SW6010B	9J07001	10/09/09 12:24
7440-09-7	Potassium	388	250	1250	1	J	SW6010B	9J07001	10/09/09 12:24
7782-49-2	Selenium		0.750	1.25	1	U	SW6010B	9J07001	10/09/09 12:24
7440-22-4	Silver		0.250	1.25	1	U	SW6010B	9J07001	10/09/09 12:24
7440-23-5	Sodium		250	1250	1	U	SW6010B	9J07001	10/09/09 12:24
7440-28-0	Thallium		0.750	2.00	1	U	SW6010B	9J07001	10/09/09 12:24
7440-62-2	Vanadium	1.93	1.25	3.12	1	J	SW6010B	9J07001	10/09/09 12:24
7440-66-6	Zinc	7.50	1.25	5.00	1		SW6010B	9J07001	10/09/09 12:24

ANALYSIS DATA SHEET

RB-092909-02

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Water
Sampled: 09/29/09 13:02
% Solids: 0.00

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-52
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (ug/L)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0800	0.200	1	U	SW7470A	9J07004	10/12/09 07:25
7429-90-5	Aluminum		12.5	50.0	1	U	SW6010B	9J07001	10/09/09 12:28
7440-36-0	Antimony		1.25	3.75	1	U	SW6010B	9J07001	10/09/09 12:28
7440-38-2	Arsenic		0.750	1.25	1	U	SW6010B	9J07001	10/09/09 12:28
7440-39-3	Barium		1.25	10.0	1	U	SW6010B	9J07001	10/09/09 12:28
7440-41-7	Beryllium		0.250	1.25	1	U	SW6010B	9J07001	10/09/09 12:28
7440-43-9	Cadmium		0.250	1.25	1	U	SW6010B	9J07001	10/09/09 12:28
7440-70-2	Calcium		250	1250	1	U	SW6010B	9J07001	10/09/09 12:28
7440-47-3	Chromium		0.500	1.25	1	U	SW6010B	9J07001	10/09/09 12:28
7440-48-4	Cobalt		1.25	3.12	1	U	SW6010B	9J07001	10/09/09 12:28
7440-50-8	Copper		1.25	2.50	1	U	SW6010B	9J07001	10/09/09 12:28
7439-89-6	Iron		7.50	25.0	1	U	SW6010B	9J07001	10/09/09 12:28
7439-92-1	Lead		0.375	0.750	1	U	SW6010B	9J07001	10/09/09 12:28
7439-95-4	Magnesium		250	1250	1	U	SW6010B	9J07001	10/09/09 12:28
7439-96-5	Manganese		0.750	3.75	1	U	SW6010B	9J07001	10/09/09 12:28
7440-02-0	Nickel		0.750	2.50	1	U	SW6010B	9J07001	10/09/09 12:28
7440-09-7	Potassium		250	1250	1	U	SW6010B	9J07001	10/09/09 12:28
7782-49-2	Selenium		0.750	1.25	1	U	SW6010B	9J07001	10/09/09 12:28
7440-22-4	Silver		0.250	1.25	1	U	SW6010B	9J07001	10/09/09 12:28
7440-23-5	Sodium		250	1250	1	U	SW6010B	9J07001	10/09/09 12:28
7440-28-0	Thallium		0.750	2.00	1	U	SW6010B	9J07001	10/09/09 12:28
7440-62-2	Vanadium		1.25	3.12	1	U	SW6010B	9J07001	10/09/09 12:28
7440-66-6	Zinc		1.25	5.00	1	U	SW6010B	9J07001	10/09/09 12:28

ANALYSIS DATA SHEET

SB-092909-01

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Water
Sampled: 09/29/09 10:31
% Solids: 0.00

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-53
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (ug/L)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0800	0.200	1	U	SW7470A	9J07004	10/12/09 07:29
7429-90-5	Aluminum		12.5	50.0	1	U	SW6010B	9J07001	10/09/09 12:33
7440-36-0	Antimony		1.25	3.75	1	U	SW6010B	9J07001	10/09/09 12:33
7440-38-2	Arsenic		0.750	1.25	1	U	SW6010B	9J07001	10/09/09 12:33
7440-39-3	Barium		1.25	10.0	1	U	SW6010B	9J07001	10/09/09 12:33
7440-41-7	Beryllium		0.250	1.25	1	U	SW6010B	9J07001	10/09/09 12:33
7440-43-9	Cadmium		0.250	1.25	1	U	SW6010B	9J07001	10/09/09 12:33
7440-70-2	Calcium		250	1250	1	U	SW6010B	9J07001	10/09/09 12:33
7440-47-3	Chromium		0.500	1.25	1	U	SW6010B	9J07001	10/09/09 12:33
7440-48-4	Cobalt		1.25	3.12	1	U	SW6010B	9J07001	10/09/09 12:33
7440-50-8	Copper		1.25	2.50	1	U	SW6010B	9J07001	10/09/09 12:33
7439-89-6	Iron		7.50	25.0	1	U	SW6010B	9J07001	10/09/09 12:33
7439-92-1	Lead		0.375	0.750	1	U	SW6010B	9J07001	10/09/09 12:33
7439-95-4	Magnesium		250	1250	1	U	SW6010B	9J07001	10/09/09 12:33
7439-96-5	Manganese		0.750	3.75	1	U	SW6010B	9J07001	10/09/09 12:33
7440-02-0	Nickel		0.750	2.50	1	U	SW6010B	9J07001	10/09/09 12:33
7440-09-7	Potassium		250	1250	1	U	SW6010B	9J07001	10/09/09 12:33
7782-49-2	Selenium		0.750	1.25	1	U	SW6010B	9J07001	10/09/09 12:33
7440-22-4	Silver		0.250	1.25	1	U	SW6010B	9J07001	10/09/09 12:33
7440-23-5	Sodium		250	1250	1	U	SW6010B	9J07001	10/09/09 12:33
7440-28-0	Thallium		0.750	2.00	1	U	SW6010B	9J07001	10/09/09 12:33
7440-62-2	Vanadium		1.25	3.12	1	U	SW6010B	9J07001	10/09/09 12:33
7440-66-6	Zinc		1.25	5.00	1	U	SW6010B	9J07001	10/09/09 12:33

ANALYSIS DATA SHEET

FD-092609-01

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/26/09 00:00
% Solids: 92.62

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-01
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0169	0.0145	0.0369	1	J	SW7471A	9J09009	10/12/09 13:07
7429-90-5	Aluminum	3490	12.9	51.7	5	D	SW6010B	9J13003	10/21/09 13:43
7440-36-0	Antimony		0.517	1.55	2	U	SW6010B	9J13003	10/21/09 03:08
7440-38-2	Arsenic	23.2	0.310	0.517	2	D	SW6010B	9J13003	10/21/09 03:08
7440-39-3	Barium	18.4	0.517	4.13	2	D	SW6010B	9J13003	10/21/09 03:08
7440-41-7	Beryllium	0.233	0.103	0.517	2	J D	SW6010B	9J13003	10/21/09 03:08
7440-43-9	Cadmium	0.322	0.103	0.517	2	J D	SW6010B	9J13003	10/21/09 03:08
7440-70-2	Calcium	78500	258	1290	5	D	SW6010B	9J13003	10/21/09 13:43
7440-47-3	Chromium	7.36	0.207	0.517	2	D	SW6010B	9J13003	10/21/09 03:08
7440-48-4	Cobalt	5.64	0.517	1.29	2	D	SW6010B	9J13003	10/21/09 03:08
7440-50-8	Copper	26.1	0.517	1.03	2	D	SW6010B	9J13003	10/21/09 03:08
7439-89-6	Iron	25800	3.10	10.3	2	D	SW6010B	9J13003	10/21/09 03:08
7439-92-1	Lead	12.4	0.387	0.775	5	D	SW6010B	9J13003	10/21/09 13:43
7439-95-4	Magnesium	48800	103	517	2	D	SW6010B	9J13003	10/21/09 03:08
7439-96-5	Manganese	732	0.310	1.55	2	D	SW6010B	9J13003	10/21/09 03:08
7440-02-0	Nickel	14.8	0.517	1.03	2	D	SW6010B	9J13003	10/21/09 03:08
7440-09-7	Potassium	690	103	517	2	D	SW6010B	9J13003	10/21/09 03:08
7782-49-2	Selenium		0.775	1.29	5	U	SW6010B	9J13003	10/21/09 13:43
7440-22-4	Silver		0.103	0.517	2	U	SW6010B	9J13003	10/21/09 03:08
7440-23-5	Sodium	349	103	517	2	J D	SW6010B	9J13003	10/21/09 03:08
7440-28-0	Thallium		0.413	0.827	2	U	SW6010B	9J13003	10/21/09 03:08
7440-62-2	Vanadium	13.9	0.517	1.29	2	D	SW6010B	9J13003	10/21/09 03:08
7440-66-6	Zinc	73.5	1.29	5.17	5	D	SW6010B	9J13003	10/21/09 13:43

ANALYSIS DATA SHEET

FD-092609-02

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/26/09 00:00
% Solids: 92.80

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-02
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.655	0.0131	0.0333	1		SW7471A	9J09009	10/12/09 13:08
7429-90-5	Aluminum	3390	13.3	53.1	5	D	SW6010B	9J13003	10/21/09 13:48
7440-36-0	Antimony	0.802	0.531	1.59	2	J D	SW6010B	9J13003	10/21/09 03:13
7440-38-2	Arsenic	4.78	0.318	0.531	2	D	SW6010B	9J13003	10/21/09 03:13
7440-39-3	Barium	124	0.531	4.25	2	D	SW6010B	9J13003	10/21/09 03:13
7440-41-7	Beryllium	0.477	0.106	0.531	2	J D	SW6010B	9J13003	10/21/09 03:13
7440-43-9	Cadmium	2.62	0.265	1.33	5	D	SW6010B	9J13003	10/21/09 13:48
7440-70-2	Calcium	95500	265	1330	5	D	SW6010B	9J13003	10/21/09 13:48
7440-47-3	Chromium	16.2	0.531	1.33	5	D	SW6010B	9J13003	10/21/09 13:48
7440-48-4	Cobalt	3.36	0.531	1.33	2	D	SW6010B	9J13003	10/21/09 03:13
7440-50-8	Copper	72.3	0.531	1.06	2	D	SW6010B	9J13003	10/21/09 03:13
7439-89-6	Iron	11200	3.18	10.6	2	D	SW6010B	9J13003	10/21/09 03:13
7439-92-1	Lead	88.0	0.398	0.796	5	D	SW6010B	9J13003	10/21/09 13:48
7439-95-4	Magnesium	55600	265	1330	5	D	SW6010B	9J13003	10/21/09 13:48
7439-96-5	Manganese	206	0.318	1.59	2	D	SW6010B	9J13003	10/21/09 03:13
7440-02-0	Nickel	23.5	0.531	1.06	2	D	SW6010B	9J13003	10/21/09 03:13
7440-09-7	Potassium	612	106	531	2	D	SW6010B	9J13003	10/21/09 03:13
7782-49-2	Selenium		0.796	1.33	5	U	SW6010B	9J13003	10/21/09 13:48
7440-22-4	Silver	0.172	0.106	0.531	2	J D	SW6010B	9J13003	10/21/09 03:13
7440-23-5	Sodium	609	106	531	2	D	SW6010B	9J13003	10/21/09 03:13
7440-28-0	Thallium		0.318	0.849	2	U	SW6010B	9J13003	10/21/09 03:13
7440-62-2	Vanadium	20.6	0.531	1.33	2	D	SW6010B	9J13003	10/21/09 03:13
7440-66-6	Zinc	115	1.33	5.31	5	D	SW6010B	9J13003	10/21/09 13:48

ANALYSIS DATA SHEET

FD-092709-01

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Solid
Sampled: 09/27/09 00:00
% Solids: 75.55

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-20
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0266	0.0161	0.0409	1	J *	SW7471A	9J14016	10/21/09 13:53
7429-90-5	Aluminum	20200	16.7	66.8	5	D	SW6010B	9J13004	10/21/09 05:11
7440-36-0	Antimony		1.67	5.01	5	U N	SW6010B	9J13004	10/21/09 05:11
7440-38-2	Arsenic	123	1.00	1.67	5	D * N	SW6010B	9J13004	10/21/09 05:11
7440-39-3	Barium	197	1.67	13.4	5	D E N	SW6010B	9J13004	10/21/09 05:11
7440-41-7	Beryllium	4.44	0.334	1.67	5	D * N	SW6010B	9J13004	10/21/09 05:11
7440-43-9	Cadmium	7.72	0.334	1.67	5	D	SW6010B	9J13004	10/21/09 05:11
7440-70-2	Calcium	119000	334	1670	5	D	SW6010B	9J13004	10/21/09 05:11
7440-47-3	Chromium	12.2	0.668	1.67	5	D N	SW6010B	9J13004	10/21/09 05:11
7440-48-4	Cobalt	11.4	1.67	4.18	5	D	SW6010B	9J13004	10/21/09 05:11
7440-50-8	Copper	84.3	1.67	3.34	5	D	SW6010B	9J13004	10/21/09 05:11
7439-89-6	Iron	111000	10.0	33.4	5	D * E	SW6010B	9J13004	10/21/09 05:11
7439-92-1	Lead	17.8	0.501	1.00	5	D * E	SW6010B	9J13004	10/21/09 05:11
7439-95-4	Magnesium	10500	334	1670	5	D	SW6010B	9J13004	10/21/09 05:11
7439-96-5	Manganese	1020	1.00	5.01	5	D E	SW6010B	9J13004	10/21/09 05:11
7440-02-0	Nickel	35.8	1.67	3.34	5	D * N	SW6010B	9J13004	10/21/09 05:11
7440-09-7	Potassium	740	334	1670	5	J D	SW6010B	9J13004	10/21/09 05:11
7782-49-2	Selenium	1.68	1.00	1.67	5	D	SW6010B	9J13004	10/21/09 05:11
7440-22-4	Silver		0.334	1.67	5	U	SW6010B	9J13004	10/21/09 05:11
7440-23-5	Sodium	1130	334	1670	5	J D	SW6010B	9J13004	10/21/09 05:11
7440-28-0	Thallium		1.00	2.67	5	U N	SW6010B	9J13004	10/21/09 05:11
7440-62-2	Vanadium	18.2	1.67	4.18	5	D	SW6010B	9J13004	10/21/09 05:11
7440-66-6	Zinc	404	1.67	6.68	5	D *	SW6010B	9J13004	10/21/09 05:11

ANALYSIS DATA SHEET

FD-092809-01

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/28/09 00:00
% Solids: 79.98

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-40
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0184	0.0139	0.0354	1	J *	SW7471A	9J14017	10/21/09 14:27
7429-90-5	Aluminum	4500	30.2	121	10	D	SW6010B	9J13004	10/21/09 16:02
7440-36-0	Antimony		0.604	1.81	2	U N	SW6010B	9J13004	10/21/09 07:08
7440-38-2	Arsenic	7.05	0.362	0.604	2	D * N	SW6010B	9J13004	10/21/09 07:08
7440-39-3	Barium	32.1	0.604	4.83	2	D E N	SW6010B	9J13004	10/21/09 07:08
7440-41-7	Beryllium	0.331	0.121	0.604	2	J D * N	SW6010B	9J13004	10/21/09 07:08
7440-43-9	Cadmium	0.935	0.302	1.51	5	J D	SW6010B	9J13004	10/21/09 15:57
7440-70-2	Calcium	162000	604	3020	10	D	SW6010B	9J13004	10/21/09 16:02
7440-47-3	Chromium	7.90	0.604	1.51	5	D N	SW6010B	9J13004	10/21/09 15:57
7440-48-4	Cobalt	4.04	0.604	1.51	2	D	SW6010B	9J13004	10/21/09 07:08
7440-50-8	Copper	21.8	0.604	1.21	2	D	SW6010B	9J13004	10/21/09 07:08
7439-89-6	Iron	11900	3.62	12.1	2	D * E	SW6010B	9J13004	10/21/09 07:08
7439-92-1	Lead	24.8	0.906	1.81	10	D * E	SW6010B	9J13004	10/21/09 16:02
7439-95-4	Magnesium	92500	302	1510	5	D	SW6010B	9J13004	10/21/09 15:57
7439-96-5	Manganese	479	0.362	1.81	2	D E	SW6010B	9J13004	10/21/09 07:08
7440-02-0	Nickel	8.26	0.604	1.21	2	D * N	SW6010B	9J13004	10/21/09 07:08
7440-09-7	Potassium	972	121	604	2	D	SW6010B	9J13004	10/21/09 07:08
7782-49-2	Selenium		1.81	3.02	10	U	SW6010B	9J13004	10/21/09 16:02
7440-22-4	Silver		0.121	0.604	2	U	SW6010B	9J13004	10/21/09 07:08
7440-23-5	Sodium	706	121	604	2	D	SW6010B	9J13004	10/21/09 07:08
7440-28-0	Thallium		0.362	0.966	2	U N	SW6010B	9J13004	10/21/09 07:08
7440-62-2	Vanadium	9.81	0.604	1.51	2	D	SW6010B	9J13004	10/21/09 07:08
7440-66-6	Zinc	76.6	3.02	12.1	10	D *	SW6010B	9J13004	10/21/09 16:02

ANALYSIS DATA SHEET

NTC21SB01-SO-0102

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/28/09 12:00
% Solids: 84.24

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-41
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0548	0.0149	0.0379	1		SW7471A	9J14017	10/21/09 14:29
7429-90-5	Aluminum	9140	5.85	23.4	2	D	SW6010B	9J13005	10/21/09 07:38
7440-36-0	Antimony		0.585	1.75	2	U N	SW6010B	9J13005	10/21/09 07:38
7440-38-2	Arsenic	21.1	0.351	0.585	2	D	SW6010B	9J13005	10/21/09 07:38
7440-39-3	Barium	52.9	0.585	4.68	2	D	SW6010B	9J13005	10/21/09 07:38
7440-41-7	Beryllium	0.521	0.117	0.585	2	J D	SW6010B	9J13005	10/21/09 07:38
7440-43-9	Cadmium	0.554	0.117	0.585	2	J D	SW6010B	9J13005	10/21/09 07:38
7440-70-2	Calcium	54000	117	585	2	D	SW6010B	9J13005	10/21/09 07:38
7440-47-3	Chromium	17.3	0.234	0.585	2	D	SW6010B	9J13005	10/21/09 07:38
7440-48-4	Cobalt	8.64	0.585	1.46	2	D	SW6010B	9J13005	10/21/09 07:38
7440-50-8	Copper	37.9	0.585	1.17	2	D * N	SW6010B	9J13005	10/21/09 07:38
7439-89-6	Iron	48600	3.51	11.7	2	D	SW6010B	9J13005	10/21/09 07:38
7439-92-1	Lead	29.6	0.175	0.351	2	D N	SW6010B	9J13005	10/21/09 07:38
7439-95-4	Magnesium	30600	117	585	2	D *	SW6010B	9J13005	10/21/09 07:38
7439-96-5	Manganese	733	0.351	1.75	2	D	SW6010B	9J13005	10/21/09 07:38
7440-02-0	Nickel	25.4	0.585	1.17	2	D	SW6010B	9J13005	10/21/09 07:38
7440-09-7	Potassium	1180	117	585	2	D N	SW6010B	9J13005	10/21/09 07:38
7782-49-2	Selenium		0.877	1.46	5	U	SW6010B	9J13005	10/21/09 16:07
7440-22-4	Silver		0.117	0.585	2	U	SW6010B	9J13005	10/21/09 07:38
7440-23-5	Sodium	1010	117	585	2	D	SW6010B	9J13005	10/21/09 07:38
7440-28-0	Thallium		0.351	0.936	2	U	SW6010B	9J13005	10/21/09 07:38
7440-62-2	Vanadium	24.2	0.585	1.46	2	D	SW6010B	9J13005	10/21/09 07:38
7440-66-6	Zinc	114	0.585	2.34	2	D * E N	SW6010B	9J13005	10/21/09 07:38

ANALYSIS DATA SHEET

NTC21SB02-SO-0001

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/28/09 10:20
% Solids: 89.66

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-42
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0920	0.0140	0.0356	1		SW7471A	9J14017	10/21/09 14:30
7429-90-5	Aluminum	10400	14.2	56.6	5	D	SW6010B	9J13005	10/21/09 16:11
7440-36-0	Antimony		0.566	1.70	2	U N	SW6010B	9J13005	10/21/09 07:43
7440-38-2	Arsenic	11.1	0.340	0.566	2	D	SW6010B	9J13005	10/21/09 07:43
7440-39-3	Barium	91.7	0.566	4.53	2	D	SW6010B	9J13005	10/21/09 07:43
7440-41-7	Beryllium	0.793	0.113	0.566	2	D	SW6010B	9J13005	10/21/09 07:43
7440-43-9	Cadmium	0.440	0.113	0.566	2	J D	SW6010B	9J13005	10/21/09 07:43
7440-70-2	Calcium	56300	283	1420	5	D	SW6010B	9J13005	10/21/09 16:11
7440-47-3	Chromium	15.1	0.226	0.566	2	D	SW6010B	9J13005	10/21/09 07:43
7440-48-4	Cobalt	11.0	0.566	1.42	2	D	SW6010B	9J13005	10/21/09 07:43
7440-50-8	Copper	30.2	0.566	1.13	2	D * N	SW6010B	9J13005	10/21/09 07:43
7439-89-6	Iron	24100	3.40	11.3	2	D	SW6010B	9J13005	10/21/09 07:43
7439-92-1	Lead	57.3	0.425	0.849	5	D N	SW6010B	9J13005	10/21/09 16:11
7439-95-4	Magnesium	36300	113	566	2	D *	SW6010B	9J13005	10/21/09 07:43
7439-96-5	Manganese	965	0.340	1.70	2	D	SW6010B	9J13005	10/21/09 07:43
7440-02-0	Nickel	21.1	0.566	1.13	2	D	SW6010B	9J13005	10/21/09 07:43
7440-09-7	Potassium	1240	113	566	2	D N	SW6010B	9J13005	10/21/09 07:43
7782-49-2	Selenium		0.849	1.42	5	U	SW6010B	9J13005	10/21/09 16:11
7440-22-4	Silver		0.113	0.566	2	U	SW6010B	9J13005	10/21/09 07:43
7440-23-5	Sodium	833	113	566	2	D	SW6010B	9J13005	10/21/09 07:43
7440-28-0	Thallium		0.340	0.906	2	U	SW6010B	9J13005	10/21/09 07:43
7440-62-2	Vanadium	19.3	0.566	1.42	2	D	SW6010B	9J13005	10/21/09 07:43
7440-66-6	Zinc	151	1.42	5.66	5	D * E N	SW6010B	9J13005	10/21/09 16:11

ANALYSIS DATA SHEET

NTC21SB02-SO-0204

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/28/09 10:30
% Solids: 88.74

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-43
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0963	0.0133	0.0338	1		SW7471A	9J14017	10/21/09 14:31
7429-90-5	Aluminum	4590	14.2	56.6	5	D	SW6010B	9J13005	10/21/09 07:47
7440-36-0	Antimony		1.42	4.25	5	U N	SW6010B	9J13005	10/21/09 07:47
7440-38-2	Arsenic	8.57	0.849	1.42	5	D	SW6010B	9J13005	10/21/09 07:47
7440-39-3	Barium	42.6	1.42	11.3	5	D	SW6010B	9J13005	10/21/09 07:47
7440-41-7	Beryllium	0.985	0.283	1.42	5	J D	SW6010B	9J13005	10/21/09 07:47
7440-43-9	Cadmium		0.283	1.42	5	U	SW6010B	9J13005	10/21/09 07:47
7440-70-2	Calcium	86600	283	1420	5	D	SW6010B	9J13005	10/21/09 07:47
7440-47-3	Chromium	10.1	0.566	1.42	5	D	SW6010B	9J13005	10/21/09 07:47
7440-48-4	Cobalt	3.18	1.42	3.54	5	J D	SW6010B	9J13005	10/21/09 07:47
7440-50-8	Copper	23.8	1.42	2.83	5	D * N	SW6010B	9J13005	10/21/09 07:47
7439-89-6	Iron	15000	8.49	28.3	5	D	SW6010B	9J13005	10/21/09 07:47
7439-92-1	Lead	35.6	0.425	0.849	5	D N	SW6010B	9J13005	10/21/09 07:47
7439-95-4	Magnesium	36700	283	1420	5	D *	SW6010B	9J13005	10/21/09 07:47
7439-96-5	Manganese	294	0.849	4.25	5	D	SW6010B	9J13005	10/21/09 07:47
7440-02-0	Nickel	10.2	1.42	2.83	5	D	SW6010B	9J13005	10/21/09 07:47
7440-09-7	Potassium	658	283	1420	5	J D N	SW6010B	9J13005	10/21/09 07:47
7782-49-2	Selenium		0.849	1.42	5	U	SW6010B	9J13005	10/21/09 07:47
7440-22-4	Silver		0.283	1.42	5	U	SW6010B	9J13005	10/21/09 07:47
7440-23-5	Sodium	817	283	1420	5	J D	SW6010B	9J13005	10/21/09 07:47
7440-28-0	Thallium		0.849	2.27	5	U	SW6010B	9J13005	10/21/09 07:47
7440-62-2	Vanadium	12.8	1.42	3.54	5	D	SW6010B	9J13005	10/21/09 07:47
7440-66-6	Zinc	110	1.42	5.66	5	D * E N	SW6010B	9J13005	10/21/09 07:47

ANALYSIS DATA SHEET

NTC21SB03-SO-0001

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/28/09 12:20
% Solids: 94.89

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-44
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.144	0.0137	0.0348	1		SW7471A	9J14017	10/21/09 14:37
7429-90-5	Aluminum	8950	13.2	52.7	5	D	SW6010B	9J13005	10/21/09 16:16
7440-36-0	Antimony	0.627	0.527	1.58	2	J D N	SW6010B	9J13005	10/21/09 08:12
7440-38-2	Arsenic	9.93	0.316	0.527	2	D	SW6010B	9J13005	10/21/09 08:12
7440-39-3	Barium	68.3	0.527	4.22	2	D	SW6010B	9J13005	10/21/09 08:12
7440-41-7	Beryllium	0.846	0.105	0.527	2	D	SW6010B	9J13005	10/21/09 08:12
7440-43-9	Cadmium	0.605	0.105	0.527	2	D	SW6010B	9J13005	10/21/09 08:12
7440-70-2	Calcium	57000	263	1320	5	D	SW6010B	9J13005	10/21/09 16:16
7440-47-3	Chromium	14.1	0.211	0.527	2	D	SW6010B	9J13005	10/21/09 08:12
7440-48-4	Cobalt	7.43	0.527	1.32	2	D	SW6010B	9J13005	10/21/09 08:12
7440-50-8	Copper	49.4	0.527	1.05	2	D * N	SW6010B	9J13005	10/21/09 08:12
7439-89-6	Iron	23300	3.16	10.5	2	D	SW6010B	9J13005	10/21/09 08:12
7439-92-1	Lead	106	0.395	0.790	5	D N	SW6010B	9J13005	10/21/09 16:16
7439-95-4	Magnesium	34500	105	527	2	D *	SW6010B	9J13005	10/21/09 08:12
7439-96-5	Manganese	652	0.316	1.58	2	D	SW6010B	9J13005	10/21/09 08:12
7440-02-0	Nickel	18.9	0.527	1.05	2	D	SW6010B	9J13005	10/21/09 08:12
7440-09-7	Potassium	1060	105	527	2	D N	SW6010B	9J13005	10/21/09 08:12
7782-49-2	Selenium		0.790	1.32	5	U	SW6010B	9J13005	10/21/09 16:16
7440-22-4	Silver		0.105	0.527	2	U	SW6010B	9J13005	10/21/09 08:12
7440-23-5	Sodium	1220	105	527	2	D	SW6010B	9J13005	10/21/09 08:12
7440-28-0	Thallium		0.527	0.843	2	U	SW6010B	9J13005	10/21/09 08:12
7440-62-2	Vanadium	16.8	0.527	1.32	2	D	SW6010B	9J13005	10/21/09 08:12
7440-66-6	Zinc	252	1.32	5.27	5	D * E N	SW6010B	9J13005	10/21/09 16:16

ANALYSIS DATA SHEET

NTC21SB03-SO-0204

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/28/09 12:30
% Solids: 92.18

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-45
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.215	0.0121	0.0330	1		SW7471A	9J14017	10/21/09 14:41
7429-90-5	Aluminum	4830	13.6	54.5	5	D	SW6010B	9J13005	10/21/09 08:17
7440-36-0	Antimony		1.36	4.09	5	U N	SW6010B	9J13005	10/21/09 08:17
7440-38-2	Arsenic	10.4	0.818	1.36	5	D	SW6010B	9J13005	10/21/09 08:17
7440-39-3	Barium	44.6	1.36	10.9	5	D	SW6010B	9J13005	10/21/09 08:17
7440-41-7	Beryllium	0.694	0.273	1.36	5	J D	SW6010B	9J13005	10/21/09 08:17
7440-43-9	Cadmium	0.395	0.273	1.36	5	J D	SW6010B	9J13005	10/21/09 08:17
7440-70-2	Calcium	109000	273	1360	5	D	SW6010B	9J13005	10/21/09 08:17
7440-47-3	Chromium	10.8	0.545	1.36	5	D	SW6010B	9J13005	10/21/09 08:17
7440-48-4	Cobalt	4.52	1.36	3.41	5	D	SW6010B	9J13005	10/21/09 08:17
7440-50-8	Copper	34.4	1.36	2.73	5	D * N	SW6010B	9J13005	10/21/09 08:17
7439-89-6	Iron	18600	8.18	27.3	5	D	SW6010B	9J13005	10/21/09 08:17
7439-92-1	Lead	63.2	0.409	0.818	5	D N	SW6010B	9J13005	10/21/09 08:17
7439-95-4	Magnesium	58300	273	1360	5	D *	SW6010B	9J13005	10/21/09 08:17
7439-96-5	Manganese	413	0.818	4.09	5	D	SW6010B	9J13005	10/21/09 08:17
7440-02-0	Nickel	13.4	1.36	2.73	5	D	SW6010B	9J13005	10/21/09 08:17
7440-09-7	Potassium	785	273	1360	5	J D N	SW6010B	9J13005	10/21/09 08:17
7782-49-2	Selenium		0.818	1.36	5	U	SW6010B	9J13005	10/21/09 08:17
7440-22-4	Silver		0.273	1.36	5	U	SW6010B	9J13005	10/21/09 08:17
7440-23-5	Sodium	1590	273	1360	5	D	SW6010B	9J13005	10/21/09 08:17
7440-28-0	Thallium		0.818	2.18	5	U	SW6010B	9J13005	10/21/09 08:17
7440-62-2	Vanadium	15.2	1.36	3.41	5	D	SW6010B	9J13005	10/21/09 08:17
7440-66-6	Zinc	115	1.36	5.45	5	D * E N	SW6010B	9J13005	10/21/09 08:17

ANALYSIS DATA SHEET

NTC21SB04-SO-0001

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/27/09 12:50
% Solids: 92.16

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-21
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0517	0.0124	0.0330	1	*	SW7471A	9J14016	10/21/09 13:54
7429-90-5	Aluminum	2470	13.8	55.4	5	D	SW6010B	9J13004	10/21/09 05:15
7440-36-0	Antimony		1.38	4.15	5	U N	SW6010B	9J13004	10/21/09 05:15
7440-38-2	Arsenic	13.4	0.830	1.38	5	D * N	SW6010B	9J13004	10/21/09 05:15
7440-39-3	Barium	34.8	1.38	11.1	5	D E N	SW6010B	9J13004	10/21/09 05:15
7440-41-7	Beryllium	0.429	0.277	1.38	5	J D * N	SW6010B	9J13004	10/21/09 05:15
7440-43-9	Cadmium	0.338	0.277	1.38	5	J D	SW6010B	9J13004	10/21/09 05:15
7440-70-2	Calcium	89000	277	1380	5	D	SW6010B	9J13004	10/21/09 05:15
7440-47-3	Chromium	7.16	0.554	1.38	5	D N	SW6010B	9J13004	10/21/09 05:15
7440-48-4	Cobalt	2.31	1.38	3.46	5	J D	SW6010B	9J13004	10/21/09 05:15
7440-50-8	Copper	25.3	1.38	2.77	5	D	SW6010B	9J13004	10/21/09 05:15
7439-89-6	Iron	26000	8.30	27.7	5	D * E	SW6010B	9J13004	10/21/09 05:15
7439-92-1	Lead	43.0	0.415	0.830	5	D * E	SW6010B	9J13004	10/21/09 05:15
7439-95-4	Magnesium	47600	277	1380	5	D	SW6010B	9J13004	10/21/09 05:15
7439-96-5	Manganese	178	0.830	4.15	5	D E	SW6010B	9J13004	10/21/09 05:15
7440-02-0	Nickel	7.18	1.38	2.77	5	D * N	SW6010B	9J13004	10/21/09 05:15
7440-09-7	Potassium	763	277	1380	5	J D	SW6010B	9J13004	10/21/09 05:15
7782-49-2	Selenium		0.830	1.38	5	U	SW6010B	9J13004	10/21/09 05:15
7440-22-4	Silver		0.277	1.38	5	U	SW6010B	9J13004	10/21/09 05:15
7440-23-5	Sodium	845	277	1380	5	J D	SW6010B	9J13004	10/21/09 05:15
7440-28-0	Thallium		0.830	2.21	5	U N	SW6010B	9J13004	10/21/09 05:15
7440-62-2	Vanadium	11.3	1.38	3.46	5	D	SW6010B	9J13004	10/21/09 05:15
7440-66-6	Zinc	53.1	1.38	5.54	5	D *	SW6010B	9J13004	10/21/09 05:15

ANALYSIS DATA SHEET

NTC21SB04-SO-0406

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/27/09 13:00
% Solids: 57.77

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-22
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0897	0.0225	0.0571	1	*	SW7471A	9J14016	10/21/09 13:56
7429-90-5	Aluminum	13200	8.92	35.7	2	D	SW6010B	9J13004	10/21/09 05:20
7440-36-0	Antimony		0.892	2.68	2	U N	SW6010B	9J13004	10/21/09 05:20
7440-38-2	Arsenic	14.6	0.535	0.892	2	D * N	SW6010B	9J13004	10/21/09 05:20
7440-39-3	Barium	115	0.892	7.14	2	D E N	SW6010B	9J13004	10/21/09 05:20
7440-41-7	Beryllium	1.26	0.178	0.892	2	D * N	SW6010B	9J13004	10/21/09 05:20
7440-43-9	Cadmium	2.49	0.178	0.892	2	D	SW6010B	9J13004	10/21/09 05:20
7440-70-2	Calcium	36100	178	892	2	D	SW6010B	9J13004	10/21/09 05:20
7440-47-3	Chromium	34.3	0.357	0.892	2	D N	SW6010B	9J13004	10/21/09 05:20
7440-48-4	Cobalt	15.8	0.892	2.23	2	D	SW6010B	9J13004	10/21/09 05:20
7440-50-8	Copper	72.6	0.892	1.78	2	D	SW6010B	9J13004	10/21/09 05:20
7439-89-6	Iron	30500	5.35	17.8	2	D * E	SW6010B	9J13004	10/21/09 05:20
7439-92-1	Lead	184	0.268	0.535	2	D * E	SW6010B	9J13004	10/21/09 05:20
7439-95-4	Magnesium	15800	178	892	2	D	SW6010B	9J13004	10/21/09 05:20
7439-96-5	Manganese	267	0.535	2.68	2	D E	SW6010B	9J13004	10/21/09 05:20
7440-02-0	Nickel	34.0	0.892	1.78	2	D * N	SW6010B	9J13004	10/21/09 05:20
7440-09-7	Potassium	1320	178	892	2	D	SW6010B	9J13004	10/21/09 05:20
7782-49-2	Selenium		0.535	0.892	2	U	SW6010B	9J13004	10/21/09 05:20
7440-22-4	Silver		0.178	0.892	2	U	SW6010B	9J13004	10/21/09 05:20
7440-23-5	Sodium	1460	178	892	2	D	SW6010B	9J13004	10/21/09 05:20
7440-28-0	Thallium		0.535	1.43	2	U N	SW6010B	9J13004	10/21/09 05:20
7440-62-2	Vanadium	33.5	0.892	2.23	2	D	SW6010B	9J13004	10/21/09 05:20
7440-66-6	Zinc	1010	0.892	3.57	2	D *	SW6010B	9J13004	10/21/09 05:20

ANALYSIS DATA SHEET

NTC21SB05-SO-0001

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/28/09 10:00
% Solids: 93.64

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-46
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0693	0.0126	0.0330	1		SW7471A	9J14017	10/21/09 14:42
7429-90-5	Aluminum	5750	12.8	51.3	5	D	SW6010B	9J13005	10/21/09 16:21
7440-36-0	Antimony		0.513	1.54	2	U N	SW6010B	9J13005	10/21/09 08:21
7440-38-2	Arsenic	6.05	0.308	0.513	2	D	SW6010B	9J13005	10/21/09 08:21
7440-39-3	Barium	44.9	0.513	4.11	2	D	SW6010B	9J13005	10/21/09 08:21
7440-41-7	Beryllium	0.470	0.103	0.513	2	J D	SW6010B	9J13005	10/21/09 08:21
7440-43-9	Cadmium	0.395	0.103	0.513	2	J D	SW6010B	9J13005	10/21/09 08:21
7440-70-2	Calcium	62700	257	1280	5	D	SW6010B	9J13005	10/21/09 16:21
7440-47-3	Chromium	13.7	0.205	0.513	2	D	SW6010B	9J13005	10/21/09 08:21
7440-48-4	Cobalt	6.12	0.513	1.28	2	D	SW6010B	9J13005	10/21/09 08:21
7440-50-8	Copper	24.6	0.513	1.03	2	D * N	SW6010B	9J13005	10/21/09 08:21
7439-89-6	Iron	18200	3.08	10.3	2	D	SW6010B	9J13005	10/21/09 08:21
7439-92-1	Lead	42.2	0.385	0.770	5	D N	SW6010B	9J13005	10/21/09 16:21
7439-95-4	Magnesium	37900	103	513	2	D *	SW6010B	9J13005	10/21/09 08:21
7439-96-5	Manganese	503	0.308	1.54	2	D	SW6010B	9J13005	10/21/09 08:21
7440-02-0	Nickel	17.2	0.513	1.03	2	D	SW6010B	9J13005	10/21/09 08:21
7440-09-7	Potassium	970	103	513	2	D N	SW6010B	9J13005	10/21/09 08:21
7782-49-2	Selenium		0.770	1.28	5	U	SW6010B	9J13005	10/21/09 16:21
7440-22-4	Silver		0.103	0.513	2	U	SW6010B	9J13005	10/21/09 08:21
7440-23-5	Sodium	798	103	513	2	D	SW6010B	9J13005	10/21/09 08:21
7440-28-0	Thallium		0.411	0.822	2	U	SW6010B	9J13005	10/21/09 08:21
7440-62-2	Vanadium	12.5	0.513	1.28	2	D	SW6010B	9J13005	10/21/09 08:21
7440-66-6	Zinc	87.8	1.28	5.13	5	D * E N	SW6010B	9J13005	10/21/09 16:21

ANALYSIS DATA SHEET

NTC21SB05-SO-0204

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/28/09 10:10
% Solids: 90.70

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-47
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0375	0.0148	0.0376	1	J	SW7471A	9J14017	10/21/09 14:43
7429-90-5	Aluminum	7820	5.40	21.6	2	D	SW6010B	9J20002	10/21/09 08:56
7440-36-0	Antimony		0.540	1.62	2	U	SW6010B	9J20002	10/21/09 08:56
7440-38-2	Arsenic	7.32	0.324	0.540	2	D	SW6010B	9J20002	10/21/09 08:56
7440-39-3	Barium	48.0	0.540	4.32	2	D	SW6010B	9J20002	10/21/09 08:56
7440-41-7	Beryllium	0.604	0.108	0.540	2	D	SW6010B	9J20002	10/21/09 08:56
7440-43-9	Cadmium	0.449	0.108	0.540	2	J D	SW6010B	9J20002	10/21/09 08:56
7440-70-2	Calcium	50200	108	540	2	D	SW6010B	9J20002	10/21/09 08:56
7440-47-3	Chromium	14.2	0.216	0.540	2	D	SW6010B	9J20002	10/21/09 08:56
7440-48-4	Cobalt	8.23	0.540	1.35	2	D	SW6010B	9J20002	10/21/09 08:56
7440-50-8	Copper	31.7	0.540	1.08	2	D	SW6010B	9J20002	10/21/09 08:56
7439-89-6	Iron	20700	3.24	10.8	2	D	SW6010B	9J20002	10/21/09 08:56
7439-92-1	Lead	37.0	0.162	0.324	2	D	SW6010B	9J20002	10/21/09 08:56
7439-95-4	Magnesium	24100	108	540	2	D	SW6010B	9J20002	10/21/09 08:56
7439-96-5	Manganese	419	0.324	1.62	2	D	SW6010B	9J20002	10/21/09 08:56
7440-02-0	Nickel	22.5	0.540	1.08	2	D	SW6010B	9J20002	10/21/09 08:56
7440-09-7	Potassium	956	108	540	2	D	SW6010B	9J20002	10/21/09 08:56
7782-49-2	Selenium		0.540	0.540	2	U	SW6010B	9J20002	10/21/09 08:56
7440-22-4	Silver		0.108	0.540	2	U	SW6010B	9J20002	10/21/09 08:56
7440-23-5	Sodium	922	108	540	2	D	SW6010B	9J20002	10/21/09 08:56
7440-28-0	Thallium		0.432	0.865	2	U	SW6010B	9J20002	10/21/09 08:56
7440-62-2	Vanadium	16.8	0.540	1.35	2	D	SW6010B	9J20002	10/21/09 08:56
7440-66-6	Zinc	90.6	0.540	2.16	2	D	SW6010B	9J20002	10/21/09 08:56

ANALYSIS DATA SHEET

NTC21SB06-SO-0001

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/27/09 15:10
% Solids: 82.48

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-23
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0332	0.0135	0.0343	1	J *	SW7471A	9J14016	10/21/09 13:57
7429-90-5	Aluminum	7130	5.86	23.4	2	D	SW6010B	9J13004	10/21/09 05:25
7440-36-0	Antimony		0.586	1.76	2	U N	SW6010B	9J13004	10/21/09 05:25
7440-38-2	Arsenic	7.93	0.351	0.586	2	D * N	SW6010B	9J13004	10/21/09 05:25
7440-39-3	Barium	43.1	0.586	4.69	2	D E N	SW6010B	9J13004	10/21/09 05:25
7440-41-7	Beryllium	0.469	0.117	0.586	2	J D * N	SW6010B	9J13004	10/21/09 05:25
7440-43-9	Cadmium	0.132	0.117	0.586	2	J D	SW6010B	9J13004	10/21/09 05:25
7440-70-2	Calcium	2240	117	586	2	D	SW6010B	9J13004	10/21/09 05:25
7440-47-3	Chromium	11.3	0.234	0.586	2	D N	SW6010B	9J13004	10/21/09 05:25
7440-48-4	Cobalt	8.67	0.586	1.46	2	D	SW6010B	9J13004	10/21/09 05:25
7440-50-8	Copper	18.3	0.586	1.17	2	D	SW6010B	9J13004	10/21/09 05:25
7439-89-6	Iron	18500	3.51	11.7	2	D * E	SW6010B	9J13004	10/21/09 05:25
7439-92-1	Lead	25.9	0.176	0.351	2	D * E	SW6010B	9J13004	10/21/09 05:25
7439-95-4	Magnesium	1440	117	586	2	D	SW6010B	9J13004	10/21/09 05:25
7439-96-5	Manganese	318	0.351	1.76	2	D E	SW6010B	9J13004	10/21/09 05:25
7440-02-0	Nickel	13.7	0.586	1.17	2	D * N	SW6010B	9J13004	10/21/09 05:25
7440-09-7	Potassium	461	117	586	2	J D	SW6010B	9J13004	10/21/09 05:25
7782-49-2	Selenium		0.351	0.586	2	U	SW6010B	9J13004	10/21/09 05:25
7440-22-4	Silver		0.117	0.586	2	U	SW6010B	9J13004	10/21/09 05:25
7440-23-5	Sodium	594	117	586	2	D	SW6010B	9J13004	10/21/09 05:25
7440-28-0	Thallium		0.469	0.937	2	U N	SW6010B	9J13004	10/21/09 05:25
7440-62-2	Vanadium	22.0	0.586	1.46	2	D	SW6010B	9J13004	10/21/09 05:25
7440-66-6	Zinc	80.9	0.586	2.34	2	D *	SW6010B	9J13004	10/21/09 05:25

ANALYSIS DATA SHEET

NTC21SB06-SO-0204

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/27/09 15:20
% Solids: 76.55

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-24
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.237	0.0182	0.0462	1	*	SW7471A	9J14016	10/21/09 13:58
7429-90-5	Aluminum	4450	16.2	64.7	5	D	SW6010B	9J20002	10/21/09 08:51
7440-36-0	Antimony		1.62	4.85	5	U	SW6010B	9J20002	10/21/09 08:51
7440-38-2	Arsenic	6.39	0.970	1.62	5	D	SW6010B	9J20002	10/21/09 08:51
7440-39-3	Barium	55.3	1.62	12.9	5	D E	SW6010B	9J20002	10/21/09 08:51
7440-41-7	Beryllium	0.603	0.323	1.62	5	J D *	SW6010B	9J20002	10/21/09 08:51
7440-43-9	Cadmium	1.51	0.323	1.62	5	J D	SW6010B	9J20002	10/21/09 08:51
7440-70-2	Calcium	133000	323	1620	5	D	SW6010B	9J20002	10/21/09 08:51
7440-47-3	Chromium	16.5	0.647	1.62	5	D	SW6010B	9J20002	10/21/09 08:51
7440-48-4	Cobalt	3.59	1.62	4.04	5	J D	SW6010B	9J20002	10/21/09 08:51
7440-50-8	Copper	77.1	1.62	3.23	5	D	SW6010B	9J20002	10/21/09 08:51
7439-89-6	Iron	15100	9.70	32.3	5	D * E	SW6010B	9J20002	10/21/09 08:51
7439-92-1	Lead	100	0.485	0.970	5	D * E	SW6010B	9J20002	10/21/09 08:51
7439-95-4	Magnesium	57900	323	1620	5	D	SW6010B	9J20002	10/21/09 08:51
7439-96-5	Manganese	354	0.970	4.85	5	D E	SW6010B	9J20002	10/21/09 08:51
7440-02-0	Nickel	13.1	1.62	3.23	5	D *	SW6010B	9J20002	10/21/09 08:51
7440-09-7	Potassium	746	323	1620	5	J D	SW6010B	9J20002	10/21/09 08:51
7782-49-2	Selenium		1.29	1.62	5	U	SW6010B	9J20002	10/21/09 08:51
7440-22-4	Silver		0.323	1.62	5	U	SW6010B	9J20002	10/21/09 08:51
7440-23-5	Sodium	792	323	1620	5	J D	SW6010B	9J20002	10/21/09 08:51
7440-28-0	Thallium		0.970	2.59	5	U	SW6010B	9J20002	10/21/09 08:51
7440-62-2	Vanadium	15.4	1.62	4.04	5	D	SW6010B	9J20002	10/21/09 08:51
7440-66-6	Zinc	151	1.62	6.47	5	D *	SW6010B	9J20002	10/21/09 08:51

ANALYSIS DATA SHEET

NTC21SB07-SO-0001

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/27/09 10:40
% Solids: 91.64

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-25
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0854	0.0152	0.0386	1	*	SW7471A	9J14016	10/21/09 13:59
7429-90-5	Aluminum	5320	13.6	54.3	5	D	SW6010B	9J13004	10/21/09 05:29
7440-36-0	Antimony		1.36	4.07	5	U N	SW6010B	9J13004	10/21/09 05:29
7440-38-2	Arsenic	7.46	0.814	1.36	5	D * N	SW6010B	9J13004	10/21/09 05:29
7440-39-3	Barium	42.3	1.36	10.9	5	D E N	SW6010B	9J13004	10/21/09 05:29
7440-41-7	Beryllium	0.445	0.271	1.36	5	J D * N	SW6010B	9J13004	10/21/09 05:29
7440-43-9	Cadmium	0.644	0.271	1.36	5	J D	SW6010B	9J13004	10/21/09 05:29
7440-70-2	Calcium	98600	271	1360	5	D	SW6010B	9J13004	10/21/09 05:29
7440-47-3	Chromium	12.6	0.543	1.36	5	D N	SW6010B	9J13004	10/21/09 05:29
7440-48-4	Cobalt	5.79	1.36	3.39	5	D	SW6010B	9J13004	10/21/09 05:29
7440-50-8	Copper	37.9	1.36	2.71	5	D	SW6010B	9J13004	10/21/09 05:29
7439-89-6	Iron	18900	8.14	27.1	5	D * E	SW6010B	9J13004	10/21/09 05:29
7439-92-1	Lead	81.5	0.407	0.814	5	D * E	SW6010B	9J13004	10/21/09 05:29
7439-95-4	Magnesium	53800	271	1360	5	D	SW6010B	9J13004	10/21/09 05:29
7439-96-5	Manganese	597	0.814	4.07	5	D E	SW6010B	9J13004	10/21/09 05:29
7440-02-0	Nickel	15.9	1.36	2.71	5	D * N	SW6010B	9J13004	10/21/09 05:29
7440-09-7	Potassium	981	271	1360	5	J D	SW6010B	9J13004	10/21/09 05:29
7782-49-2	Selenium		1.36	1.36	5	U	SW6010B	9J13004	10/21/09 05:29
7440-22-4	Silver		0.271	1.36	5	U	SW6010B	9J13004	10/21/09 05:29
7440-23-5	Sodium	384	271	1360	5	J D	SW6010B	9J13004	10/21/09 05:29
7440-28-0	Thallium		0.814	2.17	5	U N	SW6010B	9J13004	10/21/09 05:29
7440-62-2	Vanadium	14.2	1.36	3.39	5	D	SW6010B	9J13004	10/21/09 05:29
7440-66-6	Zinc	119	1.36	5.43	5	D *	SW6010B	9J13004	10/21/09 05:29

ANALYSIS DATA SHEET

NTC21SB07-SO-0204

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/27/09 10:50
% Solids: 85.99

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-26
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0778	0.0151	0.0384	1	*	SW7471A	9J14016	10/21/09 14:01
7429-90-5	Aluminum	6830	5.56	22.3	2	D	SW6010B	9J13004	10/21/09 05:34
7440-36-0	Antimony		0.556	1.67	2	U N	SW6010B	9J13004	10/21/09 05:34
7440-38-2	Arsenic	8.88	0.334	0.556	2	D * N	SW6010B	9J13004	10/21/09 05:34
7440-39-3	Barium	44.9	0.556	4.45	2	D E N	SW6010B	9J13004	10/21/09 05:34
7440-41-7	Beryllium	0.397	0.111	0.556	2	J D * N	SW6010B	9J13004	10/21/09 05:34
7440-43-9	Cadmium	0.606	0.111	0.556	2	D	SW6010B	9J13004	10/21/09 05:34
7440-70-2	Calcium	24900	111	556	2	D	SW6010B	9J13004	10/21/09 05:34
7440-47-3	Chromium	10.9	0.223	0.556	2	D N	SW6010B	9J13004	10/21/09 05:34
7440-48-4	Cobalt	6.25	0.556	1.39	2	D	SW6010B	9J13004	10/21/09 05:34
7440-50-8	Copper	124	0.556	1.11	2	D	SW6010B	9J13004	10/21/09 05:34
7439-89-6	Iron	26600	3.34	11.1	2	D * E	SW6010B	9J13004	10/21/09 05:34
7439-92-1	Lead	228	0.167	0.334	2	D * E	SW6010B	9J13004	10/21/09 05:34
7439-95-4	Magnesium	14600	111	556	2	D	SW6010B	9J13004	10/21/09 05:34
7439-96-5	Manganese	465	0.334	1.67	2	D E	SW6010B	9J13004	10/21/09 05:34
7440-02-0	Nickel	14.6	0.556	1.11	2	D * N	SW6010B	9J13004	10/21/09 05:34
7440-09-7	Potassium	558	111	556	2	D	SW6010B	9J13004	10/21/09 05:34
7782-49-2	Selenium		0.334	0.556	2	U	SW6010B	9J13004	10/21/09 05:34
7440-22-4	Silver		0.111	0.556	2	U	SW6010B	9J13004	10/21/09 05:34
7440-23-5	Sodium	427	111	556	2	J D	SW6010B	9J13004	10/21/09 05:34
7440-28-0	Thallium		0.445	0.890	2	U N	SW6010B	9J13004	10/21/09 05:34
7440-62-2	Vanadium	17.4	0.556	1.39	2	D	SW6010B	9J13004	10/21/09 05:34
7440-66-6	Zinc	181	0.556	2.23	2	D *	SW6010B	9J13004	10/21/09 05:34

ANALYSIS DATA SHEET

NTC21SB08-SO-0001

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/28/09 11:55
% Solids: 92.71

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-48
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0612	0.0136	0.0344	1		SW7471A	9J14017	10/21/09 14:45
7429-90-5	Aluminum	5200	13.5	53.9	5	D	SW6010B	9J20002	10/21/09 16:50
7440-36-0	Antimony	0.933	0.539	1.62	2	J D	SW6010B	9J20002	10/21/09 09:00
7440-38-2	Arsenic	9.53	0.324	0.539	2	D	SW6010B	9J20002	10/21/09 09:00
7440-39-3	Barium	55.6	0.539	4.31	2	D	SW6010B	9J20002	10/21/09 09:00
7440-41-7	Beryllium	0.485	0.108	0.539	2	J D	SW6010B	9J20002	10/21/09 09:00
7440-43-9	Cadmium	1.24	0.108	0.539	2	D	SW6010B	9J20002	10/21/09 09:00
7440-70-2	Calcium	76300	270	1350	5	D	SW6010B	9J20002	10/21/09 16:50
7440-47-3	Chromium	9.71	0.216	0.539	2	D	SW6010B	9J20002	10/21/09 09:00
7440-48-4	Cobalt	6.07	0.539	1.35	2	D	SW6010B	9J20002	10/21/09 09:00
7440-50-8	Copper	47.0	0.539	1.08	2	D	SW6010B	9J20002	10/21/09 09:00
7439-89-6	Iron	18400	3.24	10.8	2	D	SW6010B	9J20002	10/21/09 09:00
7439-92-1	Lead	65.3	0.404	0.809	5	D	SW6010B	9J20002	10/21/09 16:50
7439-95-4	Magnesium	38800	108	539	2	D	SW6010B	9J20002	10/21/09 09:00
7439-96-5	Manganese	456	0.324	1.62	2	D	SW6010B	9J20002	10/21/09 09:00
7440-02-0	Nickel	15.9	0.539	1.08	2	D	SW6010B	9J20002	10/21/09 09:00
7440-09-7	Potassium	749	108	539	2	D	SW6010B	9J20002	10/21/09 09:00
7782-49-2	Selenium		0.809	1.35	5	U	SW6010B	9J20002	10/21/09 16:50
7440-22-4	Silver		0.108	0.539	2	U	SW6010B	9J20002	10/21/09 09:00
7440-23-5	Sodium	230	108	539	2	J D	SW6010B	9J20002	10/21/09 09:00
7440-28-0	Thallium		0.431	0.863	2	U	SW6010B	9J20002	10/21/09 09:00
7440-62-2	Vanadium	12.5	0.539	1.35	2	D	SW6010B	9J20002	10/21/09 09:00
7440-66-6	Zinc	172	1.35	5.39	5	D	SW6010B	9J20002	10/21/09 16:50

ANALYSIS DATA SHEET

NTC21SB08-SO-0204

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/28/09 12:00
% Solids: 73.74

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-49
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0470	0.0156	0.0395	1		SW7471A	9J14017	10/21/09 14:46
7429-90-5	Aluminum	9510	16.8	67.1	5	D	SW6010B	9J20002	10/21/09 16:55
7440-36-0	Antimony		0.671	2.01	2	U	SW6010B	9J20002	10/21/09 09:05
7440-38-2	Arsenic	12.0	0.403	0.671	2	D	SW6010B	9J20002	10/21/09 09:05
7440-39-3	Barium	61.7	0.671	5.37	2	D	SW6010B	9J20002	10/21/09 09:05
7440-41-7	Beryllium	0.844	0.134	0.671	2	D	SW6010B	9J20002	10/21/09 09:05
7440-43-9	Cadmium	0.898	0.134	0.671	2	D	SW6010B	9J20002	10/21/09 09:05
7440-70-2	Calcium	59000	336	1680	5	D	SW6010B	9J20002	10/21/09 16:55
7440-47-3	Chromium	16.0	0.269	0.671	2	D	SW6010B	9J20002	10/21/09 09:05
7440-48-4	Cobalt	10.3	0.671	1.68	2	D	SW6010B	9J20002	10/21/09 09:05
7440-50-8	Copper	46.5	0.671	1.34	2	D	SW6010B	9J20002	10/21/09 09:05
7439-89-6	Iron	27600	4.03	13.4	2	D	SW6010B	9J20002	10/21/09 09:05
7439-92-1	Lead	66.5	0.504	1.01	5	D	SW6010B	9J20002	10/21/09 16:55
7439-95-4	Magnesium	38000	134	671	2	D	SW6010B	9J20002	10/21/09 09:05
7439-96-5	Manganese	583	0.403	2.01	2	D	SW6010B	9J20002	10/21/09 09:05
7440-02-0	Nickel	28.4	0.671	1.34	2	D	SW6010B	9J20002	10/21/09 09:05
7440-09-7	Potassium	1110	134	671	2	D	SW6010B	9J20002	10/21/09 09:05
7782-49-2	Selenium		1.01	1.68	5	U	SW6010B	9J20002	10/21/09 16:55
7440-22-4	Silver		0.134	0.671	2	U	SW6010B	9J20002	10/21/09 09:05
7440-23-5	Sodium	210	134	671	2	J D	SW6010B	9J20002	10/21/09 09:05
7440-28-0	Thallium		0.537	1.07	2	U	SW6010B	9J20002	10/21/09 09:05
7440-62-2	Vanadium	20.2	0.671	1.68	2	D	SW6010B	9J20002	10/21/09 09:05
7440-66-6	Zinc	229	1.68	6.71	5	D	SW6010B	9J20002	10/21/09 16:55

ANALYSIS DATA SHEET

NTC21SB09-SO-0001

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/26/09 16:20
% Solids: 91.14

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-03
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.495	0.0134	0.0339	1		SW7471A	9J09009	10/12/09 13:12
7429-90-5	Aluminum	4350	13.8	55.1	5	D	SW6010B	9J13003	10/21/09 03:18
7440-36-0	Antimony	2.06	1.38	4.14	5	J D	SW6010B	9J13003	10/21/09 03:18
7440-38-2	Arsenic	8.14	0.827	1.38	5	D	SW6010B	9J13003	10/21/09 03:18
7440-39-3	Barium	86.6	1.38	11.0	5	D	SW6010B	9J13003	10/21/09 03:18
7440-41-7	Beryllium	0.929	0.276	1.38	5	J D	SW6010B	9J13003	10/21/09 03:18
7440-43-9	Cadmium	3.81	0.276	1.38	5	D	SW6010B	9J13003	10/21/09 03:18
7440-70-2	Calcium	32000	276	1380	5	D	SW6010B	9J13003	10/21/09 03:18
7440-47-3	Chromium	163	0.551	1.38	5	D	SW6010B	9J13003	10/21/09 03:18
7440-48-4	Cobalt	5.19	1.38	3.45	5	D	SW6010B	9J13003	10/21/09 03:18
7440-50-8	Copper	129	1.38	2.76	5	D	SW6010B	9J13003	10/21/09 03:18
7439-89-6	Iron	23400	8.27	27.6	5	D	SW6010B	9J13003	10/21/09 03:18
7439-92-1	Lead	167	0.414	0.827	5	D	SW6010B	9J13003	10/21/09 03:18
7439-95-4	Magnesium	13800	276	1380	5	D	SW6010B	9J13003	10/21/09 03:18
7439-96-5	Manganese	173	0.827	4.14	5	D	SW6010B	9J13003	10/21/09 03:18
7440-02-0	Nickel	56.2	1.38	2.76	5	D	SW6010B	9J13003	10/21/09 03:18
7440-09-7	Potassium	642	276	1380	5	J D	SW6010B	9J13003	10/21/09 03:18
7782-49-2	Selenium		0.827	1.38	5	U	SW6010B	9J13003	10/21/09 03:18
7440-22-4	Silver	0.515	0.276	1.38	5	J D	SW6010B	9J13003	10/21/09 03:18
7440-23-5	Sodium	868	276	1380	5	J D	SW6010B	9J13003	10/21/09 03:18
7440-28-0	Thallium		0.827	2.21	5	U	SW6010B	9J13003	10/21/09 03:18
7440-62-2	Vanadium	25.7	1.38	3.45	5	D	SW6010B	9J13003	10/21/09 03:18
7440-66-6	Zinc	190	1.38	5.51	5	D	SW6010B	9J13003	10/21/09 03:18

ANALYSIS DATA SHEET

NTC21SB09-SO-0204

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/26/09 16:28
% Solids: 79.45

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-04
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0822	0.0164	0.0415	1		SW7471A	9J09009	10/12/09 13:13
7429-90-5	Aluminum	17400	6.45	25.8	2	D	SW6010B	9J13003	10/21/09 03:22
7440-36-0	Antimony		0.645	1.94	2	U	SW6010B	9J13003	10/21/09 03:22
7440-38-2	Arsenic	7.34	0.387	0.645	2	D	SW6010B	9J13003	10/21/09 03:22
7440-39-3	Barium	140	0.645	5.16	2	D	SW6010B	9J13003	10/21/09 03:22
7440-41-7	Beryllium	1.46	0.129	0.645	2	D	SW6010B	9J13003	10/21/09 03:22
7440-43-9	Cadmium	0.653	0.129	0.645	2	D	SW6010B	9J13003	10/21/09 03:22
7440-70-2	Calcium	26600	129	645	2	D	SW6010B	9J13003	10/21/09 03:22
7440-47-3	Chromium	19.3	0.258	0.645	2	D	SW6010B	9J13003	10/21/09 03:22
7440-48-4	Cobalt	9.54	0.645	1.61	2	D	SW6010B	9J13003	10/21/09 03:22
7440-50-8	Copper	37.8	0.645	1.29	2	D	SW6010B	9J13003	10/21/09 03:22
7439-89-6	Iron	25800	3.87	12.9	2	D	SW6010B	9J13003	10/21/09 03:22
7439-92-1	Lead	29.1	0.194	0.387	2	D	SW6010B	9J13003	10/21/09 03:22
7439-95-4	Magnesium	5180	129	645	2	D	SW6010B	9J13003	10/21/09 03:22
7439-96-5	Manganese	1690	0.968	4.84	5	D	SW6010B	9J13003	10/21/09 13:53
7440-02-0	Nickel	23.2	0.645	1.29	2	D	SW6010B	9J13003	10/21/09 03:22
7440-09-7	Potassium	1780	129	645	2	D	SW6010B	9J13003	10/21/09 03:22
7782-49-2	Selenium		0.387	0.645	2	U	SW6010B	9J13003	10/21/09 03:22
7440-22-4	Silver		0.129	0.645	2	U	SW6010B	9J13003	10/21/09 03:22
7440-23-5	Sodium	2920	129	645	2	D	SW6010B	9J13003	10/21/09 03:22
7440-28-0	Thallium		2.26	2.58	5	U	SW6010B	9J13003	10/21/09 13:53
7440-62-2	Vanadium	28.0	0.645	1.61	2	D	SW6010B	9J13003	10/21/09 03:22
7440-66-6	Zinc	156	0.645	2.58	2	D	SW6010B	9J13003	10/21/09 03:22

ANALYSIS DATA SHEET

NTC21SB10-SO-0001

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/26/09 18:36
% Solids: 89.63

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-05
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	8.98	0.281	0.713	20	D	SW7471A	9J09009	10/12/09 13:41
7429-90-5	Aluminum	6720	12.7	50.9	5	D	SW6010B	9J13003	10/21/09 03:27
7440-36-0	Antimony	5.22	1.27	3.82	5	D	SW6010B	9J13003	10/21/09 03:27
7440-38-2	Arsenic	11.9	0.764	1.27	5	D	SW6010B	9J13003	10/21/09 03:27
7440-39-3	Barium	161	1.27	10.2	5	D	SW6010B	9J13003	10/21/09 03:27
7440-41-7	Beryllium	0.826	0.255	1.27	5	J D	SW6010B	9J13003	10/21/09 03:27
7440-43-9	Cadmium	13.0	0.255	1.27	5	D	SW6010B	9J13003	10/21/09 03:27
7440-70-2	Calcium	42200	255	1270	5	D	SW6010B	9J13003	10/21/09 03:27
7440-47-3	Chromium	36.9	0.509	1.27	5	D	SW6010B	9J13003	10/21/09 03:27
7440-48-4	Cobalt	6.67	1.27	3.18	5	D	SW6010B	9J13003	10/21/09 03:27
7440-50-8	Copper	835	1.27	2.55	5	D	SW6010B	9J13003	10/21/09 03:27
7439-89-6	Iron	35000	7.64	25.5	5	D	SW6010B	9J13003	10/21/09 03:27
7439-92-1	Lead	428	0.382	0.764	5	D	SW6010B	9J13003	10/21/09 03:27
7439-95-4	Magnesium	13600	255	1270	5	D	SW6010B	9J13003	10/21/09 03:27
7439-96-5	Manganese	416	0.764	3.82	5	D	SW6010B	9J13003	10/21/09 03:27
7440-02-0	Nickel	52.3	1.27	2.55	5	D	SW6010B	9J13003	10/21/09 03:27
7440-09-7	Potassium	846	255	1270	5	J D	SW6010B	9J13003	10/21/09 03:27
7782-49-2	Selenium		0.764	1.27	5	U	SW6010B	9J13003	10/21/09 03:27
7440-22-4	Silver	1.41	0.255	1.27	5	D	SW6010B	9J13003	10/21/09 03:27
7440-23-5	Sodium	1000	255	1270	5	J D	SW6010B	9J13003	10/21/09 03:27
7440-28-0	Thallium		0.764	2.04	5	U	SW6010B	9J13003	10/21/09 03:27
7440-62-2	Vanadium	21.2	1.27	3.18	5	D	SW6010B	9J13003	10/21/09 03:27
7440-66-6	Zinc	1230	1.27	5.09	5	D	SW6010B	9J13003	10/21/09 03:27

ANALYSIS DATA SHEET

NTC21SB10-SO-0406

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/26/09 18:40
% Solids: 82.84

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-06
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0742	0.0152	0.0386	1		SW7471A	9J09009	10/12/09 13:18
7429-90-5	Aluminum	9450	6.16	24.6	2	D	SW6010B	9J13003	10/21/09 03:31
7440-36-0	Antimony	0.643	0.616	1.85	2	J D	SW6010B	9J13003	10/21/09 03:31
7440-38-2	Arsenic	9.71	0.370	0.616	2	D	SW6010B	9J13003	10/21/09 03:31
7440-39-3	Barium	60.9	0.616	4.93	2	D	SW6010B	9J13003	10/21/09 03:31
7440-41-7	Beryllium	0.506	0.123	0.616	2	J D	SW6010B	9J13003	10/21/09 03:31
7440-43-9	Cadmium	0.414	0.123	0.616	2	J D	SW6010B	9J13003	10/21/09 03:31
7440-70-2	Calcium	57800	123	616	2	D	SW6010B	9J13003	10/21/09 03:31
7440-47-3	Chromium	16.2	0.246	0.616	2	D	SW6010B	9J13003	10/21/09 03:31
7440-48-4	Cobalt	9.49	0.616	1.54	2	D	SW6010B	9J13003	10/21/09 03:31
7440-50-8	Copper	66.6	0.616	1.23	2	D	SW6010B	9J13003	10/21/09 03:31
7439-89-6	Iron	24900	3.70	12.3	2	D	SW6010B	9J13003	10/21/09 03:31
7439-92-1	Lead	38.4	0.185	0.370	2	D	SW6010B	9J13003	10/21/09 03:31
7439-95-4	Magnesium	29200	123	616	2	D	SW6010B	9J13003	10/21/09 03:31
7439-96-5	Manganese	650	0.370	1.85	2	D	SW6010B	9J13003	10/21/09 03:31
7440-02-0	Nickel	25.9	0.616	1.23	2	D	SW6010B	9J13003	10/21/09 03:31
7440-09-7	Potassium	1570	123	616	2	D	SW6010B	9J13003	10/21/09 03:31
7782-49-2	Selenium		0.924	1.54	5	U	SW6010B	9J13003	10/21/09 13:57
7440-22-4	Silver		0.123	0.616	2	U	SW6010B	9J13003	10/21/09 03:31
7440-23-5	Sodium	483	123	616	2	J D	SW6010B	9J13003	10/21/09 03:31
7440-28-0	Thallium		0.493	0.985	2	U	SW6010B	9J13003	10/21/09 03:31
7440-62-2	Vanadium	21.7	0.616	1.54	2	D	SW6010B	9J13003	10/21/09 03:31
7440-66-6	Zinc	116	0.616	2.46	2	D	SW6010B	9J13003	10/21/09 03:31

ANALYSIS DATA SHEET

NTC21SB11-SO-0001

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/26/09 18:10
% Solids: 92.03

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-07
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0648	0.0121	0.0330	1		SW7471A	9J09009	10/12/09 13:19
7429-90-5	Aluminum	2790	13.7	54.9	5	D	SW6010B	9J13003	10/21/09 03:36
7440-36-0	Antimony		1.37	4.12	5	U	SW6010B	9J13003	10/21/09 03:36
7440-38-2	Arsenic	5.60	0.823	1.37	5	D	SW6010B	9J13003	10/21/09 03:36
7440-39-3	Barium	82.3	1.37	11.0	5	D	SW6010B	9J13003	10/21/09 03:36
7440-41-7	Beryllium	0.646	0.274	1.37	5	J D	SW6010B	9J13003	10/21/09 03:36
7440-43-9	Cadmium	1.94	0.274	1.37	5	D	SW6010B	9J13003	10/21/09 03:36
7440-70-2	Calcium	62100	274	1370	5	D	SW6010B	9J13003	10/21/09 03:36
7440-47-3	Chromium	11.1	0.549	1.37	5	D	SW6010B	9J13003	10/21/09 03:36
7440-48-4	Cobalt	2.90	1.37	3.43	5	J D	SW6010B	9J13003	10/21/09 03:36
7440-50-8	Copper	104	1.37	2.74	5	D	SW6010B	9J13003	10/21/09 03:36
7439-89-6	Iron	15000	8.23	27.4	5	D	SW6010B	9J13003	10/21/09 03:36
7439-92-1	Lead	118	0.412	0.823	5	D	SW6010B	9J13003	10/21/09 03:36
7439-95-4	Magnesium	29100	274	1370	5	D	SW6010B	9J13003	10/21/09 03:36
7439-96-5	Manganese	206	0.823	4.12	5	D	SW6010B	9J13003	10/21/09 03:36
7440-02-0	Nickel	10.9	1.37	2.74	5	D	SW6010B	9J13003	10/21/09 03:36
7440-09-7	Potassium	438	274	1370	5	J D	SW6010B	9J13003	10/21/09 03:36
7782-49-2	Selenium		0.823	1.37	5	U	SW6010B	9J13003	10/21/09 03:36
7440-22-4	Silver		0.274	1.37	5	U	SW6010B	9J13003	10/21/09 03:36
7440-23-5	Sodium	986	274	1370	5	J D	SW6010B	9J13003	10/21/09 03:36
7440-28-0	Thallium		0.823	2.20	5	U	SW6010B	9J13003	10/21/09 03:36
7440-62-2	Vanadium	11.2	1.37	3.43	5	D	SW6010B	9J13003	10/21/09 03:36
7440-66-6	Zinc	125	1.37	5.49	5	D	SW6010B	9J13003	10/21/09 03:36

ANALYSIS DATA SHEET

NTC21SB11-SO-0204

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/26/09 18:12
% Solids: 84.12

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-08
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0889	0.0145	0.0368	1		SW7471A	9J09009	10/12/09 13:21
7429-90-5	Aluminum	4900	14.6	58.6	5	D	SW6010B	9J13003	10/21/09 03:41
7440-36-0	Antimony		1.46	4.39	5	U	SW6010B	9J13003	10/21/09 03:41
7440-38-2	Arsenic	6.00	0.878	1.46	5	D	SW6010B	9J13003	10/21/09 03:41
7440-39-3	Barium	81.2	1.46	11.7	5	D	SW6010B	9J13003	10/21/09 03:41
7440-41-7	Beryllium	1.35	0.293	1.46	5	J D	SW6010B	9J13003	10/21/09 03:41
7440-43-9	Cadmium	0.979	0.293	1.46	5	J D	SW6010B	9J13003	10/21/09 03:41
7440-70-2	Calcium	10500	293	1460	5	D	SW6010B	9J13003	10/21/09 03:41
7440-47-3	Chromium	10.7	0.586	1.46	5	D	SW6010B	9J13003	10/21/09 03:41
7440-48-4	Cobalt	6.80	1.46	3.66	5	D	SW6010B	9J13003	10/21/09 03:41
7440-50-8	Copper	69.9	1.46	2.93	5	D	SW6010B	9J13003	10/21/09 03:41
7439-89-6	Iron	40100	8.78	29.3	5	D	SW6010B	9J13003	10/21/09 03:41
7439-92-1	Lead	94.3	0.439	0.878	5	D	SW6010B	9J13003	10/21/09 03:41
7439-95-4	Magnesium	3150	293	1460	5	D	SW6010B	9J13003	10/21/09 03:41
7439-96-5	Manganese	203	0.878	4.39	5	D	SW6010B	9J13003	10/21/09 03:41
7440-02-0	Nickel	19.2	1.46	2.93	5	D	SW6010B	9J13003	10/21/09 03:41
7440-09-7	Potassium	607	293	1460	5	J D	SW6010B	9J13003	10/21/09 03:41
7782-49-2	Selenium		0.878	1.46	5	U	SW6010B	9J13003	10/21/09 03:41
7440-22-4	Silver		0.293	1.46	5	U	SW6010B	9J13003	10/21/09 03:41
7440-23-5	Sodium	885	293	1460	5	J D	SW6010B	9J13003	10/21/09 03:41
7440-28-0	Thallium		0.878	2.34	5	U	SW6010B	9J13003	10/21/09 03:41
7440-62-2	Vanadium	15.5	1.46	3.66	5	D	SW6010B	9J13003	10/21/09 03:41
7440-66-6	Zinc	244	1.46	5.86	5	D	SW6010B	9J13003	10/21/09 03:41

ANALYSIS DATA SHEET

NTC21SB12-SO-0001

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/26/09 14:00
% Solids: 84.89

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-09
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.585	0.0153	0.0389	1		SW7471A	9J09009	10/12/09 13:22
7429-90-5	Aluminum	3280	15.1	60.4	5	D	SW6010B	9J13003	10/21/09 03:59
7440-36-0	Antimony		1.51	4.53	5	U	SW6010B	9J13003	10/21/09 03:59
7440-38-2	Arsenic	12.9	0.906	1.51	5	D	SW6010B	9J13003	10/21/09 03:59
7440-39-3	Barium	49.6	1.51	12.1	5	D	SW6010B	9J13003	10/21/09 03:59
7440-41-7	Beryllium	0.508	0.302	1.51	5	J D	SW6010B	9J13003	10/21/09 03:59
7440-43-9	Cadmium	0.507	0.302	1.51	5	J D	SW6010B	9J13003	10/21/09 03:59
7440-70-2	Calcium	83300	302	1510	5	D	SW6010B	9J13003	10/21/09 03:59
7440-47-3	Chromium	12.6	0.604	1.51	5	D	SW6010B	9J13003	10/21/09 03:59
7440-48-4	Cobalt	3.27	1.51	3.78	5	J D	SW6010B	9J13003	10/21/09 03:59
7440-50-8	Copper	31.6	1.51	3.02	5	D	SW6010B	9J13003	10/21/09 03:59
7439-89-6	Iron	25800	9.06	30.2	5	D	SW6010B	9J13003	10/21/09 03:59
7439-92-1	Lead	51.3	0.453	0.906	5	D	SW6010B	9J13003	10/21/09 03:59
7439-95-4	Magnesium	39600	302	1510	5	D	SW6010B	9J13003	10/21/09 03:59
7439-96-5	Manganese	226	0.906	4.53	5	D	SW6010B	9J13003	10/21/09 03:59
7440-02-0	Nickel	10.4	1.51	3.02	5	D	SW6010B	9J13003	10/21/09 03:59
7440-09-7	Potassium	428	302	1510	5	J D	SW6010B	9J13003	10/21/09 03:59
7782-49-2	Selenium		0.906	1.51	5	U	SW6010B	9J13003	10/21/09 03:59
7440-22-4	Silver		0.302	1.51	5	U	SW6010B	9J13003	10/21/09 03:59
7440-23-5	Sodium	378	302	1510	5	J D	SW6010B	9J13003	10/21/09 03:59
7440-28-0	Thallium		0.906	2.42	5	U	SW6010B	9J13003	10/21/09 03:59
7440-62-2	Vanadium	13.8	1.51	3.78	5	D	SW6010B	9J13003	10/21/09 03:59
7440-66-6	Zinc	70.9	1.51	6.04	5	D	SW6010B	9J13003	10/21/09 03:59

ANALYSIS DATA SHEET

NTC21SB12-SO-0204

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/26/09 14:10
% Solids: 77.00

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-10
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.484	0.0163	0.0415	1		SW7471A	9J09009	10/12/09 13:23
7429-90-5	Aluminum	12300	16.9	67.6	5	D	SW6010B	9J13003	10/21/09 04:04
7440-36-0	Antimony		1.69	5.07	5	U	SW6010B	9J13003	10/21/09 04:04
7440-38-2	Arsenic	7.09	1.01	1.69	5	D	SW6010B	9J13003	10/21/09 04:04
7440-39-3	Barium	103	1.69	13.5	5	D	SW6010B	9J13003	10/21/09 04:04
7440-41-7	Beryllium	4.05	0.338	1.69	5	D	SW6010B	9J13003	10/21/09 04:04
7440-43-9	Cadmium	4.15	0.338	1.69	5	D	SW6010B	9J13003	10/21/09 04:04
7440-70-2	Calcium	24200	338	1690	5	D	SW6010B	9J13003	10/21/09 04:04
7440-47-3	Chromium	12.1	0.676	1.69	5	D	SW6010B	9J13003	10/21/09 04:04
7440-48-4	Cobalt	23.8	1.69	4.23	5	D	SW6010B	9J13003	10/21/09 04:04
7440-50-8	Copper	59.8	1.69	3.38	5	D	SW6010B	9J13003	10/21/09 04:04
7439-89-6	Iron	32900	10.1	33.8	5	D	SW6010B	9J13003	10/21/09 04:04
7439-92-1	Lead	41.3	0.507	1.01	5	D	SW6010B	9J13003	10/21/09 04:04
7439-95-4	Magnesium	10700	338	1690	5	D	SW6010B	9J13003	10/21/09 04:04
7439-96-5	Manganese	760	1.01	5.07	5	D	SW6010B	9J13003	10/21/09 04:04
7440-02-0	Nickel	42.7	1.69	3.38	5	D	SW6010B	9J13003	10/21/09 04:04
7440-09-7	Potassium	683	338	1690	5	J D	SW6010B	9J13003	10/21/09 04:04
7782-49-2	Selenium		1.01	1.69	5	U	SW6010B	9J13003	10/21/09 04:04
7440-22-4	Silver		0.338	1.69	5	U	SW6010B	9J13003	10/21/09 04:04
7440-23-5	Sodium	601	338	1690	5	J D	SW6010B	9J13003	10/21/09 04:04
7440-28-0	Thallium		1.01	2.71	5	U	SW6010B	9J13003	10/21/09 04:04
7440-62-2	Vanadium	20.5	1.69	4.23	5	D	SW6010B	9J13003	10/21/09 04:04
7440-66-6	Zinc	358	1.69	6.76	5	D	SW6010B	9J13003	10/21/09 04:04

ANALYSIS DATA SHEET

NTC21SB13-SO-0001

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/27/09 09:00
% Solids: 77.65

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-27
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.106	0.0148	0.0375	1	*	SW7471A	9J14016	10/21/09 14:02
7429-90-5	Aluminum	6210	15.4	61.6	5	D	SW6010B	9J13004	10/21/09 05:39
7440-36-0	Antimony	2.51	1.54	4.62	5	J D N	SW6010B	9J13004	10/21/09 05:39
7440-38-2	Arsenic	10.7	0.924	1.54	5	D * N	SW6010B	9J13004	10/21/09 05:39
7440-39-3	Barium	69.8	1.54	12.3	5	D E N	SW6010B	9J13004	10/21/09 05:39
7440-41-7	Beryllium	2.44	0.308	1.54	5	D * N	SW6010B	9J13004	10/21/09 05:39
7440-43-9	Cadmium	8.45	0.308	1.54	5	D	SW6010B	9J13004	10/21/09 05:39
7440-70-2	Calcium	21100	308	1540	5	D	SW6010B	9J13004	10/21/09 05:39
7440-47-3	Chromium	14.8	0.616	1.54	5	D N	SW6010B	9J13004	10/21/09 05:39
7440-48-4	Cobalt	17.7	1.54	3.85	5	D	SW6010B	9J13004	10/21/09 05:39
7440-50-8	Copper	296	1.54	3.08	5	D	SW6010B	9J13004	10/21/09 05:39
7439-89-6	Iron	52200	9.24	30.8	5	D * E	SW6010B	9J13004	10/21/09 05:39
7439-92-1	Lead	407	0.462	0.924	5	D * E	SW6010B	9J13004	10/21/09 05:39
7439-95-4	Magnesium	8120	308	1540	5	D	SW6010B	9J13004	10/21/09 05:39
7439-96-5	Manganese	494	0.924	4.62	5	D E	SW6010B	9J13004	10/21/09 05:39
7440-02-0	Nickel	43.1	1.54	3.08	5	D * N	SW6010B	9J13004	10/21/09 05:39
7440-09-7	Potassium	435	308	1540	5	J D	SW6010B	9J13004	10/21/09 05:39
7782-49-2	Selenium		0.924	1.54	5	U	SW6010B	9J13004	10/21/09 05:39
7440-22-4	Silver		0.308	1.54	5	U	SW6010B	9J13004	10/21/09 05:39
7440-23-5	Sodium	588	308	1540	5	J D	SW6010B	9J13004	10/21/09 05:39
7440-28-0	Thallium		0.924	2.46	5	U N	SW6010B	9J13004	10/21/09 05:39
7440-62-2	Vanadium	22.3	1.54	3.85	5	D	SW6010B	9J13004	10/21/09 05:39
7440-66-6	Zinc	884	1.54	6.16	5	D *	SW6010B	9J13004	10/21/09 05:39

ANALYSIS DATA SHEET

NTC21SB13-SO-0204

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/27/09 09:10
% Solids: 84.34

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-28
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0545	0.0136	0.0345	1	*	SW7471A	9J14016	10/21/09 14:03
7429-90-5	Aluminum	6440	5.46	21.9	2	D	SW6010B	9J13004	10/21/09 05:43
7440-36-0	Antimony		0.546	1.64	2	U N	SW6010B	9J13004	10/21/09 05:43
7440-38-2	Arsenic	8.73	0.328	0.546	2	D * N	SW6010B	9J13004	10/21/09 05:43
7440-39-3	Barium	28.1	0.546	4.37	2	D E N	SW6010B	9J13004	10/21/09 05:43
7440-41-7	Beryllium	0.425	0.109	0.546	2	J D * N	SW6010B	9J13004	10/21/09 05:43
7440-43-9	Cadmium	0.909	0.109	0.546	2	D	SW6010B	9J13004	10/21/09 05:43
7440-70-2	Calcium	30100	109	546	2	D	SW6010B	9J13004	10/21/09 05:43
7440-47-3	Chromium	12.7	0.219	0.546	2	D N	SW6010B	9J13004	10/21/09 05:43
7440-48-4	Cobalt	7.28	0.546	1.37	2	D	SW6010B	9J13004	10/21/09 05:43
7440-50-8	Copper	24.5	0.546	1.09	2	D	SW6010B	9J13004	10/21/09 05:43
7439-89-6	Iron	22900	3.28	10.9	2	D * E	SW6010B	9J13004	10/21/09 05:43
7439-92-1	Lead	18.3	0.164	0.328	2	D * E	SW6010B	9J13004	10/21/09 05:43
7439-95-4	Magnesium	18400	109	546	2	D	SW6010B	9J13004	10/21/09 05:43
7439-96-5	Manganese	744	0.328	1.64	2	D E	SW6010B	9J13004	10/21/09 05:43
7440-02-0	Nickel	22.5	0.546	1.09	2	D * N	SW6010B	9J13004	10/21/09 05:43
7440-09-7	Potassium	953	109	546	2	D	SW6010B	9J13004	10/21/09 05:43
7782-49-2	Selenium		0.820	1.37	5	U	SW6010B	9J13004	10/21/09 15:04
7440-22-4	Silver		0.109	0.546	2	U	SW6010B	9J13004	10/21/09 05:43
7440-23-5	Sodium	521	109	546	2	J D	SW6010B	9J13004	10/21/09 05:43
7440-28-0	Thallium		0.437	0.874	2	U N	SW6010B	9J13004	10/21/09 05:43
7440-62-2	Vanadium	18.4	0.546	1.37	2	D	SW6010B	9J13004	10/21/09 05:43
7440-66-6	Zinc	216	0.546	2.19	2	D *	SW6010B	9J13004	10/21/09 05:43

ANALYSIS DATA SHEET

NTC21SB14-SO-0001

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/27/09 09:30
% Solids: 81.84

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-29
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0618	0.0140	0.0356	1	*	SW7471A	9J14016	10/21/09 14:05
7429-90-5	Aluminum	29500	15.7	62.7	5	D	SW6010B	9J13004	10/21/09 05:48
7440-36-0	Antimony		1.57	4.70	5	U N	SW6010B	9J13004	10/21/09 05:48
7440-38-2	Arsenic	48.4	0.940	1.57	5	D * N	SW6010B	9J13004	10/21/09 05:48
7440-39-3	Barium	234	1.57	12.5	5	D E N	SW6010B	9J13004	10/21/09 05:48
7440-41-7	Beryllium	4.71	0.313	1.57	5	D * N	SW6010B	9J13004	10/21/09 05:48
7440-43-9	Cadmium	2.63	0.313	1.57	5	D	SW6010B	9J13004	10/21/09 05:48
7440-70-2	Calcium	85900	313	1570	5	D	SW6010B	9J13004	10/21/09 05:48
7440-47-3	Chromium	17.7	0.627	1.57	5	D N	SW6010B	9J13004	10/21/09 05:48
7440-48-4	Cobalt	5.29	1.57	3.92	5	D	SW6010B	9J13004	10/21/09 05:48
7440-50-8	Copper	50.6	1.57	3.13	5	D	SW6010B	9J13004	10/21/09 05:48
7439-89-6	Iron	47000	9.40	31.3	5	D * E	SW6010B	9J13004	10/21/09 05:48
7439-92-1	Lead	67.2	0.470	0.940	5	D * E	SW6010B	9J13004	10/21/09 05:48
7439-95-4	Magnesium	3940	313	1570	5	D	SW6010B	9J13004	10/21/09 05:48
7439-96-5	Manganese	2420	0.940	4.70	5	D E	SW6010B	9J13004	10/21/09 05:48
7440-02-0	Nickel	20.1	1.57	3.13	5	D * N	SW6010B	9J13004	10/21/09 05:48
7440-09-7	Potassium	1930	313	1570	5	D	SW6010B	9J13004	10/21/09 05:48
7782-49-2	Selenium		0.940	1.57	5	U	SW6010B	9J13004	10/21/09 05:48
7440-22-4	Silver		0.313	1.57	5	U	SW6010B	9J13004	10/21/09 05:48
7440-23-5	Sodium	1590	313	1570	5	D	SW6010B	9J13004	10/21/09 05:48
7440-28-0	Thallium		2.82	2.82	5	U N	SW6010B	9J13004	10/21/09 05:48
7440-62-2	Vanadium	15.8	1.57	3.92	5	D	SW6010B	9J13004	10/21/09 05:48
7440-66-6	Zinc	186	1.57	6.27	5	D *	SW6010B	9J13004	10/21/09 05:48

ANALYSIS DATA SHEET

NTC21SB14-SO-0204

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/27/09 09:40
% Solids: 75.25

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-30
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0835	0.0179	0.0454	1	*	SW7471A	9J14016	10/21/09 14:11
7429-90-5	Aluminum	16400	6.45	25.8	2	D	SW6010B	9J13004	10/21/09 06:13
7440-36-0	Antimony		0.645	1.94	2	U N	SW6010B	9J13004	10/21/09 06:13
7440-38-2	Arsenic	9.51	0.387	0.645	2	D * N	SW6010B	9J13004	10/21/09 06:13
7440-39-3	Barium	119	0.645	5.16	2	D E N	SW6010B	9J13004	10/21/09 06:13
7440-41-7	Beryllium	1.16	0.129	0.645	2	D * N	SW6010B	9J13004	10/21/09 06:13
7440-43-9	Cadmium	0.799	0.129	0.645	2	D	SW6010B	9J13004	10/21/09 06:13
7440-70-2	Calcium	6730	129	645	2	D	SW6010B	9J13004	10/21/09 06:13
7440-47-3	Chromium	22.3	0.258	0.645	2	D N	SW6010B	9J13004	10/21/09 06:13
7440-48-4	Cobalt	9.89	0.645	1.61	2	D	SW6010B	9J13004	10/21/09 06:13
7440-50-8	Copper	40.5	0.645	1.29	2	D	SW6010B	9J13004	10/21/09 06:13
7439-89-6	Iron	34900	3.87	12.9	2	D * E	SW6010B	9J13004	10/21/09 06:13
7439-92-1	Lead	21.4	0.194	0.387	2	D * E	SW6010B	9J13004	10/21/09 06:13
7439-95-4	Magnesium	4070	129	645	2	D	SW6010B	9J13004	10/21/09 06:13
7439-96-5	Manganese	1200	0.387	1.94	2	D E	SW6010B	9J13004	10/21/09 06:13
7440-02-0	Nickel	33.0	0.645	1.29	2	D * N	SW6010B	9J13004	10/21/09 06:13
7440-09-7	Potassium	1430	129	645	2	D	SW6010B	9J13004	10/21/09 06:13
7782-49-2	Selenium		0.387	0.645	2	U	SW6010B	9J13004	10/21/09 06:13
7440-22-4	Silver		0.129	0.645	2	U	SW6010B	9J13004	10/21/09 06:13
7440-23-5	Sodium	801	129	645	2	D	SW6010B	9J13004	10/21/09 06:13
7440-28-0	Thallium		1.03	1.03	2	U N	SW6010B	9J13004	10/21/09 06:13
7440-62-2	Vanadium	28.0	0.645	1.61	2	D	SW6010B	9J13004	10/21/09 06:13
7440-66-6	Zinc	130	0.645	2.58	2	D *	SW6010B	9J13004	10/21/09 06:13

ANALYSIS DATA SHEET

NTC21SB15-SO-0001

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/27/09 10:00
% Solids: 83.27

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-31
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0472	0.0156	0.0396	1	*	SW7471A	9J14016	10/21/09 14:12
7429-90-5	Aluminum	18400	14.9	59.5	5	D	SW6010B	9J13004	10/21/09 06:31
7440-36-0	Antimony		1.49	4.46	5	U N	SW6010B	9J13004	10/21/09 06:31
7440-38-2	Arsenic	48.3	0.892	1.49	5	D * N	SW6010B	9J13004	10/21/09 06:31
7440-39-3	Barium	164	1.49	11.9	5	D E N	SW6010B	9J13004	10/21/09 06:31
7440-41-7	Beryllium	3.69	0.297	1.49	5	D * N	SW6010B	9J13004	10/21/09 06:31
7440-43-9	Cadmium	4.18	0.297	1.49	5	D	SW6010B	9J13004	10/21/09 06:31
7440-70-2	Calcium	114000	297	1490	5	D	SW6010B	9J13004	10/21/09 06:31
7440-47-3	Chromium	10.8	0.595	1.49	5	D N	SW6010B	9J13004	10/21/09 06:31
7440-48-4	Cobalt	9.12	1.49	3.72	5	D	SW6010B	9J13004	10/21/09 06:31
7440-50-8	Copper	45.8	1.49	2.97	5	D	SW6010B	9J13004	10/21/09 06:31
7439-89-6	Iron	69500	8.92	29.7	5	D * E	SW6010B	9J13004	10/21/09 06:31
7439-92-1	Lead	31.7	0.446	0.892	5	D * E	SW6010B	9J13004	10/21/09 06:31
7439-95-4	Magnesium	21500	297	1490	5	D	SW6010B	9J13004	10/21/09 06:31
7439-96-5	Manganese	1250	0.892	4.46	5	D E	SW6010B	9J13004	10/21/09 06:31
7440-02-0	Nickel	34.6	1.49	2.97	5	D * N	SW6010B	9J13004	10/21/09 06:31
7440-09-7	Potassium	763	297	1490	5	J D	SW6010B	9J13004	10/21/09 06:31
7782-49-2	Selenium		0.892	1.49	5	U	SW6010B	9J13004	10/21/09 06:31
7440-22-4	Silver		0.297	1.49	5	U	SW6010B	9J13004	10/21/09 06:31
7440-23-5	Sodium	1020	297	1490	5	J D	SW6010B	9J13004	10/21/09 06:31
7440-28-0	Thallium		0.892	2.38	5	U N	SW6010B	9J13004	10/21/09 06:31
7440-62-2	Vanadium	15.1	1.49	3.72	5	D	SW6010B	9J13004	10/21/09 06:31
7440-66-6	Zinc	352	1.49	5.95	5	D *	SW6010B	9J13004	10/21/09 06:31

ANALYSIS DATA SHEET

NTC21SB15-SO-0204

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/27/09 10:10
% Solids: 77.18

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-32
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0206	0.0140	0.0356	1	J *	SW7471A	9J14016	10/21/09 14:13
7429-90-5	Aluminum	24300	16.8	67.1	5	D	SW6010B	9J13004	10/21/09 15:18
7440-36-0	Antimony		0.671	2.01	2	U N	SW6010B	9J13004	10/21/09 06:35
7440-38-2	Arsenic	85.0	0.403	0.671	2	D * N	SW6010B	9J13004	10/21/09 06:35
7440-39-3	Barium	157	0.671	5.37	2	D E N	SW6010B	9J13004	10/21/09 06:35
7440-41-7	Beryllium	3.77	0.134	0.671	2	D * N	SW6010B	9J13004	10/21/09 06:35
7440-43-9	Cadmium	9.62	0.134	0.671	2	D	SW6010B	9J13004	10/21/09 06:35
7440-70-2	Calcium	63600	336	1680	5	D	SW6010B	9J13004	10/21/09 15:18
7440-47-3	Chromium	16.7	0.269	0.671	2	D N	SW6010B	9J13004	10/21/09 06:35
7440-48-4	Cobalt	22.0	0.671	1.68	2	D	SW6010B	9J13004	10/21/09 06:35
7440-50-8	Copper	110	0.671	1.34	2	D	SW6010B	9J13004	10/21/09 06:35
7439-89-6	Iron	65800	4.03	13.4	2	D * E	SW6010B	9J13004	10/21/09 06:35
7439-92-1	Lead	19.9	0.503	1.01	5	D * E	SW6010B	9J13004	10/21/09 15:18
7439-95-4	Magnesium	3860	134	671	2	D	SW6010B	9J13004	10/21/09 06:35
7439-96-5	Manganese	1230	0.403	2.01	2	D E	SW6010B	9J13004	10/21/09 06:35
7440-02-0	Nickel	44.4	0.671	1.34	2	D * N	SW6010B	9J13004	10/21/09 06:35
7440-09-7	Potassium	1180	134	671	2	D	SW6010B	9J13004	10/21/09 06:35
7782-49-2	Selenium	1.31	0.403	0.671	2	D	SW6010B	9J13004	10/21/09 06:35
7440-22-4	Silver		0.134	0.671	2	U	SW6010B	9J13004	10/21/09 06:35
7440-23-5	Sodium	1310	134	671	2	D	SW6010B	9J13004	10/21/09 06:35
7440-28-0	Thallium		1.07	1.07	2	U N	SW6010B	9J13004	10/21/09 06:35
7440-62-2	Vanadium	21.4	0.671	1.68	2	D	SW6010B	9J13004	10/21/09 06:35
7440-66-6	Zinc	263	1.68	6.71	5	D *	SW6010B	9J13004	10/21/09 15:18

ANALYSIS DATA SHEET

NTC21SB16-SO-0001

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/27/09 17:00
% Solids: 89.07

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-33
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0702	0.0156	0.0397	1	*	SW7471A	9J14017	10/21/09 14:17
7429-90-5	Aluminum	5180	13.1	52.5	5	D	SW6010B	9J13004	10/21/09 06:40
7440-36-0	Antimony		1.31	3.93	5	U N	SW6010B	9J13004	10/21/09 06:40
7440-38-2	Arsenic	4.86	0.787	1.31	5	D * N	SW6010B	9J13004	10/21/09 06:40
7440-39-3	Barium	55.9	1.31	10.5	5	D E N	SW6010B	9J13004	10/21/09 06:40
7440-41-7	Beryllium	1.04	0.262	1.31	5	J D * N	SW6010B	9J13004	10/21/09 06:40
7440-43-9	Cadmium		0.262	1.31	5	U	SW6010B	9J13004	10/21/09 06:40
7440-70-2	Calcium	113000	262	1310	5	D	SW6010B	9J13004	10/21/09 06:40
7440-47-3	Chromium	8.17	0.525	1.31	5	D N	SW6010B	9J13004	10/21/09 06:40
7440-48-4	Cobalt	5.51	1.31	3.28	5	D	SW6010B	9J13004	10/21/09 06:40
7440-50-8	Copper	17.0	1.31	2.62	5	D	SW6010B	9J13004	10/21/09 06:40
7439-89-6	Iron	17300	7.87	26.2	5	D * E	SW6010B	9J13004	10/21/09 06:40
7439-92-1	Lead	29.2	0.393	0.787	5	D * E	SW6010B	9J13004	10/21/09 06:40
7439-95-4	Magnesium	62900	262	1310	5	D	SW6010B	9J13004	10/21/09 06:40
7439-96-5	Manganese	321	0.787	3.93	5	D E	SW6010B	9J13004	10/21/09 06:40
7440-02-0	Nickel	13.2	1.31	2.62	5	D * N	SW6010B	9J13004	10/21/09 06:40
7440-09-7	Potassium	753	262	1310	5	J D	SW6010B	9J13004	10/21/09 06:40
7782-49-2	Selenium		1.05	1.31	5	U	SW6010B	9J13004	10/21/09 06:40
7440-22-4	Silver		0.262	1.31	5	U	SW6010B	9J13004	10/21/09 06:40
7440-23-5	Sodium	1260	262	1310	5	J D	SW6010B	9J13004	10/21/09 06:40
7440-28-0	Thallium		0.787	2.10	5	U N	SW6010B	9J13004	10/21/09 06:40
7440-62-2	Vanadium	11.5	1.31	3.28	5	D	SW6010B	9J13004	10/21/09 06:40
7440-66-6	Zinc	73.6	1.31	5.25	5	D *	SW6010B	9J13004	10/21/09 06:40

ANALYSIS DATA SHEET

NTC21SB16-SO-0204

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/27/09 16:50
% Solids: 77.43

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-34
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0711	0.0153	0.0387	1	*	SW7471A	9J14017	10/21/09 14:19
7429-90-5	Aluminum	18200	5.95	23.8	2	D	SW6010B	9J13004	10/21/09 06:45
7440-36-0	Antimony		0.595	1.79	2	U N	SW6010B	9J13004	10/21/09 06:45
7440-38-2	Arsenic	9.10	0.357	0.595	2	D * N	SW6010B	9J13004	10/21/09 06:45
7440-39-3	Barium	99.5	0.595	4.76	2	D E N	SW6010B	9J13004	10/21/09 06:45
7440-41-7	Beryllium	1.27	0.119	0.595	2	D * N	SW6010B	9J13004	10/21/09 06:45
7440-43-9	Cadmium	0.569	0.119	0.595	2	J D	SW6010B	9J13004	10/21/09 06:45
7440-70-2	Calcium	4530	119	595	2	D	SW6010B	9J13004	10/21/09 06:45
7440-47-3	Chromium	26.8	0.238	0.595	2	D N	SW6010B	9J13004	10/21/09 06:45
7440-48-4	Cobalt	10.6	0.595	1.49	2	D	SW6010B	9J13004	10/21/09 06:45
7440-50-8	Copper	39.8	0.595	1.19	2	D	SW6010B	9J13004	10/21/09 06:45
7439-89-6	Iron	34800	3.57	11.9	2	D * E	SW6010B	9J13004	10/21/09 06:45
7439-92-1	Lead	21.0	0.179	0.357	2	D * E	SW6010B	9J13004	10/21/09 06:45
7439-95-4	Magnesium	4640	119	595	2	D	SW6010B	9J13004	10/21/09 06:45
7439-96-5	Manganese	863	0.357	1.79	2	D E	SW6010B	9J13004	10/21/09 06:45
7440-02-0	Nickel	39.2	0.595	1.19	2	D * N	SW6010B	9J13004	10/21/09 06:45
7440-09-7	Potassium	1930	119	595	2	D	SW6010B	9J13004	10/21/09 06:45
7782-49-2	Selenium		0.357	0.595	2	U	SW6010B	9J13004	10/21/09 06:45
7440-22-4	Silver		0.119	0.595	2	U	SW6010B	9J13004	10/21/09 06:45
7440-23-5	Sodium	3370	119	595	2	D	SW6010B	9J13004	10/21/09 06:45
7440-28-0	Thallium		0.595	0.952	2	U N	SW6010B	9J13004	10/21/09 06:45
7440-62-2	Vanadium	26.9	0.595	1.49	2	D	SW6010B	9J13004	10/21/09 06:45
7440-66-6	Zinc	186	0.595	2.38	2	D *	SW6010B	9J13004	10/21/09 06:45

ANALYSIS DATA SHEET

NTC21SB17-SO-0001

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/26/09 13:26
% Solids: 82.76

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-11
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0477	0.0147	0.0374	1		SW7471A	9J09009	10/12/09 13:24
7429-90-5	Aluminum	11400	5.75	23.0	2	D	SW6010B	9J13003	10/21/09 04:08
7440-36-0	Antimony		0.575	1.73	2	U	SW6010B	9J13003	10/21/09 04:08
7440-38-2	Arsenic	8.23	0.345	0.575	2	D	SW6010B	9J13003	10/21/09 04:08
7440-39-3	Barium	71.6	0.575	4.60	2	D	SW6010B	9J13003	10/21/09 04:08
7440-41-7	Beryllium	0.836	0.115	0.575	2	D	SW6010B	9J13003	10/21/09 04:08
7440-43-9	Cadmium	0.845	0.115	0.575	2	D	SW6010B	9J13003	10/21/09 04:08
7440-70-2	Calcium	33600	115	575	2	D	SW6010B	9J13003	10/21/09 04:08
7440-47-3	Chromium	17.4	0.230	0.575	2	D	SW6010B	9J13003	10/21/09 04:08
7440-48-4	Cobalt	8.50	0.575	1.44	2	D	SW6010B	9J13003	10/21/09 04:08
7440-50-8	Copper	26.4	0.575	1.15	2	D	SW6010B	9J13003	10/21/09 04:08
7439-89-6	Iron	27200	3.45	11.5	2	D	SW6010B	9J13003	10/21/09 04:08
7439-92-1	Lead	29.2	0.173	0.345	2	D	SW6010B	9J13003	10/21/09 04:08
7439-95-4	Magnesium	20400	115	575	2	D	SW6010B	9J13003	10/21/09 04:08
7439-96-5	Manganese	464	0.345	1.73	2	D	SW6010B	9J13003	10/21/09 04:08
7440-02-0	Nickel	21.7	0.575	1.15	2	D	SW6010B	9J13003	10/21/09 04:08
7440-09-7	Potassium	1270	115	575	2	D	SW6010B	9J13003	10/21/09 04:08
7782-49-2	Selenium		0.345	0.575	2	U	SW6010B	9J13003	10/21/09 04:08
7440-22-4	Silver		0.115	0.575	2	U	SW6010B	9J13003	10/21/09 04:08
7440-23-5	Sodium	2080	115	575	2	D	SW6010B	9J13003	10/21/09 04:08
7440-28-0	Thallium		0.345	0.921	2	U	SW6010B	9J13003	10/21/09 04:08
7440-62-2	Vanadium	23.8	0.575	1.44	2	D	SW6010B	9J13003	10/21/09 04:08
7440-66-6	Zinc	134	0.575	2.30	2	D	SW6010B	9J13003	10/21/09 04:08

ANALYSIS DATA SHEET

NTC21SB17-SO-0507

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/26/09 13:32
% Solids: 89.58

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-12
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0156	0.0132	0.0335	1	J *	SW7471A	9J14016	10/21/09 13:05
7429-90-5	Aluminum	3720	13.4	53.4	5	D	SW6010B	9J13003	10/21/09 14:02
7440-36-0	Antimony		0.534	1.60	2	U	SW6010B	9J13003	10/21/09 04:13
7440-38-2	Arsenic	12.5	0.320	0.534	2	D	SW6010B	9J13003	10/21/09 04:13
7440-39-3	Barium	23.4	0.534	4.27	2	D	SW6010B	9J13003	10/21/09 04:13
7440-41-7	Beryllium	0.244	0.107	0.534	2	J D	SW6010B	9J13003	10/21/09 04:13
7440-43-9	Cadmium	0.175	0.107	0.534	2	J D	SW6010B	9J13003	10/21/09 04:13
7440-70-2	Calcium	68400	267	1340	5	D	SW6010B	9J13003	10/21/09 14:02
7440-47-3	Chromium	7.90	0.214	0.534	2	D	SW6010B	9J13003	10/21/09 04:13
7440-48-4	Cobalt	5.71	0.534	1.34	2	D	SW6010B	9J13003	10/21/09 04:13
7440-50-8	Copper	29.3	0.534	1.07	2	D	SW6010B	9J13003	10/21/09 04:13
7439-89-6	Iron	29400	3.20	10.7	2	D	SW6010B	9J13003	10/21/09 04:13
7439-92-1	Lead	19.6	0.401	0.801	5	D	SW6010B	9J13003	10/21/09 14:02
7439-95-4	Magnesium	42600	107	534	2	D	SW6010B	9J13003	10/21/09 04:13
7439-96-5	Manganese	438	0.320	1.60	2	D	SW6010B	9J13003	10/21/09 04:13
7440-02-0	Nickel	16.6	0.534	1.07	2	D	SW6010B	9J13003	10/21/09 04:13
7440-09-7	Potassium	864	107	534	2	D	SW6010B	9J13003	10/21/09 04:13
7782-49-2	Selenium		0.801	1.34	5	U	SW6010B	9J13003	10/21/09 14:02
7440-22-4	Silver		0.107	0.534	2	U	SW6010B	9J13003	10/21/09 04:13
7440-23-5	Sodium	984	107	534	2	D	SW6010B	9J13003	10/21/09 04:13
7440-28-0	Thallium		0.320	0.855	2	U	SW6010B	9J13003	10/21/09 04:13
7440-62-2	Vanadium	11.5	0.534	1.34	2	D	SW6010B	9J13003	10/21/09 04:13
7440-66-6	Zinc	56.8	1.34	5.34	5	D	SW6010B	9J13003	10/21/09 14:02

ANALYSIS DATA SHEET

NTC21SB18-SO-0001

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/26/09 12:47
% Solids: 85.82

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-13
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0641	0.0126	0.0330	1	*	SW7471A	9J14016	10/21/09 13:39
7429-90-5	Aluminum	11800	5.95	23.8	2	D	SW6010B	9J13003	10/21/09 04:18
7440-36-0	Antimony		0.595	1.78	2	U	SW6010B	9J13003	10/21/09 04:18
7440-38-2	Arsenic	7.73	0.357	0.595	2	D	SW6010B	9J13003	10/21/09 04:18
7440-39-3	Barium	97.7	0.595	4.76	2	D	SW6010B	9J13003	10/21/09 04:18
7440-41-7	Beryllium	0.774	0.119	0.595	2	D	SW6010B	9J13003	10/21/09 04:18
7440-43-9	Cadmium	0.621	0.119	0.595	2	D	SW6010B	9J13003	10/21/09 04:18
7440-70-2	Calcium	10700	119	595	2	D	SW6010B	9J13003	10/21/09 04:18
7440-47-3	Chromium	17.1	0.238	0.595	2	D	SW6010B	9J13003	10/21/09 04:18
7440-48-4	Cobalt	11.5	0.595	1.49	2	D	SW6010B	9J13003	10/21/09 04:18
7440-50-8	Copper	27.8	0.595	1.19	2	D	SW6010B	9J13003	10/21/09 04:18
7439-89-6	Iron	23500	3.57	11.9	2	D	SW6010B	9J13003	10/21/09 04:18
7439-92-1	Lead	27.2	0.178	0.357	2	D	SW6010B	9J13003	10/21/09 04:18
7439-95-4	Magnesium	6180	119	595	2	D	SW6010B	9J13003	10/21/09 04:18
7439-96-5	Manganese	1070	0.357	1.78	2	D	SW6010B	9J13003	10/21/09 04:18
7440-02-0	Nickel	21.3	0.595	1.19	2	D	SW6010B	9J13003	10/21/09 04:18
7440-09-7	Potassium	1130	119	595	2	D	SW6010B	9J13003	10/21/09 04:18
7782-49-2	Selenium		0.357	0.595	2	U	SW6010B	9J13003	10/21/09 04:18
7440-22-4	Silver		0.119	0.595	2	U	SW6010B	9J13003	10/21/09 04:18
7440-23-5	Sodium	1100	119	595	2	D	SW6010B	9J13003	10/21/09 04:18
7440-28-0	Thallium		2.08	2.38	5	U	SW6010B	9J13003	10/21/09 14:07
7440-62-2	Vanadium	21.8	0.595	1.49	2	D	SW6010B	9J13003	10/21/09 04:18
7440-66-6	Zinc	111	0.595	2.38	2	D	SW6010B	9J13003	10/21/09 04:18

ANALYSIS DATA SHEET

NTC21SB18-SO-0507

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/26/09 12:59
% Solids: 89.26

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-14
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0151	0.0382	1	U *	SW7471A	9J14016	10/21/09 13:08
7429-90-5	Aluminum	4230	14.2	56.9	5	D	SW6010B	9J13003	10/21/09 14:12
7440-36-0	Antimony		0.569	1.71	2	U	SW6010B	9J13003	10/21/09 04:22
7440-38-2	Arsenic	8.65	0.341	0.569	2	D	SW6010B	9J13003	10/21/09 04:22
7440-39-3	Barium	18.6	0.569	4.55	2	D	SW6010B	9J13003	10/21/09 04:22
7440-41-7	Beryllium	0.266	0.114	0.569	2	J D	SW6010B	9J13003	10/21/09 04:22
7440-43-9	Cadmium	0.153	0.114	0.569	2	J D	SW6010B	9J13003	10/21/09 04:22
7440-70-2	Calcium	79300	284	1420	5	D	SW6010B	9J13003	10/21/09 14:12
7440-47-3	Chromium	8.66	0.227	0.569	2	D	SW6010B	9J13003	10/21/09 04:22
7440-48-4	Cobalt	7.93	0.569	1.42	2	D	SW6010B	9J13003	10/21/09 04:22
7440-50-8	Copper	22.4	0.569	1.14	2	D	SW6010B	9J13003	10/21/09 04:22
7439-89-6	Iron	21100	3.41	11.4	2	D	SW6010B	9J13003	10/21/09 04:22
7439-92-1	Lead	14.6	0.427	0.853	5	D	SW6010B	9J13003	10/21/09 14:12
7439-95-4	Magnesium	48800	114	569	2	D	SW6010B	9J13003	10/21/09 04:22
7439-96-5	Manganese	887	0.341	1.71	2	D	SW6010B	9J13003	10/21/09 04:22
7440-02-0	Nickel	18.6	0.569	1.14	2	D	SW6010B	9J13003	10/21/09 04:22
7440-09-7	Potassium	936	114	569	2	D	SW6010B	9J13003	10/21/09 04:22
7782-49-2	Selenium		1.71	1.71	5	U	SW6010B	9J13003	10/21/09 14:12
7440-22-4	Silver		0.114	0.569	2	U	SW6010B	9J13003	10/21/09 04:22
7440-23-5	Sodium	347	114	569	2	J D	SW6010B	9J13003	10/21/09 04:22
7440-28-0	Thallium		0.569	0.910	2	U	SW6010B	9J13003	10/21/09 04:22
7440-62-2	Vanadium	12.9	0.569	1.42	2	D	SW6010B	9J13003	10/21/09 04:22
7440-66-6	Zinc	68.0	1.42	5.69	5	D	SW6010B	9J13003	10/21/09 14:12

ANALYSIS DATA SHEET

NTC21SB19-SO-0001

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/27/09 17:40
% Solids: 92.08

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-35
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0374	0.0141	0.0358	1	*	SW7471A	9J14017	10/21/09 14:20
7429-90-5	Aluminum	3030	12.9	51.5	5	D	SW6010B	9J13004	10/21/09 15:43
7440-36-0	Antimony		0.515	1.54	2	U N	SW6010B	9J13004	10/21/09 06:50
7440-38-2	Arsenic	5.95	0.309	0.515	2	D * N	SW6010B	9J13004	10/21/09 06:50
7440-39-3	Barium	29.3	0.515	4.12	2	D E N	SW6010B	9J13004	10/21/09 06:50
7440-41-7	Beryllium	0.290	0.103	0.515	2	J D * N	SW6010B	9J13004	10/21/09 06:50
7440-43-9	Cadmium	1.25	0.257	1.29	5	J D	SW6010B	9J13004	10/21/09 15:43
7440-70-2	Calcium	120000	257	1290	5	D	SW6010B	9J13004	10/21/09 15:43
7440-47-3	Chromium	5.38	0.515	1.29	5	D N	SW6010B	9J13004	10/21/09 15:43
7440-48-4	Cobalt	3.55	0.515	1.29	2	D	SW6010B	9J13004	10/21/09 06:50
7440-50-8	Copper	16.8	0.515	1.03	2	D	SW6010B	9J13004	10/21/09 06:50
7439-89-6	Iron	18500	3.09	10.3	2	D * E	SW6010B	9J13004	10/21/09 06:50
7439-92-1	Lead	60.3	0.386	0.772	5	D * E	SW6010B	9J13004	10/21/09 15:43
7439-95-4	Magnesium	75800	257	1290	5	D	SW6010B	9J13004	10/21/09 15:43
7439-96-5	Manganese	327	0.309	1.54	2	D E	SW6010B	9J13004	10/21/09 06:50
7440-02-0	Nickel	9.26	0.515	1.03	2	D * N	SW6010B	9J13004	10/21/09 06:50
7440-09-7	Potassium	571	103	515	2	D	SW6010B	9J13004	10/21/09 06:50
7782-49-2	Selenium		0.772	1.29	5	U	SW6010B	9J13004	10/21/09 15:43
7440-22-4	Silver		0.103	0.515	2	U	SW6010B	9J13004	10/21/09 06:50
7440-23-5	Sodium	1750	103	515	2	D	SW6010B	9J13004	10/21/09 06:50
7440-28-0	Thallium		0.309	0.824	2	U N	SW6010B	9J13004	10/21/09 06:50
7440-62-2	Vanadium	8.94	0.515	1.29	2	D	SW6010B	9J13004	10/21/09 06:50
7440-66-6	Zinc	148	1.29	5.15	5	D *	SW6010B	9J13004	10/21/09 15:43

ANALYSIS DATA SHEET

NTC21SB19-SO-0204

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/27/09 17:50
% Solids: 83.11

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-36
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0627	0.0138	0.0350	1	*	SW7471A	9J14017	10/21/09 14:24
7429-90-5	Aluminum	14500	6.02	24.1	2	D	SW6010B	9J13004	10/21/09 06:54
7440-36-0	Antimony		0.602	1.80	2	U N	SW6010B	9J13004	10/21/09 06:54
7440-38-2	Arsenic	9.59	0.361	0.602	2	D * N	SW6010B	9J13004	10/21/09 06:54
7440-39-3	Barium	105	0.602	4.81	2	D E N	SW6010B	9J13004	10/21/09 06:54
7440-41-7	Beryllium	0.818	0.120	0.602	2	D * N	SW6010B	9J13004	10/21/09 06:54
7440-43-9	Cadmium	0.300	0.120	0.602	2	J D	SW6010B	9J13004	10/21/09 06:54
7440-70-2	Calcium	4280	120	602	2	D	SW6010B	9J13004	10/21/09 06:54
7440-47-3	Chromium	24.0	0.241	0.602	2	D N	SW6010B	9J13004	10/21/09 06:54
7440-48-4	Cobalt	11.3	0.602	1.50	2	D	SW6010B	9J13004	10/21/09 06:54
7440-50-8	Copper	25.3	0.602	1.20	2	D	SW6010B	9J13004	10/21/09 06:54
7439-89-6	Iron	33200	3.61	12.0	2	D * E	SW6010B	9J13004	10/21/09 06:54
7439-92-1	Lead	16.6	0.180	0.361	2	D * E	SW6010B	9J13004	10/21/09 06:54
7439-95-4	Magnesium	4910	120	602	2	D	SW6010B	9J13004	10/21/09 06:54
7439-96-5	Manganese	1190	0.361	1.80	2	D E	SW6010B	9J13004	10/21/09 06:54
7440-02-0	Nickel	31.9	0.602	1.20	2	D * N	SW6010B	9J13004	10/21/09 06:54
7440-09-7	Potassium	1660	120	602	2	D	SW6010B	9J13004	10/21/09 06:54
7782-49-2	Selenium		0.902	1.50	5	U	SW6010B	9J13004	10/21/09 15:52
7440-22-4	Silver		0.120	0.602	2	U	SW6010B	9J13004	10/21/09 06:54
7440-23-5	Sodium	1210	120	602	2	D	SW6010B	9J13004	10/21/09 06:54
7440-28-0	Thallium		0.842	0.963	2	U N	SW6010B	9J13004	10/21/09 06:54
7440-62-2	Vanadium	25.0	0.602	1.50	2	D	SW6010B	9J13004	10/21/09 06:54
7440-66-6	Zinc	80.4	0.602	2.41	2	D *	SW6010B	9J13004	10/21/09 06:54

ANALYSIS DATA SHEET

NTC21SB20-SO-0001

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/26/09 16:57
% Solids: 94.12

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-15
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0359	0.0126	0.0330	1	*	SW7471A	9J14016	10/21/09 13:40
7429-90-5	Aluminum	3530	13.8	55.3	5	D	SW6010B	9J13003	10/21/09 14:36
7440-36-0	Antimony		0.553	1.66	2	U	SW6010B	9J13003	10/21/09 04:27
7440-38-2	Arsenic	3.12	0.332	0.553	2	D	SW6010B	9J13003	10/21/09 04:27
7440-39-3	Barium	33.0	0.553	4.43	2	D	SW6010B	9J13003	10/21/09 04:27
7440-41-7	Beryllium	0.254	0.111	0.553	2	J D	SW6010B	9J13003	10/21/09 04:27
7440-43-9	Cadmium	0.678	0.277	1.38	5	J D	SW6010B	9J13003	10/21/09 14:36
7440-70-2	Calcium	133000	277	1380	5	D	SW6010B	9J13003	10/21/09 14:36
7440-47-3	Chromium	6.46	0.553	1.38	5	D	SW6010B	9J13003	10/21/09 14:36
7440-48-4	Cobalt	2.51	0.553	1.38	2	D	SW6010B	9J13003	10/21/09 04:27
7440-50-8	Copper	12.9	0.553	1.11	2	D	SW6010B	9J13003	10/21/09 04:27
7439-89-6	Iron	6660	3.32	11.1	2	D	SW6010B	9J13003	10/21/09 04:27
7439-92-1	Lead	16.7	0.415	0.830	5	D	SW6010B	9J13003	10/21/09 14:36
7439-95-4	Magnesium	70700	277	1380	5	D	SW6010B	9J13003	10/21/09 14:36
7439-96-5	Manganese	332	0.332	1.66	2	D	SW6010B	9J13003	10/21/09 04:27
7440-02-0	Nickel	5.56	0.553	1.11	2	D	SW6010B	9J13003	10/21/09 04:27
7440-09-7	Potassium	581	111	553	2	D	SW6010B	9J13003	10/21/09 04:27
7782-49-2	Selenium		1.38	1.38	5	U	SW6010B	9J13003	10/21/09 14:36
7440-22-4	Silver		0.111	0.553	2	U	SW6010B	9J13003	10/21/09 04:27
7440-23-5	Sodium	395	111	553	2	J D	SW6010B	9J13003	10/21/09 04:27
7440-28-0	Thallium		0.443	0.885	2	U	SW6010B	9J13003	10/21/09 04:27
7440-62-2	Vanadium	10.8	0.553	1.38	2	D	SW6010B	9J13003	10/21/09 04:27
7440-66-6	Zinc	46.5	1.38	5.53	5	D	SW6010B	9J13003	10/21/09 14:36

ANALYSIS DATA SHEET

NTC21SB20-SO-0406

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/26/09 17:02
% Solids: 86.65

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-16
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0499	0.0150	0.0381	1	*	SW7471A	9J14016	10/21/09 13:42
7429-90-5	Aluminum	8380	14.4	57.7	5	D	SW6010B	9J13003	10/21/09 14:45
7440-36-0	Antimony		0.577	1.73	2	U	SW6010B	9J13003	10/21/09 04:32
7440-38-2	Arsenic	8.39	0.346	0.577	2	D	SW6010B	9J13003	10/21/09 04:32
7440-39-3	Barium	59.5	0.577	4.62	2	D	SW6010B	9J13003	10/21/09 04:32
7440-41-7	Beryllium	0.479	0.115	0.577	2	J D	SW6010B	9J13003	10/21/09 04:32
7440-43-9	Cadmium	0.338	0.115	0.577	2	J D	SW6010B	9J13003	10/21/09 04:32
7440-70-2	Calcium	55900	289	1440	5	D	SW6010B	9J13003	10/21/09 14:45
7440-47-3	Chromium	13.5	0.231	0.577	2	D	SW6010B	9J13003	10/21/09 04:32
7440-48-4	Cobalt	9.18	0.577	1.44	2	D	SW6010B	9J13003	10/21/09 04:32
7440-50-8	Copper	27.3	0.577	1.15	2	D	SW6010B	9J13003	10/21/09 04:32
7439-89-6	Iron	21200	3.46	11.5	2	D	SW6010B	9J13003	10/21/09 04:32
7439-92-1	Lead	28.6	0.433	0.866	5	D	SW6010B	9J13003	10/21/09 14:45
7439-95-4	Magnesium	36600	115	577	2	D	SW6010B	9J13003	10/21/09 04:32
7439-96-5	Manganese	803	0.346	1.73	2	D	SW6010B	9J13003	10/21/09 04:32
7440-02-0	Nickel	21.5	0.577	1.15	2	D	SW6010B	9J13003	10/21/09 04:32
7440-09-7	Potassium	1010	115	577	2	D	SW6010B	9J13003	10/21/09 04:32
7782-49-2	Selenium		0.866	1.44	5	U	SW6010B	9J13003	10/21/09 14:45
7440-22-4	Silver		0.115	0.577	2	U	SW6010B	9J13003	10/21/09 04:32
7440-23-5	Sodium	1470	115	577	2	D	SW6010B	9J13003	10/21/09 04:32
7440-28-0	Thallium		0.577	0.923	2	U	SW6010B	9J13003	10/21/09 04:32
7440-62-2	Vanadium	19.5	0.577	1.44	2	D	SW6010B	9J13003	10/21/09 04:32
7440-66-6	Zinc	90.1	1.44	5.77	5	D	SW6010B	9J13003	10/21/09 14:45

ANALYSIS DATA SHEET

NTC21SB21-SO-0001

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/26/09 15:10
% Solids: 93.11

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-17
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	1.07	0.0140	0.0354	1	*	SW7471A	9J14016	10/21/09 13:43
7429-90-5	Aluminum	2590	13.8	55.1	5	D	SW6010B	9J13003	10/21/09 14:50
7440-36-0	Antimony	1.60	0.551	1.65	2	J D	SW6010B	9J13003	10/21/09 04:37
7440-38-2	Arsenic	4.87	0.330	0.551	2	D	SW6010B	9J13003	10/21/09 04:37
7440-39-3	Barium	50.5	0.551	4.41	2	D	SW6010B	9J13003	10/21/09 04:37
7440-41-7	Beryllium	0.332	0.110	0.551	2	J D	SW6010B	9J13003	10/21/09 04:37
7440-43-9	Cadmium	5.25	0.275	1.38	5	D	SW6010B	9J13003	10/21/09 14:50
7440-70-2	Calcium	130000	275	1380	5	D	SW6010B	9J13003	10/21/09 14:50
7440-47-3	Chromium	9.75	0.551	1.38	5	D	SW6010B	9J13003	10/21/09 14:50
7440-48-4	Cobalt	3.40	0.551	1.38	2	D	SW6010B	9J13003	10/21/09 04:37
7440-50-8	Copper	131	0.551	1.10	2	D	SW6010B	9J13003	10/21/09 04:37
7439-89-6	Iron	16400	3.30	11.0	2	D	SW6010B	9J13003	10/21/09 04:37
7439-92-1	Lead	124	0.413	0.826	5	D	SW6010B	9J13003	10/21/09 14:50
7439-95-4	Magnesium	75500	275	1380	5	D	SW6010B	9J13003	10/21/09 14:50
7439-96-5	Manganese	270	0.330	1.65	2	D	SW6010B	9J13003	10/21/09 04:37
7440-02-0	Nickel	32.0	0.551	1.10	2	D	SW6010B	9J13003	10/21/09 04:37
7440-09-7	Potassium	782	110	551	2	D	SW6010B	9J13003	10/21/09 04:37
7782-49-2	Selenium		1.38	1.38	5	U	SW6010B	9J13003	10/21/09 14:50
7440-22-4	Silver	0.233	0.110	0.551	2	J D	SW6010B	9J13003	10/21/09 04:37
7440-23-5	Sodium	530	110	551	2	J D	SW6010B	9J13003	10/21/09 04:37
7440-28-0	Thallium		0.330	0.881	2	U	SW6010B	9J13003	10/21/09 04:37
7440-62-2	Vanadium	14.2	0.551	1.38	2	D	SW6010B	9J13003	10/21/09 04:37
7440-66-6	Zinc	746	1.38	5.51	5	D	SW6010B	9J13003	10/21/09 14:50

ANALYSIS DATA SHEET

NTC21SB21-SO-0608

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/26/09 15:20
% Solids: 89.66

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-18
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0138	0.0132	0.0335	1	J *	SW7471A	9J14016	10/21/09 13:44
7429-90-5	Aluminum	3770	14.5	58.1	5	D	SW6010B	9J13003	10/21/09 15:00
7440-36-0	Antimony		0.581	1.74	2	U	SW6010B	9J13003	10/21/09 04:41
7440-38-2	Arsenic	5.70	0.349	0.581	2	D	SW6010B	9J13003	10/21/09 04:41
7440-39-3	Barium	12.4	0.581	4.65	2	D	SW6010B	9J13003	10/21/09 04:41
7440-41-7	Beryllium	0.225	0.116	0.581	2	J D	SW6010B	9J13003	10/21/09 04:41
7440-43-9	Cadmium	0.124	0.116	0.581	2	J D	SW6010B	9J13003	10/21/09 04:41
7440-70-2	Calcium	72300	290	1450	5	D	SW6010B	9J13003	10/21/09 15:00
7440-47-3	Chromium	8.23	0.232	0.581	2	D	SW6010B	9J13003	10/21/09 04:41
7440-48-4	Cobalt	4.85	0.581	1.45	2	D	SW6010B	9J13003	10/21/09 04:41
7440-50-8	Copper	16.0	0.581	1.16	2	D	SW6010B	9J13003	10/21/09 04:41
7439-89-6	Iron	14300	3.49	11.6	2	D	SW6010B	9J13003	10/21/09 04:41
7439-92-1	Lead	8.86	0.436	0.871	5	D	SW6010B	9J13003	10/21/09 15:00
7439-95-4	Magnesium	43300	116	581	2	D	SW6010B	9J13003	10/21/09 04:41
7439-96-5	Manganese	568	0.349	1.74	2	D	SW6010B	9J13003	10/21/09 04:41
7440-02-0	Nickel	13.9	0.581	1.16	2	D	SW6010B	9J13003	10/21/09 04:41
7440-09-7	Potassium	834	116	581	2	D	SW6010B	9J13003	10/21/09 04:41
7782-49-2	Selenium		1.16	1.45	5	U	SW6010B	9J13003	10/21/09 15:00
7440-22-4	Silver		0.116	0.581	2	U	SW6010B	9J13003	10/21/09 04:41
7440-23-5	Sodium	241	116	581	2	J D	SW6010B	9J13003	10/21/09 04:41
7440-28-0	Thallium		0.349	0.929	2	U	SW6010B	9J13003	10/21/09 04:41
7440-62-2	Vanadium	11.2	0.581	1.45	2	D	SW6010B	9J13003	10/21/09 04:41
7440-66-6	Zinc	49.7	1.45	5.81	5	D	SW6010B	9J13003	10/21/09 15:00

ANALYSIS DATA SHEET

NTC21SB22-SO-0001

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/27/09 12:00
% Solids: 80.96

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-37
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.233	0.0138	0.0349	1	*	SW7471A	9J14017	10/21/09 14:25
7429-90-5	Aluminum	4570	16.3	65.0	5	D	SW6010B	9J13004	10/21/09 06:59
7440-36-0	Antimony		1.63	4.88	5	U N	SW6010B	9J13004	10/21/09 06:59
7440-38-2	Arsenic	6.96	0.975	1.63	5	D * N	SW6010B	9J13004	10/21/09 06:59
7440-39-3	Barium	61.3	1.63	13.0	5	D E N	SW6010B	9J13004	10/21/09 06:59
7440-41-7	Beryllium	0.878	0.325	1.63	5	J D * N	SW6010B	9J13004	10/21/09 06:59
7440-43-9	Cadmium	1.13	0.325	1.63	5	J D	SW6010B	9J13004	10/21/09 06:59
7440-70-2	Calcium	97300	325	1630	5	D	SW6010B	9J13004	10/21/09 06:59
7440-47-3	Chromium	13.6	0.650	1.63	5	D N	SW6010B	9J13004	10/21/09 06:59
7440-48-4	Cobalt	3.84	1.63	4.06	5	J D	SW6010B	9J13004	10/21/09 06:59
7440-50-8	Copper	64.7	1.63	3.25	5	D	SW6010B	9J13004	10/21/09 06:59
7439-89-6	Iron	15300	9.75	32.5	5	D * E	SW6010B	9J13004	10/21/09 06:59
7439-92-1	Lead	215	0.488	0.975	5	D * E	SW6010B	9J13004	10/21/09 06:59
7439-95-4	Magnesium	43900	325	1630	5	D	SW6010B	9J13004	10/21/09 06:59
7439-96-5	Manganese	579	0.975	4.88	5	D E	SW6010B	9J13004	10/21/09 06:59
7440-02-0	Nickel	16.2	1.63	3.25	5	D * N	SW6010B	9J13004	10/21/09 06:59
7440-09-7	Potassium	493	325	1630	5	J D	SW6010B	9J13004	10/21/09 06:59
7782-49-2	Selenium		1.63	1.63	5	U	SW6010B	9J13004	10/21/09 06:59
7440-22-4	Silver		0.325	1.63	5	U	SW6010B	9J13004	10/21/09 06:59
7440-23-5	Sodium	933	325	1630	5	J D	SW6010B	9J13004	10/21/09 06:59
7440-28-0	Thallium		0.975	2.60	5	U N	SW6010B	9J13004	10/21/09 06:59
7440-62-2	Vanadium	18.1	1.63	4.06	5	D	SW6010B	9J13004	10/21/09 06:59
7440-66-6	Zinc	103	1.63	6.50	5	D *	SW6010B	9J13004	10/21/09 06:59

ANALYSIS DATA SHEET

NTC21SB22-SO-0204

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 09/27/09 12:10
% Solids: 80.39

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0910006-38
Received: 09/30/09 08:30

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.251	0.0173	0.0440	1	*	SW7471A	9J14017	10/21/09 14:26
7429-90-5	Aluminum	5240	16.4	65.5	5	D	SW6010B	9J13004	10/21/09 07:04
7440-36-0	Antimony		1.64	4.91	5	U N	SW6010B	9J13004	10/21/09 07:04
7440-38-2	Arsenic	5.69	0.982	1.64	5	D * N	SW6010B	9J13004	10/21/09 07:04
7440-39-3	Barium	56.2	1.64	13.1	5	D E N	SW6010B	9J13004	10/21/09 07:04
7440-41-7	Beryllium	1.08	0.327	1.64	5	J D * N	SW6010B	9J13004	10/21/09 07:04
7440-43-9	Cadmium	0.809	0.327	1.64	5	J D	SW6010B	9J13004	10/21/09 07:04
7440-70-2	Calcium	26700	327	1640	5	D	SW6010B	9J13004	10/21/09 07:04
7440-47-3	Chromium	13.0	0.655	1.64	5	D N	SW6010B	9J13004	10/21/09 07:04
7440-48-4	Cobalt	3.38	1.64	4.09	5	J D	SW6010B	9J13004	10/21/09 07:04
7440-50-8	Copper	57.2	1.64	3.27	5	D	SW6010B	9J13004	10/21/09 07:04
7439-89-6	Iron	31300	9.82	32.7	5	D * E	SW6010B	9J13004	10/21/09 07:04
7439-92-1	Lead	102	0.491	0.982	5	D * E	SW6010B	9J13004	10/21/09 07:04
7439-95-4	Magnesium	9310	327	1640	5	D	SW6010B	9J13004	10/21/09 07:04
7439-96-5	Manganese	263	0.982	4.91	5	D E	SW6010B	9J13004	10/21/09 07:04
7440-02-0	Nickel	17.9	1.64	3.27	5	D * N	SW6010B	9J13004	10/21/09 07:04
7440-09-7	Potassium	600	327	1640	5	J D	SW6010B	9J13004	10/21/09 07:04
7782-49-2	Selenium		0.982	1.64	5	U	SW6010B	9J13004	10/21/09 07:04
7440-22-4	Silver		0.327	1.64	5	U	SW6010B	9J13004	10/21/09 07:04
7440-23-5	Sodium	1300	327	1640	5	J D	SW6010B	9J13004	10/21/09 07:04
7440-28-0	Thallium		0.982	2.62	5	U N	SW6010B	9J13004	10/21/09 07:04
7440-62-2	Vanadium	15.8	1.64	4.09	5	D	SW6010B	9J13004	10/21/09 07:04
7440-66-6	Zinc	119	1.64	6.55	5	D *	SW6010B	9J13004	10/21/09 07:04

BEAVER ENGINEERING, INC.
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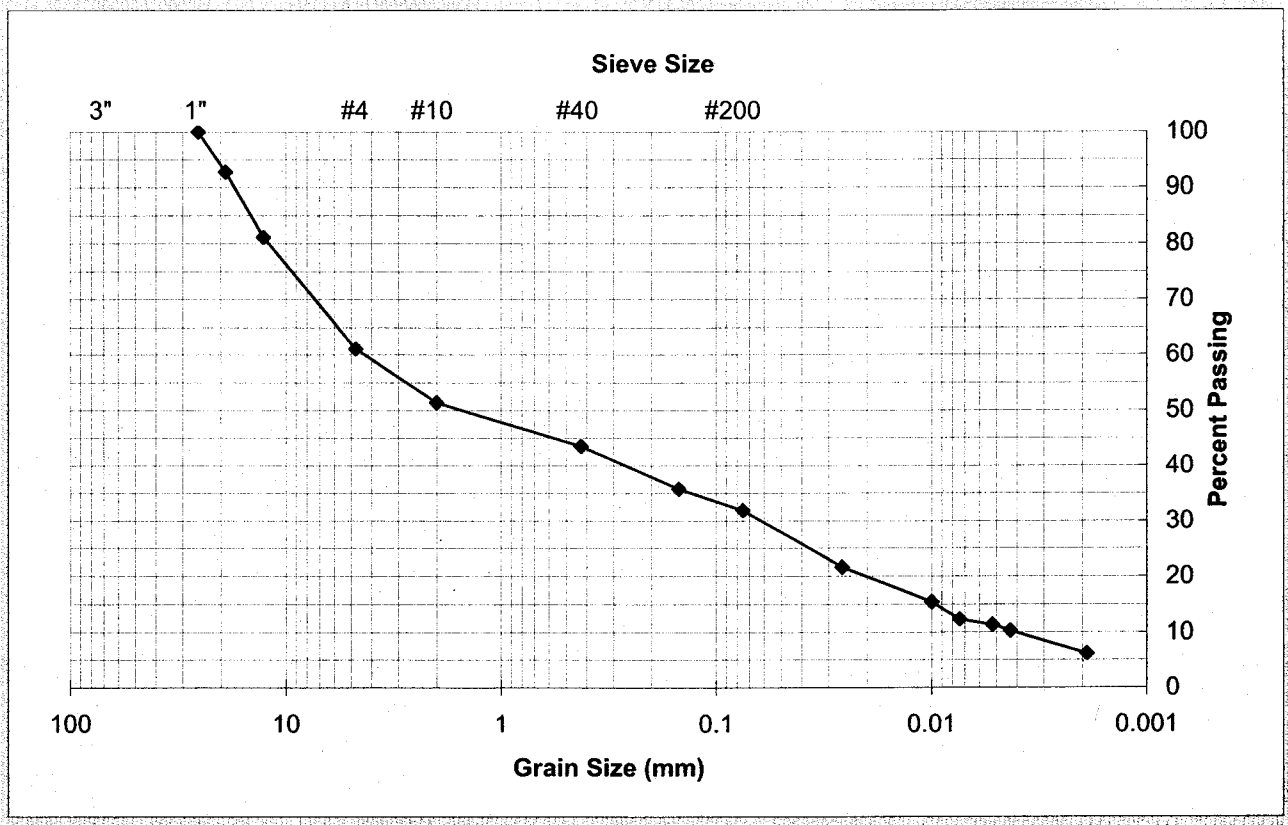
NASHVILLE, TN 37209
615-350-8124
e-mail: DATA@BEAVERENGINEERING.COM

CLIENT: **EMPIRICAL LABORATORIES**
PROJECT: **0910001 AND 0910006**
PROJECT#: **09-5970**

LABORATORY TESTING SUMMARY

	GRAIN SIZE DISTRIBUTION			
LAB ID #	**%GRAVEL**	**%SAND**	**%SILT**	**%CLAY**
0910001-06	0	45	49	6
0910001-08	7	37	36	20
0910001-21	1	11	63	25
0910006-49	39	29	21	11

GRAIN SIZE DISTRIBUTION REPORT
ASTM D 422



PERCENT PASSING

SAMPLE ID	Seive Sizes for Mechanical Analysis								Diameters for Hydrometer Analysis (mm)					
	1.0(in)	0.75(in)	0.50(in)	#4	#10	#40	#100	#200	0.026	0.01	0.007	0.0052	0.004	0.002
0910006-49	100	93	81	61	51	43	36	32	22	15	12	11	10	6
	39%			29%				21%				11%		
LAB ID J 3262	GRAVEL			SAND				SILT				CLAY		

BEAVER ENGINEERING

PROJECT: EMPIRICAL LABORATORIES 0910001 AND 0910006

PROJECT NUMBER: 09-5970

DATE: OCTOBER 13, 2009

APPENDIX C
SUPPORT DOCUMENTATION

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HERB	UG/KG	NTC21SB06-SO-0001	0910006-23	NM	09/27/2009	10/06/2009	10/10/2009	8.771	4.059	12.83
HERB	UG/KG	NTC21SB06-SO-0204	0910006-24	NM	09/27/2009	10/06/2009	10/10/2009	8.764	4.077	12.84
HERB	UG/KG	NTC21SB07-SO-0001	0910006-25	NM	09/27/2009	10/06/2009	10/10/2009	8.958	4.094	13.05
HERB	UG/KG	NTC21SB07-SO-0204	0910006-26	NM	09/27/2009	10/06/2009	10/10/2009	8.951	4.112	13.06
HERB	UG/KG	NTC21SB08-SO-0001	0910006-48	NM	09/28/2009	10/08/2009	10/11/2009	9.858	2.671	12.53
HERB	UG/KG	NTC21SB08-SO-0204	0910006-49	NM	09/28/2009	10/08/2009	10/11/2009	9.854	2.688	12.54
HERB	UG/KG	NTC21SB09-SO-0001	0910006-03	NM	09/26/2009	10/06/2009	10/16/2009	9.743	9.911	19.65
HERB	UG/KG	NTC21SB09-SO-0204	0910006-04	NM	09/26/2009	10/06/2009	10/24/2009	9.737	18.43	28.17
HERB	UG/KG	NTC21SB10-SO-0001	0910006-05	NM	09/26/2009	10/06/2009	10/16/2009	9.649	9.947	19.6
HERB	UG/KG	NTC21SB04-SO-0001	0910006-21	NM	09/27/2009	10/06/2009	10/10/2009	8.868	4.024	12.89
HERB	UG/L	RB-092909-01	0910006-51	NM	09/29/2009	10/01/2009	10/06/2009	2.242	4.317	6.56
HERB	UG/L	RB-092909-02	0910006-52	NM	09/29/2009	10/01/2009	10/06/2009	2.176	4.335	6.510
HERB	UG/L	SB-092909-01	0910006-53	NM	09/29/2009	10/01/2009	10/06/2009	2.281	4.353	6.633
HG	MG/KG	NTC21SB17-SO-0507	0910006-12	NM	09/26/2009	10/21/2009	10/21/2009	24.77	0.212	24.98
HG	MG/KG	NTC21SB11-SO-0204	0910006-08	NM	09/26/2009	10/09/2009	10/12/2009	12.7	3.102	15.8
HG	MG/KG	NTC21SB12-SO-0001	0910006-09	NM	09/26/2009	10/09/2009	10/12/2009	12.87	3.103	15.97
HG	MG/KG	NTC21SB12-SO-0204	0910006-10	NM	09/26/2009	10/09/2009	10/12/2009	12.86	3.103	15.97
HG	MG/KG	NTC21SB22-SO-0204	0910006-38	NM	09/27/2009	10/21/2009	10/21/2009	23.83	0.265	24.09

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	NTC21SB13-SO-0204	0910006-28	NM	09/27/2009	10/21/2009	10/21/2009	23.95	0.252	24.20
HG	MG/KG	NTC21SB13-SO-0001	0910006-27	NM	09/27/2009	10/21/2009	10/21/2009	23.96	0.251	24.21
HG	MG/KG	NTC21SB14-SO-0204	0910006-30	NM	09/27/2009	10/21/2009	10/21/2009	23.93	0.258	24.19
HG	MG/KG	NTC21SB15-SO-0001	0910006-31	NM	09/27/2009	10/21/2009	10/21/2009	23.92	0.258	24.18
HG	MG/KG	NTC21SB15-SO-0204	0910006-32	NM	09/27/2009	10/21/2009	10/21/2009	23.91	0.259	24.17
HG	MG/KG	NTC21SB16-SO-0001	0910006-33	NM	09/27/2009	10/21/2009	10/21/2009	23.63	0.259	23.89
HG	MG/KG	NTC21SB17-SO-0001	0910006-11	NM	09/26/2009	10/09/2009	10/12/2009	12.89	3.104	16
HG	MG/KG	NTC21SB18-SO-0001	0910006-13RE1	NM	09/26/2009	10/21/2009	10/21/2009	24.80	0.235	25.04
HG	MG/KG	NTC21SB18-SO-0507	0910006-14	NM	09/26/2009	10/21/2009	10/21/2009	24.79	0.214	25.01
HG	MG/KG	NTC21SB19-SO-0001	0910006-35	NM	09/27/2009	10/21/2009	10/21/2009	23.6	0.261	23.86
HG	MG/KG	NTC21SB19-SO-0204	0910006-36	NM	09/27/2009	10/21/2009	10/21/2009	23.59	0.264	23.86
HG	MG/KG	NTC21SB20-SO-0001	0910006-15RE1	NM	09/26/2009	10/21/2009	10/21/2009	24.63	0.236	24.86
HG	MG/KG	NTC21SB20-SO-0406	0910006-16RE1	NM	09/26/2009	10/21/2009	10/21/2009	24.62	0.237	24.86
HG	MG/KG	NTC21SB21-SO-0001	0910006-17	NM	09/26/2009	10/21/2009	10/21/2009	24.70	0.238	24.94
HG	MG/KG	NTC21SB21-SO-0608	0910006-18	NM	09/26/2009	10/21/2009	10/21/2009	24.69	0.239	24.93
HG	MG/KG	NTC21SB22-SO-0001	0910006-37	NM	09/27/2009	10/21/2009	10/21/2009	23.84	0.265	24.10
HG	MG/KG	NTC21SB11-SO-0001	0910006-07	NM	09/26/2009	10/09/2009	10/12/2009	12.7	3.101	15.8
HG	MG/KG	NTC21SB16-SO-0204	0910006-34	NM	09/27/2009	10/21/2009	10/21/2009	23.63	0.260	23.9

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	FD-092609-02	0910006-02	NM	09/26/2009	10/09/2009	10/12/2009	13.45	3.093	16.55
HG	MG/KG	NTC21SB14-SO-0001	0910006-29	NM	09/27/2009	10/21/2009	10/21/2009	23.94	0.253	24.19
HG	MG/KG	NTC21SB10-SO-0406	0910006-06	NM	09/26/2009	10/09/2009	10/12/2009	12.68	3.1	15.78
HG	MG/KG	FD-092609-01	0910006-01	NM	09/26/2009	10/09/2009	10/12/2009	13.45	3.092	16.55
HG	MG/KG	FD-092709-01	0910006-20	NM	09/27/2009	10/21/2009	10/21/2009	24.33	0.245	24.58
HG	MG/KG	FD-092809-01	0910006-40	NM	09/28/2009	10/21/2009	10/21/2009	23.34	0.266	23.60
HG	MG/KG	NTC21SB01-SO-0102	0910006-41	NM	09/28/2009	10/21/2009	10/21/2009	22.84	0.267	23.10
HG	MG/KG	NTC21SB02-SO-0001	0910006-42	NM	09/28/2009	10/21/2009	10/21/2009	22.91	0.268	23.17
HG	MG/KG	NTC21SB02-SO-0204	0910006-43	NM	09/28/2009	10/21/2009	10/21/2009	22.9	0.269	23.17
HG	MG/KG	NTC21SB03-SO-0001	0910006-44	NM	09/28/2009	10/21/2009	10/21/2009	22.82	0.273	23.1
HG	MG/KG	NTC21SB03-SO-0204	0910006-45	NM	09/28/2009	10/21/2009	10/21/2009	22.82	0.276	23.09
HG	MG/KG	NTC21SB04-SO-0001	0910006-21	NM	09/27/2009	10/21/2009	10/21/2009	23.8	0.246	24.04
HG	MG/KG	NTC21SB09-SO-0001	0910006-03	NM	09/26/2009	10/09/2009	10/12/2009	12.77	3.096	15.87
HG	MG/KG	NTC21SB05-SO-0001	0910006-46	NM	09/28/2009	10/21/2009	10/21/2009	22.92	0.276	23.2
HG	MG/KG	NTC21SB05-SO-0204	0910006-47	NM	09/28/2009	10/21/2009	10/21/2009	22.91	0.277	23.19
HG	MG/KG	NTC21SB06-SO-0001	0910006-23	NM	09/27/2009	10/21/2009	10/21/2009	23.70	0.248	23.95
HG	MG/KG	NTC21SB06-SO-0204	0910006-24	NM	09/27/2009	10/21/2009	10/21/2009	23.69	0.249	23.94
HG	MG/KG	NTC21SB07-SO-0001	0910006-25	NM	09/27/2009	10/21/2009	10/21/2009	23.89	0.249	24.14

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	NTC21SB07-SO-0204	0910006-26	NM	09/27/2009	10/21/2009	10/21/2009	23.88	0.251	24.13
HG	MG/KG	NTC21SB08-SO-0001	0910006-48	NM	09/28/2009	10/21/2009	10/21/2009	22.84	0.278	23.12
HG	MG/KG	NTC21SB08-SO-0204	0910006-49	NM	09/28/2009	10/21/2009	10/21/2009	22.84	0.279	23.12
HG	MG/KG	NTC21SB10-SO-0001	0910006-05	NM	09/26/2009	10/09/2009	10/12/2009	12.68	3.116	15.8
HG	MG/KG	NTC21SB09-SO-0204	0910006-04	NM	09/26/2009	10/09/2009	10/12/2009	12.77	3.097	15.86
HG	MG/KG	NTC21SB04-SO-0406	0910006-22	NM	09/27/2009	10/21/2009	10/21/2009	23.79	0.247	24.04
HG	UG/L	SB-092909-01	0910006-53	NM	09/29/2009	10/07/2009	10/12/2009	7.876	4.997	12.87
HG	UG/L	RB-092909-02	0910006-52	NM	09/29/2009	10/07/2009	10/12/2009	7.772	4.994	12.77
HG	UG/L	RB-092909-01	0910006-51	NM	09/29/2009	10/07/2009	10/12/2009	7.838	4.994	12.83
M	MG/KG	NTC21SB15-SO-0204	0910006-32	NM	09/27/2009	10/19/2009	10/21/2009	21.9	1.951	23.85
M	MG/KG	NTC21SB17-SO-0507	0910006-12	NM	09/26/2009	10/19/2009	10/21/2009	22.76	1.855	24.61
M	MG/KG	NTC21SB17-SO-0001	0910006-11	NM	09/26/2009	10/19/2009	10/21/2009	22.76	1.851	24.61
M	MG/KG	NTC21SB16-SO-0204	0910006-34	NM	09/27/2009	10/19/2009	10/21/2009	21.62	1.958	23.58
M	MG/KG	NTC21SB18-SO-0001	0910006-13	NM	09/26/2009	10/19/2009	10/21/2009	22.79	1.858	24.65
M	MG/KG	NTC21SB16-SO-0001	0910006-33	NM	09/27/2009	10/19/2009	10/21/2009	21.61	1.955	23.57
M	MG/KG	NTC21SB15-SO-0204	0910006-32RE1	NM	09/27/2009	10/19/2009	10/21/2009	21.9	2.315	24.21
M	MG/KG	NTC21SB17-SO-0507	0910006-12RE1	NM	09/26/2009	10/19/2009	10/21/2009	22.76	2.264	25.02
M	MG/KG	NTC21SB15-SO-0001	0910006-31	NM	09/27/2009	10/19/2009	10/21/2009	21.91	1.949	23.85

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	MG/KG	NTC21SB14-SO-0204	0910006-30	NM	09/27/2009	10/19/2009	10/21/2009	21.92	1.936	23.86
M	MG/KG	NTC21SB14-SO-0001	0910006-29	NM	09/27/2009	10/19/2009	10/21/2009	21.93	1.919	23.85
M	MG/KG	NTC21SB13-SO-0204	0910006-28RE1	NM	09/27/2009	10/19/2009	10/21/2009	21.94	2.305	24.25
M	MG/KG	NTC21SB12-SO-0204	0910006-10	NM	09/26/2009	10/19/2009	10/21/2009	22.73	1.849	24.58
M	MG/KG	NTC21SB13-SO-0001	0910006-27	NM	09/27/2009	10/19/2009	10/21/2009	21.95	1.913	23.86
M	MG/KG	NTC21SB18-SO-0001	0910006-13RE1	NM	09/26/2009	10/19/2009	10/21/2009	22.79	2.267	25.06
M	MG/KG	NTC21SB22-SO-0001	0910006-37	NM	09/27/2009	10/19/2009	10/21/2009	21.82	1.968	23.79
M	MG/KG	NTC21SB13-SO-0204	0910006-28	NM	09/27/2009	10/19/2009	10/21/2009	21.94	1.915	23.86
M	MG/KG	NTC21SB20-SO-0001	0910006-15RE1	NM	09/26/2009	10/19/2009	10/21/2009	22.61	2.287	24.90
M	MG/KG	NTC21SB11-SO-0204	0910006-08	NM	09/26/2009	10/19/2009	10/21/2009	22.56	1.833	24.4
M	MG/KG	NTC21SB11-SO-0001	0910006-07	NM	09/26/2009	10/19/2009	10/21/2009	22.56	1.829	24.39
M	MG/KG	NTC21SB22-SO-0204	0910006-38	NM	09/27/2009	10/19/2009	10/21/2009	21.82	1.972	23.79
M	MG/KG	NTC21SB21-SO-0608	0910006-18RE1	NM	09/26/2009	10/19/2009	10/21/2009	22.68	2.304	24.99
M	MG/KG	NTC21SB21-SO-0001	0910006-17RE1	NM	09/26/2009	10/19/2009	10/21/2009	22.69	2.297	24.99
M	MG/KG	NTC21SB21-SO-0001	0910006-17	NM	09/26/2009	10/19/2009	10/21/2009	22.69	1.872	24.56
M	MG/KG	NTC21SB21-SO-0608	0910006-18	NM	09/26/2009	10/19/2009	10/21/2009	22.68	1.874	24.56
M	MG/KG	NTC21SB20-SO-0406	0910006-16	NM	09/26/2009	10/19/2009	10/21/2009	22.61	1.868	24.48
M	MG/KG	NTC21SB18-SO-0507	0910006-14	NM	09/26/2009	10/19/2009	10/21/2009	22.78	1.861	24.64

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	MG/KG	NTC21SB20-SO-0001	0910006-15	NM	09/26/2009	10/19/2009	10/21/2009	22.61	1.865	24.48
M	MG/KG	NTC21SB19-SO-0204	0910006-36RE1	NM	09/27/2009	10/19/2009	10/21/2009	21.58	2.338	23.92
M	MG/KG	NTC21SB19-SO-0204	0910006-36	NM	09/27/2009	10/19/2009	10/21/2009	21.58	1.965	23.54
M	MG/KG	NTC21SB19-SO-0001	0910006-35RE1	NM	09/27/2009	10/19/2009	10/21/2009	21.59	2.332	23.92
M	MG/KG	NTC21SB19-SO-0001	0910006-35	NM	09/27/2009	10/19/2009	10/21/2009	21.59	1.962	23.55
M	MG/KG	NTC21SB18-SO-0507	0910006-14RE1	NM	09/26/2009	10/19/2009	10/21/2009	22.78	2.271	25.05
M	MG/KG	NTC21SB20-SO-0406	0910006-16RE1	NM	09/26/2009	10/19/2009	10/21/2009	22.61	2.294	24.90
M	MG/KG	NTC21SB01-SO-0102	0910006-41	NM	09/28/2009	10/19/2009	10/21/2009	20.84	1.981	22.82
M	MG/KG	NTC21SB04-SO-0001	0910006-21	NM	09/27/2009	10/19/2009	10/21/2009	21.79	1.896	23.68
M	MG/KG	NTC21SB03-SO-0204	0910006-45	NM	09/28/2009	10/19/2009	10/21/2009	20.82	2.008	22.82
M	MG/KG	NTC21SB03-SO-0001	0910006-44RE1	NM	09/28/2009	10/19/2009	10/21/2009	20.82	2.340	23.16
M	MG/KG	NTC21SB03-SO-0001	0910006-44	NM	09/28/2009	10/19/2009	10/21/2009	20.82	2.004	22.83
M	MG/KG	NTC21SB02-SO-0204	0910006-43	NM	09/28/2009	10/19/2009	10/21/2009	20.90	1.987	22.89
M	MG/KG	NTC21SB02-SO-0001	0910006-42RE1	NM	09/28/2009	10/19/2009	10/21/2009	20.91	2.337	23.24
M	MG/KG	NTC21SB04-SO-0406	0910006-22	NM	09/27/2009	10/19/2009	10/21/2009	21.78	1.899	23.68
M	MG/KG	NTC21SB01-SO-0102	0910006-41RE1	NM	09/28/2009	10/19/2009	10/21/2009	20.84	2.334	23.17
M	MG/KG	FD-092709-01	0910006-20	NM	09/27/2009	10/19/2009	10/21/2009	22.32	1.893	24.22
M	MG/KG	FD-092809-01	0910006-40RE2	NM	09/28/2009	10/19/2009	10/21/2009	21.32	2.345	23.67

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	MG/KG	FD-092809-01	0910006-40RE1	NM	09/28/2009	10/19/2009	10/21/2009	21.32	2.342	23.66
M	MG/KG	FD-092809-01	0910006-40	NM	09/28/2009	10/19/2009	10/21/2009	21.32	1.974	23.3
M	MG/KG	FD-092609-02	0910006-02RE1	NM	09/26/2009	10/19/2009	10/21/2009	23.32	2.254	25.57
M	MG/KG	FD-092609-01	0910006-01RE1	NM	09/26/2009	10/19/2009	10/21/2009	23.32	2.251	25.57
M	MG/KG	NTC21SB10-SO-0406	0910006-06RE1	NM	09/26/2009	10/19/2009	10/21/2009	22.54	2.260	24.80
M	MG/KG	NTC21SB12-SO-0001	0910006-09	NM	09/26/2009	10/19/2009	10/21/2009	22.74	1.845	24.58
M	MG/KG	NTC21SB02-SO-0001	0910006-42	NM	09/28/2009	10/19/2009	10/21/2009	20.91	1.984	22.89
M	MG/KG	NTC21SB09-SO-0204	0910006-04	NM	09/26/2009	10/19/2009	10/21/2009	22.63	1.819	24.45
M	MG/KG	FD-092609-02	0910006-02	NM	09/26/2009	10/19/2009	10/21/2009	23.32	1.813	25.13
M	MG/KG	NTC21SB05-SO-0001	0910006-46	NM	09/28/2009	10/19/2009	10/21/2009	20.92	2.010	22.93
M	MG/KG	NTC21SB10-SO-0406	0910006-06	NM	09/26/2009	10/19/2009	10/21/2009	22.54	1.826	24.37
M	MG/KG	FD-092609-01	0910006-01	NM	09/26/2009	10/19/2009	10/21/2009	23.32	1.81	25.13
M	MG/KG	NTC21SB10-SO-0001	0910006-05	NM	09/26/2009	10/19/2009	10/21/2009	22.55	1.823	24.37
M	MG/KG	NTC21SB09-SO-0204	0910006-04RE1	NM	09/26/2009	10/19/2009	10/21/2009	22.63	2.258	24.89
M	MG/KG	NTC21SB09-SO-0001	0910006-03	NM	09/26/2009	10/19/2009	10/21/2009	22.64	1.817	24.46
M	MG/KG	NTC21SB08-SO-0204	0910006-49RE1	NM	09/28/2009	10/20/2009	10/21/2009	21.89	1.315	23.20
M	MG/KG	NTC21SB06-SO-0204	0910006-24	NM	09/27/2009	10/20/2009	10/21/2009	22.75	0.979	23.73
M	MG/KG	NTC21SB08-SO-0001	0910006-48RE1	NM	09/28/2009	10/20/2009	10/21/2009	21.89	1.312	23.20

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	MG/KG	NTC21SB08-SO-0001	0910006-48	NM	09/28/2009	10/20/2009	10/21/2009	21.89	0.985	22.88
M	MG/KG	NTC21SB05-SO-0001	0910006-46RE1	NM	09/28/2009	10/19/2009	10/21/2009	20.92	2.344	23.26
M	MG/KG	NTC21SB07-SO-0204	0910006-26	NM	09/27/2009	10/19/2009	10/21/2009	21.87	1.909	23.78
M	MG/KG	NTC21SB05-SO-0204	0910006-47	NM	09/28/2009	10/20/2009	10/21/2009	21.97	0.983	22.95
M	MG/KG	NTC21SB07-SO-0001	0910006-25	NM	09/27/2009	10/19/2009	10/21/2009	21.88	1.906	23.78
M	MG/KG	NTC21SB06-SO-0001	0910006-23	NM	09/27/2009	10/19/2009	10/21/2009	21.69	1.903	23.59
M	MG/KG	NTC21SB08-SO-0204	0910006-49	NM	09/28/2009	10/20/2009	10/21/2009	21.89	0.989	22.88
M	UG/L	SB-092909-01	0910006-53	NM	09/29/2009	10/07/2009	10/09/2009	7.789	2.296	10.08
M	UG/L	RB-092909-02	0910006-52	NM	09/29/2009	10/07/2009	10/09/2009	7.684	2.292	9.976
M	UG/L	RB-092909-01	0910006-51	NM	09/29/2009	10/07/2009	10/09/2009	7.751	2.29	10.04
OS	%	NTC21SB15-SO-0001-DL	0910006-31DL	NM	09/27/2009	10/06/2009	10/18/2009	9.017	12.41	21.43
OS	%	NTC21SB15-SO-0204	0910006-32	NM	09/27/2009	10/06/2009	10/17/2009	9.010	11.16	20.17
OS	%	NTC21SB16-SO-0001	0910006-33	NM	09/27/2009	10/06/2009	10/20/2009	9.142	14.33	23.48
OS	%	NTC21SB16-SO-0204	0910006-34	NM	09/27/2009	10/06/2009	10/17/2009	8.733	11.18	19.91
OS	%	NTC21SB16-SO-0001	0910006-33	NM	09/27/2009	10/06/2009	10/17/2009	8.726	11.56	20.28
OS	%	NTC21SB15-SO-0204	0910006-32	NM	09/27/2009	10/06/2009	10/19/2009	9.010	13.34	22.35
OS	%	NTC21SB16-SO-0204	0910006-34	NM	09/27/2009	10/06/2009	10/19/2009	8.733	13.36	22.1
OS	%	NTC21SB17-SO-0001	0910006-11	NM	09/26/2009	10/03/2009	10/08/2009	7.017	5.108	12.13

HOLDTIME

SDG CTO064_001

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
GRSZ	%	NTC21SB08-SO-0204	0910006-49	NM	09/28/2009	10/13/2009	10/13/2009	15	0	15

INORGANIC CASE NARRATIVE
TETRA TECH NUS
Great Lakes NTC
SDG# CTO064_001
Work Order #0910006
October, 2009

I certify that, based upon my inquiry of those individuals immediately responsible for obtaining the information and to the best of my knowledge, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in the case narrative, as verified by the following signature.

Betty DeVille

Betty DeVille
Inorganic Lab Manager

I. RECEIPT

No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody included with this data package.

I. HOLDING TIMES

A. Sample Preparation: All holding times were met.

B. Sample Analysis: All holding times were met.

II. METHODS

US EPA SW846 method 3050B was used to digest soil samples, method 3005A was used for waters and method 6010B was used for analysis of ICAP metals. Method 7471A was used for soil samples and method 7470A was used for waters to digest and analyze mercury. Standard Methods 19th Edition method 2540B was used to analyze % solids. Note: The "U" flag indicates that the sample concentration is reported down to the laboratory MDL. The "J" flag indicates that the analyte result is between the laboratory reporting limit and the laboratory MDL. All methods performed according to EPA guidelines and Empirical Laboratories Standard Operating Procedures.

III. PREPARATION

All methods performed according to EPA guidelines and Empirical Laboratories Standard Operating Procedures.

IV. ANALYSIS

A. Calibration: All calibration criteria were met with the following exceptions: 9J29412-CCV1 was out of the specification limits of 90 to110 % for selenium at 113%. No samples were impacted by this CCV. 9J29412-CCV9 was out of the specification limits for iron at 111%; 9J29412-CCVA was out of the specification limits for

barium at 89.1% and for iron at 113%; 9J29412-CCVB was out of the specification limits for iron at 114%. 9J29412-CCV9, CCVA and CCVB impacted all the samples in batch 9J13003. 9J29412-CCVC was out of the specification limits for iron at 113%, for selenium at 88.7% and for zinc at 89.4%; 9J29412-CCVD was out of the specification limits for barium at 87.9%, for calcium at 111%, for iron at 118%, for lead at 87.7%, for selenium at 84.9% and for zinc at 86.2%. 9j29412-CCVB, CCVC and CCVD impacted all the samples in batch 9J13004. 9J29412-CCVE was out of the specification limits for barium at 85.5%, for iron at 118%, for lead at 86.9% for selenium at 84.1%, for vanadium at 89.5% and for zinc at 85.8%. 9J29412-CCVD and CCVE impacted all the samples in 9J13005. 9J29412-CCVF was out of the specification limits for barium at 86.7%, for iorn at 116%, for lead at 87.4%, for selenium at 84.8% and for zinc at 86.3%. 9J29412-CCVE and CCVF impacted samples in batch 9J20002. 9J29412-CCVJ was out of the specification limits for selenium at 112%; 9J29412-CCVL was out of the specification limits for selenium at 115%; 9J29412-CCVM was out of the specification limits for selenium at 112%. 9J29412-CCVJ, CCVL and CCVM impacted the dilutions for all samples in the SDG.

B. Blanks: All blank criteria were met.

C. Spikes: All matrix spikes quality control criteria were met with the following exceptions: The matrix spike was out of the specification limits for antimony at 24.6%, for arsenic at 17.4%, for barium at 135%, for beryllium at 162%, for chromium at 155%, for nickel at 141% and for thallium at 57.8%. on sample NTC21SB14-SO-0001. The post digestion spike recovery was at 105% for antimony, 107% for arsenic, 93.0% for barium, 98.8% for chromium, 101% for nickel and at 97.3% for thallium. **All associated data are flagged with an "N" on the final report.**

The matrix spike was out of the specification limits for antimony at 31.5%, for copper at 47.6%, for lead at 67.7%, for potassium at 143% and for zinc at -132%. on sample NTC21SB02-SO-0204. The post digestion spike recovery was at 107% for antimony, 105% for copper, 93.7% for lead, 110% for potassium and at 85.7% for zinc. **All associated data are flagged with an "N" on the final report.**

D. **Duplicates:** All duplicate quality control criteria were met with the following exceptions: The relative percent difference between the sample and the sample duplicate was out of the specification limits of 20% for arsenic at 37.7%, for beryllium at 34.7%, for iron at 25.7%, for lead at 20.5%, for mercury at 33.2%, for nickel at 45.9% and for zinc at 71.4% for sample NTC21SB14-SO-0001. **All associated data are flagged with an "*" on the final report.**

The relative percent difference between the sample and the sample duplicate was out of the specification limits of 20% for copper at 38.4%, for magnesium at 26.0%, for mercury at 50.1% and for zinc at 76.3% for sample NTC21SB02-SO-0204. **All associated data are flagged with an "*" on the final report.**

E. **Samples:** All sample analysis proceeded normally with the following exceptions: Some samples MDLs were increased for selenium and thallium because of a negative bias caused by matrix. These samples are noted in the comment section of the form ones.

During preparation/digestion the samples overflowed when peroxide was added. The analyst tried adding the peroxide extremely slowly in smaller increments, but still the samples overflowed. This information was communicated to the client who approved digestion without peroxide. The samples were diluted before analysis in most cases because of matrix.

F. **Laboratory Control Samples:** All percent recovery quality control criteria were met.

G. **Serial Dilution:** All serial dilution quality control criteria were met with the following exceptions: The serial dilution was out of the specification limits of <10% when the sample concentration is greater than 50 times the MDL for barium at 19.5%, for iron at 11.3%, for lead at 14.2%, for manganese at 18.2% and for zinc at 23.7% for sample NTC21SB14-SO-0001. **All associated data is flagged with an "E" on the final report.**

The serial dilution was out of the specification limits of <10% when the sample concentration is greater than 50 times the MDL for zinc at 10.6% for sample NTC21SB02-SO-0204. **All associated data is flagged with an "E" on the final report.**

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0910006 Number of Coolers: 1 of 12

Client: TTNUS Project: Great Lakes

Date/Time Received: **09/30/09 08:30** Date cooler(s) opened: **09/30/09**

Opened By (print): **WILLIAM SCHWAB** (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
   EL Courier Other: _____

If applicable, enter airbill number here: 7110

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 2 Seal date: 9/29/09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival?	Yes	No	N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler?	Yes	No	N/A
5. Were custody papers filled out properly (ink, signed, etc.)?	Yes	No	N/A
6. Did you sign custody papers in the appropriate place for acceptance?	Yes	No	N/A
7. Was project identifiable from custody papers?	Yes	No	N/A
8. If required, was enough ice present in the cooler(s)?	Yes	No	N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 3.3°C

Dates samples were logged-in: **09/30/09**

9. Initial this form to acknowledge login of sample(s): (Name): Will Schwab (Initial): WS

10. Were all bottle lids intact and sealed tightly?	Yes	No	N/A
11. Did all bottles arrive unbroken? WS	~~Yes~~	No	N/A
12. Was all required bottle label information complete?	Yes	No	N/A
13. Did all bottle labels agree with custody papers?	Yes	No	N/A
14. Were correct containers used for the analyses indicated?	Yes	No	N/A
15. Were preservative levels correct in all applicable sample containers?	Yes	No	N/A
16. Was residual chlorine present in any applicable sample containers?	Yes	No	N/A
17. Was sufficient amount of sample sent for the analyses required?	Yes	No	N/A
18. Was headspace present in any included VOA vials?	Yes	No	N/A

If Non-Conformance issues were present, list by sample ID: NTC21SB05-S0001 - 1 4oz broken in shipment CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: _____ Number of Coolers: _____ of _____

Client: TTNUS Project: Great Lakes

Date/Time Received: 09/30/09 08:30 Date cooler(s) opened: 09/30/09

Opened By (print): WILLIAM SCHWAB (signature): _____

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered

EL Courier Other: _____

If applicable, enter airbill number here: 7201

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 2 Seal date: 9/29/09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A
7. Was project identifiable from custody papers? ..... Yes No N/A
8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 0 4°C

Dates samples were logged-in: 09/30/09

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: _____ Number of Coolers: _____ of _____

Client: TTNUS Project: Great Lakes

Date/Time Received: **09/30/09 08:30** Date cooler(s) opened: **09/30/09**

Opened By (print): **WILLIAM SCHWAB** (signature): _____

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered

EL Courier Other: _____

If applicable, enter airbill number here: 6411

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 2 Seal date: 9/29/09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A
7. Was project identifiable from custody papers? ..... Yes No N/A
8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 2.9°C

Dates samples were logged-in: 09/30/09

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: _____ Number of Coolers: 1 of 3

Client: Tetra Tech NUS Project: Great Lakes CTO-0510

Date/Time Received: **09/30/09 08:30** Date cooler(s) opened: **09/30/09**

Opened By (print): **WILLIAM SCHWAB** (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered

EL Courier Other: _____

If applicable, enter airbill number here: 7164

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 2 Seal date: 9/29/09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A
7. Was project identifiable from custody papers? ..... Yes No N/A
8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 2.9°C

Dates samples were logged-in: **09/30/09**

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: _____ Number of Coolers: _____ of _____

Client: TJNUS Project: Great Lakes

Date/Time Received: **09/30/09 08:30** Date cooler(s) opened: **09/30/09**

Opened By (print): **WILLIAM SCHWAB** (signature): _____

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
   EL Courier Other: _____

If applicable, enter airbill number here: 7120

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 2 Seal date: 9/29/09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A
7. Was project identifiable from custody papers? ..... Yes No N/A
8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 3.6°C

Dates samples were logged-in: 09/30/09

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: _____ Number of Coolers: _____ of _____

Client: TTNUS Project: Great Lakes

Date/Time Received: 09/30/09 ~~08:30~~ 14:15 Date cooler(s) opened: 09/30/09

Opened By (print): **WILLIAM SCHWAB** (signature): _____

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered

EL Courier Other: _____

If applicable, enter airbill number here: 7197

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 2 Seal date: 9/29/09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A
7. Was project identifiable from custody papers? ..... Yes No N/A
8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 2.6°C

Dates samples were logged-in: 09/30/09

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: _____ Number of Coolers: _____ of _____

Client: TTNUS Project: Great Lakes

Date/Time Received: **09/30/09 08:30** Date cooler(s) opened: **09/30/09**

Opened By (print): **WILLIAM SCHWAB** (signature): _____

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered

EL Courier Other: _____

If applicable, enter airbill number here: 7142

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 2 Seal date: 9/29/09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A
7. Was project identifiable from custody papers? ..... Yes No N/A
8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 3.9°C

Dates samples were logged-in: **09/30/09**

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: _____ Number of Coolers: _____ of _____

Client: TTNUS Project: Great Lakes

Date/Time Received: 09/30/09 08:30 Date cooler(s) opened: 09/30/09

Opened By (print): WILLIAM SCHWAB (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered

EL Courier Other: _____

If applicable, enter airbill number here: 7153

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 2 Seal date: 9/29/09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival?	Yes	No	N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler?	Yes	No	N/A
5. Were custody papers filled out properly (ink, signed, etc.)?	Yes	No	N/A
6. Did you sign custody papers in the appropriate place for acceptance?	Yes	No	N/A
7. Was project identifiable from custody papers?	Yes	No	N/A
8. If required, was enough ice present in the cooler(s)?	Yes	No	N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 0.9°C

Dates samples were logged-in: 09/30/09

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____

10. Were all bottle lids intact and sealed tightly?	Yes	No	N/A
11. Did all bottles arrive unbroken?	Yes	No	N/A
12. Was all required bottle label information complete?	Yes	No	N/A
13. Did all bottle labels agree with custody papers?	Yes	No	N/A
14. Were correct containers used for the analyses indicated?	Yes	No	N/A
15. Were preservative levels correct in all applicable sample containers?	Yes	No	N/A
16. Was residual chlorine present in any applicable sample containers?	Yes	No	N/A
17. Was sufficient amount of sample sent for the analyses required?	Yes	No	N/A
18. Was headspace present in any included VOA vials?	Yes	No	N/A

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: _____ Number of Coolers: _____ of _____

Client: TTNUS Project: Great Lakes

Date/Time Received: 09/30/09 08:30 Date cooler(s) opened: 09/30/09

Opened By (print): WILLIAM SCHWAB (signature): _____

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
EL Courier Other: _____

If applicable, enter airbill number here: 7186

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 2 Seal date: 9/29/09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A
7. Was project identifiable from custody papers? ..... Yes No N/A
8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 2.6°C

Dates samples were logged-in: 09/30/09

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: _____ Number of Coolers: 3 of 3

Client: Tetra Tech NUS Project: Great Lakes CO-0510

Date/Time Received: **09/30/09 08:30** Date cooler(s) opened: **09/30/09**

Opened By (print): **WILLIAM SCHWAB** (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered

EL Courier Other: _____

If applicable, enter airbill number here: 8200

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 2 Seal date: 9/29/09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A
7. Was project identifiable from custody papers? ..... Yes No N/A
8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 1.9°C

Dates samples were logged-in: **09/30/09**

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: _____ Number of Coolers: 2 of 3

Client: Tetra Tech NUS Project: Great Lakes 00-0510

Date/Time Received: **09/30/09 08:30** Date cooler(s) opened: 09/30/09

Opened By (print): **WILLIAM SCHWAB** (signature): _____

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
   EL Courier Other: _____

If applicable, enter airbill number here: 7131

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 2 Seal date: 9/29/09 Seal Initials: _____

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A
7. Was project identifiable from custody papers? ..... Yes No N/A
8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 4.4°C

Dates samples were logged-in: 09/30/09

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No ~~N/A~~
18. Was headspace present in any included VOA vials? ..... Yes No N/A

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: _____ Number of Coolers: _____ of _____

Client: TTNUS Project: Great Lakes

Date/Time Received: **09/30/09 08:30** Date cooler(s) opened: **09/30/09**

Opened By (print): **WILLIAM SCHWAB** (signature): _____

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered

EL Courier Other: _____

If applicable, enter airbill number here: 7175

2. Were custody seals on outside of cooler(s)? ..... (Yes) No

How many: 2 Seal date: 9/29/09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival? ..... (Yes) No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... (Yes) No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... (Yes) No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... (Yes) No N/A
7. Was project identifiable from custody papers? ..... (Yes) No N/A
8. If required, was enough ice present in the cooler(s)? ..... (Yes) No N/A

Type of Coolant: (WET) DRY BLUE NONE Temperature of Samples upon Receipt: 0.1°C

Dates samples were logged-in: **09/30/09**

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

CTO064_001 Sum Package

Project No: 12G01797	Facility: GREAT LAKES NTC	Project Manager: Biff Cummings	Carrier: Airborne Express	Laboratory Name: Empirical Laboritories, LLC. 227 French Landing Drive Nashville, TN 37228
Task No: 064	Turn Around Time: Standard	Field Ops Leader: Shannon Hill	Carrier/Waybill No. 8631 2526 8200	Point of Contact: Janice Shilling 615.345.1115 ext. 256

Date	Sample ID #	Time	Analysis	Loc ID	Matrix	Description	Preservative	Container Count	Container Type	Container Reqs	Comments
											6910006
09/26/2009	FD-092609-01	00:00	SW-846 8270C/8181/8081A/8082/6010B	QC	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-01
09/26/2009	FD-092609-01	00:00	SW-846 8260B	QC	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	terra core
09/26/2009	FD-092609-02	00:00	SW-846 8270C/8181/8081A/8082/6010B	QC	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-02
09/26/2009	FD-092609-02	00:00	SW-846 8260B	QC	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	
09/26/2009	NTC21SB09-SO-0001	16:20	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB09	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-03
09/26/2009	NTC21SB09-SO-0001	16:20	SW-846 8260B	NTC21SB09	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	
09/26/2009	NTC21SB09-SO-0204	16:28	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB09	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-04
09/26/2009	NTC21SB09-SO-0204	16:28	SW-846 8260B	NTC21SB09	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	
09/26/2009	NTC21SB10-SO-0001	18:36	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB10	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-05
09/26/2009	NTC21SB10-SO-0001	18:36	SW-846 8260B	NTC21SB10	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	
09/26/2009	NTC21SB10-SO-0406	18:40	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB10	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-06
09/26/2009	NTC21SB10-SO-0406	18:40	SW-846 8260B	NTC21SB10	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	
09/26/2009	NTC21SB11-SO-0001	18:10	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB11	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-07
09/26/2009	NTC21SB11-SO-0001	18:10	SW-846 8260B	NTC21SB11	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	
09/26/2009	NTC21SB11-SO-0204	18:12	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB11	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-08
09/26/2009	NTC21SB11-SO-0204	18:12	SW-846 8260B	NTC21SB11	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	Terra core
09/26/2009	NTC21SB12-SO-0001	14:00	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB12	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-09

09/26/2009	NTC21SB12-SO-0001	14:00	**SW-846 8260B**	NTC21SB12	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	Terra core	-09
09/26/2009	NTC21SB12-SO-0204	14:10	**SW-846 8270C/8181/8081A/8082/6010B**	NTC21SB12	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		
09/26/2009	NTC21SB12-SO-0204	14:10	**SW-846 8260B**	NTC21SB12	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other		-10
09/26/2009	NTC21SB17-SO-0001	13:26	**SW-846 8270C/8181/8081A/8082/6010B**	NTC21SB17	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4° C/HNaO4S/MeOH	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		
09/26/2009	NTC21SB17-SO-0001	13:26	**SW-846 8260B**	NTC21SB17	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other		-11
09/26/2009	NTC21SB17-SO-0507	13:32	**SW-846 8270C/8181/8081A/8082/6010B**	NTC21SB17	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		
09/26/2009	NTC21SB17-SO-0507	13:32	**SW-846 8260B**	NTC21SB17	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other		-12
09/26/2009	NTC21SB18-SO-0001	12:47	**SW-846 8270C/8181/8081A/8082/6010B**	NTC21SB18	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		
09/26/2009	NTC21SB18-SO-0001	12:47	**SW-846 8260B**	NTC21SB18	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	Terra core	-13
09/26/2009	NTC21SB18-SO-0507	12:59	**SW-846 8270C/8181/8081A/8082/6010B**	NTC21SB18	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		
09/26/2009	NTC21SB18-SO-0507	12:59	**SW-846 8260B**	NTC21SB18	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	terra core	-14
09/26/2009	NTC21SB20-SO-0001	16:57	**SW-846 8270C/8181/8081A/8082/6010B**	NTC21SB20	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		
09/26/2009	NTC21SB20-SO-0001	16:57	**SW-846 8260B**	NTC21SB20	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other		-15
09/26/2009	NTC21SB20-SO-0406	17:02	**SW-846 8270C/8181/8081A/8082/6010B**	NTC21SB20	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		
09/26/2009	NTC21SB20-SO-0406	17:02	**SW-846 8260B**	NTC21SB20	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other		-16
09/26/2009	NTC21SB21-SO-0001	15:10	**SW-846 8270C/8181/8081A/8082/6010B**	NTC21SB21	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		
09/26/2009	NTC21SB21-SO-0001	15:10	**SW-846 8260B**	NTC21SB21	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	Terra core	-17
09/26/2009	NTC21SB21-SO-0608	15:20	**SW-846 8270C/8181/8081A/8082/6010B**	NTC21SB21	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		
09/26/2009	NTC21SB21-SO-0608	15:20	**SW-846 8260B**	NTC21SB21	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	Terra core	-18
09/26/2009	TB-092609-01	08:00	**NONE**	QC	AQ		4°C/HCL	2	Glass - Clear	40ml vials	TCL VOC	-19
09/27/2009	FD-092709-01	00:00	**SW-846 8270C/8181/8081A/8082/6010B**	QC	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		-20
09/27/2009	FD-092709-01	00:00	**SW-846 8260B**	QC	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	Terra core	
09/27/2009	NTC21SB04-SO-0001	12:50	**SW-846 8270C/8181/8081A/8082/6010B**	NTC21SB04	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		-21
09/27/2009	NTC21SB04-SO-0001	12:50	**SW-846 8260B**	NTC21SB04	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	Terra core	
09/27/2009	NTC21SB04-SO-0406	13:00	**SW-846 8270C/8181/8081A/8082/6010B**	NTC21SB04	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		-22
09/27/2009	NTC21SB04-SO-0406	13:00	**SW-846 8260B**	NTC21SB04	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	Terra core	
09/27/2009	NTC21SB06-SO-0001	15:10	**SW-846 8270C/8181/8081A/8082/6010B**	NTC21SB06	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		-23
09/27/2009	NTC21SB06-SO-0001	15:10	**SW-846 8260B**	NTC21SB06	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other		
09/27/2009	NTC21SB06-SO-0204	15:20	**SW-846 8270C/8181/8081A/8082/6010B**	NTC21SB06	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap		-24
09/27/2009	NTC21SB06-SO-0204	15:20	**SW-846 8260B**	NTC21SB06	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other		

C0004_08 Summ Package

2

	0001		8270C/8181/8081A/8082/6010B			Metals				w/Teflon cap	0910006-25
09/27/2009	NTC21SB07-SO-0001	10:40	SW-846 8260B	NTC21SB07	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	
09/27/2009	NTC21SB07-SO-0204	10:50	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB07	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-26
09/27/2009	NTC21SB07-SO-0204	10:50	SW-846 8260B	NTC21SB07	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	
09/27/2009	NTC21SB13-SO-0001	09:00	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB13	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-27
09/27/2009	NTC21SB13-SO-0001	09:00	SW-846 8260B	NTC21SB13	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	
09/27/2009	NTC21SB13-SO-0204	09:10	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB13	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-28
09/27/2009	NTC21SB13-SO-0204	09:10	SW-846 8260B	NTC21SB13	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	
09/27/2009	NTC21SB14-SO-0001	09:30	SW-846 8260B	NTC21SB14	SO	TCL VOCs	4° C/HNaO4S/MeOH	12	Other	Other	-29
09/27/2009	NTC21SB14-SO-0001	09:30	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB14	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	9	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
09/27/2009	NTC21SB14-SO-0204	09:40	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB14	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-30
09/27/2009	NTC21SB14-SO-0204	09:40	SW-846 8260B	NTC21SB14	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	
09/27/2009	NTC21SB15-SO-0001	10:00	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB15	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-31
09/27/2009	NTC21SB15-SO-0001	10:00	SW-846 8260B	NTC21SB15	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	Terra core
09/27/2009	NTC21SB15-SO-0204	10:10	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB15	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-32
09/27/2009	NTC21SB15-SO-0204	10:10	SW-846 8260B	NTC21SB15	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	Terra core
09/27/2009	NTC21SB16-SO-0001	17:00	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB16	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4° C/HNaO4S/MeOH	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-33
09/27/2009	NTC21SB16-SO-0001	17:00	SW-846 8260B	NTC21SB16	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	
09/27/2009	NTC21SB16-SO-0204	16:50	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB16	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-34
09/27/2009	NTC21SB16-SO-0204	16:50	SW-846 8260B	NTC21SB16	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	
09/27/2009	NTC21SB19-SO-0001	17:40	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB19	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-35
09/27/2009	NTC21SB19-SO-0001	17:40	SW-846 8260B	NTC21SB19	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	Terra core
09/27/2009	NTC21SB19-SO-0204	17:50	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB19	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-36
09/27/2009	NTC21SB19-SO-0204	17:50	SW-846 8260B	NTC21SB19	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	
09/27/2009	NTC21SB22-SO-0001	12:00	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB22	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-37
09/27/2009	NTC21SB22-SO-0001	12:00	SW-846 8260B	NTC21SB22	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	terra core
09/27/2009	NTC21SB22-SO-0204	12:10	SW-846 8270C/8181/8081A/8082/6010B	NTC21SB22	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-38
09/27/2009	NTC21SB22-SO-0204	12:10	SW-846 8260B	NTC21SB22	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	
09/27/2009	TB-092709-01	08:00	SW-846 8260B	QC	AQ	TCL VOCs	4°C/H3PO4	2	Glass - Clear	40ml vials	-39
09/28/2009	FD-092809-01	00:00	SW-846 8270C/8181/8081A/8082/6010B	QC	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-40

CTO 0064 001 Sumba Package

							C/HNaO4S/MeOH				-40
09/28/2009	NTC21SB01-SO-0102	12:00	**SW-846 8270C/8181/8081A/8082/6010B**	NTC21SB01	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-41
09/28/2009	NTC21SB01-SO-0102	12:00	**SW-846 8260B**	NTC21SB01	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	Terra core
09/28/2009	NTC21SB02-SO-0001	10:20	**SW-846 8270C/8181/8081A/8082/6010B**	NTC21SB02	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-42
09/28/2009	NTC21SB02-SO-0001	10:20	**SW-846 8260B**	NTC21SB02	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	
09/28/2009	NTC21SB02-SO-0204	10:30	**SW-846 8270C/8181/8081A/8082/6010B**	NTC21SB02	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	9	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-43
09/28/2009	NTC21SB02-SO-0204	10:30	**SW-846 8260B**	NTC21SB02	SO	TCL VOCs	4° C/HNaO4S/MeOH	12	Other	Other	terra core
09/28/2009	NTC21SB03-SO-0001	12:20	**SW-846 8270C/8181/8081A/8082/6010B**	NTC21SB03	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-44
09/28/2009	NTC21SB03-SO-0001	12:20	**SW-846 8260B**	NTC21SB03	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	Terra core
09/28/2009	NTC21SB03-SO-0204	12:30	**SW-846 8270C/8181/8081A/8082/6010B**	NTC21SB03	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-45
09/28/2009	NTC21SB03-SO-0204	12:30	**SW-846 8260B**	NTC21SB03	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	
09/28/2009	NTC21SB05-SO-0001	10:00	**SW-846 8270C/8181/8081A/8082/6010B**	NTC21SB05	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-46
09/28/2009	NTC21SB05-SO-0001	10:00	**SW-846 8260B**	NTC21SB05	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	
09/28/2009	NTC21SB05-SO-0204	10:10	**SW-846 8270C/8181/8081A/8082/6010B**	NTC21SB05	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-47
09/28/2009	NTC21SB05-SO-0204	10:10	**SW-846 8260B**	NTC21SB05	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	
09/28/2009	NTC21SB08-SO-0001	11:55	**SW-846 8270C/8181/8081A/8082/6010B**	NTC21SB08	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-48
09/28/2009	NTC21SB08-SO-0001	11:55	**SW-846 8260B**	NTC21SB08	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	
09/28/2009	NTC21SB08-SO-0204	12:00	**SW-846 8270C/8181/8081A/8082/6010B**	NTC21SB08	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-49
09/28/2009	NTC21SB08-SO-0204	12:00	**SW-846 8260B**	NTC21SB08	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	Other	Other	Terra core
09/28/2009	NTC21SB08-SO-0204	12:00	**ASTM D422 (or as instructed by TtNUS)**	NTC21SB08	SO	Grain Size	None	1	Glass - Clear	4 oz. wide-mouth w/Teflon cap	
09/28/2009	TB-092809-01	08:00	**SW-846 8260B**	QC	AQ	TCL VOCs	4°C/HCL	2	Glass - Clear	40ml vials	-50
09/29/2009	RB-092909-01	11:26	**SW-846 8270C/8181/8081A/8082**	QC	AQ	TCL SVOCs/Herb/Pest/PCB	4°C	6	Glass - Amber	1L	from deconned shoe of DPT rig -51
09/29/2009	RB-092909-01	11:26	**SW-846 8260B**	QC	AQ	TCL VOCs	4°C/HCL	3	Glass - Clear	40ml vials	
09/29/2009	RB-092909-01	11:26	**SW-846 6010B**	QC	AQ	TAL Metals (Total)	4°C/HNO3	1	Plastic - Bell Arte HDPE	250ml	
09/29/2009	RB-092909-02	13:02	**SW-846 8260B**	QC	AQ	TCL VOCs	4°C/HCL	3	Glass - Clear	40ml vials	-52
09/29/2009	RB-092909-02	13:02	**SW-846 8270C/8181/8081A/8082**	QC	AQ	TCL SVOCs/Herb/Pest/PCB	4°C	6	Glass - Amber	1L	DPT disposible sleeve
09/29/2009	RB-092909-02	13:02	**SW-846 6010B**	QC	AQ	TAL Metals (Total)	4°C/HNO3	1	Plastic - Bell Arte HDPE	250ml	
09/29/2009	SB-092909-01	10:31	**SW-846 8260B**	QC	AQ	TCL VOCs	4°C/HCL	3	Glass - Clear	40ml vials	-53
09/29/2009	SB-092909-01	10:31	**SW-846 6010B**	QC	AQ	TAL Metals (Total)	4°C/HNO3	1	Plastic - Bell Arte HDPE	250ml	
09/29/2009	SB-092909-01	10:31	**SW-846 8270C/8181/8081A/8082**	QC	AQ	TCL SVOCs/Herb/Pest/PCB	4°C	6	Glass - Amber	1L	
09/29/2009	TB-092909-01	10:28	**SW-846 8260B**	QC	AQ	TCL VOCs	4°C/HCL	2	Glass - Clear	40ml vials	-54

STO064_001 SampPackage

1. Relinquished By: **Shannon Hill**	Date: 09/29/2009	Time: 13:11	Received By: **Airborne Express**	Date: 09/29/2009	Time: 14:11
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date: 9/30/09	Time: 0820

Comments:

3.3°C

CTQ064_001 Summ Package

NTC GREAT LAKES
SOIL DATA
CTO064_001

FRACTION	CHEMICAL	NTC21SB18-SO-0507	UNITS	FD-092609-01		RPD	D
M	ALUMINUM	4230	MG/KG	3490		19.17	740.00
M	ARSENIC	8.65	MG/KG	23.2		91.37	14.55
M	BARIUM	18.6 J	MG/KG	18.4 J		1.08	0.20
M	BERYLLIUM	0.266	MG/KG	0.233		13.23	0.03
M	CADMIUM	0.153	MG/KG	0.322	ok	71.16	0.17
M	CALCIUM	79300	MG/KG	78500		1.01	800.00
M	CHROMIUM	8.66	MG/KG	7.36		16.23	1.30
M	COBALT	7.93	MG/KG	5.64		33.75	2.29
M	COPPER	22.4	MG/KG	26.1		15.26	3.70
M	IRON	21100 J	MG/KG	25800 J		20.04	4700.00
M	LEAD	14.6	MG/KG	12.4		16.30	2.20
M	MAGNESIUM	48800	MG/KG	48800		0.00	0.00
M	MANGANESE	887	MG/KG	732		19.15	155.00
M	MERCURY	ND	MG/KG	0.0169	ok	200.00	0.02
M	NICKEL	18.6	MG/KG	14.8		22.75	3.80
M	POTASSIUM	936	MG/KG	690		30.26	246.00
M	SODIUM	347	MG/KG	349		0.57	2.00
M	VANADIUM	12.9	MG/KG	13.9		7.46	1.00
M	ZINC	68	MG/KG	73.5		7.77	5.50

ok:
result < 5 × RL
D < 4 × RL

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NTC GREAT LAKES
SOIL DATA
CTO064_001

FRACTION	CHEMICAL	NTC21SB09-SO-0001	UNITS	FD-092609-02		RPD	D
M	ALUMINUM	4350	MG/KG	3390		24.81	960.00
M	ANTIMONY	2.06	MG/KG	0.802	ok	87.91	1.26
M	ARSENIC	8.14	MG/KG	4.78	ok	52.01	3.36
M	BARIUM	86.6 J	MG/KG	124 J		35.52	37.40
M	BERYLLIUM	0.929	MG/KG	0.477	ok	64.30	0.45
M	CADMIUM	3.81	MG/KG	2.62		37.01	1.19
M	CALCIUM	32000	MG/KG	95500		99.61	63500.00
M	CHROMIUM	163	MG/KG	16.2		163.84	146.80
M	COBALT	5.19	MG/KG	3.36		42.81	1.83
M	COPPER	129	MG/KG	72.3		56.33	56.70
M	IRON	23400 J	MG/KG	11200 J		70.52	12200.00
M	LEAD	167	MG/KG	88		61.96	79.00
M	MAGNESIUM	13800	MG/KG	55600		120.46	41800.00
M	MANGANESE	173	MG/KG	206		17.41	33.00
M	MERCURY	0.495	MG/KG	0.655		27.83	0.16
M	NICKEL	56.2	MG/KG	23.5		82.06	32.70
M	POTASSIUM	642	MG/KG	612		4.78	30.00
M	SILVER	0.515	MG/KG	0.172	ok	99.85	0.34
M	SODIUM	868	MG/KG	609		35.07	259.00
M	VANADIUM	25.7	MG/KG	20.6		22.03	5.10
M	ZINC	190	MG/KG	115		49.18	75.00

ok: result < 5 × RL
D < 4 × RL

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NTC GREAT LAKES
SOIL DATA
CTO064_001

FRACTION	CHEMICAL	NTO21SB15-SO-0204	UNITS	FD-092709-01	RPD	D
M	ALUMINUM	24300	MG/KG	20200	18.43	4100.00
M	ARSENIC	85 J	MG/KG	123 J	36.54	38.00
M	BARIUM	157 J	MG/KG	197 J	22.60	40.00
M	BERYLLIUM	3.77 J	MG/KG	4.44 J	16.32	0.67
M	CADMIUM	9.62	MG/KG	7.72	21.91	1.90
M	CALCIUM	63600	MG/KG	119000 J	60.68	55400.00
M	CHROMIUM	16.7 J	MG/KG	12.2 J	31.14	4.50
M	COBALT	22	MG/KG	11.4	63.47	10.60
M	COPPER	110 J	MG/KG	84.3 J	26.45	25.70
M	IRON	65800 J	MG/KG	111000 J	51.13	45200.00
M	LEAD	19.9 J	MG/KG	17.8 J	11.14	2.10
M	MAGNESIUM	3860	MG/KG	10500	92.48	6640.00
M	MANGANESE	1230 J	MG/KG	1020 J	18.67	210.00
M	MERCURY	0.0206	MG/KG	0.0266	25.42	0.01
M	NICKEL	44.4 J	MG/KG	35.8 J	21.45	8.60
M	POTASSIUM	1180	MG/KG	740	45.83	440.00
M	SELENIUM	1.31 J	MG/KG	1.68 J	24.75	0.37
M	SODIUM	1310	MG/KG	1130	14.75	180.00
M	VANADIUM	21.4	MG/KG	18.2	16.16	3.20
M	ZINC	263 J	MG/KG	404 J	42.28	141.00

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

NTC GREAT LAKES
SOIL DATA
CTO064_001

FRACTION	CHEMICAL	NTC21SB05-SO-0001	UNITS	FD-092809-01	RPD	D
M	ALUMINUM	5750	MG/KG	4500	24.39	1250.00
M	ARSENIC	6.05	MG/KG	7.05 J	15.27	1.00
M	BARIUM	44.9 J	MG/KG	32.1 J	33.25	12.80
M	BERYLLIUM	0.47	MG/KG	0.331 J	34.71	0.14
M	CADMIUM	0.395	MG/KG	0.935 ok	81.20	0.54
M	CALCIUM	62700	MG/KG	162000	88.38	99300.00
M	CHROMIUM	13.7	MG/KG	7.9 J	53.70	5.80
M	COBALT	6.12	MG/KG	4.04	40.94	2.08
M	COPPER	24.6 J	MG/KG	21.8 J	12.07	2.80
M	IRON	18200 J	MG/KG	11900 J	41.86	6300.00
M	LEAD	42.2 J	MG/KG	24.8 J	51.94	17.40
M	MAGNESIUM	37900	MG/KG	92500	83.74	54600.00
M	MANGANESE	503	MG/KG	479 J	4.89	24.00
M	MERCURY	0.0693 J	MG/KG	0.0184 J ok	116.08	0.05
M	NICKEL	17.2	MG/KG	8.26 J	70.23	8.94
M	POTASSIUM	970 J	MG/KG	972	0.21	2.00
M	SODIUM	798	MG/KG	706	12.23	92.00
M	VANADIUM	12.5	MG/KG	9.81	24.11	2.69
M	ZINC	87.8 J	MG/KG	76.6 J	13.63	11.20

ok : result < 5 x RL
D < 4 x RL

Current RPD Quality Control Limit: 50 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

Sample Calc. - water

RB-092909-01

Sample Name: 0910006-51 Acquired: 10/9/2009 12:24:19 Type: Unk

Method: DuoEnviroMethodNEW(v817) Mode: CONC Corr. Factor: 1.000000

User: rburr Custom ID1: Custom ID2: Custom ID3:

Comment: TETRA/4X

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179	Cd2288
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**-.12244**	**2922.6**	**.45165**	**5.1931**	**14.922**	**.17018**	**20.381**	**.50252**
Stddev	.17536	10.9	2.1593	.1495	.173	.05246	.198	.06498
%RSD	143.21	.37360	478.10	2.8799	1.1597	30.826	.97005	12.931
#1	-.17024	2935.2	-2.0288	5.1787	15.098	.14783	20.555	.57180
#2	.07185	2915.6	1.4722	5.0512	14.918	.13261	20.424	.49284
#3	-.26895	2917.1	1.9115	5.3493	14.752	.23012	20.166	.44293

Elem	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Mg2790	Mn2576	Mo2020
Units	ppb	ppb	ppb	ppb	ppm	ppm	ppb	ppb
Avg	**3.9653**	**39.063**	**8.7281**	**7902.7**	**1.5521**	**10.438**	**185.73**	**29.022**
Stddev	.1838	.455	.1046	64.2	.0076	.076	1.11	.087
%RSD	4.6344	1.1646	1.1981	.81238	.49014	.72577	.59949	.29977
#1	4.0340	39.587	8.7399	7976.8	1.5465	10.510	186.74	29.107
#2	4.1048	38.775	8.8262	7867.0	1.5491	10.446	185.91	29.026
#3	3.7571	38.826	8.6181	7864.3	1.5607	10.359	184.53	28.933

Elem	Na5895	Ni2316	Pb2203	Sb2068	Se1960	Sn1899	Ti3349	Tl1908
Units	ppm	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avg	**.89090**	**21.390**	**1.4476**	**-.72464**	**.39957**	**-.23818**	**52.675**	**-.21303**
Stddev	.00078	.043	1.5539	.88400	1.3670	.33457	.604	.07351
%RSD	.08711	.19919	107.34	121.99	342.13	140.47	1.1474	34.507
#1	.89029	21.429	2.9365	.26488	.86599	-.16717	53.233	-.12879
#2	.89177	21.345	1.5705	-1.4364	1.4724	.05518	52.758	-.24613
#3	.89064	21.396	-.16405	-1.0024	-1.1396	-.60255	52.033	-.26417

Elem	V_2924	Zn2062
Units	ppb	ppb
Avg	**7.7184**	**29.992**
Stddev	.3365	.172
%RSD	4.3598	.57240
#1	7.9107	30.114
#2	7.9147	29.795
#3	7.3299	30.066

Copper reported result: 2.18 mg/L

8.7281 ÷ 4 = 2.18 mg/L

Sample Calc

NTC21SB09-SO-0001 -Soil

Sample Name: 0910006-03 Acquired: 10/21/2009 3:18:05 Type: Unk

Method: DuoEnviroMethodNEW(v836) Mode: CONC Corr. Factor: 1.000000 % solids: 91.14

User: rburr Custom ID1: Custom ID2: Custom ID3:

Comment: TETRA X5

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179	Cd2288
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm	ppb
Avg	**1.8666**	**15761.**	**29.510**	**161.52**	**313.98**	**3.3680**	**116.11**	**13.834**
Stddev	.2164	44.	.872	.74	1.01	.0574	.98	.122
%RSD	11.595	.27941	2.9538	.45948	.32126	1.7055	.84102	.87872
#1	1.6313	15811.	29.590	161.62	314.65	3.4298	117.16	13.723
#2	1.9113	15743.	30.339	162.21	314.46	3.3581	115.94	13.964
#3	2.0572	15729.	28.601	160.74	312.82	3.3162	115.23	13.816

Elem	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Mg2790	Mn2576	Mo2020
Units	ppb	ppb	ppb	ppb	ppm	ppm	ppb	ppb
Avg	**18.818**	**591.84**	**469.69**	**84785.**	**2.3272**	**49.972**	**629.27**	**79.923**
Stddev	.163	11.30	8.98	698.	.0234	.313	11.25	.244
%RSD	.86733	1.9091	1.9118	.82268	1.0044	.62580	1.7871	.30486
#1	18.952	602.58	479.49	85542.	2.3282	50.333	641.17	80.202
#2	18.866	592.88	467.71	84644.	2.3501	49.809	627.85	79.754
#3	18.636	580.05	461.87	84169.	2.3034	49.774	618.81	79.813

Elem	Na5895	Ni2316	Pb2203	Sb2068	Se1960	Sn1899	Ti3349	Tl1908
Units	ppm	ppb	ppb	ppb	ppb	ppb	ppb	ppb
Avg	**3.1492**	**204.02**	**605.58**	**7.4630**	**.78372**	**34.832**	**636.26**	**-.44669**
Stddev	.0200	.51	2.25	.1189	.90968	.543	5.45	1.0627
%RSD	.63405	.24802	.37177	1.5936	116.07	1.5585	.85593	237.90
#1	3.1571	204.59	607.17	7.5963	.20929	34.495	641.90	-.74102
#2	3.1640	203.62	606.57	7.4253	1.8325	35.458	635.83	.73211
#3	3.1265	203.85	603.01	7.3675	.30933	34.542	631.03	-1.3312

Elem	V_2924	Zn2062
Units	ppb	ppb
Avg	**93.297**	**689.46**
Stddev	1.925	2.70
%RSD	2.0632	.39121
#1	95.407	692.03
#2	92.848	689.69
#3	91.637	686.65

Arsenic reported result: 8.14 mg/kg

$$29.510 \otimes \frac{0.1\ L}{1.99\ g} \otimes \frac{1}{0.9114} \otimes 5 = 8.14\ mg/kg$$

volume / weight ⊗ % solids ⊗ dilution

ANALYSIS SEQUENCE SUMMARY
SW6010B

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9J28712	Instrument:	ME-ICP
Calibration:	9287008		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	9J28712-CAL1	100909A-001	10/09/09 09:27
Cal Standard	9J28712-CAL2	100909A-002	10/09/09 09:32
Cal Standard	9J28712-CAL3	100909A-003	10/09/09 09:38
Cal Standard	9J28712-CAL4	100909A-004	10/09/09 09:44
Cal Standard	9J28712-CAL5	100909A-005	10/09/09 09:49
Cal Standard	9J28712-CAL6	100909A-006	10/09/09 09:56
Cal Standard	9J28712-CAL7	100909A-007	10/09/09 10:02
Cal Standard	9J28712-CAL8	100909A-008	10/09/09 10:08
Initial Cal Check	9J28712-ICV1	100909B-001	10/09/09 10:57
Initial Cal Blank	9J28712-ICB1	100909B-002	10/09/09 11:04
MRL Check	9J28712-CRL2	100909B-003	10/09/09 11:09
MRL Check	9J28712-CRL1	100909B-004	10/09/09 11:14
Interference Check A	9J28712-IFA1	100909C-003	10/09/09 11:47
Interference Check B	9J28712-IFB1	100909C-004	10/09/09 11:52
Calibration Check	9J28712-CCV1	100909C-005	10/09/09 12:00
Calibration Blank	9J28712-CCB1	100909C-006	10/09/09 12:07
Blank	9J07001-BLK1	100909C-007	10/09/09 12:13
LCS	9J07001-BS1	100909C-008	10/09/09 12:17
RB-092909-01	0910006-51	100909C-009	10/09/09 12:24
RB-092909-02	0910006-52	100909C-010	10/09/09 12:28
SB-092909-01	0910006-53	100909C-011	10/09/09 12:33
Calibration Check	9J28712-CCV2	100909C-019	10/09/09 13:12
Calibration Blank	9J28712-CCB2	100909C-020	10/09/09 13:19

ANALYSIS SEQUENCE SUMMARY
SW6010B

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9J28910	Instrument:	ME-ICP
Calibration:	9291001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	9J28910-CAL1	101409A-002	10/14/09 09:57
Cal Standard	9J28910-CAL2	101409A-003	10/14/09 10:03
Cal Standard	9J28910-CAL3	101409A-004	10/14/09 10:09
Cal Standard	9J28910-CAL7	101409A-008	10/14/09 10:36
Cal Standard	9J28910-CAL8	101409A-009	10/14/09 10:43
Initial Cal Check	9J28910-ICV1	101409B-001	10/14/09 11:10
Initial Cal Blank	9J28910-ICB1	101409C-001	10/14/09 11:19
MRL Check	9J28910-CRLC	101409C-007	10/14/09 11:51
Interference Check A	9J28910-IFA1	101409C-013	10/14/09 12:29
Interference Check B	9J28910-IFB1	101409C-014	10/14/09 12:33
Calibration Check	9J28910-CCV1	101409C-015	10/14/09 12:42
Calibration Blank	9J28910-CCB1	101409C-016	10/14/09 12:49
Calibration Check	9J28910-CCV4	101409D-037	10/14/09 17:14
Calibration Blank	9J28910-CCB4	101409D-038	10/14/09 17:21
LCS	9J07001-BS2	101409E-001	10/14/09 17:34
Calibration Check	9J28910-CCV5	101409E-010	10/14/09 18:18
Calibration Blank	9J28910-CCB5	101409E-011	10/14/09 18:27

ANALYSIS SEQUENCE SUMMARY
SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Sequence: 9J29412
Calibration: 9294005

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Instrument: ME-ICP

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	9J29412-CAL4	102009A-002	10/20/09 12:32
Cal Standard	9J29412-CAL5	102009A-003	10/20/09 12:38
Cal Standard	9J29412-CAL6	102009A-004	10/20/09 12:45
Cal Standard	9J29412-CAL7	102009A-005	10/20/09 12:53
Cal Standard	9J29412-CAL8	102009A-006	10/20/09 12:59
Cal Standard	9J29412-CAL1	102009B-003	10/20/09 14:34
Initial Cal Check	9J29412-ICV1	102009C-001	10/20/09 14:46
Initial Cal Blank	9J29412-ICB1	102009C-002	10/20/09 14:52
MRL Check	9J29412-CRL2	102009C-003	10/20/09 14:57
MRL Check	9J29412-CRL3	102009C-005	10/20/09 15:07
MRL Check	9J29412-CRL5	102009C-007	10/20/09 15:19
Interference Check A	9J29412-IFA1	102009C-013	10/20/09 15:52
Interference Check B	9J29412-IFB1	102009C-014	10/20/09 15:57
Calibration Check	9J29412-CCV1	102009C-015	10/20/09 16:05
Calibration Blank	9J29412-CCB1	102009C-016	10/20/09 16:12
Calibration Check	9J29412-CCV9 Fe	102009D-099	10/21/09 02:15
Calibration Blank	9J29412-CCB9	102009D-100	10/21/09 02:23
Blank	9J13003-BLK1	102009D-101	10/21/09 02:27
LCS	9J13003-BS1	102009D-102	10/21/09 02:32
FD-092609-01	0910006-01	102009D-109	10/21/09 03:08
FD-092609-02	0910006-02	102009D-110	10/21/09 03:13
NTC21SB09-SO-0001	0910006-03	102009D-111	10/21/09 03:18
NTC21SB09-SO-0204	0910006-04	102009D-112	10/21/09 03:22
NTC21SB10-SO-0001	0910006-05	102009D-113	10/21/09 03:27
NTC21SB10-SO-0406	0910006-06	102009D-114	10/21/09 03:31
NTC21SB11-SO-0001	0910006-07	102009D-115	10/21/09 03:36
NTC21SB11-SO-0204	0910006-08	102009D-116	10/21/09 03:41
Calibration Check	9J29412-CCVA Fe, Bh	102009D-117	10/21/09 03:47
Calibration Blank	9J29412-CCBA	102009D-118	10/21/09 03:54
NTC21SB12-SO-0001	0910006-09	102009D-119	10/21/09 03:59
NTC21SB12-SO-0204	0910006-10	102009D-120	10/21/09 04:04
NTC21SB17-SO-0001	0910006-11	102009D-121	10/21/09 04:08

ANALYSIS SEQUENCE SUMMARY
SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Sequence: 9J29412
Calibration: 9294005

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Instrument: ME-ICP

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
NTC21SB17-SO-0507	0910006-12	102009D-122	10/21/09 04:13
NTC21SB18-SO-0001	0910006-13	102009D-123	10/21/09 04:18
NTC21SB18-SO-0507	0910006-14	102009D-124	10/21/09 04:22
NTC21SB20-SO-0001	0910006-15	102009D-125	10/21/09 04:27
NTC21SB20-SO-0406	0910006-16	102009D-126	10/21/09 04:32
NTC21SB21-SO-0001	0910006-17	102009D-127	10/21/09 04:37
NTC21SB21-SO-0608	0910006-18	102009D-128	10/21/09 04:41
Calibration Check	9J29412-CCVB	102009D-129	10/21/09 04:47
Calibration Blank	9J29412-CCBB	102009D-130	10/21/09 04:55
Blank	9J13004-BLK1	102009D-131	10/21/09 04:59
LCS	9J13004-BS1	102009D-132	10/21/09 05:04
FD-092709-01	0910006-20	102009D-133	10/21/09 05:11
NTC21SB04-SO-0001	0910006-21	102009D-134	10/21/09 05:15
NTC21SB04-SO-0406	0910006-22	102009D-135	10/21/09 05:20
NTC21SB06-SO-0001	0910006-23	102009D-136	10/21/09 05:25
NTC21SB07-SO-0001	0910006-25	102009D-137	10/21/09 05:29
NTC21SB07-SO-0204	0910006-26	102009D-138	10/21/09 05:34
NTC21SB13-SO-0001	0910006-27	102009D-139	10/21/09 05:39
NTC21SB13-SO-0204	0910006-28	102009D-140	10/21/09 05:43
NTC21SB14-SO-0001	0910006-29	102009D-141	10/21/09 05:48
NTC21SB14-SO-0001	9J13004-DUP1	102009D-142	10/21/09 05:53
NTC21SB14-SO-0001	9J13004-MS1	102009D-143	10/21/09 05:58
NTC21SB14-SO-0001	9J13004-PS1	102009D-144	10/21/09 06:03
NTC21SB14-SO-0001	9J29412-SRD7	102009D-145	10/21/09 06:08
NTC21SB14-SO-0204	0910006-30	102009D-146	10/21/09 06:13
Calibration Check	9J29412-CCVC	102009D-147	10/21/09 06:18
Calibration Blank	9J29412-CCBC	102009D-148	10/21/09 06:26
NTC21SB15-SO-0001	0910006-31	102009D-149	10/21/09 06:31
NTC21SB15-SO-0204	0910006-32	102009D-150	10/21/09 06:35
NTC21SB16-SO-0001	0910006-33	102009D-151	10/21/09 06:40
NTC21SB16-SO-0204	0910006-34	102009D-152	10/21/09 06:45
NTC21SB19-SO-0001	0910006-35	102009D-153	10/21/09 06:50

ANALYSIS SEQUENCE SUMMARY
SW6010B

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9J29412	Instrument:	ME-ICP
Calibration:	9294005		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
NTC21SB19-SO-0204	0910006-36	102009D-154	10/21/09 06:54
NTC21SB22-SO-0001	0910006-37	102009D-155	10/21/09 06:59
NTC21SB22-SO-0204	0910006-38	102009D-156	10/21/09 07:04
FD-092809-01	0910006-40	102009D-157	10/21/09 07:08
Calibration Check	9J29412-CCVD	102009D-158	10/21/09 07:14
Calibration Blank	9J29412-CCBD	102009D-159	10/21/09 07:22
Blank	9J13005-BLK1	102009D-160	10/21/09 07:26
LCS	9J13005-BS1	102009D-161	10/21/09 07:31
NTC21SB01-SO-0102	0910006-41	102009D-162	10/21/09 07:38
NTC21SB02-SO-0001	0910006-42	102009D-163	10/21/09 07:43
NTC21SB02-SO-0204	0910006-43	102009D-164	10/21/09 07:47
NTC21SB02-SO-0204	9J13005-DUP1	102009D-165	10/21/09 07:52
NTC21SB02-SO-0204	9J13005-MS1	102009D-166	10/21/09 07:57
NTC21SB02-SO-0204	9J13005-PS1	102009D-167	10/21/09 08:02
NTC21SB02-SO-0204	9J29412-SRD8	102009D-168	10/21/09 08:07
NTC21SB03-SO-0001	0910006-44	102009D-169	10/21/09 08:12
NTC21SB03-SO-0204	0910006-45	102009D-170	10/21/09 08:17
NTC21SB05-SO-0001	0910006-46	102009D-171	10/21/09 08:21
Calibration Check	9J29412-CCVE	102009D-172	10/21/09 08:27
Calibration Blank	9J29412-CCBE	102009D-173	10/21/09 08:35
Blank	9J20002-BLK1	102009D-174	10/21/09 08:40
LCS	9J20002-BS1	102009D-175	10/21/09 08:44
NTC21SB06-SO-0204	0910006-24	102009D-176	10/21/09 08:51
NTC21SB05-SO-0204	0910006-47	102009D-177	10/21/09 08:56
NTC21SB08-SO-0001	0910006-48	102009D-178	10/21/09 09:00
NTC21SB08-SO-0204	0910006-49	102009D-179	10/21/09 09:05
Calibration Check	9J29412-CCVF	102009D-180	10/21/09 09:12
Calibration Blank	9J29412-CCBF	102009D-181	10/21/09 09:20
Calibration Check	9J29412-CCVH	102009E-023	10/21/09 13:00
Calibration Blank	9J29412-CCBH	102009E-024	10/21/09 13:08
LCS	9J13003-BS2	102009E-026	10/21/09 13:17
FD-092609-01	0910006-01RE1	102009E-031	10/21/09 13:43

ANALYSIS SEQUENCE SUMMARY
SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Sequence: 9J29412
Calibration: 9294005

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Instrument: ME-ICP

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
FD-092609-02	0910006-02RE1	102009E-032	10/21/09 13:48
NTC21SB09-SO-0204	0910006-04RE1	102009E-033	10/21/09 13:53
NTC21SB10-SO-0406	0910006-06RE1	102009E-034	10/21/09 13:57
NTC21SB17-SO-0507	0910006-12RE1	102009E-035	10/21/09 14:02
NTC21SB18-SO-0001	0910006-13RE1	102009E-036	10/21/09 14:07
NTC21SB18-SO-0507	0910006-14RE1	102009E-037	10/21/09 14:12
Calibration Check	9J29412-CCVI	102009E-038	10/21/09 14:17
Calibration Blank	9J29412-CCBI	102009E-039	10/21/09 14:25
LCS	9J13004-BS2	102009E-040	10/21/09 14:29
NTC21SB20-SO-0001	0910006-15RE1	102009E-041	10/21/09 14:36
NTC21SB20-SO-0406	0910006-16RE1	102009E-043	10/21/09 14:45
NTC21SB21-SO-0001	0910006-17RE1	102009E-044	10/21/09 14:50
NTC21SB21-SO-0608	0910006-18RE1	102009E-046	10/21/09 15:00
NTC21SB13-SO-0204	0910006-28RE1	102009E-047	10/21/09 15:04
NTC21SB14-SO-0001	9J29412-SRDA	102009E-048	10/21/09 15:09
NTC21SB15-SO-0204	0910006-32RE1	102009E-050	10/21/09 15:18
Calibration Check	9J29412-CCVJ	102009E-051	10/21/09 15:24
Calibration Blank	9J29412-CCBJ	102009E-052	10/21/09 15:32
LCS	9J13005-BS2	102009E-053	10/21/09 15:36
NTC21SB19-SO-0001	0910006-35RE1	102009E-054	10/21/09 15:43
NTC21SB19-SO-0204	0910006-36RE1	102009G-056	10/21/09 15:52
FD-092809-01	0910006-40RE1	102009G-057	10/21/09 15:57
FD-092809-01	0910006-40RE2	102009G-058	10/21/09 16:02
NTC21SB01-SO-0102	0910006-41RE1	102009G-059	10/21/09 16:07
NTC21SB02-SO-0001	0910006-42RE1	102009G-060	10/21/09 16:11
NTC21SB03-SO-0001	0910006-44RE1	102009G-061	10/21/09 16:16
NTC21SB05-SO-0001	0910006-46RE1	102009G-062	10/21/09 16:21
Calibration Check	9J29412-CCVL	102009G-063	10/21/09 16:27
Calibration Blank	9J29412-CCBL	102009G-064	10/21/09 16:34
Blank	9J20002-BLK2	102009G-065	10/21/09 16:39
LCS	9J20002-BS2	102009G-066	10/21/09 16:44
NTC21SB08-SO-0001	0910006-48RE1	102009G-067	10/21/09 16:50

ANALYSIS SEQUENCE SUMMARY
SW6010B

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9J29412	Instrument:	ME-ICP
Calibration:	9294005		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
NTC21SB08-SO-0204	0910006-49RE1	102009G-068	10/21/09 16:55
Calibration Check	9J29412-CCVM	102009G-069	10/21/09 17:00
Calibration Blank	9J29412-CCBM	102009G-070	10/21/09 17:07

ANALYSIS SEQUENCE SUMMARY
SW7470A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9J28512	Instrument:	ME-FIMS
Calibration:	9285003		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	9J28512-CAL1	COPY101209W-002	10/12/09 06:57
Cal Standard	9J28512-CAL2	COPY101209W-003	10/12/09 06:58
Cal Standard	9J28512-CAL3	COPY101209W-004	10/12/09 06:59
Cal Standard	9J28512-CAL4	COPY101209W-005	10/12/09 07:00
Cal Standard	9J28512-CAL5	COPY101209W-006	10/12/09 07:01
Cal Standard	9J28512-CAL6	COPY101209W-007	10/12/09 07:03
Cal Standard	9J28512-CAL7	COPY101209W-008	10/12/09 07:04
Cal Standard	9J28512-CAL8	COPY101209W-009	10/12/09 07:05
Initial Cal Check	9J28512-ICV1	COPY101209W-010	10/12/09 07:13
Initial Cal Blank	9J28512-ICB1	COPY101209W-011	10/12/09 07:14
MRL Check	9J28512-CRL1	COPY101209W-012	10/12/09 07:16
LCS	9J07004-BS1	COPY101209W-013	10/12/09 07:17
Blank	9J07004-BLK1	COPY101209W-014	10/12/09 07:19
RB-092909-01	0910006-51	COPY101209W-017	10/12/09 07:24
RB-092909-02	0910006-52	COPY101209W-018	10/12/09 07:25
SB-092909-01	0910006-53	COPY101209W-021	10/12/09 07:29
Calibration Check	9J28512-CCV1	COPY101209W-023	10/12/09 07:31
Calibration Blank	9J28512-CCB1	COPY101209W-024	10/12/09 07:32
Calibration Check	9J28512-CCV7	COPY101209W-095	10/12/09 08:57
Calibration Blank	9J28512-CCB7	COPY101209W-096	10/12/09 08:58
MRL Check	9J28512-CRL2	COPY101209W-104	10/12/09 09:08
Calibration Check	9J28512-CCV8	COPY101209W-105	10/12/09 09:09
Calibration Blank	9J28512-CCB8	COPY101209W-106	10/12/09 09:10

ANALYSIS SEQUENCE SUMMARY
SW7471A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9J28601	Instrument:	ME-FIMS
Calibration:	9286001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	9J28601-CAL1	COPY101209SA-002	10/12/09 11:03
Cal Standard	9J28601-CAL2	COPY101209SA-003	10/12/09 11:04
Cal Standard	9J28601-CAL3	COPY101209SA-004	10/12/09 11:05
Cal Standard	9J28601-CAL4	COPY101209SA-005	10/12/09 11:06
Cal Standard	9J28601-CAL5	COPY101209SA-006	10/12/09 11:07
Cal Standard	9J28601-CAL6	COPY101209SA-007	10/12/09 11:09
Cal Standard	9J28601-CAL7	COPY101209SA-008	10/12/09 11:10
Cal Standard	9J28601-CAL8	COPY101209SA-009	10/12/09 11:11
Initial Cal Check	9J28601-ICV1	COPY101209SA-010	10/12/09 11:20
Initial Cal Blank	9J28601-ICB1	COPY101209SA-011	10/12/09 11:21
MRL Check	9J28601-CRL1	COPY101209SA-012	10/12/09 11:24
Calibration Check	9J28601-CCV1	COPY101209SA-021	10/12/09 11:37
Calibration Blank	9J28601-CCB1	COPY101209SA-022	10/12/09 11:38
Calibration Check	9J28601-CCV5	COPY101209SA-069	10/12/09 12:38
Calibration Blank	9J28601-CCB5	COPY101209SA-070	10/12/09 12:39
LCS	9J09009-BS1	COPY101209SA-071	10/12/09 12:44
Blank	9J09009-BLK1	COPY101209SA-072	10/12/09 12:45
Calibration Check	9J28601-CCV6	COPY101209SA-080	10/12/09 12:57
Calibration Blank	9J28601-CCB6	COPY101209SA-081	10/12/09 12:58
FD-092609-01	0910006-01	COPY101209SA-088	10/12/09 13:07
FD-092609-02	0910006-02	COPY101209SA-089	10/12/09 13:08
NTC21SB09-SO-0001	0910006-03	COPY101209SA-090	10/12/09 13:12
NTC21SB09-SO-0204	0910006-04	COPY101209SA-091	10/12/09 13:13
Calibration Check	9J28601-CCV7	COPY101209SA-092	10/12/09 13:15
Calibration Blank	9J28601-CCB7	COPY101209SA-093	10/12/09 13:16
NTC21SB10-SO-0406	0910006-06	COPY101209SA-094	10/12/09 13:18
NTC21SB11-SO-0001	0910006-07	COPY101209SA-095	10/12/09 13:19
NTC21SB11-SO-0204	0910006-08	COPY101209SA-096	10/12/09 13:21
NTC21SB12-SO-0001	0910006-09	COPY101209SA-097	10/12/09 13:22
NTC21SB12-SO-0204	0910006-10	COPY101209SA-098	10/12/09 13:23
NTC21SB17-SO-0001	0910006-11	COPY101209SA-099	10/12/09 13:24
MRL Check	9J28601-CRL2	COPY101209SA-100	10/12/09 13:26

ANALYSIS SEQUENCE SUMMARY
SW7471A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9J28601	Instrument:	ME-FIMS
Calibration:	9286001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	9J28601-CCV8	COPY101209SA-101	10/12/09 13:27
Calibration Blank	9J28601-CCB8	COPY101209SA-102	10/12/09 13:28
NTC21SB10-SO-0001	0910006-05	COPY101209SA-105	10/12/09 13:41
MRL Check	9J28601-CRL3	COPY101209SA-106	10/12/09 13:44
Calibration Check	9J28601-CCV9	COPY101209SA-107	10/12/09 13:45
Calibration Blank	9J28601-CCB9	COPY101209SA-108	10/12/09 13:47

ANALYSIS SEQUENCE SUMMARY
SW7471A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9J29413	Instrument:	ME-FIMS
Calibration:	9294004		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	9J29413-CAL1	102109SA-002	10/21/09 12:49
Cal Standard	9J29413-CAL2	102109SA-003	10/21/09 12:50
Cal Standard	9J29413-CAL3	102109SA-004	10/21/09 12:51
Cal Standard	9J29413-CAL4	102109SA-005	10/21/09 12:52
Cal Standard	9J29413-CAL5	102109SA-006	10/21/09 12:53
Cal Standard	9J29413-CAL6	102109SA-007	10/21/09 12:55
Cal Standard	9J29413-CAL7	102109SA-008	10/21/09 12:56
Cal Standard	9J29413-CAL8	102109SA-009	10/21/09 12:57
Initial Cal Check	9J29413-ICV1	102109SA-010	10/21/09 12:59
Initial Cal Blank	9J29413-ICB1	102109SA-011	10/21/09 13:00
MRL Check	9J29413-CRL1	102109SA-012	10/21/09 13:01
LCS	9J14016-BS1	102109SA-013	10/21/09 13:03
Blank	9J14016-BLK1	102109SA-014	10/21/09 13:04
NTC21SB17-SO-0507	0910006-12	102109SA-015	10/21/09 13:05
NTC21SB18-SO-0507	0910006-14	102109SA-017	10/21/09 13:08
NTC21SB18-SO-0001	0910006-13RE1	102109SA-020	10/21/09 13:39
NTC21SB20-SO-0001	0910006-15RE1	102109SA-021	10/21/09 13:40
NTC21SB20-SO-0406	0910006-16RE1	102109SA-022	10/21/09 13:42
NTC21SB21-SO-0001	0910006-17	102109SA-023	10/21/09 13:43
NTC21SB21-SO-0608	0910006-18	102109SA-024	10/21/09 13:44
Calibration Check	9J29413-CCV1	102109SA-025	10/21/09 13:45
Calibration Blank	9J29413-CCB1	102109SA-026	10/21/09 13:47
FD-092709-01	0910006-20	102109SA-027	10/21/09 13:53
NTC21SB04-SO-0001	0910006-21	102109SA-028	10/21/09 13:54
NTC21SB04-SO-0406	0910006-22	102109SA-029	10/21/09 13:56
NTC21SB06-SO-0001	0910006-23	102109SA-030	10/21/09 13:57
NTC21SB06-SO-0204	0910006-24	102109SA-031	10/21/09 13:58
NTC21SB07-SO-0001	0910006-25	102109SA-032	10/21/09 13:59
NTC21SB07-SO-0204	0910006-26	102109SA-033	10/21/09 14:01
NTC21SB13-SO-0001	0910006-27	102109SA-034	10/21/09 14:02
NTC21SB13-SO-0204	0910006-28	102109SA-035	10/21/09 14:03
NTC21SB14-SO-0001	0910006-29	102109SA-036	10/21/09 14:05

ANALYSIS SEQUENCE SUMMARY
SW7471A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9J29413	Instrument:	ME-FIMS
Calibration:	9294004		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	9J29413-CCV2	102109SA-037	10/21/09 14:06
Calibration Blank	9J29413-CCB2	102109SA-038	10/21/09 14:07
NTC21SB14-SO-0001	9J14016-MS1	102109SA-039	10/21/09 14:08
NTC21SB14-SO-0001	9J14016-DUP1	102109SA-040	10/21/09 14:10
NTC21SB14-SO-0204	0910006-30	102109SA-041	10/21/09 14:11
NTC21SB15-SO-0001	0910006-31	102109SA-042	10/21/09 14:12
NTC21SB15-SO-0204	0910006-32	102109SA-043	10/21/09 14:13
LCS	9J14017-BS1	102109SA-044	10/21/09 14:15
Blank	9J14017-BLK1	102109SA-045	10/21/09 14:16
NTC21SB16-SO-0001	0910006-33	102109SA-046	10/21/09 14:17
NTC21SB16-SO-0204	0910006-34	102109SA-047	10/21/09 14:19
NTC21SB19-SO-0001	0910006-35	102109SA-048	10/21/09 14:20
Calibration Check	9J29413-CCV3	102109SA-049	10/21/09 14:21
Calibration Blank	9J29413-CCB3	102109SA-050	10/21/09 14:22
NTC21SB19-SO-0204	0910006-36	102109SA-051	10/21/09 14:24
NTC21SB22-SO-0001	0910006-37	102109SA-052	10/21/09 14:25
NTC21SB22-SO-0204	0910006-38	102109SA-053	10/21/09 14:26
FD-092809-01	0910006-40	102109SA-054	10/21/09 14:27
NTC21SB01-SO-0102	0910006-41	102109SA-055	10/21/09 14:29
NTC21SB02-SO-0001	0910006-42	102109SA-056	10/21/09 14:30
NTC21SB02-SO-0204	0910006-43	102109SA-057	10/21/09 14:31
NTC21SB02-SO-0204	9J14017-MS1	102109SA-058	10/21/09 14:32
NTC21SB02-SO-0204	9J14017-DUP1	102109SA-059	10/21/09 14:35
NTC21SB03-SO-0001	0910006-44	102109SA-060	10/21/09 14:37
Calibration Check	9J29413-CCV4	102109SA-061	10/21/09 14:38
Calibration Blank	9J29413-CCB4	102109SA-062	10/21/09 14:39
NTC21SB03-SO-0204	0910006-45	102109SA-063	10/21/09 14:41
NTC21SB05-SO-0001	0910006-46	102109SA-064	10/21/09 14:42
NTC21SB05-SO-0204	0910006-47	102109SA-065	10/21/09 14:43
NTC21SB08-SO-0001	0910006-48	102109SA-066	10/21/09 14:45
NTC21SB08-SO-0204	0910006-49	102109SA-067	10/21/09 14:46
MRL Check	9J29413-CRL2	102109SA-068	10/21/09 14:47

ANALYSIS SEQUENCE SUMMARY
SW7471A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9J29413	Instrument:	ME-FIMS
Calibration:	9294004		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	9J29413-CCV5	102109SA-069	10/21/09 14:48
Calibration Blank	9J29413-CCB5	102109SA-070	10/21/09 14:49

PREPARATION BATCH SUMMARY

SW6010B

Laboratory: Empirical Laboratories, LLC SDG: CTO064_001

Client: Tetra Tech NUS, Inc. (T010) Project: Great Lakes CTO 064 (Site 21)

Batch: 9J07001 Batch Matrix: Water Preparation: MET_3005A_LOW

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
RB-092909-01	0910006-51	10/07/09 05:27	100.00	25.00
RB-092909-02	0910006-52	10/07/09 05:27	100.00	25.00
SB-092909-01	0910006-53	10/07/09 05:27	100.00	25.00
Blank	9J07001-BLK1	10/07/09 05:27	100.00	25.00
LCS	9J07001-BS1	10/07/09 05:27	100.00	25.00
LCS	9J07001-BS2	10/07/09 05:27	100.00	25.00

PREPARATION BATCH SUMMARY

SW6010B

Laboratory: Empirical Laboratories, LLC SDG: CTO064_001

Client: Tetra Tech NUS, Inc. (T010) Project: Great Lakes CTO 064 (Site 21)

Batch: 9J13003 Batch Matrix: Solid Preparation: MET_3050B

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
FD-092609-01	0910006-01	10/19/09 07:42	2.09	100.00
FD-092609-01	0910006-01RE1	10/19/09 07:42	2.09	100.00
FD-092609-02	0910006-02	10/19/09 07:42	2.03	100.00
FD-092609-02	0910006-02RE1	10/19/09 07:42	2.03	100.00
NTC21SB09-SO-0001	0910006-03	10/19/09 07:42	1.99	100.00
NTC21SB09-SO-0204	0910006-04	10/19/09 07:42	1.95	100.00
NTC21SB09-SO-0204	0910006-04RE1	10/19/09 07:42	1.95	100.00
NTC21SB10-SO-0001	0910006-05	10/19/09 07:42	2.19	100.00
NTC21SB10-SO-0406	0910006-06	10/19/09 07:42	1.96	100.00
NTC21SB10-SO-0406	0910006-06RE1	10/19/09 07:42	1.96	100.00
NTC21SB11-SO-0001	0910006-07	10/19/09 07:42	1.98	100.00
NTC21SB11-SO-0204	0910006-08	10/19/09 07:42	2.03	100.00
NTC21SB12-SO-0001	0910006-09	10/19/09 07:42	1.95	100.00
NTC21SB12-SO-0204	0910006-10	10/19/09 07:42	1.92	100.00
NTC21SB17-SO-0001	0910006-11	10/19/09 07:42	2.10	100.00
NTC21SB17-SO-0507	0910006-12	10/19/09 07:42	2.09	100.00
NTC21SB17-SO-0507	0910006-12RE1	10/19/09 07:42	2.09	100.00
NTC21SB18-SO-0001	0910006-13	10/19/09 07:42	1.96	100.00
NTC21SB18-SO-0001	0910006-13RE1	10/19/09 07:42	1.96	100.00
NTC21SB18-SO-0507	0910006-14	10/19/09 07:42	1.97	100.00
NTC21SB18-SO-0507	0910006-14RE1	10/19/09 07:42	1.97	100.00
NTC21SB20-SO-0001	0910006-15	10/19/09 07:42	1.92	100.00
NTC21SB20-SO-0001	0910006-15RE1	10/19/09 07:42	1.92	100.00
NTC21SB20-SO-0406	0910006-16	10/19/09 07:42	2.00	100.00
NTC21SB20-SO-0406	0910006-16RE1	10/19/09 07:42	2.00	100.00
NTC21SB21-SO-0001	0910006-17	10/19/09 07:42	1.95	100.00
NTC21SB21-SO-0001	0910006-17RE1	10/19/09 07:42	1.95	100.00
NTC21SB21-SO-0608	0910006-18	10/19/09 07:42	1.92	100.00
NTC21SB21-SO-0608	0910006-18RE1	10/19/09 07:42	1.92	100.00
Blank	9J13003-BLK1	10/19/09 07:42	2.00	100.00
LCS	9J13003-BS1	10/19/09 07:42	2.00	100.00
LCS	9J13003-BS2	10/19/09 07:42	2.00	100.00

PREPARATION BATCH SUMMARY
SW6010B

Laboratory: Empirical Laboratories, LLC
SDG: CTO064_001
Client: Tetra Tech NUS, Inc. (T010)
Project: Great Lakes CTO 064 (Site 21)
Batch: 9J13004 Batch Matrix: Solid
Preparation: MET_3050B

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
FD-092709-01	0910006-20	10/19/09 07:45	1.98	100.00
NTC21SB04-SO-0001	0910006-21	10/19/09 07:45	1.96	100.00
NTC21SB04-SO-0406	0910006-22	10/19/09 07:45	1.94	100.00
NTC21SB06-SO-0001	0910006-23	10/19/09 07:45	2.07	100.00
NTC21SB07-SO-0001	0910006-25	10/19/09 07:45	2.01	100.00
NTC21SB07-SO-0204	0910006-26	10/19/09 07:45	2.09	100.00
NTC21SB13-SO-0001	0910006-27	10/19/09 07:45	2.09	100.00
NTC21SB13-SO-0204	0910006-28	10/19/09 07:45	2.17	100.00
NTC21SB13-SO-0204	0910006-28RE1	10/19/09 07:45	2.17	100.00
NTC21SB14-SO-0001	0910006-29	10/19/09 07:45	1.95	100.00
NTC21SB14-SO-0204	0910006-30	10/19/09 07:45	2.06	100.00
NTC21SB15-SO-0001	0910006-31	10/19/09 07:45	2.02	100.00
NTC21SB15-SO-0204	0910006-32	10/19/09 07:45	1.93	100.00
NTC21SB15-SO-0204	0910006-32RE1	10/19/09 07:45	1.93	100.00
NTC21SB16-SO-0001	0910006-33	10/19/09 07:45	2.14	100.00
NTC21SB16-SO-0204	0910006-34	10/19/09 07:45	2.17	100.00
NTC21SB19-SO-0001	0910006-35	10/19/09 07:45	2.11	100.00
NTC21SB19-SO-0001	0910006-35RE1	10/19/09 07:45	2.11	100.00
NTC21SB19-SO-0204	0910006-36	10/19/09 07:45	2.00	100.00
NTC21SB19-SO-0204	0910006-36RE1	10/19/09 07:45	2.00	100.00
NTC21SB22-SO-0001	0910006-37	10/19/09 07:45	1.90	100.00
NTC21SB22-SO-0204	0910006-38	10/19/09 07:45	1.90	100.00
FD-092809-01	0910006-40	10/19/09 07:45	2.07	100.00
FD-092809-01	0910006-40RE1	10/19/09 07:45	2.07	100.00
FD-092809-01	0910006-40RE2	10/19/09 07:45	2.07	100.00
Blank	9J13004-BLK1	10/19/09 07:45	2.00	100.00
LCS	9J13004-BS1	10/19/09 07:45	2.00	100.00
LCS	9J13004-BS2	10/19/09 07:45	2.00	100.00
NTC21SB14-SO-0001	9J13004-DUP1	10/19/09 07:45	1.99	100.00
NTC21SB14-SO-0001	9J13004-MS1	10/19/09 07:45	1.96	100.00
NTC21SB14-SO-0001	9J13004-PS1	10/19/09 07:45	1.95	100.00

PREPARATION BATCH SUMMARY

SW6010B

Laboratory: Empirical Laboratories, LLC SDG: CTO064_001

Client: Tetra Tech NUS, Inc. (T010) Project: Great Lakes CTO 064 (Site 21)

Batch: 9J13005 Batch Matrix: Solid Preparation: MET_3050B

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
NTC21SB01-SO-0102	0910006-41	10/19/09 08:06	2.03	100.00
NTC21SB01-SO-0102	0910006-41RE1	10/19/09 08:06	2.03	100.00
NTC21SB02-SO-0001	0910006-42	10/19/09 08:06	1.97	100.00
NTC21SB02-SO-0001	0910006-42RE1	10/19/09 08:06	1.97	100.00
NTC21SB02-SO-0204	0910006-43	10/19/09 08:06	1.99	100.00
NTC21SB03-SO-0001	0910006-44	10/19/09 08:06	2.00	100.00
NTC21SB03-SO-0001	0910006-44RE1	10/19/09 08:06	2.00	100.00
NTC21SB03-SO-0204	0910006-45	10/19/09 08:06	1.99	100.00
NTC21SB05-SO-0001	0910006-46	10/19/09 08:06	2.08	100.00
NTC21SB05-SO-0001	0910006-46RE1	10/19/09 08:06	2.08	100.00
Blank	9J13005-BLK1	10/19/09 08:06	2.00	100.00
LCS	9J13005-BS1	10/19/09 08:06	2.00	100.00
LCS	9J13005-BS2	10/19/09 08:06	2.00	100.00
NTC21SB02-SO-0204	9J13005-DUP1	10/19/09 08:06	2.00	100.00
NTC21SB02-SO-0204	9J13005-MS1	10/19/09 08:06	2.01	100.00
NTC21SB02-SO-0204	9J13005-PS1	10/19/09 08:06	1.99	100.00

PREPARATION BATCH SUMMARY

SW6010B

Laboratory: Empirical Laboratories, LLC SDG: CTO064_001

Client: Tetra Tech NUS, Inc. (T010) Project: Great Lakes CTO 064 (Site 21)

Batch: 9J20002 Batch Matrix: Solid Preparation: MET_3050B

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
NTC21SB06-SO-0204	0910006-24	10/20/09 09:21	2.02	100.00
NTC21SB05-SO-0204	0910006-47	10/20/09 09:21	2.04	100.00
NTC21SB08-SO-0001	0910006-48	10/20/09 09:21	2.00	100.00
NTC21SB08-SO-0001	0910006-48RE1	10/20/09 09:21	2.00	100.00
NTC21SB08-SO-0204	0910006-49	10/20/09 09:21	2.02	100.00
NTC21SB08-SO-0204	0910006-49RE1	10/20/09 09:21	2.02	100.00
Blank	9J20002-BLK1	10/20/09 09:21	2.00	100.00
Blank	9J20002-BLK2	10/20/09 09:21	2.00	100.00
LCS	9J20002-BS1	10/20/09 09:21	2.00	100.00
LCS	9J20002-BS2	10/20/09 09:21	2.00	100.00

PREPARATION BATCH SUMMARY

SW7470A

Laboratory: Empirical Laboratories, LLC

SDG: CTO064_001

Client: Tetra Tech NUS, Inc. (T010)

Project: Great Lakes CTO 064 (Site 21)

Batch: 9J07004 Batch Matrix: Water

Preparation: pMercury-W SW 7470A

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
RB-092909-01	0910006-51	10/07/09 07:33	30.00	30.00
RB-092909-02	0910006-52	10/07/09 07:33	30.00	30.00
SB-092909-01	0910006-53	10/07/09 07:33	30.00	30.00
Blank	9J07004-BLK1	10/07/09 07:33	30.00	30.00
LCS	9J07004-BS1	10/07/09 07:33	30.00	30.00

PREPARATION BATCH SUMMARY

SW7471A

Laboratory: Empirical Laboratories, LLC SDG: CTO064_001

Client: Tetra Tech NUS, Inc. (T010) Project: Great Lakes CTO 064 (Site 21)

Batch: 9J09009 Batch Matrix: Solid Preparation: MET_HG_S

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
FD-092609-01	0910006-01	10/09/09 10:54	0.29	50.00
FD-092609-02	0910006-02	10/09/09 10:54	0.32	50.00
NTC21SB09-SO-0001	0910006-03	10/09/09 10:54	0.32	50.00
NTC21SB09-SO-0204	0910006-04	10/09/09 10:54	0.30	50.00
NTC21SB10-SO-0001	0910006-05	10/09/09 10:54	0.31	50.00
NTC21SB10-SO-0406	0910006-06	10/09/09 10:54	0.31	50.00
NTC21SB11-SO-0001	0910006-07	10/09/09 10:54	0.35	50.00
NTC21SB11-SO-0204	0910006-08	10/09/09 10:54	0.32	50.00
NTC21SB12-SO-0001	0910006-09	10/09/09 10:54	0.30	50.00
NTC21SB12-SO-0204	0910006-10	10/09/09 10:54	0.31	50.00
NTC21SB17-SO-0001	0910006-11	10/09/09 10:54	0.32	50.00
Blank	9J09009-BLK1	10/09/09 10:54	0.30	50.00
LCS	9J09009-BS1	10/09/09 10:54	0.30	50.00

PREPARATION BATCH SUMMARY

SW7471A

Laboratory: Empirical Laboratories, LLC SDG: CTO064_001

Client: Tetra Tech NUS, Inc. (T010) Project: Great Lakes CTO 064 (Site 21)

Batch: 9J14016 Batch Matrix: Solid Preparation: MET_HG_S

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
NTC21SB17-SO-0507	0910006-12	10/21/09 08:00	0.33	50.00
NTC21SB18-SO-0001	0910006-13RE1	10/21/09 08:00	0.36	50.00
NTC21SB18-SO-0507	0910006-14	10/21/09 08:00	0.29	50.00
NTC21SB20-SO-0001	0910006-15RE1	10/21/09 08:00	0.33	50.00
NTC21SB20-SO-0406	0910006-16RE1	10/21/09 08:00	0.30	50.00
NTC21SB21-SO-0001	0910006-17	10/21/09 08:00	0.30	50.00
NTC21SB21-SO-0608	0910006-18	10/21/09 08:00	0.33	50.00
FD-092709-01	0910006-20	10/21/09 08:00	0.32	50.00
NTC21SB04-SO-0001	0910006-21	10/21/09 08:00	0.34	50.00
NTC21SB04-SO-0406	0910006-22	10/21/09 08:00	0.30	50.00
NTC21SB06-SO-0001	0910006-23	10/21/09 08:00	0.35	50.00
NTC21SB06-SO-0204	0910006-24	10/21/09 08:00	0.28	50.00
NTC21SB07-SO-0001	0910006-25	10/21/09 08:00	0.28	50.00
NTC21SB07-SO-0204	0910006-26	10/21/09 08:00	0.30	50.00
NTC21SB13-SO-0001	0910006-27	10/21/09 08:00	0.34	50.00
NTC21SB13-SO-0204	0910006-28	10/21/09 08:00	0.34	50.00
NTC21SB14-SO-0001	0910006-29	10/21/09 08:00	0.34	50.00
NTC21SB14-SO-0204	0910006-30	10/21/09 08:00	0.29	50.00
NTC21SB15-SO-0001	0910006-31	10/21/09 08:00	0.30	50.00
NTC21SB15-SO-0204	0910006-32	10/21/09 08:00	0.36	50.00
Blank	9J14016-BLK1	10/21/09 08:00	0.30	50.00
LCS	9J14016-BS1	10/21/09 08:00	0.30	50.00
NTC21SB14-SO-0001	9J14016-DUP1	10/21/09 08:00	0.32	50.00
NTC21SB14-SO-0001	9J14016-MS1	10/21/09 08:00	0.36	50.00

PREPARATION BATCH SUMMARY

SW7471A

Laboratory: Empirical Laboratories, LLC SDG: CTO064_001

Client: Tetra Tech NUS, Inc. (T010) Project: Great Lakes CTO 064 (Site 21)

Batch: 9J14017 Batch Matrix: Solid Preparation: MET_HG_S

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
NTC21SB16-SO-0001	0910006-33	10/21/09 08:04	0.28	50.00
NTC21SB16-SO-0204	0910006-34	10/21/09 08:04	0.33	50.00
NTC21SB19-SO-0001	0910006-35	10/21/09 08:04	0.30	50.00
NTC21SB19-SO-0204	0910006-36	10/21/09 08:04	0.34	50.00
NTC21SB22-SO-0001	0910006-37	10/21/09 08:04	0.35	50.00
NTC21SB22-SO-0204	0910006-38	10/21/09 08:04	0.28	50.00
FD-092809-01	0910006-40	10/21/09 08:04	0.35	50.00
NTC21SB01-SO-0102	0910006-41	10/21/09 08:04	0.31	50.00
NTC21SB02-SO-0001	0910006-42	10/21/09 08:04	0.31	50.00
NTC21SB02-SO-0204	0910006-43	10/21/09 08:04	0.33	50.00
NTC21SB03-SO-0001	0910006-44	10/21/09 08:04	0.30	50.00
NTC21SB03-SO-0204	0910006-45	10/21/09 08:04	0.35	50.00
NTC21SB05-SO-0001	0910006-46	10/21/09 08:04	0.33	50.00
NTC21SB05-SO-0204	0910006-47	10/21/09 08:04	0.29	50.00
NTC21SB08-SO-0001	0910006-48	10/21/09 08:04	0.31	50.00
NTC21SB08-SO-0204	0910006-49	10/21/09 08:04	0.34	50.00
Blank	9J14017-BLK1	10/21/09 08:04	0.30	50.00
LCS	9J14017-BS1	10/21/09 08:04	0.30	50.00
NTC21SB02-SO-0204	9J14017-DUP1	10/21/09 08:04	0.35	50.00
NTC21SB02-SO-0204	9J14017-MS1	10/21/09 08:04	0.36	50.00

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9287008
Sequence: 9J28712

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9J28712-ICV1	Aluminum	10000	9870	98.7	ug/L	+/- 10.00%
	Antimony	1000	979.9	98.0	ug/L	+/- 10.00%
	Arsenic	1000	965.8	96.6	ug/L	+/- 10.00%
	Barium	1000	1005	101	ug/L	+/- 10.00%
	Beryllium	1000	958.0	95.8	ug/L	+/- 10.00%
	Cadmium	1000	1043	104	ug/L	+/- 10.00%
	Calcium	50000	47710	95.4	ug/L	+/- 10.00%
	Chromium	1000	928.9	92.9	ug/L	+/- 10.00%
	Cobalt	1000	973.0	97.3	ug/L	+/- 10.00%
	Copper	1000	982.2	98.2	ug/L	+/- 10.00%
	Iron	10000	10090	101	ug/L	+/- 10.00%
	Lead	1000	978.5	97.9	ug/L	+/- 10.00%
	Magnesium	50000	46890	93.8	ug/L	+/- 10.00%
	Manganese	1000	997.8	99.8	ug/L	+/- 10.00%
	Nickel	1000	962.0	96.2	ug/L	+/- 10.00%
	Potassium	10000	9604	96.0	ug/L	+/- 10.00%
	Selenium	1000	1007	101	ug/L	+/- 10.00%
	Silver	500.0	485.2	97.0	ug/L	+/- 10.00%
	Sodium	50000	49180	98.4	ug/L	+/- 10.00%
	Thallium	1000	941.7	94.2	ug/L	+/- 10.00%
	Vanadium	1000	946.2	94.6	ug/L	+/- 10.00%
	Zinc	1000	979.8	98.0	ug/L	+/- 10.00%
9J28712-CCV1	Aluminum	10000	10100	101	ug/L	+/- 10.00%
	Antimony	1000	999.0	99.9	ug/L	+/- 10.00%
	Arsenic	1000	1024	102	ug/L	+/- 10.00%
	Barium	1000	984.3	98.4	ug/L	+/- 10.00%
	Beryllium	1000	1044	104	ug/L	+/- 10.00%
	Cadmium	1000	1054	105	ug/L	+/- 10.00%
	Calcium	50000	50280	101	ug/L	+/- 10.00%
	Chromium	1000	985.7	98.6	ug/L	+/- 10.00%
	Cobalt	1000	989.4	98.9	ug/L	+/- 10.00%
	Copper	1000	1005	101	ug/L	+/- 10.00%
	Iron	10000	10520	105	ug/L	+/- 10.00%
	Lead	1000	1002	100	ug/L	+/- 10.00%
	Magnesium	50000	48980	98.0	ug/L	+/- 10.00%
	Manganese	1000	1047	105	ug/L	+/- 10.00%
	Nickel	1000	994.8	99.5	ug/L	+/- 10.00%
	Potassium	10000	9868	98.7	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9287008
Sequence: 9J28712

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9J28712-CCV1	Selenium	1000	1028	103	ug/L	+/- 10.00%
	Silver	500.0	487.2	97.4	ug/L	+/- 10.00%
	Sodium	50000	50980	102	ug/L	+/- 10.00%
	Thallium	1000	1010	101	ug/L	+/- 10.00%
	Vanadium	1000	996.7	99.7	ug/L	+/- 10.00%
	Zinc	1000	1008	101	ug/L	+/- 10.00%
9J28712-CCV2	Aluminum	10000	9917	99.2	ug/L	+/- 10.00%
	Antimony	1000	1002	100	ug/L	+/- 10.00%
	Arsenic	1000	1046	105	ug/L	+/- 10.00%
	Barium	1000	996.0	99.6	ug/L	+/- 10.00%
	Beryllium	1000	1019	102	ug/L	+/- 10.00%
	Cadmium	1000	1061	106	ug/L	+/- 10.00%
	Calcium	50000	48780	97.6	ug/L	+/- 10.00%
	Chromium	1000	972.3	97.2	ug/L	+/- 10.00%
	Cobalt	1000	992.1	99.2	ug/L	+/- 10.00%
	Copper	1000	1009	101	ug/L	+/- 10.00%
	Iron	10000	10380	104	ug/L	+/- 10.00%
	Lead	1000	1006	101	ug/L	+/- 10.00%
	Magnesium	50000	48200	96.4	ug/L	+/- 10.00%
	Manganese	1000	1041	104	ug/L	+/- 10.00%
	Nickel	1000	988.7	98.9	ug/L	+/- 10.00%
	Potassium	10000	9902	99.0	ug/L	+/- 10.00%
	Selenium	1000	1031	103	ug/L	+/- 10.00%
	Silver	500.0	487.9	97.6	ug/L	+/- 10.00%
	Sodium	50000	49390	98.8	ug/L	+/- 10.00%
	Thallium	1000	1001	100	ug/L	+/- 10.00%
	Vanadium	1000	992.2	99.2	ug/L	+/- 10.00%
	Zinc	1000	1021	102	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9291001
Sequence: 9J28910

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9J28910-ICV1	Sodium	50000	49930	99.9	ug/L	+/- 10.00%
9J28910-CCV1	Sodium	50000	49680	99.4	ug/L	+/- 10.00%
9J28910-CCV4	Sodium	50000	50450	101	ug/L	+/- 10.00%
9J28910-CCV5	Sodium	50000	51340	103	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9294005
Sequence: 9J29412

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9J29412-ICV1	Aluminum	10000	10300	103	ug/L	+/- 10.00%
	Antimony	1000	1010	101	ug/L	+/- 10.00%
	Arsenic	1000	955.2	95.5	ug/L	+/- 10.00%
	Barium	1000	1051	105	ug/L	+/- 10.00%
	Beryllium	1000	966.4	96.6	ug/L	+/- 10.00%
	Cadmium	1000	1027	103	ug/L	+/- 10.00%
	Calcium	50000	48880	97.8	ug/L	+/- 10.00%
	Chromium	1000	971.0	97.1	ug/L	+/- 10.00%
	Cobalt	1000	1005	100	ug/L	+/- 10.00%
	Copper	1000	1003	100	ug/L	+/- 10.00%
	Iron	10000	10150	101	ug/L	+/- 10.00%
	Lead	1000	1025	102	ug/L	+/- 10.00%
	Magnesium	50000	48130	96.3	ug/L	+/- 10.00%
	Manganese	1000	1031	103	ug/L	+/- 10.00%
	Nickel	1000	966.8	96.7	ug/L	+/- 10.00%
	Potassium	10000	10120	101	ug/L	+/- 10.00%
	Selenium	1000	1055	105	ug/L	+/- 10.00%
	Silver	500.0	502.3	100	ug/L	+/- 10.00%
	Sodium	50000	50600	101	ug/L	+/- 10.00%
	Thallium	1000	965.7	96.6	ug/L	+/- 10.00%
	Vanadium	1000	987.7	98.8	ug/L	+/- 10.00%
	Zinc	1000	1016	102	ug/L	+/- 10.00%
9J29412-CCV1	Aluminum	10000	10510	105	ug/L	+/- 10.00%
	Antimony	1000	1048	105	ug/L	+/- 10.00%
	Arsenic	1000	1008	101	ug/L	+/- 10.00%
	Barium	1000	1060	106	ug/L	+/- 10.00%
	Beryllium	1000	1024	102	ug/L	+/- 10.00%
	Cadmium	1000	1041	104	ug/L	+/- 10.00%
	Calcium	50000	49040	98.1	ug/L	+/- 10.00%
	Chromium	1000	958.0	95.8	ug/L	+/- 10.00%
	Cobalt	1000	1033	103	ug/L	+/- 10.00%
	Copper	1000	1030	103	ug/L	+/- 10.00%
	Iron	10000	9936	99.4	ug/L	+/- 10.00%
	Lead	1000	1077	108	ug/L	+/- 10.00%
	Magnesium	50000	49420	98.8	ug/L	+/- 10.00%
	Manganese	1000	1080	108	ug/L	+/- 10.00%
	Nickel	1000	995.5	99.5	ug/L	+/- 10.00%
	Potassium	10000	10190	102	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9294005
Sequence: 9J29412

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9J29412-CCV1	**Selenium**	**1000**	**1134**	**113**	**ug/L**	+/- 10.00%
	Silver	500.0	498.5	99.7	ug/L	+/- 10.00%
	Sodium	50000	51300	103	ug/L	+/- 10.00%
	Thallium	1000	1030	103	ug/L	+/- 10.00%
	Vanadium	1000	1047	105	ug/L	+/- 10.00%
	Zinc	1000	1080	108	ug/L	+/- 10.00%
9J29412-CCV9	Aluminum	10000	10230	102	ug/L	+/- 10.00%
	Antimony	1000	961.9	96.2	ug/L	+/- 10.00%
	Arsenic	1000	991.2	99.1	ug/L	+/- 10.00%
	Barium	1000	914.7	91.5	ug/L	+/- 10.00%
	Beryllium	1000	983.1	98.3	ug/L	+/- 10.00%
	Cadmium	1000	1006	101	ug/L	+/- 10.00%
	Calcium	50000	51520	103	ug/L	+/- 10.00%
	Chromium	1000	1009	101	ug/L	+/- 10.00%
	Cobalt	1000	942.3	94.2	ug/L	+/- 10.00%
	Copper	1000	965.2	96.5	ug/L	+/- 10.00%
	Iron	**10000**	**11070**	**111**	**ug/L**	+/- 10.00%
	Lead	1000	935.2	93.5	ug/L	+/- 10.00%
	Magnesium	50000	47970	95.9	ug/L	+/- 10.00%
	Manganese	1000	985.8	98.6	ug/L	+/- 10.00%
	Nickel	1000	963.3	96.3	ug/L	+/- 10.00%
	Potassium	10000	10000	100	ug/L	+/- 10.00%
	Selenium	1000	923.1	92.3	ug/L	+/- 10.00%
	Silver	500.0	484.0	96.8	ug/L	+/- 10.00%
	Sodium	50000	51460	103	ug/L	+/- 10.00%
	Thallium	1000	981.1	98.1	ug/L	+/- 10.00%
	Vanadium	1000	923.3	92.3	ug/L	+/- 10.00%
	Zinc	1000	936.6	93.7	ug/L	+/- 10.00%
9J29412-CCVA	Aluminum	10000	10330	103	ug/L	+/- 10.00%
	Antimony	1000	951.1	95.1	ug/L	+/- 10.00%
	Arsenic	1000	989.3	98.9	ug/L	+/- 10.00%
	Barium	**1000**	**891.2**	**89.1**	**ug/L**	+/- 10.00%
	Beryllium	1000	1008	101	ug/L	+/- 10.00%
	Cadmium	1000	1010	101	ug/L	+/- 10.00%
	Calcium	50000	52780	106	ug/L	+/- 10.00%
	Chromium	1000	1006	101	ug/L	+/- 10.00%
	Cobalt	1000	931.9	93.2	ug/L	+/- 10.00%
	Copper	1000	975.3	97.5	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9294005
Sequence: 9J29412

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9J29412-CCVA	**Iron**	**10000**	**11280**	**113**	**ug/L**	+/- 10.00%
	Lead	1000	917.1	91.7	ug/L	+/- 10.00%
	Magnesium	50000	48860	97.7	ug/L	+/- 10.00%
	Manganese	1000	990.5	99.1	ug/L	+/- 10.00%
	Nickel	1000	964.7	96.5	ug/L	+/- 10.00%
	Potassium	10000	10080	101	ug/L	+/- 10.00%
	Selenium	1000	905.0	90.5	ug/L	+/- 10.00%
	Silver	500.0	481.2	96.2	ug/L	+/- 10.00%
	Sodium	50000	52790	106	ug/L	+/- 10.00%
	Thallium	1000	981.3	98.1	ug/L	+/- 10.00%
	Vanadium	1000	934.9	93.5	ug/L	+/- 10.00%
	Zinc	1000	912.1	91.2	ug/L	+/- 10.00%
9J29412-CCVB	Aluminum	10000	10380	104	ug/L	+/- 10.00%
	Antimony	1000	960.7	96.1	ug/L	+/- 10.00%
	Arsenic	1000	997.5	99.7	ug/L	+/- 10.00%
	Barium	1000	899.9	90.0	ug/L	+/- 10.00%
	Beryllium	1000	995.1	99.5	ug/L	+/- 10.00%
	Cadmium	1000	1016	102	ug/L	+/- 10.00%
	Calcium	50000	52680	105	ug/L	+/- 10.00%
	Chromium	1000	1030	103	ug/L	+/- 10.00%
	Cobalt	1000	938.4	93.8	ug/L	+/- 10.00%
	Copper	1000	972.1	97.2	ug/L	+/- 10.00%
	Iron	**10000**	**11450**	**114**	**ug/L**	+/- 10.00%
	Lead	1000	925.6	92.6	ug/L	+/- 10.00%
	Magnesium	50000	48840	97.7	ug/L	+/- 10.00%
	Manganese	1000	988.7	98.9	ug/L	+/- 10.00%
	Nickel	1000	971.2	97.1	ug/L	+/- 10.00%
	Potassium	10000	10160	102	ug/L	+/- 10.00%
	Selenium	1000	905.1	90.5	ug/L	+/- 10.00%
	Silver	500.0	486.5	97.3	ug/L	+/- 10.00%
	Sodium	50000	52680	105	ug/L	+/- 10.00%
	Thallium	1000	987.8	98.8	ug/L	+/- 10.00%
	Vanadium	1000	923.7	92.4	ug/L	+/- 10.00%
	Zinc	1000	923.0	92.3	ug/L	+/- 10.00%
J29412-CCVC	Aluminum	10000	10220	102	ug/L	+/- 10.00%
	Antimony	1000	945.6	94.6	ug/L	+/- 10.00%
	Arsenic	1000	955.4	95.5	ug/L	+/- 10.00%
	Barium	1000	911.6	91.2	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9294005
Sequence: 9J29412

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9J29412-CCVC	Beryllium	1000	990.7	99.1	ug/L	+/- 10.00%
	Cadmium	1000	1022	102	ug/L	+/- 10.00%
	Calcium	50000	53660	107	ug/L	+/- 10.00%
	Chromium	1000	1005	100	ug/L	+/- 10.00%
	Cobalt	1000	932.0	93.2	ug/L	+/- 10.00%
	Copper	1000	964.0	96.4	ug/L	+/- 10.00%
	Iron	**10000**	**11310**	**113**	**ug/L**	+/- 10.00%
	Lead	1000	902.7	90.3	ug/L	+/- 10.00%
	Magnesium	50000	48950	97.9	ug/L	+/- 10.00%
	Manganese	1000	975.4	97.5	ug/L	+/- 10.00%
	Nickel	1000	961.2	96.1	ug/L	+/- 10.00%
	Potassium	10000	9799	98.0	ug/L	+/- 10.00%
	Selenium	**1000**	**887.2**	**88.7**	**ug/L**	+/- 10.00%
	Silver	500.0	482.2	96.4	ug/L	+/- 10.00%
	Sodium	50000	52350	105	ug/L	+/- 10.00%
	Thallium	1000	942.3	94.2	ug/L	+/- 10.00%
	Vanadium	1000	919.7	92.0	ug/L	+/- 10.00%
	Zinc	**1000**	**894.2**	**89.4**	**ug/L**	+/- 10.00%
9J29412-CCVD	Aluminum	10000	10310	103	ug/L	+/- 10.00%
	Antimony	1000	931.0	93.1	ug/L	+/- 10.00%
	Arsenic	1000	954.4	95.4	ug/L	+/- 10.00%
	Barium	**1000**	**879.3**	**87.9**	**ug/L**	+/- 10.00%
	Beryllium	1000	1008	101	ug/L	+/- 10.00%
	Cadmium	1000	1025	102	ug/L	+/- 10.00%
	Calcium	**50000**	**55480**	**111**	**ug/L**	+/- 10.00%
	Chromium	1000	1026	103	ug/L	+/- 10.00%
	Cobalt	1000	917.0	91.7	ug/L	+/- 10.00%
	Copper	1000	969.8	97.0	ug/L	+/- 10.00%
	Iron	**10000**	**11780**	**118**	**ug/L**	+/- 10.00%
	Lead	**1000**	**877.1**	**87.7**	**ug/L**	+/- 10.00%
	Magnesium	50000	49930	99.9	ug/L	+/- 10.00%
	Manganese	1000	965.3	96.5	ug/L	+/- 10.00%
	Nickel	1000	961.5	96.1	ug/L	+/- 10.00%
	Potassium	10000	9828	98.3	ug/L	+/- 10.00%
	Selenium	**1000**	**848.8**	**84.9**	**ug/L**	+/- 10.00%
	Silver	500.0	482.8	96.6	ug/L	+/- 10.00%
	Sodium	50000	53480	107	ug/L	+/- 10.00%
	Thallium	1000	936.8	93.7	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9294005
Sequence: 9J29412

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9J29412-CCVD	Vanadium	1000	905.7	90.6	ug/L	+/- 10.00%
	Zinc	**1000**	**862.1**	**86.2**	**ug/L**	+/- 10.00%
9J29412-CCVE	Aluminum	10000	10220	102	ug/L	+/- 10.00%
	Antimony	1000	926.4	92.6	ug/L	+/- 10.00%
	Arsenic	1000	974.6	97.5	ug/L	+/- 10.00%
	Barium	**1000**	**854.6**	**85.5**	**ug/L**	+/- 10.00%
	Beryllium	1000	1006	101	ug/L	+/- 10.00%
	Cadmium	1000	1017	102	ug/L	+/- 10.00%
	Calcium	50000	54960	110	ug/L	+/- 10.00%
	Chromium	1000	1026	103	ug/L	+/- 10.00%
	Cobalt	1000	909.0	90.9	ug/L	+/- 10.00%
	Copper	1000	961.2	96.1	ug/L	+/- 10.00%
	Iron	**10000**	**11760**	**118**	**ug/L**	+/- 10.00%
	Lead	**1000**	**869.3**	**86.9**	**ug/L**	+/- 10.00%
	Magnesium	50000	49420	98.8	ug/L	+/- 10.00%
	Manganese	1000	957.7	95.8	ug/L	+/- 10.00%
	Nickel	1000	961.7	96.2	ug/L	+/- 10.00%
	Potassium	10000	9792	97.9	ug/L	+/- 10.00%
	Selenium	**1000**	**840.8**	**84.1**	**ug/L**	+/- 10.00%
	Silver	500.0	476.6	95.3	ug/L	+/- 10.00%
	Sodium	50000	53310	107	ug/L	+/- 10.00%
	Thallium	1000	952.5	95.3	ug/L	+/- 10.00%
	Vanadium	**1000**	**895.2**	**89.5**	**ug/L**	+/- 10.00%
	Zinc	**1000**	**857.6**	**85.8**	**ug/L**	+/- 10.00%
9J29412-CCVF	Aluminum	10000	10150	101	ug/L	+/- 10.00%
	Antimony	1000	929.6	93.0	ug/L	+/- 10.00%
	Arsenic	1000	966.6	96.7	ug/L	+/- 10.00%
	Barium	**1000**	**867.3**	**86.7**	**ug/L**	+/- 10.00%
	Beryllium	1000	997.8	99.8	ug/L	+/- 10.00%
	Cadmium	1000	1017	102	ug/L	+/- 10.00%
	Calcium	50000	54480	109	ug/L	+/- 10.00%
	Chromium	1000	1022	102	ug/L	+/- 10.00%
	Cobalt	1000	912.1	91.2	ug/L	+/- 10.00%
	Copper	1000	964.9	96.5	ug/L	+/- 10.00%
	Iron	**10000**	**11600**	**116**	**ug/L**	+/- 10.00%
	Lead	**1000**	**873.8**	**87.4**	**ug/L**	+/- 10.00%
	Magnesium	50000	48940	97.9	ug/L	+/- 10.00%
	Manganese	1000	966.1	96.6	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9294005
Sequence: 9J29412

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9J29412-CCVF	Nickel	1000	958.0	95.8	ug/L	+/- 10.00%
	Potassium	10000	9678	96.8	ug/L	+/- 10.00%
	Selenium	**1000**	**848.1**	**84.8**	**ug/L**	+/- 10.00%
	Silver	500.0	478.8	95.8	ug/L	+/- 10.00%
	Sodium	50000	52780	106	ug/L	+/- 10.00%
	Thallium	1000	945.0	94.5	ug/L	+/- 10.00%
	Vanadium	1000	907.6	90.8	ug/L	+/- 10.00%
	Zinc	**1000**	**862.7**	**86.3**	**ug/L**	+/- 10.00%
9J29412-CCVH	Aluminum	10000	9997	100	ug/L	+/- 10.00%
	Antimony	1000	996.0	99.6	ug/L	+/- 10.00%
	Arsenic	1000	991.2	99.1	ug/L	+/- 10.00%
	Barium	1000	989.6	99.0	ug/L	+/- 10.00%
	Beryllium	1000	984.7	98.5	ug/L	+/- 10.00%
	Cadmium	1000	1011	101	ug/L	+/- 10.00%
	Calcium	50000	48630	97.3	ug/L	+/- 10.00%
	Chromium	1000	970.3	97.0	ug/L	+/- 10.00%
	Cobalt	1000	985.6	98.6	ug/L	+/- 10.00%
	Copper	1000	983.2	98.3	ug/L	+/- 10.00%
	Iron	10000	9981	99.8	ug/L	+/- 10.00%
	Lead	1000	1009	101	ug/L	+/- 10.00%
	Magnesium	50000	47040	94.1	ug/L	+/- 10.00%
	Manganese	1000	1027	103	ug/L	+/- 10.00%
	Nickel	1000	966.1	96.6	ug/L	+/- 10.00%
	Potassium	10000	9867	98.7	ug/L	+/- 10.00%
	Selenium	1000	1035	104	ug/L	+/- 10.00%
	Silver	500.0	488.2	97.6	ug/L	+/- 10.00%
	Sodium	50000	49900	99.8	ug/L	+/- 10.00%
	Thallium	1000	1001	100	ug/L	+/- 10.00%
	Vanadium	1000	976.2	97.6	ug/L	+/- 10.00%
	Zinc	1000	1011	101	ug/L	+/- 10.00%
9J29412-CCVI	Aluminum	10000	10120	101	ug/L	+/- 10.00%
	Antimony	1000	1018	102	ug/L	+/- 10.00%
	Arsenic	1000	989.8	99.0	ug/L	+/- 10.00%
	Barium	1000	1024	102	ug/L	+/- 10.00%
	Beryllium	1000	974.4	97.4	ug/L	+/- 10.00%
	Cadmium	1000	1014	101	ug/L	+/- 10.00%
	Calcium	50000	46850	93.7	ug/L	+/- 10.00%
	Chromium	1000	946.4	94.6	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9294005
Sequence: 9J29412

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9J29412-CCVI	Cobalt	1000	1004	100	ug/L	+/- 10.00%
	Copper	1000	995.5	99.6	ug/L	+/- 10.00%
	Iron	10000	9671	96.7	ug/L	+/- 10.00%
	Lead	1000	1042	104	ug/L	+/- 10.00%
	Magnesium	50000	46720	93.4	ug/L	+/- 10.00%
	Manganese	1000	1038	104	ug/L	+/- 10.00%
	Nickel	1000	971.4	97.1	ug/L	+/- 10.00%
	Potassium	10000	10110	101	ug/L	+/- 10.00%
	Selenium	1000	1086	109	ug/L	+/- 10.00%
	Silver	500.0	488.7	97.7	ug/L	+/- 10.00%
	Sodium	50000	50150	100	ug/L	+/- 10.00%
	Thallium	1000	1009	101	ug/L	+/- 10.00%
	Vanadium	1000	994.8	99.5	ug/L	+/- 10.00%
	Zinc	1000	1040	104	ug/L	+/- 10.00%
9J29412-CCVJ	Aluminum	10000	10190	102	ug/L	+/- 10.00%
	Antimony	1000	1032	103	ug/L	+/- 10.00%
	Arsenic	1000	993.7	99.4	ug/L	+/- 10.00%
	Barium	1000	1043	104	ug/L	+/- 10.00%
	Beryllium	1000	1007	101	ug/L	+/- 10.00%
	Cadmium	1000	1026	103	ug/L	+/- 10.00%
	Calcium	50000	47410	94.8	ug/L	+/- 10.00%
	Chromium	1000	941.4	94.1	ug/L	+/- 10.00%
	Cobalt	1000	1018	102	ug/L	+/- 10.00%
	Copper	1000	1024	102	ug/L	+/- 10.00%
	Iron	10000	9532	95.3	ug/L	+/- 10.00%
	Lead	1000	1061	106	ug/L	+/- 10.00%
	Magnesium	50000	47670	95.3	ug/L	+/- 10.00%
	Manganese	1000	1070	107	ug/L	+/- 10.00%
	Nickel	1000	981.6	98.2	ug/L	+/- 10.00%
	Potassium	10000	10140	101	ug/L	+/- 10.00%
	Selenium	**1000**	**1121**	**112**	**ug/L**	+/- 10.00%
	Silver	500.0	492.8	98.6	ug/L	+/- 10.00%
	Sodium	50000	50830	102	ug/L	+/- 10.00%
	Thallium	1000	1021	102	ug/L	+/- 10.00%
	Vanadium	1000	1041	104	ug/L	+/- 10.00%
	Zinc	1000	1057	106	ug/L	+/- 10.00%
9J29412-CCVL	Aluminum	10000	10220	102	ug/L	+/- 10.00%
	Antimony	1000	1041	104	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9294005
Sequence: 9J29412

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9J29412-CCVL	Arsenic	1000	986.0	98.6	ug/L	+/- 10.00%
	Barium	1000	1067	107	ug/L	+/- 10.00%
	Beryllium	1000	994.1	99.4	ug/L	+/- 10.00%
	Cadmium	1000	1020	102	ug/L	+/- 10.00%
	Calcium	50000	46350	92.7	ug/L	+/- 10.00%
	Chromium	1000	938.0	93.8	ug/L	+/- 10.00%
	Cobalt	1000	1026	103	ug/L	+/- 10.00%
	Copper	1000	1024	102	ug/L	+/- 10.00%
	Iron	10000	9327	93.3	ug/L	+/- 10.00%
	Lead	1000	1081	108	ug/L	+/- 10.00%
	Magnesium	50000	47700	95.4	ug/L	+/- 10.00%
	Manganese	1000	1075	108	ug/L	+/- 10.00%
	Nickel	1000	977.1	97.7	ug/L	+/- 10.00%
	Potassium	10000	10230	102	ug/L	+/- 10.00%
	Selenium	**1000**	**1145**	**115**	**ug/L**	+/- 10.00%
	Silver	500.0	497.5	99.5	ug/L	+/- 10.00%
	Sodium	50000	50340	101	ug/L	+/- 10.00%
	Thallium	1000	1019	102	ug/L	+/- 10.00%
	Vanadium	1000	1045	104	ug/L	+/- 10.00%
	Zinc	1000	1076	108	ug/L	+/- 10.00%
9J29412-CCVM	Aluminum	10000	10290	103	ug/L	+/- 10.00%
	Antimony	1000	1036	104	ug/L	+/- 10.00%
	Arsenic	1000	989.3	98.9	ug/L	+/- 10.00%
	Barium	1000	1059	106	ug/L	+/- 10.00%
	Beryllium	1000	982.2	98.2	ug/L	+/- 10.00%
	Cadmium	1000	1011	101	ug/L	+/- 10.00%
	Calcium	50000	46400	92.8	ug/L	+/- 10.00%
	Chromium	1000	958.3	95.8	ug/L	+/- 10.00%
	Cobalt	1000	1018	102	ug/L	+/- 10.00%
	Copper	1000	1022	102	ug/L	+/- 10.00%
	Iron	10000	9504	95.0	ug/L	+/- 10.00%
	Lead	1000	1070	107	ug/L	+/- 10.00%
	Magnesium	50000	47520	95.0	ug/L	+/- 10.00%
	Manganese	1000	1066	107	ug/L	+/- 10.00%
	Nickel	1000	969.0	96.9	ug/L	+/- 10.00%
	Potassium	10000	10330	103	ug/L	+/- 10.00%
	Selenium	**1000**	**1120**	**112**	**ug/L**	+/- 10.00%
	Silver	500.0	503.6	101	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9294005
Sequence: 9J29412

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9J29412-CCVM	Sodium	50000	50380	101	ug/L	+/- 10.00%
	Thallium	1000	1013	101	ug/L	+/- 10.00%
	Vanadium	1000	1026	103	ug/L	+/- 10.00%
	Zinc	1000	1069	107	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW7470A

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-FIMS

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9285003
Sequence: 9J28512

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9J28512-ICV1	Mercury	2.000	2.020	101	ug/L	+/- 15.00%
9J28512-CCV1	Mercury	4.000	3.875	96.9	ug/L	+/- 15.00%
9J28512-CCV7	Mercury	2.000	1.940	97.0	ug/L	+/- 15.00%
9J28512-CCV8	Mercury	2.000	1.950	97.5	ug/L	+/- 15.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW7471A

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-FIMS

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9286001
Sequence: 9J28601

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9J28601-ICV1	Mercury	4.000	4.194	105	ug/L	+/- 15.00%
9J28601-CCV1	Mercury	4.000	4.031	101	ug/L	+/- 15.00%
9J28601-CCV5	Mercury	4.000	4.114	103	ug/L	+/- 15.00%
9J28601-CCV6	Mercury	4.000	4.133	103	ug/L	+/- 15.00%
9J28601-CCV7	Mercury	2.000	1.908	95.4	ug/L	+/- 15.00%
9J28601-CCV8	Mercury	2.000	1.916	95.8	ug/L	+/- 15.00%
9J28601-CCV9	Mercury	2.000	1.904	95.2	ug/L	+/- 15.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW7471A

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-FIMS

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9294004
Sequence: 9J29413

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9J29413-ICV1	Mercury	4.000	3.638	91.0	ug/L	+/- 15.00%
9J29413-CCV1	Mercury	4.000	4.056	101	ug/L	+/- 15.00%
9J29413-CCV2	Mercury	4.000	4.152	104	ug/L	+/- 15.00%
9J29413-CCV3	Mercury	2.000	2.016	101	ug/L	+/- 15.00%
9J29413-CCV4	Mercury	2.000	2.012	101	ug/L	+/- 15.00%
9J29413-CCV5	Mercury	4.000	4.008	100	ug/L	+/- 15.00%

CRDL STANDARD

SW6010B

Laboratory: Empirical Laboratories, LLC

SDG: CTO064_001

Client: Tetra Tech NUS, Inc. (T010)

Project: Great Lakes CTO 064 (Site 21)

Instrument ID: ME-ICP

Calibration: 9287008

Sequence: 9J28712

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
9J28712-CRL2	Barium	40.00	40.30	101	ug/L	50 - 150
	Manganese	15.00	16.06	107	ug/L	50 - 150
9J28712-CRL1	Aluminum	200.0	211.0	106	ug/L	50 - 150
	Antimony	15.00	13.96	93.1	ug/L	50 - 150
	Arsenic	5.000	4.380	87.6	ug/L	50 - 150
	Beryllium	5.000	5.103	102	ug/L	50 - 150
	Cadmium	5.000	5.107	102	ug/L	50 - 150
	Calcium	5000	5054	101	ug/L	50 - 150
	Chromium	5.000	4.908	98.2	ug/L	50 - 150
	Cobalt	12.50	12.22	97.7	ug/L	50 - 150
	Copper	10.00	10.04	100	ug/L	50 - 150
	Iron	100.0	109.1	109	ug/L	50 - 150
	Lead	3.000	2.407	80.2	ug/L	50 - 150
	Magnesium	5000	4844	96.9	ug/L	50 - 150
	Nickel	10.00	9.734	97.3	ug/L	50 - 150
	Potassium	5000	4895	97.9	ug/L	50 - 150
	Selenium	5.000	5.492	110	ug/L	50 - 150
	Silver	2.000	2.053	103	ug/L	50 - 150
	Sodium	5000	5564	111	ug/L	50 - 150
	Thallium	8.000	6.803	85.0	ug/L	50 - 150
	Vanadium	12.50	11.97	95.8	ug/L	50 - 150
	Zinc	20.00	19.71	98.6	ug/L	50 - 150

CRDL STANDARD

SW6010B

Laboratory: Empirical Laboratories, LLC

SDG: CTO064_001

Client: Tetra Tech NUS, Inc. (T010)

Project: Great Lakes CTO 064 (Site 21)

Instrument ID: ME-ICP

Calibration: 9291001

Sequence: 9J28910

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
9J28910-CRLC	Sodium	5000	5507	110	ug/L	50 - 150

CRDL STANDARD

SW6010B

Laboratory: Empirical Laboratories, LLC
SDG: CTO064_001
Client: Tetra Tech NUS, Inc. (T010)
Project: Great Lakes CTO 064 (Site 21)
Instrument ID: ME-ICP
Calibration: 9294005
Sequence: 9J29412

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
9J29412-CRL2	Barium	40.00	42.86	107	ug/L	50 - 150
	Manganese	15.00	16.22	108	ug/L	50 - 150
9J29412-CRL3	Aluminum	200.0	212.5	106	ug/L	50 - 150
	Antimony	15.00	15.44	103	ug/L	50 - 150
	Arsenic	5.000	4.737	94.7	ug/L	50 - 150
	Beryllium	5.000	5.065	101	ug/L	50 - 150
	Cadmium	5.000	5.183	104	ug/L	50 - 150
	Calcium	5000	4936	98.7	ug/L	50 - 150
	Chromium	5.000	5.737	115	ug/L	50 - 150
	Cobalt	12.50	12.64	101	ug/L	50 - 150
	Copper	10.00	10.06	101	ug/L	50 - 150
	Iron	100.0	106.3	106	ug/L	50 - 150
	Magnesium	5000	4765	95.3	ug/L	50 - 150
	Nickel	10.00	8.963	89.6	ug/L	50 - 150
	Potassium	5000	4914	98.3	ug/L	50 - 150
	Selenium	5.000	4.794	95.9	ug/L	50 - 150
	Silver	2.000	2.112	106	ug/L	50 - 150
	Sodium	5000	5431	109	ug/L	50 - 150
	Thallium	8.000	6.649	83.1	ug/L	50 - 150
	Vanadium	12.50	12.97	104	ug/L	50 - 150
	Zinc	20.00	21.15	106	ug/L	50 - 150
9J29412-CRL5	Lead	3.000	2.451	81.7	ug/L	50 - 150

CRDL STANDARD

SW7470A

Laboratory: Empirical Laboratories, LLC

SDG: CTO064_001

Client: Tetra Tech NUS, Inc. (T010)

Project: Great Lakes CTO 064 (Site 21)

Instrument ID: ME-FIMS

Calibration: 9285003

Sequence: 9J28512

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
9J28512-CRL1	Mercury	0.2000	0.1802	90.1	ug/L	70 - 130
9J28512-CRL2	Mercury	0.2000	0.1944	97.2	ug/L	70 - 130

CRDL STANDARD

SW7471A

Laboratory: Empirical Laboratories, LLC

SDG: CTO064_001

Client: Tetra Tech NUS, Inc. (T010)

Project: Great Lakes CTO 064 (Site 21)

Instrument ID: ME-FIMS

Calibration: 9286001

Sequence: 9J28601

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
9J28601-CRL1	Mercury	0.2000	0.2040	102	ug/L	70 - 130
9J28601-CRL2	Mercury	0.2000	0.2082	104	ug/L	70 - 130
9J28601-CRL3	Mercury	0.2000	0.2055	103	ug/L	70 - 130

CRDL STANDARD

SW7471A

Laboratory: Empirical Laboratories, LLC

SDG: CTO064_001

Client: Tetra Tech NUS, Inc. (T010)

Project: Great Lakes CTO 064 (Site 21)

Instrument ID: ME-FIMS

Calibration: 9294004

Sequence: 9J29413

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
9J29413-CRL1	Mercury	0.2000	0.2035	102	ug/L	70 - 130
9J29413-CRL2	Mercury	0.2000	0.2157	108	ug/L	70 - 130

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP
Sequence: 9J28712

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9287008

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9J28712-ICB1	Aluminum	4.412	50.0	200	ug/L	U	SW6010B
	Antimony	-0.3013	5.00	15.0	ug/L	U	SW6010B
	Arsenic	-0.4032	3.00	5.00	ug/L	U	SW6010B
	Barium	0.07911	5.00	40.0	ug/L	U	SW6010B
	Beryllium	0.008710	1.00	5.00	ug/L	U	SW6010B
	Cadmium	0.1385	1.00	5.00	ug/L	U	SW6010B
	Calcium	2.340	1000	5000	ug/L	U	SW6010B
	Chromium	0.1062	2.00	5.00	ug/L	U	SW6010B
	Cobalt	0.1259	5.00	12.5	ug/L	U	SW6010B
	Copper	0.06078	5.00	10.0	ug/L	U	SW6010B
	Iron	2.095	30.0	100	ug/L	U	SW6010B
	Lead	-0.3639	1.50	3.00	ug/L	U	SW6010B
	Magnesium	11.36	1000	5000	ug/L	U	SW6010B
	Manganese	-0.01055	3.00	15.0	ug/L	U	SW6010B
	Nickel	0.07104	3.00	10.0	ug/L	U	SW6010B
	Potassium	1.240	1000	5000	ug/L	U	SW6010B
	Selenium	1.814	3.00	5.00	ug/L	U	SW6010B
	Silver	-0.04732	1.00	5.00	ug/L	U	SW6010B
	Sodium	-3.370	1000	5000	ug/L	U	SW6010B
	Thallium	-0.5558	3.00	8.00	ug/L	U	SW6010B
	Vanadium	-0.1793	5.00	12.5	ug/L	U	SW6010B
	Zinc	-0.1431	5.00	20.0	ug/L	U	SW6010B
9J28712-CCB1	Aluminum	17.2	50.0	200	ug/L	U	SW6010B
	Antimony	-0.0812	5.00	15.0	ug/L	U	SW6010B
	Arsenic	0.0143	3.00	5.00	ug/L	U	SW6010B
	Barium	0.466	5.00	40.0	ug/L	U	SW6010B
	Beryllium	0.158	1.00	5.00	ug/L	U	SW6010B
	Cadmium	0.494	1.00	5.00	ug/L	U	SW6010B
	Calcium	17.6	1000	5000	ug/L	U	SW6010B
	Chromium	0.235	2.00	5.00	ug/L	U	SW6010B
	Cobalt	0.584	5.00	12.5	ug/L	U	SW6010B
	Copper	0.253	5.00	10.0	ug/L	U	SW6010B
	Iron	10.9	30.0	100	ug/L	U	SW6010B

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
SDG: CTO064_001
Instrument ID: ME-ICP
Project: Great Lakes CTO 064 (Site 21)
Sequence: 9J28712
Calibration: 9287008

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9J28712-CCB1	Lead	-0.162	1.50	3.00	ug/L	U	SW6010B
	Magnesium	29.9	1000	5000	ug/L	U	SW6010B
	Manganese	0.243	3.00	15.0	ug/L	U	SW6010B
	Nickel	0.502	3.00	10.0	ug/L	U	SW6010B
	Potassium	2.80	1000	5000	ug/L	U	SW6010B
	Selenium	1.70	3.00	5.00	ug/L	U	SW6010B
	Silver	-0.00352	1.00	5.00	ug/L	U	SW6010B
	Sodium	13.2	1000	5000	ug/L	U	SW6010B
	Thallium	-0.520	3.00	8.00	ug/L	U	SW6010B
	Vanadium	-0.0239	5.00	12.5	ug/L	U	SW6010B
	Zinc	0.242	5.00	20.0	ug/L	U	SW6010B
9J07001-BLK1	Aluminum	11.3	12.5	50.0	ug/L	U	SW6010B
	Antimony	-0.0199	1.25	3.75	ug/L	U	SW6010B
	Arsenic	0.216	0.750	1.25	ug/L	U	SW6010B
	Barium	0.0453	1.25	10.0	ug/L	U	SW6010B
	Beryllium	0.0851	0.250	1.25	ug/L	U	SW6010B
	Cadmium	0.0415	0.250	1.25	ug/L	U	SW6010B
	Calcium	11.2	250	1250	ug/L	U	SW6010B
	Chromium	0.120	0.500	1.25	ug/L	U	SW6010B
	Cobalt	0.0581	1.25	3.12	ug/L	U	SW6010B
	Copper	0.123	1.25	2.50	ug/L	U	SW6010B
	Iron	6.52	7.50	25.0	ug/L	U	SW6010B
	Lead	-0.106	0.375	0.750	ug/L	U	SW6010B
	Magnesium	12.7	250	1250	ug/L	U	SW6010B
	Manganese	0.127	0.750	3.75	ug/L	U	SW6010B
	Nickel	0.0790	0.750	2.50	ug/L	U	SW6010B
	Potassium	0.00750	250	1250	ug/L	U	SW6010B
	Selenium	-0.114	0.750	1.25	ug/L	U	SW6010B
	Silver	0.0519	0.250	1.25	ug/L	U	SW6010B
	Sodium	6.25	250	1250	ug/L	U	SW6010B
	Thallium	0.283	0.750	2.00	ug/L	U	SW6010B
	Vanadium	-0.0274	1.25	3.12	ug/L	U	SW6010B
	Zinc	0.511	1.25	5.00	ug/L	U	SW6010B

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP
Sequence: 9J28712

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9287008

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9J28712-CCB2	Aluminum	-0.0466	50.0	200	ug/L	U	SW6010B
	Antimony	0.334	5.00	15.0	ug/L	U	SW6010B
	Arsenic	-0.698	3.00	5.00	ug/L	U	SW6010B
	Barium	0.179	5.00	40.0	ug/L	U	SW6010B
	Beryllium	0.0880	1.00	5.00	ug/L	U	SW6010B
	Cadmium	0.281	1.00	5.00	ug/L	U	SW6010B
	Calcium	28.9	1000	5000	ug/L	U	SW6010B
	Chromium	0.233	2.00	5.00	ug/L	U	SW6010B
	Cobalt	0.239	5.00	12.5	ug/L	U	SW6010B
	Copper	0.179	5.00	10.0	ug/L	U	SW6010B
	Iron	0.428	30.0	100	ug/L	U	SW6010B
	Lead	-0.766	1.50	3.00	ug/L	U	SW6010B
	Magnesium	69.0	1000	5000	ug/L	U	SW6010B
	Manganese	0.0798	3.00	15.0	ug/L	U	SW6010B
	Nickel	0.0778	3.00	10.0	ug/L	U	SW6010B
	Potassium	93.4	1000	5000	ug/L	U	SW6010B
	Selenium	1.82	3.00	5.00	ug/L	U	SW6010B
	Silver	-0.00631	1.00	5.00	ug/L	U	SW6010B
	Sodium	1460	1000	5000	ug/L	J	SW6010B
	Thallium	0.164	3.00	8.00	ug/L	U	SW6010B
	Vanadium	-0.0540	5.00	12.5	ug/L	U	SW6010B
	Zinc	-0.0276	5.00	20.0	ug/L	U	SW6010B

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
SDG: CTO064_001

Instrument ID: ME-ICP
Project: Great Lakes CTO 064 (Site 21)

Sequence: 9J28910
Calibration: 9291001

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9J28910-ICB1	Sodium	-3.740	1000	5000	ug/L	U	SW6010B
9J28910-CCB1	Sodium	22.0	1000	5000	ug/L	U	SW6010B
9J28910-CCB4	Sodium	50.6	1000	5000	ug/L	U	SW6010B
9J28910-CCB5	Sodium	1150	1000	5000	ug/L	J	SW6010B

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
SDG: CTO064_001
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP
Project: Great Lakes CTO 064 (Site 21)
Sequence: 9J29412
Calibration: 9294005

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9J29412-ICB1	Aluminum	-2.479	50.0	200	ug/L	U	SW6010B
	Antimony	0.8784	5.00	15.0	ug/L	U	SW6010B
	Arsenic	0.3285	3.00	5.00	ug/L	U	SW6010B
	Barium	0.09320	5.00	40.0	ug/L	U	SW6010B
	Beryllium	0.1538	1.00	5.00	ug/L	U	SW6010B
	Cadmium	0.08690	1.00	5.00	ug/L	U	SW6010B
	Calcium	7.820	1000	5000	ug/L	U	SW6010B
	Chromium	0.7940	2.00	5.00	ug/L	U	SW6010B
	Cobalt	0.3632	5.00	12.5	ug/L	U	SW6010B
	Copper	0.2058	5.00	10.0	ug/L	U	SW6010B
	Iron	2.851	30.0	100	ug/L	U	SW6010B
	Lead	-0.04874	1.50	3.00	ug/L	U	SW6010B
	Magnesium	9.520	1000	5000	ug/L	U	SW6010B
	Manganese	0.09114	3.00	15.0	ug/L	U	SW6010B
	Nickel	-0.5478	3.00	10.0	ug/L	U	SW6010B
	Potassium	16.83	1000	5000	ug/L	U	SW6010B
	Selenium	0.1989	3.00	5.00	ug/L	U	SW6010B
	Silver	-0.2058	1.00	5.00	ug/L	U	SW6010B
	Sodium	22.37	1000	5000	ug/L	U	SW6010B
	Thallium	-0.7007	3.00	8.00	ug/L	U	SW6010B
	Vanadium	-0.03302	5.00	12.5	ug/L	U	SW6010B
	Zinc	0.03494	5.00	20.0	ug/L	U	SW6010B
9J29412-CCB1	Aluminum	53.7	50.0	200	ug/L	J	SW6010B
	Antimony	1.23	5.00	15.0	ug/L	U	SW6010B
	Arsenic	1.10	3.00	5.00	ug/L	U	SW6010B
	Barium	0.425	5.00	40.0	ug/L	U	SW6010B
	Beryllium	0.503	1.00	5.00	ug/L	U	SW6010B
	Cadmium	0.952	1.00	5.00	ug/L	U	SW6010B
	Calcium	58.0	1000	5000	ug/L	U	SW6010B
	Chromium	1.14	2.00	5.00	ug/L	U	SW6010B
	Cobalt	0.756	5.00	12.5	ug/L	U	SW6010B
	Copper	0.902	5.00	10.0	ug/L	U	SW6010B
	Iron	31.6	30.0	100	ug/L	J	SW6010B

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
SDG: CTO064_001
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP
Project: Great Lakes CTO 064 (Site 21)
Sequence: 9J29412
Calibration: 9294005

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9J29412-CCB1	Lead	-0.119	1.50	3.00	ug/L	U	SW6010B
	Magnesium	68.1	1000	5000	ug/L	U	SW6010B
	Manganese	0.340	3.00	15.0	ug/L	U	SW6010B
	Nickel	-0.439	3.00	10.0	ug/L	U	SW6010B
	Potassium	20.9	1000	5000	ug/L	U	SW6010B
	Selenium	1.39	3.00	5.00	ug/L	U	SW6010B
	Silver	-0.0711	1.00	5.00	ug/L	U	SW6010B
	Sodium	46.3	1000	5000	ug/L	U	SW6010B
	Thallium	0.937	3.00	8.00	ug/L	U	SW6010B
	Vanadium	0.590	5.00	12.5	ug/L	U	SW6010B
	Zinc	0.632	5.00	20.0	ug/L	U	SW6010B
9J29412-CCB9	Aluminum	-1.50	50.0	200	ug/L	U	SW6010B
	Antimony	0.551	5.00	15.0	ug/L	U	SW6010B
	Arsenic	-0.821	3.00	5.00	ug/L	U	SW6010B
	Barium	0.188	5.00	40.0	ug/L	U	SW6010B
	Beryllium	0.0402	1.00	5.00	ug/L	U	SW6010B
	Cadmium	-0.717	1.00	5.00	ug/L	U	SW6010B
	Calcium	5.88	1000	5000	ug/L	U	SW6010B
	Chromium	0.694	2.00	5.00	ug/L	U	SW6010B
	Cobalt	0.170	5.00	12.5	ug/L	U	SW6010B
	Copper	-0.915	5.00	10.0	ug/L	U	SW6010B
	Iron	3.25	30.0	100	ug/L	U	SW6010B
	Lead	-1.21	1.50	3.00	ug/L	U	SW6010B
	Magnesium	6.01	1000	5000	ug/L	U	SW6010B
	Manganese	0.0570	3.00	15.0	ug/L	U	SW6010B
	Nickel	-0.0220	3.00	10.0	ug/L	U	SW6010B
	Potassium	6.64	1000	5000	ug/L	U	SW6010B
	Selenium	0.102	3.00	5.00	ug/L	U	SW6010B
	Silver	-0.0344	1.00	5.00	ug/L	U	SW6010B
	Sodium	1.31	1000	5000	ug/L	U	SW6010B
	Thallium	0.290	3.00	8.00	ug/L	U	SW6010B
	Vanadium	0.263	5.00	12.5	ug/L	U	SW6010B
	Zinc	0.200	5.00	20.0	ug/L	U	SW6010B

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP
Sequence: 9J29412

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9294005

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9J13003-BLK1	Aluminum	0.361	2.50	10.0	mg/Kg wet	U	SW6010B
	Antimony	0.0441	0.250	0.750	mg/Kg wet	U	SW6010B
	Arsenic	-0.112	0.150	0.250	mg/Kg wet	U	SW6010B
	Barium	-0.0105	0.250	2.00	mg/Kg wet	U	SW6010B
	Beryllium	-0.000654	0.0500	0.250	mg/Kg wet	U	SW6010B
	Cadmium	-0.0209	0.0500	0.250	mg/Kg wet	U	SW6010B
	Calcium	1.03	50.0	250	mg/Kg wet	U	SW6010B
	Chromium	0.0832	0.100	0.250	mg/Kg wet	U	SW6010B
	Cobalt	-0.00181	0.250	0.625	mg/Kg wet	U	SW6010B
	Copper	-0.0499	0.250	0.500	mg/Kg wet	U	SW6010B
	Iron	0.286	1.50	5.00	mg/Kg wet	U	SW6010B
	Lead	-0.0793	0.0750	0.150	mg/Kg wet	J	SW6010B
	Magnesium	0.00150	50.0	250	mg/Kg wet	U	SW6010B
	Manganese	0.00833	0.150	0.750	mg/Kg wet	U	SW6010B
	Nickel	-0.0328	0.250	0.500	mg/Kg wet	U	SW6010B
	Potassium	0.0205	50.0	250	mg/Kg wet	U	SW6010B
	Selenium	0.0895	0.150	0.250	mg/Kg wet	U	SW6010B
	Silver	-0.0152	0.0500	0.250	mg/Kg wet	U	SW6010B
	Sodium	0.228	50.0	250	mg/Kg wet	U	SW6010B
	Thallium	-0.149	0.150	0.400	mg/Kg wet	U	SW6010B
	Vanadium	0.0127	0.250	0.625	mg/Kg wet	U	SW6010B
	Zinc	0.253	0.250	1.00	mg/Kg wet	J	SW6010B
9J29412-CCBA	Aluminum	-7.44	50.0	200	ug/L	U	SW6010B
	Antimony	0.663	5.00	15.0	ug/L	U	SW6010B
	Arsenic	-1.01	3.00	5.00	ug/L	U	SW6010B
	Barium	0.238	5.00	40.0	ug/L	U	SW6010B
	Beryllium	0.0210	1.00	5.00	ug/L	U	SW6010B
	Cadmium	-0.652	1.00	5.00	ug/L	U	SW6010B
	Calcium	5.40	1000	5000	ug/L	U	SW6010B
	Chromium	0.814	2.00	5.00	ug/L	U	SW6010B
	Cobalt	0.173	5.00	12.5	ug/L	U	SW6010B
	Copper	-1.20	5.00	10.0	ug/L	U	SW6010B
	Iron	7.18	30.0	100	ug/L	U	SW6010B

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
SDG: CTO064_001
Instrument ID: ME-ICP
Project: Great Lakes CTO 064 (Site 21)
Sequence: 9J29412
Calibration: 9294005

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9J29412-CCBA	Lead	-1.34	1.50	3.00	ug/L	U	SW6010B
	Magnesium	10.4	1000	5000	ug/L	U	SW6010B
	Manganese	0.0382	3.00	15.0	ug/L	U	SW6010B
	Nickel	0.127	3.00	10.0	ug/L	U	SW6010B
	Potassium	-7.98	1000	5000	ug/L	U	SW6010B
	Selenium	-0.776	3.00	5.00	ug/L	U	SW6010B
	Silver	0.0482	1.00	5.00	ug/L	U	SW6010B
	Sodium	8.79	1000	5000	ug/L	U	SW6010B
	Thallium	0.824	3.00	8.00	ug/L	U	SW6010B
	Vanadium	0.254	5.00	12.5	ug/L	U	SW6010B
	Zinc	0.429	5.00	20.0	ug/L	U	SW6010B
9J29412-CCBB	Aluminum	-4.27	50.0	200	ug/L	U	SW6010B
	Antimony	0.923	5.00	15.0	ug/L	U	SW6010B
	Arsenic	0.216	3.00	5.00	ug/L	U	SW6010B
	Barium	0.320	5.00	40.0	ug/L	U	SW6010B
	Beryllium	0.0525	1.00	5.00	ug/L	U	SW6010B
	Cadmium	-0.618	1.00	5.00	ug/L	U	SW6010B
	Calcium	17.6	1000	5000	ug/L	U	SW6010B
	Chromium	1.05	2.00	5.00	ug/L	U	SW6010B
	Cobalt	0.272	5.00	12.5	ug/L	U	SW6010B
	Copper	-1.18	5.00	10.0	ug/L	U	SW6010B
	Iron	9.99	30.0	100	ug/L	U	SW6010B
	Lead	-0.365	1.50	3.00	ug/L	U	SW6010B
	Magnesium	11.6	1000	5000	ug/L	U	SW6010B
	Manganese	0.256	3.00	15.0	ug/L	U	SW6010B
	Nickel	0.112	3.00	10.0	ug/L	U	SW6010B
	Potassium	-6.09	1000	5000	ug/L	U	SW6010B
	Selenium	-1.38	3.00	5.00	ug/L	U	SW6010B
	Silver	0.314	1.00	5.00	ug/L	U	SW6010B
	Sodium	8.43	1000	5000	ug/L	U	SW6010B
	Thallium	-0.00435	3.00	8.00	ug/L	U	SW6010B
	Vanadium	0.426	5.00	12.5	ug/L	U	SW6010B
	Zinc	0.546	5.00	20.0	ug/L	U	SW6010B

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
SDG: CTO064_001
Instrument ID: ME-ICP
Project: Great Lakes CTO 064 (Site 21)
Sequence: 9J29412
Calibration: 9294005

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9J13004-BLK1	Aluminum	0.332	2.50	10.0	mg/Kg wet	U	SW6010B
	Antimony	0.0325	0.250	0.750	mg/Kg wet	U	SW6010B
	Arsenic	-0.0494	0.150	0.250	mg/Kg wet	U	SW6010B
	Barium	-0.0158	0.250	2.00	mg/Kg wet	U	SW6010B
	Beryllium	-0.000948	0.0500	0.250	mg/Kg wet	U	SW6010B
	Cadmium	-0.0304	0.0500	0.250	mg/Kg wet	U	SW6010B
	Calcium	1.56	50.0	250	mg/Kg wet	U	SW6010B
	Chromium	0.0747	0.100	0.250	mg/Kg wet	U	SW6010B
	Cobalt	-0.00225	0.250	0.625	mg/Kg wet	U	SW6010B
	Copper	-0.0613	0.250	0.500	mg/Kg wet	U	SW6010B
	Iron	0.935	1.50	5.00	mg/Kg wet	U	SW6010B
	Lead	-0.0400	0.0750	0.150	mg/Kg wet	U	SW6010B
	Magnesium	0.454	50.0	250	mg/Kg wet	U	SW6010B
	Manganese	0.0118	0.150	0.750	mg/Kg wet	U	SW6010B
	Nickel	-0.0350	0.250	0.500	mg/Kg wet	U	SW6010B
	Potassium	0.171	50.0	250	mg/Kg wet	U	SW6010B
	Selenium	0.0402	0.150	0.250	mg/Kg wet	U	SW6010B
	Silver	-0.00679	0.0500	0.250	mg/Kg wet	U	SW6010B
	Sodium	0.469	50.0	250	mg/Kg wet	U	SW6010B
	Thallium	-0.177	0.150	0.400	mg/Kg wet	J	SW6010B
	Vanadium	0.00644	0.250	0.625	mg/Kg wet	U	SW6010B
	Zinc	0.278	0.250	1.00	mg/Kg wet	J	SW6010B
9J29412-CCBC	Aluminum	1.67	50.0	200	ug/L	U	SW6010B
	Antimony	0.387	5.00	15.0	ug/L	U	SW6010B
	Arsenic	-0.758	3.00	5.00	ug/L	U	SW6010B
	Barium	0.0470	5.00	40.0	ug/L	U	SW6010B
	Beryllium	0.0499	1.00	5.00	ug/L	U	SW6010B
	Cadmium	-1.08	1.00	5.00	ug/L	J	SW6010B
	Calcium	7.06	1000	5000	ug/L	U	SW6010B
	Chromium	0.866	2.00	5.00	ug/L	U	SW6010B
	Cobalt	0.0682	5.00	12.5	ug/L	U	SW6010B
	Copper	-1.42	5.00	10.0	ug/L	U	SW6010B
	Iron	11.4	30.0	100	ug/L	U	SW6010B

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
SDG: CTO064_001
Instrument ID: ME-ICP
Project: Great Lakes CTO 064 (Site 21)
Sequence: 9J29412
Calibration: 9294005

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9J29412-CCBC	Lead	-1.14	1.50	3.00	ug/L	U	SW6010B
	Magnesium	-0.470	1000	5000	ug/L	U	SW6010B
	Manganese	0.150	3.00	15.0	ug/L	U	SW6010B
	Nickel	-0.00439	3.00	10.0	ug/L	U	SW6010B
	Potassium	2.01	1000	5000	ug/L	U	SW6010B
	Selenium	-0.538	3.00	5.00	ug/L	U	SW6010B
	Silver	0.0765	1.00	5.00	ug/L	U	SW6010B
	Sodium	1.59	1000	5000	ug/L	U	SW6010B
	Thallium	0.244	3.00	8.00	ug/L	U	SW6010B
	Vanadium	0.253	5.00	12.5	ug/L	U	SW6010B
	Zinc	0.152	5.00	20.0	ug/L	U	SW6010B
9J29412-CCBD	Aluminum	-3.88	50.0	200	ug/L	U	SW6010B
	Antimony	-0.153	5.00	15.0	ug/L	U	SW6010B
	Arsenic	-0.871	3.00	5.00	ug/L	U	SW6010B
	Barium	0.0196	5.00	40.0	ug/L	U	SW6010B
	Beryllium	0.0255	1.00	5.00	ug/L	U	SW6010B
	Cadmium	-1.20	1.00	5.00	ug/L	J	SW6010B
	Calcium	14.9	1000	5000	ug/L	U	SW6010B
	Chromium	0.795	2.00	5.00	ug/L	U	SW6010B
	Cobalt	0.140	5.00	12.5	ug/L	U	SW6010B
	Copper	-1.63	5.00	10.0	ug/L	U	SW6010B
	Iron	8.51	30.0	100	ug/L	U	SW6010B
	Lead	-0.615	1.50	3.00	ug/L	U	SW6010B
	Magnesium	8.63	1000	5000	ug/L	U	SW6010B
	Manganese	0.0741	3.00	15.0	ug/L	U	SW6010B
	Nickel	0.175	3.00	10.0	ug/L	U	SW6010B
	Potassium	-26.6	1000	5000	ug/L	U	SW6010B
	Selenium	-0.957	3.00	5.00	ug/L	U	SW6010B
	Silver	0.0958	1.00	5.00	ug/L	U	SW6010B
	Sodium	1.88	1000	5000	ug/L	U	SW6010B
	Thallium	0.577	3.00	8.00	ug/L	U	SW6010B
	Vanadium	0.109	5.00	12.5	ug/L	U	SW6010B
	Zinc	0.121	5.00	20.0	ug/L	U	SW6010B

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP
Sequence: 9J29412

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9294005

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9J13005-BLK1	Aluminum	0.597	2.50	10.0	mg/Kg wet	U	SW6010B
	Antimony	0.00519	0.250	0.750	mg/Kg wet	U	SW6010B
	Arsenic	-0.0530	0.150	0.250	mg/Kg wet	U	SW6010B
	Barium	-0.0113	0.250	2.00	mg/Kg wet	U	SW6010B
	Beryllium	-0.000146	0.0500	0.250	mg/Kg wet	U	SW6010B
	Cadmium	-0.0539	0.0500	0.250	mg/Kg wet	J	SW6010B
	Calcium	2.66	50.0	250	mg/Kg wet	U	SW6010B
	Chromium	0.0723	0.100	0.250	mg/Kg wet	U	SW6010B
	Cobalt	-0.00766	0.250	0.625	mg/Kg wet	U	SW6010B
	Copper	-0.0851	0.250	0.500	mg/Kg wet	U	SW6010B
	Iron	0.948	1.50	5.00	mg/Kg wet	U	SW6010B
	Lead	-0.0114	0.0750	0.150	mg/Kg wet	U	SW6010B
	Magnesium	0.854	50.0	250	mg/Kg wet	U	SW6010B
	Manganese	0.0227	0.150	0.750	mg/Kg wet	U	SW6010B
	Nickel	-0.0170	0.250	0.500	mg/Kg wet	U	SW6010B
	Potassium	-1.35	50.0	250	mg/Kg wet	U	SW6010B
	Selenium	-0.0161	0.150	0.250	mg/Kg wet	U	SW6010B
	Silver	-0.00830	0.0500	0.250	mg/Kg wet	U	SW6010B
	Sodium	0.766	50.0	250	mg/Kg wet	U	SW6010B
	Thallium	-0.132	0.150	0.400	mg/Kg wet	U	SW6010B
	Vanadium	0.0114	0.250	0.625	mg/Kg wet	U	SW6010B
	Zinc	0.274	0.250	1.00	mg/Kg wet	J	SW6010B
9J29412-CCBE	Aluminum	-2.80	50.0	200	ug/L	U	SW6010B
	Antimony	0.514	5.00	15.0	ug/L	U	SW6010B
	Arsenic	-1.39	3.00	5.00	ug/L	U	SW6010B
	Barium	-0.0904	5.00	40.0	ug/L	U	SW6010B
	Beryllium	0.00991	1.00	5.00	ug/L	U	SW6010B
	Cadmium	-1.28	1.00	5.00	ug/L	J	SW6010B
	Calcium	7.62	1000	5000	ug/L	U	SW6010B
	Chromium	0.746	2.00	5.00	ug/L	U	SW6010B
	Cobalt	0.0140	5.00	12.5	ug/L	U	SW6010B
	Copper	-1.72	5.00	10.0	ug/L	U	SW6010B
	Iron	7.92	30.0	100	ug/L	U	SW6010B

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
SDG: CTO064_001
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP
Project: Great Lakes CTO 064 (Site 21)
Sequence: 9J29412
Calibration: 9294005

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9J29412-CCBE	Lead	-1.39	1.50	3.00	ug/L	U	SW6010B
	Magnesium	-3.73	1000	5000	ug/L	U	SW6010B
	Manganese	0.103	3.00	15.0	ug/L	U	SW6010B
	Nickel	-0.128	3.00	10.0	ug/L	U	SW6010B
	Potassium	-23.9	1000	5000	ug/L	U	SW6010B
	Selenium	-1.46	3.00	5.00	ug/L	U	SW6010B
	Silver	0.162	1.00	5.00	ug/L	U	SW6010B
	Sodium	-0.940	1000	5000	ug/L	U	SW6010B
	Thallium	-0.111	3.00	8.00	ug/L	U	SW6010B
	Vanadium	0.226	5.00	12.5	ug/L	U	SW6010B
	Zinc	0.0226	5.00	20.0	ug/L	U	SW6010B
9J20002-BLK1	Aluminum	-0.0474	2.50	10.0	mg/Kg wet	U	SW6010B
	Antimony	0.0157	0.250	0.750	mg/Kg wet	U	SW6010B
	Arsenic	-0.103	0.150	0.250	mg/Kg wet	U	SW6010B
	Barium	-0.0120	0.250	2.00	mg/Kg wet	U	SW6010B
	Beryllium	-0.000470	0.0500	0.250	mg/Kg wet	U	SW6010B
	Cadmium	-0.0522	0.0500	0.250	mg/Kg wet	J	SW6010B
	Calcium	0.632	50.0	250	mg/Kg wet	U	SW6010B
	Chromium	0.0574	0.100	0.250	mg/Kg wet	U	SW6010B
	Cobalt	-0.00501	0.250	0.625	mg/Kg wet	U	SW6010B
	Copper	-0.0809	0.250	0.500	mg/Kg wet	U	SW6010B
	Iron	0.671	1.50	5.00	mg/Kg wet	U	SW6010B
	Lead	-0.0432	0.0750	0.150	mg/Kg wet	U	SW6010B
	Magnesium	-0.362	50.0	250	mg/Kg wet	U	SW6010B
	Manganese	0.00459	0.150	0.750	mg/Kg wet	U	SW6010B
	Nickel	-0.0232	0.250	0.500	mg/Kg wet	U	SW6010B
	Potassium	-1.17	50.0	250	mg/Kg wet	U	SW6010B
	Selenium	-0.00911	0.150	0.250	mg/Kg wet	U	SW6010B
	Silver	-0.00811	0.0500	0.250	mg/Kg wet	U	SW6010B
	Sodium	1.26	50.0	250	mg/Kg wet	U	SW6010B
	Vanadium	0.00559	0.250	0.625	mg/Kg wet	U	SW6010B
	Zinc	0.267	0.250	1.00	mg/Kg wet	J	SW6010B
9J29412-CCBF	Aluminum	2.74	50.0	200	ug/L	U	SW6010B

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP
Sequence: 9J29412

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9294005

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9J29412-CCBF	Antimony	0.206	5.00	15.0	ug/L	U	SW6010B
	Arsenic	-0.00368	3.00	5.00	ug/L	U	SW6010B
	Barium	0.0842	5.00	40.0	ug/L	U	SW6010B
	Beryllium	0.0268	1.00	5.00	ug/L	U	SW6010B
	Cadmium	-1.06	1.00	5.00	ug/L	J	SW6010B
	Calcium	6.54	1000	5000	ug/L	U	SW6010B
	Chromium	0.765	2.00	5.00	ug/L	U	SW6010B
	Cobalt	0.204	5.00	12.5	ug/L	U	SW6010B
	Copper	-1.54	5.00	10.0	ug/L	U	SW6010B
	Iron	11.9	30.0	100	ug/L	U	SW6010B
	Lead	-0.674	1.50	3.00	ug/L	U	SW6010B
	Magnesium	1.23	1000	5000	ug/L	U	SW6010B
	Manganese	0.114	3.00	15.0	ug/L	U	SW6010B
	Nickel	0.300	3.00	10.0	ug/L	U	SW6010B
	Potassium	-20.7	1000	5000	ug/L	U	SW6010B
	Selenium	-1.17	3.00	5.00	ug/L	U	SW6010B
	Silver	0.0226	1.00	5.00	ug/L	U	SW6010B
	Sodium	3.92	1000	5000	ug/L	U	SW6010B
	Thallium	-0.693	3.00	8.00	ug/L	U	SW6010B
	Vanadium	0.281	5.00	12.5	ug/L	U	SW6010B
	Zinc	0.403	5.00	20.0	ug/L	U	SW6010B
9J29412-CCBH	Aluminum	-1.13	50.0	200	ug/L	U	SW6010B
	Antimony	1.12	5.00	15.0	ug/L	U	SW6010B
	Arsenic	-1.34	3.00	5.00	ug/L	U	SW6010B
	Barium	0.658	5.00	40.0	ug/L	U	SW6010B
	Beryllium	0.0727	1.00	5.00	ug/L	U	SW6010B
	Cadmium	0.414	1.00	5.00	ug/L	U	SW6010B
	Calcium	-0.490	1000	5000	ug/L	U	SW6010B
	Chromium	0.809	2.00	5.00	ug/L	U	SW6010B
	Cobalt	0.467	5.00	12.5	ug/L	U	SW6010B
	Copper	-0.0208	5.00	10.0	ug/L	U	SW6010B
	Iron	2.90	30.0	100	ug/L	U	SW6010B
	Lead	-0.648	1.50	3.00	ug/L	U	SW6010B

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
SDG: CTO064_001
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP
Project: Great Lakes CTO 064 (Site 21)
Sequence: 9J29412
Calibration: 9294005

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9J29412-CCBH	Magnesium	5.30	1000	5000	ug/L	U	SW6010B
	Manganese	0.126	3.00	15.0	ug/L	U	SW6010B
	Nickel	-0.0884	3.00	10.0	ug/L	U	SW6010B
	Potassium	11.1	1000	5000	ug/L	U	SW6010B
	Selenium	-0.912	3.00	5.00	ug/L	U	SW6010B
	Silver	0.0503	1.00	5.00	ug/L	U	SW6010B
	Sodium	24.1	1000	5000	ug/L	U	SW6010B
	Thallium	0.166	3.00	8.00	ug/L	U	SW6010B
	Vanadium	0.276	5.00	12.5	ug/L	U	SW6010B
	Zinc	0.519	5.00	20.0	ug/L	U	SW6010B
9J29412-CCBI	Aluminum	4.03	50.0	200	ug/L	U	SW6010B
	Antimony	0.662	5.00	15.0	ug/L	U	SW6010B
	Arsenic	-0.466	3.00	5.00	ug/L	U	SW6010B
	Barium	0.0841	5.00	40.0	ug/L	U	SW6010B
	Beryllium	0.106	1.00	5.00	ug/L	U	SW6010B
	Cadmium	0.377	1.00	5.00	ug/L	U	SW6010B
	Calcium	33.7	1000	5000	ug/L	U	SW6010B
	Chromium	0.751	2.00	5.00	ug/L	U	SW6010B
	Cobalt	0.332	5.00	12.5	ug/L	U	SW6010B
	Copper	0.487	5.00	10.0	ug/L	U	SW6010B
	Iron	15.1	30.0	100	ug/L	U	SW6010B
	Lead	-0.299	1.50	3.00	ug/L	U	SW6010B
	Magnesium	28.8	1000	5000	ug/L	U	SW6010B
	Manganese	0.532	3.00	15.0	ug/L	U	SW6010B
	Nickel	-1.01	3.00	10.0	ug/L	U	SW6010B
	Potassium	26.3	1000	5000	ug/L	U	SW6010B
	Selenium	-0.554	3.00	5.00	ug/L	U	SW6010B
	Silver	-0.132	1.00	5.00	ug/L	U	SW6010B
	Sodium	17.1	1000	5000	ug/L	U	SW6010B
	Thallium	0.464	3.00	8.00	ug/L	U	SW6010B
	Vanadium	0.242	5.00	12.5	ug/L	U	SW6010B
	Zinc	0.140	5.00	20.0	ug/L	U	SW6010B
9J29412-CCBJ	Aluminum	0.914	50.0	200	ug/L	U	SW6010B

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
SDG: CTO064_001
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP
Project: Great Lakes CTO 064 (Site 21)
Sequence: 9J29412
Calibration: 9294005

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9J29412-CCBJ	Antimony	1.71	5.00	15.0	ug/L	U	SW6010B
	Arsenic	0.311	3.00	5.00	ug/L	U	SW6010B
	Barium	0.334	5.00	40.0	ug/L	U	SW6010B
	Beryllium	0.0974	1.00	5.00	ug/L	U	SW6010B
	Cadmium	0.677	1.00	5.00	ug/L	U	SW6010B
	Calcium	1.54	1000	5000	ug/L	U	SW6010B
	Chromium	0.820	2.00	5.00	ug/L	U	SW6010B
	Cobalt	0.334	5.00	12.5	ug/L	U	SW6010B
	Copper	0.754	5.00	10.0	ug/L	U	SW6010B
	Iron	8.63	30.0	100	ug/L	U	SW6010B
	Lead	-0.857	1.50	3.00	ug/L	U	SW6010B
	Magnesium	7.40	1000	5000	ug/L	U	SW6010B
	Manganese	0.325	3.00	15.0	ug/L	U	SW6010B
	Nickel	-0.780	3.00	10.0	ug/L	U	SW6010B
	Potassium	40.0	1000	5000	ug/L	U	SW6010B
	Selenium	-1.27	3.00	5.00	ug/L	U	SW6010B
	Silver	0.0191	1.00	5.00	ug/L	U	SW6010B
	Sodium	14.5	1000	5000	ug/L	U	SW6010B
	Thallium	-0.384	3.00	8.00	ug/L	U	SW6010B
	Vanadium	0.141	5.00	12.5	ug/L	U	SW6010B
	Zinc	0.282	5.00	20.0	ug/L	U	SW6010B
9J29412-CCBL	Aluminum	-0.499	50.0	200	ug/L	U	SW6010B
	Antimony	1.29	5.00	15.0	ug/L	U	SW6010B
	Arsenic	-1.19	3.00	5.00	ug/L	U	SW6010B
	Barium	0.216	5.00	40.0	ug/L	U	SW6010B
	Beryllium	0.0462	1.00	5.00	ug/L	U	SW6010B
	Cadmium	0.862	1.00	5.00	ug/L	U	SW6010B
	Calcium	-0.650	1000	5000	ug/L	U	SW6010B
	Chromium	0.648	2.00	5.00	ug/L	U	SW6010B
	Cobalt	0.469	5.00	12.5	ug/L	U	SW6010B
	Copper	1.00	5.00	10.0	ug/L	U	SW6010B
	Iron	3.62	30.0	100	ug/L	U	SW6010B
	Lead	-1.73	1.50	3.00	ug/L	J	SW6010B

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP
Sequence: 9J29412

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9294005

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9J29412-CCBL	Magnesium	0.140	1000	5000	ug/L	U	SW6010B
	Manganese	0.321	3.00	15.0	ug/L	U	SW6010B
	Nickel	-0.927	3.00	10.0	ug/L	U	SW6010B
	Potassium	26.1	1000	5000	ug/L	U	SW6010B
	Selenium	0.859	3.00	5.00	ug/L	U	SW6010B
	Silver	-0.0389	1.00	5.00	ug/L	U	SW6010B
	Sodium	7.08	1000	5000	ug/L	U	SW6010B
	Thallium	-0.660	3.00	8.00	ug/L	U	SW6010B
	Vanadium	0.164	5.00	12.5	ug/L	U	SW6010B
	Zinc	0.416	5.00	20.0	ug/L	U	SW6010B
9J20002-BLK2	Thallium	-0.172	0.150	0.400	mg/Kg wet	J	SW6010B
9J29412-CCBM	Aluminum	-0.703	50.0	200	ug/L	U	SW6010B
	Antimony	1.77	5.00	15.0	ug/L	U	SW6010B
	Arsenic	-0.445	3.00	5.00	ug/L	U	SW6010B
	Barium	0.273	5.00	40.0	ug/L	U	SW6010B
	Beryllium	0.0718	1.00	5.00	ug/L	U	SW6010B
	Cadmium	0.730	1.00	5.00	ug/L	U	SW6010B
	Calcium	4.06	1000	5000	ug/L	U	SW6010B
	Chromium	0.745	2.00	5.00	ug/L	U	SW6010B
	Cobalt	0.268	5.00	12.5	ug/L	U	SW6010B
	Copper	0.587	5.00	10.0	ug/L	U	SW6010B
	Iron	5.07	30.0	100	ug/L	U	SW6010B
	Lead	-1.30	1.50	3.00	ug/L	U	SW6010B
	Magnesium	6.92	1000	5000	ug/L	U	SW6010B
	Manganese	0.175	3.00	15.0	ug/L	U	SW6010B
	Nickel	-0.745	3.00	10.0	ug/L	U	SW6010B
	Potassium	10.5	1000	5000	ug/L	U	SW6010B
	Selenium	0.881	3.00	5.00	ug/L	U	SW6010B
	Silver	0.0377	1.00	5.00	ug/L	U	SW6010B
	Sodium	3.53	1000	5000	ug/L	U	SW6010B
	Thallium	-0.444	3.00	8.00	ug/L	U	SW6010B
	Vanadium	0.0770	5.00	12.5	ug/L	U	SW6010B
	Zinc	0.336	5.00	20.0	ug/L	U	SW6010B

BLANKS
SW7470A

Laboratory: Empirical Laboratories, LLC
SDG: CTO064_001
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-FIMS
Project: Great Lakes CTO 064 (Site 21)
Sequence: 9J28512
Calibration: 9285003

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9J28512-ICB1	Mercury	0.004618	0.0800	0.200	ug/L	U	SW7470A
9J07004-BLK1	Mercury	0.0114	0.0800	0.200	ug/L	U	SW7470A
9J28512-CCB1	Mercury	0.0115	0.0800	0.200	ug/L	U	SW7470A
9J28512-CCB7	Mercury	0.0240	0.0800	0.200	ug/L	U	SW7470A
9J28512-CCB8	Mercury	0.0238	0.0800	0.200	ug/L	U	SW7470A

BLANKS
SW7471A

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-FIMS
Sequence: 9J28601

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9286001

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9J28601-ICB1	Mercury	0.02564	0.480	1.20	ug/L	U	SW7471A
9J28601-CCB1	Mercury	0.0319	0.480	1.20	ug/L	U	SW7471A
9J28601-CCB5	Mercury	0.0290	0.480	1.20	ug/L	U	SW7471A
9J09009-BLK1	Mercury	0.00494	0.0130	0.0330	mg/Kg wet	U	SW7471A
9J28601-CCB6	Mercury	0.0301	0.480	1.20	ug/L	U	SW7471A
9J28601-CCB7	Mercury	0.0351	0.480	1.20	ug/L	U	SW7471A
9J28601-CCB8	Mercury	0.0320	0.480	1.20	ug/L	U	SW7471A
9J28601-CCB9	Mercury	0.0295	0.480	1.20	ug/L	U	SW7471A

BLANKS
SW7471A

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-FIMS
Sequence: 9J29413

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9294004

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9J29413-ICB1	Mercury	0.01945	0.480	1.20	ug/L	U	SW7471A
9J14016-BLK1	Mercury	0.00286	0.0130	0.0330	mg/Kg wet	U	SW7471A
9J29413-CCB1	Mercury	0.0202	0.480	1.20	ug/L	U	SW7471A
9J29413-CCB2	Mercury	0.0218	0.480	1.20	ug/L	U	SW7471A
9J14017-BLK1	Mercury	0.00376	0.0130	0.0330	mg/Kg wet	U	SW7471A
9J29413-CCB3	Mercury	0.0197	0.480	1.20	ug/L	U	SW7471A
9J29413-CCB4	Mercury	0.0226	0.480	1.20	ug/L	U	SW7471A
9J29413-CCB5	Mercury	0.0210	0.480	1.20	ug/L	U	SW7471A

ICP INTERFERENCE CHECK SAMPLE

SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP
Sequence: 9J28712

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9287008

Lab Sample ID	Analyte	True	Found	%R	Units
9J28712-IFA1	Aluminum	500000	506,530.00	101	ug/L
	Antimony		1.06		ug/L
	Arsenic		3.71		ug/L
	Barium		3.20		ug/L
	Beryllium		0.22		ug/L
	Cadmium		0.20		ug/L
	Calcium	500000	466,770.00	93.4	ug/L
	Chromium		-1.24		ug/L
	Cobalt		4.89		ug/L
	Copper		-7.11		ug/L
	Iron	200000	197,530.00	98.8	ug/L
	Lead		1.42		ug/L
	Magnesium	500000	498,780.00	99.8	ug/L
	Manganese		2.74		ug/L
	Nickel		-10.94		ug/L
	Potassium		-57.99		ug/L
	Selenium		0.57		ug/L
	Silver		-0.13		ug/L
	Sodium		42.23		ug/L
	Thallium		1.69		ug/L
	Vanadium		0.77		ug/L
	Zinc		-2.73		ug/L
9J28712-IFB1	Aluminum	500000	515,440.00	103	ug/L
	Antimony	600.0	665.38	111	ug/L
	Arsenic	100.0	111.17	111	ug/L
	Barium	500.0	547.94	110	ug/L
	Beryllium	500.0	479.70	95.9	ug/L
	Cadmium	1000	1,181.60	118	ug/L
	Calcium	500000	463,520.00	92.7	ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6010B

Laboratory: Empirical Laboratories, LLC

SDG: CTO064_001

Client: Tetra Tech NUS, Inc. (T010)

Project: Great Lakes CTO 064 (Site 21)

Instrument ID: ME-ICP

Calibration: 9287008

Sequence: 9J28712

Lab Sample ID	Analyte	True	Found	%R	Units
9J28712-IFB1	Chromium	500.0	439.10	87.8	ug/L
	Cobalt	500.0	509.62	102	ug/L
	Copper	500.0	515.56	103	ug/L
	Iron	200000	197,970.00	99.0	ug/L
	Lead	50.00	53.36	107	ug/L
	Magnesium	500000	497,440.00	99.5	ug/L
	Manganese	500.0	468.78	93.8	ug/L
	Nickel	1000	977.86	97.8	ug/L
	Potassium		-50.74		ug/L
	Selenium	50.00	53.75	107	ug/L
	Silver	200.0	204.47	102	ug/L
	Sodium		59.43		ug/L
	Thallium	100.0	94.28	94.3	ug/L
	Vanadium	500.0	454.09	90.8	ug/L
	Zinc	1000	988.54	98.9	ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6010B

Laboratory: Empirical Laboratories, LLC

Client: Tetra Tech NUS, Inc. (T010)

Instrument ID: ME-ICP

Sequence: 9J28910

SDG: CTO064_001

Project: Great Lakes CTO 064 (Site 21)

Calibration: 9291001

Lab Sample ID	Analyte	True	Found	%R	Units
9J28910-IFA1	Sodium		81.72		ug/L
9J28910-IFB1	Sodium		100.33		ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP
Sequence: 9J29412

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9294005

Lab Sample ID	Analyte	True	Found	%R	Units
9J29412-IFA1	Aluminum	500000	526,640.00	105	ug/L
	Antimony		1.05		ug/L
	Arsenic		4.24		ug/L
	Barium		3.31		ug/L
	Beryllium		0.72		ug/L
	Cadmium		1.82		ug/L
	Calcium	500000	453,700.00	90.7	ug/L
	Chromium		-0.37		ug/L
	Cobalt		3.58		ug/L
	Copper		-6.86		ug/L
	Iron	200000	190,230.00	95.1	ug/L
	Lead		2.42		ug/L
	Magnesium	500000	502,040.00	100	ug/L
	Manganese		2.02		ug/L
	Nickel		-15.78		ug/L
	Potassium		-50.57		ug/L
	Selenium		-2.76		ug/L
	Silver		-0.54		ug/L
	Sodium		98.33		ug/L
	Thallium		-0.56		ug/L
	Vanadium		1.74		ug/L
	Zinc		-2.07		ug/L
9J29412-IFB1	Aluminum	500000	498,630.00	99.7	ug/L
	Antimony	600.0	640.94	107	ug/L
	Arsenic	100.0	102.18	102	ug/L
	Barium	500.0	543.69	109	ug/L
	Beryllium	500.0	445.12	89.0	ug/L
	Cadmium	1000	1,064.60	106	ug/L
	Calcium	500000	426,930.00	85.4	ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6010B

Laboratory: Empirical Laboratories, LLC

SDG: CTO064_001

Client: Tetra Tech NUS, Inc. (T010)

Project: Great Lakes CTO 064 (Site 21)

Instrument ID: ME-ICP

Calibration: 9294005

Sequence: 9J29412

Lab Sample ID	Analyte	True	Found	%R	Units
9J29412-IFB1	Chromium	500.0	417.34	83.5	ug/L
	Cobalt	500.0	497.63	99.5	ug/L
	Copper	500.0	501.80	100	ug/L
	Iron	200000	177,710.00	88.9	ug/L
	Lead	50.00	56.01	112	ug/L
	Magnesium	500000	472,580.00	94.5	ug/L
	Manganese	500.0	462.54	92.5	ug/L
	Nickel	1000	919.72	92.0	ug/L
	Potassium		-30.19		ug/L
	Selenium	50.00	56.91	114	ug/L
	Silver	200.0	199.75	99.9	ug/L
	Sodium		126.55		ug/L
	Thallium	100.0	96.00	96.0	ug/L
	Vanadium	500.0	460.16	92.0	ug/L
	Zinc	1000	968.37	96.8	ug/L

LCS / LCS DUPLICATE RECOVERY

SW6010B

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Water		
Batch:	9J07001	Laboratory ID:	9J07001-BS1
Preparation:	MET_3005A_LOW	Initial/Final:	100 mL / 25 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Aluminum	40.00	46.82	117	80 - 120
Antimony	5.000	4.912	98.2	80 - 120
Arsenic	5.000	5.196	104	80 - 120
Barium	40.00	39.55	98.9	80 - 120
Beryllium	1.000	1.059	106	80 - 120
Cadmium	2.500	2.647	106	80 - 120
Calcium	600.0	629.8	105	80 - 120
Chromium	4.000	4.053	101	80 - 120
Cobalt	10.00	9.785	97.8	80 - 120
Copper	5.000	5.332	107	80 - 120
Iron	20.00	23.49	117	80 - 120
Lead	5.000	4.835	96.7	80 - 120
Magnesium	600.0	607.3	101	80 - 120
Manganese	10.00	10.77	108	80 - 120
Nickel	10.00	9.792	97.9	80 - 120
Potassium	600.0	620.8	103	80 - 120
Selenium	5.000	4.952	99.0	80 - 120
Silver	5.000	5.063	101	80 - 120
Thallium	5.000	4.774	95.5	80 - 120
Vanadium	10.00	9.935	99.3	80 - 120
Zinc	10.00	10.55	105	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW6010B

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Water		
Batch:	9J07001	Laboratory ID:	9J07001-BS2
Preparation:	MET_3005A_LOW	Initial/Final:	100 mL / 25 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Sodium	600.0	721.6	120	80 - 120

LCS / LCS DUPLICATE RECOVERY
SW6010B

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Solid		
Batch:	9J13003	Laboratory ID:	9J13003-BS1
Preparation:	MET_3050B	Initial/Final:	2 g / 100 mL

ANALYTE	SPIKE ADDED (mg/Kg wet)	LCS CONCENTRATION (mg/Kg wet)	LCS % REC.	QC LIMITS REC.
Aluminum	100.0	109.6	110	80 - 120
Antimony	12.50	12.14	97.1	80 - 120
Arsenic	12.50	12.37	99.0	80 - 120
Barium	100.0	107.2	107	80 - 120
Beryllium	2.500	2.581	103	80 - 120
Cadmium	6.250	6.309	101	80 - 120
Calcium	250.0	274.7	110	80 - 120
Chromium	10.00	11.10	111	80 - 120
Cobalt	25.00	26.95	108	80 - 120
Copper	12.50	13.01	104	80 - 120
Lead	12.50	11.93	95.4	80 - 120
Magnesium	250.0	249.2	99.7	80 - 120
Manganese	25.00	26.48	106	80 - 120
Nickel	25.00	27.71	111	80 - 120
Potassium	250.0	263.0	105	80 - 120
Selenium	12.50	10.72	85.7	80 - 120
Silver	12.50	12.83	103	80 - 120
Sodium	250.0	296.3	119	80 - 120
Thallium	12.50	11.50	92.0	80 - 120
Vanadium	25.00	24.72	98.9	80 - 120
Zinc	25.00	26.21	105	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW6010B

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Solid		
Batch:	9J13003	Laboratory ID:	9J13003-BS2
Preparation:	MET_3050B	Initial/Final:	2 g / 100 mL

ANALYTE	SPIKE ADDED (mg/Kg wet)	LCS CONCENTRATION (mg/Kg wet)	LCS % REC.	QC LIMITS REC.
Iron	50.00	54.90	110	80 - 120

LCS / LCS DUPLICATE RECOVERY
SW6010B

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Solid		
Batch:	9J13004	Laboratory ID:	9J13004-BS1
Preparation:	MET_3050B	Initial/Final:	2 g / 100 mL

ANALYTE	SPIKE ADDED (mg/Kg wet)	LCS CONCENTRATION (mg/Kg wet)	LCS % REC.	QC LIMITS REC.
Aluminum	100.0	111.1	111	80 - 120
Antimony	12.50	12.19	97.5	80 - 120
Arsenic	12.50	12.55	100	80 - 120
Barium	100.0	105.9	106	80 - 120
Beryllium	2.500	2.622	105	80 - 120
Cadmium	6.250	6.350	102	80 - 120
Calcium	250.0	283.9	114	80 - 120
Chromium	10.00	11.30	113	80 - 120
Cobalt	25.00	27.10	108	80 - 120
Copper	12.50	13.25	106	80 - 120
Lead	12.50	11.77	94.2	80 - 120
Magnesium	250.0	255.0	102	80 - 120
Manganese	25.00	26.58	106	80 - 120
Nickel	25.00	28.16	113	80 - 120
Potassium	250.0	267.2	107	80 - 120
Selenium	12.50	10.48	83.8	80 - 120
Silver	12.50	12.75	102	80 - 120
Thallium	12.50	11.51	92.1	80 - 120
Vanadium	25.00	24.82	99.3	80 - 120
Zinc	25.00	25.93	104	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW6010B

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Solid		
Batch:	9J13004	Laboratory ID:	9J13004-BS2
Preparation:	MET_3050B	Initial/Final:	2 g / 100 mL

ANALYTE	SPIKE ADDED (mg/Kg wet)	LCS CONCENTRATION (mg/Kg wet)	LCS % REC.	QC LIMITS REC.
Iron	50.00	54.88	110	80 - 120
Sodium	250.0	293.8	118	80 - 120

LCS / LCS DUPLICATE RECOVERY
SW6010B

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Solid		
Batch:	9J13005	Laboratory ID:	9J13005-BS1
Preparation:	MET_3050B	Initial/Final:	2 g / 100 mL

ANALYTE	SPIKE ADDED (mg/Kg wet)	LCS CONCENTRATION (mg/Kg wet)	LCS % REC.	QC LIMITS REC.
Aluminum	100.0	109.2	109	80 - 120
Antimony	12.50	11.63	93.0	80 - 120
Arsenic	12.50	12.30	98.4	80 - 120
Barium	100.0	97.06	97.1	80 - 120
Beryllium	2.500	2.681	107	80 - 120
Cadmium	6.250	6.257	100	80 - 120
Calcium	250.0	297.4	119	80 - 120
Chromium	10.00	11.26	113	80 - 120
Cobalt	25.00	25.71	103	80 - 120
Copper	12.50	12.96	104	80 - 120
Lead	12.50	11.03	88.2	80 - 120
Magnesium	250.0	258.1	103	80 - 120
Manganese	25.00	25.89	104	80 - 120
Nickel	25.00	27.50	110	80 - 120
Potassium	250.0	255.2	102	80 - 120
Silver	12.50	12.36	98.9	80 - 120
Thallium	12.50	11.25	90.0	80 - 120
Vanadium	25.00	24.03	96.1	80 - 120
Zinc	25.00	24.04	96.1	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW6010B

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Solid		
Batch:	9J13005	Laboratory ID:	9J13005-BS2
Preparation:	MET_3050B	Initial/Final:	2 g / 100 mL

ANALYTE	SPIKE ADDED (mg/Kg wet)	LCS CONCENTRATION (mg/Kg wet)	LCS % REC.	QC LIMITS REC.
Iron	50.00	53.76	108	80 - 120
Selenium	12.50	13.15	105	80 - 120
Sodium	250.0	288.5	115	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW6010B

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Solid		
Batch:	9J20002	Laboratory ID:	9J20002-BS1
Preparation:	MET_3050B	Initial/Final:	2 g / 100 mL

ANALYTE	SPIKE ADDED (mg/Kg wet)	LCS CONCENTRATION (mg/Kg wet)	LCS % REC.	QC LIMITS REC.
Aluminum	100.0	109.9	110	80 - 120
Antimony	12.50	12.28	98.2	80 - 120
Arsenic	12.50	12.74	102	80 - 120
Barium	100.0	100.1	100	80 - 120
Beryllium	2.500	2.642	106	80 - 120
Cadmium	6.250	6.486	104	80 - 120
Calcium	250.0	291.1	116	80 - 120
Chromium	10.00	11.49	115	80 - 120
Cobalt	25.00	26.24	105	80 - 120
Copper	12.50	13.01	104	80 - 120
Lead	12.50	11.51	92.1	80 - 120
Magnesium	250.0	256.3	103	80 - 120
Manganese	25.00	26.05	104	80 - 120
Nickel	25.00	27.85	111	80 - 120
Potassium	250.0	260.8	104	80 - 120
Selenium	12.50	10.02	80.2	80 - 120
Silver	12.50	12.62	101	80 - 120
Thallium	12.50	11.69	93.5	80 - 120
Vanadium	25.00	24.09	96.4	80 - 120
Zinc	25.00	24.62	98.5	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW6010B

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Solid		
Batch:	9J20002	Laboratory ID:	9J20002-BS2
Preparation:	MET_3050B	Initial/Final:	2 g / 100 mL

ANALYTE	SPIKE ADDED (mg/Kg wet)	LCS CONCENTRATION (mg/Kg wet)	LCS % REC.	QC LIMITS REC.
Iron	50.00	51.55	103	80 - 120
Sodium	250.0	290.8	116	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW7470A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Water		
Batch:	9J07004	Laboratory ID:	9J07004-BS1
Preparation:	pMercury-W SW 7470A	Initial/Final:	30 mL / 30 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Mercury	2.000	1.907	95.3	80 - 120

LCS / LCS DUPLICATE RECOVERY
SW7471A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Solid		
Batch:	9J09009	Laboratory ID:	9J09009-BS1
Preparation:	MET_HG_S	Initial/Final:	0.3 g / 50 mL

ANALYTE	SPIKE ADDED (mg/Kg wet)	LCS CONCENTRATION (mg/Kg wet)	LCS % REC.	QC LIMITS REC.
Mercury	0.3333	0.3622	109	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW7471A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Solid		
Batch:	9J14016	Laboratory ID:	9J14016-BS1
Preparation:	MET_HG_S	Initial/Final:	0.3 g / 50 mL

ANALYTE	SPIKE ADDED (mg/Kg wet)	LCS CONCENTRATION (mg/Kg wet)	LCS % REC.	QC LIMITS REC.
Mercury	0.3333	0.3067	92.0	80 - 120

LCS / LCS DUPLICATE RECOVERY
SW7471A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Solid		
Batch:	9J14017	Laboratory ID:	9J14017-BS1
Preparation:	MET_HG_S	Initial/Final:	0.3 g / 50 mL

ANALYTE	SPIKE ADDED (mg/Kg wet)	LCS CONCENTRATION (mg/Kg wet)	LCS % REC.	QC LIMITS REC.
Mercury	0.3333	0.2984	89.5	80 - 120

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW6010B

NTC21SB14-SO-0001

Laboratory: Empirical Laboratories, LLC

SDG: CTO064_001

Client: Tetra Tech NUS, Inc. (T010)

Project: Great Lakes CTO 064 (Site 21)

Matrix: Solid

Batch: 9J13004

% Solids: 81.84

Source Sample Name: **0910006-29**

ANALYTE	SPIKE ADDED (mg/Kg dry)	SAMPLE CONCENTRATION (mg/Kg dry)	MS CONCENTRATION (mg/Kg dry)	MS % REC.	Q	QC LIMITS REC.
Aluminum	124.7	29530	35220	4570		75 - 125
Antimony	15.59	ND	3.828	24.6	N	75 - 125
Arsenic	15.59	48.40	51.10	17.4	N	75 - 125
Barium	124.7	234.1	402.7	135	N	75 - 125
Beryllium	3.117	4.709	9.746	162	N	75 - 125
Cadmium	7.793	2.628	12.12	122		75 - 125
Calcium	311.7	85940	101800	5100		75 - 125
Chromium	12.47	17.74	37.02	155	N	75 - 125
Cobalt	31.17	5.287	39.75	111		75 - 125
Copper	15.59	50.63	71.55	134		75 - 125
Iron	62.34	47000	53770	10900		75 - 125
Lead	15.59	67.25	95.74	183		75 - 125
Magnesium	311.7	3936	5703	567		75 - 125
Manganese	31.17	2423	2672	800		75 - 125
Nickel	31.17	20.08	63.95	141	N	75 - 125
Potassium	311.7	1930	2732	257		75 - 125
Selenium	15.59	ND	14.23	91.3		75 - 125
Silver	15.59	ND	17.70	114		75 - 125
Sodium	311.7	1588	2149	180		75 - 125
Thallium	15.59	ND	9.014	57.8	N	75 - 125
Vanadium	31.17	15.75	49.01	107		75 - 125
Zinc	31.17	185.9	370.6	592		75 - 125

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW7471A

NTC21SB14-SO-0001

Laboratory: Empirical Laboratories, LLC

SDG: CTO064_001

Client: Tetra Tech NUS, Inc. (T010)

Project: Great Lakes CTO 064 (Site 21)

Matrix: Solid

Batch: 9J14016

% Solids: 81.84

Source Sample Name: **0910006-29**

ANALYTE	SPIKE ADDED (mg/Kg dry)	SAMPLE CONCENTRATION (mg/Kg dry)	MS CONCENTRATION (mg/Kg dry)	MS % REC.	Q	QC LIMITS REC.
Mercury	0.3394	0.06175	0.3616	88.4		75 - 125

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW6010B

NTC21SB02-SO-0204

Laboratory: Empirical Laboratories, LLC

SDG: CTO064_001

Client: Tetra Tech NUS, Inc. (T010)

Project: Great Lakes CTO 064 (Site 21)

Matrix: Solid

Batch: 9J13005

% Solids: 88.74

Source Sample Name: **0910006-43**

ANALYTE	SPIKE ADDED (mg/Kg dry)	SAMPLE CONCENTRATION (mg/Kg dry)	MS CONCENTRATION (mg/Kg dry)	MS % REC.	Q	QC LIMITS REC.
Aluminum	112.1	4594	5726	1010		75 - 125
Antimony	14.02	ND	4.412	31.5	N	75 - 125
Arsenic	14.02	8.574	23.06	103		75 - 125
Barium	112.1	42.64	156.3	101		75 - 125
Beryllium	2.803	0.9855	3.814	101		75 - 125
Cadmium	7.008	ND	7.664	109		75 - 125
Calcium	280.3	86570	92120	1980		75 - 125
Chromium	11.21	10.12	23.16	116		75 - 125
Cobalt	28.03	3.185	31.36	101		75 - 125
Copper	14.02	23.75	30.43	47.6	N	75 - 125
Iron	56.07	15040	15920	1570		75 - 125
Lead	14.02	35.65	45.14	67.7	N	75 - 125
Magnesium	280.3	36720	31940	-1710		75 - 125
Manganese	28.03	293.8	410.1	415		75 - 125
Nickel	28.03	10.19	39.58	105		75 - 125
Potassium	280.3	657.8	1060	143	N	75 - 125
Selenium	14.02	ND	11.42	81.5		75 - 125
Silver	14.02	ND	14.92	106		75 - 125
Sodium	280.3	816.9	1080	93.8		75 - 125
Thallium	14.02	ND	10.52	75.0		75 - 125
Vanadium	28.03	12.76	40.60	99.3		75 - 125
Zinc	28.03	109.5	72.55	-132	N	75 - 125

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW7471A

NTC21SB02-SO-0204

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_001
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Solid		
Batch:	9J14017		
% Solids:	88.74		

Source Sample Name: **0910006-43**

ANALYTE	SPIKE ADDED (mg/Kg dry)	SAMPLE CONCENTRATION (mg/Kg dry)	MS CONCENTRATION (mg/Kg dry)	MS % REC.	Q	QC LIMITS REC.
Mercury	0.3130	0.09629	0.3754	89.2		75 - 125

POST DIGEST SPIKE SAMPLE RECOVERY

SW6010B

NTC21SB14-SO-0001

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Solid
Batch: 9J13004
Preparation: MET_3050B

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 9J13004-PS1
Lab Source ID: 0910006-29
Initial/Final: 1.95 g / 100 mL

Analyte	Spike Sample Result (SSR) (ug/L)	Sample Result (SR) (ug/L)	Spike Added (SA) (ug/L)	%R	Control Limit %R
Aluminum	**467000**	**471200**	**10000**	**-42.0**	**85 - 115**
Antimony	1320	5.162	1250	105	85 - 115
Arsenic	2104	772.4	1250	107	85 - 115
Barium	13040	3736	10000	93.0	85 - 115
Beryllium	329.0	75.15	250.0	102	85 - 115
Cadmium	740.2	41.94	625.0	112	85 - 115
Calcium	**1354000**	**1372000**	**25000**	**-72.2**	**85 - 115**
Chromium	1271	283.1	1000	98.8	85 - 115
Cobalt	2518	84.37	2500	97.3	85 - 115
Copper	2092	808.0	1250	103	85 - 115
Iron	**734400**	**750000**	**5000**	**-313**	**85 - 115**
Lead	2250	1073	1250	94.1	85 - 115
Magnesium	85080	62820	25000	89.0	85 - 115
Manganese	**39580**	**38660**	**2500**	**36.9**	**85 - 115**
Nickel	2849	320.5	2500	101	85 - 115
Potassium	56450	30810	25000	103	85 - 115
Selenium	1244	11.04	1250	98.6	85 - 115
Silver	1238	ND	1250	99.2	85 - 115
Sodium	53620	25340	25000	113	85 - 115
Thallium	1175	ND	1250	97.3	85 - 115
Vanadium	2529	251.4	2500	91.1	85 - 115
Zinc	**5081**	**2968**	**2500**	**84.5**	**85 - 115**

POST DIGEST SPIKE SAMPLE RECOVERY

SW6010B

NTC21SB02-SO-0204

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Solid
Batch: 9J13005
Preparation: MET_3050B

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 9J13005-PS1
Lab Source ID: 0910006-43
Initial/Final: 1.99 g / 100 mL

Analyte	Spike Sample Result (SSR) (ug/L)	Sample Result (SR) (ug/L)	Spike Added (SA) (ug/L)	%R	Control Limit %R
Aluminum	92500	81130	10000	114	85 - 115
Antimony	1334	ND	1250	107	85 - 115
Arsenic	1580	151.4	1250	114	85 - 115
Barium	9866	752.9	10000	91.1	85 - 115
Beryllium	280.1	17.40	250.0	105	85 - 115
Cadmium	713.0	2.239	625.0	114	85 - 115
Calcium	**1571000**	**1529000**	**25000**	**171**	**85 - 115**
Chromium	1218	178.8	1000	104	85 - 115
Cobalt	2451	56.24	2500	95.8	85 - 115
Copper	1732	419.4	1250	105	85 - 115
Iron	**274500**	**265600**	**5000**	**178**	**85 - 115**
Lead	1801	629.5	1250	93.7	85 - 115
Magnesium	**679400**	**648500**	**25000**	**124**	**85 - 115**
Manganese	7442	5188	2500	90.1	85 - 115
Nickel	2732	179.9	2500	102	85 - 115
Potassium	39080	11620	25000	110	85 - 115
Selenium	1177	ND	1250	95.2	85 - 115
Silver	1258	ND	1250	101	85 - 115
Sodium	**45400**	**14420**	**25000**	**124**	**85 - 115**
Thallium	1224	ND	1250	98.7	85 - 115
Vanadium	2454	225.3	2500	89.2	85 - 115
Zinc	4076	1934	2500	85.7	85 - 115

DUPLICATES

SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Solid
Batch: 9J13004
Preparation: MET_3050B
Source Sample Name: NTC21SB14-SO-0001

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 9J13004-DUP1
Lab Source ID: 0910006-29
Initial/Final: 1.99 g / 100 mL
% Solids: 81.84

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/Kg dry)	DUPLICATE CONCENTRATION (mg/Kg dry)	RPD %	Q	METHOD
Aluminum	20	29500 D	32320 D	9.04		SW6010B
Antimony	20	4.70 U	4.61 U			SW6010B
Arsenic	20	48.4 D	33.05 D	37.7	*	SW6010B
Barium	20	234 D	250.2 D	6.66		SW6010B
Beryllium	20	4.71 D	6.686 D	34.7	*	SW6010B
Cadmium	20	2.63 D	4.005 D	41.5		SW6010B
Calcium	20	85900 D	94440 D	9.42		SW6010B
Chromium	20	17.7 D	15.27 D	15.0		SW6010B
Cobalt	20	5.29 D	8.569 D	47.4		SW6010B
Copper	20	50.6 D	43.52 D	15.1		SW6010B
Iron	20	47000 D	60840 D	25.7	*	SW6010B
Lead	20	67.2 D	54.74 D	20.5	*	SW6010B
Magnesium	20	3940 D	3944 D	0.189		SW6010B
Manganese	20	2420 D	2414 D	0.366		SW6010B
Nickel	20	20.1 D	32.06 D	45.9	*	SW6010B
Potassium	20	1930 D	1943 D	0.623		SW6010B
Selenium	20	1.57 U	1.54 U			SW6010B
Silver	20	1.57 U	1.54 U			SW6010B
Sodium	20	1590 D	1585 D	0.168		SW6010B
Thallium	20	2.82 U	2.46 U			SW6010B
Vanadium	20	15.8 D	15.53 D	1.40		SW6010B
Zinc	20	186 D	392.4 D	71.4	*	SW6010B

35%

DUPLICATES

SW7471A

NTC21SB14-SO-0001

Laboratory: Empirical Laboratories, LLC

Client: Tetra Tech NUS, Inc. (T010)

Matrix: Solid

Batch: 9J14016

Preparation: MET_HG_S

Source Sample Name: NTC21SB14-SO-0001

SDG: CTO064_001

Project: Great Lakes CTO 064 (Site 21)

Laboratory ID: 9J14016-DUP1

Lab Source ID: 0910006-29

Initial/Final: 0.32 g / 50 mL

% Solids: 81.84

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/Kg dry)	DUPLICATE CONCENTRATION (mg/Kg dry)	RPD %	Q	METHOD
Mercury	20	0.0618	0.04417	33.2	*	SW7471A

35%

DUPLICATES
SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Solid
Batch: 9J13005
Preparation: MET_3050B
Source Sample Name: NTC21SB02-SO-0204

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 9J13005-DUP1
Lab Source ID: 0910006-43
Initial/Final: 2 g / 100 mL
% Solids: 88.74

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/Kg dry)	DUPLICATE CONCENTRATION (mg/Kg dry)	RPD %	Q	METHOD
luminum	20	4590 D	5439 D	16.8		SW6010B
ntimony	20	4.25 U	4.23 U			SW6010B
rsenic	20	8.57 D	7.453 D	14.0		SW6010B
arium	20	42.6 D	41.65 D	2.34		SW6010B
eryllium	20	0.985 JD	1.41 JD	34.6		SW6010B
admium	20	1.42 U	1.41 U			SW6010B
alcium	20	86600 D	80860 D	6.82		SW6010B
hromium	20	10.1 D	11.05 D	8.75		SW6010B
obalt	20	3.18 JD	3.52 JD	0.849		SW6010B
opper	20	23.8 D	16.10 D	38.4	*	SW6010B
on	20	15000 D	16050 D	6.45		SW6010B
ead	20	35.6 D	29.72 D	18.1		SW6010B
agnesium	20	36700 D	28270 D	26.0	*	SW6010B
anganese	20	294 D	307.8 D	4.64		SW6010B
ickel	20	10.2 D	10.59 D	3.85		SW6010B
otassium	20	658 JD	1410 JD	9.31		SW6010B
elenium	20	1.42 U	1.41 U			SW6010B
ilver	20	1.42 U	1.41 U			SW6010B
odium	20	817 JD	1410 JD	5.03		SW6010B
hallium	20	2.27 U	2.25 U			SW6010B
anadium	20	12.8 D	12.90 D	1.15		SW6010B
inc	20	110 D	49.06 D	76.3	*	SW6010B

35%

DUPLICATES
SW7471A

NTC21SB02-SO-0204

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Solid
Batch: 9J14017
Preparation: MET_HG_S
Source Sample Name: NTC21SB02-SO-0204

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 9J14017-DUP1
Lab Source ID: 0910006-43
Initial/Final: 0.35 g / 50 mL
% Solids: 88.74

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (mg/Kg dry)	DUPLICATE CONCENTRATION (mg/Kg dry)	RPD %	Q	METHOD
Mercury	20	0.0963	0.05774	50.1	*	SW7471A

35%.

SERIAL DILUTION

SW6010B

NTC21SB14-SO-0001

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Solid
Sequence: 9J29412
Preparation: 9J20002

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 9J29412-SRDA
Lab Source ID: 0910006-29
Initial/Final: 1.95 / 100

Analyte	Initial Sample Result (I)	Serial Dilution Result (S)	% Difference	Q	Method	QC Limits % Difference
Aluminum	94241	93420	0.871		SW6010B	10
Antimony	ND	ND			SW6010B	10
Arsenic	154.47	156.68	1.43		SW6010B	10
Barium	747.25	892.85	19.5	E	SW6010B	10
Beryllium	15.03	ND			SW6010B	10
Cadmium	8.387	ND			SW6010B	10
Calcium	274310	254130	7.36		SW6010B	10
Chromium	56.625	59.52	5.11		SW6010B	10
Cobalt	16.874	ND			SW6010B	10
Copper	161.61	172.19	6.55		SW6010B	10
Iron	150010	133010	11.3	E	SW6010B	10
Lead	214.65	245.17	14.2	E	SW6010B	10
Magnesium	12564	12781	1.72		SW6010B	10
Manganese	7732.3	9143	18.2	E	SW6010B	10
Nickel	64.095	55.145	14.0		SW6010B	10
Potassium	6161.8	6303.5	2.30		SW6010B	10
Selenium	ND	ND			SW6010B	10
Silver	ND	ND			SW6010B	10
Sodium	5068.7	5114	0.894		SW6010B	10
Thallium	ND	ND			SW6010B	10
Vanadium	50.284	65.475	30.2		SW6010B	10
Zinc	593.52	734.4	23.7	E	SW6010B	10

SERIAL DILUTION

SW6010B

NTC21SB02-SO-0204

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Solid
Sequence: 9J29412
Preparation: 9J20002

SDG: CTO064_001
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 9J29412-SRD8
Lab Source ID: 0910006-43
Initial/Final: 1.99 / 100

Analyte	Initial Sample Result (I)	Serial Dilution Result (S)	% Difference	Q	Method	QC Limits % Difference
Aluminum	16226	16696	2.90		SW6010B	10
Antimony	ND	ND			SW6010B	10
Arsenic	30.281	29.141	3.76		SW6010B	10
Barium	150.58	152.86	1.51		SW6010B	10
Beryllium	3.4804	ND			SW6010B	10
Cadmium	ND	ND			SW6010B	10
Calcium	305740	336980	10.2		SW6010B	10
Chromium	35.75	40.733	13.9		SW6010B	10
Cobalt	11.248	ND			SW6010B	10
Copper	83.889	77.855	7.19		SW6010B	10
Iron	53129	57425	8.09		SW6010B	10
Lead	125.9	126.09	0.151		SW6010B	10
Magnesium	129690	133190	2.69		SW6010B	10
Manganese	1037.6	1110.5	7.03		SW6010B	10
Nickel	35.972	38.156	6.07		SW6010B	10
Potassium	2323	2206.9	5.00		SW6010B	10
Selenium	ND	ND			SW6010B	10
Silver	ND	ND			SW6010B	10
Sodium	2884.9	3093.6	7.23		SW6010B	10
Thallium	ND	ND			SW6010B	10
Vanadium	45.056	50.88	12.9		SW6010B	10
Zinc	386.82	427.65	10.6	E	SW6010B	10

METHOD DETECTION AND REPORTING LIMITS

Laboratory: Empirical Laboratories, LLC
SDG: CTO064_001
Client: Tetra Tech NUS, Inc. (T010)
Project: Great Lakes CTO 064 (Site 21)
Matrix: Solid
Instrument: ME-ICP

Analyte	MDL	MRL	Units	Method
Aluminum	2.50	10.0	mg/Kg	SW6010B
	12.5	50.0	ug/L	SW6010B
Antimony	0.250	0.750	mg/Kg	SW6010B
	1.25	3.75	ug/L	SW6010B
Arsenic	0.150	0.250	mg/Kg	SW6010B
	0.750	1.25	ug/L	SW6010B
Barium	0.250	2.00	mg/Kg	SW6010B
	1.25	10.0	ug/L	SW6010B
Beryllium	0.0500	0.250	mg/Kg	SW6010B
	0.250	1.25	ug/L	SW6010B
Cadmium	0.0500	0.250	mg/Kg	SW6010B
	0.250	1.25	ug/L	SW6010B
Calcium	50.0	250	mg/Kg	SW6010B
	250	1250	ug/L	SW6010B
Chromium	0.100	0.250	mg/Kg	SW6010B
	0.500	1.25	ug/L	SW6010B
Cobalt	0.250	0.625	mg/Kg	SW6010B
	1.25	3.12	ug/L	SW6010B
Copper	0.250	0.500	mg/Kg	SW6010B
	1.25	2.50	ug/L	SW6010B
Iron	1.50	5.00	mg/Kg	SW6010B
	7.50	25.0	ug/L	SW6010B
Lead	0.0750	0.150	mg/Kg	SW6010B
	0.375	0.750	ug/L	SW6010B
Magnesium	50.0	250	mg/Kg	SW6010B
	250	1250	ug/L	SW6010B
Manganese	0.150	0.750	mg/Kg	SW6010B
	0.750	3.75	ug/L	SW6010B
Nickel	0.250	0.500	mg/Kg	SW6010B
	0.750	2.50	ug/L	SW6010B
Potassium	50.0	250	mg/Kg	SW6010B
	250	1250	ug/L	SW6010B
Selenium	0.150	0.250	mg/Kg	SW6010B
	0.750	1.25	ug/L	SW6010B
Silver	0.0500	0.250	mg/Kg	SW6010B
	0.250	1.25	ug/L	SW6010B
Sodium	50.0	250	mg/Kg	SW6010B

METHOD DETECTION AND REPORTING LIMITS

Laboratory: Empirical Laboratories, LLC
SDG: CTO064_001
Client: Tetra Tech NUS, Inc. (T010)
Project: Great Lakes CTO 064 (Site 21)
Matrix: Water
Instrument: ME-ICP

Analyte	MDL	MRL	Units	Method
Sodium	250	1250	ug/L	SW6010B
Thallium	0.750	2.00	ug/L	SW6010B
	0.150	0.400	mg/Kg	SW6010B
Vanadium	1.25	3.12	ug/L	SW6010B
	0.250	0.625	mg/Kg	SW6010B
Zinc	0.250	1.00	mg/Kg	SW6010B
	1.25	5.00	ug/L	SW6010B

METHOD DETECTION AND REPORTING LIMITS

Laboratory: Empirical Laboratories, LLC **SDG:** CTO064_001

Client: Tetra Tech NUS, Inc. (T010) **Project:** Great Lakes CTO 064 (Site 21)

Matrix: Water **Instrument:** ME-FIMS

Analyte	MDL	MRL	Units	Method
Mercury	0.0800	0.200	ug/L	SW7470A
	0.0130	0.0330	mg/Kg	SW7471A
	~~0.0800~~	~~0.200~~	~~mg/Kg~~	~~SW7471A~~

SNO 10/27/09

5x Dilution
Reanalysis

NSAMPLE	LAB_ID	PREP_BATCH	ANAL_DATE	SDG	PARA_OLD
FD-092609-01	0910006-01RE1	9J13003	10/21/2009 13:43	CTO064_001	ALUMINUM
FD-092609-01	0910006-01RE1	9J13003	10/21/2009 13:43	CTO064_001	CALCIUM
FD-092609-01	0910006-01RE1	9J13003	10/21/2009 13:43	CTO064_001	LEAD
FD-092609-01	0910006-01RE1	9J13003	10/21/2009 13:43	CTO064_001	SELENIUM
FD-092609-01	0910006-01RE1	9J13003	10/21/2009 13:43	CTO064_001	ZINC
FD-092609-02	0910006-02RE1	9J13003	10/21/2009 13:48	CTO064_001	ALUMINUM
FD-092609-02	0910006-02RE1	9J13003	10/21/2009 13:48	CTO064_001	CADMIUM
FD-092609-02	0910006-02RE1	9J13003	10/21/2009 13:48	CTO064_001	CALCIUM
FD-092609-02	0910006-02RE1	9J13003	10/21/2009 13:48	CTO064_001	CHROMIUM
FD-092609-02	0910006-02RE1	9J13003	10/21/2009 13:48	CTO064_001	LEAD
FD-092609-02	0910006-02RE1	9J13003	10/21/2009 13:48	CTO064_001	MAGNESIUM
FD-092609-02	0910006-02RE1	9J13003	10/21/2009 13:48	CTO064_001	SELENIUM
FD-092609-02	0910006-02RE1	9J13003	10/21/2009 13:48	CTO064_001	ZINC
FD-092809-01	0910006-40RE1	9J13004	10/21/2009 15:57	CTO064_001	CADMIUM
FD-092809-01	0910006-40RE1	9J13004	10/21/2009 15:57	CTO064_001	CHROMIUM
FD-092809-01	0910006-40RE1	9J13004	10/21/2009 15:57	CTO064_001	MAGNESIUM
NTC21SB01-SO-0102	0910006-41RE1	9J13005	10/21/2009 16:07	CTO064_001	SELENIUM
NTC21SB02-SO-0001	0910006-42RE1	9J13005	10/21/2009 16:11	CTO064_001	ALUMINUM
NTC21SB02-SO-0001	0910006-42RE1	9J13005	10/21/2009 16:11	CTO064_001	CALCIUM
NTC21SB02-SO-0001	0910006-42RE1	9J13005	10/21/2009 16:11	CTO064_001	LEAD
NTC21SB02-SO-0001	0910006-42RE1	9J13005	10/21/2009 16:11	CTO064_001	SELENIUM
NTC21SB02-SO-0001	0910006-42RE1	9J13005	10/21/2009 16:11	CTO064_001	ZINC
NTC21SB03-SO-0001	0910006-44RE1	9J13005	10/21/2009 16:16	CTO064_001	ALUMINUM
NTC21SB03-SO-0001	0910006-44RE1	9J13005	10/21/2009 16:16	CTO064_001	CALCIUM
NTC21SB03-SO-0001	0910006-44RE1	9J13005	10/21/2009 16:16	CTO064_001	LEAD
NTC21SB03-SO-0001	0910006-44RE1	9J13005	10/21/2009 16:16	CTO064_001	SELENIUM
NTC21SB03-SO-0001	0910006-44RE1	9J13005	10/21/2009 16:16	CTO064_001	ZINC
NTC21SB05-SO-0001	0910006-46RE1	9J13005	10/21/2009 16:21	CTO064_001	ALUMINUM
NTC21SB05-SO-0001	0910006-46RE1	9J13005	10/21/2009 16:21	CTO064_001	CALCIUM
NTC21SB05-SO-0001	0910006-46RE1	9J13005	10/21/2009 16:21	CTO064_001	LEAD
NTC21SB05-SO-0001	0910006-46RE1	9J13005	10/21/2009 16:21	CTO064_001	SELENIUM
NTC21SB05-SO-0001	0910006-46RE1	9J13005	10/21/2009 16:21	CTO064_001	ZINC
NTC21SB08-SO-0001	0910006-48RE1	9J20002	10/21/2009 16:50	CTO064_001	ALUMINUM
NTC21SB08-SO-0001	0910006-48RE1	9J20002	10/21/2009 16:50	CTO064_001	CALCIUM
NTC21SB08-SO-0001	0910006-48RE1	9J20002	10/21/2009 16:50	CTO064_001	LEAD
NTC21SB08-SO-0001	0910006-48RE1	9J20002	10/21/2009 16:50	CTO064_001	SELENIUM
NTC21SB08-SO-0001	0910006-48RE1	9J20002	10/21/2009 16:50	CTO064_001	ZINC
NTC21SB08-SO-0204	0910006-49RE1	9J20002	10/21/2009 16:55	CTO064_001	ALUMINUM
NTC21SB08-SO-0204	0910006-49RE1	9J20002	10/21/2009 16:55	CTO064_001	CALCIUM
NTC21SB08-SO-0204	0910006-49RE1	9J20002	10/21/2009 16:55	CTO064_001	LEAD
NTC21SB08-SO-0204	0910006-49RE1	9J20002	10/21/2009 16:55	CTO064_001	SELENIUM
NTC21SB08-SO-0204	0910006-49RE1	9J20002	10/21/2009 16:55	CTO064_001	ZINC
NTC21SB09-SO-0204	0910006-04RE1	9J13003	10/21/2009 13:53	CTO064_001	MANGANESE
NTC21SB09-SO-0204	0910006-04RE1	9J13003	10/21/2009 13:53	CTO064_001	THALLIUM
NTC21SB10-SO-0406	0910006-06RE1	9J13003	10/21/2009 13:57	CTO064_001	SELENIUM
NTC21SB13-SO-0204	0910006-28RE1	9J13004	10/21/2009 15:04	CTO064_001	SELENIUM
NTC21SB15-SO-0204	0910006-32RE1	9J13004	10/21/2009 15:18	CTO064_001	ALUMINUM
NTC21SB15-SO-0204	0910006-32RE1	9J13004	10/21/2009 15:18	CTO064_001	CALCIUM
NTC21SB15-SO-0204	0910006-32RE1	9J13004	10/21/2009 15:18	CTO064_001	LEAD
NTC21SB15-SO-0204	0910006-32RE1	9J13004	10/21/2009 15:18	CTO064_001	ZINC
NTC21SB17-SO-0507	0910006-12RE1	9J13003	10/21/2009 14:02	CTO064_001	ALUMINUM
NTC21SB17-SO-0507	0910006-12RE1	9J13003	10/21/2009 14:02	CTO064_001	CALCIUM
NTC21SB17-SO-0507	0910006-12RE1	9J13003	10/21/2009 14:02	CTO064_001	LEAD
NTC21SB17-SO-0507	0910006-12RE1	9J13003	10/21/2009 14:02	CTO064_001	SELENIUM
NTC21SB17-SO-0507	0910006-12RE1	9J13003	10/21/2009 14:02	CTO064_001	ZINC
NTC21SB18-SO-0001	0910006-13RE1	9J13003	10/21/2009 14:07	CTO064_001	THALLIUM
NTC21SB18-SO-0507	0910006-14RE1	9J13003	10/21/2009 14:12	CTO064_001	ALUMINUM
NTC21SB18-SO-0507	0910006-14RE1	9J13003	10/21/2009 14:12	CTO064_001	CALCIUM
NTC21SB18-SO-0507	0910006-14RE1	9J13003	10/21/2009 14:12	CTO064_001	LEAD
NTC21SB18-SO-0507	0910006-14RE1	9J13003	10/21/2009 14:12	CTO064_001	SELENIUM

5 x Dilution
Reanalysis

NSAMPLE	LAB_ID	PREP_BATCH	ANAL_DATE	SDG	PARA_OLD
NTC21SB18-SO-0507	0910006-14RE1	9J13003	10/21/2009 14:12	CTO064_001	ZINC
NTC21SB19-SO-0001	0910006-35RE1	9J13004	10/21/2009 15:43	CTO064_001	ALUMINUM
NTC21SB19-SO-0001	0910006-35RE1	9J13004	10/21/2009 15:43	CTO064_001	CADMIUM
NTC21SB19-SO-0001	0910006-35RE1	9J13004	10/21/2009 15:43	CTO064_001	CALCIUM
NTC21SB19-SO-0001	0910006-35RE1	9J13004	10/21/2009 15:43	CTO064_001	CHROMIUM
NTC21SB19-SO-0001	0910006-35RE1	9J13004	10/21/2009 15:43	CTO064_001	LEAD
NTC21SB19-SO-0001	0910006-35RE1	9J13004	10/21/2009 15:43	CTO064_001	MAGNESIUM
NTC21SB19-SO-0001	0910006-35RE1	9J13004	10/21/2009 15:43	CTO064_001	SELENIUM
NTC21SB19-SO-0001	0910006-35RE1	9J13004	10/21/2009 15:43	CTO064_001	ZINC
NTC21SB19-SO-0204	0910006-36RE1	9J13004	10/21/2009 15:52	CTO064_001	SELENIUM
NTC21SB20-SO-0001	0910006-15RE1	9J13003	10/21/2009 14:36	CTO064_001	ALUMINUM
NTC21SB20-SO-0001	0910006-15RE1	9J13003	10/21/2009 14:36	CTO064_001	CADMIUM
NTC21SB20-SO-0001	0910006-15RE1	9J13003	10/21/2009 14:36	CTO064_001	CALCIUM
NTC21SB20-SO-0001	0910006-15RE1	9J13003	10/21/2009 14:36	CTO064_001	CHROMIUM
NTC21SB20-SO-0001	0910006-15RE1	9J13003	10/21/2009 14:36	CTO064_001	LEAD
NTC21SB20-SO-0001	0910006-15RE1	9J13003	10/21/2009 14:36	CTO064_001	MAGNESIUM
NTC21SB20-SO-0001	0910006-15RE1	9J13003	10/21/2009 14:36	CTO064_001	SELENIUM
NTC21SB20-SO-0001	0910006-15RE1	9J13003	10/21/2009 14:36	CTO064_001	ZINC
NTC21SB20-SO-0406	0910006-16RE1	9J13003	10/21/2009 14:45	CTO064_001	ALUMINUM
NTC21SB20-SO-0406	0910006-16RE1	9J13003	10/21/2009 14:45	CTO064_001	CALCIUM
NTC21SB20-SO-0406	0910006-16RE1	9J13003	10/21/2009 14:45	CTO064_001	LEAD
NTC21SB20-SO-0406	0910006-16RE1	9J13003	10/21/2009 14:45	CTO064_001	SELENIUM
NTC21SB20-SO-0406	0910006-16RE1	9J13003	10/21/2009 14:45	CTO064_001	ZINC
NTC21SB21-SO-0001	0910006-17RE1	9J13003	10/21/2009 14:50	CTO064_001	ALUMINUM
NTC21SB21-SO-0001	0910006-17RE1	9J13003	10/21/2009 14:50	CTO064_001	CADMIUM
NTC21SB21-SO-0001	0910006-17RE1	9J13003	10/21/2009 14:50	CTO064_001	CALCIUM
NTC21SB21-SO-0001	0910006-17RE1	9J13003	10/21/2009 14:50	CTO064_001	CHROMIUM
NTC21SB21-SO-0001	0910006-17RE1	9J13003	10/21/2009 14:50	CTO064_001	LEAD
NTC21SB21-SO-0001	0910006-17RE1	9J13003	10/21/2009 14:50	CTO064_001	MAGNESIUM
NTC21SB21-SO-0001	0910006-17RE1	9J13003	10/21/2009 14:50	CTO064_001	SELENIUM
NTC21SB21-SO-0001	0910006-17RE1	9J13003	10/21/2009 14:50	CTO064_001	ZINC
NTC21SB21-SO-0608	0910006-18RE1	9J13003	10/21/2009 15:00	CTO064_001	ALUMINUM
NTC21SB21-SO-0608	0910006-18RE1	9J13003	10/21/2009 15:00	CTO064_001	CALCIUM
NTC21SB21-SO-0608	0910006-18RE1	9J13003	10/21/2009 15:00	CTO064_001	LEAD
NTC21SB21-SO-0608	0910006-18RE1	9J13003	10/21/2009 15:00	CTO064_001	SELENIUM
NTC21SB21-SO-0608	0910006-18RE1	9J13003	10/21/2009 15:00	CTO064_001	ZINC

10 X Dilution reanalysis

NSAMPLE	LAB_ID	PREP_BATCH	ANAL_DATE	SDG	PARA_OLD
FD-092809-01	0910006-40RE2	9J13004	10/21/2009 16:02	CTO064_001	ALUMINUM
FD-092809-01	0910006-40RE2	9J13004	10/21/2009 16:02	CTO064_001	CALCIUM
FD-092809-01	0910006-40RE2	9J13004	10/21/2009 16:02	CTO064_001	LEAD
FD-092809-01	0910006-40RE2	9J13004	10/21/2009 16:02	CTO064_001	SELENIUM
FD-092809-01	0910006-40RE2	9J13004	10/21/2009 16:02	CTO064_001	ZINC

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**B. CUMMINGS**	**DATE:**	**JANUARY 8, 2010**
FROM:	**JOSEPH KALINYAK**	**COPIES:**	**DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION: VOC/SVOC/PAH/PEST/PCB/HERB**
CTO C064, NTC GREAT LAKES
SDG CTO064_002

SAMPLES: 7 / Aqueous / SVOC / PAH / PEST/PCB / HERB

NTC21-FD111609-01	NTC21MW0101	NTC21MW0201
NTC21MW0301	NTC21MW0401	NTC21MW0501
NTC21MW0601		

8 / Aqueous / VOC

FB-111709-01	NTC21-FD111609-01	NTC21MW0101
NTC21MW0201	NTC21MW0301	NTC21MW0401
NTC21MW0501	NTC21MW0601	

1 / Soil / VOC / SVOC / PAH / PEST/PCB / HERB

NTC21SB02-SO-0406

OVERVIEW

The sample set for CTO C064, NTC Great Lakes, SDG CTO064_002 consists of eight (8) aqueous samples including one (1) field blank and one (1) soil environmental sample including one (1) field duplicate sample. The samples were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOC), polynuclear aromatic hydrocarbons (PAH), chlorinated pesticides (PEST), polychlorinated biphenyls (PCB), and herbicides (HERB). The one (1) field blank was analyzed for VOCs only. There was one (1) field duplicate pair included in this sample delivery group (SDG): NTC21-FD111609-01 / NTC21MW0201.

The samples were collected by TetraTech NUS on November 13, 15, 16, and 17, 2009 and analyzed by Empirical Laboratories, LLC. All analyses were conducted using USEPA SW-846 Methods 8260B, 8270C, 8081A, 8082, and 8151A analytical and reporting protocols.

The aqueous data for the four (4) samples NTC21-FD111609-01, NTC21MW0101, NTC21MW0201, and NTC21MW0301 contained in this SDG were fully validated with regard to the following parameters:

- * Data Completeness
- * Holding Times
- * GC/MS Tuning
- Initial and Continuing Calibration
- Laboratory Blank Analyses
- Surrogate Recoveries
- Blank Spike/Blank Spike Duplicate Results
- * Matrix Spike/Matrix Spike Duplicate Results
- * Internal Standard Recoveries
- Field Duplicate Results
- * Compound Quantitation

* • Compound Identification
* • Detection Limits

The symbol (*) indicates that quality control criteria were met for this parameter. Problems affecting data quality are discussed below; documentation supporting these findings is presented in Appendix C. Qualified Analytical results are presented in Appendix A. Results as reported by the laboratory are presented in Appendix B.

The aqueous data for the three (3) aqueous samples NTC21MW0401, NTC21MW0501, and NTC21MW0601 and the one (1) soil sample, NTC21SB02-SO-0406, contained in this SDG were validated with regard to the following limited parameters:

* • Data Completeness
* • Holding Times
* • GC/MS Tuning
• Initial and Continuing Calibration
• Laboratory Blank Analyses
* • Detection Limits

The symbol (*) indicates that quality control criteria were met for this parameter. Problems affecting data quality are discussed below; documentation supporting these findings is presented in Appendix C. Qualified Analytical results are presented in Appendix A. Results as reported by the laboratory are presented in Appendix B.

VOC

The following compounds were detected in the method blanks:

Compound	Maximum Conc. (µg/l)	Action Level (µg/l)
Methylene chloride (1)	1.2	12
1,2,4-Trichlorobenzene (1)	0.16	0.80
Methylene chloride (2)	0.63	6.30
1,2,4-Trichlorobenzene (2)	0.16	0.80

Compound	Maximum Conc. (µg/kg)	Action Level (µg/kg)
Methylene chloride (3)	1.3	13.0

(1) Maximum concentration detected in the aqueous method blank V3BLK1120E affecting SDG aqueous samples FB-111709-01, NTC21MW0101 and NTC21MW0601.
(2) Maximum concentration detected in the aqueous method blank V3BLK1122 affecting aqueous samples NTC21MW0201, NTC21MW0301, NTC21MW0401, NTC21MW0501, and NTC21-FD111609-01.
(3) Maximum concentration detected in the soil method blank V5BLK1119 affecting soil sample NTC21SB02-SO-0406.

An action level of 10X the maximum contaminant concentration for the common laboratory contaminant methylene chloride and 5X the maximum contaminant concentration for other contaminants was established to evaluate sample data for blank contamination. Dilution factors, % moisture, and sample aliquots, if applicable, were taken into consideration during the application of the action level when evaluating for blank contamination for each individual sample.

Blank Actions:

- Value < Reporting Limit (RL); value followed by a U, raise value to CRQL.
- Value > RL and < Action level; report value followed by a U.

A continuing calibration percent difference (%D) was greater than the 25% quality control limit for 1,1-dichloroethane and methyl acetate on instrument VOA5 on 10/03/09 at 16:11 affecting sample NTC21SB02-SO-0406. The non-detected sample results for the aforementioned analytes for sample NTC21SB02-SO-0406 were qualified estimated, (UJ).

A continuing calibration percent difference (%D) was greater than the 25% quality control limit for acetone, 2-butanone, chloromethane, and 4-methyl-2-pentanone on instrument VOA3 on 11/21/09 at 04:30 affecting samples FB-111709-01, NTC21MW0101, and NTC21MW0601. The positive and non-detected sample results for the aforementioned samples for acetone, 2-butanone, chloromethane, and 4-methyl-2-pentanone were qualified estimated, (J) and (UJ), respectively.

A continuing calibration percent difference (%D) was greater than the 25% quality control limit for acetone, 2-butanone, chloroethane, chloromethane, dichlorodifluoromethane, and 4-methyl-2-pentanone on instrument VOA3 on 11/22/09 at 12:27 affecting samples NTC21MW0201, NTC21MW0301, NTC21MW0401, NTC21MW0501, and NTC21-FD111609-01. The positive and non-detected sample results for the aforementioned samples for the aforementioned analytes were qualified estimated, (J) and (UJ), respectively.

The laboratory control sample (LCS) V3BLK1120E and LCS duplicate (LCSD) % recoveries were greater than the quality control limit for chloromethane. The affected sample NTC21MW0101 had a non-detected result for which was not qualified.

The laboratory control sample (LCS) V3BLK1122 % recoveries were greater than the quality control limit for acetone and chloromethane. The positive results for acetone were qualified estimated, (J), and the non-detected acetone and chloromethane results were not qualified for the affected samples NTC21-FD111609-01, NTC21MW0201, and NTC21MW0301.

SVOC

The following compounds were detected in the method blanks:

Compound	Maximum Conc. (µg/l)	Action Level (µg/l)
Caprolactam (1)	0.80	4.0
Caprolactam (2)	1.5	6.0

Compound	Maximum Conc. (µg/kg)	Action Level (µg/kg)
Diethylphthalate (3)	140	1400

(1) Maximum concentration detected in the aqueous method blank 9K18009-BLK1 affecting SDG aqueous samples NTC21MW0201, NTC21MW0301, NTC21MW0401, NTC21MW0501, and NTC21-FD111609-01.
(2) Maximum concentration detected in the aqueous method blank 9K19024-BLK1 affecting aqueous samples NTC21MW0101 and NTC21MW0601.
(3) Maximum concentration detected in the soil method blank 9K23034-BLK1 affecting soil sample NTC21SB02-SO-0406.

An action level of 10X the maximum contaminant concentration for the common laboratory contaminant diethylphthalate and 5X the maximum contaminant concentration for other contaminants was established to evaluate sample data for blank contamination. Dilution factors, %

moisture, and sample aliquots, if applicable, were taken into consideration during the application of the action level when evaluating for blank contamination for each individual sample.

Blank Actions

- Value < Reporting Limit (RL); value followed by a U, raise value to CRQL.
- Value > RL and < Action level; report value followed by a U.

The continuing calibration %D was greater than the 25% quality control limit for instrument BNA1 on 11/24/09 @ 14:04 for acetophenone, atrazine, 2,2'-oxybis(1-chloropropane), caprolactam, 3,3'-dichlorobenzidine, 4-nitrophenol, and n-nitroso-di-n-propylamine affecting samples NTC21MW0501 and NTC21-FD111609-01. All the results were non-detected for the aforementioned analytes except caprolactam for the samples NTC21MW0501 and NTC21-FD111609-01. The caprolactam results were qualified due to method blank contamination and no further action was necessary. The remainder of the analytes were qualified estimated, (UJ), for samples NTC21MW0501 and NTC21-FD111609-01.

The continuing calibration %D was greater than the 25% quality control limit for instrument BNA1 on 11/25/09 @ 04:11 for acetophenone, atrazine, 3,3'-dichlorobenzidine, and 4-nitrophenol affecting samples NTC21MW0201, NTC21MW0301, and NTC21MW401. All the results were non-detected for the aforementioned analytes which were qualified estimated, (UJ), for samples NTC21MW0201, NTC21MW0301, and NTC21MW401.

The continuing calibration %D was greater than the 25% quality control limit for instrument BNA1 on 11/27/09 @ 14:20 for atrazine, caprolactam, 3,3'-dichlorobenzidine, 2,4-dinitrophenol, and 3-nitroaniline affecting sample blank analysis for 9K23034-BLK1. No samples results were qualified due to this issue.

The continuing calibration %D was greater than the 25% quality control limit for instrument BNA1 on 11/27/09 @ 22:38 for atrazine, caprolactam, 3,3'-dichlorobenzidine, and di-n-octylphthalate affecting sample blank analysis for 9K19024-BLK1. No samples results were qualified due to this issue.

The continuing calibration %D was greater than the 25% quality control limit for instrument BNA1 on 12/03/09 @ 12:06 for 3,3'-dichlorobenzidine and 4-nitroaniline affecting soil sample NTC21SB02-SO-0406. All the results were non-detected for the aforementioned analytes which were qualified estimated, (UJ), for sample NTC21SB02-SO-0406.

The continuing calibration %D was greater than the 25% quality control limit for instrument BNA1 on 12/04/09 @ 10:34 for acetophenone, benzaldehyde, 2,2'-oxybis(1-chloropropane), caprolactam, 3,3'-dichlorobenzidine, 2,4-dinitrophenol, 4-methylphenol, 4-nitrophenol, and n-nitroso-di-n-propylamine affecting samples NTC21MW0101, and NTC21MW0601. The caprolactam result was qualified due to method blank contamination and no further action was necessary. All results were non-detected for the remaining aforementioned analytes which were qualified estimated, (UJ), for samples NTC21MW0101 and NTC21MW0601.

The laboratory control sample (LCS) 9K18009-BLK1 associated with batch 9K18009 for instrument BNA1 had % recoveries greater than the quality control limit for butylbenzylphthalate and di-n-octylphthalate. No action was taken for the associated samples NTC21MW0201, NTC21MW0301, and NTC21-FD111609-01, as they had non-detected results for butylbenzylphthalate and di-n-octylphthalate.

The LCS 9K18009-BLK1 associated with batch 9K18009 for instrument BNA1 had % recoveries less than the quality control limit for caprolactam. No action was taken for the associated samples NTC21MW0201, NTC21MW0301, and NTC21-FD111609-01, as they were qualified due to method blank contamination.

The LCS 9K19024-BLK1 associated with batch 9K19024 for instrument BNA1 had a % recovery greater than the quality control limit for butylbenzylphthalate. The LCS duplicate (LCSD) associated with batch 9K19024 for instrument BNA1 had a % recovery greater than the quality control limit for 2,4-dinitrophenol. No action was

taken for the associated sample NTC21MW0101, as it had non-detected results for both butylbenzylphthalate and 2,4-dinitrophenol.

The LCS 9K19024-BLK1 associated with batch 9K19024 for instrument BNA1 had a % recovery less than the quality control limit for caprolactam. No action was taken for the associated sample NTC21MW0101 as it was qualified due to method blank contamination.

The sample NTC21SB02-SO-0406 had surrogate recovery quality control limit exceedances on the initial analysis. It was subsequently re-extracted outside the hold time of 14 days and was re-analyzed with similar surrogate recovery quality control limit concerns. The initial analysis results were reported.

PAH

The following compounds were detected in the method blanks:

Compound	Maximum Conc. (µg/l)	Action Level (µg/l)
2-Methylnapphthalene (1)	0.046	0.230
Naphthalene (1)	0.046	0.230
Phenanthrene (1)	0.026	0.130
Acenaphthene (2)	0.045	0.225
Acenaphthylene (2)	0.035	0.175
Anthracene (2)	0.094	0.470
Benzo(a)anthracene (2)	0.14	0.70
Benzo(b)fluoranthene (2)	0.12	0.60
Benzo(k)fluoranthene (2)	0.13	0.65
Benzo(a)pyrene (2)	0.12	0.60
Chrysene (2)	0.15	0.75
Fluoranthene (2)	0.13	0.65
Fluorene (2)	0.058	0.290
2-Methylnaphthalene (2)	0.026	0.130
Naphthalene (2)	0.023	0.115
Phenanthrene (2)	0.10	0.50
Pyrene (2)	0.15	0.75

(1) Maximum concentration detected in the aqueous method blank 9K18009-BLK2 affecting SDG aqueous samples NTC21MW0201, NTC21MW0301, NTC21MW0401, NTC21MW0501, and NTC21-FD111609-01.
(2) Maximum concentration detected in the method blank 9K19024-BLK2 affecting samples NTC21MW0101 and NTC21MW0601.

Action levels of 5X the maximum contaminant concentration for PAH contaminants were established to evaluate sample data for blank contamination. Dilution factors, % moisture, and sample aliquots, if applicable, were taken into consideration during the application of the action level when evaluating for blank contamination for each individual sample.

Blank Actions

- Value < Reporting Limit (RL); value followed by a U, raise value to CRQL.
- Value > RL and < Action level; report value followed by a U.

The continuing calibration %D was greater than the 25% quality control limit for instrument BNA4 on 12/01/09 @ 18:25 for benzo(a)anthracene and chrysene affecting the dilution analysis of sample NTC21SB02-SO-0406. Only the fluoranthene result was reported from the dilution analysis and therefore no action was necessary.

The sample NTC21SB02-SO-0406 was also re-analyzed at a 5X dilution and the fluoranthene result was reported from the 5X dilution analysis of the sample.

PEST/PCB

The continuing calibrations verifications (CCV) % recoveries were greater than the 15% quality control limit for multiple CCVs affecting a large number of analytes for both the initial and confirmatory chromatography columns resulting in data qualifications for the associated samples. The positive and non-detected sample results were qualified estimated, (J) and (UJ), respectively, for those analytes of the samples which were affected by the quality control limit exceedances for both columns. The samples analytes affected on both columns are listed as follows.

CCV % Recovery Exceedance on Both Columns:		
Date	Analytes	Affected Samples
11/18/09 @ 20:02	4,4'-DDE, 4,4'-DDD, 4,4'-DDT, endosulfan I, endrin aldehyde.	NTC21-FD111609-01, NTC21MW0201, NTC21MW0501, NTC21MW0301, NTC21MW0401
11/19/09 @ 01:51	methoxychlor	NTC21MW0501, NTC21MW0301, NTC21MW0401
11/23/09 @ 11:59, @ 12:17, @19:36, @ 19:54	4,4'-DDT, 4,4'-DDE, 4,4'-DDD, methoxychlor, endrin, endrin aldehyde, PCB-1016, PCB-1260	NTC21MW0101, NTC21MW0601
11/25/09 @ 13:35	4,4'-DDT, heptachlor, alpha-BHC, delta-BHC, methoxychlor, PCB-1016, PCB-1260	NTC21SB-02-SO-0406
11/25/09 @ 17:13	PCB-1260	NTC21SB-02-SO-0406 re-analysis

The higher of the two columns positive results were reported except when quantitative matrix interferences were detected as identified by the laboratory. In those cases the alternate column value was reported and these analytes were qualified estimated, (J). Sample analytes were not qualified if they were reported from a column which met the quality control limits even if the alternate column did not meet one or more quality control limits.

Positive sample NTC21SB02-SO-0406 4,4-DDE, 4,4'-DDT, aldrin, alpha-chlordane, delta-BHC, dieldrin, endosulfan I, endrin, gamma-chlordane, methoxychlor, PCB-1242, and PCB-1260 results with column relative percent differences (RPD) >25% were qualified estimated, (J). No results were rejected even though some RPDs were >100%.

The LCS and the LCSD % recoveries for 4,4'-DDT from both columns exceeded the quality control limits for batch 9K19008 affecting sample NTC21MW0101. The 4,4'-DDT was non-detected and was not qualified. The LCSD endrin aldehyde % recovery from the ZB MR-2 column and the LCSD methoxychlor % recovery from the ZB MR-1 column exceeded the quality control limit. No action was taken as the alternate column had within the quality control limit % recoveries.

HERB

The closing continuing calibration verification (CCV) % D exceeded the 15% quality control limit on the MR-1 column for 2,4-DB for instrument GL-ECD3 on 12/01/09 @ 13:04 affecting samples NTC21MW0201, NTC21MW0301, NTC21MW0401, NTC21MW0501, and NTC21-FD111609-01. No action was taken for the affected samples as all samples had non-detected 2,4-DB herbicide results and the continuing calibration check %D was within the quality control limit on the alternate column.

The LCS % recovery was greater than the quality control limit for 2,4,5-T on the MR-1 column for the LCS

from batch 9K18013 affecting samples NTC21MW0201, NTC21MW0301, and NTC21-FD111609-01. No action was taken as the alternate column had within the quality control limit % recovery for 2,4,5-T.

The LCS and the LCSD % recoveries was greater than the quality control limit for 2,4,5-T and dichloroprop on both the MR-1 and MR-2 columns from batch 9K23022 affecting sample NTC21MW0101. The % recoveries for dinoseb were greater than the quality control limit for the LCS MR-1 column and the LCSD for the MR-1 and MR-2 columns from batch 9K23022. Additionally, the % recovery was greater than the quality control limit for MCPP on the MR-2 column for both the LCS and the LCSD. The affected sample NTC21MW0101 had non-detected results for all these analytes which were not qualified.

The higher of the two columns positive results were reported except when quantitative matrix interferences were detected as identified by the laboratory. In those cases the alternate column value was reported and these analytes were qualified estimated, (J). Sample analytes were not qualified if they were reported from a column which met the quality control limits even if the alternate column did not meet one or more quality control limits.

ADDITIONAL COMMENTS

Positive results less than the reporting limit (RL) were qualified as estimated, (J), due to uncertainty near the detection limit.

EXECUTIVE SUMMARY

Laboratory Performance Issues: VOC method blank contamination resulted in sample data qualification. VOC continuing calibration %Ds greater than the 25% quality control limits for a number of analytes resulted in data qualification of the positive and non-detected sample analytes. The positive acetone results for samples NTC21MW0201 and NTC21-FD111609-01 were qualified due to an LCS quality control limit exceedance.

SVOC method blank contamination resulted in sample data qualification. SVOC continuing calibration %Ds greater than the 25% quality control limit for a number of analytes resulted in data qualification of positive and non-detected SVOC sample analytes.

PAH method blank contamination resulted in sample data qualification.

PEST/PCB continuing calibration %Ds greater than the quality control limits for a number of analytes resulted in data qualification of the positive and non-detected sample analytes. Matrix interferences identified by the laboratory resulted in PEST/PCB data qualification when sample results were reported from an alternate column. The RPDs between analytical columns which exceeded 25% resulted in PEST/PCB sample data qualification.

Matrix interferences identified by the laboratory resulted in HERB data qualification when sample results were reported from an alternate column. The HERB RPDs between analytical columns which exceeded 25% resulted in HERB sample data qualification.

Other factors affecting data quality: Positive results less than the reporting limit (RL) were qualified as estimated, (J), due to uncertainty near the detection limit.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (October 1999) and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (January 2006). The text of this report has been formulated to address only those problem areas affecting data quality.

Tetra Tech NUS

Joseph Kalinyak
Chemist/Data Validator

TetraTech NUS

Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Support Documentation

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Value Qualifier Key (Val Qual)

J – Positive result is considered estimated, "J", as a result of technical non-compliances.

UJ – Non-detected result is considered estimated, "UJ", as a result of technical non-compliances.

U - Value is a non-detect as reported by the laboratory.

UR – Non-detected result is considered rejected, (UR), as a result of technical non-compliances.

DATA QUALIFICATION CODE (QUAL CODE)

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's r < 0.995 / ICP PDS Recovery Noncompliance
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (e.g. base-line drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient r < 0.995
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 01797	NSAMPLE	NTC21SB02-SO-0406
SDG: CTO064_002	LAB_ID	0911147-01
FRACTION: OV	SAMP_DATE	11/13/2009
MEDIA: SOIL	QC_TYPE	NM
	UNITS	UG/KG
	PCT_SOLIDS	88.9
	DUP_OF	

PARAMETER	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	1.3	U	
1,1,2,2-TETRACHLOROETHANE	0.62	U	
1,1,2-TRICHLOROETHANE	0.51	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	0.8	U	
1,1-DICHLOROETHANE	0.78	UJ	C
1,1-DICHLOROETHENE	1.7	U	
1,2,4-TRICHLOROBENZENE	0.26	U	
1,2-DIBROMO-3-CHLOROPROPANE	1.7	U	
1,2-DIBROMOETHANE	0.62	U	
1,2-DICHLOROBENZENE	0.53	U	
1,2-DICHLOROETHANE	0.66	U	
1,2-DICHLOROPROPANE	0.66	U	
1,3-DICHLOROBENZENE	1.2	U	
1,4-DICHLOROBENZENE	0.8	U	
2-BUTANONE	2	U	
2-HEXANONE	3.3	U	
4-METHYL-2-PENTANONE	0.84	U	
ACETONE	35		
BENZENE	0.68	U	
BROMODICHLOROMETHANE	0.43	U	
BROMOFORM	1.4	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1.9	J	P
CARBON TETRACHLORIDE	1.3	U	
CHLOROBENZENE	0.49	U	
CHLORODIBROMOMETHANE	0.49	U	
CHLOROETHANE	1.6	U	
CHLOROFORM	0.8	U	
CHLOROMETHANE	0.75	U	
CIS-1,2-DICHLOROETHENE	1.7	U	
CIS-1,3-DICHLOROPROPENE	0.72	U	
CYCLOHEXANE	0.78	U	
DICHLORODIFLUOROMETHANE	1.6	U	
ETHYLBENZENE	1.1	U	
ISOPROPYLBENZENE	1.3	U	
METHYL ACETATE	2.3	UJ	C

PROJ_NO: 01797	NSAMPLE	NTC21SB02-SO-0406
SDG: CTO064_002	LAB_ID	0911147-01
FRACTION: OV	SAMP_DATE	11/13/2009
MEDIA: SOIL	QC_TYPE	NM
	UNITS	UG/KG
	PCT_SOLIDS	88.9
	DUP_OF	

PARAMETER	RESULT	VQL	QLCD
METHYL CYCLOHEXANE	1.3	J	P
METHYL TERT-BUTYL ETHER	0.46	U	
METHYLENE CHLORIDE	14	U	A
STYRENE	0.51	U	
TETRACHLOROETHENE	3.3	J	P
TOLUENE	1.5	J	P
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1.6	U	
TRANS-1,3-DICHLOROPROPENE	0.46	U	
TRICHLOROETHENE	1.2	U	
TRICHLOROFLUOROMETHANE	1.4	J	P
VINYL CHLORIDE	1.6	U	

PROJ_NO: 01797	NSAMPLE	FB-111709-01			NTC21-FD111609-01			NTC21MW0101			NTC21MW0201		
SDG: CTO064_002	LAB_ID	0911181-01			0911151-02			0911181-02			0911151-03		
FRACTION: OV	SAMP_DATE	11/17/2009			11/16/2009			11/17/2009			11/16/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF				NTC21MW0201								
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		0.17	U		0.17	U		0.17	U		0.17	U	
1,1,2,2-TETRACHLOROETHANE		0.1	U		0.1	U		0.1	U		0.1	U	
1,1,2-TRICHLOROETHANE		0.1	U		0.1	U		0.1	U		0.1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE		0.18	U		0.18	U		0.18	U		0.18	U	
1,1-DICHLOROETHANE		0.12	U		0.12	U		0.12	U		0.12	U	
1,1-DICHLOROETHENE		0.15	U		0.15	U		0.15	U		0.15	U	
1,2,4-TRICHLOROBENZENE		1	U	A	0.1	U		0.1	U		0.1	U	
1,2-DIBROMO-3-CHLOROPROPANE		0.11	U		0.11	U		0.11	U		0.11	U	
1,2-DIBROMOETHANE		0.1	U		0.1	U		0.1	U		0.1	U	
1,2-DICHLOROBENZENE		0.1	U		0.1	U		0.1	U		0.1	U	
1,2-DICHLOROETHANE		0.1	U		0.1	U		0.1	U		0.1	U	
1,2-DICHLOROPROPANE		0.1	U		0.1	U		0.1	U		0.1	U	
1,3-DICHLOROBENZENE		0.13	U		0.13	U		0.13	U		0.13	U	
1,4-DICHLOROBENZENE		0.1	U		0.1	U		0.1	U		0.1	U	
2-BUTANONE		1	UJ	C	1	UJ	C	1	UJ	C	1	UJ	C
2-HEXANONE		0.3	U		0.3	U		0.3	U		0.3	U	
4-METHYL-2-PENTANONE		0.29	UJ	C	0.29	UJ	C	0.29	UJ	C	0.29	UJ	C
ACETONE		0.84	UJ	C	4.6	J	CEP	3.6	J	CP	4.6	J	CEP
BENZENE		0.11	U		0.11	U		0.96	J	P	0.11	U	
BROMODICHLOROMETHANE		0.1	U		0.1	U		0.1	U		0.1	U	
BROMOFORM		0.1	U		0.1	U		0.1	U		0.1	U	
BROMOMETHANE		0.32	U		0.32	U		0.32	U		0.32	U	
CARBON DISULFIDE		0.13	U		0.13	U		0.13	U		0.13	U	
CARBON TETRACHLORIDE		0.15	U		0.15	U		0.15	U		0.15	U	
CHLOROBENZENE		0.1	U		0.1	U		0.1	U		0.1	U	
CHLORODIBROMOMETHANE		0.1	U		0.1	U		0.1	U		0.1	U	
CHLOROETHANE		0.18	U		0.18	UJ	C	0.18	U		0.18	UJ	C
CHLOROFORM		0.11	U		0.11	U		0.11	U		0.11	U	
CHLOROMETHANE		0.29	UJ	C	0.29	UJ	C	0.29	UJ	C	0.29	UJ	C
CIS-1,2-DICHLOROETHENE		0.13	U		0.13	U		0.13	U		0.13	U	
CIS-1,3-DICHLOROPROPENE		0.11	U		0.11	U		0.11	U		0.11	U	
CYCLOHEXANE		0.2	U		0.2	U		0.2	U		0.2	U	
DICHLORODIFLUOROMETHANE		0.22	U		0.22	UJ	C	0.22	U		0.22	UJ	C
ETHYLBENZENE		0.13	U		0.13	U		0.13	U		0.13	U	
ISOPROPYLBENZENE		0.15	U		0.15	U		0.15	U		0.15	U	
METHYL ACETATE		0.3	U		0.3	U		0.3	U		0.3	U	

PROJ_NO: 01797	NSAMPLE	NTC21MW0301			NTC21MW0401			NTC21MW0501			NTC21MW0601		
SDG: CTO064_002	LAB_ID	0911151-04			0911151-05			0911151-01			0911181-03		
FRACTION: OV	SAMP_DATE	11/16/2009			11/16/2009			11/15/2009			11/17/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE		0.17	U		0.17	U		0.17	U		0.17	U	
1,1,2,2-TETRACHLOROETHANE		0.1	U		0.1	U		0.1	U		0.1	U	
1,1,2-TRICHLOROETHANE		0.1	U		0.1	U		0.1	U		0.1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE		0.18	U		0.18	U		0.18	U		0.18	U	
1,1-DICHLOROETHANE		0.12	U		0.12	U		0.12	U		0.12	U	
1,1-DICHLOROETHENE		0.15	U		0.15	U		0.15	U		0.15	U	
1,2,4-TRICHLOROBENZENE		0.1	U		0.1	U		0.1	U		0.1	U	
1,2-DIBROMO-3-CHLOROPROPANE		0.11	U		0.11	U		0.11	U		0.11	U	
1,2-DIBROMOETHANE		0.1	U		0.1	U		0.1	U		0.1	U	
1,2-DICHLOROBENZENE		0.1	U		0.1	U		0.1	U		0.1	U	
1,2-DICHLOROETHANE		0.1	U		0.1	U		0.1	U		0.1	U	
1,2-DICHLOROPROPANE		0.1	U		0.1	U		0.1	U		0.1	U	
1,3-DICHLOROBENZENE		0.13	U		0.13	U		0.13	U		0.13	U	
1,4-DICHLOROBENZENE		0.1	U		0.1	U		0.1	U		0.1	U	
2-BUTANONE		1	UJ	C	1	UJ	C	1	UJ	C	1	UJ	C
2-HEXANONE		0.3	U		0.3	U		0.3	U		0.3	U	
4-METHYL-2-PENTANONE		0.29	UJ	C	0.29	UJ	C	0.29	UJ	C	0.29	UJ	C
ACETONE		0.84	UJ	C	2.2	J	CP	3.4	J	CP	1.8	J	CP
BENZENE		0.11	U		0.11	U		0.11	U		0.11	U	
BROMODICHLOROMETHANE		0.1	U		0.1	U		0.1	U		0.1	U	
BROMOFORM		0.1	U		0.1	U		0.1	U		0.1	U	
BROMOMETHANE		0.32	U		0.32	U		0.32	U		0.32	U	
CARBON DISULFIDE		0.13	U		0.13	U		0.13	U		0.13	U	
CARBON TETRACHLORIDE		0.15	U		0.15	U		0.15	U		0.15	U	
CHLOROBENZENE		0.1	U		0.1	U		0.1	U		0.1	U	
CHLORODIBROMOMETHANE		0.1	U		0.1	U		0.1	U		0.1	U	
CHLOROETHANE		0.18	UJ	C	0.18	UJ	C	0.18	UJ	C	0.18	U	
CHLOROFORM		0.11	U		0.11	U		0.11	U		0.11	U	
CHLOROMETHANE		0.29	UJ	C	0.29	UJ	C	0.29	UJ	C	0.29	UJ	C
CIS-1,2-DICHLOROETHENE		0.13	U		0.13	U		0.79	J	P	0.13	U	
CIS-1,3-DICHLOROPROPENE		0.11	U		0.11	U		0.11	U		0.11	U	
CYCLOHEXANE		0.2	U		0.2	U		0.2	U		0.2	U	
DICHLORODIFLUOROMETHANE		0.22	UJ	C	0.22	UJ	C	0.22	UJ	C	0.22	U	
ETHYLBENZENE		0.13	U		0.13	U		0.13	U		0.13	U	
ISOPROPYLBENZENE		0.15	U		0.15	U		0.15	U		0.15	U	
METHYL ACETATE		0.3	U		0.3	U		0.3	U		0.3	U	

PROJ_NO: 01797	NSAMPLE	FB-111709-01			NTC21-FD111609-01			NTC21MW0101			NTC21MW0201		
SDG: CTO064_002	LAB_ID	0911181-01			0911151-02			0911181-02			0911151-03		
FRACTION: OV	SAMP_DATE	11/17/2009			11/16/2009			11/17/2009			11/16/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF				NTC21MW0201								
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		0.17	U		0.17	U		0.17	U		0.17	U	
METHYL TERT-BUTYL ETHER		0.1	U		0.1	U		1.6			0.1	U	
METHYLENE CHLORIDE		0.14	U		0.14	U		0.14	U		0.14	U	
STYRENE		0.1	U		0.1	U		0.1	U		0.1	U	
TETRACHLOROETHENE		0.15	U		0.15	U		0.85	J	P	0.15	U	
TOLUENE		0.1	U		0.1	U		0.1	U		0.1	U	
TOTAL XYLENES		0.22	U		0.22	U		0.22	U		0.22	U	
TRANS-1,2-DICHLOROETHENE		0.13	U		0.13	U		0.13	U		0.13	U	
TRANS-1,3-DICHLOROPROPENE		0.1	U		0.1	U		0.1	U		0.1	U	
TRICHLOROETHENE		0.13	U		0.13	U		0.13	U		0.13	U	
TRICHLOROFLUOROMETHANE		0.17	U		0.17	U		2.5			0.17	U	
VINYL CHLORIDE		0.18	U		0.18	U		0.18	U		0.18	U	

PROJ_NO: 01797	NSAMPLE	NTC21MW0301			NTC21MW0401			NTC21MW0501			NTC21MW0601		
SDG: CTO064_002	LAB_ID	0911151-04			0911151-05			0911151-01			0911181-03		
FRACTION: OV	SAMP_DATE	11/16/2009			11/16/2009			11/15/2009			11/17/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF												
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
METHYL CYCLOHEXANE		0.17	U		0.17	U		0.17	U		0.17	U	
METHYL TERT-BUTYL ETHER		0.1	U		0.1	U		0.1	U		0.1	U	
METHYLENE CHLORIDE		0.14	U		0.14	U		0.14	U		0.14	U	
STYRENE		0.1	U		0.1	U		0.1	U		0.1	U	
TETRACHLOROETHENE		0.15	U		0.15	U		0.15	U		0.15	U	
TOLUENE		0.1	U		0.1	U		0.1	U		0.1	U	
TOTAL XYLENES		0.22	U		0.22	U		0.22	U		0.22	U	
TRANS-1,2-DICHLOROETHENE		0.13	U		0.13	U		0.13	U		0.13	U	
TRANS-1,3-DICHLOROPROPENE		0.1	U		0.1	U		0.1	U		0.1	U	
TRICHLOROETHENE		0.13	U		0.13	U		0.13	U		0.13	U	
TRICHLOROFLUOROMETHANE		0.17	U		0.17	U		0.17	U		0.17	U	
VINYL CHLORIDE		0.18	U		0.18	U		0.18	U		0.18	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB02-SO-0406			NTC21SB02-SO-0406-DL		
SDG: CTO064_002	LAB_ID	0911147-01			0911147-01DL		
FRACTION: OS	SAMP_DATE	11/13/2009			11/13/2009		
MEDIA: SOIL	QC_TYPE	NM			NM		
	UNITS	UG/KG			UG/KG		
	PCT_SOLIDS	89.0			89.0		
	DUP_OF						
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		33	U				
2,2'-OXYBIS(1-CHLOROPROPANE)		58	U				
2,4,5-TRICHLOROPHENOL		30	U				
2,4,6-TRICHLOROPHENOL		39	U				
2,4-DICHLOROPHENOL		21	U				
2,4-DIMETHYLPHENOL		24	U				
2,4-DINITROPHENOL		150	U				
2,4-DINITROTOLUENE		27	U				
2,6-DINITROTOLUENE		42	U				
2-CHLORONAPHTHALENE		36	U				
2-CHLOROPHENOL		46	U				
2-METHYLNAPHTHALENE		30					
2-METHYLPHENOL		43	U				
2-NITROANILINE		36	U				
2-NITROPHENOL		25	U				
3,3'-DICHLOROBENZIDINE		35	UJ	C			
3-NITROANILINE		53	U				
4,6-DINITRO-2-METHYLPHENOL		24	U				
4-BROMOPHENYL PHENYL ETHER		29	U				
4-CHLORO-3-METHYLPHENOL		31	U				
4-CHLOROANILINE		54	U				
4-CHLOROPHENYL PHENYL ETHER		35	U				
4-METHYLPHENOL		30	U				
4-NITROANILINE		110	UJ	C			
4-NITROPHENOL		91	U				
ACENAPHTHENE		200					
ACENAPHTHYLENE		32					
ACETOPHENONE		46	U				
ANTHRACENE		560					
ATRAZINE		32	U				
BENZALDEHYDE		62	U				
BENZO(A)ANTHRACENE		2000					
BENZO(A)PYRENE		1200					
BENZO(B)FLUORANTHENE		1600					
BENZO(G,H,I)PERYLENE		730					

PROJ_NO: 01797	NSAMPLE	NTC21SB02-SO-0406			NTC21SB02-SO-0406-DL		
SDG: CTO064_002	LAB_ID	0911147-01			0911147-01DL		
FRACTION: OS	SAMP_DATE	11/13/2009			11/13/2009		
MEDIA: SOIL	QC_TYPE	NM			NM		
	UNITS	UG/KG			UG/KG		
	PCT_SOLIDS	89.0			89.0		
	DUP_OF						
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD
BENZO(K)FLUORANTHENE		620					
BIS(2-CHLOROETHOXY)METHANE		35	U				
BIS(2-CHLOROETHYL)ETHER		46	U				
BIS(2-ETHYLHEXYL)PHTHALATE		69	J	P			
BUTYL BENZYL PHTHALATE		110	J	P			
CAPROLACTAM		76	U				
CARBAZOLE		430	J	P			
CHRYSENE		2100					
DIBENZO(A,H)ANTHRACENE		240					
DIBENZOFURAN		150	J	P			
DIETHYL PHTHALATE		38	U				
DIMETHYL PHTHALATE		34	U				
DI-N-BUTYL PHTHALATE		34	U				
DI-N-OCTYL PHTHALATE		30	U				
FLUORANTHENE					4700		
FLUORENE		180					
HEXACHLOROBENZENE		39	U				
HEXACHLOROBUTADIENE		37	U				
HEXACHLOROCYCLOPENTADIENE		69	U				
HEXACHLOROETHANE		44	U				
INDENO(1,2,3-CD)PYRENE		890					
ISOPHORONE		32	U				
NAPHTHALENE		33					
NITROBENZENE		39	U				
N-NITROSO-DI-N-PROPYLAMINE		62	U				
N-NITROSODIPHENYLAMINE		36	U				
PENTACHLOROPHENOL		38	U				
PHENANTHRENE		2200					
PHENOL		40	U				
PYRENE		3200					

PROJ_NO: 01797	NSAMPLE	NTC21-FD111609-01			NTC21MW0101			NTC21MW0201			NTC21MW0301		
SDG: CTO064_002	LAB_ID	0911151-02			0911181-02			0911151-03			0911151-04		
FRACTION: OS	SAMP_DATE	11/16/2009			11/17/2009			11/16/2009			11/16/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF	NTC21MW0201											
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		0.39	U		0.38	U		0.36	U		0.38	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		0.85	UJ	C	0.83	UJ	C	0.79	U		0.82	U	
2,4,5-TRICHLOROPHENOL		0.5	U		0.49	U		0.46	U		0.48	U	
2,4,6-TRICHLOROPHENOL		0.73	U		0.72	U		0.68	U		0.7	U	
2,4-DICHLOROPHENOL		0.44	U		0.43	U		0.41	U		0.42	U	
2,4-DIMETHYLPHENOL		0.71	U		0.7	U		0.66	U		0.68	U	
2,4-DINITROPHENOL		0.85	U		0.83	UJ	C	0.79	U		0.82	U	
2,4-DINITROTOLUENE		0.49	U		0.48	U		0.45	U		0.47	U	
2,6-DINITROTOLUENE		0.66	U		0.65	U		0.61	U		0.63	U	
2-CHLORONAPHTHALENE		0.58	U		0.57	U		0.54	U		0.56	U	
2-CHLOROPHENOL		0.59	U		0.58	U		0.55	U		0.57	U	
2-METHYLNAPHTHALENE		0.06	U	A	0.05	U	A	0.01	U		0.01	U	
2-METHYLPHENOL		0.83	U		0.81	U		0.77	U		0.8	U	
2-NITROANILINE		1.2	U		1.2	U		1.1	U		1.1	U	
2-NITROPHENOL		0.74	U		0.72	U		0.68	U		0.71	U	
3,3'-DICHLOROBENZIDINE		0.89	UJ	C	0.87	UJ	C	0.82	UJ	C	0.86	UJ	C
3-NITROANILINE		1	U		1	U		0.97	U		1	U	
4,6-DINITRO-2-METHYLPHENOL		0.74	U		0.72	U		0.68	U		0.71	U	
4-BROMOPHENYL PHENYL ETHER		0.57	U		0.56	U		0.53	U		0.55	U	
4-CHLORO-3-METHYLPHENOL		0.58	U		0.57	U		0.54	U		0.56	U	
4-CHLOROANILINE		0.95	U		0.93	U		0.88	U		0.91	U	
4-CHLOROPHENYL PHENYL ETHER		0.89	U		0.87	U		0.82	U		0.86	U	
4-METHYLPHENOL		0.77	U		0.75	UJ	C	0.71	U		0.74	U	
4-NITROANILINE		2	U		2	U		1.9	U		2	U	
4-NITROPHENOL		0.83	UJ	C	0.81	UJ	C	0.77	UJ	C	0.8	UJ	C
ACENAPHTHENE		0.03	J	P	0.1	U	A	0.01	U		0.02	J	P
ACENAPHTHYLENE		0.03	J	P	0.02	U		0.01	U		0.01	U	
ACETOPHENONE		0.75	UJ	C	0.74	UJ	C	0.69	UJ	C	0.72	UJ	C
ANTHRACENE		0.06			0.02	U		0.01	U		0.04	J	P
ATRAZINE		0.69	UJ	C	0.68	U		0.64	UJ	C	0.66	UJ	C
BENZALDEHYDE		0.57	U		0.56	UJ	C	0.53	U		0.55	U	
BENZO(A)ANTHRACENE		0.09			0.02	U		0.01	U		0.05	J	P
BENZO(A)PYRENE		0.06			0.02	U		0.01	U		0.03	J	P
BENZO(B)FLUORANTHENE		0.08			0.02	U		0.01	U		0.03	J	P
BENZO(G,H,I)PERYLENE		0.02	U		0.02	U		0.01	U		0.01	U	

PROJ_NO: 01797	NSAMPLE	NTC21MW0401			NTC21MW0501			NTC21MW0601		
SDG: CTO064_002	LAB_ID	0911151-05			0911151-01			0911181-03		
FRACTION: OS	SAMP_DATE	11/16/2009			11/15/2009			11/17/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0		
	DUP_OF									
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
1,1-BIPHENYL		0.38	U		0.36	U		0.38	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		0.83	U		0.79	UJ	C	0.83	UJ	C
2,4,5-TRICHLOROPHENOL		0.49	U		0.46	U		0.49	U	
2,4,6-TRICHLOROPHENOL		0.72	U		0.68	U		0.72	U	
2,4-DICHLOROPHENOL		0.43	U		0.41	U		0.43	U	
2,4-DIMETHYLPHENOL		0.7	U		0.66	U		0.7	U	
2,4-DINITROPHENOL		0.83	U		0.79	U		0.83	UJ	C
2,4-DINITROTOLUENE		0.48	U		0.45	U		0.48	U	
2,6-DINITROTOLUENE		0.65	U		0.61	U		0.65	U	
2-CHLORONAPHTHALENE		0.57	U		0.54	U		0.57	U	
2-CHLOROPHENOL		0.58	U		0.55	U		0.58	U	
2-METHYLNAPHTHALENE		0.02	U		0.05	U	A	0.02	U	
2-METHYLPHENOL		0.81	U		0.77	U		0.81	U	
2-NITROANILINE		1.2	U		1.1	U		1.2	U	
2-NITROPHENOL		0.72	U		0.68	U		0.72	U	
3,3'-DICHLOROBENZIDINE		0.87	UJ	C	0.82	UJ	C	0.87	UJ	C
3-NITROANILINE		1	U		0.97	U		1	U	
4,6-DINITRO-2-METHYLPHENOL		0.72	U		0.68	U		0.72	U	
4-BROMOPHENYL PHENYL ETHER		0.56	U		0.53	U		0.56	U	
4-CHLORO-3-METHYLPHENOL		0.57	U		0.54	U		0.57	U	
4-CHLOROANILINE		0.93	U		0.88	U		0.93	U	
4-CHLOROPHENYL PHENYL ETHER		0.87	U		0.82	U		0.87	U	
4-METHYLPHENOL		0.75	U		0.71	U		0.75	UJ	C
4-NITROANILINE		2	U		1.9	U		2	U	
4-NITROPHENOL		0.81	UJ	C	0.77	UJ	C	0.81	UJ	C
ACENAPHTHENE		0.02	U		0.02	J	P	0.02	U	
ACENAPHTHYLENE		0.02	U		0.01	U		0.02	U	
ACETOPHENONE		0.74	UJ	C	0.69	UJ	C	0.74	UJ	C
ANTHRACENE		0.02	U		0.03	J	P	0.05	U	A
ATRAZINE		0.68	UJ	C	0.64	UJ	C	0.68	U	
BENZALDEHYDE		0.56	U		0.53	U		0.56	UJ	C
BENZO(A)ANTHRACENE		0.02	U		0.04	J	P	0.05	U	A
BENZO(A)PYRENE		0.02	U		0.03	J	P	0.05	U	A
BENZO(B)FLUORANTHENE		0.02	U		0.03	J	P	0.05	U	A
BENZO(G,H,I)PERYLENE		0.02	U		0.01	U		0.02	U	

PROJ_NO: 01797	NSAMPLE	NTC21-FD111609-01			NTC21MW0101			NTC21MW0201			NTC21MW0301		
SDG: CTO064_002	LAB_ID	0911151-02			0911181-02			0911151-03			0911151-04		
FRACTION: OS	SAMP_DATE	11/16/2009			11/17/2009			11/16/2009			11/16/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF	NTC21MW0201											
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BENZO(K)FLUORANTHENE		0.08			0.02	U		0.01	U		0.03	J	P
BIS(2-CHLOROETHOXY)METHANE		0.52	U		0.51	U		0.48	U		0.5	U	
BIS(2-CHLOROETHYL)ETHER		0.45	U		0.44	U		0.42	U		0.43	U	
BIS(2-ETHYLHEXYL)PHTHALATE		1.3	U		1.2	U		1.2	U		1.8	J	P
BUTYL BENZYL PHTHALATE		0.82	U		0.8	U		0.76	U		0.79	U	
CAPROLACTAM		5	U	A	4.9	U	A	4.9	U	A	4.9	U	A
CARBAZOLE		0.69	U		0.68	U		0.64	U		0.66	U	
CHRYSENE		0.09			0.02	U		0.01	U		0.05	J	P
DIBENZO(A,H)ANTHRACENE		0.02	U		0.02	U		0.01	U		0.01	U	
DIBENZOFURAN		0.65	U		0.64	U		0.6	U		0.62	U	
DIETHYL PHTHALATE		1	U		1	U		0.94	U		0.98	U	
DIMETHYL PHTHALATE		0.74	U		0.72	U		0.68	U		0.71	U	
DI-N-BUTYL PHTHALATE		1.3	U		1.3	U		1.2	U		1.2	U	
DI-N-OCTYL PHTHALATE		0.33	U		0.32	U		0.3	U		0.32	U	
FLUORANTHENE		0.08			0.13	U	A	0.01	U		0.04	J	P
FLUORENE		0.04	J	P	0.05	U	A	0.01	U		0.03	J	P
HEXACHLOROBENZENE		0.47	U		0.46	U		0.44	U		0.45	U	
HEXACHLOROBUTADIENE		0.93	U		0.91	U		0.86	U		0.89	U	
HEXACHLOROCYCLOPENTADIENE		0.89	U		0.87	U		0.82	U		0.86	U	
HEXACHLOROETHANE		0.46	U		0.45	U		0.42	U		0.44	U	
INDENO(1,2,3-CD)PYRENE		0.02	U		0.02	U		0.01	U		0.01	U	
ISOPHORONE		0.55	U		0.54	U		0.51	U		0.53	U	
NAPHTHALENE		0.06	U	A	0.11	U	A	0.01	U		0.01	U	
NITROBENZENE		0.62	U		0.61	U		0.57	U		0.6	U	
N-NITROSO-DI-N-PROPYLAMINE		0.9	UJ	C	0.88	UJ	C	0.83	U		0.86	U	
N-NITROSODIPHENYLAMINE		0.46	U		0.45	U		0.42	U		0.44	U	
PENTACHLOROPHENOL		1	U		7.8	J	P	0.92	U		0.96	U	
PHENANTHRENE		0.07	U	A	0.16	U	A	0.05	U	A	0.05	U	A
PHENOL		0.46	U		0.45	U		0.42	U		0.44	U	
PYRENE		0.09			0.12	U	A	0.01	U		0.05	J	P

PROJ_NO: 01797	NSAMPLE	NTC21MW0401			NTC21MW0501			NTC21MW0601		
SDG: CTO064_002	LAB_ID	0911151-05			0911151-01			0911181-03		
FRACTION: OS	SAMP_DATE	11/16/2009			11/15/2009			11/17/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0		
	DUP_OF									
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
BENZO(K)FLUORANTHENE		0.02	U		0.03	J	P	0.05	U	A
BIS(2-CHLOROETHOXY)METHANE		0.51	U		0.48	U		0.51	U	
BIS(2-CHLOROETHYL)ETHER		0.44	U		0.42	U		0.44	U	
BIS(2-ETHYLHEXYL)PHTHALATE		1.2	U		1.2	U		1.2	U	
BUTYL BENZYL PHTHALATE		0.8	U		0.76	U		0.8	U	
CAPROLACTAM		4.9	U	A	4.9	U	A	4.9	U	A
CARBAZOLE		0.68	U		0.64	U		0.68	U	
CHRYSENE		0.02	U		0.04	J	P	0.06	U	A
DIBENZO(A,H)ANTHRACENE		0.02	U		0.01	U		0.02	U	
DIBENZOFURAN		0.64	U		0.6	U		0.64	U	
DIETHYL PHTHALATE		1	U		0.94	U		1	U	
DIMETHYL PHTHALATE		0.72	U		0.68	U		0.72	U	
DI-N-BUTYL PHTHALATE		1.3	U		1.2	U		1.3	U	
DI-N-OCTYL PHTHALATE		0.32	U		0.3	U		0.32	U	
FLUORANTHENE		0.03	J	P	0.06			0.05	U	A
FLUORENE		0.02	U		0.02	J	P	0.05	U	A
HEXACHLOROBENZENE		0.46	U		0.44	U		0.46	U	
HEXACHLOROBUTADIENE		0.91	U		0.86	U		0.91	U	
HEXACHLOROCYCLOPENTADIENE		0.87	U		0.82	U		0.87	U	
HEXACHLOROETHANE		0.45	U		0.42	U		0.45	U	
INDENO(1,2,3-CD)PYRENE		0.02	U		0.01	U		0.02	U	
ISOPHORONE		0.54	U		0.51	U		0.54	U	
NAPHTHALENE		0.02	U		0.05	U	A	0.05	U	A
NITROBENZENE		0.61	U		0.57	U		0.61	U	
N-NITROSO-DI-N-PROPYLAMINE		0.88	U		0.83	UJ	C	0.88	UJ	C
N-NITROSODIPHENYLAMINE		0.45	U		0.42	U		0.45	U	
PENTACHLOROPHENOL		0.98	U		0.92	U		0.98	U	
PHENANTHRENE		0.05	U	A	0.05	U	A	0.05	U	A
PHENOL		0.45	U		0.42	U		0.45	U	
PYRENE		0.03	J	P	0.05			0.06	U	A

PROJ_NO: 01797	NSAMPLE	NTC21SB02-SO-0406
SDG: CTO064_002	LAB_ID	0911147-01
FRACTION: PEST/PCB	SAMP_DATE	11/13/2009
MEDIA: SOIL	QC_TYPE	NM
	UNITS	UG/KG
	PCT_SOLIDS	88.9
	DUP_OF	

PARAMETER	RESULT	VQL	QLCD
4,4'-DDD	0.19	U	
4,4'-DDE	17.3	J	U
4,4'-DDT	8.53	J	CQU
ALDRIN	0.83	J	U
ALPHA-BHC	0.12	UJ	C
ALPHA-CHLORDANE	0.41	J	QU
AROCLOR-1016	4.72	UJ	C
AROCLOR-1221	4.72	U	
AROCLOR-1232	4.72	U	
AROCLOR-1242	47	J	U
AROCLOR-1248	4.72	U	
AROCLOR-1254	4.72	U	
AROCLOR-1260	122	J	CU
BETA-BHC	0.37	U	
DELTA-BHC	1.48	J	CU
DIELDRIN	2.89	J	QU
ENDOSULFAN I	3.22	J	U
ENDOSULFAN II	1.26		
ENDOSULFAN SULFATE	3.91		
ENDRIN	1.84	J	U
ENDRIN ALDEHYDE	0.75	U	
ENDRIN KETONE	0.75	U	
GAMMA-BHC (LINDANE)	0.46		
GAMMA-CHLORDANE	1.07	J	QU
HEPTACHLOR	0.37	UJ	C
HEPTACHLOR EPOXIDE	0.37	U	
METHOXYCHLOR	34.2	J	CU
TOXAPHENE	37.1	U	

PROJ_NO: 01797	NSAMPLE	NTC21-FD111609-01			NTC21MW0101			NTC21MW0201			NTC21MW0301		
SDG: CTO064_002	LAB_ID	0911151-02			0911181-02			0911151-03			0911151-04		
FRACTION: PEST/PCB	SAMP_DATE	11/16/2009			11/17/2009			11/16/2009			11/16/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF	NTC21MW0201											
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		0.00472	UJ	C	0.0049	UJ	C	0.00481	UJ	C	0.0049	UJ	C
4,4'-DDE		0.00472	UJ	C	0.0049	UJ	C	0.00481	UJ	C	0.0049	UJ	C
4,4'-DDT		0.00472	UJ	C	0.0049	UJ	C	0.00481	UJ	C	0.0049	UJ	C
ALDRIN		0.00311	U		0.00324	U		0.00317	U		0.00324	U	
ALPHA-BHC		0.00311	U		0.00324	U		0.00317	U		0.00324	U	
ALPHA-CHLORDANE		0.00311	U		0.00324	U		0.00317	U		0.00324	U	
AROCLOR-1016		0.11	U		0.11	UJ	C	0.11	U		0.11	U	
AROCLOR-1221		0.11	U		0.11	U		0.11	U		0.11	U	
AROCLOR-1232		0.11	U		0.11	U		0.11	U		0.11	U	
AROCLOR-1242		0.11	U		0.11	U		0.11	U		0.11	U	
AROCLOR-1248		0.11	U		0.11	U		0.11	U		0.11	U	
AROCLOR-1254		0.11	U		0.11	U		0.11	U		0.11	U	
AROCLOR-1260		0.11	U		0.11	UJ	C	0.11	U		0.11	U	
BETA-BHC		0.00311	U		0.00324	U		0.00317	U		0.00324	U	
DELTA-BHC		0.00311	U		0.00324	U		0.00317	U		0.00324	U	
DIELDRIN		0.00472	U		0.0049	U		0.00481	U		0.0049	U	
ENDOSULFAN I		0.00311	UJ	C	0.00324	U		0.00317	UJ	C	0.00324	UJ	C
ENDOSULFAN II		0.00472	U		0.0049	U		0.00481	U		0.0049	U	
ENDOSULFAN SULFATE		0.00472	U		0.0049	U		0.00481	U		0.0049	U	
ENDRIN		0.00472	U		0.0049	UJ	C	0.00481	U		0.0049	U	
ENDRIN ALDEHYDE		0.00472	UJ	C	0.0049	UJ	C	0.00481	UJ	C	0.0049	UJ	C
ENDRIN KETONE		0.00472	U		0.0049	U		0.00481	U		0.0049	U	
GAMMA-BHC (LINDANE)		0.00311	U		0.00324	U		0.00317	U		0.00324	U	
GAMMA-CHLORDANE		0.00311	U		0.00324	U		0.00317	U		0.00324	U	
HEPTACHLOR		0.00311	U		0.00324	U		0.00317	U		0.00324	U	
HEPTACHLOR EPOXIDE		0.00311	U		0.00324	U		0.00317	U		0.00324	U	
METHOXYCHLOR		0.00311	UJ	C	0.00324	UJ	C	0.00317	UJ	C	0.00324	UJ	C
TOXAPHENE		0.31	U		0.32	U		0.31	U		0.32	U	

PROJ_NO: 01797	NSAMPLE	NTC21MW0401			NTC21MW0501			NTC21MW0601		
SDG: CTO064_002	LAB_ID	0911151-05			0911151-01			0911181-03		
FRACTION: PEST/PCB	SAMP_DATE	11/16/2009			11/15/2009			11/17/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0		
	DUP_OF									
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
4,4'-DDD		0.0049	UJ	C	0.00463	UJ	C	0.0049	UJ	C
4,4'-DDE		0.0049	UJ	C	0.00463	UJ	C	0.0049	UJ	C
4,4'-DDT		0.0049	UJ	C	0.00463	UJ	C	0.0049	UJ	C
ALDRIN		0.00324	U		0.00306	U		0.00324	U	
ALPHA-BHC		0.00324	U		0.00306	U		0.00324	U	
ALPHA-CHLORDANE		0.00324	U		0.00385	J	P	0.00324	U	
AROCLOR-1016		0.11	U		0.11	U		0.11	UJ	C
AROCLOR-1221		0.11	U		0.11	U		0.11	U	
AROCLOR-1232		0.11	U		0.11	U		0.11	U	
AROCLOR-1242		0.11	U		0.11	U		0.11	U	
AROCLOR-1248		0.11	U		0.11	U		0.11	U	
AROCLOR-1254		0.11	U		0.11	U		0.11	U	
AROCLOR-1260		0.11	U		0.11	U		0.11	UJ	C
BETA-BHC		0.00324	U		0.00306	U		0.00324	U	
DELTA-BHC		0.00324	U		0.00801	J	P	0.02		
DIELDRIN		0.0049	U		0.00463	U		0.0049	U	
ENDOSULFAN I		0.00324	UJ	C	0.00306	UJ	C	0.00324	U	
ENDOSULFAN II		0.0049	U		0.00463	U		0.0049	U	
ENDOSULFAN SULFATE		0.0049	U		0.00463	U		0.0049	U	
ENDRIN		0.0049	U		0.00463	U		0.0049	UJ	C
ENDRIN ALDEHYDE		0.0049	UJ	C	0.00463	UJ	C	0.0049	UJ	C
ENDRIN KETONE		0.0049	U		0.00463	U		0.0049	U	
GAMMA-BHC (LINDANE)		0.00324	U		0.00306	U		0.00324	U	
GAMMA-CHLORDANE		0.00324	U		0.00311	J	P	0.00324	U	
HEPTACHLOR		0.00324	U		0.00306	U		0.00324	U	
HEPTACHLOR EPOXIDE		0.00324	U		0.00306	U		0.00324	U	
METHOXYCHLOR		0.00324	UJ	C	0.00306	UJ	C	0.00324	UJ	C
TOXAPHENE		0.32	U		0.3	U		0.32	U	

PROJ_NO: 01797	NSAMPLE	NTC21SB02-SO-0406		
SDG: CTO064_002	LAB_ID	0911147-01		
FRACTION: HERB	SAMP_DATE	11/13/2009		
MEDIA: SOIL	QC_TYPE	NM		
	UNITS	UG/KG		
	PCT_SOLIDS	88.9		
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
2,4,5-T		2.81	U	
2,4,5-TP (SILVEX)		2.81	U	
2,4-D		28.1	U	
2,4-DB		28.1	U	
DALAPON		70.3	U	
DICAMBA		2.81	U	
DICHLOROPROP		28.1	U	
DINOSEB		14.1	U	
MCPA		2810	U	
MCPP		2810	U	

PROJ_NO: 01797	NSAMPLE	NTC21-FD111609-01			NTC21MW0101			NTC21MW0201			NTC21MW0301		
SDG: CTO064_002	LAB_ID	0911151-02			0911181-02			0911151-03			0911151-04		
FRACTION: HERB	SAMP_DATE	11/16/2009			11/17/2009			11/16/2009			11/16/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF	NTC21MW0201											
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2,4,5-T		0.02	U		0.02	U		0.02	U		0.02	U	
2,4,5-TP (SILVEX)		0.02	U		0.03	J	P	0.02	U		0.02	U	
2,4-D		0.23	U		0.24	U		0.24	U		0.24	U	
2,4-DB		0.23	U		0.62	J	U	0.24	U		0.24	U	
DALAPON		0.57	U		0.75	J	PQU	0.61	U		0.61	U	
DICAMBA		0.02	U		0.02	U		0.02	U		0.02	U	
DICHLOROPROP		0.44	J	P	0.24	U		0.5	J	U	0.34	J	P
DINOSEB		0.11	U		0.12	U		0.12	U		0.12	U	
MCPA		23.1	U		24	U		24.5	U		24.5	U	
MCPP		23.1	U		24	U		24.5	U		24.5	U	

PROJ_NO: 01797	NSAMPLE	NTC21MW0401			NTC21MW0501			NTC21MW0601		
SDG: CTO064_002	LAB_ID	0911151-05			0911151-01			0911181-03		
FRACTION: HERB	SAMP_DATE	11/16/2009			11/15/2009			11/17/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0		
	DUP_OF									
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
2,4,5-T		0.02	U		0.02	U		0.02	U	
2,4,5-TP (SILVEX)		0.02	U		0.02	U		0.02	U	
2,4-D		0.24	U		0.24	U		0.24	U	
2,4-DB		0.24	U		0.24	U		0.24	U	
DALAPON		0.61	U		0.61	U		0.61	U	
DICAMBA		0.02	U		0.02	U		0.02	U	
DICHLOROPROP		0.24	U		0.78	J	U	0.24	U	
DINOSEB		0.12	U		0.12	U		0.12	U	
MCPA		24.5	U		24.5	U		24.5	U	
MCPP		24.5	U		24.5	U		24.5	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
2-SO-0406

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) SOIL Lab Sample ID: 0911147-01

Sample wt/vol: 3.9 (g/mL) G Lab File ID: 1114701A

Level: (low/med) LOW Date Sampled: 11/13/09 09:12

% Moisture: not dec. 11 Date Analyzed: 11/19/09 19:17

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.9	7.2	35	
71-43-2	Benzene	0.68	7.2		U
75-27-4	Bromodichloromethane	0.43	14		U
75-25-2	Bromoform	1.4	7.2		U
74-83-9	Bromomethane	1.0	14		U
78-93-3	2-Butanone	2.0	7.2		U
75-15-0	Carbon disulfide	1.9	7.2	1.9	J
56-23-5	Carbon tetrachloride	1.3	7.2		U
108-90-7	Chlorobenzene	0.49	7.2		U
75-00-3	Chloroethane	1.6	14		U
67-66-3	Chloroform	0.80	7.2		U
74-87-3	Chloromethane	0.75	14		U
110-82-7	Cyclohexane	0.78	7.2		U
124-48-1	Dibromochloromethane	0.49	7.2		U
96-12-8	1,2-Dibromo-3-chloropropane	1.7	7.2		U
106-93-4	1,2-Dibromoethane	0.62	7.2		U
95-50-1	1,2-Dichlorobenzene	0.53	7.2		U
541-73-1	1,3-Dichlorobenzene	1.2	7.2		U
106-46-7	1,4-Dichlorobenzene	0.80	7.2		U
75-71-8	Dichlorodifluoromethane	1.6	7.2		U
75-34-3	1,1-Dichloroethane	0.78	7.2		U
107-06-2	1,2-Dichloroethane	0.66	7.2		U
75-35-4	1,1-Dichloroethene	1.7	7.2		U
156-59-2	cis-1,2-Dichloroethene	1.7	14		U
156-60-5	trans-1,2-Dichloroethene	1.6	7.2		U
78-87-5	1,2-Dichloropropane	0.66	7.2		U
10061-01-5	cis-1,3-Dichloropropene	0.72	7.2		U
10061-02-6	trans-1,3-Dichloropropene	0.46	7.2		U
100-41-4	Ethylbenzene	1.1	7.2		U
591-78-6	2-Hexanone	3.3	7.2		U
98-82-8	Isopropylbenzene	1.3	7.2		U
79-20-9	Methyl acetate	2.3	14		U
75-09-2	Methylene chloride	0.90	14	2.1	JB
108-87-2	Methyl cyclohexane	0.43	7.2	1.3	J
1634-04-4	Methyl-tert-butyl-ether	0.46	7.2		U
108-10-1	4-Methyl-2-pentanone	0.84	7.2		U
100-42-5	Styrene	0.51	7.2		U
79-34-5	1,1,2,2-Tetrachloroethane	0.62	7.2		U
127-18-4	Tetrachloroethene	1.4	7.2	3.3	J

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
2-SO-0406

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) SOIL Lab Sample ID: 0911147-01

Sample wt/vol: 3.9 (g/mL) G Lab File ID: 1114701A

Level: (low/med) LOW Date Sampled: 11/13/09 09:12

% Moisture: not dec. 11 Date Analyzed: 11/19/09 19:17

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	1.2	7.2	1.5	J
120-82-1	1,2,4-Trichlorobenzene	0.26	7.2		U
71-55-6	1,1,1-Trichloroethane	1.3	7.2		U
79-00-5	1,1,2-Trichloroethane	0.51	7.2		U
79-01-6	Trichloroethene	1.2	7.2		U
76-13-1	Trichlorotrifluoroethane	0.80	7.2		U
75-69-4	Trichlorofluoromethane	1.4	7.2	1.4	J
75-01-4	Vinyl chloride	1.6	7.2		U
1330-20-7	Xylene(total)	1.0	7.2		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FB-111709-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 0911181-01

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1118101

Level: (low/med) LOW Date Sampled: 11/17/09 08:00

% Moisture: not dec. _____ Date Analyzed: 11/21/09 07:28

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	0.84	10		U
71-43-2	Benzene	0.11	1.0		U
75-27-4	Bromodichloromethane	0.10	1.0		U
75-25-2	Bromoform	0.10	1.0		U
74-83-9	Bromomethane	0.32	2.0		U
78-93-3	2-Butanone	1.0	10		U
75-15-0	Carbon disulfide	0.13	1.0		U
56-23-5	Carbon tetrachloride	0.15	1.0		U
108-90-7	Chlorobenzene	0.10	1.0		U
75-00-3	Chloroethane	0.18	2.0		U
67-66-3	Chloroform	0.11	1.0		U
74-87-3	Chloromethane	0.29	2.0		U
110-82-7	Cyclohexane	0.20	1.0		U
124-48-1	Dibromochloromethane	0.10	1.0		U
96-12-8	1,2-Dibromo-3-chloropropane	0.11	1.0		U
106-93-4	1,2-Dibromoethane	0.10	1.0		U
95-50-1	1,2-Dichlorobenzene	0.10	1.0		U
541-73-1	1,3-Dichlorobenzene	0.13	1.0		U
106-46-7	1,4-Dichlorobenzene	0.10	1.0		U
75-71-8	Dichlorodifluoromethane	0.22	2.0		U
75-34-3	1,1-Dichloroethane	0.12	1.0		U
107-06-2	1,2-Dichloroethane	0.10	1.0		U
75-35-4	1,1-Dichloroethene	0.15	1.0		U
156-59-2	cis-1,2-Dichloroethene	0.13	1.0		U
156-60-5	trans-1,2-Dichloroethene	0.13	1.0		U
78-87-5	1,2-Dichloropropane	0.10	1.0		U
10061-01-5	cis-1,3-Dichloropropene	0.11	1.0		U
10061-02-6	trans-1,3-Dichloropropene	0.10	1.0		U
100-41-4	Ethylbenzene	0.13	1.0		U
591-78-6	2-Hexanone	0.30	5.0		U
98-82-8	Isopropylbenzene	0.15	1.0		U
79-20-9	Methyl acetate	0.30	2.0		U
75-09-2	Methylene chloride	0.14	2.0		U
108-87-2	Methyl cyclohexane	0.17	1.0		U
1634-04-4	Methyl-tert-butyl-ether	0.10	1.0		U
108-10-1	4-Methyl-2-pentanone	0.29	5.0		U
100-42-5	Styrene	0.10	1.0		U
79-34-5	1,1,2,2-Tetrachloroethane	0.10	1.0		U
127-18-4	Tetrachloroethene	0.15	1.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FB-111709-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 0911181-01

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1118101

Level: (low/med) LOW Date Sampled: 11/17/09 08:00

% Moisture: not dec. _____ Date Analyzed: 11/21/09 07:28

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.10	1.0		U
120-82-1	1,2,4-Trichlorobenzene	0.10	1.0	0.12	JB
71-55-6	1,1,1-Trichloroethane	0.17	1.0		U
79-00-5	1,1,2-Trichloroethane	0.10	1.0		U
79-01-6	Trichloroethene	0.13	1.0		U
76-13-1	Trichlorotrifluoroethane	0.18	2.0		U
75-69-4	Trichlorofluoromethane	0.17	2.0		U
75-01-4	Vinyl chloride	0.18	1.0		U
1330-20-7	Xylene(total)	0.22	1.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21-FD
111609-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 0911151-02

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1115102

Level: (low/med) LOW Date Sampled: 11/16/09 :

% Moisture: not dec. _____ Date Analyzed: 11/22/09 19:51

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	0.84	10	4.6	J
71-43-2	Benzene	0.11	1.0		U
75-27-4	Bromodichloromethane	0.10	1.0		U
75-25-2	Bromoform	0.10	1.0		U
74-83-9	Bromomethane	0.32	2.0		U
78-93-3	2-Butanone	1.0	10		U
75-15-0	Carbon disulfide	0.13	1.0		U
56-23-5	Carbon tetrachloride	0.15	1.0		U
108-90-7	Chlorobenzene	0.10	1.0		U
75-00-3	Chloroethane	0.18	2.0		U
67-66-3	Chloroform	0.11	1.0		U
74-87-3	Chloromethane	0.29	2.0		U
110-82-7	Cyclohexane	0.20	1.0		U
124-48-1	Dibromochloromethane	0.10	1.0		U
96-12-8	1,2-Dibromo-3-chloropropane	0.11	1.0		U
106-93-4	1,2-Dibromoethane	0.10	1.0		U
95-50-1	1,2-Dichlorobenzene	0.10	1.0		U
541-73-1	1,3-Dichlorobenzene	0.13	1.0		U
106-46-7	1,4-Dichlorobenzene	0.10	1.0		U
75-71-8	Dichlorodifluoromethane	0.22	2.0		U
75-34-3	1,1-Dichloroethane	0.12	1.0		U
107-06-2	1,2-Dichloroethane	0.10	1.0		U
75-35-4	1,1-Dichloroethene	0.15	1.0		U
156-59-2	cis-1,2-Dichloroethene	0.13	1.0		U
156-60-5	trans-1,2-Dichloroethene	0.13	1.0		U
78-87-5	1,2-Dichloropropane	0.10	1.0		U
10061-01-5	cis-1,3-Dichloropropene	0.11	1.0		U
10061-02-6	trans-1,3-Dichloropropene	0.10	1.0		U
100-41-4	Ethylbenzene	0.13	1.0		U
591-78-6	2-Hexanone	0.30	5.0		U
98-82-8	Isopropylbenzene	0.15	1.0		U
79-20-9	Methyl acetate	0.30	2.0		U
75-09-2	Methylene chloride	0.14	2.0		U
108-87-2	Methyl cyclohexane	0.17	1.0		U
1634-04-4	Methyl-tert-butyl-ether	0.10	1.0		U
108-10-1	4-Methyl-2-pentanone	0.29	5.0		U
100-42-5	Styrene	0.10	1.0		U
79-34-5	1,1,2,2-Tetrachloroethane	0.10	1.0		U
127-18-4	Tetrachloroethene	0.15	1.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21-FD
111609-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 0911151-02

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1115102

Level: (low/med) LOW Date Sampled: 11/16/09 :

% Moisture: not dec. _____ Date Analyzed: 11/22/09 19:51

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.10	1.0		U
120-82-1	1,2,4-Trichlorobenzene	0.10	1.0		U
71-55-6	1,1,1-Trichloroethane	0.17	1.0		U
79-00-5	1,1,2-Trichloroethane	0.10	1.0		U
79-01-6	Trichloroethene	0.13	1.0		U
76-13-1	Trichlorotrifluoroethane	0.18	2.0		U
75-69-4	Trichlorofluoromethane	0.17	2.0		U
75-01-4	Vinyl chloride	0.18	1.0		U
1330-20-7	Xylene(total)	0.22	1.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21MW0101

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 0911181-02

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1118102

Level: (low/med) LOW Date Sampled: 11/17/09 11:45

% Moisture: not dec. _____ Date Analyzed: 11/21/09 07:58

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	0.84	10	3.6	J
71-43-2	Benzene	0.11	1.0	0.96	J
75-27-4	Bromodichloromethane	0.10	1.0		U
75-25-2	Bromoform	0.10	1.0		U
74-83-9	Bromomethane	0.32	2.0		U
78-93-3	2-Butanone	1.0	10		U
75-15-0	Carbon disulfide	0.13	1.0		U
56-23-5	Carbon tetrachloride	0.15	1.0		U
108-90-7	Chlorobenzene	0.10	1.0		U
75-00-3	Chloroethane	0.18	2.0		U
67-66-3	Chloroform	0.11	1.0		U
74-87-3	Chloromethane	0.29	2.0		U
110-82-7	Cyclohexane	0.20	1.0		U
124-48-1	Dibromochloromethane	0.10	1.0		U
96-12-8	1,2-Dibromo-3-chloropropane	0.11	1.0		U
106-93-4	1,2-Dibromoethane	0.10	1.0		U
95-50-1	1,2-Dichlorobenzene	0.10	1.0		U
541-73-1	1,3-Dichlorobenzene	0.13	1.0		U
106-46-7	1,4-Dichlorobenzene	0.10	1.0		U
75-71-8	Dichlorodifluoromethane	0.22	2.0		U
75-34-3	1,1-Dichloroethane	0.12	1.0		U
107-06-2	1,2-Dichloroethane	0.10	1.0		U
75-35-4	1,1-Dichloroethene	0.15	1.0		U
156-59-2	cis-1,2-Dichloroethene	0.13	1.0		U
156-60-5	trans-1,2-Dichloroethene	0.13	1.0		U
78-87-5	1,2-Dichloropropane	0.10	1.0		U
10061-01-5	cis-1,3-Dichloropropene	0.11	1.0		U
10061-02-6	trans-1,3-Dichloropropene	0.10	1.0		U
100-41-4	Ethylbenzene	0.13	1.0		U
591-78-6	2-Hexanone	0.30	5.0		U
98-82-8	Isopropylbenzene	0.15	1.0		U
79-20-9	Methyl acetate	0.30	2.0		U
75-09-2	Methylene chloride	0.14	2.0		U
108-87-2	Methyl cyclohexane	0.17	1.0		U
1634-04-4	Methyl-tert-butyl-ether	0.10	1.0	1.6	
108-10-1	4-Methyl-2-pentanone	0.29	5.0		U
100-42-5	Styrene	0.10	1.0		U
79-34-5	1,1,2,2-Tetrachloroethane	0.10	1.0		U
127-18-4	Tetrachloroethene	0.15	1.0	0.85	J

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21MW0101

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 0911181-02

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1118102

Level: (low/med) LOW Date Sampled: 11/17/09 11:45

% Moisture: not dec. _____ Date Analyzed: 11/21/09 07:58

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.10	1.0		U
120-82-1	1,2,4-Trichlorobenzene	0.10	1.0		U
71-55-6	1,1,1-Trichloroethane	0.17	1.0		U
79-00-5	1,1,2-Trichloroethane	0.10	1.0		U
79-01-6	Trichloroethene	0.13	1.0		U
76-13-1	Trichlorotrifluoroethane	0.18	2.0		U
75-69-4	Trichlorofluoromethane	0.17	2.0	2.5	
75-01-4	Vinyl chloride	0.18	1.0		U
1330-20-7	Xylene(total)	0.22	1.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21MW0201

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 0911151-03

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1115103

Level: (low/med) LOW Date Sampled: 11/16/09 12:46

% Moisture: not dec. _____ Date Analyzed: 11/22/09 20:20

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	0.84	10	4.6	J
71-43-2	Benzene	0.11	1.0		U
75-27-4	Bromodichloromethane	0.10	1.0		U
75-25-2	Bromoform	0.10	1.0		U
74-83-9	Bromomethane	0.32	2.0		U
78-93-3	2-Butanone	1.0	10		U
75-15-0	Carbon disulfide	0.13	1.0		U
56-23-5	Carbon tetrachloride	0.15	1.0		U
108-90-7	Chlorobenzene	0.10	1.0		U
75-00-3	Chloroethane	0.18	2.0		U
67-66-3	Chloroform	0.11	1.0		U
74-87-3	Chloromethane	0.29	2.0		U
110-82-7	Cyclohexane	0.20	1.0		U
124-48-1	Dibromochloromethane	0.10	1.0		U
96-12-8	1,2-Dibromo-3-chloropropane	0.11	1.0		U
106-93-4	1,2-Dibromoethane	0.10	1.0		U
95-50-1	1,2-Dichlorobenzene	0.10	1.0		U
541-73-1	1,3-Dichlorobenzene	0.13	1.0		U
106-46-7	1,4-Dichlorobenzene	0.10	1.0		U
75-71-8	Dichlorodifluoromethane	0.22	2.0		U
75-34-3	1,1-Dichloroethane	0.12	1.0		U
107-06-2	1,2-Dichloroethane	0.10	1.0		U
75-35-4	1,1-Dichloroethene	0.15	1.0		U
156-59-2	cis-1,2-Dichloroethene	0.13	1.0		U
156-60-5	trans-1,2-Dichloroethene	0.13	1.0		U
78-87-5	1,2-Dichloropropane	0.10	1.0		U
10061-01-5	cis-1,3-Dichloropropene	0.11	1.0		U
10061-02-6	trans-1,3-Dichloropropene	0.10	1.0		U
100-41-4	Ethylbenzene	0.13	1.0		U
591-78-6	2-Hexanone	0.30	5.0		U
98-82-8	Isopropylbenzene	0.15	1.0		U
79-20-9	Methyl acetate	0.30	2.0		U
75-09-2	Methylene chloride	0.14	2.0		U
108-87-2	Methyl cyclohexane	0.17	1.0		U
1634-04-4	Methyl-tert-butyl-ether	0.10	1.0		U
108-10-1	4-Methyl-2-pentanone	0.29	5.0		U
100-42-5	Styrene	0.10	1.0		U
79-34-5	1,1,2,2-Tetrachloroethane	0.10	1.0		U
127-18-4	Tetrachloroethene	0.15	1.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21MW0201

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 0911151-03

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1115103

Level: (low/med) LOW Date Sampled: 11/16/09 12:46

% Moisture: not dec. _____ Date Analyzed: 11/22/09 20:20

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.10	1.0		U
120-82-1	1,2,4-Trichlorobenzene	0.10	1.0		U
71-55-6	1,1,1-Trichloroethane	0.17	1.0		U
79-00-5	1,1,2-Trichloroethane	0.10	1.0		U
79-01-6	Trichloroethene	0.13	1.0		U
76-13-1	Trichlorotrifluoroethane	0.18	2.0		U
75-69-4	Trichlorofluoromethane	0.17	2.0		U
75-01-4	Vinyl chloride	0.18	1.0		U
1330-20-7	Xylene(total)	0.22	1.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21MW0301

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 0911151-04

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1115104

Level: (low/med) LOW Date Sampled: 11/16/09 10:05

% Moisture: not dec. _____ Date Analyzed: 11/22/09 20:50

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	0.84	10		U
71-43-2	Benzene	0.11	1.0		U
75-27-4	Bromodichloromethane	0.10	1.0		U
75-25-2	Bromoform	0.10	1.0		U
74-83-9	Bromomethane	0.32	2.0		U
78-93-3	2-Butanone	1.0	10		U
75-15-0	Carbon disulfide	0.13	1.0		U
56-23-5	Carbon tetrachloride	0.15	1.0		U
108-90-7	Chlorobenzene	0.10	1.0		U
75-00-3	Chloroethane	0.18	2.0		U
67-66-3	Chloroform	0.11	1.0		U
74-87-3	Chloromethane	0.29	2.0		U
110-82-7	Cyclohexane	0.20	1.0		U
124-48-1	Dibromochloromethane	0.10	1.0		U
96-12-8	1,2-Dibromo-3-chloropropane	0.11	1.0		U
106-93-4	1,2-Dibromoethane	0.10	1.0		U
95-50-1	1,2-Dichlorobenzene	0.10	1.0		U
541-73-1	1,3-Dichlorobenzene	0.13	1.0		U
106-46-7	1,4-Dichlorobenzene	0.10	1.0		U
75-71-8	Dichlorodifluoromethane	0.22	2.0		U
75-34-3	1,1-Dichloroethane	0.12	1.0		U
107-06-2	1,2-Dichloroethane	0.10	1.0		U
75-35-4	1,1-Dichloroethene	0.15	1.0		U
156-59-2	cis-1,2-Dichloroethene	0.13	1.0		U
156-60-5	trans-1,2-Dichloroethene	0.13	1.0		U
78-87-5	1,2-Dichloropropane	0.10	1.0		U
10061-01-5	cis-1,3-Dichloropropene	0.11	1.0		U
10061-02-6	trans-1,3-Dichloropropene	0.10	1.0		U
100-41-4	Ethylbenzene	0.13	1.0		U
591-78-6	2-Hexanone	0.30	5.0		U
98-82-8	Isopropylbenzene	0.15	1.0		U
79-20-9	Methyl acetate	0.30	2.0		U
75-09-2	Methylene chloride	0.14	2.0		U
108-87-2	Methyl cyclohexane	0.17	1.0		U
1634-04-4	Methyl-tert-butyl-ether	0.10	1.0		U
108-10-1	4-Methyl-2-pentanone	0.29	5.0		U
100-42-5	Styrene	0.10	1.0		U
79-34-5	1,1,2,2-Tetrachloroethane	0.10	1.0		U
127-18-4	Tetrachloroethene	0.15	1.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21MW0301

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 0911151-04

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1115104

Level: (low/med) LOW Date Sampled: 11/16/09 10:05

% Moisture: not dec. _____ Date Analyzed: 11/22/09 20:50

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.10	1.0		U
120-82-1	1,2,4-Trichlorobenzene	0.10	1.0		U
71-55-6	1,1,1-Trichloroethane	0.17	1.0		U
79-00-5	1,1,2-Trichloroethane	0.10	1.0		U
79-01-6	Trichloroethene	0.13	1.0		U
76-13-1	Trichlorotrifluoroethane	0.18	2.0		U
75-69-4	Trichlorofluoromethane	0.17	2.0		U
75-01-4	Vinyl chloride	0.18	1.0		U
1330-20-7	Xylene(total)	0.22	1.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21MW0401

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 0911151-05

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1115105

Level: (low/med) LOW Date Sampled: 11/16/09 13:10

% Moisture: not dec. _____ Date Analyzed: 11/22/09 21:20

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	0.84	10	2.2	J
71-43-2	Benzene	0.11	1.0		U
75-27-4	Bromodichloromethane	0.10	1.0		U
75-25-2	Bromoform	0.10	1.0		U
74-83-9	Bromomethane	0.32	2.0		U
78-93-3	2-Butanone	1.0	10		U
75-15-0	Carbon disulfide	0.13	1.0		U
56-23-5	Carbon tetrachloride	0.15	1.0		U
108-90-7	Chlorobenzene	0.10	1.0		U
75-00-3	Chloroethane	0.18	2.0		U
67-66-3	Chloroform	0.11	1.0		U
74-87-3	Chloromethane	0.29	2.0		U
110-82-7	Cyclohexane	0.20	1.0		U
124-48-1	Dibromochloromethane	0.10	1.0		U
96-12-8	1,2-Dibromo-3-chloropropane	0.11	1.0		U
106-93-4	1,2-Dibromoethane	0.10	1.0		U
95-50-1	1,2-Dichlorobenzene	0.10	1.0		U
541-73-1	1,3-Dichlorobenzene	0.13	1.0		U
106-46-7	1,4-Dichlorobenzene	0.10	1.0		U
75-71-8	Dichlorodifluoromethane	0.22	2.0		U
75-34-3	1,1-Dichloroethane	0.12	1.0		U
107-06-2	1,2-Dichloroethane	0.10	1.0		U
75-35-4	1,1-Dichloroethene	0.15	1.0		U
156-59-2	cis-1,2-Dichloroethene	0.13	1.0		U
156-60-5	trans-1,2-Dichloroethene	0.13	1.0		U
78-87-5	1,2-Dichloropropane	0.10	1.0		U
10061-01-5	cis-1,3-Dichloropropene	0.11	1.0		U
10061-02-6	trans-1,3-Dichloropropene	0.10	1.0		U
100-41-4	Ethylbenzene	0.13	1.0		U
591-78-6	2-Hexanone	0.30	5.0		U
98-82-8	Isopropylbenzene	0.15	1.0		U
79-20-9	Methyl acetate	0.30	2.0		U
75-09-2	Methylene chloride	0.14	2.0		U
108-87-2	Methyl cyclohexane	0.17	1.0		U
1634-04-4	Methyl-tert-butyl-ether	0.10	1.0		U
108-10-1	4-Methyl-2-pentanone	0.29	5.0		U
100-42-5	Styrene	0.10	1.0		U
79-34-5	1,1,2,2-Tetrachloroethane	0.10	1.0		U
127-18-4	Tetrachloroethene	0.15	1.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21MW0401

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 0911151-05

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1115105

Level: (low/med) LOW Date Sampled: 11/16/09 13:10

% Moisture: not dec. _____ Date Analyzed: 11/22/09 21:20

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.10	1.0		U
120-82-1	1,2,4-Trichlorobenzene	0.10	1.0		U
71-55-6	1,1,1-Trichloroethane	0.17	1.0		U
79-00-5	1,1,2-Trichloroethane	0.10	1.0		U
79-01-6	Trichloroethene	0.13	1.0		U
76-13-1	Trichlorotrifluoroethane	0.18	2.0		U
75-69-4	Trichlorofluoromethane	0.17	2.0		U
75-01-4	Vinyl chloride	0.18	1.0		U
1330-20-7	Xylene(total)	0.22	1.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21MW0501

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 0911151-01

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1115101

Level: (low/med) LOW Date Sampled: 11/15/09 16:26

% Moisture: not dec. _____ Date Analyzed: 11/22/09 19:21

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	0.84	10	3.4	J
71-43-2	Benzene	0.11	1.0		U
75-27-4	Bromodichloromethane	0.10	1.0		U
75-25-2	Bromoform	0.10	1.0		U
74-83-9	Bromomethane	0.32	2.0		U
78-93-3	2-Butanone	1.0	10		U
75-15-0	Carbon disulfide	0.13	1.0		U
56-23-5	Carbon tetrachloride	0.15	1.0		U
108-90-7	Chlorobenzene	0.10	1.0		U
75-00-3	Chloroethane	0.18	2.0		U
67-66-3	Chloroform	0.11	1.0		U
74-87-3	Chloromethane	0.29	2.0		U
110-82-7	Cyclohexane	0.20	1.0		U
124-48-1	Dibromochloromethane	0.10	1.0		U
96-12-8	1,2-Dibromo-3-chloropropane	0.11	1.0		U
106-93-4	1,2-Dibromoethane	0.10	1.0		U
95-50-1	1,2-Dichlorobenzene	0.10	1.0		U
541-73-1	1,3-Dichlorobenzene	0.13	1.0		U
106-46-7	1,4-Dichlorobenzene	0.10	1.0		U
75-71-8	Dichlorodifluoromethane	0.22	2.0		U
75-34-3	1,1-Dichloroethane	0.12	1.0		U
107-06-2	1,2-Dichloroethane	0.10	1.0		U
75-35-4	1,1-Dichloroethene	0.15	1.0		U
156-59-2	cis-1,2-Dichloroethene	0.13	1.0	0.79	J
156-60-5	trans-1,2-Dichloroethene	0.13	1.0		U
78-87-5	1,2-Dichloropropane	0.10	1.0		U
10061-01-5	cis-1,3-Dichloropropene	0.11	1.0		U
10061-02-6	trans-1,3-Dichloropropene	0.10	1.0		U
100-41-4	Ethylbenzene	0.13	1.0		U
591-78-6	2-Hexanone	0.30	5.0		U
98-82-8	Isopropylbenzene	0.15	1.0		U
79-20-9	Methyl acetate	0.30	2.0		U
75-09-2	Methylene chloride	0.14	2.0		U
108-87-2	Methyl cyclohexane	0.17	1.0		U
1634-04-4	Methyl-tert-butyl-ether	0.10	1.0		U
108-10-1	4-Methyl-2-pentanone	0.29	5.0		U
100-42-5	Styrene	0.10	1.0		U
79-34-5	1,1,2,2-Tetrachloroethane	0.10	1.0		U
127-18-4	Tetrachloroethene	0.15	1.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21MW0501

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 0911151-01

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1115101

Level: (low/med) LOW Date Sampled: 11/15/09 16:26

% Moisture: not dec. _____ Date Analyzed: 11/22/09 19:21

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.10	1.0		U
120-82-1	1,2,4-Trichlorobenzene	0.10	1.0		U
71-55-6	1,1,1-Trichloroethane	0.17	1.0		U
79-00-5	1,1,2-Trichloroethane	0.10	1.0		U
79-01-6	Trichloroethene	0.13	1.0		U
76-13-1	Trichlorotrifluoroethane	0.18	2.0		U
75-69-4	Trichlorofluoromethane	0.17	2.0		U
75-01-4	Vinyl chloride	0.18	1.0		U
1330-20-7	Xylene(total)	0.22	1.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21MW0601

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 0911181-03

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1118103

Level: (low/med) LOW Date Sampled: 11/17/09 14:05

% Moisture: not dec. _____ Date Analyzed: 11/21/09 08:29

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	0.84	10	1.8	J
71-43-2	Benzene	0.11	1.0		U
75-27-4	Bromodichloromethane	0.10	1.0		U
75-25-2	Bromoform	0.10	1.0		U
74-83-9	Bromomethane	0.32	2.0		U
78-93-3	2-Butanone	1.0	10		U
75-15-0	Carbon disulfide	0.13	1.0		U
56-23-5	Carbon tetrachloride	0.15	1.0		U
108-90-7	Chlorobenzene	0.10	1.0		U
75-00-3	Chloroethane	0.18	2.0		U
67-66-3	Chloroform	0.11	1.0		U
74-87-3	Chloromethane	0.29	2.0		U
110-82-7	Cyclohexane	0.20	1.0		U
124-48-1	Dibromochloromethane	0.10	1.0		U
96-12-8	1,2-Dibromo-3-chloropropane	0.11	1.0		U
106-93-4	1,2-Dibromoethane	0.10	1.0		U
95-50-1	1,2-Dichlorobenzene	0.10	1.0		U
541-73-1	1,3-Dichlorobenzene	0.13	1.0		U
106-46-7	1,4-Dichlorobenzene	0.10	1.0		U
75-71-8	Dichlorodifluoromethane	0.22	2.0		U
75-34-3	1,1-Dichloroethane	0.12	1.0		U
107-06-2	1,2-Dichloroethane	0.10	1.0		U
75-35-4	1,1-Dichloroethene	0.15	1.0		U
156-59-2	cis-1,2-Dichloroethene	0.13	1.0		U
156-60-5	trans-1,2-Dichloroethene	0.13	1.0		U
78-87-5	1,2-Dichloropropane	0.10	1.0		U
10061-01-5	cis-1,3-Dichloropropene	0.11	1.0		U
10061-02-6	trans-1,3-Dichloropropene	0.10	1.0		U
100-41-4	Ethylbenzene	0.13	1.0		U
591-78-6	2-Hexanone	0.30	5.0		U
98-82-8	Isopropylbenzene	0.15	1.0		U
79-20-9	Methyl acetate	0.30	2.0		U
75-09-2	Methylene chloride	0.14	2.0		U
108-87-2	Methyl cyclohexane	0.17	1.0		U
1634-04-4	Methyl-tert-butyl-ether	0.10	1.0		U
108-10-1	4-Methyl-2-pentanone	0.29	5.0		U
100-42-5	Styrene	0.10	1.0		U
79-34-5	1,1,2,2-Tetrachloroethane	0.10	1.0		U
127-18-4	Tetrachloroethene	0.15	1.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21MW0601

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 0911181-03

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1118103

Level: (low/med) LOW Date Sampled: 11/17/09 14:05

% Moisture: not dec. _____ Date Analyzed: 11/21/09 08:29

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.10	1.0		U
120-82-1	1,2,4-Trichlorobenzene	0.10	1.0		U
71-55-6	1,1,1-Trichloroethane	0.17	1.0		U
79-00-5	1,1,2-Trichloroethane	0.10	1.0		U
79-01-6	Trichloroethene	0.13	1.0		U
76-13-1	Trichlorotrifluoroethane	0.18	2.0		U
75-69-4	Trichlorofluoromethane	0.17	2.0		U
75-01-4	Vinyl chloride	0.18	1.0		U
1330-20-7	Xylene(total)	0.22	1.0		U

FORM I VOA

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
2-SO-0406

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) SOIL Lab Sample ID: 0911147-01

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1114701

% Moisture: 11 decanted: (Y/N) N Date Sampled: 11/13/09 09:12

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:11/24/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 12/03/09 22:47

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	46	370		UY
1912-24-9	Atrazine	32	370		U
100-52-7	Benzaldehyde	62	370		UY
111-91-1	bis(2-Chloroethoxy)methane	35	370		U
92-52-4	1,1'-Biphenyl	33	370		U
111-44-4	bis(2-Chloroethyl)ether	46	370		U
108-60-1	2,2-Oxybis(1-chloropropane)	58	750		U
117-81-7	Bis(2-ethylhexyl)phthalate	41	370	69	J
101-55-3	4-Bromophenyl-phenylether	29	370		U
85-68-7	Butylbenzylphthalate	33	370	110	J
105-60-2	Caprolactam	76	370		UY
106-47-8	4-Chloroaniline	54	370		U
86-74-8	Carbazole	41	750	430	J
59-50-7	4-Chloro-3-methylphenol	31	370		U*
91-58-7	2-Chloronaphthalene (beta)	36	370		U
95-57-8	2-Chlorophenol	46	370		U*
7005-72-3	4-Chlorophenyl-phenylether	35	370		U
132-64-9	Dibenzofuran	28	370	150	J
91-94-1	3,3'-Dichlorobenzidine	35	370		U
120-83-2	2,4-Dichlorophenol	21	370		U*
84-66-2	Diethylphthalate	38	370		U
105-67-9	2,4-Dimethylphenol	24	750		UY*
131-11-3	Dimethylphthalate	34	370		U
84-74-2	Di-n-butylphthalate	34	370		U
534-52-1	4,6-Dinitro-2-methylphenol	24	1500		U*
51-28-5	2,4-Dinitrophenol	150	3700		U*
121-14-2	2,4-Dinitrotoluene	27	370		U
606-20-2	2,6-Dinitrotoluene	42	370		U
117-84-0	Di-n-octylphthalate	30	370		U
118-74-1	Hexachlorobenzene	39	370		U
87-68-3	Hexachlorobutadiene	37	370		U
77-47-4	Hexachlorocyclopentadiene	69	370		U
67-72-1	Hexachloroethane	44	750		U

* = SEE CASE NARRATIVE.

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
2-SO-0406

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) SOIL Lab Sample ID: 0911147-01

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1114701

% Moisture: 11 decanted: (Y/N) N Date Sampled: 11/13/09 09:12

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:11/24/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 12/03/09 22:47

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	32	370		U
106-44-5	4-Methylphenol (p-cresol)	30	370		U*
95-48-7	2-Methylphenol (o-cresol)	43	370		U*
88-74-4	2-Nitroaniline	36	1500		U
99-09-2	3-Nitroaniline	53	1500		U
100-01-6	4-Nitroaniline	110	1500		U
98-95-3	Nitrobenzene	39	370		U
88-75-5	2-Nitrophenol	25	370		U*
100-02-7	4-Nitrophenol	91	1500		U*
86-30-6	N-Nitrosodiphenylamine (1)	36	370		U
621-64-7	N-Nitroso-di-n-propylamine	62	370		U
87-86-5	Pentachlorophenol	38	1500		U*
108-95-2	Phenol	40	370		U*
95-95-4	2,4,5-Trichlorophenol	30	370		U*
88-06-2	2,4,6-Trichlorophenol	39	370		U*

(1) - Cannot be separated from Diphenylamine
* = SEE CASE NARRATIVE.

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
2-SO-0406RE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) SOIL Lab Sample ID: 0911147-01RE

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1114701R

% Moisture: 11 decanted: (Y/N) N Date Sampled: 11/13/09 09:12

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:12/04/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 12/07/09 21:49

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	46	370		U
1912-24-9	Atrazine	32	370		U
100-52-7	Benzaldehyde	62	370		U
111-91-1	bis(2-Chloroethoxy)methane	35	370		U
92-52-4	1,1'-Biphenyl	33	370		U
111-44-4	bis(2-Chloroethyl)ether	46	370		U
108-60-1	2,2-Oxybis(1-chloropropane)	58	750		U
117-81-7	Bis(2-ethylhexyl)phthalate	41	370		U
101-55-3	4-Bromophenyl-phenylether	29	370		U
85-68-7	Butylbenzylphthalate	33	370	61	J
105-60-2	Caprolactam	76	370		U
106-47-8	4-Chloroaniline	54	370		U
86-74-8	Carbazole	41	750	260	J
59-50-7	4-Chloro-3-methylphenol	31	370		U*
91-58-7	2-Chloronaphthalene (beta)	36	370		U
95-57-8	2-Chlorophenol	46	370		U*
7005-72-3	4-Chlorophenyl-phenylether	35	370		U
132-64-9	Dibenzofuran	28	370	140	J
91-94-1	3,3'-Dichlorobenzidine	35	370		U
120-83-2	2,4-Dichlorophenol	21	370		U*
84-66-2	Diethylphthalate	38	370		U
105-67-9	2,4-Dimethylphenol	24	750		U*
131-11-3	Dimethylphthalate	34	370		U
84-74-2	Di-n-butylphthalate	34	370		U
534-52-1	4,6-Dinitro-2-methylphenol	24	1500		U*
51-28-5	2,4-Dinitrophenol	150	3700		U*
121-14-2	2,4-Dinitrotoluene	27	370		U
606-20-2	2,6-Dinitrotoluene	42	370		U
117-84-0	Di-n-octylphthalate	30	370		U
118-74-1	Hexachlorobenzene	39	370		U
87-68-3	Hexachlorobutadiene	37	370		U
77-47-4	Hexachlorocyclopentadiene	69	370		U
67-72-1	Hexachloroethane	44	750		U

* = SEE CASE NARRATIVE.

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
2-SO-0406RE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) SOIL Lab Sample ID: 0911147-01RE

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1114701R

% Moisture: 11 decanted: (Y/N) N Date Sampled: 11/13/09 09:12

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:12/04/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 12/07/09 21:49

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	32	370		U
106-44-5	4-Methylphenol (p-cresol)	30	370		U*
95-48-7	2-Methylphenol (o-cresol)	43	370		U*
88-74-4	2-Nitroaniline	36	1500		U
99-09-2	3-Nitroaniline	53	1500		U
100-01-6	4-Nitroaniline	110	1500		U
98-95-3	Nitrobenzene	39	370		U
88-75-5	2-Nitrophenol	25	370		U*
100-02-7	4-Nitrophenol	91	1500		U*
86-30-6	N-Nitrosodiphenylamine (1)	36	370		U
621-64-7	N-Nitroso-di-n-propylamine	62	370		U
87-86-5	Pentachlorophenol	38	1500		U*
108-95-2	Phenol	40	370		U*
95-95-4	2,4,5-Trichlorophenol	30	370		U*
88-06-2	2,4,6-Trichlorophenol	39	370		U*

(1) - Cannot be separated from Diphenylamine
* = SEE CASE NARRATIVE.

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21-FD
111609-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 0911151-02

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 1115102

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 11/16/09 :

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:11/19/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 11/25/09 01:28

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	0.75	5.0		U
1912-24-9	Atrazine	0.69	5.0		U
100-52-7	Benzaldehyde	0.57	5.0		U
111-91-1	bis(2-Chloroethoxy)methane	0.52	5.0		U
92-52-4	1,1'-Biphenyl	0.39	5.0		U
111-44-4	bis(2-Chloroethyl)ether	0.45	5.0		U
108-60-1	2,2-Oxybis(1-chloropropane)	0.85	5.0		U
117-81-7	Bis(2-ethylhexyl)phthalate	1.3	5.0		U
101-55-3	4-Bromophenyl-phenylether	0.57	5.0		U
85-68-7	Butylbenzylphthalate	0.82	5.0		U
105-60-2	Caprolactam	0.36	5.0	0.62	JB
106-47-8	4-Chloroaniline	0.95	5.0		U
86-74-8	Carbazole	0.69	5.0		U
59-50-7	4-Chloro-3-methylphenol	0.58	5.0		U
91-58-7	2-Chloronaphthalene (beta)	0.58	5.0		U
95-57-8	2-Chlorophenol	0.59	5.0		U
7005-72-3	4-Chlorophenyl-phenylether	0.89	5.0		U
132-64-9	Dibenzofuran	0.65	5.0		U
91-94-1	3,3'-Dichlorobenzidine	0.89	5.0		U
120-83-2	2,4-Dichlorophenol	0.44	5.0		U
84-66-2	Diethylphthalate	1.0	5.0		U
105-67-9	2,4-Dimethylphenol	0.71	20		U
131-11-3	Dimethylphthalate	0.74	5.0		U
84-74-2	Di-n-butylphthalate	1.3	5.0		U
534-52-1	4,6-Dinitro-2-methylphenol	0.74	20		U
51-28-5	2,4-Dinitrophenol	0.85	50		U
121-14-2	2,4-Dinitrotoluene	0.49	5.0		U
606-20-2	2,6-Dinitrotoluene	0.66	5.0		U
117-84-0	Di-n-octylphthalate	0.33	5.0		U
118-74-1	Hexachlorobenzene	0.47	5.0		U
87-68-3	Hexachlorobutadiene	0.93	5.0		U
77-47-4	Hexachlorocyclopentadiene	0.89	5.0		U
67-72-1	Hexachloroethane	0.46	5.0		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21-FD
111609-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 0911151-02

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 1115102

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 11/16/09 :

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:11/19/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 11/25/09 01:28

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	0.55	5.0		U
106-44-5	4-Methylphenol (p-cresol)	0.77	5.0		U
95-48-7	2-Methylphenol (o-cresol)	0.83	5.0		U
88-74-4	2-Nitroaniline	1.2	20		U
99-09-2	3-Nitroaniline	1.0	20		U
100-01-6	4-Nitroaniline	2.0	20		U
98-95-3	Nitrobenzene	0.62	5.0		U
88-75-5	2-Nitrophenol	0.74	5.0		U
100-02-7	4-Nitrophenol	0.83	20		U
86-30-6	N-Nitrosodiphenylamine (1)	0.46	5.0		U
621-64-7	N-Nitroso-di-n-propylamine	0.90	5.0		U
87-86-5	Pentachlorophenol	1.0	20		U
108-95-2	Phenol	0.46	5.0		U
95-95-4	2,4,5-Trichlorophenol	0.50	5.0		U
88-06-2	2,4,6-Trichlorophenol	0.73	5.0		U

(1) - Cannot be separated from Diphenylamine

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21MW0101

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 0911181-02

Sample wt/vol: 1020 (g/mL) ML Lab File ID: 1118102

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 11/17/09 11:45

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:11/20/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 12/04/09 15:59

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	0.74	4.9		U
1912-24-9	Atrazine	0.68	4.9		U
100-52-7	Benzaldehyde	0.56	4.9		U
111-91-1	bis(2-Chloroethoxy)methane	0.51	4.9		U
92-52-4	1,1'-Biphenyl	0.38	4.9		U
111-44-4	bis(2-Chloroethyl)ether	0.44	4.9		U
108-60-1	2,2-Oxybis(1-chloropropane)	0.83	4.9		U
117-81-7	Bis(2-ethylhexyl)phthalate	1.2	4.9		U
101-55-3	4-Bromophenyl-phenylether	0.56	4.9		U
85-68-7	Butylbenzylphthalate	0.80	4.9		U
105-60-2	Caprolactam	0.35	4.9	1.2	JB
106-47-8	4-Chloroaniline	0.93	4.9		U
86-74-8	Carbazole	0.68	4.9		U
59-50-7	4-Chloro-3-methylphenol	0.57	4.9		U
91-58-7	2-Chloronaphthalene (beta)	0.57	4.9		U
95-57-8	2-Chlorophenol	0.58	4.9		U
7005-72-3	4-Chlorophenyl-phenylether	0.87	4.9		U
132-64-9	Dibenzofuran	0.64	4.9		U
91-94-1	3,3'-Dichlorobenzidine	0.87	4.9		U
120-83-2	2,4-Dichlorophenol	0.43	4.9		U
84-66-2	Diethylphthalate	1.0	4.9		U
105-67-9	2,4-Dimethylphenol	0.70	20		U
131-11-3	Dimethylphthalate	0.72	4.9		U
84-74-2	Di-n-butylphthalate	1.3	4.9		U
534-52-1	4,6-Dinitro-2-methylphenol	0.72	20		U
51-28-5	2,4-Dinitrophenol	0.83	49		U
121-14-2	2,4-Dinitrotoluene	0.48	4.9		U
606-20-2	2,6-Dinitrotoluene	0.65	4.9		U
117-84-0	Di-n-octylphthalate	0.32	4.9		U
118-74-1	Hexachlorobenzene	0.46	4.9		U
87-68-3	Hexachlorobutadiene	0.91	4.9		U
77-47-4	Hexachlorocyclopentadiene	0.87	4.9		U
67-72-1	Hexachloroethane	0.45	4.9		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21MW0101

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 0911181-02

Sample wt/vol: 1020 (g/mL) ML Lab File ID: 1118102

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 11/17/09 11:45

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:11/20/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 12/04/09 15:59

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	0.54	4.9		U
106-44-5	4-Methylphenol (p-cresol)	0.75	4.9		U
95-48-7	2-Methylphenol (o-cresol)	0.81	4.9		U
88-74-4	2-Nitroaniline	1.2	20		U
99-09-2	3-Nitroaniline	1.0	20		U
100-01-6	4-Nitroaniline	2.0	20		U
98-95-3	Nitrobenzene	0.61	4.9		U
88-75-5	2-Nitrophenol	0.72	4.9		U
100-02-7	4-Nitrophenol	0.81	20		U
86-30-6	N-Nitrosodiphenylamine (1)	0.45	4.9		U
621-64-7	N-Nitroso-di-n-propylamine	0.88	4.9		U
87-86-5	Pentachlorophenol	0.98	20	7.8	J
108-95-2	Phenol	0.45	4.9		U
95-95-4	2,4,5-Trichlorophenol	0.49	4.9		U
88-06-2	2,4,6-Trichlorophenol	0.72	4.9		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21MW0201

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 0911151-03

Sample wt/vol: 1080 (g/mL) ML Lab File ID: 1115103

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 11/16/09 12:46

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:11/19/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 11/25/09 08:02

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	0.69	4.6		U
1912-24-9	Atrazine	0.64	4.6		U
100-52-7	Benzaldehyde	0.53	4.6		U
111-91-1	bis(2-Chloroethoxy)methane	0.48	4.6		U
92-52-4	1,1'-Biphenyl	0.36	4.6		U
111-44-4	bis(2-Chloroethyl)ether	0.42	4.6		U
108-60-1	2,2-Oxybis(1-chloropropane)	0.79	4.6		U
117-81-7	Bis(2-ethylhexyl)phthalate	1.2	4.6		U
101-55-3	4-Bromophenyl-phenylether	0.53	4.6		U
85-68-7	Butylbenzylphthalate	0.76	4.6		U
105-60-2	Caprolactam	0.33	4.6	0.51	JB
106-47-8	4-Chloroaniline	0.88	4.6		U
86-74-8	Carbazole	0.64	4.6		U
59-50-7	4-Chloro-3-methylphenol	0.54	4.6		U
91-58-7	2-Chloronaphthalene (beta)	0.54	4.6		U
95-57-8	2-Chlorophenol	0.55	4.6		U
7005-72-3	4-Chlorophenyl-phenylether	0.82	4.6		U
132-64-9	Dibenzofuran	0.60	4.6		U
91-94-1	3,3'-Dichlorobenzidine	0.82	4.6		U
120-83-2	2,4-Dichlorophenol	0.41	4.6		U
84-66-2	Diethylphthalate	0.94	4.6		U
105-67-9	2,4-Dimethylphenol	0.66	18		U
131-11-3	Dimethylphthalate	0.68	4.6		U
84-74-2	Di-n-butylphthalate	1.2	4.6		U
534-52-1	4,6-Dinitro-2-methylphenol	0.68	18		U
51-28-5	2,4-Dinitrophenol	0.79	46		U
121-14-2	2,4-Dinitrotoluene	0.45	4.6		U
606-20-2	2,6-Dinitrotoluene	0.61	4.6		U
117-84-0	Di-n-octylphthalate	0.30	4.6		U
118-74-1	Hexachlorobenzene	0.44	4.6		U
87-68-3	Hexachlorobutadiene	0.86	4.6		U
77-47-4	Hexachlorocyclopentadiene	0.82	4.6		U
67-72-1	Hexachloroethane	0.42	4.6		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21MW0201

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 0911151-03

Sample wt/vol: 1080 (g/mL) ML Lab File ID: 1115103

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 11/16/09 12:46

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:11/19/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 11/25/09 08:02

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	0.51	4.6		U
106-44-5	4-Methylphenol (p-cresol)	0.71	4.6		U
95-48-7	2-Methylphenol (o-cresol)	0.77	4.6		U
88-74-4	2-Nitroaniline	1.1	18		U
99-09-2	3-Nitroaniline	0.97	18		U
100-01-6	4-Nitroaniline	1.9	18		U
98-95-3	Nitrobenzene	0.57	4.6		U
88-75-5	2-Nitrophenol	0.68	4.6		U
100-02-7	4-Nitrophenol	0.77	18		U
86-30-6	N-Nitrosodiphenylamine (1)	0.42	4.6		U
621-64-7	N-Nitroso-di-n-propylamine	0.83	4.6		U
87-86-5	Pentachlorophenol	0.92	18		U
108-95-2	Phenol	0.42	4.6		U
95-95-4	2,4,5-Trichlorophenol	0.46	4.6		U
88-06-2	2,4,6-Trichlorophenol	0.68	4.6		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21MW0301

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 0911151-04

Sample wt/vol: 1040 (g/mL) ML Lab File ID: 1115104

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 11/16/09 10:05

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:11/19/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 11/25/09 08:38

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	0.72	4.8		U
1912-24-9	Atrazine	0.66	4.8		U
100-52-7	Benzaldehyde	0.55	4.8		U
111-91-1	bis(2-Chloroethoxy)methane	0.50	4.8		U
92-52-4	1,1'-Biphenyl	0.38	4.8		U
111-44-4	bis(2-Chloroethyl)ether	0.43	4.8		U
108-60-1	2,2-Oxybis(1-chloropropane)	0.82	4.8		U
117-81-7	Bis(2-ethylhexyl)phthalate	1.2	4.8	1.8	J
101-55-3	4-Bromophenyl-phenylether	0.55	4.8		U
85-68-7	Butylbenzylphthalate	0.79	4.8		U
105-60-2	Caprolactam	0.35	4.8	0.47	JB
106-47-8	4-Chloroaniline	0.91	4.8		U
86-74-8	Carbazole	0.66	4.8		U
59-50-7	4-Chloro-3-methylphenol	0.56	4.8		U
91-58-7	2-Chloronaphthalene (beta)	0.56	4.8		U
95-57-8	2-Chlorophenol	0.57	4.8		U
7005-72-3	4-Chlorophenyl-phenylether	0.86	4.8		U
132-64-9	Dibenzofuran	0.62	4.8		U
91-94-1	3,3'-Dichlorobenzidine	0.86	4.8		U
120-83-2	2,4-Dichlorophenol	0.42	4.8		U
84-66-2	Diethylphthalate	0.98	4.8		U
105-67-9	2,4-Dimethylphenol	0.68	19		U
131-11-3	Dimethylphthalate	0.71	4.8		U
84-74-2	Di-n-butylphthalate	1.2	4.8		U
534-52-1	4,6-Dinitro-2-methylphenol	0.71	19		U
51-28-5	2,4-Dinitrophenol	0.82	48		U
121-14-2	2,4-Dinitrotoluene	0.47	4.8		U
606-20-2	2,6-Dinitrotoluene	0.63	4.8		U
117-84-0	Di-n-octylphthalate	0.32	4.8		U
118-74-1	Hexachlorobenzene	0.45	4.8		U
87-68-3	Hexachlorobutadiene	0.89	4.8		U
77-47-4	Hexachlorocyclopentadiene	0.86	4.8		U
67-72-1	Hexachloroethane	0.44	4.8		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21MW0301

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 0911151-04

Sample wt/vol: 1040 (g/mL) ML Lab File ID: 1115104

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 11/16/09 10:05

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:11/19/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 11/25/09 08:38

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	0.53	4.8		U
106-44-5	4-Methylphenol (p-cresol)	0.74	4.8		U
95-48-7	2-Methylphenol (o-cresol)	0.80	4.8		U
88-74-4	2-Nitroaniline	1.1	19		U
99-09-2	3-Nitroaniline	1.0	19		U
100-01-6	4-Nitroaniline	2.0	19		U
98-95-3	Nitrobenzene	0.60	4.8		U
88-75-5	2-Nitrophenol	0.71	4.8		U
100-02-7	4-Nitrophenol	0.80	19		U
86-30-6	N-Nitrosodiphenylamine (1)	0.44	4.8		U
621-64-7	N-Nitroso-di-n-propylamine	0.86	4.8		U
87-86-5	Pentachlorophenol	0.96	19		U
108-95-2	Phenol	0.44	4.8		U
95-95-4	2,4,5-Trichlorophenol	0.48	4.8		U
88-06-2	2,4,6-Trichlorophenol	0.70	4.8		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21MW0401

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 0911151-05

Sample wt/vol: 1020 (g/mL) ML Lab File ID: 1115105

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 11/16/09 13:10

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:11/19/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 11/25/09 04:47

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	0.74	4.9		U
1912-24-9	Atrazine	0.68	4.9		U
100-52-7	Benzaldehyde	0.56	4.9		U
111-91-1	bis(2-Chloroethoxy)methane	0.51	4.9		U
92-52-4	1,1'-Biphenyl	0.38	4.9		U
111-44-4	bis(2-Chloroethyl)ether	0.44	4.9		U
108-60-1	2,2-Oxybis(1-chloropropane)	0.83	4.9		U
117-81-7	Bis(2-ethylhexyl)phthalate	1.2	4.9		U
101-55-3	4-Bromophenyl-phenylether	0.56	4.9		U
85-68-7	Butylbenzylphthalate	0.80	4.9		U
105-60-2	Caprolactam	0.35	4.9	0.46	JB
106-47-8	4-Chloroaniline	0.93	4.9		U
86-74-8	Carbazole	0.68	4.9		U
59-50-7	4-Chloro-3-methylphenol	0.57	4.9		U
91-58-7	2-Chloronaphthalene (beta)	0.57	4.9		U
95-57-8	2-Chlorophenol	0.58	4.9		U
7005-72-3	4-Chlorophenyl-phenylether	0.87	4.9		U
132-64-9	Dibenzofuran	0.64	4.9		U
91-94-1	3,3'-Dichlorobenzidine	0.87	4.9		U
120-83-2	2,4-Dichlorophenol	0.43	4.9		U
84-66-2	Diethylphthalate	1.0	4.9		U
105-67-9	2,4-Dimethylphenol	0.70	20		U
131-11-3	Dimethylphthalate	0.72	4.9		U
84-74-2	Di-n-butylphthalate	1.3	4.9		U
534-52-1	4,6-Dinitro-2-methylphenol	0.72	20		U
51-28-5	2,4-Dinitrophenol	0.83	49		U
121-14-2	2,4-Dinitrotoluene	0.48	4.9		U
606-20-2	2,6-Dinitrotoluene	0.65	4.9		U
117-84-0	Di-n-octylphthalate	0.32	4.9		U
118-74-1	Hexachlorobenzene	0.46	4.9		U
87-68-3	Hexachlorobutadiene	0.91	4.9		U
77-47-4	Hexachlorocyclopentadiene	0.87	4.9		U
67-72-1	Hexachloroethane	0.45	4.9		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21MW0401

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 0911151-05

Sample wt/vol: 1020 (g/mL) ML Lab File ID: 1115105

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 11/16/09 13:10

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:11/19/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 11/25/09 04:47

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	0.54	4.9		U
106-44-5	4-Methylphenol (p-cresol)	0.75	4.9		U
95-48-7	2-Methylphenol (o-cresol)	0.81	4.9		U
88-74-4	2-Nitroaniline	1.2	20		U
99-09-2	3-Nitroaniline	1.0	20		U
100-01-6	4-Nitroaniline	2.0	20		U
98-95-3	Nitrobenzene	0.61	4.9		U
88-75-5	2-Nitrophenol	0.72	4.9		U
100-02-7	4-Nitrophenol	0.81	20		U
86-30-6	N-Nitrosodiphenylamine (1)	0.45	4.9		U
621-64-7	N-Nitroso-di-n-propylamine	0.88	4.9		U
87-86-5	Pentachlorophenol	0.98	20		U
108-95-2	Phenol	0.45	4.9		U
95-95-4	2,4,5-Trichlorophenol	0.49	4.9		U
88-06-2	2,4,6-Trichlorophenol	0.72	4.9		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21MW0501

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 0911151-01

Sample wt/vol: 1080 (g/mL) ML Lab File ID: 1115101

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 11/15/09 16:26

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:11/19/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 11/25/09 00:52

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	0.69	4.6		U
1912-24-9	Atrazine	0.64	4.6		U
100-52-7	Benzaldehyde	0.53	4.6		U
111-91-1	bis(2-Chloroethoxy)methane	0.48	4.6		U
92-52-4	1,1'-Biphenyl	0.36	4.6		U
111-44-4	bis(2-Chloroethyl)ether	0.42	4.6		U
108-60-1	2,2-Oxybis(1-chloropropane)	0.79	4.6		U
117-81-7	Bis(2-ethylhexyl)phthalate	1.2	4.6		U
101-55-3	4-Bromophenyl-phenylether	0.53	4.6		U
85-68-7	Butylbenzylphthalate	0.76	4.6		U
105-60-2	Caprolactam	0.33	4.6	0.80	JB
106-47-8	4-Chloroaniline	0.88	4.6		U
86-74-8	Carbazole	0.64	4.6		U
59-50-7	4-Chloro-3-methylphenol	0.54	4.6		U
91-58-7	2-Chloronaphthalene (beta)	0.54	4.6		U
95-57-8	2-Chlorophenol	0.55	4.6		U
7005-72-3	4-Chlorophenyl-phenylether	0.82	4.6		U
132-64-9	Dibenzofuran	0.60	4.6		U
91-94-1	3,3'-Dichlorobenzidine	0.82	4.6		U
120-83-2	2,4-Dichlorophenol	0.41	4.6		U
84-66-2	Diethylphthalate	0.94	4.6		U
105-67-9	2,4-Dimethylphenol	0.66	18		U
131-11-3	Dimethylphthalate	0.68	4.6		U
84-74-2	Di-n-butylphthalate	1.2	4.6		U
534-52-1	4,6-Dinitro-2-methylphenol	0.68	18		U
51-28-5	2,4-Dinitrophenol	0.79	46		U
121-14-2	2,4-Dinitrotoluene	0.45	4.6		U
606-20-2	2,6-Dinitrotoluene	0.61	4.6		U
117-84-0	Di-n-octylphthalate	0.30	4.6		U
118-74-1	Hexachlorobenzene	0.44	4.6		U
87-68-3	Hexachlorobutadiene	0.86	4.6		U
77-47-4	Hexachlorocyclopentadiene	0.82	4.6		U
67-72-1	Hexachloroethane	0.42	4.6		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21MW0501

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 0911151-01

Sample wt/vol: 1080 (g/mL) ML Lab File ID: 1115101

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 11/15/09 16:26

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:11/19/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 11/25/09 00:52

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	0.51	4.6		U
106-44-5	4-Methylphenol (p-cresol)	0.71	4.6		U
95-48-7	2-Methylphenol (o-cresol)	0.77	4.6		U
88-74-4	2-Nitroaniline	1.1	18		U
99-09-2	3-Nitroaniline	0.97	18		U
100-01-6	4-Nitroaniline	1.9	18		U
98-95-3	Nitrobenzene	0.57	4.6		U
88-75-5	2-Nitrophenol	0.68	4.6		U
100-02-7	4-Nitrophenol	0.77	18		U
86-30-6	N-Nitrosodiphenylamine (1)	0.42	4.6		U
621-64-7	N-Nitroso-di-n-propylamine	0.83	4.6		U
87-86-5	Pentachlorophenol	0.92	18		U
108-95-2	Phenol	0.42	4.6		U
95-95-4	2,4,5-Trichlorophenol	0.46	4.6		U
88-06-2	2,4,6-Trichlorophenol	0.68	4.6		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21MW0601

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 0911181-03

Sample wt/vol: 1020 (g/mL) ML Lab File ID: 1118103

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 11/17/09 14:05

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:11/20/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 12/04/09 16:35

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	0.74	4.9		U
1912-24-9	Atrazine	0.68	4.9		U
100-52-7	Benzaldehyde	0.56	4.9		U
111-91-1	bis(2-Chloroethoxy)methane	0.51	4.9		U
92-52-4	1,1'-Biphenyl	0.38	4.9		U
111-44-4	bis(2-Chloroethyl)ether	0.44	4.9		U
108-60-1	2,2-Oxybis(1-chloropropane)	0.83	4.9		U
117-81-7	Bis(2-ethylhexyl)phthalate	1.2	4.9		U
101-55-3	4-Bromophenyl-phenylether	0.56	4.9		U
85-68-7	Butylbenzylphthalate	0.80	4.9		U
105-60-2	Caprolactam	0.35	4.9	1.2	JB
106-47-8	4-Chloroaniline	0.93	4.9		U
86-74-8	Carbazole	0.68	4.9		U
59-50-7	4-Chloro-3-methylphenol	0.57	4.9		U
91-58-7	2-Chloronaphthalene (beta)	0.57	4.9		U
95-57-8	2-Chlorophenol	0.58	4.9		U
7005-72-3	4-Chlorophenyl-phenylether	0.87	4.9		U
132-64-9	Dibenzofuran	0.64	4.9		U
91-94-1	3,3'-Dichlorobenzidine	0.87	4.9		U
120-83-2	2,4-Dichlorophenol	0.43	4.9		U
84-66-2	Diethylphthalate	1.0	4.9		U
105-67-9	2,4-Dimethylphenol	0.70	20		U
131-11-3	Dimethylphthalate	0.72	4.9		U
84-74-2	Di-n-butylphthalate	1.3	4.9		U
534-52-1	4,6-Dinitro-2-methylphenol	0.72	20		U
51-28-5	2,4-Dinitrophenol	0.83	49		U
121-14-2	2,4-Dinitrotoluene	0.48	4.9		U
606-20-2	2,6-Dinitrotoluene	0.65	4.9		U
117-84-0	Di-n-octylphthalate	0.32	4.9		U
118-74-1	Hexachlorobenzene	0.46	4.9		U
87-68-3	Hexachlorobutadiene	0.91	4.9		U
77-47-4	Hexachlorocyclopentadiene	0.87	4.9		U
67-72-1	Hexachloroethane	0.45	4.9		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21MW0601

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 0911181-03

Sample wt/vol: 1020 (g/mL) ML Lab File ID: 1118103

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 11/17/09 14:05

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:11/20/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 12/04/09 16:35

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	0.54	4.9		U
106-44-5	4-Methylphenol (p-cresol)	0.75	4.9		U
95-48-7	2-Methylphenol (o-cresol)	0.81	4.9		U
88-74-4	2-Nitroaniline	1.2	20		U
99-09-2	3-Nitroaniline	1.0	20		U
100-01-6	4-Nitroaniline	2.0	20		U
98-95-3	Nitrobenzene	0.61	4.9		U
88-75-5	2-Nitrophenol	0.72	4.9		U
100-02-7	4-Nitrophenol	0.81	20		U
86-30-6	N-Nitrosodiphenylamine (1)	0.45	4.9		U
621-64-7	N-Nitroso-di-n-propylamine	0.88	4.9		U
87-86-5	Pentachlorophenol	0.98	20		U
108-95-2	Phenol	0.45	4.9		U
95-95-4	2,4,5-Trichlorophenol	0.49	4.9		U
88-06-2	2,4,6-Trichlorophenol	0.72	4.9		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB0
2-SO-0406

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) SOIL Lab Sample ID: 0911147-01

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1114701

% Moisture: 11 decanted: (Y/N) N Date Sampled: 11/13/09 09:12

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:11/24/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 11/25/09 17:49

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.5	4.5	200	
208-96-8	Acenaphthylene	1.5	4.5	32	
120-12-7	Anthracene	1.5	4.5	560	
56-55-3	Benzo(a)anthracene	1.5	4.5	2000	X
205-99-2	Benzo(b)fluoranthene	1.5	4.5	1600	
207-08-9	Benzo(k)fluoranthene	1.5	4.5	620	
191-24-2	Benzo(g,h,i)perylene	1.5	4.5	730	
50-32-8	Benzo(a)pyrene	1.5	4.5	1200	
218-01-9	Chrysene	1.5	4.5	2100	X
53-70-3	Dibenz(a,h)anthracene	1.5	4.5	240	
206-44-0	Fluoranthene	1.5	4.5	4000	E
86-73-7	Fluorene	1.5	4.5	180	
193-39-5	Indeno(1,2,3-cd)pyrene	1.5	4.5	890	
91-57-6	2-Methylnaphthalene	1.5	4.5	30	
91-20-3	Naphthalene	1.5	4.5	33	
85-01-8	Phenanthrene	1.5	4.5	2200	
129-00-0	Pyrene	1.5	4.5	3200	

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21SB02
-SO-0406DL

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) SOIL Lab Sample ID: 0911147-01DL

Sample wt/vol: 15.1 (g/mL) G Lab File ID: 1114701D

% Moisture: 11 decanted: (Y/N) N Date Sampled: 11/13/09 09:12

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:11/24/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 12/01/09 18:59

Injection Volume: 1.0(uL) Dilution Factor: 5.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	7.4	22	210	D
208-96-8	Acenaphthylene	7.4	22	34	D
120-12-7	Anthracene	7.4	22	610	D
56-55-3	Benzo(a)anthracene	7.4	22	2000	DX
205-99-2	Benzo(b)fluoranthene	7.4	22	2000	D
207-08-9	Benzo(k)fluoranthene	7.4	22	680	D
191-24-2	Benzo(g,h,i)perylene	7.4	22	790	D
50-32-8	Benzo(a)pyrene	7.4	22	1400	D
218-01-9	Chrysene	7.4	22	2100	DX
53-70-3	Dibenz(a,h)anthracene	7.4	22	220	D
206-44-0	Fluoranthene	7.4	22	4700	D
86-73-7	Fluorene	7.4	22	190	D
193-39-5	Indeno(1,2,3-cd)pyrene	7.4	22	860	D
91-57-6	2-Methylnaphthalene	7.4	22	34	D
91-20-3	Naphthalene	7.4	22	37	D
85-01-8	Phenanthrene	7.4	22	2600	D
129-00-0	Pyrene	7.4	22	3700	D

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21-FD
111609-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 0911151-02

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 1115102

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 11/16/09 :

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:11/19/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 11/20/09 15:01

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	0.020	0.060	0.036	J
208-96-8	Acenaphthylene	0.020	0.060	0.030	J
120-12-7	Anthracene	0.020	0.060	0.069	
56-55-3	Benzo(a)anthracene	0.020	0.060	0.092	X
205-99-2	Benzo(b)fluoranthene	0.020	0.060	0.080	
207-08-9	Benzo(k)fluoranthene	0.020	0.060	0.080	
191-24-2	Benzo(g,h,i)perylene	0.020	0.060		U
50-32-8	Benzo(a)pyrene	0.020	0.060	0.069	
218-01-9	Chrysene	0.020	0.060	0.092	
53-70-3	Dibenz(a,h)anthracene	0.020	0.060		U
206-44-0	Fluoranthene	0.020	0.060	0.080	
86-73-7	Fluorene	0.020	0.060	0.049	J
193-39-5	Indeno(1,2,3-cd)pyrene	0.020	0.060		U
91-57-6	2-Methylnaphthalene	0.020	0.060	0.030	JB
91-20-3	Naphthalene	0.020	0.060	0.023	JB
85-01-8	Phenanthrene	0.020	0.060	0.077	B
129-00-0	Pyrene	0.020	0.060	0.093	

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21MW0101

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 0911181-02

Sample wt/vol: 1020 (g/mL) ML Lab File ID: 1118102

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 11/17/09 11:45

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:11/20/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 11/23/09 16:23

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	0.020	0.059	0.10	B
208-96-8	Acenaphthylene	0.020	0.059		U
120-12-7	Anthracene	0.020	0.059		U
56-55-3	Benzo(a)anthracene	0.020	0.059		U
205-99-2	Benzo(b)fluoranthene	0.020	0.059		U
207-08-9	Benzo(k)fluoranthene	0.020	0.059		U
191-24-2	Benzo(g,h,i)perylene	0.020	0.059		U
50-32-8	Benzo(a)pyrene	0.020	0.059		U
218-01-9	Chrysene	0.020	0.059		U
53-70-3	Dibenz(a,h)anthracene	0.020	0.059		U
206-44-0	Fluoranthene	0.020	0.059	0.13	B
86-73-7	Fluorene	0.020	0.059	0.045	JB
193-39-5	Indeno(1,2,3-cd)pyrene	0.020	0.059		U
91-57-6	2-Methylnaphthalene	0.020	0.059	0.037	JB
91-20-3	Naphthalene	0.020	0.059	0.11	B
85-01-8	Phenanthrene	0.020	0.059	0.16	B
129-00-0	Pyrene	0.020	0.059	0.12	B

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21MW0201

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 0911151-03

Sample wt/vol: 1080 (g/mL) ML Lab File ID: 1115103

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 11/16/09 12:46

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:11/19/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 11/20/09 15:35

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	0.018	0.056		U
208-96-8	Acenaphthylene	0.018	0.056		U
120-12-7	Anthracene	0.018	0.056		U
56-55-3	Benzo(a)anthracene	0.018	0.056		U
205-99-2	Benzo(b)fluoranthene	0.018	0.056		U
207-08-9	Benzo(k)fluoranthene	0.018	0.056		U
191-24-2	Benzo(g,h,i)perylene	0.018	0.056		U
50-32-8	Benzo(a)pyrene	0.018	0.056		U
218-01-9	Chrysene	0.018	0.056		U
53-70-3	Dibenz(a,h)anthracene	0.018	0.056		U
206-44-0	Fluoranthene	0.018	0.056		U
86-73-7	Fluorene	0.018	0.056		U
193-39-5	Indeno(1,2,3-cd)pyrene	0.018	0.056		U
91-57-6	2-Methylnaphthalene	0.018	0.056		U
91-20-3	Naphthalene	0.018	0.056		U
85-01-8	Phenanthrene	0.018	0.056	0.020	JB
129-00-0	Pyrene	0.018	0.056		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21MW0301

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 0911151-04

Sample wt/vol: 1040 (g/mL) ML Lab File ID: 1115104

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 11/16/09 10:05

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:11/19/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 11/20/09 16:09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	0.019	0.058	0.029	J
208-96-8	Acenaphthylene	0.019	0.058		U
120-12-7	Anthracene	0.019	0.058	0.042	J
56-55-3	Benzo(a)anthracene	0.019	0.058	0.053	J
205-99-2	Benzo(b)fluoranthene	0.019	0.058	0.039	J
207-08-9	Benzo(k)fluoranthene	0.019	0.058	0.036	J
191-24-2	Benzo(g,h,i)perylene	0.019	0.058		U
50-32-8	Benzo(a)pyrene	0.019	0.058	0.033	J
218-01-9	Chrysene	0.019	0.058	0.051	J
53-70-3	Dibenz(a,h)anthracene	0.019	0.058		U
206-44-0	Fluoranthene	0.019	0.058	0.048	J
86-73-7	Fluorene	0.019	0.058	0.031	J
193-39-5	Indeno(1,2,3-cd)pyrene	0.019	0.058		U
91-57-6	2-Methylnaphthalene	0.019	0.058		U
91-20-3	Naphthalene	0.019	0.058		U
85-01-8	Phenanthrene	0.019	0.058	0.042	JB
129-00-0	Pyrene	0.019	0.058	0.054	J

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21MW0401

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 0911151-05

Sample wt/vol: 1020 (g/mL) ML Lab File ID: 1115105

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 11/16/09 13:10

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:11/19/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 11/20/09 16:42

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	0.020	0.059		U
208-96-8	Acenaphthylene	0.020	0.059		U
120-12-7	Anthracene	0.020	0.059		U
56-55-3	Benzo(a)anthracene	0.020	0.059		U
205-99-2	Benzo(b)fluoranthene	0.020	0.059		U
207-08-9	Benzo(k)fluoranthene	0.020	0.059		U
191-24-2	Benzo(g,h,i)perylene	0.020	0.059		U
50-32-8	Benzo(a)pyrene	0.020	0.059		U
218-01-9	Chrysene	0.020	0.059		U
53-70-3	Dibenz(a,h)anthracene	0.020	0.059		U
206-44-0	Fluoranthene	0.020	0.059	0.032	J
86-73-7	Fluorene	0.020	0.059		U
193-39-5	Indeno(1,2,3-cd)pyrene	0.020	0.059		U
91-57-6	2-Methylnaphthalene	0.020	0.059		U
91-20-3	Naphthalene	0.020	0.059		U
85-01-8	Phenanthrene	0.020	0.059	0.025	JB
129-00-0	Pyrene	0.020	0.059	0.034	J

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21MW0501

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 0911151-01

Sample wt/vol: 1080 (g/mL) ML Lab File ID: 1115101

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 11/15/09 16:26

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:11/19/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 11/20/09 14:27

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	0.018	0.056	0.020	J
208-96-8	Acenaphthylene	0.018	0.056		U
120-12-7	Anthracene	0.018	0.056	0.038	J
56-55-3	Benzo(a)anthracene	0.018	0.056	0.045	J
205-99-2	Benzo(b)fluoranthene	0.018	0.056	0.039	J
207-08-9	Benzo(k)fluoranthene	0.018	0.056	0.036	J
191-24-2	Benzo(g,h,i)perylene	0.018	0.056		U
50-32-8	Benzo(a)pyrene	0.018	0.056	0.031	J
218-01-9	Chrysene	0.018	0.056	0.046	J
53-70-3	Dibenz(a,h)anthracene	0.018	0.056		U
206-44-0	Fluoranthene	0.018	0.056	0.060	
86-73-7	Fluorene	0.018	0.056	0.027	J
193-39-5	Indeno(1,2,3-cd)pyrene	0.018	0.056		U
91-57-6	2-Methylnaphthalene	0.018	0.056	0.024	JB
91-20-3	Naphthalene	0.018	0.056	0.034	JB
85-01-8	Phenanthrene	0.018	0.056	0.056	B
129-00-0	Pyrene	0.018	0.056	0.056	

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC21MW0601

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 0911181-03

Sample wt/vol: 1020 (g/mL) ML Lab File ID: 1118103

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 11/17/09 14:05

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:11/20/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 11/23/09 16:57

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	0.020	0.059		U
208-96-8	Acenaphthylene	0.020	0.059		U
120-12-7	Anthracene	0.020	0.059	0.036	JB
56-55-3	Benzo(a)anthracene	0.020	0.059	0.057	JB
205-99-2	Benzo(b)fluoranthene	0.020	0.059	0.040	JB
207-08-9	Benzo(k)fluoranthene	0.020	0.059	0.040	JB
191-24-2	Benzo(g,h,i)perylene	0.020	0.059		U
50-32-8	Benzo(a)pyrene	0.020	0.059	0.033	JB
218-01-9	Chrysene	0.020	0.059	0.060	B
53-70-3	Dibenz(a,h)anthracene	0.020	0.059		U
206-44-0	Fluoranthene	0.020	0.059	0.052	JB
86-73-7	Fluorene	0.020	0.059	0.024	JB
193-39-5	Indeno(1,2,3-cd)pyrene	0.020	0.059		U
91-57-6	2-Methylnaphthalene	0.020	0.059		U
91-20-3	Naphthalene	0.020	0.059	0.020	JB
85-01-8	Phenanthrene	0.020	0.059	0.043	JB
129-00-0	Pyrene	0.020	0.059	0.064	B

FORM I SV

ANALYSIS DATA SHEET

NTC21SB02-SO-0406

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_002	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0911147-01	File ID:	010F1001.D
Sampled:	11/13/09 09:12	Prepared:	11/24/09 11:20	Analyzed:	11/25/09 15:26
Solids:	88.89	Preparation:	EXT_3546	Dilution:	1
Batch:	9K19009	Sequence:	9L33502	Calibration:	9310003
Instrument:	GL-ECD4				

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
72-54-8	4,4'-DDD		0.191	0.754	U
72-55-9	4,4'-DDE	17.3	0.191	0.754	
50-29-3	4,4'-DDT	8.53	0.191	0.754	PM.
309-00-2	Aldrin	0.839	0.124	0.371	P
319-84-6	alpha-BHC		0.124	0.371	UZ
5103-71-9	alpha-Chlordane	0.418	0.124	0.371	PM
319-85-7	beta-BHC		0.124	0.371	U
319-86-8	delta-BHC	1.48	0.124	0.371	P
60-57-1	Dieldrin	2.89	0.191	0.754	PM
959-98-8	Endosulfan I	3.22	0.124	0.371	P
33213-65-9	Endosulfan II	1.26	0.191	0.754	
1031-07-8	Endosulfan sulfate	3.91	0.191	0.754	
72-20-8	Endrin	1.84	0.191	0.754	PX
7421-93-4	Endrin aldehyde		0.191	0.754	U
53494-70-5	Endrin ketone		0.191	0.754	UZ
58-89-9	gamma-BHC (Lindane)	0.461	0.124	0.371	
5566-34-7	gamma-Chlordane	1.07	0.124	0.371	PM
76-44-8	Heptachlor		0.124	0.371	U
1024-57-3	Heptachlor epoxide		0.124	0.371	U
72-43-5	Methoxychlor	34.2	0.124	0.371	P
57-74-9	Chlordane (tech)		0.641	1.91	U
8001-35-2	Toxaphene		12.4	37.1	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	18.75	15.92	84.9	30 - 120	
Tetrachloro-m-xylene [2C]	18.75	11.67	62.2	30 - 120	
Decachlorobiphenyl	18.75	17.84	95.2	35 - 140	
Decachlorobiphenyl [2C]	18.75	9.045	48.2	35 - 140	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB02-SO-0406

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_002	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Soil	Laboratory ID:	0911147-01	File ID:	006F0601.D
Sampled:	11/13/09 09:12	Prepared:	11/24/09 11:20	Analyzed:	12/02/09 16:55
Solids:	88.89	Preparation:	EXT_3546	Dilution:	1

Batch: 9K19009 Sequence: 9L33704 Calibration: 9334002 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
12674-11-2	Aroclor-1016		4.72	19.1	U
11104-28-2	Aroclor-1221		4.72	19.1	U
11141-16-5	Aroclor-1232		4.72	19.1	U
53469-21-9	Aroclor-1242	47.0	4.72	19.1	
12672-29-6	Aroclor-1248		4.72	19.1	U
11097-69-1	Aroclor-1254		4.72	19.1	U
11096-82-5	Aroclor-1260	122	4.72	19.1	

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	18.75	13.61	72.6	70 - 125	
Tetrachloro-m-xylene [2C]	18.75	13.51	72.0	70 - 125	
Decachlorobiphenyl	18.75	16.75	89.4	60 - 125	
Decachlorobiphenyl [2C]	18.75	12.36	65.9	60 - 125	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21-FD111609-01

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_002	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Ground Water	Laboratory ID:	0911151-02	File ID:	073F7301.D
Sampled:	11/16/09 00:00	Prepared:	11/18/09 11:30	Analyzed:	11/18/09 00:38
Solids:		Preparation:	EXT_3510	Dilution:	1
Batch:	9K17029	Sequence:	9K32204	Calibration:	9310003
Instrument:	GL-ECD4				

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
72-55-9	4,4'-DDE		0.00472	0.0189	U
72-54-8	4,4'-DDD		0.00472	0.0189	U
50-29-3	4,4'-DDT		0.00472	0.0189	U
309-00-2	Aldrin		0.00311	0.00943	U
319-84-6	alpha-BHC		0.00311	0.00943	U
5103-71-9	alpha-Chlordane		0.00311	0.00943	U
319-85-7	beta-BHC		0.00311	0.00943	U
319-86-8	delta-BHC		0.00311	0.00943	U
60-57-1	Dieldrin		0.00472	0.0189	U
959-98-8	Endosulfan I		0.00311	0.00943	U
33213-65-9	Endosulfan II		0.00472	0.0189	U
1031-07-8	Endosulfan sulfate		0.00472	0.0189	U
72-20-8	Endrin		0.00472	0.0189	U
7421-93-4	Endrin aldehyde		0.00472	0.0189	U
53494-70-5	Endrin ketone		0.00472	0.0189	U
58-89-9	gamma-BHC (Lindane)		0.00311	0.00943	U
5566-34-7	gamma-Chlordane		0.00311	0.00943	U
76-44-8	Heptachlor		0.00311	0.00943	U
1024-57-3	Heptachlor epoxide		0.00311	0.00943	U
72-43-5	Methoxychlor		0.00311	0.00943	U
57-74-9	Chlordane (tech)		0.0160	0.0472	U
8001-35-2	Toxaphene		0.311	0.943	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	0.4717	0.4345	92.1	25 - 140	
Tetrachloro-m-xylene [2C]	0.4717	0.3815	80.9	25 - 140	
Decachlorobiphenyl	0.4717	0.4059	86.0	30 - 135	
Decachlorobiphenyl [2C]	0.4717	0.4354	92.3	30 - 135	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21-FD111609-01

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_002	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Ground Water	Laboratory ID:	0911151-02	File ID:	073F7301.D
Sampled:	11/16/09 00:00	Prepared:	11/18/09 11:30	Analyzed:	11/18/09 00:38
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 9K17029 Sequence: 9K32204 Calibration: 9310003 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
12674-11-2	Aroclor-1016		0.113	0.472	U
11104-28-2	Aroclor-1221		0.113	0.472	U
11141-16-5	Aroclor-1232		0.113	0.472	U
53469-21-9	Aroclor-1242		0.113	0.472	U
12672-29-6	Aroclor-1248		0.113	0.472	U
11097-69-1	Aroclor-1254		0.113	0.472	U
11096-82-5	Aroclor-1260		0.113	0.472	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	0.4717	0.4345	92.1	25 - 140	
Tetrachloro-m-xylene [2C]	0.4717	0.3815	80.9	25 - 140	
Decachlorobiphenyl	0.4717	0.4059	86.0	40 - 135	
Decachlorobiphenyl [2C]	0.4717	0.4354	92.3	40 - 135	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21MW0101

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Water	Laboratory ID:	0911181-02	File ID:	016F1601.D
Sampled:	11/17/09 11:45	Prepared:	11/23/09 08:30	Analyzed:	11/23/09 15:57
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 9K19008 Sequence: 9K32803 Calibration: 9310003 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
72-55-9	4,4'-DDE		0.00490	0.0196	U
72-54-8	4,4'-DDD		0.00490	0.0196	U
50-29-3	4,4'-DDT		0.00490	0.0196	U
309-00-2	Aldrin		0.00324	0.00980	U
319-84-6	alpha-BHC		0.00324	0.00980	U
5103-71-9	alpha-Chlordane		0.00324	0.00980	U
319-85-7	beta-BHC		0.00324	0.00980	U
319-86-8	delta-BHC		0.00324	0.00980	U
60-57-1	Dieldrin		0.00490	0.0196	U
959-98-8	Endosulfan I		0.00324	0.00980	U
33213-65-9	Endosulfan II		0.00490	0.0196	U
1031-07-8	Endosulfan sulfate		0.00490	0.0196	U
72-20-8	Endrin		0.00490	0.0196	UY
7421-93-4	Endrin aldehyde		0.00490	0.0196	U
53494-70-5	Endrin ketone		0.00490	0.0196	U
58-89-9	gamma-BHC (Lindane)		0.00324	0.00980	U
5566-34-7	gamma-Chlordane		0.00324	0.00980	U
76-44-8	Heptachlor		0.00324	0.00980	U
1024-57-3	Heptachlor epoxide		0.00324	0.00980	U
72-43-5	Methoxychlor		0.00324	0.00980	U
57-74-9	Chlordane (tech)		0.0167	0.0490	U
8001-35-2	Toxaphene		0.324	0.980	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	0.4902	0.5077	104	25 - 140	
Tetrachloro-m-xylene [2C]	0.4902	0.4086	83.4	25 - 140	
Decachlorobiphenyl	0.4902	0.5178	106	30 - 135	
Decachlorobiphenyl [2C]	0.4902	0.5367	109	30 - 135	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21MW0101

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_002	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Water	Laboratory ID:	0911181-02	File ID:	016F1601.D
Sampled:	11/17/09 11:45	Prepared:	11/23/09 08:30	Analyzed:	11/23/09 15:57
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 9K19008 Sequence: 9K32803 Calibration: 9310003 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
12674-11-2	Aroclor-1016		0.118	0.490	U
11104-28-2	Aroclor-1221		0.118	0.490	U
11141-16-5	Aroclor-1232		0.118	0.490	U
53469-21-9	Aroclor-1242		0.118	0.490	U
12672-29-6	Aroclor-1248		0.118	0.490	U
11097-69-1	Aroclor-1254		0.118	0.490	U
11096-82-5	Aroclor-1260		0.118	0.490	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	0.4902	0.5077	104	25 - 140	
Tetrachloro-m-xylene [2C]	0.4902	0.4086	83.4	25 - 140	
Decachlorobiphenyl	0.4902	0.5178	106	40 - 135	
Decachlorobiphenyl [2C]	0.4902	0.5367	109	40 - 135	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21MW0201

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Ground Water	Laboratory ID:	0911151-03	File ID:	074F7401.D
Sampled:	11/16/09 12:46	Prepared:	11/18/09 11:30	Analyzed:	11/18/09 00:56
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 9K17029 Sequence: 9K32204 Calibration: 9310003 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
72-55-9	4,4'-DDE.		0.00481	0.0192	U
72-54-8	4,4'-DDD		0.00481	0.0192	U
50-29-3	4,4'-DDT		0.00481	0.0192	U
309-00-2	Aldrin		0.00317	0.00962	U
319-84-6	alpha-BHC		0.00317	0.00962	U
5103-71-9	alpha-Chlordane		0.00317	0.00962	U
319-85-7	beta-BHC		0.00317	0.00962	U
319-86-8	delta-BHC		0.00317	0.00962	U
60-57-1	Dieldrin		0.00481	0.0192	U
959-98-8	Endosulfan I		0.00317	0.00962	U
33213-65-9	Endosulfan II		0.00481	0.0192	U
1031-07-8	Endosulfan sulfate		0.00481	0.0192	U
72-20-8	Endrin		0.00481	0.0192	U
7421-93-4	Endrin aldehyde		0.00481	0.0192	U
53494-70-5	Endrin ketone		0.00481	0.0192	U
58-89-9	gamma-BHC (Lindane)		0.00317	0.00962	U
5566-34-7	gamma-Chlordane		0.00317	0.00962	U
76-44-8	Heptachlor		0.00317	0.00962	U
1024-57-3	Heptachlor epoxide		0.00317	0.00962	U
72-43-5	Methoxychlor		0.00317	0.00962	U
57-74-9	Chlordane (tech)		0.0163	0.0481	U
8001-35-2	Toxaphene		0.317	0.962	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	0.4808	0.4201	87.4	25 - 140	
Tetrachloro-m-xylene [2C]	0.4808	0.3625	75.4	25 - 140	
Decachlorobiphenyl	0.4808	0.4157	86.5	30 - 135	
Decachlorobiphenyl [2C]	0.4808	0.4424	92.0	30 - 135	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21MW0201

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_002	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Ground Water	Laboratory ID:	0911151-03	File ID:	074F7401.D
Sampled:	11/16/09 12:46	Prepared:	11/18/09 11:30	Analyzed:	11/18/09 00:56
Solids:		Preparation:	EXT_3510	Dilution:	1
Batch:	9K17029	Sequence:	9K32204	Calibration:	9310003
Instrument:	GL-ECD4				

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
12674-11-2	Aroclor-1016		0.115	0.481	U
11104-28-2	Aroclor-1221		0.115	0.481	U
11141-16-5	Aroclor-1232		0.115	0.481	U
53469-21-9	Aroclor-1242		0.115	0.481	U
12672-29-6	Aroclor-1248		0.115	0.481	U
11097-69-1	Aroclor-1254		0.115	0.481	U
11096-82-5	Aroclor-1260		0.115	0.481	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	0.4808	0.4201	87.4	25 - 140	
Tetrachloro-m-xylene [2C]	0.4808	0.3625	75.4	25 - 140	
Decachlorobiphenyl	0.4808	0.4157	86.5	40 - 135	
Decachlorobiphenyl [2C]	0.4808	0.4424	92.0	40 - 135	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21MW0301

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Ground Water	Laboratory ID:	0911151-04	File ID:	075F7501.D
Sampled:	11/16/09 10:05	Prepared:	11/18/09 11:30	Analyzed:	11/19/09 01:14
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 9K17029 Sequence: 9K32204 Calibration: 9310003 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
72-55-9	4,4'-DDE		0.00490	0.0196	U
72-54-8	4,4'-DDD		0.00490	0.0196	U
50-29-3	4,4'-DDT		0.00490	0.0196	U
309-00-2	Aldrin		0.00324	0.00980	U
319-84-6	alpha-BHC		0.00324	0.00980	U
5103-71-9	alpha-Chlordane		0.00324	0.00980	U
319-85-7	beta-BHC		0.00324	0.00980	U
319-86-8	delta-BHC		0.00324	0.00980	U
60-57-1	Dieldrin		0.00490	0.0196	U
959-98-8	Endosulfan I		0.00324	0.00980	U
33213-65-9	Endosulfan II		0.00490	0.0196	U
1031-07-8	Endosulfan sulfate		0.00490	0.0196	U
72-20-8	Endrin		0.00490	0.0196	U
7421-93-4	Endrin aldehyde		0.00490	0.0196	U
53494-70-5	Endrin ketone		0.00490	0.0196	U
58-89-9	gamma-BHC (Lindane)		0.00324	0.00980	U
5566-34-7	gamma-Chlordane		0.00324	0.00980	U
76-44-8	Heptachlor		0.00324	0.00980	U
1024-57-3	Heptachlor epoxide		0.00324	0.00980	U
72-43-5	Methoxychlor		0.00324	0.00980	U
57-74-9	Chlordane (tech)		0.0167	0.0490	U
8001-35-2	Toxaphene		0.324	0.980	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	0.4902	0.4755	97.0	25 - 140	
Tetrachloro-m-xylene [2C]	0.4902	0.4196	85.6	25 - 140	
Decachlorobiphenyl	0.4902	0.3908	79.7	30 - 135	
Decachlorobiphenyl [2C]	0.4902	0.4280	87.3	30 - 135	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21MW0301

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Ground Water	Laboratory ID:	0911151-04	File ID:	075F7501.D
Sampled:	11/16/09 10:05	Prepared:	11/18/09 11:30	Analyzed:	11/19/09 01:14
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 9K17029 Sequence: 9K32204 Calibration: 9310003 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
12674-11-2	Aroclor-1016		0.118	0.490	U
11104-28-2	Aroclor-1221		0.118	0.490	U
11141-16-5	Aroclor-1232		0.118	0.490	U
53469-21-9	Aroclor-1242		0.118	0.490	U
12672-29-6	Aroclor-1248		0.118	0.490	U
11097-69-1	Aroclor-1254		0.118	0.490	U
11096-82-5	Aroclor-1260		0.118	0.490	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	0.4902	0.4755	97.0	25 - 140	
Tetrachloro-m-xylene [2C]	0.4902	0.4196	85.6	25 - 140	
Decachlorobiphenyl	0.4902	0.3908	79.7	40 - 135	
Decachlorobiphenyl [2C]	0.4902	0.4280	87.3	40 - 135	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21MW0401

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_002	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Ground Water	Laboratory ID:	0911151-05	File ID:	076F7601.D
Sampled:	11/16/09 13:10	Prepared:	11/18/09 11:30	Analyzed:	11/19/09 01:33
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 9K17029 Sequence: 9K32204 Calibration: 9310003 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
72-55-9	4,4'-DDE		0.00490	0.0196	U
72-54-8	4,4'-DDD		0.00490	0.0196	U
50-29-3	4,4'-DDT		0.00490	0.0196	U
309-00-2	Aldrin		0.00324	0.00980	U
319-84-6	alpha-BHC		0.00324	0.00980	U
5103-71-9	alpha-Chlordane		0.00324	0.00980	U
319-85-7	beta-BHC		0.00324	0.00980	U
319-86-8	delta-BHC		0.00324	0.00980	U
60-57-1	Dieldrin		0.00490	0.0196	U
959-98-8	Endosulfan I		0.00324	0.00980	U
33213-65-9	Endosulfan II		0.00490	0.0196	U
1031-07-8	Endosulfan sulfate		0.00490	0.0196	U
72-20-8	Endrin		0.00490	0.0196	U
7421-93-4	Endrin aldehyde		0.00490	0.0196	U
53494-70-5	Endrin ketone		0.00490	0.0196	U
58-89-9	gamma-BHC (Lindane)		0.00324	0.00980	U
5566-34-7	gamma-Chlordane		0.00324	0.00980	U
76-44-8	Heptachlor		0.00324	0.00980	U
1024-57-3	Heptachlor epoxide		0.00324	0.00980	U
72-43-5	Methoxychlor		0.00324	0.00980	U
57-74-9	Chlordane (tech)		0.0167	0.0490	U
8001-35-2	Toxaphene		0.324	0.980	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	0.4902	0.4398	89.7	25 - 140	
Tetrachloro-m-xylene [2C]	0.4902	0.3846	78.5	25 - 140	
Decachlorobiphenyl	0.4902	0.2133	43.5	30 - 135	
Decachlorobiphenyl [2C]	0.4902	0.2294	46.8	30 - 135	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21MW0401

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_002	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Ground Water	Laboratory ID:	0911151-05	File ID:	076F7601.D
Sampled:	11/16/09 13:10	Prepared:	11/18/09 11:30	Analyzed:	11/19/09 01:33
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 9K17029 Sequence: 9K32204 Calibration: 9310003 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
12674-11-2	Aroclor-1016		0.118	0.490	U
11104-28-2	Aroclor-1221		0.118	0.490	U
11141-16-5	Aroclor-1232		0.118	0.490	U
53469-21-9	Aroclor-1242		0.118	0.490	U
12672-29-6	Aroclor-1248		0.118	0.490	U
11097-69-1	Aroclor-1254		0.118	0.490	U
11096-82-5	Aroclor-1260		0.118	0.490	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	0.4902	0.4398	89.7	25 - 140	
Tetrachloro-m-xylene [2C]	0.4902	0.3846	78.5	25 - 140	
Decachlorobiphenyl	0.4902	0.2133	43.5	40 - 135	
Decachlorobiphenyl [2C]	0.4902	0.2294	46.8	40 - 135	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21MW0501

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_002	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Ground Water	Laboratory ID:	0911151-01	File ID:	068F6801.D
Sampled:	11/15/09 16:26	Prepared:	11/18/09 11:30	Analyzed:	11/18/09 23:06
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 9K17029 Sequence: 9K32204 Calibration: 9310003 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
72-55-9	4,4'-DDE		0.00463	0.0185	U
72-54-8	4,4'-DDD		0.00463	0.0185	U
50-29-3	4,4'-DDT		0.00463	0.0185	U
309-00-2	Aldrin		0.00306	0.00926	U
319-84-6	alpha-BHC		0.00306	0.00926	U
5103-71-9	alpha-Chlordane	0.00416	0.00306	0.00926	J
319-85-7	beta-BHC		0.00306	0.00926	U
319-86-8	delta-BHC		0.00306	0.00926	U
60-57-1	Dieldrin		0.00463	0.0185	U
959-98-8	Endosulfan I		0.00306	0.00926	U
33213-65-9	Endosulfan II		0.00463	0.0185	U
1031-07-8	Endosulfan sulfate		0.00463	0.0185	U
72-20-8	Endrin		0.00463	0.0185	U
7421-93-4	Endrin aldehyde		0.00463	0.0185	U
53494-70-5	Endrin ketone		0.00463	0.0185	U
58-89-9	gamma-BHC (Lindane)		0.00306	0.00926	U
5566-34-7	gamma-Chlordane	0.00354	0.00306	0.00926	J
76-44-8	Heptachlor		0.00306	0.00926	U
1024-57-3	Heptachlor epoxide		0.00306	0.00926	U
72-43-5	Methoxychlor		0.00306	0.00926	U
57-74-9	Chlordane (tech)		0.0157	0.0463	U
8001-35-2	Toxaphene		0.306	0.926	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	0.4630	0.4642	100	25 - 140	
Tetrachloro-m-xylene [2C]	0.4630	0.3860	83.4	25 - 140	
Decachlorobiphenyl	0.4630	0.4821	104	30 - 135	
Decachlorobiphenyl [2C]	0.4630	0.4928	106	30 - 135	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21MW0501

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Ground Water	Laboratory ID:	0911151-01	File ID:	068F6801.D
Sampled:	11/15/09 16:26	Prepared:	11/18/09 11:30	Analyzed:	11/18/09 23:06
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 9K17029 Sequence: 9K32204 Calibration: 9310003 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
12674-11-2	Aroclor-1016		0.111	0.463	U
11104-28-2	Aroclor-1221		0.111	0.463	U
11141-16-5	Aroclor-1232		0.111	0.463	U
53469-21-9	Aroclor-1242		0.111	0.463	U
12672-29-6	Aroclor-1248		0.111	0.463	U
11097-69-1	Aroclor-1254		0.111	0.463	U
11096-82-5	Aroclor-1260		0.111	0.463	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	0.4630	0.4642	100	25 - 140	
Tetrachloro-m-xylene [2C]	0.4630	0.3860	83.4	25 - 140	
Decachlorobiphenyl	0.4630	0.4821	104	40 - 135	
Decachlorobiphenyl [2C]	0.4630	0.4928	106	40 - 135	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21MW0601

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_002	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Water	Laboratory ID:	0911181-03	File ID:	017F1701.D
Sampled:	11/17/09 14:05	Prepared:	11/23/09 08:30	Analyzed:	11/23/09 16:15
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 9K19008 Sequence: 9K32803 Calibration: 9310003 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
72-55-9	4,4'-DDE		0.00490	0.0196	U
72-54-8	4,4'-DDD		0.00490	0.0196	U
50-29-3	4,4'-DDT		0.00490	0.0196	U
309-00-2	Aldrin		0.00324	0.00980	U
319-84-6	alpha-BHC		0.00324	0.00980	U
5103-71-9	alpha-Chlordane		0.00324	0.00980	U
319-85-7	beta-BHC		0.00324	0.00980	U
319-86-8	delta-BHC	0.0279	0.00324	0.00980	
60-57-1	Dieldrin		0.00490	0.0196	U
959-98-8	Endosulfan I		0.00324	0.00980	U
33213-65-9	Endosulfan II		0.00490	0.0196	U
1031-07-8	Endosulfan sulfate		0.00490	0.0196	U
72-20-8	Endrin		0.00490	0.0196	UY
7421-93-4	Endrin aldehyde		0.00490	0.0196	U
53494-70-5	Endrin ketone		0.00490	0.0196	U
58-89-9	gamma-BHC (Lindane)		0.00324	0.00980	U
5566-34-7	gamma-Chlordane		0.00324	0.00980	U
76-44-8	Heptachlor		0.00324	0.00980	U
1024-57-3	Heptachlor epoxide		0.00324	0.00980	U
72-43-5	Methoxychlor		0.00324	0.00980	U
57-74-9	Chlordane (tech)		0.0167	0.0490	U
8001-35-2	Toxaphene		0.324	0.980	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	0.4902	0.5170	105	25 - 140	
Tetrachloro-m-xylene [2C]	0.4902	0.4318	88.1	25 - 140	
Decachlorobiphenyl	0.4902	0.5555	113	30 - 135	
Decachlorobiphenyl [2C]	0.4902	0.5941	121	30 - 135	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21MW0601

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_002	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Water	Laboratory ID:	0911181-03	File ID:	017F1701.D
Sampled:	11/17/09 14:05	Prepared:	11/23/09 08:30	Analyzed:	11/23/09 16:15
Solids:		Preparation:	EXT_3510	Dilution:	1

Batch: 9K19008 Sequence: 9K32803 Calibration: 9310003 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
12674-11-2	Aroclor-1016		0.118	0.490	U
11104-28-2	Aroclor-1221		0.118	0.490	U
11141-16-5	Aroclor-1232		0.118	0.490	U
53469-21-9	Aroclor-1242		0.118	0.490	U
12672-29-6	Aroclor-1248		0.118	0.490	U
11097-69-1	Aroclor-1254		0.118	0.490	U
11096-82-5	Aroclor-1260		0.118	0.490	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	0.4902	0.5170	105	25 - 140	
Tetrachloro-m-xylene [2C]	0.4902	0.4318	88.1	25 - 140	
Decachlorobiphenyl	0.4902	0.5555	113	40 - 135	
Decachlorobiphenyl [2C]	0.4902	0.5941	121	40 - 135	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21SB02-SO-0406

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Soil	Laboratory ID:	0911147-01	File ID:	039R3901.D
Sampled:	11/13/09 09:12	Prepared:	11/27/09 11:30	Analyzed:	12/01/09 02:57
Solids:	88.89	Preparation:	EXT_8151	Dilution:	1

Batch: 9K18015 Sequence: 9L33608 Calibration: 9336002 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/Kg dry)	MDL	MRL	Q
93-76-5	2,4,5-T		2.81	5.62	U
93-72-1	2,4,5-TP (Silvex)		2.81	5.62	U
94-75-7	2,4-D		28.1	56.2	U
94-82-6	2,4-DB		28.1	56.2	U
75-99-0	Dalapon		70.3	141	U
1918-00-9	Dicamba		2.81	5.62	U
120-36-5	Dichloroprop		28.1	56.2	U
88-85-7	Dinoseb		14.1	28.1	U
94-74-6	MCPA		2810	5620	U
7085-19-0	MCPP		2810	5620	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg dry)	CONC (ug/Kg dry)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	112.5	105.8	94.0	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	112.5	103.2	91.7	30 - 120	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21-FD111609-01

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_002	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Ground Water	Laboratory ID:	0911151-02	File ID:	059F5901.D
Sampled:	11/16/09 00:00	Prepared:	11/20/09 14:50	Analyzed:	12/01/09 11:23
Solids:		Preparation:	EXT_8151	Dilution:	1

Batch: 9K18013 Sequence: 9L33608 Calibration: 9336002 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
93-76-5	2,4,5-T		0.0231	0.0462	U
93-72-1	2,4,5-TP (Silvex)		0.0231	0.0462	U
94-75-7	2,4-D		0.231	0.462	U
94-82-6	2,4-DB		0.231	0.462	U
75-99-0	Dalapon		0.579	1.158	U
1918-00-9	Dicamba		0.0231	0.0462	U
120-36-5	Dichloroprop	0.443	0.231	0.462	J
88-85-7	Dinoseb		0.116	0.232	U
94-74-6	MCPA		23.1	46.2	U
7085-19-0	MCPP		23.1	46.2	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	0.9259	0.8222	88.8	20 - 140	
2,4-Dichlorophenylacetic acid [2C]	0.9259	0.7425	80.2	20 - 140	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21MW0101

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_002	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Water	Laboratory ID:	0911181-02	File ID:	046R4601.D
Sampled:	11/17/09 11:45	Prepared:	11/23/09 12:55	Analyzed:	12/01/09 05:53
Solids:		Preparation:	EXT_8151	Dilution:	1

Batch: 9K23022 Sequence: 9L33608 Calibration: 9336002 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
93-76-5	2,4,5-T		0.0240	0.048	U
93-72-1	2,4,5-TP (Silvex)	0.0366	0.0240	0.048	J
94-75-7	2,4-D		0.240	0.48	U
94-82-6	2,4-DB	0.629	0.240	0.48	P
75-99-0	Dalapon	0.751	0.601	1.202	JP M
1918-00-9	Dicamba		0.0240	0.048	U
120-36-5	Dichloroprop		0.240	0.48	U
88-85-7	Dinoseb		0.120	0.24	U
94-74-6	MCPA		24.0	48	U
7085-19-0	MCPP		24.0	48	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	0.9615	0.8710	90.6	20 - 140	
2,4-Dichlorophenylacetic acid [2C]	0.9615	0.8727	90.8	20 - 140	

* Values outside of QC limits

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12/10/09

ANALYSIS DATA SHEET

NTC21MW0201

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Ground Water	Laboratory ID:	0911151-03	File ID:	060F6001.D
Sampled:	11/16/09 12:46	Prepared:	11/20/09 14:50	Analyzed:	12/01/09 11:48
Solids:		Preparation:	EXT_8151	Dilution:	1

Batch: 9K18013 Sequence: 9L33608 Calibration: 9336002 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
93-76-5	2,4,5-T		0.0245	0.049	U
93-72-1	2,4,5-TP (Silvex)		0.0245	0.049	U
94-75-7	2,4-D		0.245	0.49	U
94-82-6	2,4-DB		0.245	0.49	U
75-99-0	Dalapon		0.613	1.226	U
1918-00-9	Dicamba		0.0245	0.049	U
120-36-5	Dichloroprop	0.509	0.245	0.49	
88-85-7	Dinoseb		0.123	0.246	U
94-74-6	MCPA		24.5	49	U
7085-19-0	MCPP		24.5	49	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	0.9804	0.9005	91.8	20 - 140	
2,4-Dichlorophenylacetic acid [2C]	0.9804	0.8091	82.5	20 - 140	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21MW0301

Laboratory:	Empirical Laboratories, LLC			SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)			Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Ground Water	Laboratory ID:	0911151-04	File ID:	061R6101.D
Sampled:	11/16/09 10:05	Prepared:	11/20/09 14:50	Analyzed:	12/01/09 12:13
Solids:		Preparation:	EXT_8151	Dilution:	1

Batch: 9K18013 Sequence: 9L33608 Calibration: 9336002 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
93-76-5	2,4,5-T		0.0245	0.049	U
93-72-1	2,4,5-TP (Silvex)		0.0245	0.049	U
94-75-7	2,4-D		0.245	0.49	U
94-82-6	2,4-DB		0.245	0.49	U
75-99-0	Dalapon		0.613	1.226	U
1918-00-9	Dicamba		0.0245	0.049	U
120-36-5	Dichloroprop	0.344	0.245	0.49	J
88-85-7	Dinoseb		0.123	0.246	U
94-74-6	MCPA		24.5	49	U
7085-19-0	MCPP		24.5	49	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	0.9804	0.9529	97.2	20 - 140	
2,4-Dichlorophenylacetic acid [2C]	0.9804	0.8033	81.9	20 - 140	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21MW0401

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_002	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Ground Water	Laboratory ID:	0911151-05	File ID:	062R6201.D
Sampled:	11/16/09 13:10	Prepared:	11/20/09 14:50	Analyzed:	12/01/09 12:38
Solids:		Preparation:	EXT_8151	Dilution:	1

Batch: 9K18013 Sequence: 9L33608 Calibration: 9336002 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
93-76-5	2,4,5-T		0.0245	0.049	U
93-72-1	2,4,5-TP (Silvex)		0.0245	0.049	U
94-75-7	2,4-D		0.245	0.49	U
94-82-6	2,4-DB		0.245	0.49	U
75-99-0	Dalapon		0.613	1.226	U
1918-00-9	Dicamba		0.0245	0.049	U
120-36-5	Dichloroprop		0.245	0.49	U
88-85-7	Dinoseb		0.123	0.246	U
94-74-6	MCPA		24.5	49	U
7085-19-0	MCPP		24.5	49	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	0.9804	0.9559	97.5	20 - 140	
2,4-Dichlorophenylacetic acid [2C]	0.9804	0.8378	85.5	20 - 140	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21MW0501

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_002	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Ground Water	Laboratory ID:	0911151-01	File ID:	056R5601.D
Sampled:	11/15/09 16:26	Prepared:	11/20/09 14:50	Analyzed:	12/01/09 10:06
Solids:		Preparation:	EXT_8151	Dilution:	1

Batch: 9K18013 Sequence: 9L33608 Calibration: 9336002 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
93-76-5	2,4,5-T		0.0245	0.049	U
93-72-1	2,4,5-TP (Silvex)		0.0245	0.049	U
94-75-7	2,4-D		0.245	0.49	U
94-82-6	2,4-DB		0.245	0.49	U
75-99-0	Dalapon		0.613	1.226	U
1918-00-9	Dicamba		0.0245	0.049	U
120-36-5	Dichloroprop	0.782	0.245	0.49	P
88-85-7	Dinoseb		0.123	0.246	U
94-74-6	MCPA		24.5	49	U
7085-19-0	MCPP		24.5	49	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	0.9804	0.9246	94.3	20 - 140	
2,4-Dichlorophenylacetic acid [2C]	0.9804	0.9591	97.8	20 - 140	

* Values outside of QC limits

ANALYSIS DATA SHEET

NTC21MW0601

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_002	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:	Water	Laboratory ID:	0911181-03	File ID:	047F4701.D
Sampled:	11/17/09 14:05	Prepared:	11/23/09 12:55	Analyzed:	12/01/09 06:19
Solids:		Preparation:	EXT_8151	Dilution:	1

Batch: 9K23022 Sequence: 9L33608 Calibration: 9336002 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
93-76-5	2,4,5-T		0.0245	0.049	U
93-72-1	2,4,5-TP (Silvex)		0.0245	0.049	U
94-75-7	2,4-D		0.245	0.49	U
94-82-6	2,4-DB		0.245	0.49	U
75-99-0	Dalapon		0.613	1.226	U
1918-00-9	Dicamba		0.0245	0.049	U
120-36-5	Dichloroprop		0.245	0.49	U
88-85-7	Dinoseb		0.123	0.246	U
94-74-6	MCPA		24.5	49	U
7085-19-0	MCPP		24.5	49	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	0.9804	0.9488	96.8	20 - 140	
2,4-Dichlorophenylacetic acid [2C]	0.9804	0.8676	88.5	20 - 140	

* Values outside of QC limits

APPENDIX C

SUPPORT DOCUMENTATION

HOLDTIME

SDG CTO064_002

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HERB	%	NTC21MW0101	0911181-02	NM	11/17/2009	11/23/2009	12/01/2009	6.049	7.832	13.88
HERB	%	NTC21MW0201	0911151-03	NM	11/16/2009	11/20/2009	12/01/2009	4.086	10.87	14.96
HERB	%	NTC21MW0301	0911151-04	NM	11/16/2009	11/20/2009	12/01/2009	4.198	10.89	15.09
HERB	%	NTC21MW0401	0911151-05	NM	11/16/2009	11/20/2009	12/01/2009	4.069	10.91	14.98
HERB	%	NTC21MW0501	0911151-01	NM	11/15/2009	11/20/2009	12/01/2009	4.933	10.80	15.74
HERB	%	NTC21MW0601	0911181-03	NM	11/17/2009	11/23/2009	12/01/2009	5.951	7.723	13.67
HERB	%	NTC21SB02-SO-0406	0911147-01	NM	11/13/2009	11/27/2009	12/01/2009	14.1	3.644	17.74
HERB	%	NTC21-FD111609-01	0911151-02	NM	11/16/2009	11/20/2009	12/01/2009	4.618	10.86	15.47
HERB	UG/KG	NTC21SB02-SO-0406	0911147-01	NM	11/13/2009	11/27/2009	12/01/2009	14.1	3.644	17.74
HERB	UG/L	NTC21-FD111609-01	0911151-02	NM	11/16/2009	11/20/2009	12/01/2009	4.618	10.86	15.47
HERB	UG/L	NTC21MW0601	0911181-03	NM	11/17/2009	11/23/2009	12/01/2009	5.951	7.723	13.67
HERB	UG/L	NTC21MW0501	0911151-01	NM	11/15/2009	11/20/2009	12/01/2009	4.933	10.80	15.74
HERB	UG/L	NTC21MW0401	0911151-05	NM	11/16/2009	11/20/2009	12/01/2009	4.069	10.91	14.98
HERB	UG/L	NTC21MW0301	0911151-04	NM	11/16/2009	11/20/2009	12/01/2009	4.198	10.89	15.09
HERB	UG/L	NTC21MW0101	0911181-02	NM	11/17/2009	11/23/2009	12/01/2009	6.049	7.832	13.88

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HERB	UG/L	NTC21MW0201	0911151-03	NM	11/16/2009	11/20/2009	12/01/2009	4.086	10.87	14.96
HG	MG/KG	NTC21SB02-SO-0406	0911147-01	NM	11/13/2009	11/30/2009	11/30/2009	16.89	0.481	17.37
HG	UG/L	NTC21MW0401	0911151-05	NM	11/16/2009	12/02/2009	12/03/2009	15.75	1.196	16.95
HG	UG/L	NTC21MW0101	0911181-02	NM	11/17/2009	12/02/2009	12/03/2009	14.81	1.202	16.02
HG	UG/L	NTC21MW0601	0911181-03	NM	11/17/2009	12/02/2009	12/03/2009	14.72	1.199	15.92
HG	UG/L	NTC21MW0501	0911151-01	NM	11/15/2009	12/02/2009	12/03/2009	16.62	1.192	17.81
HG	UG/L	NTC21MW0201	0911151-03	NM	11/16/2009	12/02/2009	12/03/2009	15.77	1.194	16.97
HG	UG/L	NTC21MW0301	0911151-04	NM	11/16/2009	12/02/2009	12/03/2009	15.88	1.195	17.08
HG	UG/L	NTC21-FD111609-01	0911151-02	NM	11/16/2009	12/02/2009	12/03/2009	16.30	1.194	17.5
M	MG/KG	NTC21SB02-SO-0406	0911147-01	NM	11/13/2009	11/23/2009	11/25/2009	9.943	1.717	11.66
M	MG/KG	NTC21SB02-SO-0406	0911147-01RE1	NM	11/13/2009	11/23/2009	12/04/2009	9.943	11.1	21.04
M	MG/KG	NTC21SB02-SO-0406	0911147-01RE3	NM	11/13/2009	11/23/2009	12/04/2009	9.943	11.2	21.14
M	UG/L	NTC21MW0601	0911181-03RE2	NM	11/17/2009	11/30/2009	12/08/2009	12.72	7.931	20.65
M	UG/L	NTC21MW0401	0911151-05	NM	11/16/2009	11/30/2009	12/01/2009	13.75	1.531	15.28
M	UG/L	NTC21MW0401	0911151-05RE1	NM	11/16/2009	11/30/2009	12/04/2009	13.75	4.274	18.02
M	UG/L	NTC21MW0501	0911151-01	NM	11/15/2009	11/30/2009	12/01/2009	14.61	1.503	16.12
M	UG/L	NTC21MW0501	0911151-01RE1	NM	11/15/2009	11/30/2009	12/04/2009	14.61	4.228	18.84
M	UG/L	NTC21MW0501	0911151-01RE2	NM	11/15/2009	11/30/2009	12/04/2009	14.61	4.232	18.84

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	UG/L	NTC21MW0601	0911181-03RE1	NM	11/17/2009	11/30/2009	12/08/2009	12.72	7.928	20.64
M	UG/L	NTC21MW0301	0911151-04RE1	NM	11/16/2009	11/30/2009	12/04/2009	13.88	4.270	18.15
M	UG/L	NTC21MW0601	0911181-03RE3	NM	11/17/2009	11/30/2009	12/09/2009	12.72	9.308	22.02
M	UG/L	NTC21-FD111609-01	0911151-02RE2	NM	11/16/2009	11/30/2009	12/08/2009	14.3	7.895	22.19
M	UG/L	NTC21MW0601	0911181-03	NM	11/17/2009	11/30/2009	12/01/2009	12.72	1.572	14.29
M	UG/L	NTC21MW0201	0911151-03RE2	NM	11/16/2009	11/30/2009	12/04/2009	13.77	4.267	18.03
M	UG/L	NTC21MW0201	0911151-03RE1	NM	11/16/2009	11/30/2009	12/04/2009	13.77	4.264	18.03
M	UG/L	NTC21MW0201	0911151-03	NM	11/16/2009	11/30/2009	12/01/2009	13.77	1.524	15.29
M	UG/L	NTC21MW0101	0911181-02RE3	NM	11/17/2009	11/30/2009	12/09/2009	12.81	9.304	22.12
M	UG/L	NTC21MW0101	0911181-02RE2	NM	11/17/2009	11/30/2009	12/08/2009	12.81	7.897	20.71
M	UG/L	NTC21MW0101	0911181-02	NM	11/17/2009	11/30/2009	12/01/2009	12.81	1.569	14.38
M	UG/L	NTC21MW0101	0911181-02RE1	NM	11/17/2009	11/30/2009	12/08/2009	12.81	7.894	20.71
M	UG/L	NTC21-FD111609-01	0911151-02RE1	NM	11/16/2009	11/30/2009	12/04/2009	14.3	4.249	18.55
M	UG/L	NTC21-FD111609-01	0911151-02	NM	11/16/2009	11/30/2009	12/01/2009	14.3	1.520	15.82
M	UG/L	NTC21MW0301	0911151-04	NM	11/16/2009	11/30/2009	12/01/2009	13.88	1.527	15.40
HGF	UG/L	NTC21MW0401	0911151-06	NM	11/16/2009	12/02/2009	12/03/2009	15.75	1.197	16.95
MF	UG/L	NTC21MW0401	0911151-06	NM	11/16/2009	11/30/2009	12/01/2009	13.75	1.534	15.28
MF	UG/L	NTC21MW0401	0911151-06RE1	NM	11/16/2009	11/30/2009	12/04/2009	13.75	4.277	18.03

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OS	%	NTC21MW0601	0911181-03	NM	11/17/2009	11/20/2009	12/04/2009	2.847	14.26	17.10
OS	%	NTC21-FD111609-01	0911151-02	NM	11/16/2009	11/19/2009	11/25/2009	3.5	5.561	9.061
OS	%	NTC21MW0101	0911181-02	NM	11/17/2009	11/20/2009	11/23/2009	2.944	3.249	6.193
OS	%	NTC21MW0101	0911181-02	NM	11/17/2009	11/20/2009	12/04/2009	2.944	14.23	17.18
OS	%	NTC21MW0201	0911151-03	NM	11/16/2009	11/19/2009	11/20/2009	2.968	1.149	4.117
OS	%	NTC21MW0201	0911151-03	NM	11/16/2009	11/19/2009	11/25/2009	2.968	5.835	8.803
OS	%	NTC21MW0301	0911151-04	NM	11/16/2009	11/19/2009	11/20/2009	3.08	1.173	4.253
OS	%	NTC21MW0301	0911151-04	NM	11/16/2009	11/19/2009	11/25/2009	3.08	5.86	8.94
OS	%	NTC21MW0401	0911151-05	NM	11/16/2009	11/19/2009	11/20/2009	2.951	1.196	4.147
OS	%	NTC21MW0401	0911151-05	NM	11/16/2009	11/19/2009	11/25/2009	2.951	5.699	8.651
OS	%	NTC21MW0501	0911151-01	NM	11/15/2009	11/19/2009	11/20/2009	3.815	1.102	4.917
OS	%	NTC21-FD111609-01	0911151-02	NM	11/16/2009	11/19/2009	11/20/2009	3.5	1.126	4.626
OS	%	NTC21MW0501	0911151-01	NM	11/15/2009	11/19/2009	11/25/2009	3.815	5.536	9.351
OS	%	NTC21SB02-SO-0406	0911147-01	NM	11/13/2009	11/24/2009	11/25/2009	11.09	1.270	12.36
OS	%	NTC21SB02-SO-0406-DL	0911147-01DL	NM	11/13/2009	11/24/2009	12/01/2009	11.09	7.319	18.41
OS	%	NTC21SB02-SO-0406RE	0911147-01RE	NM	11/13/2009	12/04/2009	12/07/2009	21.04	3.485	24.53
OS	%	NTC21MW0601	0911181-03	NM	11/17/2009	11/20/2009	11/23/2009	2.847	3.272	6.119
OS	UG/KG	NTC21SB02-SO-0406	0911147-01	NM	11/13/2009	11/24/2009	11/25/2009	11.09	1.270	12.36

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OS	UG/KG	NTC21SB02-SO-0406-DL	0911147-01DL	NM	11/13/2009	11/24/2009	12/01/2009	11.09	7.319	18.41
OS	UG/KG	NTC21SB02-SO-0406RE	0911147-01RE	NM	11/13/2009	12/04/2009	12/07/2009	21.04	3.485	24.53
OS	UG/L	NTC21MW0401	0911151-05	NM	11/16/2009	11/19/2009	11/25/2009	2.951	5.699	8.651
OS	UG/L	NTC21MW0601	0911181-03	NM	11/17/2009	11/20/2009	12/04/2009	2.847	14.26	17.10
OS	UG/L	NTC21MW0601	0911181-03	NM	11/17/2009	11/20/2009	11/23/2009	2.847	3.272	6.119
OS	UG/L	NTC21MW0501	0911151-01	NM	11/15/2009	11/19/2009	11/20/2009	3.815	1.102	4.917
OS	UG/L	NTC21MW0401	0911151-05	NM	11/16/2009	11/19/2009	11/20/2009	2.951	1.196	4.147
OS	UG/L	NTC21MW0301	0911151-04	NM	11/16/2009	11/19/2009	11/25/2009	3.08	5.86	8.94
OS	UG/L	NTC21MW0201	0911151-03	NM	11/16/2009	11/19/2009	11/25/2009	2.968	5.835	8.803
OS	UG/L	NTC21MW0201	0911151-03	NM	11/16/2009	11/19/2009	11/20/2009	2.968	1.149	4.117
OS	UG/L	NTC21-FD111609-01	0911151-02	NM	11/16/2009	11/19/2009	11/20/2009	3.5	1.126	4.626
OS	UG/L	NTC21MW0101	0911181-02	NM	11/17/2009	11/20/2009	12/04/2009	2.944	14.23	17.18
OS	UG/L	NTC21MW0101	0911181-02	NM	11/17/2009	11/20/2009	11/23/2009	2.944	3.249	6.193
OS	UG/L	NTC21-FD111609-01	0911151-02	NM	11/16/2009	11/19/2009	11/25/2009	3.5	5.561	9.061
OS	UG/L	NTC21MW0301	0911151-04	NM	11/16/2009	11/19/2009	11/20/2009	3.08	1.173	4.253
OS	UG/L	NTC21MW0501	0911151-01	NM	11/15/2009	11/19/2009	11/25/2009	3.815	5.536	9.351
OV	%	NTC21MW0101	0911181-02	NM	11/17/2009	11/21/2009	11/21/2009	3.842	0	3.842
OV	%	NTC21SB02-SO-0406	0911147-01	NM	11/13/2009	11/19/2009	11/19/2009	6.420	0	6.420

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
OV	%	NTC21MW0601	0911181-03	NM	11/17/2009	11/21/2009	11/21/2009	3.767	0	3.767
OV	%	NTC21MW0501	0911151-01	NM	11/15/2009	11/22/2009	11/22/2009	7.122	0	7.122
OV	%	NTC21MW0401	0911151-05	NM	11/16/2009	11/22/2009	11/22/2009	6.340	0	6.340
OV	%	NTC21MW0201	0911151-03	NM	11/16/2009	11/22/2009	11/22/2009	6.315	0	6.315
OV	%	NTC21-FD111609-01	0911151-02	NM	11/16/2009	11/22/2009	11/22/2009	6.827	0	6.827
OV	%	FB-111709-01	0911181-01	NM	11/17/2009	11/21/2009	11/21/2009	3.978	0	3.978
OV	%	NTC21MW0301	0911151-04	NM	11/16/2009	11/22/2009	11/22/2009	6.448	0	6.448
OV	UG/KG	NTC21SB02-SO-0406	0911147-01	NM	11/13/2009	11/19/2009	11/19/2009	6.420	0	6.420
OV	UG/L	NTC21MW0301	0911151-04	NM	11/16/2009	11/22/2009	11/22/2009	6.448	0	6.448
OV	UG/L	NTC21MW0501	0911151-01	NM	11/15/2009	11/22/2009	11/22/2009	7.122	0	7.122
OV	UG/L	NTC21MW0601	0911181-03	NM	11/17/2009	11/21/2009	11/21/2009	3.767	0	3.767
OV	UG/L	NTC21MW0401	0911151-05	NM	11/16/2009	11/22/2009	11/22/2009	6.340	0	6.340
OV	UG/L	NTC21MW0101	0911181-02	NM	11/17/2009	11/21/2009	11/21/2009	3.842	0	3.842
OV	UG/L	FB-111709-01	0911181-01	NM	11/17/2009	11/21/2009	11/21/2009	3.978	0	3.978
OV	UG/L	NTC21-FD111609-01	0911151-02	NM	11/16/2009	11/22/2009	11/22/2009	6.827	0	6.827
OV	UG/L	NTC21MW0201	0911151-03	NM	11/16/2009	11/22/2009	11/22/2009	6.315	0	6.315
PCB	%	NTC21MW0301	0911151-04	NM	11/16/2009	11/18/2009	11/19/2009	2.040	1.091	3.131
PCB	%	NTC21SB02-SO-0406	0911147-01	NM	11/17/2009	11/24/2009	12/02/2009	6.873	8.245	15.12

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
PCB	%	NTC21MW0601	0911181-03	NM	11/17/2009	11/23/2009	11/23/2009	5.749	0.342	6.090
PCB	%	NTC21MW0401	0911151-05	NM	11/16/2009	11/18/2009	11/19/2009	1.912	1.104	3.016
PCB	%	NTC21MW0201	0911151-03	NM	11/16/2009	11/18/2009	11/18/2009	1.928	-0.42	1.507
PCB	%	NTC21MW0101	0911181-02	NM	11/17/2009	11/23/2009	11/23/2009	5.846	0.329	6.175
PCB	%	NTC21-FD111609-01	0911151-02	NM	11/16/2009	11/18/2009	11/18/2009	2.460	-0.43	2.026
PCB	%	NTC21MW0501	0911151-01	NM	11/15/2009	11/18/2009	11/18/2009	2.776	0.502	3.278
PCB	UG/KG	NTC21SB02-SO-0406	0911147-01	NM	11/17/2009	11/24/2009	12/02/2009	6.873	8.245	15.12
PCB	UG/L	NTC21-FD111609-01	0911151-02	NM	11/16/2009	11/18/2009	11/18/2009	2.460	-0.43	2.026
PCB	UG/L	NTC21MW0401	0911151-05	NM	11/16/2009	11/18/2009	11/19/2009	1.912	1.104	3.016
PCB	UG/L	NTC21MW0501	0911151-01	NM	11/15/2009	11/18/2009	11/18/2009	2.776	0.502	3.278
PCB	UG/L	NTC21MW0601	0911181-03	NM	11/17/2009	11/23/2009	11/23/2009	5.749	0.342	6.090
PCB	UG/L	NTC21MW0301	0911151-04	NM	11/16/2009	11/18/2009	11/19/2009	2.040	1.091	3.131
PCB	UG/L	NTC21MW0101	0911181-02	NM	11/17/2009	11/23/2009	11/23/2009	5.846	0.329	6.175
PCB	UG/L	NTC21MW0201	0911151-03	NM	11/16/2009	11/18/2009	11/18/2009	1.928	-0.42	1.507
PEST	UG/KG	NTC21SB02-SO-0406	0911147-01	NM	11/13/2009	11/24/2009	11/25/2009	11.09	1.171	12.26
PEST	UG/L	NTC21MW0601	0911181-03	NM	11/17/2009	11/23/2009	11/23/2009	5.767	0.323	6.090
PEST	UG/L	NTC21-FD111609-01	0911151-02	NM	11/16/2009	11/18/2009	11/18/2009	2.479	-0.45	2.026
PEST	UG/L	NTC21MW0101	0911181-02	NM	11/17/2009	11/23/2009	11/23/2009	5.865	0.310	6.175

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
PEST	UG/L	NTC21MW0201	0911151-03	NM	11/16/2009	11/18/2009	11/18/2009	1.947	-0.44	1.507
PEST	UG/L	NTC21MW0301	0911151-04	NM	11/16/2009	11/18/2009	11/19/2009	2.059	0.572	2.631
PEST	UG/L	NTC21MW0401	0911151-05	NM	11/16/2009	11/18/2009	11/19/2009	1.931	0.585	2.516
PEST	UG/L	NTC21MW0501	0911151-01	NM	11/15/2009	11/18/2009	11/18/2009	2.794	0.483	3.278

TETRA TECH NUS, INC

CHAIN OF CUSTODY
NUMBER: ED00000105-3

Project No:	Facility:	Project Manager:	Carrier:	Laboratory Name:
112G01797	**GREAT LAKES NTC**	**Biff Cummings**	**Federal Express**	**Empirical Laboritories, LLC. 227 French Landing Drive Nashville, TN 37228**
Task No:	Turn Around Time:	Field Ops Leader:	Carrier/Waybill No.	Point of Contact:
0064	**Standard**	**Shannon Hill**	**8631 3888 3733 0215**	**Janice Shilling 615.345.1115 ext. 256**

Date	Sample ID #	Time	Analysis	Loc ID	Matrix	Description	Preservative	Container Count	Container Type	Container Reqs	Comments
11/13/2009	NTC21SB02-SO-0406	09:12	**SW-846 8270C/8181/8081A/8082/6010B**	NTC21SB02	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	-01
11/13/2009	NTC21SB02-SO-0406	09:12	**SW-846 8260B**	NTC21SB02	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore	

0911147

1. Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Shannon Hill	11/13/2009	18:11	**Federal Express**	11/13/2009	19:11
2. Relinquished By:	Date:	Time:	Received By:	Date:	Time:
3. Relinquished By:	Date:	Time:	Received By:	Date:	Time:
				11/14/09	10:45

2.8°C

Comments:

CTO064 002 Summ Package

1

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0911147 Number of Coolers: 1 of 1

Client: Tetra Tech NUS Project: CTO-064

Date/Time Received: **11/14/09 10:45** Date cooler(s) opened: 11/14/09

Opened By (print): **WILLIAM SCHWAB** (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered

EL Courier Other: _____

If applicable, enter airbill number here: 7752

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 1 Seal date: 11/13/09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A
7. Was project identifiable from custody papers? ..... Yes No N/A
8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 2-8°C

Dates samples were logged-in: **11/16/09**

9. Initial this form to acknowledge login of sample(s): (Name): Will Schwab (Initial): WS
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A Soils

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

CTO064_002 Summary Package

TETRA TECH NUS, INC

CHAIN OF CUSTODY
NUMBER: ED00000105-4

Project No: **12G01797**	Facility: **GREAT LAKES NTC**	Project Manager: **Biff Cummings**	Carrier: **Federal Express**	Laboratory Name: **Empirical Laboritories, LLC. 227 French Landing Drive Nashville, TN 37228**
Task No: **0064**	Turn Around Time: **Standard**	Field Ops Leader: **Shannon Hill**	Carrier/Waybill No. **8631 3888 3744 0215**	Point of Contact: **Janice Shilling 615.345.1115 ext. 256**

Date	Sample ID #	Time	Analysis	Loc ID	Matrix	Description	Preservative	Container Count	Container Type	Container Reqs	Comments
11/15/2009	NTC21MW0501	16:26	**SW-846 8270C/8181/8081A/8082**	NTC21-MW05	GW	TCL SVOCs/Herb/Pest/PCB	4°C	18	Glass - Amber	1L	MS/MSD -01
11/15/2009	NTC21MW0501	16:26	**SW-846 6010B**	NTC21-MW05	GW	TAL Metals (Total)	4°C/HNO3	3	Plastic - PE	250ml	MS/MSD
11/15/2009	NTC21MW0501	16:26	**SW-846 8260B**	NTC21-MW05	GW	TCL VOCs	4°C/HCL	9	Glass - Clear	40ml vials	MS/MSD
11/16/2009	NTC21-FD111609-01	00:00	**SW-846 8270C/8181/8081A/8082**	QC	GW	TCL SVOCs/Herb/Pest/PCB	4°C	6	Glass - Amber	1L	-02
11/16/2009	NTC21-FD111609-01	00:00	**SW-846 6010B**	QC	GW	TAL Metals (Total)	4°C/HNO3	1	Plastic - PE	250ml	
11/16/2009	NTC21-FD111609-01	00:00	**SW-846 8260B**	QC	GW	TCL VOCs	4°C/HCL	3	Glass - Clear	40ml vials	
11/16/2009	NTC21MW0201	12:46	**SW-846 8270C/8181/8081A/8082**	NTC21-MW02	GW	TCL SVOCs/Herb/Pest/PCB	4°C	6	Glass - Amber	1L	-03
11/16/2009	NTC21MW0201	12:46	**SW-846 6010B**	NTC21-MW02	GW	TAL Metals (Total)	4°C/HNO3	1	Plastic - PE	250ml	
11/16/2009	NTC21MW0201	12:46	**SW-846 8260B**	NTC21-MW02	GW	TCL VOCs	4°C/HCL	3	Glass - Clear	40ml vials	
11/16/2009	NTC21MW0301	10:05	**SW-846 6010B**	NTC21-MW03	GW	TAL Metals (Total)	4°C/HNO3	1	Plastic - PE	250ml	-04
11/16/2009	NTC21MW0301	10:05	**SW-846 8260B**	NTC21-MW03	GW	TCL VOCs	4°C/HCL	3	Glass - Clear	40ml vials	
11/16/2009	NTC21MW0301	10:05	**SW-846 8270C/8181/8081A/8082**	NTC21-MW03	GW	TCL SVOCs/Herb/Pest/PCB	4°C	6	Glass - Amber	1L	
11/16/2009	NTC21MW0401	13:10	**SW-846 6010B - Filtered**	NTC21-MW04	GW	TAL Metals (Dissolved)	4°C/HNO3	1	Plastic - PE	250ml	-06
11/16/2009	NTC21MW0401	13:10	**SW-846 8270C/8181/8081A/8082**	NTC21-MW04	GW	TCL SVOCs/Herb/Pest/PCB	4°C	6	Glass - Amber	1L	-05
11/16/2009	NTC21MW0401	13:10	**SW-846 6010B**	NTC21-MW04	GW	TAL Metals (Total)	4°C/HNO3	1	Plastic - PE	250ml	
11/16/2009	NTC21MW0401	13:10	**SW-846 8260B**	NTC21-MW04	GW	TCL VOCs	4°C/HCL	3	Glass - Clear	40ml vials	

0911151

1. Relinquished By: **Shannon Hill**	Date: 11/16/2009	Time: 17:46	Received By: **Federal Express**	Date: 11/16/2009	Time: 18:46
2. Relinquished By: Nicole Rochner	Date: 11/16/2009	Time:	Received By:	Date:	Time:
3. Relinquished By:	Date:	Time:	Received By: [signature]	Date: 11/17/09	Time: 08:30

0.10C

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0911151 Number of Coolers: 1 of 5

Client: Tetra Tech NUS Project: Great Lakes CTO-064

Date/Time Received: **11/17/09 08:30** Date cooler(s) opened: **11/17/09**

Opened By (print): **WILLIAM SCHWAB** (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
   EL Courier Other: _____

If applicable, enter airbill number here: 1726

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 1 Seal date: 11/16/09 Seal Initials: _____

3. Were custody seals unbroken and intact at the date and time of arrival?	Yes	No	N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler?	Yes	No	N/A
5. Were custody papers filled out properly (ink, signed, etc.)?	Yes	No	N/A
6. Did you sign custody papers in the appropriate place for acceptance?	Yes	No	N/A
7. Was project identifiable from custody papers?	Yes	No	N/A
8. If required, was enough ice present in the cooler(s)?	Yes	No	N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 0.1°C

Dates samples were logged-in: **11/17/09**

9. Initial this form to acknowledge login of sample(s): (Name): Will Schwab (Initial): WS

10. Were all bottle lids intact and sealed tightly?	Yes	No	N/A
11. Did all bottles arrive unbroken?	Yes	No	N/A
12. Was all required bottle label information complete?	Yes	No	N/A
13. Did all bottle labels agree with custody papers?	Yes	No	N/A
14. Were correct containers used for the analyses indicated?	Yes	No	N/A
15. Were preservative levels correct in all applicable sample containers?	Yes	No	N/A
16. Was residual chlorine present in any applicable sample containers?	Yes	No	N/A
17. Was sufficient amount of sample sent for the analyses required?	Yes	No	N/A
18. Was headspace present in any included VOA vials?	Yes	No	N/A

pH for total + dissolved metals all <2

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0911151 Number of Coolers: 2 of 5

Client: Tetra Tech NUS Project: Great Lakes CTO-064

Date/Time Received: 11/17/09 08:30 Date cooler(s) opened: 11/17/09

Opened By (print): WILLIAM SCHWAB (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered

EL Courier Other: _____

If applicable, enter airbill number here: 1690

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 1 Seal date: 11/16/09 Seal Initials: _____

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A

4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A

5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A

6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A

7. Was project identifiable from custody papers? ..... Yes No N/A

8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 1.4°C

~~Dates samples were logged in:~~ 11/17/09

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____

10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A

11. Did all bottles arrive unbroken? ..... Yes No N/A

12. Was all required bottle label information complete? ..... Yes No N/A

13. Did all bottle labels agree with custody papers? ..... Yes No N/A

14. Were correct containers used for the analyses indicated? ..... Yes No N/A

15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A

16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A

17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A

18. Was headspace present in any included VOA vials? ..... Yes No N/A

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

See page 10 of 5

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0911151 Number of Coolers: 3 ~~1~~ ws of 5

Client: Tetra Tech NUS Project: Great Lakes CTO-064

Date/Time Received: **11/17/09 08:30** Date cooler(s) opened: **11/17/09**

Opened By (print): **WILLIAM SCHWAB** (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
   EL Courier Other: _____

If applicable, enter airbill number here: 1737

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 1 Seal date: 11/16/09 Seal Initials: _____

3. Were custody seals unbroken and intact at the date and time of arrival?	Yes	No	N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler?	Yes	No	N/A
5. Were custody papers filled out properly (ink, signed, etc.)?	Yes	No	N/A
6. Did you sign custody papers in the appropriate place for acceptance?	Yes	No	N/A
7. Was project identifiable from custody papers?	Yes	No	N/A
8. If required, was enough ice present in the cooler(s)?	Yes	No	N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 1.10c

Dates ~~samples were logged-in:~~ **11/17/09**

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____

10. Were all bottle lids intact and sealed tightly?	Yes	No	N/A
11. Did all bottles arrive unbroken?	Yes	No	N/A
12. Was all required bottle label information complete?	Yes	No	N/A
13. Did all bottle labels agree with custody papers?	Yes	No	N/A
14. Were correct containers used for the analyses indicated?	Yes	No	N/A
15. Were preservative levels correct in all applicable sample containers?	Yes	No	N/A
16. Was residual chlorine present in any applicable sample containers?	Yes	No	N/A
17. Was sufficient amount of sample sent for the analyses required?	Yes	No	N/A
18. Was headspace present in any included VOA vials?	Yes	No	N/A

see page ws #1 of 5

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0911151 Number of Coolers: 4 of 5

Client: Tetra Tech NUS Project: Great Lakes CTO-064

Date/Time Received: 11/17/09 08:30 Date cooler(s) opened: 11/17/09

Opened By (print): WILLIAM SCHWAB (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
EL Courier Other: _____

If applicable, enter airbill number here: 1715

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 1 Seal date: 11/16/09 Seal Initials: -

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A
7. Was project identifiable from custody papers? ..... Yes No N/A
8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 3.1°C

Dates samples were logged-in: 11/17/09

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A

See page 1 of 5

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0911151 Number of Coolers: 5 of 5

Client: Tetra Tech NUS Project: Great Lakes CTO-064

Date/Time Received: 11/17/09 08:30 Date cooler(s) opened: 11/17/09

Opened By (print): ~~WILLIAM SCHWAB~~ (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered

EL Courier Other: _____

If applicable, enter airbill number here: 1748

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 1 Seal date: 11/16/09 Seal Initials: _____

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A
7. Was project identifiable from custody papers? ..... Yes No N/A
8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 4.4°C

Dates samples were logged-in: 11/17/09

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

See page 1 of 5

TETRA TECH NUS, INC

CHAIN OF CUSTODY
NUMBER: ED00000105-6

Project No:	Facility:	Project Manager:	Carrier:	Laboratory Name:
112G01797	**GREAT LAKES NTC**	**Biff Cummings**	**Federal Express**	**Empirical Laboritories, LLC. 227 French Landing Drive Nashville, TN 37228**
Task No:	Turn Around Time:	Field Ops Leader:	Carrier/Waybill No.	Point of Contact:
0064	**Standard**	**Shannon Hill**	**8631 2526 7844 0215**	**Janice Shilling 615.345.1115 ext. 256**

Date	Sample ID #	Time	Analysis	Loc ID	Matrix	Description	Preservative	Container Count	Container Type	Container Reqs	Comments
11/17/2009	FB-111709-01	08:00	**SW-846 8260B**	QC	AQ	TCL VOCs	4°C/HCL	2	Glass - Clear	40ml vials	-01 0911181
11/17/2009	NTC21MW0101	11:45	**SW-846 6010B**	NTC21-MW01	GW	TAL Metals (Total)	4°C/HNO3	1	Plastic - PE	250ml	-02
11/17/2009	NTC21MW0101	11:45	**SW-846 8260B**	NTC21-MW01	GW	TCL VOCs	4°C/HCL	3	Glass - Clear	40ml vials	
11/17/2009	NTC21MW0101	11:45	**SW-846 8270C/8181/8081A/8082**	NTC21-MW01	GW	TCL SVOCs/Herb/Pest/PCB	4°C	6	Glass - Amber	1L	
11/17/2009	NTC21MW0601	14:05	**SW-846 8260B**	NTC21-MW06	GW	TCL VOCs	4°C/HCL	3	Glass - Clear	40ml vials	-03
11/17/2009	NTC21MW0601	14:05	**SW-846 8270C/8181/8081A/8082**	NTC21-MW06	GW	TCL SVOCs/Herb/Pest/PCB	4°C	6	Glass - Amber	1L	
11/17/2009	NTC21MW0601	14:05	**SW-846 6010B**	NTC21-MW06	GW	TAL Metals (Total)	4°C/HNO3	1	Plastic - PE	250ml	

1. Relinquished By: **Shannon Hill**	Date: 11/17/2009	Time: 18:50	Received By: **Federal Express**	Date: 11/17/2009	Time: 19:50
2. Relinquished By:	Date:	Time:	Received By:	Date:	Time:
3. Relinquished By:	Date:	Time:	Received By:	Date: 11/18/09	Time: 08:15

3.8°C

Comments:

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0911181 Number of Coolers: 1 of 2

Client: Tetra Tech NUS Project: CTO-064

Date/Time Received: **11/18/09 08:15** Date cooler(s) opened: **11/18/09**

Opened By (print): **WILLIAM SCHWAB** (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
   EL Courier Other: _____

If applicable, enter airbill number here: 6859

2. Were custody seals on outside of cooler(s)? ..... (Yes) No

How many: 1 Seal date: 11/17/09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival? ..... (Yes) No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... (Yes) No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... (Yes) No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... (Yes) No N/A
7. Was project identifiable from custody papers? ..... (Yes) No N/A
8. If required, was enough ice present in the cooler(s)? ..... (Yes) No N/A

Type of Coolant: (WET) DRY BLUE NONE Temperature of Samples upon Receipt: 3-8°C

Dates samples were logged-in: **11/18/09**

9. Initial this form to acknowledge login of sample(s): (Name): Will Schwab (Initial): WS
10. Were all bottle lids intact and sealed tightly? ..... (Yes) No N/A
11. Did all bottles arrive unbroken? ..... (Yes) No N/A
12. Was all required bottle label information complete? ..... (Yes) No N/A
13. Did all bottle labels agree with custody papers? ..... (Yes) No N/A
14. Were correct containers used for the analyses indicated? ..... (Yes) No N/A
15. Were preservative levels correct in all applicable sample containers? ..... (Yes) No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No (N/A)
17. Was sufficient amount of sample sent for the analyses required? ..... (Yes) No N/A
18. Was headspace present in any included VOA vials? ..... Yes (No) N/A

pH for metals all <2

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0911181 Number of Coolers: 2 of 2

Client: Tetra Tech NUS Project: CTO-064

Date/Time Received: **11/18/09 08:15** Date cooler(s) opened: **11/18/09**

Opened By (print): **WILLIAM SCHWAB** (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered

EL Courier Other: _____

If applicable, enter airbill number here: 7844

2. Were custody seals on outside of cooler(s)? ..... (Yes) No

How many: 1 Seal date: 11/17/09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival? ..... (Yes) No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... (Yes) No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... (Yes) No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... (Yes) No N/A
7. Was project identifiable from custody papers? ..... (Yes) No N/A
8. If required, was enough ice present in the cooler(s)? ..... (Yes) No N/A

Type of Coolant: (WET) DRY BLUE NONE Temperature of Samples upon Receipt: 4-5°C

Dates samples ~~were logged-in:~~ 11/18/09

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A

See page 1 of 2

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

Sample Delivery Group Assignment Form

CLIENT: Tetra Tech NUS, Inc. (T010)
PROJECT NAME: Great Lakes CTO 064 (Site 21)
SDG#: DRAFT CTO064_002
MATRIX: Ground Water/ Soil

QC LEVEL: EDD/IV
Report Due: 12/11/2009
Client Sample Count: 8

Sample Type	Sampled	Received	Lab ID	Client ID	TAL Metals	Pest	PCB	Herb	VOA	BNA
Client Sample	11/13/2009	11/14/2009	0911147-01	NTC21SB02-SO-0406	X	X	X	X	X	X
Client Sample	11/15/2009	11/17/2009	0911151-01	NTC21MW0501	MS/MSD	MS/MSD	MS/MSD	MS/MSD	MS/MSD	MS/MSD
Field Duplicate	11/16/2009	11/17/2009	0911151-02	NTC21-FD111609-01	X	X	X	X	X	X
Client Sample	11/16/2009	11/17/2009	0911151-03	NTC21MW0201	X	X	X	X	X	X
Client Sample	11/16/2009	11/17/2009	0911151-04	NTC21MW0301	X	X	X	X	X	X
Client Sample	11/16/2009	11/17/2009	0911151-05	NTC21MW0401	X	X	X	X	X	X
Client Sample	11/16/2009	11/17/2009	0911151-06	NTC21MW0401	X					
Field Blank	11/17/2009	11/18/2009	0911181-01	FB-111709-01					X	
Client Sample	11/17/2009	11/18/2009	0911181-02	NTC21MW0101	X	X	X	X	X	X
Client Sample	11/17/2009	11/18/2009	0911181-03	NTC21MW0601	X	X	X	X	X	X

VOC

ORGANIC CASE NARRATIVE
Tetra Tech NUS, Inc./Great Lakes, IL CTO064
Project Manager: B. Cummings
SDG: CTO064_002
Work order: 0911147, 0911151 and 0911181

Sampled	Received	Lab ID	Client ID
11/13/2009	11/14/2009	0911147-01	NTC21SB02-SO-0406
11/15/2009	11/17/2009	0911151-01	NTC21MW0501
11/16/2009	11/17/2009	0911151-02	NTC21-FD111609-01
11/16/2009	11/17/2009	0911151-03	NTC21MW0201
11/16/2009	11/17/2009	0911151-04	NTC21MW0301
11/16/2009	11/17/2009	0911151-05	NTC21MW0401
11/17/2009	11/18/2009	0911181-02	NTC21MW0101
11/17/2009	11/18/2009	0911181-03	NTC21MW0601

Volatiles

Method: The samples were extracted/analyzed for a client specified analyte list by USEPA SW-846 Methods 5030B/8260B (purge and trap then capillary column GC/MS) for waters or 5035B/8260B (Encore field sampling followed by laboratory preservation the purge and trap followed by capillary column GC/MS) for solids upon receipt to the laboratory in satisfactory condition.

Comments: The volatile analyses for these samples were satisfactorily completed within sample holding times and met the corresponding specifications with the following note/exceptions:

- BFB Tuning: All method tuning criteria were met.
- Calibration Criteria: All calibration criteria were met.
- Method Blank Results: One or more target analytes were detected in the method blanks. Reported concentrations in the samples are qualified with a "B".
- Surrogate Recoveries: All recoveries were within limits.
- V5BLK1119FLCS Results: Recovery of isopropylbenzene exceeded the limit of 130% at 135%. All other recoveries were within limits.
- V3BLK1120ELCS/LCSD Results: Recoveries of chloromethane exceeded the limit of 125% at 128%/131%. All other recoveries and relative percent differences were within limits.
- V3BLK1122LCS Results: Recoveries of acetone and chloromethane exceeded the limits of 140% and 125% at 202% and 158% while all other recoveries were within limits.
- MS/MSD Results: Recoveries of chloromethane exceeded the limit of 125% at 156%/161%. All other recoveries and relative percent differences were within limits.
- Internal Standard Area Counts: All area counts were within limits.
- Dilutions: All samples were analyzed without dilution.
- Manual integrations: Quantitation signals were manually integrated in order to accurately reflect the peak areas based on the technical judgment of the analyst. A listing of the manual integrations performed and reason for the integration is included with the logs. Before and after "pictures" are available where manual integrations were performed.

I certify that, to the best of my knowledge and based upon my inquiry of those individuals immediately responsible for obtaining the information, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in the case narrative, as verified by the following signature.

Marcia K. McGinnity
Data Quality Manager

ANALYTICAL REPORT TERMS AND QUALIFIERS (ORGANIC)

MDL: The method detection limit (MDL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The MDL is determined from analysis of a sample containing the analyte in a given matrix.

EQL: The estimated quantitation limit (EQL), also known as the reporting limit (RL), is defined as the estimated concentration above which quantitative results can be obtained with a specific degree of confidence. Empirical Laboratories defines the EQL to be at or near the lowest standard of the calibration curve.

U: The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte quantitated below the MDL.

B: The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the correct sample result might be less than the reported result and, perhaps, zero.

D: When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".

E: The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound.

J: The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The mass spectral data pass the identification criteria showing that the compound is present, but the calculated result is less than the EQL. One should feel confident that the result is greater than zero and less than the EQL.

P: The associated numerical value is an estimated quantity. There is greater than a 40% difference between the two GC columns for the detected concentrations. The higher of the two values is reported.

M: The presence of an "M" to the right of an analytical result indicates that the sample matrix interfered with the quantitation of the analyte. In GC and HPLC, results are reported from the column with the lower concentration.

I: The presence of an "I" to the right of an analytical result that the presence of a qualitative interference could have caused a false positive or over estimation of the analyte. In GC and HPLC, results are reported from the column with the lower concentration.

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA83153

Lab File ID: V5BFB01 BFB Injection Date: 10/02/09

Instrument ID: VOA5 BFB Injection Time: 1020

GC Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.7
75	30.0 - 60.0% of mass 95	42.5
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.0
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	100.8
175	5.0 - 9.0% of mass 174	7.7 (7.7)1
176	95.0 - 101.0% of mass 174	98.5 (97.7)1
177	5.0 - 9.0% of mass 176	7.0 (7.1)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01		V5STD2PPB	V5STD01	10/02/09	1051
02		V5STD5PPB	V5STD02	10/02/09	1122
03		V5STD10PPB	V5STD03	10/02/09	1153
04		V5STD20PPB	V5STD04	10/02/09	1224
05		V5STD50PPB	V5STD05	10/02/09	1256
06	V5BLK1002LCS	V5BLK1002LCS	V5ICV01	10/02/09	1327
07		V5STD100PPB	V5STD06	10/02/09	1358
08		V5STD200PPB	V5STD07	10/02/09	1429
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

page 1 of 1

FORM V VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5 Calibration Date(s): 10/02/09 10/02/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 1051 1429

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
Acetone	LINR	0.00000000	8.817e-002		0.998
~~Acrolein~~	AVRG		~~3.143e-002~~		14.3
Acrylonitrile	AVRG		6.189e-002		14.6
Benzene	AVRG		1.15969595		9.2
Bromobenzene	AVRG		0.93913497		5.3
Bromochloromethane	AVRG		0.18430562		8.6
Bromodichloromethane	AVRG		0.38634915		9.0
Bromoform	AVRG		0.47469350		14.9
Bromomethane	AVRG		0.26616532		8.8
2-Butanone	LINR	0.00000000	0.11978584		0.998
n-Butylbenzene	AVRG		2.79599379		7.6
sec-Butylbenzene	AVRG		3.43982164		10.1
tert-Butylbenzene	AVRG		2.15176029		8.3
Carbon disulfide	AVRG		0.83259214		7.5
Carbon tetrachloride	AVRG		0.38767632		8.3
Chlorobenzene	AVRG		2.14944782		10.8
Chloroethane	AVRG		0.17168868		7.3
2-Chloroethyl vinyl ether	LINR	0.00000000	0.10213250		0.999
Chloroform	AVRG		0.60797242		8.9
1-Chlorohexane	AVRG		1.11788394		10.5
Chloromethane	AVRG		0.38328271		9.2
2-Chlorotoluene	AVRG		2.23457226		7.2
4-Chlorotoluene	AVRG		2.15033461		10.1
Cyclohexane	AVRG		0.47956779		6.9
Dibromochloromethane	AVRG		0.80065580		8.2
1,2-Dibromo-3-chloropropane	AVRG		0.13210715		8.4
1,2-Dibromoethane	AVRG		0.66539171		6.3
Dibromomethane	AVRG		0.18730109		5.9
1,2-Dichlorobenzene	AVRG		1.55427247		6.1
1,3-Dichlorobenzene	AVRG		1.71929684		5.2
~~t-Butyl alcohol~~	AVRG		~~1.703e-002~~		12.8
1,4-Dichlorobenzene	AVRG		1.75615514		15.0
Dichlorodifluoromethane	AVRG		0.35896206		8.5
1,1-Dichloroethane	AVRG		0.45846995		6.2
1,2-Dichloroethane	AVRG		0.34215185		5.1
1,1-Dichloroethene	AVRG		0.23719959		9.4
cis-1,2-Dichloroethene	AVRG		0.36055185		6.8

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5 Calibration Date(s): 10/02/09 10/02/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 1051 1429

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
1,2-Dichloroethene(total)	AVRG		0.30975638		5.9
trans-1,2-Dichloroethene	AVRG		0.25896091		5.2
1,2-Dichloropropane	AVRG		0.30746477		8.4
1,3-Dichloropropane	AVRG		0.92500533		8.0
2,2-Dichloropropane	AVRG		0.41704008		9.2
1,1-Dichloropropene	AVRG		0.40171491		13.6
cis-1,3-Dichloropropene	AVRG		0.42905979		11.2
trans-1,3-Dichloropropene	LINR	0.00000000	0.85487363		0.997
Ethylbenzene	AVRG		3.31658815		12.1
Ethyl methacrylate	LINR	0.00000000	0.70394267		0.998
Hexachlorobutadiene	AVRG		0.67985507		5.4
2-Hexanone	LINR	0.00000000	0.41901345		0.995
Iodomethane	LINR	0.00000000	0.51839912		0.998
Isopropylbenzene	AVRG		2.72467361		11.4
p-Isopropyltoluene	AVRG		2.60106959		9.6
Methyl acetate	AVRG		0.17290943		10.0
Methyl cyclohexane	AVRG		0.46797921		9.5
Methylene chloride	2ORDR	0.00000000	2.94325149	0.63578538	0.998
Methyl methacrylate	LINR	0.00000000	0.19079860		0.999
4-Methyl-2-pentanone	AVRG		0.20599337		11.5
MTBE	AVRG		0.44857601		7.0
Naphthalene	AVRG		1.79270322		11.5
n-Propylbenzene	AVRG		3.67059246		11.5
Styrene	2ORDR	0.00000000	0.43162839	1.456e-002	0.998
1,1,1,2-Tetrachloroethane	AVRG		0.74283743		8.1
1,1,2,2-Tetrachloroethane	AVRG		0.71598392		5.2
Tetrachloroethene	AVRG		0.98088101		11.3
Tetrahydrofuran	LINR	0.00000000	5.376e-002		1.000
Toluene	AVRG		1.76055311		7.5
1,2,3-Trichlorobenzene	AVRG		0.99252560		6.8
1,2,4-Trichlorobenzene	AVRG		1.11556143		7.3
1,1,1-Trichloroethane	AVRG		0.42292084		5.8
1,1,2-Trichloroethane	AVRG		0.52513858		10.2
Trichloroethene	AVRG		0.32005131		6.8
Trichlorotrifluoroethane	AVRG		0.28745575		7.3
Trichlorofluoromethane	AVRG		0.44415423		7.4
1,2,3-Trichloropropane	AVRG		0.16530343		6.1

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5 Calibration Date(s): 10/02/09 10/02/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 1051 1429

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
1,2,4-Trimethylbenzene	AVRG		2.49443663		7.3
1,3,5-Trimethylbenzene	AVRG		2.45476551		8.1
Vinyl acetate	AVRG		0.43517186		14.9
Vinyl chloride	2ORDR	0.00000000	2.46148664	0.80791744	1.000
m,p-Xylene	2ORDR	0.00000000	0.21241081	1.61e-002	0.999
Xylene(total)	2ORDR	0.00000000	8.17e-002	2.704e-003	0.999
Di-Isopropyl Ether	AVRG		1.06658300		9.1
ETBE	AVRG		0.71078471		13.4
tert-Amyl Methyl Ether	AVRG		0.60852190		8.6
Dibromofluoromethane	AVRG		0.33611443		3.5
1,2-Dichloroethane-d4	AVRG		4.804e-002		5.2
Toluene-d8	AVRG		2.22430730		4.3
Bromofluorobenzene	AVRG		0.89721421		3.8

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5 Calibration Date(s): 10/02/09 10/02/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 1051 1429

LAB FILE ID: RF2: V5STD01 RF5: V5STD02 RF10: V5STD03
RF20: V5STD04 RF50: V5STD05

COMPOUND	RF2	RF5	RF10	RF20	RF50
Acetone	0.163	0.102	0.091	0.102	0.094
Acrolein	0.038	0.029	0.027	0.036	0.032
Acrylonitrile	0.080	0.055	0.054	0.068	0.058
Benzene	1.228	1.058	1.082	1.338	1.166
Bromobenzene	0.966	0.844	0.928	1.002	0.920
Bromochloromethane	0.195	0.161	0.166	0.204	0.190
Bromodichloromethane	0.391	0.359	0.340	0.438	0.380
Bromoform	0.422	0.377	0.419	0.487	0.506
Bromomethane	0.290	0.227	0.240	0.278	0.276
2-Butanone	0.144	0.072	0.090	0.122	0.128
n-Butylbenzene	2.684	2.665	2.873	3.030	3.028
sec-Butylbenzene	3.230	3.462	3.571	3.911	3.636
tert-Butylbenzene	2.000	1.986	2.089	2.392	2.379
Carbon disulfide	0.866	0.789	0.718	0.901	0.872
Carbon tetrachloride	0.363	0.352	0.351	0.426	0.406
Chlorobenzene	2.274	2.187	2.158	2.366	2.355
Chloroethane	0.186	0.178	0.160	0.183	0.169
2-Chloroethyl vinyl ether	0.076	0.060	0.072	0.101	0.098
Chloroform	0.707	0.556	0.563	0.641	0.618
1-Chlorohexane	1.126	1.034	1.095	1.305	1.225
Chloromethane	0.437	0.358	0.353	0.426	0.389
2-Chlorotoluene	2.079	2.096	2.317	2.516	2.305
4-Chlorotoluene	2.201	1.860	2.102	2.436	2.346
Cyclohexane	0.468	0.424	0.496	0.522	0.470
Dibromochloromethane	0.790	0.709	0.750	0.878	0.894
1,2-Dibromo-3-chloropropane	0.132	0.120	0.119	0.130	0.132
1,2-Dibromoethane	0.671	0.647	0.612	0.715	0.728
Dibromomethane	0.188	0.183	0.171	0.208	0.186
1,2-Dichlorobenzene	1.638	1.481	1.578	1.656	1.550
1,3-Dichlorobenzene	1.776	1.596	1.655	1.846	1.796
t-Butyl alcohol	0.021	0.014	0.015	0.019	0.016
1,4-Dichlorobenzene	2.174	1.812	1.789	1.916	1.709
Dichlorodifluoromethane	0.386	0.320	0.323	0.402	0.365
1,1-Dichloroethane	0.498	0.427	0.438	0.492	0.470
1,2-Dichloroethane	0.350	0.325	0.315	0.363	0.349
1,1-Dichloroethene	0.270	0.225	0.207	0.258	0.230
cis-1,2-Dichloroethene	0.366	0.332	0.324	0.384	0.367

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5 Calibration Date(s): 10/02/09 10/02/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 1051 1429

LAB FILE ID: RF2: V5STD01 RF5: V5STD02 RF10: V5STD03
RF20: V5STD04 RF50: V5STD05

COMPOUND	RF2	RF5	RF10	RF20	RF50
1,2-Dichloroethene(total)	0.312	0.284	0.289	0.328	0.313
trans-1,2-Dichloroethene	0.258	0.235	0.254	0.272	0.259
1,2-Dichloropropane	0.271	0.294	0.297	0.336	0.338
1,3-Dichloropropane	0.948	0.881	0.887	1.047	0.995
2,2-Dichloropropane	0.422	0.361	0.371	0.466	0.424
1,1-Dichloropropene	0.368	0.323	0.352	0.468	0.428
cis-1,3-Dichloropropene	0.414	0.371	0.376	0.482	0.483
trans-1,3-Dichloropropene	0.641	0.648	0.741	0.938	0.931
Ethylbenzene	3.510	3.271	3.181	3.583	3.856
Ethyl methacrylate	0.524	0.540	0.590	0.685	0.786
Hexachlorobutadiene	0.708	0.610	0.662	0.723	0.696
2-Hexanone	0.313	0.338	0.357	0.439	0.459
Iodomethane	0.391	0.375	0.427	0.556	0.528
Isopropylbenzene	2.703	2.638	2.679	3.106	3.040
p-Isopropyltoluene	2.648	2.639	2.678	2.922	2.760
Methyl acetate	0.208	0.173	0.163	0.176	0.163
Methyl cyclohexane	0.428	0.427	0.439	0.540	0.479
Methylene chloride	0.897	0.418	0.334	0.342	0.274
Methyl methacrylate	0.131	0.108	0.129	0.179	0.194
4-Methyl-2-pentanone	0.202	0.174	0.173	0.229	0.224
MTBE	0.495	0.406	0.426	0.481	0.452
Naphthalene	2.132	1.476	1.624	1.847	1.775
n-Propylbenzene	3.496	3.407	3.780	4.324	4.004
Styrene	1.803	1.741	1.652	2.344	2.285
1,1,1,2-Tetrachloroethane	0.730	0.701	0.717	0.833	0.812
1,1,2,2-Tetrachloroethane	0.746	0.656	0.698	0.747	0.753
Tetrachloroethene	1.121	0.982	0.997	1.058	1.029
Tetrahydrofuran	0.078	0.044	0.050	0.051	0.054
Toluene	1.876	1.761	1.746	1.818	1.910
1,2,3-Trichlorobenzene	1.097	0.878	0.950	1.024	0.998
1,2,4-Trichlorobenzene	1.184	0.952	1.126	1.197	1.131
1,1,1-Trichloroethane	0.430	0.389	0.392	0.450	0.421
1,1,2-Trichloroethane	0.553	0.498	0.497	0.620	0.553
Trichloroethene	0.326	0.301	0.312	0.360	0.319
Trichlorotrifluoroethane	0.302	0.262	0.266	0.318	0.287
Trichlorofluoromethane	0.440	0.398	0.414	0.491	0.466
1,2,3-Trichloropropane	0.177	0.159	0.158	0.174	0.175

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5 Calibration Date(s): 10/02/09 10/02/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 1051 1429

LAB FILE ID: RF2: V5STD01 RF5: V5STD02 RF10: V5STD03
RF20: V5STD04 RF50: V5STD05

COMPOUND	RF2	RF5	RF10	RF20	RF50
1,2,4-Trimethylbenzene	2.543	2.453	2.610	2.771	2.412
1,3,5-Trimethylbenzene	2.344	2.269	2.479	2.715	2.667
Vinyl acetate	0.364	0.345	0.407	0.509	0.468
Vinyl chloride	0.363	0.289	0.246	0.391	0.341
m,p-Xylene	2.916	2.747	2.630	2.832	2.808
Xylene(total)	8.690	8.227	7.925	8.644	8.564
Di-Isopropyl Ether	1.042	0.915	0.973	1.128	1.129
ETBE	0.599	0.583	0.674	0.804	0.772
tert-Amyl Methyl Ether	0.701	0.558	0.540	0.638	0.607
Dibromofluoromethane	0.343	0.327	0.344	0.346	0.330
1,2-Dichloroethane-d4	0.051	0.050	0.049	0.046	0.047
Toluene-d8	2.136	2.303	2.253	2.154	2.381
Bromofluorobenzene	0.884	0.942	0.881	0.877	0.932

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5 Calibration Date(s): 10/02/09 10/02/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 1051 1429

LAB FILE ID: RF100: V5STD06 RF200: V5STD07

COMPOUND	RF100	RF200
Acetone	0.093	0.086
Acrolein	0.031	0.026
Acrylonitrile	0.060	0.059
Benzene	1.204	1.042
Bromobenzene	0.959	0.954
Bromochloromethane	0.192	0.182
Bromodichloromethane	0.425	0.372
Bromoform	0.543	0.568
Bromomethane	0.282	0.269
2-Butanone	0.127	0.117
n-Butylbenzene	2.850	2.443
sec-Butylbenzene	3.459	2.810
tert-Butylbenzene	2.217	1.998
Carbon disulfide	0.866	0.817
Carbon tetrachloride	0.420	0.397
Chlorobenzene	1.991	1.714
Chloroethane	0.172	0.152
2-Chloroethyl vinyl ether	0.106	0.101
Chloroform	0.605	0.565
1-Chlorohexane	1.087	0.952
Chloromethane	0.362	0.358
2-Chlorotoluene	2.244	2.085
4-Chlorotoluene	2.216	1.890
Cyclohexane	0.512	0.464
Dibromochloromethane	0.795	0.788
1,2-Dibromo-3-chloropropane	0.143	0.149
1,2-Dibromoethane	0.646	0.638
Dibromomethane	0.192	0.182
1,2-Dichlorobenzene	1.592	1.384
1,3-Dichlorobenzene	1.690	1.676
t-Butyl alcohol	0.018	0.016
1,4-Dichlorobenzene	1.541	1.352
Dichlorodifluoromethane	0.366	0.350
1,1-Dichloroethane	0.438	0.445
1,2-Dichloroethane	0.358	0.335
1,1-Dichloroethene	0.248	0.222
cis-1,2-Dichloroethene	0.389	0.361

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5 Calibration Date(s): 10/02/09 10/02/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 1051 1429

LAB FILE ID: RF100: V5STD06 RF200: V5STD07

COMPOUND	RF100	RF200
1,2-Dichloroethene(total)	0.334	0.309
trans-1,2-Dichloroethene	0.278	0.258
1,2-Dichloropropane	0.326	0.291
1,3-Dichloropropane	0.876	0.840
2,2-Dichloropropane	0.449	0.426
1,1-Dichloropropene	0.454	0.417
cis-1,3-Dichloropropene	0.467	0.410
trans-1,3-Dichloropropene	0.915	0.832
Ethylbenzene	3.228	2.586
Ethyl methacrylate	0.722	0.694
Hexachlorobutadiene	0.678	0.681
2-Hexanone	0.458	0.405
Iodomethane	0.555	0.508
Isopropylbenzene	2.750	2.157
p-Isopropyltoluene	2.407	2.153
Methyl acetate	0.172	0.154
Methyl cyclohexane	0.513	0.449
Methylene chloride	0.291	0.249
Methyl methacrylate	0.193	0.190
4-Methyl-2-pentanone	0.223	0.216
MTBE	0.448	0.431
Naphthalene	1.877	1.819
n-Propylbenzene	3.658	3.024
Styrene	1.825	1.687
1,1,1,2-Tetrachloroethane	0.742	0.664
1,1,2,2-Tetrachloroethane	0.727	0.685
Tetrachloroethene	0.892	0.788
Tetrahydrofuran	0.053	0.054
Toluene	1.703	1.510
1,2,3-Trichlorobenzene	1.004	0.997
1,2,4-Trichlorobenzene	1.136	1.082
1,1,1-Trichloroethane	0.450	0.428
1,1,2-Trichloroethane	0.492	0.463
Trichloroethene	0.328	0.294
Trichlorotrifluoroethane	0.301	0.275
Trichlorofluoromethane	0.470	0.431
1,2,3-Trichloropropane	0.162	0.151

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5 Calibration Date(s): 10/02/09 10/02/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 1051 1429

LAB FILE ID: RF100: V5STD06 RF200: V5STD07

COMPOUND	RF100	RF200
1,2,4-Trimethylbenzene	2.491	2.181
1,3,5-Trimethylbenzene	2.520	2.188
Vinyl acetate	0.500	0.453
Vinyl chloride	0.306	0.259
m,p-Xylene	2.266	1.712
Xylene(total)	7.002	5.507
Di-Isopropyl Ether	1.195	1.084
ETBE	0.817	0.727
tert-Amyl Methyl Ether	0.608	0.608
Dibromofluoromethane	0.347	0.316
1,2-Dichloroethane-d4	0.048	0.044
Toluene-d8	2.222	2.121
Bromofluorobenzene	0.917	0.846

FORM VI VOA

VOLATILE INITIAL CALIBRATION VERIFICATION

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5 Calibration Date: 10/02/09 Time: 1327

Lab File ID: V5ICV01 Init. Calib. Date(s): 10/02/09 10/02/09

Heated Purge: (Y/N) Y Init. Calib. Times: 1051 1429

GC Column: RTX-VRX ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acetone	0.104	0.083	100.0	94.49		LINR	-5.5	25.0
~~Acrolein~~	0.031	~~0.028~~	250.0	224.5		AVRG	-10.2	25.0
Acrylonitrile	0.062	0.052	250.0	211.5		AVRG	-15.4	25.0
Benzene	1.160	1.163	50.00	50.15		AVRG	0.3	25.0
Bromobenzene	0.939	0.871	50.00	46.37		AVRG	-7.2	25.0
Bromochloromethane	0.184	0.173	50.00	46.99		AVRG	-6.0	25.0
Bromodichloromethane	0.386	0.383	50.00	49.60		AVRG	-0.8	25.0
Bromoform	0.474	0.440	50.00	46.30	0.100	AVRG	-7.4	25.0
Bromomethane	0.266	0.261	50.00	49.01		AVRG	-2.0	25.0
2-Butanone	0.114	0.110	100.0	92.17		LINR	-7.8	25.0
n-Butylbenzene	2.796	2.654	50.00	47.46		AVRG	-5.1	25.0
sec-Butylbenzene	3.440	3.374	50.00	49.04		AVRG	-1.9	25.0
tert-Butylbenzene	2.152	2.014	50.00	46.81		AVRG	-6.4	25.0
Carbon disulfide	0.833	0.914	50.00	54.90		AVRG	9.8	25.0
Carbon tetrachloride	0.388	0.394	50.00	50.83		AVRG	1.7	25.0
Chlorobenzene	2.149	2.074	50.00	48.26	0.300	AVRG	-3.5	25.0
Chloroethane	0.171	0.178	50.00	51.98		AVRG	4.0	25.0
2-Chloroethyl vinyl ether	0.088	0.109	100.0	106.7		LINR	6.7	25.0
Chloroform	0.608	0.554	50.00	45.56		AVRG	-8.9	25.0
1-Chlorohexane	1.118	1.181	50.00	52.84		AVRG	5.7	25.0
Chloromethane	0.383	0.418	50.00	54.50	0.100	AVRG	9.0	25.0
2-Chlorotoluene	2.234	2.178	50.00	48.74		AVRG	-2.5	25.0
4-Chlorotoluene	2.150	2.109	50.00	49.04		AVRG	-1.9	25.0
Cyclohexane	0.479	0.524	50.00	54.65		AVRG	9.3	25.0
Dibromochloromethane	0.800	0.834	50.00	52.08		AVRG	4.2	25.0
1,2-Dibromo-3-chloropropane	0.132	0.113	50.00	42.75		AVRG	-14.5	25.0
1,2-Dibromoethane	0.665	0.630	50.00	47.36		AVRG	-5.3	25.0
Dibromomethane	0.187	0.172	50.00	45.98		AVRG	-8.0	25.0
1,2-Dichlorobenzene	1.554	1.490	50.00	47.94		AVRG	-4.1	25.0
1,3-Dichlorobenzene	1.719	1.588	50.00	46.18		AVRG	-7.6	25.0
~~t-Butyl alcohol~~	0.017	~~0.017~~	250.0	247.2		AVRG	-1.1	25.0
1,4-Dichlorobenzene	1.756	1.632	50.00	46.48		AVRG	-7.0	25.0
Dichlorodifluoromethane	0.359	0.430	50.00	59.91		AVRG	19.8	25.0
1,1-Dichloroethane	0.458	0.433	50.00	47.23	0.100	AVRG	-5.5	25.0
1,2-Dichloroethane	0.342	0.335	50.00	48.99		AVRG	-2.0	25.0
1,1-Dichloroethene	0.237	0.238	50.00	50.19		AVRG	0.4	25.0
cis-1,2-Dichloroethene	0.360	0.352	50.00	48.80		AVRG	-2.4	25.0

VOLATILE INITIAL CALIBRATION VERIFICATION

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5 Calibration Date: 10/02/09 Time: 1327

Lab File ID: V5ICV01 Init. Calib. Date(s): 10/02/09 10/02/09

Heated Purge: (Y/N) Y Init. Calib. Times: 1051 1429

GC Column: RTX-VRX ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
1,2-Dichloroethene(total)	0.310	0.304	100.0	98.07		AVRG	-2.0	25.0
trans-1,2-Dichloroethene	0.259	0.255	50.00	49.27		AVRG	-1.5	25.0
1,2-Dichloropropane	0.308	0.327	50.00	53.25		AVRG	6.5	25.0
1,3-Dichloropropane	0.925	0.909	50.00	49.15		AVRG	-1.7	25.0
2,2-Dichloropropane	0.417	0.399	50.00	47.80		AVRG	-4.4	25.0
1,1-Dichloropropene	0.401	0.422	50.00	52.56		AVRG	5.1	25.0
cis-1,3-Dichloropropene	0.429	0.437	50.00	50.88		AVRG	1.8	25.0
trans-1,3-Dichloropropene	0.806	0.889	50.00	52.02		LINR	4.0	25.0
Ethylbenzene	3.316	3.598	50.00	54.24		AVRG	8.5	25.0
Ethyl methacrylate	0.649	0.672	50.00	47.72		LINR	-4.6	25.0
Hexachlorobutadiene	0.680	0.721	50.00	53.05		AVRG	6.1	25.0
2-Hexanone	0.396	0.444	100.0	106.0		LINR	6.0	25.0
Iodomethane	0.477	0.554	50.00	53.46		LINR	6.9	25.0
Isopropylbenzene	2.725	3.364	50.00	61.74		AVRG	23.5	25.0
p-Isopropyltoluene	2.601	2.753	50.00	52.91		AVRG	5.8	25.0
Methyl acetate	0.173	0.162	50.00	46.88		AVRG	-6.2	25.0
Methyl cyclohexane	0.468	0.464	50.00	49.58		AVRG	-0.8	25.0
Methylene chloride	0.401	0.266	50.00	42.91		2ORDR	-14.2	25.0
Methyl methacrylate	0.160	0.164	50.00	42.89		LINR	-14.2	25.0
4-Methyl-2-pentanone	0.206	0.212	100.0	102.8		AVRG	2.8	25.0
MTBE	0.448	0.395	50.00	44.01		AVRG	-12.0	25.0
Naphthalene	1.793	1.638	50.00	45.68		AVRG	-8.6	25.0
n-Propylbenzene	3.670	3.308	50.00	45.05		AVRG	-9.9	25.0
Styrene	1.905	2.232	50.00	54.20		2ORDR	8.4	25.0
1,1,1,2-Tetrachloroethane	0.743	0.795	50.00	53.53		AVRG	7.1	25.0
1,1,2,2-Tetrachloroethane	0.716	0.643	50.00	44.90	0.300	AVRG	-10.2	25.0
Tetrachloroethene	0.981	0.964	50.00	49.14		AVRG	-1.7	25.0
~~Tetrahydrofuran~~	0.055	~~0.047~~	50.00	44.11		LINR	-11.8	25.0
Toluene	1.760	1.816	50.00	51.57		AVRG	3.1	25.0
1,2,3-Trichlorobenzene	0.992	0.890	50.00	44.84		AVRG	-10.3	25.0
1,2,4-Trichlorobenzene	1.115	1.034	50.00	46.34		AVRG	-7.3	25.0
1,1,1-Trichloroethane	0.423	0.393	50.00	46.44		AVRG	-7.1	25.0
1,1,2-Trichloroethane	0.525	0.483	50.00	45.97		AVRG	-8.0	25.0
Trichloroethene	0.320	0.320	50.00	50.02		AVRG	0.0	25.0
Trichlorotrifluoroethane	0.287	0.304	50.00	52.90		AVRG	5.8	25.0
Trichlorofluoromethane	0.444	0.468	50.00	52.66		AVRG	5.3	25.0
1,2,3-Trichloropropane	0.165	0.156	50.00	47.07		AVRG	-5.9	25.0

VOLATILE INITIAL CALIBRATION VERIFICATION

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5 Calibration Date: 10/02/09 Time: 1327

Lab File ID: V5ICV01 Init. Calib. Date(s): 10/02/09 10/02/09

Heated Purge: (Y/N) Y Init. Calib. Times: 1051 1429

GC Column: RTX-VRX ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
1,2,4-Trimethylbenzene	2.494	2.538	50.00	50.88		AVRG	1.8	25.0
1,3,5-Trimethylbenzene	2.454	2.389	50.00	48.66		AVRG	-2.7	25.0
Vinyl acetate	0.435	0.443	100.0	101.8		AVRG	1.8	25.0
Vinyl chloride	0.314	0.349	50.00	51.14		2ORDR	2.3	25.0
Xylene(total)	7.794	7.760	150.0	138.8		2ORDR	-7.5	25.0
Di-Isopropyl Ether	1.066	1.081	50.00	50.69		AVRG	1.4	25.0
ETBE	0.711	0.774	50.00	54.48		AVRG	9.0	25.0
tert-Amyl Methyl Ether	0.608	0.569	50.00	46.76		AVRG	-6.5	25.0
Dibromofluoromethane	0.336	0.342	30.00	30.50		AVRG	1.7	25.0
1,2-Dichloroethane-d4	0.048	0.045	30.00	28.10		AVRG	-6.3	25.0
Toluene-d8	2.224	2.376	30.00	32.04		AVRG	6.8	25.0
Bromofluorobenzene	0.897	0.910	30.00	30.43		AVRG	1.4	25.0

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Lab File ID: SEQ-TUN1 BFB Injection Date: 11/19/09

Instrument ID: VOA5 BFB Injection Time: 1540

GC Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	26.2
75	30.0 - 60.0% of mass 95	47.9
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.6
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	55.3
175	5.0 - 9.0% of mass 174	4.0 (7.3)1
176	95.0 - 101.0% of mass 174	52.7 (95.3)1
177	5.0 - 9.0% of mass 176	4.3 (8.2)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SEQ-CCV1	SEQ-CCV1	SEQ-CCV1	11/19/09	1611
02	V5BLK1119LCS	9K20012-BS1	V5LCS01	11/19/09	1642
03	V5BLK1119	9K20012-BLK1	V5BLK01	11/19/09	1815
04	NTC21SB02-SO	0911147-01	1114701A	11/19/09	1917
05					
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page 1 of 1

FORM V VOA

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Instrument ID: VOA5 Calibration Date: 11/19/09 Time: 1611

Lab File ID: SEQ-CCV1 Init. Calib. Date(s): 01/16/09 10/02/09

Heated Purge: (Y/N) Y Init. Calib. Times: 0950 1429

GC Column: RTX-VRX ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF100	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acetone	0.104	0.088	200.0	199.3		LINR	-0.3	
Benzene	1.160	1.276	100.0	110.0		AVRG	10.0	
Bromodichloromethane	0.386	0.431	100.0	111.5		AVRG	11.5	
Bromoform	0.474	0.562	100.0	118.3	0.100	AVRG	18.3	
Bromomethane	0.266	0.259	100.0	97.33		AVRG	-2.7	
2-Butanone	0.114	0.136	200.0	226.3		LINR	13.2	
Carbon disulfide	0.833	0.763	100.0	91.70		AVRG	-8.3	
Carbon tetrachloride	0.388	0.436	100.0	112.5		AVRG	12.5	
Chlorobenzene	2.149	2.196	100.0	102.1	0.300	AVRG	2.1	
Chloroethane	0.171	0.164	100.0	95.48		AVRG	-4.5	
Chloroform	0.608	0.614	100.0	101.0		AVRG	1.0	20.0
Chloromethane	0.383	0.352	100.0	91.82	0.100	AVRG	-8.2	
Cyclohexane	0.479	0.513	100.0	107.0		AVRG	7.0	
Dibromochloromethane	0.800	0.889	100.0	111.0		AVRG	11.0	
1,2-Dibromo-3-chloropropane	0.132	0.152	100.0	115.3		AVRG	15.3	
1,2-Dibromoethane	0.665	0.726	100.0	109.0		AVRG	9.0	
1,2-Dichlorobenzene	1.554	1.662	100.0	106.9		AVRG	6.9	
1,3-Dichlorobenzene	1.719	1.703	100.0	99.06		AVRG	-0.9	
1,4-Dichlorobenzene	1.756	1.816	100.0	103.4		AVRG	3.4	
Dichlorodifluoromethane	0.359	0.344	100.0	95.79		AVRG	-4.2	
1,1-Dichloroethane	0.458	0.660	100.0	143.9	0.100	AVRG	43.9	
1,2-Dichloroethane	0.342	0.359	100.0	104.9		AVRG	4.9	
1,1-Dichloroethene	0.237	0.233	100.0	98.44		AVRG	-1.6	20.0
cis-1,2-Dichloroethene	0.360	0.380	100.0	105.5		AVRG	5.5	
trans-1,2-Dichloroethene	0.259	0.265	100.0	102.2		AVRG	2.2	
1,2-Dichloropropane	0.308	0.319	100.0	103.9		AVRG	3.9	20.0
cis-1,3-Dichloropropene	0.429	0.508	100.0	118.5		AVRG	18.5	
trans-1,3-Dichloropropene	0.806	0.944	100.0	110.4		LINR	10.4	
Ethylbenzene	3.316	3.576	100.0	107.8		AVRG	7.8	20.0
2-Hexanone	0.396	0.505	200.0	241.1		LINR	20.6	
Isopropylbenzene	2.725	2.847	100.0	104.5		AVRG	4.5	
Methyl acetate	0.173	0.122	100.0	70.74		AVRG	-29.3	
Methylene chloride	0.401	0.266	100.0	93.21		2ORDR	-6.8	
Methyl cyclohexane	0.468	0.504	100.0	107.6		AVRG	7.6	
Methyl-tert-butyl-ether	0.448	0.475	100.0	105.9		AVRG	5.9	
4-Methyl-2-pentanone	0.206	0.254	200.0	247.0		AVRG	23.5	
Styrene	1.905	2.053	100.0	109.1		2ORDR	9.1	

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Instrument ID: VOA5 Calibration Date: 11/19/09 Time: 1611

Lab File ID: SEQ-CCV1 Init. Calib. Date(s): 01/16/09 10/02/09

Heated Purge: (Y/N) Y Init. Calib. Times: 0950 1429

GC Column: RTX-VRX ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF100	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
1,1,2,2-Tetrachloroethane	0.716	0.726	100.0	101.4	0.300	AVRG	1.4	
Tetrachloroethene	0.981	1.090	100.0	111.1		AVRG	11.1	
Toluene	1.760	1.916	100.0	108.8		AVRG	8.8	20.0
1,2,4-Trichlorobenzene	1.115	1.189	100.0	106.6		AVRG	6.6	
1,1,1-Trichloroethane	0.423	0.458	100.0	108.4		AVRG	8.4	
1,1,2-Trichloroethane	0.525	0.550	100.0	104.8		AVRG	4.8	
Trichloroethene	0.320	0.360	100.0	112.3		AVRG	12.3	
Trichlorotrifluoroethane	0.287	0.281	100.0	97.89		AVRG	-2.1	
Trichlorofluoromethane	0.444	0.454	100.0	102.2		AVRG	2.2	
Vinyl chloride	0.314	0.291	100.0	94.52		2ORDR	-5.5	20.0
Xylene(total)	7.794	7.646	300.0	342.3		2ORDR	14.1	
Dibromofluoromethane	0.336	0.345	30.00	30.80		AVRG	2.6	
1,2-Dichloroethane-d4	0.048	0.047	30.00	29.17		AVRG	-2.8	
Toluene-d8	2.224	2.325	30.00	31.36		AVRG	4.5	
Bromofluorobenzene	0.897	0.857	30.00	28.66		AVRG	-4.4	

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMPIRICAL LABS Contract: SHAW

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA33683

Lab File ID: V3BFB01 BFB Injection Date: 10/12/09

Instrument ID: VOA3 BFB Injection Time: 1312

GC Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	29.6
75	30.0 - 60.0% of mass 95	52.3
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.2
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	73.6
175	5.0 - 9.0% of mass 174	5.7 (7.7)1
176	95.0 - 101.0% of mass 174	71.5 (97.1)1
177	5.0 - 9.0% of mass 176	6.0 (8.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	V3STD0.5PPB	V3STD0.5PPB	V3STD02	10/12/09	1614
02	V3STD1.0PPB	V3STD1.0PPB	V3STD03	10/12/09	1644
03	V3STD2.0PPB	V3STD2.0PPB	V3STD04	10/12/09	1714
04	V3STD10PPB	V3STD10PPB	V3STD05	10/12/09	1743
05	V3STD20PPB	V3STD20PPB	V3STD06	10/12/09	1813
06	V3STD50PPB	V3STD50PPB	V3STD07	10/12/09	1843
07	V3BLK1012LCS	V3BLK1012LCS	V3ICV	10/12/09	1913
08	V3STD100PPB	V3STD100PPB	V3STD08	10/12/09	1942
09	V3STD200PPB	V3STD200PPB	V3STD09	10/12/09	2012
10					
11					
12					
13					
14					
15					
16					
17					
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20					
21					
22					

page 1 of 1

FORM V VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: ELABN Case No.: NA SAS No.: NA SDG No.: SDGA33683

Instrument ID: VOA3 Calibration Date(s): 09/17/09 10/12/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 2112 2012

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
Acetone	LINR	0.00000000	9.385e-002		0.999
~~Acrolein~~	AVRG		~~4.486e-002~~		12.8
Acrylonitrile	AVRG		0.11329471		8.8
tert-Amyl Methyl Ether	LINR	0.00000000	0.60328977		1.000
Benzene	AVRG		0.88941215		9.9
Bromobenzene	AVRG		0.64641101		4.9
Bromochloromethane	AVRG		0.11632930		5.8
Bromodichloromethane	AVRG		0.32984959		3.5
Bromoform	AVRG		0.34714353		11.1
Bromomethane	AVRG		0.12449631		13.7
2-Butanone	LINR	0.00000000	0.12531256		0.999
~~t-Butyl alcohol~~	LINR	0.00000000	~~2.24e-002~~		0.999
n-Butylbenzene	AVRG		1.55506839		9.1
sec-Butylbenzene	AVRG		2.02838705		8.6
tert-Butylbenzene	AVRG		1.65331483		8.8
Carbon disulfide	AVRG		0.62096673		3.1
Carbon tetrachloride	AVRG		0.31558979		10.9
Chlorobenzene	AVRG		1.32777819		11.4
Chloroethane	AVRG		0.13101950		5.8
2-Chloroethyl vinyl ether	AVRG		0.19450128		5.6
Chloroform	AVRG		0.43317325		11.6
Chloromethane	AVRG		0.25526870		9.9
2-Chlorotoluene	AVRG		1.58753096		5.3
4-Chlorotoluene	AVRG		1.67032443		8.0
Cyclohexane	AVRG		0.49447323		1.9
Dibromochloromethane	AVRG		0.45999360		7.5
1,2-Dibromo-3-chloropropane	AVRG		0.11145982		11.9
1,2-Dibromoethane	AVRG		0.46773984		10.3
Dibromomethane	AVRG		0.15934104		6.6
1,2-Dichlorobenzene	AVRG		1.09401151		5.8
1,3-Dichlorobenzene	AVRG		1.14531003		8.3
1,4-Dichlorobenzene	AVRG		1.17428723		10.0
Dichlorodifluoromethane	AVRG		0.24340780		13.0
1,1-Dichloroethane	AVRG		0.49046577		3.8
1,2-Dichloroethane	AVRG		0.44584641		5.6
1,1-Dichloroethene	AVRG		0.18688498		14.2
cis-1,2-Dichloroethene	AVRG		0.23327282		10.8

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: ELABN Case No.: NA SAS No.: NA SDG No.: SDGA33683

Instrument ID: VOA3 Calibration Date(s): 09/17/09 10/12/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 2112 2012

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
1,2-Dichloroethene(total)	AVRG		0.22760225		12.3
trans-1,2-Dichloroethene	AVRG		0.22193167		14.0
1,2-Dichloropropane	AVRG		0.29288175		3.4
1,3-Dichloropropane	AVRG		0.74284923		11.6
2,2-Dichloropropane	AVRG		0.32773912		3.7
1,1-Dichloropropene	AVRG		0.32185055		1.6
cis-1,3-Dichloropropene	AVRG		0.40005200		4.8
trans-1,3-Dichloropropene	AVRG		0.64114084		6.8
Ethylbenzene	AVRG		2.38031316		7.9
Ethyl methacrylate	AVRG		0.52790774		5.0
Hexachlorobutadiene	LINR	1.058e-002	0.35728447		1.000
2-Hexanone	2ORDR	0.00000000	2.06152414	0.16503605	1.000
Iodomethane	AVRG		0.35274598		13.8
Isopropylbenzene	AVRG		2.02653496		14.4
p-Isopropyltoluene	AVRG		1.44569355		4.7
Methyl acetate	AVRG		0.28942455		5.0
Methylene chloride	AVRG		0.23647749		13.5
Methyl cyclohexane	AVRG		0.32251755		2.0
Methyl methacrylate	LINR	0.00000000	0.29958173		1.000
4-Methyl-2-pentanone	AVRG		0.28817802		10.4
MTBE	AVRG		0.59661813		4.3
Naphthalene	AVRG		1.38737911		13.3
n-Propylbenzene	AVRG		2.37163275		11.1
Styrene	AVRG		1.52030518		10.1
1,1,1,2-Tetrachloroethane	AVRG		0.47833719		14.7
1,1,2,2-Tetrachloroethane	AVRG		0.47856319		4.3
Tetrachloroethene	AVRG		0.55589010		8.3
Tetrahydrofuran	AVRG		8.314e-002		4.2
Toluene	AVRG		1.11212877		7.4
1,2,3-Trichlorobenzene	LINR	0.00000000	0.65850597		1.000
1,2,4-Trichlorobenzene	AVRG		0.78674535		13.3
1,1,1-Trichloroethane	AVRG		0.38771407		9.2
1,1,2-Trichloroethane	AVRG		0.35233165		11.8
Trichloroethene	AVRG		0.25004135		3.3
Trichlorofluoromethane	AVRG		0.40550760		13.3
Trichlorotrifluoroethane	AVRG		0.19758528		1.4
1,2,3-Trichloropropane	AVRG		0.17422607		7.0

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: ELABN Case No.: NA SAS No.: NA SDG No.: SDGA33683

Instrument ID: VOA3 Calibration Date(s): 09/17/09 10/12/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 2112 2012

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
1,2,4-Trimethylbenzene	AVRG		1.79845945		6.6
1,3,5-Trimethylbenzene	AVRG		1.74476312		6.6
Vinyl acetate	AVRG		0.50111991		10.7
Vinyl chloride	AVRG		0.25724626		10.7
m,p-Xylene	AVRG		1.89208279		11.9
Xylene(total)	AVRG		5.85356072		10.8
1-Chlorohexane	AVRG		0.61205175		11.0
Di-isopropyl ether	AVRG		1.08475337		4.5
ETBE	AVRG		0.84255390		2.6
Dibromofluoromethane	AVRG		0.26569486		6.9
1,2-Dichloroethane-d4	AVRG		5.533e-002		5.4
Toluene-d8	AVRG		2.03555440		3.4
Bromofluorobenzene	AVRG		1.00058384		4.6

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: ELABN Case No.: NA SAS No.: NA SDG No.: SDGA33683

Instrument ID: VOA3 Calibration Date(s): 09/17/09 10/12/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 2112 2012

LAB FILE ID: RF0.25: V3STD01 RF0.5: V3STD02 RF1: V3STD03
RF2: V3STD04 RF10: V3STD05

COMPOUND	RF0.25	RF0.5	RF1	RF2	RF10
Acetone		0.294	0.095	0.041	0.104
Acrolein		0.058	0.045	0.044	0.040
Acrylonitrile		0.136	0.107	0.109	0.114
tert-Amyl Methyl Ether			0.984	0.803	0.620
Benzene		1.090	0.902	0.859	0.882
Bromobenzene			0.716	0.625	0.644
Bromochloromethane		0.130	0.122	0.112	0.112
Bromodichloromethane		0.336	0.334	0.308	0.322
Bromoform		0.406	0.308	0.290	0.323
Bromomethane		0.150	0.127	0.112	0.097
2-Butanone				0.075	0.109
t-Butyl alcohol		0.207	0.022	0.023	0.021
n-Butylbenzene			1.813	1.553	1.507
sec-Butylbenzene			2.241	2.081	2.070
tert-Butylbenzene			1.807	1.744	1.683
Carbon disulfide			0.616	0.599	0.599
Carbon tetrachloride		0.384	0.270	0.281	0.302
Chlorobenzene			1.473	1.412	1.409
Chloroethane		0.146	0.136	0.121	0.129
2-Chloroethyl vinyl ether		0.188	0.174	0.188	0.203
Chloroform		0.553	0.445	0.404	0.420
Chloromethane		0.236	0.251	0.224	0.234
2-Chlorotoluene			1.707	1.554	1.620
4-Chlorotoluene			1.852	1.677	1.722
Cyclohexane			0.484	0.503	0.482
Dibromochloromethane		0.507	0.413	0.417	0.450
1,2-Dibromo-3-chloropropane			0.105	0.094	0.103
1,2-Dibromoethane		0.570	0.473	0.467	0.457
Dibromomethane		0.180	0.170	0.154	0.154
1,2-Dichlorobenzene			1.188	1.067	1.103
1,3-Dichlorobenzene			1.335	1.152	1.140
1,4-Dichlorobenzene			1.372	1.243	1.195
Dichlorodifluoromethane		0.320	0.239	0.219	0.232
1,1-Dichloroethane		0.533	0.482	0.480	0.476
1,2-Dichloroethane		0.488	0.473	0.426	0.446
1,1-Dichloroethene		0.252	0.177	0.178	0.167
cis-1,2-Dichloroethene		0.294	0.222	0.227	0.219

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: ELABN Case No.: NA SAS No.: NA SDG No.: SDGA33683

Instrument ID: VOA3 Calibration Date(s): 09/17/09 10/12/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 2112 2012

LAB FILE ID: RF0.25: V3STD01 RF0.5: V3STD02 RF1: V3STD03
RF2: V3STD04 RF10: V3STD05

COMPOUND	RF0.25	RF0.5	RF1	RF2	RF10
1,2-Dichloroethene(total)		0.297	0.218	0.217	0.214
trans-1,2-Dichloroethene		0.299	0.213	0.207	0.209
1,2-Dichloropropane		0.310	0.282	0.299	0.295
1,3-Dichloropropane		0.913	0.769	0.760	0.750
2,2-Dichloropropane			0.310	0.314	0.329
1,1-Dichloropropene			0.328	0.317	0.316
cis-1,3-Dichloropropene		0.431	0.394	0.368	0.388
trans-1,3-Dichloropropene		0.703	0.565	0.628	0.643
Ethylbenzene			2.583	2.452	2.434
Ethyl methacrylate		0.487	0.518	0.524	0.523
Hexachlorobutadiene			0.725	0.413	0.336
2-Hexanone			0.252	0.388	0.421
Iodomethane		0.444	0.317	0.290	0.377
Isopropylbenzene			2.253	2.260	2.138
p-Isopropyltoluene			1.536	1.421	1.451
Methyl acetate		0.300	0.276	0.319	0.275
Methylene chloride		0.315	0.235	0.227	0.225
Methyl cyclohexane			0.335	0.319	0.317
Methyl methacrylate			0.180	0.270	0.280
4-Methyl-2-pentanone		0.238	0.280	0.251	0.307
MTBE		0.624	0.616	0.542	0.590
Naphthalene			1.736	1.352	1.173
n-Propylbenzene			2.619	2.501	2.491
Styrene			1.583	1.534	1.626
1,1,1,2-Tetrachloroethane		0.638	0.483	0.436	0.462
1,1,2,2-Tetrachloroethane			0.520	0.478	0.482
Tetrachloroethene			0.598	0.597	0.564
Tetrahydrofuran				0.089	0.082
Toluene			1.164	1.178	1.150
1,2,3-Trichlorobenzene			1.024	0.706	0.606
1,2,4-Trichlorobenzene			1.018	0.772	0.707
1,1,1-Trichloroethane		0.474	0.374	0.370	0.366
1,1,2-Trichloroethane		0.427	0.388	0.333	0.352
Trichloroethene			0.253	0.258	0.245
Trichlorofluoromethane		0.537	0.395	0.377	0.389
Trichlorotrifluoroethane			0.200	0.195	0.198
1,2,3-Trichloropropane			0.192	0.174	0.181

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: ELABN Case No.: NA SAS No.: NA SDG No.: SDGA33683

Instrument ID: VOA3 Calibration Date(s): 09/17/09 10/12/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 2112 2012

LAB FILE ID: RF0.25: V3STD01 RF0.5: V3STD02 RF1: V3STD03
RF2: V3STD04 RF10: V3STD05

COMPOUND	RF0.25	RF0.5	RF1	RF2	RF10
1,2,4-Trimethylbenzene			1.899	1.853	1.836
1,3,5-Trimethylbenzene			1.838	1.755	1.799
Vinyl acetate		0.406	0.453	0.462	0.525
Vinyl chloride		0.323	0.257	0.234	0.244
m,p-Xylene			2.072	2.045	2.008
Xylene(total)			6.392	6.287	6.150
1-Chlorohexane			0.712	0.659	0.622
Di-isopropyl ether		1.163	1.052	0.997	1.077
ETBE			0.860	0.801	0.840
Dibromofluoromethane	0.313	0.260	0.262	0.264	0.263
1,2-Dichloroethane-d4	0.062	0.055	0.054	0.055	0.054
Toluene-d8		2.071	2.082	2.117	2.074
Bromofluorobenzene		1.003	1.015	1.047	1.036

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: ELABN Case No.: NA SAS No.: NA SDG No.: SDGA33683

Instrument ID: VOA3 Calibration Date(s): 09/17/09 10/12/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 2112 2012

LAB FILE ID: RF20: V3STD06 RF50: V3STD07 RF100: V3STD08
RF200: V3STD09

COMPOUND	RF20	RF50	RF100	RF200
Acetone	0.083	0.095	0.095	0.094
Acrolein	0.044	0.041	0.043	0.043
Acrylonitrile	0.117	0.109	0.108	0.106
tert-Amyl Methyl Ether	0.624	0.600	0.610	0.602
Benzene	0.896	0.847	0.842	0.797
Bromobenzene	0.644	0.632	0.641	0.623
Bromochloromethane	0.115	0.110	0.113	0.115
Bromodichloromethane	0.346	0.329	0.337	0.326
Bromoform	0.350	0.362	0.382	0.357
Bromomethane	0.111	0.124	0.132	0.141
2-Butanone	0.116	0.119	0.121	0.127
t-Butyl alcohol	0.022	0.020	0.022	0.023
n-Butylbenzene	1.598	1.562	1.515	1.338
sec-Butylbenzene	2.118	2.045	1.964	1.678
tert-Butylbenzene	1.746	1.648	1.573	1.372
Carbon disulfide	0.635	0.614	0.639	0.645
Carbon tetrachloride	0.319	0.320	0.326	0.322
Chlorobenzene	1.426	1.303	1.235	1.036
Chloroethane	0.128	0.126	0.128	0.134
2-Chloroethyl vinyl ether	0.209	0.200	0.198	0.194
Chloroform	0.423	0.403	0.410	0.406
Chloromethane	0.255	0.261	0.277	0.303
2-Chlorotoluene	1.642	1.573	1.580	1.436
4-Chlorotoluene	1.756	1.661	1.593	1.432
Cyclohexane	0.504	0.490	0.501	0.496
Dibromochloromethane	0.480	0.479	0.489	0.445
1,2-Dibromo-3-chloropropane	0.106	0.117	0.122	0.133
1,2-Dibromoethane	0.477	0.450	0.449	0.398
Dibromomethane	0.159	0.152	0.155	0.150
1,2-Dichlorobenzene	1.146	1.096	1.068	0.990
1,3-Dichlorobenzene	1.159	1.116	1.089	1.026
1,4-Dichlorobenzene	1.191	1.120	1.099	1.000
Dichlorodifluoromethane	0.240	0.234	0.231	0.232
1,1-Dichloroethane	0.497	0.480	0.490	0.486
1,2-Dichloroethane	0.457	0.429	0.431	0.417
1,1-Dichloroethene	0.184	0.176	0.181	0.180
cis-1,2-Dichloroethene	0.231	0.221	0.222	0.230

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: ELABN Case No.: NA SAS No.: NA SDG No.: SDGA33683

Instrument ID: VOA3 Calibration Date(s): 09/17/09 10/12/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 2112 2012

LAB FILE ID: RF20: V3STD06 RF50: V3STD07 RF100: V3STD08
RF200: V3STD09

COMPOUND	RF20	RF50	RF100	RF200
1,2-Dichloroethene(total)	0.222	0.214	0.218	0.222
trans-1,2-Dichloroethene	0.213	0.207	0.214	0.214
1,2-Dichloropropane	0.301	0.285	0.290	0.283
1,3-Dichloropropane	0.736	0.721	0.682	0.611
2,2-Dichloropropane	0.344	0.331	0.336	0.331
1,1-Dichloropropene	0.328	0.318	0.325	0.321
cis-1,3-Dichloropropene	0.415	0.403	0.410	0.391
trans-1,3-Dichloropropene	0.671	0.655	0.666	0.597
Ethylbenzene	2.492	2.255	2.066	
Ethyl methacrylate	0.562	0.553	0.553	0.502
Hexachlorobutadiene	0.338	0.346	0.355	0.358
2-Hexanone	0.441	0.428	0.405	0.352
Iodomethane	0.386	0.351	0.339	0.318
Isopropylbenzene	2.187	2.033	1.874	1.440
p-Isopropyltoluene	1.494	1.464	1.437	1.317
Methyl acetate	0.295	0.284	0.286	0.281
Methylene chloride	0.222	0.222	0.223	0.224
Methyl cyclohexane	0.327	0.319	0.320	0.320
Methyl methacrylate	0.298	0.299	0.304	0.298
4-Methyl-2-pentanone	0.324	0.309	0.306	0.289
MTBE	0.596	0.586	0.602	0.616
Naphthalene	1.278	1.292	1.505	1.375
n-Propylbenzene	2.518	2.396	2.241	1.836
Styrene	1.663	1.569	1.462	1.204
1,1,1,2-Tetrachloroethane	0.486	0.461	0.458	0.401
1,1,2,2-Tetrachloroethane	0.482	0.468	0.463	0.457
Tetrachloroethene	0.582	0.552	0.531	0.467
Tetrahydrofuran	0.084	0.079	0.082	0.083
Toluene	1.151	1.128	1.074	0.941
1,2,3-Trichlorobenzene	0.635	0.642	0.674	0.656
1,2,4-Trichlorobenzene	0.749	0.740	0.780	0.742
1,1,1-Trichloroethane	0.389	0.377	0.379	0.372
1,1,2-Trichloroethane	0.365	0.332	0.329	0.292
Trichloroethene	0.262	0.245	0.249	0.238
Trichlorofluoromethane	0.402	0.384	0.388	0.373
Trichlorotrifluoroethane	0.202	0.194	0.198	0.196
1,2,3-Trichloropropane	0.178	0.173	0.169	0.152

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: ELABN Case No.: NA SAS No.: NA . SDG No.: SDGA33683

Instrument ID: VOA3 Calibration Date(s): 09/17/09 10/12/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 2112 2012

LAB FILE ID: RF20: V3STD06 RF50: V3STD07 RF100: V3STD08
RF200: V3STD09

COMPOUND	RF20	RF50	RF100	RF200
1,2,4-Trimethylbenzene	1.869	1.825	1.761	1.546
1,3,5-Trimethylbenzene	1.841	1.763	1.712	1.506
Vinyl acetate	0.555	0.538	0.544	0.526
Vinyl chloride	0.255	0.245	0.250	0.249
m,p-Xylene	1.980	1.750	1.497	
Xylene(total)	6.095	5.437	4.759	
1-Chlorohexane	0.622	0.600	0.571	0.498
Di-isopropyl ether	1.119	1.079	1.106	1.085
ETBE	0.871	0.834	0.852	0.840
Dibromofluoromethane	0.258	0.261	0.257	0.252
1,2-Dichloroethane-d4	0.054	0.052	0.054	0.057
Toluene-d8	2.016	2.048	1.971	1.904
Bromofluorobenzene	1.016	1.014	0.970	0.902

FORM VI VOA

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Lab File ID: SEQ-TUN2 BFB Injection Date: 11/21/09

Instrument ID: VOA3 BFB Injection Time: 0401

GC Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	31.6
75	30.0 - 60.0% of mass 95	51.4
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.4
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	72.9
175	5.0 - 9.0% of mass 174	5.1 (7.0)1
176	95.0 - 101.0% of mass 174	72.1 (99.0)1
177	5.0 - 9.0% of mass 176	5.3 (7.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SEQ-CCV3	SEQ-CCV3	SEQ-CCV3	11/21/09	0430
02	V3BLK1120ELC	9K22004-BS1	V3LCS01E	11/21/09	0500
03	V3BLK1120E	9K22004-BLK1	V3BLK01E	11/21/09	0627
04	FB-111709-01	0911181-01	1118101	11/21/09	0728
05	NTC21MW0101	0911181-02	1118102	11/21/09	0758
06	NTC21MW0601	0911181-03	1118103	11/21/09	0829
07	V3BLK1120ELC	9K22004-BSD1	V3LCSD01E	11/21/09	0859
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FORM V VOA

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Instrument ID: VOA3 Calibration Date: 11/21/09 Time: 0430

Lab File ID: SEQ-CCV3 Init. Calib. Date(s): 12/17/08 10/12/09

Heated Purge: (Y/N) N Init. Calib. Times: 1502 2012

GC Column: RTX-VRX ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF100	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acetone	0.113	0.138	200.0	295.3		LINR	47.6	
Benzene	0.889	0.868	100.0	97.60		AVRG	-2.4	
Bromodichloromethane	0.330	0.386	100.0	117.0		AVRG	17.0	
Bromoform	0.347	0.402	100.0	115.9	0.100	AVRG	15.9	
Bromomethane	0.124	0.109	100.0	87.55		AVRG	-12.4	
2-Butanone	0.111	0.164	200.0	261.7		LINR	30.8	
Carbon disulfide	0.621	0.601	100.0	96.83		AVRG	-3.2	
Carbon tetrachloride	0.316	0.358	100.0	113.5		AVRG	13.5	
Chlorobenzene	1.328	1.213	100.0	91.37	0.300	AVRG	-8.6	
Chloroethane	0.131	0.144	100.0	109.8		AVRG	9.8	
Chloroform	0.433	0.455	100.0	105.1		AVRG	5.1	20.0
Chloromethane	0.255	0.322	100.0	126.0	0.100	AVRG	26.0	
Cyclohexane	0.494	0.440	100.0	88.92		AVRG	-11.1	
Dibromochloromethane	0.460	0.510	100.0	111.0		AVRG	11.0	
1,2-Dibromo-3-chloropropane	0.111	0.133	100.0	119.7		AVRG	19.7	
1,2-Dibromoethane	0.468	0.464	100.0	99.31		AVRG	-0.7	
1,2-Dichlorobenzene	1.094	1.074	100.0	98.20		AVRG	-1.8	
1,3-Dichlorobenzene	1.145	1.116	100.0	97.47		AVRG	-2.5	
1,4-Dichlorobenzene	1.174	1.111	100.0	94.65		AVRG	-5.3	
Dichlorodifluoromethane	0.243	0.246	100.0	101.2		AVRG	1.2	
1,1-Dichloroethane	0.490	0.496	100.0	101.0	0.100	AVRG	1.0	
1,2-Dichloroethane	0.446	0.491	100.0	110.0		AVRG	10.0	
1,1-Dichloroethene	0.187	0.175	100.0	93.86		AVRG	-6.1	20.0
cis-1,2-Dichloroethene	0.233	0.229	100.0	98.14		AVRG	-1.9	
trans-1,2-Dichloroethene	0.222	0.208	100.0	93.66		AVRG	-6.3	
1,2-Dichloropropane	0.293	0.296	100.0	101.1		AVRG	1.1	20.0
cis-1,3-Dichloropropene	0.400	0.414	100.0	103.4		AVRG	3.4	
trans-1,3-Dichloropropene	0.641	0.630	100.0	98.32		AVRG	-1.7	
Ethylbenzene	2.380	2.082	100.0	87.49		AVRG	-12.5	20.0
2-Hexanone	0.384	0.464	200.0	238.9		2ORDR	19.4	
Isopropylbenzene	2.026	1.825	100.0	90.04		AVRG	-10.0	
Methyl acetate	0.290	0.258	100.0	89.20		AVRG	-10.8	
Methylene chloride	0.237	0.234	100.0	98.87		AVRG	-1.1	
Methyl cyclohexane	0.322	0.285	100.0	88.52		AVRG	-11.5	
Methyl-tert-butyl-ether	0.596	0.600	100.0	100.6		AVRG	0.6	
4-Methyl-2-pentanone	0.288	0.375	200.0	260.1		AVRG	30.0	
Styrene	1.520	1.433	100.0	94.26		AVRG	-5.7	

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FORM VII VOA

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Instrument ID: VOA3 Calibration Date: 11/21/09 Time: 0430

Lab File ID: SEQ-CCV3 Init. Calib. Date(s): 12/17/08 10/12/09

Heated Purge: (Y/N) N Init. Calib. Times: 1502 2012

GC Column: RTX-VRX ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF100	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
1,1,2,2-Tetrachloroethane	0.478	0.526	100.0	109.9	0.300	AVRG	9.9	
Tetrachloroethene	0.556	0.495	100.0	89.12		AVRG	-10.9	
Toluene	1.112	1.029	100.0	92.57		AVRG	-7.4	20.0
1,2,4-Trichlorobenzene	0.787	0.738	100.0	93.76		AVRG	-6.2	
1,1,1-Trichloroethane	0.388	0.413	100.0	106.4		AVRG	6.4	
1,1,2-Trichloroethane	0.352	0.333	100.0	94.44		AVRG	-5.6	
Trichloroethene	0.250	0.264	100.0	105.6		AVRG	5.6	
Trichlorotrifluoroethane	0.198	0.189	100.0	95.67		AVRG	-4.3	
Trichlorofluoromethane	0.406	0.429	100.0	105.8		AVRG	5.8	
Vinyl chloride	0.257	0.270	100.0	105.2		AVRG	5.2	20.0
Xylene(total)	5.853	4.988	300.0	255.3		AVRG	-14.8	
Dibromofluoromethane	0.266	0.278	30.00	31.39		AVRG	4.6	
1,2-Dichloroethane-d4	0.055	0.055	30.00	29.69		AVRG	-1.0	
Toluene-d8	2.035	1.823	30.00	26.86		AVRG	-10.4	
Bromofluorobenzene	1.000	0.937	30.00	28.08		AVRG	-6.4	

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Lab File ID: SEQ-TUN1 BFB Injection Date: 11/22/09

Instrument ID: VOA3 BFB Injection Time: 1157

GC Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	33.3
75	30.0 - 60.0% of mass 95	54.6
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.7
173	Less than 2.0% of mass 174	0.4 (0.5)1
174	Greater than 50.0% of mass 95	72.0
175	5.0 - 9.0% of mass 174	5.9 (8.2)1
176	95.0 - 101.0% of mass 174	68.4 (95.0)1
177	5.0 - 9.0% of mass 176	3.9 (5.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SEQ-CCV1	SEQ-CCV1	SEQ-CCV1	11/22/09	1227
02	V3BLK1122LCS	9K24009-BS1	V3LCS01	11/22/09	1257
03	V3BLK1122	9K24009-BLK1	V3BLK01	11/22/09	1423
04	NTC21MW0501	0911151-01	1115101	11/22/09	1921
05	NTC21-FD1116	0911151-02	1115102	11/22/09	1951
06	NTC21MW0201	0911151-03	1115103	11/22/09	2020
07	NTC21MW0301	0911151-04	1115104	11/22/09	2050
08	NTC21MW0401	0911151-05	1115105	11/22/09	2120
09	NTC21MW0501M	0911151-01MS	1115101M	11/22/09	2149
10	NTC21MW0501M	0911151-01MSD	1115101S	11/22/09	2219
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FORM V VOA

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Instrument ID: VOA3 Calibration Date: 11/22/09 Time: 1227

Lab File ID: SEQ-CCV1 Init. Calib. Date(s): 12/17/08 10/12/09

Heated Purge: (Y/N) N Init. Calib. Times: 1502 2012

GC Column: RTX-VRX ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF100	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acetone	0.113	0.206	200.0	439.1		LINR	119.5	
Benzene	0.889	0.889	100.0	99.93		AVRG	-0.1	
Bromodichloromethane	0.330	0.402	100.0	121.9		AVRG	21.9	
Bromoform	0.347	0.397	100.0	114.3	0.100	AVRG	14.3	
Bromomethane	0.124	0.145	100.0	116.2		AVRG	16.2	
2-Butanone	0.111	0.188	200.0	300.5		LINR	50.2	
Carbon disulfide	0.621	0.609	100.0	98.09		AVRG	-1.9	
Carbon tetrachloride	0.316	0.392	100.0	124.4		AVRG	24.4	
Chlorobenzene	1.328	1.222	100.0	92.00	0.300	AVRG	-8.0	
Chloroethane	0.131	0.166	100.0	126.3		AVRG	26.3	
Chloroform	0.433	0.468	100.0	108.0		AVRG	8.0	20.0
Chloromethane	0.255	0.394	100.0	154.3	0.100	AVRG	54.3	
Cyclohexane	0.494	0.459	100.0	92.84		AVRG	-7.2	
Dibromochloromethane	0.460	0.506	100.0	109.9		AVRG	9.9	
1,2-Dibromo-3-chloropropane	0.111	0.127	100.0	113.9		AVRG	13.9	
1,2-Dibromoethane	0.468	0.440	100.0	94.01		AVRG	-6.0	
1,2-Dichlorobenzene	1.094	1.087	100.0	99.40		AVRG	-0.6	
1,3-Dichlorobenzene	1.145	1.105	100.0	96.49		AVRG	-3.5	
1,4-Dichlorobenzene	1.174	1.143	100.0	97.34		AVRG	-2.6	
Dichlorodifluoromethane	0.243	0.332	100.0	136.4		AVRG	36.4	
1,1-Dichloroethane	0.490	0.506	100.0	103.1	0.100	AVRG	3.1	
1,2-Dichloroethane	0.446	0.522	100.0	117.0		AVRG	17.0	
1,1-Dichloroethene	0.187	0.178	100.0	95.27		AVRG	-4.7	20.0
cis-1,2-Dichloroethene	0.233	0.231	100.0	98.93		AVRG	-1.1	
trans-1,2-Dichloroethene	0.222	0.209	100.0	94.04		AVRG	-6.0	
1,2-Dichloropropane	0.293	0.295	100.0	100.8		AVRG	0.8	20.0
cis-1,3-Dichloropropene	0.400	0.447	100.0	111.7		AVRG	11.7	
trans-1,3-Dichloropropene	0.641	0.652	100.0	101.6		AVRG	1.6	
Ethylbenzene	2.380	2.091	100.0	87.86		AVRG	-12.1	20.0
2-Hexanone	0.384	0.467	200.0	240.3		2ORDR	20.2	
Isopropylbenzene	2.026	1.837	100.0	90.65		AVRG	-9.4	
Methyl acetate	0.290	0.249	100.0	86.07		AVRG	-13.9	
Methylene chloride	0.237	0.234	100.0	99.10		AVRG	-0.9	
Methyl cyclohexane	0.322	0.304	100.0	94.37		AVRG	-5.6	
Methyl-tert-butyl-ether	0.596	0.598	100.0	100.2		AVRG	0.2	
4-Methyl-2-pentanone	0.288	0.376	200.0	261.1		AVRG	30.5	
Styrene	1.520	1.410	100.0	92.78		AVRG	-7.2	

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FORM VII VOA

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Instrument ID: VOA3 Calibration Date: 11/22/09 Time: 1227

Lab File ID: SEQ-CCV1 Init. Calib. Date(s): 12/17/08 10/12/09

Heated Purge: (Y/N) N Init. Calib. Times: 1502 2012

GC Column: RTX-VRX ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF100	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
1,1,2,2-Tetrachloroethane	0.478	0.494	100.0	103.1	0.300	AVRG	3.1	
Tetrachloroethene	0.556	0.488	100.0	87.82		AVRG	-12.2	
Toluene	1.112	0.994	100.0	89.42		AVRG	-10.6	20.0
1,2,4-Trichlorobenzene	0.787	0.721	100.0	91.67		AVRG	-8.3	
1,1,1-Trichloroethane	0.388	0.444	100.0	114.5		AVRG	14.5	
1,1,2-Trichloroethane	0.352	0.315	100.0	89.45		AVRG	-10.5	
Trichloroethene	0.250	0.269	100.0	107.4		AVRG	7.4	
Trichlorotrifluoroethane	0.198	0.200	100.0	101.0		AVRG	1.0	
Trichlorofluoromethane	0.406	0.485	100.0	119.7		AVRG	19.7	
Vinyl chloride	0.257	0.292	100.0	113.5		AVRG	13.5	20.0
Xylene(total)	5.853	4.964	300.0	254.2		AVRG	-15.2	
Dibromofluoromethane	0.266	0.284	30.00	32.09		AVRG	7.0	
1,2-Dichloroethane-d4	0.055	0.052	30.00	27.93		AVRG	-6.9	
Toluene-d8	2.035	1.780	30.00	26.23		AVRG	-12.6	
Bromofluorobenzene	1.000	0.928	30.00	27.81		AVRG	-7.3	

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

V3BLK1120E

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Lab File ID: V3BLK01E Lab Sample ID: 9K22004-BLK1

Date Analyzed: 11/21/09 Time Analyzed: 0627

Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) N

Instrument ID: VOA3

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	V3BLK1120ELC	9K22004-BS1	V3LCS01E	0500
02	FB-111709-01	0911181-01	1118101	0728
03	NTC21MW0101	0911181-02	1118102	0758
04	NTC21MW0601	0911181-03	1118103	0829
05	V3BLK1120ELC	9K22004-BSD1	V3LCSD01E	0859
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COMMENTS:

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FORM IV VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V3BLK1120E

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 9K22004-BLK1

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V3BLK01E

Level: (low/med) LOW Date Sampled: _____

% Moisture: not dec. _____ Date Analyzed: 11/21/09 06:27

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	0.84	10		U
71-43-2	Benzene	0.11	1.0		U
75-27-4	Bromodichloromethane	0.10	1.0		U
75-25-2	Bromoform	0.10	1.0		U
74-83-9	Bromomethane	0.32	2.0		U
78-93-3	2-Butanone	1.0	10		U
75-15-0	Carbon disulfide	0.13	1.0		U
56-23-5	Carbon tetrachloride	0.15	1.0		U
108-90-7	Chlorobenzene	0.10	1.0		U
75-00-3	Chloroethane	0.18	2.0		U
67-66-3	Chloroform	0.11	1.0		U
74-87-3	Chloromethane	0.29	2.0		U
110-82-7	Cyclohexane	0.20	1.0		U
124-48-1	Dibromochloromethane	0.10	1.0		U
96-12-8	1,2-Dibromo-3-chloropropane	0.11	1.0		U
106-93-4	1,2-Dibromoethane	0.10	1.0		U
95-50-1	1,2-Dichlorobenzene	0.10	1.0		U
541-73-1	1,3-Dichlorobenzene	0.13	1.0		U
106-46-7	1,4-Dichlorobenzene	0.10	1.0		U
75-71-8	Dichlorodifluoromethane	0.22	2.0		U
75-34-3	1,1-Dichloroethane	0.12	1.0		U
107-06-2	1,2-Dichloroethane	0.10	1.0		U
75-35-4	1,1-Dichloroethene	0.15	1.0		U
156-59-2	cis-1,2-Dichloroethene	0.13	1.0		U
156-60-5	trans-1,2-Dichloroethene	0.13	1.0		U
78-87-5	1,2-Dichloropropane	0.10	1.0		U
10061-01-5	cis-1,3-Dichloropropene	0.11	1.0		U
10061-02-6	trans-1,3-Dichloropropene	0.10	1.0		U
100-41-4	Ethylbenzene	0.13	1.0		U
591-78-6	2-Hexanone	0.30	5.0		U
98-82-8	Isopropylbenzene	0.15	1.0		U
79-20-9	Methyl acetate	0.30	2.0		U
75-09-2	Methylene chloride	0.14	2.0	1.2	J
108-87-2	Methyl cyclohexane	0.17	1.0		U
1634-04-4	Methyl-tert-butyl-ether	0.10	1.0		U
108-10-1	4-Methyl-2-pentanone	0.29	5.0		U
100-42-5	Styrene	0.10	1.0		U
79-34-5	1,1,2,2-Tetrachloroethane	0.10	1.0		U
127-18-4	Tetrachloroethene	0.15	1.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V3BLK1120E

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 9K22004-BLK1

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V3BLK01E

Level: (low/med) LOW Date Sampled: _____

% Moisture: not dec. _____ Date Analyzed: 11/21/09 06:27

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.10	1.0		U
120-82-1	1,2,4-Trichlorobenzene	0.10	1.0	0.16	J
71-55-6	1,1,1-Trichloroethane	0.17	1.0		U
79-00-5	1,1,2-Trichloroethane	0.10	1.0		U
79-01-6	Trichloroethene	0.13	1.0		U
76-13-1	Trichlorotrifluoroethane	0.18	2.0		U
75-69-4	Trichlorofluoromethane	0.17	2.0		U
75-01-4	Vinyl chloride	0.18	1.0		U
1330-20-7	Xylene(total)	0.22	1.0		U

FORM I VOA

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

V3BLK1122

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Lab File ID: V3BLK01 Lab Sample ID: 9K24009-BLK1

Date Analyzed: 11/22/09 Time Analyzed: 1423

Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) N

Instrument ID: VOA3

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	V3BLK1122LCS	9K24009-BS1	V3LCS01	1257
02	NTC21MW0501	0911151-01	1115101	1921
03	NTC21-FD1116	0911151-02	1115102	1951
04	NTC21MW0201	0911151-03	1115103	2020
05	NTC21MW0301	0911151-04	1115104	2050
06	NTC21MW0401	0911151-05	1115105	2120
07	NTC21MW0501M	0911151-01MS	1115101M	2149
08	NTC21MW0501M	0911151-01MSD	1115101S	2219
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COMMENTS:

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FORM IV VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V3BLK1122

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 9K24009-BLK1

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V3BLK01

Level: (low/med) LOW Date Sampled: _____

% Moisture: not dec. _____ Date Analyzed: 11/22/09 14:23

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	0.84	10		U
71-43-2	Benzene	0.11	1.0		U
75-27-4	Bromodichloromethane	0.10	1.0		U
75-25-2	Bromoform	0.10	1.0		U
74-83-9	Bromomethane	0.32	2.0		U
78-93-3	2-Butanone	1.0	10		U
75-15-0	Carbon disulfide	0.13	1.0		U
56-23-5	Carbon tetrachloride	0.15	1.0		U
108-90-7	Chlorobenzene	0.10	1.0		U
75-00-3	Chloroethane	0.18	2.0		U
67-66-3	Chloroform	0.11	1.0		U
74-87-3	Chloromethane	0.29	2.0		U
110-82-7	Cyclohexane	0.20	1.0		U
124-48-1	Dibromochloromethane	0.10	1.0		U
96-12-8	1,2-Dibromo-3-chloropropane	0.11	1.0		U
106-93-4	1,2-Dibromoethane	0.10	1.0		U
95-50-1	1,2-Dichlorobenzene	0.10	1.0		U
541-73-1	1,3-Dichlorobenzene	0.13	1.0		U
106-46-7	1,4-Dichlorobenzene	0.10	1.0		U
75-71-8	Dichlorodifluoromethane	0.22	2.0		U
75-34-3	1,1-Dichloroethane	0.12	1.0		U
107-06-2	1,2-Dichloroethane	0.10	1.0		U
75-35-4	1,1-Dichloroethene	0.15	1.0		U
156-59-2	cis-1,2-Dichloroethene	0.13	1.0		U
156-60-5	trans-1,2-Dichloroethene	0.13	1.0		U
78-87-5	1,2-Dichloropropane	0.10	1.0		U
10061-01-5	cis-1,3-Dichloropropene	0.11	1.0		U
10061-02-6	trans-1,3-Dichloropropene	0.10	1.0		U
100-41-4	Ethylbenzene	0.13	1.0		U
591-78-6	2-Hexanone	0.30	5.0		U
98-82-8	Isopropylbenzene	0.15	1.0		U
79-20-9	Methyl acetate	0.30	2.0		U
75-09-2	Methylene chloride	0.14	2.0	0.63	J
108-87-2	Methyl cyclohexane	0.17	1.0		U
1634-04-4	Methyl-tert-butyl-ether	0.10	1.0		U
108-10-1	4-Methyl-2-pentanone	0.29	5.0		U
100-42-5	Styrene	0.10	1.0		U
79-34-5	1,1,2,2-Tetrachloroethane	0.10	1.0		U
127-18-4	Tetrachloroethene	0.15	1.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V3BLK1122

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 9K24009-BLK1

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V3BLK01

Level: (low/med) LOW Date Sampled: _____

% Moisture: not dec. _____ Date Analyzed: 11/22/09 14:23

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.10	1.0		U
120-82-1	1,2,4-Trichlorobenzene	0.10	1.0	0.16	J
71-55-6	1,1,1-Trichloroethane	0.17	1.0		U
79-00-5	1,1,2-Trichloroethane	0.10	1.0		U
79-01-6	Trichloroethene	0.13	1.0		U
76-13-1	Trichlorotrifluoroethane	0.18	2.0		U
75-69-4	Trichlorofluoromethane	0.17	2.0		U
75-01-4	Vinyl chloride	0.18	1.0		U
1330-20-7	Xylene(total)	0.22	1.0		U

FORM I VOA

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

V5BLK1119

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Lab File ID: V5BLK01 Lab Sample ID: 9K20012-BLK1

Date Analyzed: 11/19/09 Time Analyzed: 1815

Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) Y

Instrument ID: VOA5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	V5BLK1119LCS	9K20012-BS1	V5LCS01	1642
02	NTC21SB02-SO	0911147-01	1114701A	1917
03				
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COMMENTS:

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FORM IV VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V5BLK1119

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) SOIL Lab Sample ID: 9K20012-BLK1

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5BLK01

Level: (low/med) LOW Date Sampled: _____

% Moisture: not dec. 0 Date Analyzed: 11/19/09 18:15

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.0	5.0		U
71-43-2	Benzene	0.47	5.0		U
75-27-4	Bromodichloromethane	0.30	10		U
75-25-2	Bromoform	1.0	5.0		U
74-83-9	Bromomethane	0.72	10		U
78-93-3	2-Butanone	1.4	5.0		U
75-15-0	Carbon disulfide	1.3	5.0		U
56-23-5	Carbon tetrachloride	0.88	5.0		U
108-90-7	Chlorobenzene	0.34	5.0		U
75-00-3	Chloroethane	1.1	10		U
67-66-3	Chloroform	0.55	5.0		U
74-87-3	Chloromethane	0.52	10		U
110-82-7	Cyclohexane	0.54	5.0		U
124-48-1	Dibromochloromethane	0.34	5.0		U
96-12-8	1,2-Dibromo-3-chloropropane	1.2	5.0		U
106-93-4	1,2-Dibromoethane	0.43	5.0		U
95-50-1	1,2-Dichlorobenzene	0.37	5.0		U
541-73-1	1,3-Dichlorobenzene	0.84	5.0		U
106-46-7	1,4-Dichlorobenzene	0.55	5.0		U
75-71-8	Dichlorodifluoromethane	1.1	5.0		U
75-34-3	1,1-Dichloroethane	0.54	5.0		U
107-06-2	1,2-Dichloroethane	0.46	5.0		U
75-35-4	1,1-Dichloroethene	1.2	5.0		U
156-59-2	cis-1,2-Dichloroethene	1.2	10		U
156-60-5	trans-1,2-Dichloroethene	1.1	5.0		U
78-87-5	1,2-Dichloropropane	0.46	5.0		U
10061-01-5	cis-1,3-Dichloropropene	0.50	5.0		U
10061-02-6	trans-1,3-Dichloropropene	0.32	5.0		U
100-41-4	Ethylbenzene	0.75	5.0		U
591-78-6	2-Hexanone	2.3	5.0		U
98-82-8	Isopropylbenzene	0.88	5.0		U
79-20-9	Methyl acetate	1.6	10		U
75-09-2	Methylene chloride	0.62	10	1.3	J
108-87-2	Methyl cyclohexane	0.30	5.0		U
1634-04-4	Methyl-tert-butyl-ether	0.32	5.0		U
108-10-1	4-Methyl-2-pentanone	0.58	5.0		U
100-42-5	Styrene	0.35	5.0		U
79-34-5	1,1,2,2-Tetrachloroethane	0.43	5.0		U
127-18-4	Tetrachloroethene	0.97	5.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V5BLK1119

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) SOIL Lab Sample ID: 9K20012-BLK1

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5BLK01

Level: (low/med) LOW Date Sampled: _____

% Moisture: not dec. 0 Date Analyzed: 11/19/09 18:15

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.86	5.0		U
120-82-1	1,2,4-Trichlorobenzene	0.18	5.0		U
71-55-6	1,1,1-Trichloroethane	0.90	5.0		U
79-00-5	1,1,2-Trichloroethane	0.35	5.0		U
79-01-6	Trichloroethene	0.85	5.0		U
76-13-1	Trichlorotrifluoroethane	0.55	5.0		U
75-69-4	Trichlorofluoromethane	0.95	5.0		U
75-01-4	Vinyl chloride	1.1	5.0		U
1330-20-7	Xylene(total)	0.70	5.0		U

FORM I VOA

FORM 2
WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

	CLIENT SAMPLE NO.	SMC1 (DFM) #	SMC2 (DCE) #	SMC3 (TOL) #	SMC4 (BFB) #	TOT OUT
01	V3BLK1120ELC	102	96	96	98	0
02	V3BLK1120E	106	106	96	96	0
03	FB-111709-01	112	101	95	98	0
04	NTC21MW0101	112	102	96	98	0
05	NTC21MW0601	110	104	99	100	0
06	V3BLK1120ELC	109	96	92	98	0
07	V3BLK1122LCS	106	99	94	100	0
08	V3BLK1122	108	101	94	96	0
09	NTC21MW0501	108	107	97	97	0
10	NTC21-FD1116	107	103	96	95	0
11	NTC21MW0201	109	103	97	97	0
12	NTC21MW0301	109	102	97	97	0
13	NTC21MW0401	111	104	96	97	0
14	NTC21MW0501M	106	101	91	98	0
15	NTC21MW0501M	110	99	91	98	0
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		EL QC LIMITS	SPIKE CONC (ug/L)
SMC1 (DFM)	= Dibromofluoromethane	(85-120)	30
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(80-135)	30
SMC3 (TOL)	= Toluene-d8	(85-115)	30
SMC4 (BFB)	= Bromofluorobenzene	(85-120)	30

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate results reported from a diluted analysis

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix Spike - Client Sample No.: V3BLK1120E

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Acetone	100.0	0.0000	135.4	135	40-140
Benzene	50.00	0.0000	48.08	96	80-120
Bromodichloromethane	50.00	0.0000	52.58	105	75-120
Bromoform	50.00	0.0000	51.36	103	70-130
Bromomethane	50.00	0.0000	41.02	82	30-145
2-Butanone	100.0	0.0000	110.5	110	30-150
Carbon disulfide	50.00	0.0000	51.82	104	35-160
Carbon tetrachloride	50.00	0.0000	50.74	101	65-140
Chlorobenzene	50.00	0.0000	47.94	96	80-120
Chloroethane	50.00	0.0000	54.76	110	60-135
Chloroform	50.00	0.0000	46.63	93	65-135
Chloromethane	50.00	0.0000	64.25	128*	40-125
Cyclohexane	50.00	0.0000	46.34	93	60-130
Dibromochloromethane	50.00	0.0000	52.18	104	60-135
1,2-Dibromo-3-chloropro	50.00	0.0000	47.27	94	50-130
1,2-Dibromoethane	50.00	0.0000	46.15	92	80-120
1,2-Dichlorobenzene	50.00	0.0000	48.48	97	70-120
1,3-Dichlorobenzene	50.00	0.0000	47.15	94	75-125
1,4-Dichlorobenzene	50.00	0.0000	46.38	93	75-125
Dichlorodifluoromethane	50.00	0.0000	49.89	100	30-155
1,1-Dichloroethane	50.00	0.0000	46.71	93	70-135
1,2-Dichloroethane	50.00	0.0000	50.24	100	70-130
1,1-Dichloroethene	50.00	0.0000	44.34	89	70-130
cis-1,2-Dichloroethene	50.00	0.0000	44.39	89	70-125
trans-1,2-Dichloroethen	50.00	0.0000	43.89	88	60-140
1,2-Dichloropropane	50.00	0.0000	46.88	94	75-125
cis-1,3-Dichloropropene	50.00	0.0000	47.08	94	70-130
trans-1,3-Dichloroprope	50.00	0.0000	48.13	96	55-140

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix Spike - Client Sample No.: V3BLK1120E

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Ethylbenzene	50.00	0.0000	46.63	93	75-125
2-Hexanone	100.0	0.0000	102.6	103	55-130
Isopropylbenzene	50.00	0.0000	53.63	107	75-125
Methyl acetate	50.00	0.0000	41.17	82	55-150
Methylene chloride	50.00	1.173	44.68	87	55-140
Methyl cyclohexane	50.00	0.0000	43.86	88	60-125
Methyl-tert-butyl-ether	50.00	0.0000	46.11	92	65-125
4-Methyl-2-pentanone	100.0	0.0000	116.6	117	60-135
Styrene	50.00	0.0000	48.97	98	65-135
1,1,2,2-Tetrachloroetha	50.00	0.0000	50.67	101	65-130
Tetrachloroethene	50.00	0.0000	43.08	86	45-150
Toluene	50.00	0.0000	47.64	95	75-120
1,2,4-Trichlorobenzene	50.00	0.1583	43.67	87	65-135
1,1,1-Trichloroethane	50.00	0.0000	46.60	93	65-130
1,1,2-Trichloroethane	50.00	0.0000	45.29	90	75-125
Trichloroethene	50.00	0.0000	49.04	98	70-125
Trichlorotrifluoroethan	50.00	0.0000	49.66	99	60-130
Trichlorofluoromethane	50.00	0.0000	50.47	101	60-145
Vinyl chloride	50.00	0.0000	52.61	105	50-145
Xylene(total)	150.0	0.0000	136.8	91	75-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix Spike - Client Sample No.: V3BLK1120E

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Acetone	100.0	132.2	132	2	30	40-140
Benzene	50.00	47.75	96	1	30	80-120
Bromodichloromethane	50.00	55.48	111	5	30	75-120
Bromoform	50.00	51.83	104	1	30	70-130
Bromomethane	50.00	37.97	76	8	30	30-145
2-Butanone	100.0	105.2	105	5	30	30-150
Carbon disulfide	50.00	50.56	101	2	30	35-160
Carbon tetrachloride	50.00	54.64	109	7	30	65-140
Chlorobenzene	50.00	47.88	96	0	30	80-120
Chloroethane	50.00	53.40	107	2	30	60-135
Chloroform	50.00	48.48	97	4	30	65-135
Chloromethane	50.00	65.67	131*	2	30	40-125
Cyclohexane	50.00	44.37	89	4	30	60-130
Dibromochloromethane	50.00	53.23	106	2	30	60-135
1,2-Dibromo-3-chloropro	50.00	43.14	86	9	30	50-130
1,2-Dibromoethane	50.00	45.77	92	1	30	80-120
1,2-Dichlorobenzene	50.00	45.79	92	6	30	70-120
1,3-Dichlorobenzene	50.00	47.61	95	1	30	75-125
1,4-Dichlorobenzene	50.00	45.74	91	1	30	75-125
Dichlorodifluoromethane	50.00	50.43	101	1	30	30-155
1,1-Dichloroethane	50.00	47.42	95	2	30	70-135
1,2-Dichloroethane	50.00	54.41	109	8	30	70-130
1,1-Dichloroethene	50.00	43.54	87	2	30	70-130
cis-1,2-Dichloroethene	50.00	45.02	90	1	30	70-125
trans-1,2-Dichloroethen	50.00	42.66	85	3	30	60-140
1,2-Dichloropropane	50.00	45.67	91	3	30	75-125
cis-1,3-Dichloropropene	50.00	47.29	94	0	30	70-130
trans-1,3-Dichloroprope	50.00	47.32	95	2	30	55-140

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix Spike - Client Sample No.: V3BLK1120E

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Ethylbenzene	50.00	46.32	93	1	30	75-125
2-Hexanone	100.0	94.23	94	8	30	55-130
Isopropylbenzene	50.00	54.66	109	2	30	75-125
Methyl acetate	50.00	39.85	80	3	30	55-150
Methylene chloride	50.00	42.72	83	4	30	55-140
Methyl cyclohexane	50.00	42.76	86	2	30	60-125
Methyl-tert-butyl-ether	50.00	45.79	92	1	30	65-125
4-Methyl-2-pentanone	100.0	115.0	115	1	30	60-135
Styrene	50.00	48.05	96	2	30	65-135
1,1,2,2-Tetrachloroetha	50.00	48.37	97	5	30	65-130
Tetrachloroethene	50.00	40.24	80	7	30	45-150
Toluene	50.00	46.78	94	2	30	75-120
1,2,4-Trichlorobenzene	50.00	39.27	78	11	30	65-135
1,1,1-Trichloroethane	50.00	49.03	98	5	30	65-130
1,1,2-Trichloroethane	50.00	42.64	85	6	30	75-125
Trichloroethene	50.00	49.48	99	1	30	70-125
Trichlorotrifluoroethan	50.00	49.78	100	0	30	60-130
Trichlorofluoromethane	50.00	53.47	107	6	30	60-145
Vinyl chloride	50.00	51.18	102	3	30	50-145
Xylene(total)	150.0	138.6	92	1	30	75-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 48 outside limits
Spike Recovery: 2 out of 96 outside limits

COMMENTS: _____

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix Spike - Client Sample No.: V3BLK1122

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Acetone	100.0	0.0000	202.2	202*	40-140
Benzene	50.00	0.0000	49.64	99	80-120
Bromodichloromethane	50.00	0.0000	57.54	115	75-120
Bromoform	50.00	0.0000	55.57	111	70-130
Bromomethane	50.00	0.0000	50.35	101	30-145
2-Butanone	100.0	0.0000	139.6	140	30-150
Carbon disulfide	50.00	0.0000	53.94	108	35-160
Carbon tetrachloride	50.00	0.0000	56.20	112	65-140
Chlorobenzene	50.00	0.0000	48.71	97	80-120
Chloroethane	50.00	0.0000	63.48	127	60-135
Chloroform	50.00	0.0000	49.57	99	65-135
Chloromethane	50.00	0.0000	79.25	158*	40-125
Cyclohexane	50.00	0.0000	47.50	95	60-130
Dibromochloromethane	50.00	0.0000	56.94	114	60-135
1,2-Dibromo-3-chloropro	50.00	0.0000	51.03	102	50-130
1,2-Dibromoethane	50.00	0.0000	48.47	97	80-120
1,2-Dichlorobenzene	50.00	0.0000	48.97	98	70-120
1,3-Dichlorobenzene	50.00	0.0000	47.84	96	75-125
1,4-Dichlorobenzene	50.00	0.0000	49.00	98	75-125
Dichlorodifluoromethane	50.00	0.0000	64.18	128	30-155
1,1-Dichloroethane	50.00	0.0000	49.28	98	70-135
1,2-Dichloroethane	50.00	0.0000	55.39	111	70-130
1,1-Dichloroethene	50.00	0.0000	45.29	90	70-130
cis-1,2-Dichloroethene	50.00	0.0000	46.85	94	70-125
trans-1,2-Dichloroethen	50.00	0.0000	45.80	92	60-140
1,2-Dichloropropane	50.00	0.0000	47.35	95	75-125
cis-1,3-Dichloropropene	50.00	0.0000	52.26	104	70-130
trans-1,3-Dichloroprope	50.00	0.0000	53.92	108	55-140

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix Spike - Client Sample No.: V3BLK1122

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Ethylbenzene	50.00	0.0000	47.26	94	75-125
2-Hexanone	100.0	0.0000	116.9	117	55-130
Isopropylbenzene	50.00	0.0000	56.22	112	75-125
Methyl acetate	50.00	0.0000	46.84	94	55-150
Methylene chloride	50.00	0.6326	46.16	91	55-140
Methyl cyclohexane	50.00	0.0000	46.43	93	60-125
Methyl-tert-butyl-ether	50.00	0.0000	51.74	103	65-125
4-Methyl-2-pentanone	100.0	0.0000	131.8	132	60-135
Styrene	50.00	0.0000	49.82	100	65-135
1,1,2,2-Tetrachloroetha	50.00	0.0000	53.72	107	65-130
Tetrachloroethene	50.00	0.0000	44.22	88	45-150
Toluene	50.00	0.0000	47.22	94	75-120
1,2,4-Trichlorobenzene	50.00	0.1584	44.85	89	65-135
1,1,1-Trichloroethane	50.00	0.0000	50.10	100	65-130
1,1,2-Trichloroethane	50.00	0.0000	46.03	92	75-125
Trichloroethene	50.00	0.0000	51.84	104	70-125
Trichlorotrifluoroethan	50.00	0.0000	54.29	108	60-130
Trichlorofluoromethane	50.00	0.0000	57.15	114	60-145
Vinyl chloride	50.00	0.0000	62.81	126	50-145
Xylene(total)	150.0	0.0000	143.1	95	75-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 2 out of 48 outside limits

COMMENTS: _____

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Lab File ID (Standard): SEQ-CCV3 Date Analyzed: 11/21/09

Instrument ID: VOA3 Time Analyzed: 0430

GC Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) N

		IS1(FLB) AREA #	RT #	IS2(CBZ) AREA #	RT #	IS3(DCB) AREA #	RT #
	12 HOUR STD	1085654	12.75	662525	16.31	690692	18.31
	UPPER LIMIT	2171308	13.25	1325050	16.81	1381384	18.81
	LOWER LIMIT	542827	12.25	331263	15.81	345346	17.81
	CLIENT SAMPLE NO.						
01	V3BLK1120ELC	1170618	12.75	666745	16.31	724527	18.31
02	V3BLK1120E	985916	12.76	572019	16.31	628154	18.31
03	FB-111709-01	904290	12.75	524234	16.31	575268	18.31
04	NTC21MW0101	891826	12.75	508476	16.31	578894	18.31
05	NTC21MW0601	895959	12.75	494109	16.31	561706	18.31
06	V3BLK1120ELC	974002	12.75	576276	16.31	646372	18.31
07							
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22							

IS1 (FLB) = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

page 1 of 1

FORM VIII VOA

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Lab File ID (Standard): SEQ-CCV1 Date Analyzed: 11/22/09

Instrument ID: VOA3 Time Analyzed: 1227

GC Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) N

		IS1(FLB) AREA #	RT #	IS2(CBZ) AREA #	RT #	IS3(DCB) AREA #	RT #
	12 HOUR STD	938144	12.76	606922	16.31	625066	18.31
	UPPER LIMIT	1876288	13.26	1213844	16.81	1250132	18.81
	LOWER LIMIT	469072	12.26	303461	15.81	312533	17.81
	CLIENT SAMPLE NO.						
01	V3BLK1122LCS	1000774	12.76	586676	16.31	647275	18.31
02	V3BLK1122	885441	12.76	519856	16.31	570628	18.31
03	NTC21MW0501	983864	12.76	566596	16.31	629616	18.31
04	NTC21-FD1116	970724	12.76	557874	16.31	616735	18.31
05	NTC21MW0201	952972	12.76	542426	16.31	595302	18.31
06	NTC21MW0301	923820	12.76	523823	16.31	573969	18.31
07	NTC21MW0401	896860	12.76	515860	16.31	574082	18.31
08	NTC21MW0501M	980708	12.76	594842	16.31	649438	18.31
09	NTC21MW0501M	973122	12.76	595265	16.31	663282	18.31
10							
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22							

IS1 (FLB) = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

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FORM VIII VOA

NTC GREAT LAKES
WATER DATA
CTO064_002

FRACTION	CHEMICAL	NTC21-FD111609-01	UNITS	NTC21MW0201	RPD	D
OV	ACETONE	4.6 J	UG/L	4.6 J	0.00	0.00

Current RPD Quality Control Limit: 30 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

ORGANIC CASE NARRATIVE
Tetra Tech NUS, Inc./Great Lakes, IL CTO064
Project Manager: B. Cummings
SDG: CTO064_002
Work order: 0911147, 0911151 and 0911181

SVOC

Sampled	Received	Lab ID	Client ID
11/13/2009	11/14/2009	0911147-01	NTC21SB02-SO-0406
11/15/2009	11/17/2009	0911151-01	NTC21MW0501
11/16/2009	11/17/2009	0911151-02	NTC21-FD111609-01
11/16/2009	11/17/2009	0911151-03	NTC21MW0201
11/16/2009	11/17/2009	0911151-04	NTC21MW0301
11/16/2009	11/17/2009	0911151-05	NTC21MW0401
11/17/2009	11/18/2009	0911181-01	FB-111709-01
11/17/2009	11/18/2009	0911181-02	NTC21MW0101
11/17/2009	11/18/2009	0911181-03	NTC21MW0601

Semi-Volatiles

Method: The samples were analyzed by USEPA SW-846 Methods 3510C/8270C or 3546/8270C (separatory funnel or microwave extraction followed by capillary column GC/MS) for waters or solids upon receipt to the laboratory in satisfactory condition.

Comments: The volatile analyses for these samples were satisfactorily completed within sample holding times and met the corresponding specifications with the following note/exceptions:

- DFTPP Tuning: All method tuning criteria were met.
- Calibration Criteria: In the initial calibration verification, 2-chlorophenol and 2,4-dimethylphenol exceeded 25% difference with positive biases of 31.9% and 43.1%. These analytes were not detected in the associated samples. All other initial calibration criteria were met.
- Continuing Calibration Exceedence: The continuing calibration compound (CCC) di-n-octylphthalate exceeded method criteria of 20% difference with a positive bias of 25.5%D in the continuing calibration verification (CCV) analyzed on 112709 at 2300. Evaluating all other compounds against the 20%D criteria, a total of 5 compounds exceeded with positive biases with no reported concentrations for these compounds above the quantitation limit in the associated samples while acetophenone, atrazine and N-nitroso-di-n-propylamine exceeded with negative biases of 24.2%, 72% and 23.8%. The continuing calibration compound (CCC) di-n-octylphthalate exceeded method criteria of 20% difference with a positive bias of 22%D in the CCV analyzed on 120309 at 1206. Evaluating all other compounds against the 20%D criteria, a total of 5 compounds exceeded with positive biases with no reported concentrations for these compounds above the quantitation limit in the associated samples while acetophenone, benzaldehye and 2,4-dimethylphenol exceeded with negative biases of 21.8%, 2108% and 22.2%. All compounds, that recovered outside of 20%D with negative biases were qualified with a "Y" in the associated samples to indicate a potential negative bias. All other method criteria were met.
- Method Blank Results: One or more target analytes were detected in the method blanks at concentrations less than ½ the quantitation limits. Reported concentrations in the associated samples are qualified with a "B".
- Surrogate Recoveries: Recovery was less than 10% for 2 of the 3 acid surrogates in sample NTC21SB02-SO-0406. In order to confirm matrix, the sample was re-extracted with MS/MSD 21 days after sampling with similar results. Both results are reported with the acid compounds qualified with an "*" and a note to "see case narrative".
- 9K16025-BLK1LCS Results: Recovery of caprolactam was below the limit of 20% at 18% while all other recoveries were within limits.
- 9K18009-BLK1LCS Results: Recoveries of butylbenzylphthalate and di-n-octylphthalae exceeded the limits of 115% and 135% at 131% and 138% while recovery of caprolactam was below the limit of 20% at 16%. All other recoveries were within limits.
- 9K19024-BLK1LCS/LCSD Results: Recoveries of butylbenzylphthalate and 2,4-dimethylphenol

exceeded the limits of 115% and 140% at 119%/(110%) and (134%)/147% while recoveries of caprolactam were below the limit of 20% at 18%/(24%). All other recoveries and relative percent differences were within limits.

- 9K23034-BLK1LCS Results: Recovery of caprolactam was below the limit of 50% at 6% while all other recoveries were within limits. Results for caprolactam are qualified with a "Y" to indicate a potential negative bias.
- 9L04012-BLK1LCS Results: Recovery of caprolactam exceeded the limit of 110% at 128% while all other recoveries were within limits.
- NTC21MW0501MS/MSD Results: Recoveries of butylbenzylphthalate and di-n-octylphthalae exceeded the limits of 115% and 135% at 120% and 139% while recovery of caprolactam was below the limit of 20% at 13%. All other recoveries and relative percent differences were within limits.
- NTC21SB02-SO-0406MS/MSD: Of 96 recoveries, 21 recovered below the acceptance limits while 4 of 48 relative percent differences exceeded the limit. See form 3. All of the 21 analytes recovering below the limits were acid compounds with some having no recovery. All acid compound results are qualified with an "*" and a note to "see case narrative".
- Internal Standard Area Counts: All area counts were within limits.
- Dilutions: All samples were analyzed without dilution.
- Manual integrations: Quantitation signals were manually integrated in order to accurately reflect the peak areas based on the technical judgment of the analyst. A listing of the manual integrations performed and reason for the integration is included with the logs. Before and after "pictures" are available where manual integrations were performed.

I certify that, to the best of my knowledge and based upon my inquiry of those individuals immediately responsible for obtaining the information, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in the case narrative, as verified by the following signature.

Marcia K. McGinnity
Data Quality Manager

ANALYTICAL REPORT TERMS AND QUALIFIERS (ORGANIC)

MDL: The method detection limit (MDL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The MDL is determined from analysis of a sample containing the analyte in a given matrix.

EQL: The estimated quantitation limit (EQL), also known as the reporting limit (RL), is defined as the estimated concentration above which quantitative results can be obtained with a specific degree of confidence. Empirical Laboratories defines the EQL to be at or near the lowest standard of the calibration curve.

U: The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte quantitated below the MDL.

B: The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the correct sample result might be less than the reported result and, perhaps, zero.

D: When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".

E: The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound.

J: The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The mass spectral data pass the identification criteria showing that the compound is present, but the calculated result is less than the EQL. One should feel confident that the result is greater than zero and less than the EQL.

P: The associated numerical value is an estimated quantity. There is greater than a 40% difference between the two GC columns for the detected concentrations. The higher of the two values is reported.

M: The presence of an "M" to the right of an analytical result indicates that the sample matrix interfered with the quantitation of the analyte. In GC and HPLC, results are reported from the column with the lower concentration.

I: The presence of an "I" to the right of an analytical result that the presence of a qualitative interference could have caused a false positive or over estimation of the analyte. In GC and HPLC, results are reported from the column with the lower concentration.

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA17287

Lab File ID: SEQ-TUN1 DFTPP Injection Date: 11/04/09

Instrument ID: BNA1 DFTPP Injection Time: 0825

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	42.8
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	67.0
70	Less than 2.0% of mass 69	0.2 (0.3)1
127	40.0 - 60.0% of mass 198	46.5
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.9
275	10.0 - 30.0% of mass 198	17.2
365	Greater than 1.0% of mass 198	1.76
441	Present, but less than mass 443	7.8
442	Greater than 40.0% of mass 198	51.8
443	17.0 - 23.0% of mass 442	10.3 (19.9)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	BNACALA1.0PP	SEQ-CAL2	SEQ-CAL2	11/04/09	0923
02	BNACALA2.0PP	SEQ-CAL3	SEQ-CAL3	11/04/09	0959
03	BNACALA5.0PP	SEQ-CAL4	SEQ-CAL4	11/04/09	1035
04	BNACALA10.0P	SEQ-CAL5	SEQ-CAL5	11/04/09	1112
05	BNACALA20.0P	SEQ-CAL6	SEQ-CAL6	11/04/09	1148
06	BNACALA40.0P	SEQ-CAL7	SEQ-CAL7	11/04/09	1224
07	BNACALA50.0P	SEQ-CAL8	SEQ-CAL8	11/04/09	1301
08	BNACALA60.0P	SEQ-CAL9	SEQ-CAL9	11/04/09	1338
09	BNACALA80.0P	SEQ-CALA	SEQ-CALA	11/04/09	1414
10	BNACALA100.0	SEQ-CALB	SEQ-CALB	11/04/09	1542
11	BNACALB1.0PP	SEQ-CALD	SEQ-CALD	11/04/09	1730
12	BNACALB2.0PP	SEQ-CALE	SEQ-CALE	11/04/09	1807
13	BNACALB5.0PP	SEQ-CALF	SEQ-CALF	11/04/09	1843
14	BNACALB10.0P	SEQ-CALG	SEQ-CALG	11/04/09	1919
15	BNACALB20.0P	SEQ-CALH	SEQ-CALH	11/04/09	1955
16					
17					
18					
19					
20					
21					
22					

page 1 of 1

FORM V SV

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA17287

Lab File ID: SEQ-TUN2 DFTPP Injection Date: 11/04/09

Instrument ID: BNA1 DFTPP Injection Time: 2103

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	44.6
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	68.0
70	Less than 2.0% of mass 69	0.2 (0.3)1
127	40.0 - 60.0% of mass 198	48.4
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.0
275	10.0 - 30.0% of mass 198	16.9
365	Greater than 1.0% of mass 198	1.87
441	Present, but less than mass 443	7.4
442	Greater than 40.0% of mass 198	48.4
443	17.0 - 23.0% of mass 442	9.6 (19.8)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	BNACALB50.0P	SEQ-CALJ	SEQ-CALJ	11/04/09	2126
02	BNACALB60.0P	SEQ-CALK	SEQ-CALK	11/04/09	2202
03	BNACALB80.0P	SEQ-CALL	SEQ-CALL	11/04/09	2238
04	BNACALB100.0	SEQ-CALM	SEQ-CALM	11/04/09	2313
05	ICV1-50PPM	SEQ-ICV1	SEQ-ICV1	11/04/09	2349
06	ICV1A-50PPM	SEQ-ICV3	SEQ-ICV3	11/05/09	0101
07	ICV2A-50PPM	SEQ-ICV4	SEQ-ICV4	11/05/09	0137
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA86373

Instrument ID: BNA1 Calibration Date(s): 11/04/09 11/04/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0923 2313

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
Acenaphthene	AVRG		1.06284152		6.3
Acenaphthylene	AVRG		1.46066854		7.6
Acetophenone	AVRG		1.64909400		13.0
Aniline	AVRG		2.01828543		11.7
Anthracene	AVRG		0.98192517		5.3
Benzoic acid	2ORDR	0.12321304	3.34219057	-0.5325076	0.996
Benzo(a)anthracene	AVRG		1.02364724		5.8
Benzo(b)fluoranthene	AVRG		1.11611668		13.0
Benzo(k)fluoranthene	AVRG		1.13565422		14.0
Benzo(g,h,i)perylene	AVRG		0.53752343		11.2
Benzo(a)pyrene	LINR	0.00000000	1.05770635		0.996
Benzyl alcohol	AVRG		0.92473242		6.2
bis(2-Chloroethoxy)methane	AVRG		0.50716725		12.8
1,1'-Biphenyl	AVRG		1.44566742		7.9
bis(2-Chloroethyl)ether	AVRG		1.42849220		14.6
bis(2-Chloroisopropyl)ether	2ORDR	0.00000000	0.22792103	0.10183793	0.998
Bis(2-ethylhexyl)phthalate	AVRG		1.27512350		13.1
4-Bromophenyl-phenylether	AVRG		0.20853771		5.5
Butylbenzylphthalate	AVRG		0.95351456		14.4
Carbazole	AVRG		0.85263644		6.2
4-Chloroaniline	AVRG		0.47534389		10.3
Caprolactam	AVRG		0.11067848		11.3
4-Chloro-3-methylphenol	AVRG		0.32715264		10.5
2-Chloronaphthalene	AVRG		1.08273095		4.0
2-Chlorophenol	AVRG		1.28452001		11.4
4-Chlorophenyl-phenylether	AVRG		0.54199820		4.1
Chrysene	AVRG		0.96539168		5.6
Dibenz(a,h)anthracene	2ORDR	1.899e-002	2.00693431	-0.2463653	0.998
Dibenzofuran	AVRG		1.55600942		5.0
1,3-Dichlorobenzene	AVRG		1.36631772		10.6
1,4-Dichlorobenzene	AVRG		1.24910110		9.8
1,2-Dichlorobenzene	AVRG		1.20761982		11.9
2,4-Dichlorophenol	AVRG		0.30656766		10.0
2,6-Dichlorophenol	AVRG		0.29130539		10.5
Diethylphthalate	AVRG		1.34935597		5.1
2,4-Dimethylphenol	AVRG		0.38441605		12.0
Dimethylphthalate	AVRG		1.31765363		4.5

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA86373

Instrument ID: BNA1 Calibration Date(s): 11/04/09 11/04/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0923 2313

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
Di-n-butylphthalate	AVRG		1.46154006		9.9
4,6-Dinitro-2-methylphenol	2ORDR	0.16252585	6.90456966	-2.9810031	0.997
2,4-Dinitrophenol	2ORDR	0.22338235	6.44651440	-3.7969989	0.990
2,4-Dinitrotoluene	LINR	0.00000000	0.43440198		0.998
2,6-Dinitrotoluene	LINR	0.00000000	0.34658681		0.996
1,2-Diphenylhydrazine	AVRG		1.08311538		14.6
Di-n-octylphthalate	AVRG		2.70041527		14.8
Fluoranthene	AVRG		0.89752410		6.6
Fluorene	AVRG		1.17184057		4.6
Hexachlorobenzene	AVRG		0.23676557		3.3
Hexachlorobutadiene	AVRG		0.17459508		6.4
Hexachlorocyclopentadiene	2ORDR	0.00000000	4.86095632	-0.4072599	0.992
Hexachloroethane	AVRG		0.66364076		9.5
Indeno(1,2,3-cd)pyrene	2ORDR	1.16e-002	2.09215650	-0.2790025	0.998
Isophorone	AVRG		0.80804350		10.6
2-Methylnaphthalene	AVRG		0.58683980		9.0
1-Methylnaphthalene	AVRG		0.50541876		7.4
4-Methylphenol	AVRG		1.22535151		9.6
3-Methylphenol	AVRG		1.22880659		9.2
Naphthalene	AVRG		0.96646467		12.4
2-Methylphenol	AVRG		1.24321184		6.3
2-Nitroaniline	AVRG		0.44636107		12.6
3-Nitroaniline	2ORDR	0.00000000	2.70296877	-0.2860563	0.997
4-Nitroaniline	2ORDR	0.00000000	3.46706704	-0.6969726	0.993
Nitrobenzene	AVRG		0.41752872		12.4
2-Nitrophenol	AVRG		0.22302425		12.7
4-Nitrophenol	2ORDR	0.10509973	2.70371589	0.96455740	0.993
N-Nitroso-di-methylamine	AVRG		1.06926336		12.5
N-Nitrosodiphenylamine	AVRG		0.49942652		7.1
N-Nitroso-di-n-propylamine	2ORDR	-1.04e-002	0.94403214	0.23852993	0.998
Pentachlorophenol	LINR	0.17596574	0.17673923		0.998
Phenanthrene	AVRG		0.96542045		4.5
Phenol	AVRG		1.67859697		14.2
Pyrene	AVRG		1.51900735		8.6
Pyridine	AVRG		1.77503937		8.5
1,2,4,5-Tetrachlorobenzene	AVRG		0.30989782		7.4
1,2,4-Trichlorobenzene	AVRG		0.32279108		5.5

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA86373

Instrument ID: BNA1 Calibration Date(s): 11/04/09 11/04/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0923 2313

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
2,4,5-Trichlorophenol	AVRG		0.39635192		14.8
2,4,6-Trichlorophenol	LINR	1.543e-002	0.41585612		0.998
1,4-Dioxane	AVRG		0.76017709		6.9
2-Fluorophenol	AVRG		1.55324382		12.2
Phenol-d6	AVRG		1.78691664		13.6
Nitrobenzene-d5	AVRG		0.45516119		13.0
2-Fluorobiphenyl	AVRG		1.26310883		6.7
2,4,6-Tribromophenol	LINR	0.00000000	0.13850672		0.998
Terphenyl-d14	AVRG		0.90768440		13.4

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FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA86373

Instrument ID: BNA1 Calibration Date(s): 11/04/09 11/04/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0923 2313

COMPOUND	CURVE	COEFFICENTS A0	A1	%RSD OR R^2
Atrazine	AVRG		0.20324921	8.8
Benzidine	LINR	0.00000000	0.72953254	0.998
Benzaldehyde	AVRG		1.28057399	10.3
3,3'-Dichlorobenzidine	AVRG		0.31460741	13.4
2,3,4,6-Tetrachlorophenol	LINR	0.12687530	0.28002550	0.997
2-Chloroacetophenone	AVRG		0.63498709	7.2
2-Chlorobenzalmalononitrile	AVRG		0.29992935	6.1

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FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA86373 S1

Instrument ID: BNA1 Calibration Date(s): 11/04/09 11/04/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0923 2313

LAB FILE ID: RF1: SEQ-CAL2 RF2: SEQ-CAL3 RF5: SEQ-CAL4
RF10: SEQ-CAL5 RF20: SEQ-CAL6

COMPOUND	RF1	RF2	RF5	RF10	RF20
Acenaphthene	1.011	1.105	1.113	1.110	1.159
Acenaphthylene	1.355	1.460	1.608	1.541	1.649
Acetophenone	1.761	1.874	1.894	1.791	1.786
Aniline	2.100	2.284	2.257	2.310	2.168
Anthracene	0.894	0.980	1.017	1.054	1.030
Benzoic acid			0.081	0.146	0.237
Benzo(a)anthracene	0.949	0.917	0.983	1.010	1.053
Benzo(b)fluoranthene	0.857	0.898	1.052	1.132	1.121
Benzo(k)fluoranthene	0.806	0.964	1.046	1.143	1.170
Benzo(g,h,i)perylene	0.523	0.434	0.465	0.516	0.578
Benzo(a)pyrene	0.677	0.731	0.813	0.913	0.949
Benzyl alcohol	0.831	0.836	0.941	0.988	0.997
bis(2-Chloroethoxy)methane	0.551	0.581	0.568	0.558	0.562
1,1'-Biphenyl	1.378	1.480	1.572	1.540	1.589
bis(2-Chloroethyl)ether	1.503	1.665	1.666	1.618	1.566
bis(2-Chloroisopropyl)ether	3.044	3.324	3.104	3.059	2.725
Bis(2-ethylhexyl)phthalate		0.942	1.100	1.244	1.330
4-Bromophenyl-phenylether	0.185	0.194	0.208	0.209	0.212
Butylbenzylphthalate		0.715	0.820	0.930	0.963
Carbazole	0.734	0.820	0.885	0.856	0.890
4-Chloroaniline	0.425	0.449	0.506	0.514	0.576
Caprolactam		0.082	0.130	0.116	0.113
4-Chloro-3-methylphenol	0.256	0.316	0.339	0.355	0.381
2-Chloronaphthalene	1.062	1.133	1.119	1.099	1.130
2-Chlorophenol	1.315	1.435	1.429	1.445	1.369
4-Chlorophenyl-phenylether	0.511	0.541	0.537	0.511	0.550
Chrysene	0.870	0.918	0.933	0.950	0.990
Dibenz(a,h)anthracene	0.408	0.416	0.392	0.430	0.525
Dibenzofuran	1.507	1.586	1.661	1.612	1.668
1,3-Dichlorobenzene	1.405	1.527	1.480	1.495	1.465
1,4-Dichlorobenzene	1.270	1.352	1.346	1.382	1.358
1,2-Dichlorobenzene	1.230	1.367	1.340	1.338	1.317
2,4-Dichlorophenol	0.239	0.282	0.306	0.327	0.347
2,6-Dichlorophenol	0.218	0.273	0.299	0.301	0.316
Diethylphthalate	1.250	1.319	1.423	1.419	1.445
2,4-Dimethylphenol	0.411	0.417	0.437	0.442	0.414
Dimethylphthalate	1.216	1.299	1.376	1.368	1.412

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA86373

Instrument ID: BNA1 Calibration Date(s): 11/04/09 11/04/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0923 2313

LAB FILE ID: RF1: SEQ-CAL2 RF2: SEQ-CAL3 RF5: SEQ-CAL4
RF10: SEQ-CAL5 RF20: SEQ-CAL6

COMPOUND	RF1	RF2	RF5	RF10	RF20
Di-n-butylphthalate	1.236	1.400	1.562	1.639	1.639
4,6-Dinitro-2-methylphenol			0.023	0.048	0.088
2,4-Dinitrophenol			0.009	0.029	0.067
2,4-Dinitrotoluene	0.149	0.187	0.294	0.345	0.412
2,6-Dinitrotoluene	0.149	0.204	0.268	0.287	0.326
1,2-Diphenylhydrazine	1.154	1.233	1.222	1.249	1.234
Di-n-octylphthalate			2.086	2.585	2.634
Fluoranthene	0.800	0.830	0.866	0.928	0.971
Fluorene	1.055	1.163	1.158	1.195	1.226
Hexachlorobenzene	0.234	0.224	0.237	0.240	0.237
Hexachlorobutadiene	0.153	0.176	0.182	0.189	0.182
Hexachlorocyclopentadiene	0.116	0.120	0.141	0.163	0.188
Hexachloroethane	0.680	0.703	0.735	0.744	0.708
Indeno(1,2,3-cd)pyrene	0.376	0.342	0.415	0.442	0.544
Isophorone	0.694	0.812	0.912	0.928	0.912
2-Methylnaphthalene	0.557	0.591	0.621	0.646	0.654
1-Methylnaphthalene	0.484	0.544	0.522	0.533	0.555
4-Methylphenol	1.061	1.320	1.298	1.362	1.342
3-Methylphenol	1.095	1.320	1.298	1.362	1.342
Naphthalene	0.954	1.059	1.084	1.085	1.081
2-Methylphenol	1.162	1.297	1.297	1.354	1.352
2-Nitroaniline	0.316	0.378	0.465	0.495	0.492
3-Nitroaniline	0.202	0.228	0.271	0.306	0.366
4-Nitroaniline	0.166	0.145	0.142	0.192	0.267
Nitrobenzene	0.411	0.476	0.485	0.453	0.471
2-Nitrophenol		0.173	0.188	0.206	0.232
4-Nitrophenol			0.153	0.215	0.280
N-Nitroso-di-methylamine	1.074	1.269	1.111	1.190	1.135
N-Nitrosodiphenylamine	0.418	0.469	0.528	0.537	0.521
N-Nitroso-di-n-propylamine	1.092	1.226	1.145	1.080	1.013
Pentachlorophenol				0.083	0.118
Phenanthrene	0.899	0.967	0.960	1.006	1.010
Phenol	1.813	1.929	1.828	1.963	1.858
Pyrene	1.299	1.510	1.482	1.561	1.561
Pyridine	1.804	1.956	1.917	1.945	1.897
1,2,4,5-Tetrachlorobenzene	0.286	0.291	0.320	0.332	0.336
1,2,4-Trichlorobenzene	0.312	0.329	0.333	0.338	0.348

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA86373

Instrument ID: BNA1 Calibration Date(s): 11/04/09 11/04/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0923 2313

LAB FILE ID: RF1: SEQ-CAL2 RF2: SEQ-CAL3 RF5: SEQ-CAL4
RF10: SEQ-CAL5 RF20: SEQ-CAL6

COMPOUND	RF1	RF2	RF5	RF10	RF20
2,4,5-Trichlorophenol	0.262	0.335	0.384	0.393	0.430
2,4,6-Trichlorophenol	0.204	0.300	0.357	0.378	0.401
1,4-Dioxane	0.768	0.764	0.797	0.819	0.839
2-Fluorophenol	1.502	1.752	1.711	1.760	1.645
Phenol-d6	1.823	2.048	1.976	2.048	1.939
Nitrobenzene-d5	0.476	0.534	0.538	0.463	0.504
2-Fluorobiphenyl	1.204	1.290	1.386	1.360	1.351
2,4,6-Tribromophenol	0.064	0.069	0.098	0.115	0.123
Terphenyl-d14	0.716	0.809	0.835	0.884	0.932

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA86373

Instrument ID: BNA1 Calibration Date(s): 11/04/09 11/04/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0923 2313

LAB FILE ID: RF40: SEQ-CAL7 RF50: SEQ-CAL8 RF60: SEQ-CAL9
RF80: SEQ-CALA RF100: SEQ-CALB

COMPOUND	RF40	RF50	RF60	RF80	RF100
Acenaphthene	1.024	1.053	1.093	1.036	0.925
Acenaphthylene	1.388	1.425	1.472	1.407	1.300
Acetophenone	1.498	1.456	1.469	1.312	
Aniline	1.900	1.923	1.856	1.683	1.701
Anthracene	0.990	0.992	1.013	0.941	0.908
Benzoic acid	0.251	0.272	0.318	0.315	0.322
Benzo(a)anthracene	1.016	1.068	1.058	1.081	1.102
Benzo(b)fluoranthene	1.147	1.190	1.213	1.313	1.238
Benzo(k)fluoranthene	1.174	1.216	1.199	1.349	1.288
Benzo(g,h,i)perylene	0.507	0.587	0.549	0.590	0.625
Benzo(a)pyrene	0.942	1.003	1.074	1.075	1.075
Benzyl alcohol	0.919	0.959	0.964	0.923	0.890
bis(2-Chloroethoxy)methane	0.469	0.465	0.486	0.432	0.400
1,1'-Biphenyl	1.446	1.443	1.455	1.340	1.214
bis(2-Chloroethyl)ether	1.356	1.338	1.334	1.160	1.079
bis(2-Chloroisopropyl)ether	2.195	2.049	1.972	1.701	
Bis(2-ethylhexyl)phthalate	1.336	1.400	1.236	1.422	1.465
4-Bromophenyl-phenylether	0.204	0.215	0.219	0.222	0.216
Butylbenzylphthalate	0.955	1.017	0.913	1.089	1.180
Carbazole	0.862	0.849	0.929	0.875	0.826
4-Chloroaniline	0.463	0.462	0.502	0.442	0.414
Caprolactam	0.107	0.111	0.115	0.110	0.112
4-Chloro-3-methylphenol	0.317	0.332	0.354	0.318	0.303
2-Chloronaphthalene	1.028	1.080	1.110	1.055	1.011
2-Chlorophenol	1.292	1.196	1.248	1.097	1.020
4-Chlorophenyl-phenylether	0.523	0.556	0.572	0.573	0.545
Chrysene	0.932	1.016	0.992	1.002	1.051
Dibenz(a,h)anthracene	0.471	0.563	0.564	0.560	0.610
Dibenzofuran	1.523	1.524	1.578	1.460	1.441
1,3-Dichlorobenzene	1.362	1.343	1.334	1.190	1.063
1,4-Dichlorobenzene	1.230	1.214	1.245	1.082	1.011
1,2-Dichlorobenzene	1.170	1.186	1.164	1.034	0.928
2,4-Dichlorophenol	0.318	0.303	0.338	0.310	0.296
2,6-Dichlorophenol	0.290	0.299	0.334	0.298	0.284
Diethylphthalate	1.315	1.361	1.375	1.337	1.250
2,4-Dimethylphenol	0.355	0.347	0.376	0.330	0.312
Dimethylphthalate	1.296	1.340	1.314	1.311	1.245

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA86373

Instrument ID: BNA1 Calibration Date(s): 11/04/09 11/04/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0923 2313

LAB FILE ID: RF40: SEQ-CAL7 RF50: SEQ-CAL8 RF60: SEQ-CAL9
RF80: SEQ-CALA RF100: SEQ-CALB

COMPOUND	RF40	RF50	RF60	RF80	RF100
Di-n-butylphthalate	1.523	1.479	1.491	1.411	1.234
4,6-Dinitro-2-methylphenol	0.120	0.133	0.150	0.155	0.163
2,4-Dinitrophenol	0.106	0.137	0.168	0.178	0.194
2,4-Dinitrotoluene	0.402	0.419	0.446	0.433	0.441
2,6-Dinitrotoluene	0.303	0.330	0.349	0.353	0.353
1,2-Diphenylhydrazine	1.059	0.988	0.988	0.896	0.807
Di-n-octylphthalate	3.044	3.229	2.623		
Fluoranthene	0.915	0.915	0.976	0.926	0.848
Fluorene	1.144	1.207	1.244	1.186	1.138
Hexachlorobenzene	0.226	0.236	0.239	0.242	0.252
Hexachlorobutadiene	0.170	0.180	0.184	0.168	0.162
Hexachlorocyclopentadiene	0.183	0.210	0.234	0.219	0.207
Hexachloroethane	0.646	0.640	0.648	0.574	0.559
Indeno(1,2,3-cd)pyrene	0.461	0.534	0.530	0.562	0.591
Isophorone	0.756	0.728	0.836	0.768	0.733
2-Methylnaphthalene	0.571	0.585	0.625	0.539	0.480
1-Methylnaphthalene	0.491	0.498	0.527	0.461	0.439
4-Methylphenol	1.187	1.249	1.279	1.118	1.037
3-Methylphenol	1.187	1.249	1.279	1.118	1.037
Naphthalene	0.909	0.867	0.913	0.746	
2-Methylphenol	1.169	1.204	1.258	1.188	1.149
2-Nitroaniline	0.465	0.453	0.486	0.461	0.452
3-Nitroaniline	0.352	0.393	0.428	0.399	0.411
4-Nitroaniline	0.278	0.299	0.360	0.342	0.336
Nitrobenzene	0.401	0.375	0.406	0.354	0.343
2-Nitrophenol	0.232	0.231	0.261	0.244	0.239
4-Nitrophenol	0.265	0.295	0.314	0.301	0.275
N-Nitroso-di-methylamine	0.934	0.950	0.890		
N-Nitrosodiphenylamine	0.500	0.497	0.530	0.492	0.502
N-Nitroso-di-n-propylamine	0.842	0.814	0.845	0.774	0.723
Pentachlorophenol	0.137	0.145	0.157	0.162	0.165
Phenanthrene	0.988	0.991	1.004	0.942	0.887
Phenol	1.616	1.587	1.561	1.374	1.256
Pyrene	1.507	1.545	1.330	1.695	1.699
Pyridine	1.708	1.694	1.701	1.571	1.557
1,2,4,5-Tetrachlorobenzene	0.308	0.316	0.339	0.299	0.271
1,2,4-Trichlorobenzene	0.313	0.318	0.338	0.309	0.289

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA86373

Instrument ID: BNA1 Calibration Date(s): 11/04/09 11/04/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0923 2313

LAB FILE ID: RF40: SEQ-CAL7 RF50: SEQ-CAL8 RF60: SEQ-CAL9
RF80: SEQ-CALA RF100: SEQ-CALB

COMPOUND	RF40	RF50	RF60	RF80	RF100
2,4,5-Trichlorophenol	0.396	0.437	0.440	0.452	0.434
2,4,6-Trichlorophenol	0.389	0.416	0.430	0.420	0.404
1,4-Dioxane	0.749	0.763	0.744	0.687	0.671
2-Fluorophenol	1.430	1.342	1.285		
Phenol-d6	1.692	1.645	1.573	1.337	
Nitrobenzene-d5	0.438	0.409	0.438	0.388	0.364
2-Fluorobiphenyl	1.221	1.234	1.263	1.210	1.112
2,4,6-Tribromophenol	0.133	0.132	0.143	0.140	0.139
Terphenyl-d14	0.967	1.003	0.884	1.139	

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA863735L

Instrument ID: BNA1 Calibration Date(s): 11/04/09 11/04/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0923 2313

LAB FILE ID: RF1: SEQ-CALD RF2: SEQ-CALE RF5: SEQ-CALF
RF10: SEQ-CALG RF20: SEQ-CALH

COMPOUND	RF1	RF2	RF5	RF10	RF20
Atrazine	0.169	0.179	0.203	0.204	0.210
Benzidine		0.502	0.513	0.596	0.671
Benzaldehyde	1.391	1.374	1.442	1.346	1.378
3,3'-Dichlorobenzidine	0.264	0.273	0.278	0.284	0.319
2,3,4,6-Tetrachlorophenol			0.102	0.155	0.210
2-Chloroacetophenone	0.572	0.628	0.678	0.688	0.694
2-Chlorobenzalmalononitrile	0.279	0.299	0.307	0.326	0.327

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA86373

Instrument ID: BNA1 Calibration Date(s): 11/04/09 11/04/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0923 2313

LAB FILE ID: RF40: RF50: SEQ-CALJ RF60: SEQ-CALK
RF80: SEQ-CALL RF100: SEQ-CALM

COMPOUND	RF40	RF50	RF60	RF80	RF100
Atrazine		0.211	0.220	0.221	0.212
Benzidine		0.750	0.719	0.742	0.724
Benzaldehyde		1.176	1.196	1.147	1.075
3,3'-Dichlorobenzidine		0.328	0.344	0.387	0.354
2,3,4,6-Tetrachlorophenol		0.227	0.255	0.266	0.269
2-Chloroacetophenone		0.610	0.637	0.637	0.571
2-Chlorobenzalmalononitrile		0.297	0.288	0.301	0.276

FORM VI SV

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Lab File ID: SEQ-TUN1 DFTPP Injection Date: 11/24/09

Instrument ID: BNA1 DFTPP Injection Time: 1342

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	37.6
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	60.6
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	50.0
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.4
275	10.0 - 30.0% of mass 198	17.9
365	Greater than 1.0% of mass 198	1.81
441	Present, but less than mass 443	6.7
442	Greater than 40.0% of mass 198	45.7
443	17.0 - 23.0% of mass 442	9.2 (20.2)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV50PPM	SEQ-CCV1	SEQ-CCV1	11/24/09	1404
02	9K18009-BLK1	9K18009-BLK1	K18009B1	11/24/09	1629
03	9K18009-BLK1	9K18009-BS1	K18009L1	11/24/09	1705
04	NTC21MW0501	0911151-01	1115101	11/25/09	0052
05	NTC21-FD1116	0911151-02	1115102	11/25/09	0128
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FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Instrument ID: BNA1 Calibration Date: 11/24/09 Time: 1404

Lab File ID: SEQ-CCV1 Init. Calib. Date(s): 11/04/09 11/21/09

Init. Calib. Times: 0847 1640

COMPOUND	$\overline{RRF}$	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acetophenone	1.649	1.225	50.00	37.14		AVRG	-25.7	
Atrazine	0.203	0.089	50.00	21.90		AVRG	-56.2	
Benzaldehyde	1.280	0.995	50.00	38.84		AVRG	-22.3	
bis(2-Chloroethoxy)methane	0.507	0.456	50.00	44.95		AVRG	-10.1	
1,1'-Biphenyl	1.446	1.328	50.00	45.94		AVRG	-8.1	
bis(2-Chloroethyl)ether	1.428	1.391	50.00	48.70		AVRG	-2.6	
2,2-Oxybis(1-chloropropane)	2.575	1.672	50.00	36.86		2ORDR	-26.3	
Bis(2-ethylhexyl)phthalate	1.275	1.158	50.00	45.41		AVRG	-9.2	
4-Bromophenyl-phenylether	0.208	0.232	50.00	55.74		AVRG	11.5	
Butylbenzylphthalate	0.954	0.955	50.00	50.07		AVRG	0.1	
Caprolactam	0.111	0.148	50.00	66.67		AVRG	33.3	
4-Chloroaniline	0.475	0.458	50.00	48.20		AVRG	-3.6	
Carbazole	0.853	0.870	50.00	51.00		AVRG	2.0	
4-Chloro-3-methylphenol	0.327	0.333	50.00	50.93		AVRG	1.8	20.0
2-Chloronaphthalene (beta)	1.083	1.022	50.00	47.20		AVRG	-5.6	
2-Chlorophenol	1.285	1.134	50.00	44.15		AVRG	-11.7	
4-Chlorophenyl-phenylether	0.542	0.530	50.00	48.90		AVRG	-2.2	
Dibenzofuran	1.556	1.430	50.00	45.94		AVRG	-8.1	
3,3'-Dichlorobenzidine	0.314	0.570	50.00	90.64		AVRG	81.3	
2,4-Dichlorophenol	0.307	0.333	50.00	54.28		AVRG	8.6	20.0
Diethylphthalate	1.349	1.320	50.00	48.91		AVRG	-2.2	
2,4-Dimethylphenol	0.384	0.313	50.00	40.69		AVRG	-18.6	
Dimethylphthalate	1.318	1.328	50.00	50.39		AVRG	0.8	
Di-n-butylphthalate	1.461	1.542	50.00	52.76		AVRG	5.5	
4,6-Dinitro-2-methylphenol	0.110	0.171	50.00	60.19		2ORDR	20.4	
2,4-Dinitrophenol	0.111	0.172	50.00	57.30	0.050	2ORDR	14.6	
2,4-Dinitrotoluene	0.353	0.412	50.00	47.41		LINR	-5.2	
2,6-Dinitrotoluene	0.292	0.354	50.00	51.01		LINR	2.0	
Di-n-octylphthalate	2.700	2.835	50.00	52.48		AVRG	5.0	20.0
Hexachlorobenzene	0.237	0.240	50.00	50.75		AVRG	1.5	
Hexachlorobutadiene	0.175	0.157	50.00	44.96		AVRG	-10.1	20.0
Hexachlorocyclopentadiene	0.178	0.172	50.00	40.94	0.050	2ORDR	-18.1	
Hexachloroethane	0.664	0.601	50.00	45.27		AVRG	-9.5	
Isophorone	0.808	0.728	50.00	45.06		AVRG	-9.9	
4-Methylphenol (p-cresol)	1.225	1.015	50.00	41.40		AVRG	-17.2	
2-Methylphenol (o-cresol)	1.243	1.144	50.00	46.03		AVRG	-7.9	
2-Nitroaniline	0.446	0.370	50.00	41.48		AVRG	-17.0	

FORM VII SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Instrument ID: BNA1 Calibration Date: 11/24/09 Time: 1404

Lab File ID: SEQ-CCV1 Init. Calib. Date(s): 11/04/09 11/21/09

Init. Calib. Times: 0847 1640

COMPOUND	$\overline{RRF}$	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
3-Nitroaniline	0.336	0.390	50.00	50.05		2ORDR	0.1	
4-Nitroaniline	0.253	0.313	50.00	49.99		2ORDR	-0.0	
Nitrobenzene	0.418	0.369	50.00	44.24		AVRG	-11.5	
2-Nitrophenol	0.223	0.266	50.00	59.60		AVRG	19.2	20.0
4-Nitrophenol	0.262	0.217	50.00	36.37	0.050	2ORDR	-27.3	
N-Nitrosodiphenylamine(1)	0.499	0.517	50.00	51.80		AVRG	3.6	20.0
N-Nitroso-di-n-propylamine	0.955	0.663	50.00	37.44	0.050	2ORDR	-25.1	
Pentachlorophenol	0.138	0.146	50.00	48.50		LINR	-3.0	20.0
Phenol	1.678	1.447	50.00	43.10		AVRG	-13.8	20.0
2,4,5-Trichlorophenol	0.396	0.383	50.00	48.30		AVRG	-3.4	
2,4,6-Trichlorophenol	0.370	0.355	50.00	43.30		LINR	-13.4	20.0
2-Fluorophenol	1.553	1.216	100.0	78.29		AVRG	-21.7	
Phenol-d6	1.787	1.360	100.0	76.13		AVRG	-23.9	
Nitrobenzene-d5	0.455	0.408	50.00	44.88		AVRG	-10.2	
2-Fluorobiphenyl	1.263	1.154	50.00	45.68		AVRG	-8.6	
2,4,6-Tribromophenol	0.116	0.114	100.0	82.29		LINR	-17.7	
Terphenyl-d14	0.908	1.138	50.00	62.72		AVRG	25.4	

(1) Cannot be separated from Diphenylamine

FORM VII SV

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Lab File ID: SEQ-TUN2 DFTPP Injection Date: 11/25/09

Instrument ID: BNA1 DFTPP Injection Time: 0349

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	35.4
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	60.4
70	Less than 2.0% of mass 69	0.2 (0.3)1
127	40.0 - 60.0% of mass 198	48.6
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.2
275	10.0 - 30.0% of mass 198	17.1
365	Greater than 1.0% of mass 198	1.81
441	Present, but less than mass 443	8.1
442	Greater than 40.0% of mass 198	52.5
443	17.0 - 23.0% of mass 442	9.9 (18.8)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV50PPM	SEQ-CCV2	SEQ-CCV2	11/25/09	0411
02	NTC21MW0401	0911151-05	1115105	11/25/09	0447
03	NTC21MW0501M	0911151-01MS	1115101M	11/25/09	0522
04	NTC21MW0501M	0911151-01MSD	1115101S	11/25/09	0558
05	NTC21MW0201	0911151-03	1115103	11/25/09	0802
06	NTC21MW0301	0911151-04	1115104	11/25/09	0838
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FORM V SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Instrument ID: BNA1 Calibration Date: 11/25/09 Time: 0411

Lab File ID: SEQ-CCV2 Init. Calib. Date(s): 11/04/09 11/21/09

Init. Calib. Times: 0847 1640

COMPOUND	$\overline{RRF}$	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acetophenone	1.649	1.211	50.00	36.70		AVRG	-26.6	
Atrazine	0.203	0.078	50.00	19.33		AVRG	-61.3	
Benzaldehyde	1.280	1.006	50.00	39.28		AVRG	-21.4	
bis(2-Chloroethoxy)methane	0.507	0.413	50.00	40.76		AVRG	-18.5	
1,1'-Biphenyl	1.446	1.341	50.00	46.37		AVRG	-7.3	
bis(2-Chloroethyl)ether	1.428	1.420	50.00	49.72		AVRG	-0.6	
2,2-Oxybis(1-chloropropane)	2.575	1.717	50.00	38.34		2ORDR	-23.3	
Bis(2-ethylhexyl)phthalate	1.275	1.271	50.00	49.85		AVRG	-0.3	
4-Bromophenyl-phenylether	0.208	0.208	50.00	49.91		AVRG	-0.2	
Butylbenzylphthalate	0.954	1.079	50.00	56.56		AVRG	13.1	
Caprolactam	0.111	0.125	50.00	56.44		AVRG	12.9	
4-Chloroaniline	0.475	0.422	50.00	44.40		AVRG	-11.2	
Carbazole	0.853	0.763	50.00	44.75		AVRG	-10.5	
4-Chloro-3-methylphenol	0.327	0.286	50.00	43.78		AVRG	-12.4	20.0
2-Chloronaphthalene (beta)	1.083	1.020	50.00	47.10		AVRG	-5.8	
2-Chlorophenol	1.285	1.201	50.00	46.77		AVRG	-6.5	
4-Chlorophenyl-phenylether	0.542	0.543	50.00	50.12		AVRG	0.2	
Dibenzofuran	1.556	1.487	50.00	47.80		AVRG	-4.4	
3,3'-Dichlorobenzidine	0.314	0.505	50.00	80.31		AVRG	60.6	
2,4-Dichlorophenol	0.307	0.283	50.00	46.18		AVRG	-7.6	20.0
Diethylphthalate	1.349	1.360	50.00	50.42		AVRG	0.8	
2,4-Dimethylphenol	0.384	0.299	50.00	38.86		AVRG	-22.3	
Dimethylphthalate	1.318	1.374	50.00	52.16		AVRG	4.3	
Di-n-butylphthalate	1.461	1.399	50.00	47.88		AVRG	-4.2	
4,6-Dinitro-2-methylphenol	0.110	0.139	50.00	50.90		2ORDR	1.8	
2,4-Dinitrophenol	0.111	0.182	50.00	59.82	0.050	2ORDR	19.6	
2,4-Dinitrotoluene	0.353	0.420	50.00	48.39		LINR	-3.2	
2,6-Dinitrotoluene	0.292	0.348	50.00	50.21		LINR	0.4	
Di-n-octylphthalate	2.700	2.966	50.00	54.92		AVRG	9.8	20.0
Hexachlorobenzene	0.237	0.227	50.00	48.02		AVRG	-4.0	
Hexachlorobutadiene	0.175	0.161	50.00	46.22		AVRG	-7.6	20.0
Hexachlorocyclopentadiene	0.178	0.171	50.00	40.76	0.050	2ORDR	-18.5	
Hexachloroethane	0.664	0.610	50.00	45.95		AVRG	-8.1	
Isophorone	0.808	0.660	50.00	40.86		AVRG	-18.3	
4-Methylphenol (p-cresol)	1.225	0.995	50.00	40.61		AVRG	-18.8	
2-Methylphenol (o-cresol)	1.243	1.128	50.00	45.36		AVRG	-9.3	
2-Nitroaniline	0.446	0.388	50.00	43.43		AVRG	-13.1	

FORM VII SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Instrument ID: BNA1 Calibration Date: 11/25/09 Time: 0411

Lab File ID: SEQ-CCV2 Init. Calib. Date(s): 11/04/09 11/21/09

Init. Calib. Times: 0847 1640

COMPOUND	$\overline{RRF}$	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
3-Nitroaniline	0.336	0.419	50.00	53.45		2ORDR	6.9	
4-Nitroaniline	0.253	0.313	50.00	50.02		2ORDR	0.0	
Nitrobenzene	0.418	0.344	50.00	41.19		AVRG	-17.6	
2-Nitrophenol	0.223	0.231	50.00	51.87		AVRG	3.7	20.0
4-Nitrophenol	0.262	0.208	50.00	34.93	0.050	2ORDR	-30.1	
N-Nitrosodiphenylamine(1)	0.499	0.461	50.00	46.20		AVRG	-7.6	20.0
N-Nitroso-di-n-propylamine	0.955	0.666	50.00	37.61	0.050	2ORDR	-24.8	
Pentachlorophenol	0.138	0.136	50.00	45.41		LINR	-9.2	20.0
Phenol	1.678	1.573	50.00	46.84		AVRG	-6.3	20.0
2,4,5-Trichlorophenol	0.396	0.392	50.00	49.52		AVRG	-1.0	
2,4,6-Trichlorophenol	0.370	0.376	50.00	45.80		LINR	-8.4	20.0
2-Fluorophenol	1.553	1.247	100.0	80.30		AVRG	-19.7	
Phenol-d6	1.787	1.460	100.0	81.74		AVRG	-18.3	
Nitrobenzene-d5	0.455	0.372	50.00	40.84		AVRG	-18.3	
2-Fluorobiphenyl	1.263	1.236	50.00	48.93		AVRG	-2.1	
2,4,6-Tribromophenol	0.116	0.108	100.0	78.38		LINR	-21.6	
Terphenyl-d14	0.908	1.180	50.00	65.02		AVRG	30.0	

(1) Cannot be separated from Diphenylamine

FORM VII SV

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Lab File ID: SEQ-TUN1 DFTPP Injection Date: 11/27/09

Instrument ID: BNA1 DFTPP Injection Time: 1357

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	38.4
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	64.7
70	Less than 2.0% of mass 69	0.2 (0.3)1
127	40.0 - 60.0% of mass 198	49.1
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.2
275	10.0 - 30.0% of mass 198	17.0
365	Greater than 1.0% of mass 198	1.56
441	Present, but less than mass 443	7.8
442	Greater than 40.0% of mass 198	48.6
443	17.0 - 23.0% of mass 442	9.8 (20.1)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SEQ-CCV1	SEQ-CCV1	SEQ-CCV1	11/27/09	1420
02	9K23034-BLK1	9K23034-BLK1	K23034B1	11/27/09	1456
03	9K23034-BLK1	9K23034-BS1	K23034L1	11/27/09	1532
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FORM V SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Instrument ID: BNA1 Calibration Date: 11/27/09 Time: 1420

Lab File ID: SEQ-CCV1 Init. Calib. Date(s): 11/04/09 11/21/09

Init. Calib. Times: 0923 1640

COMPOUND	$\overline{RRF}$	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acetophenone	1.649	1.270	50.00	38.50		AVRG	-23.0	
Atrazine	0.203	0.057	50.00	13.94		AVRG	72.1	
Benzaldehyde	1.280	0.985	50.00	38.47		AVRG	-23.1	
bis(2-Chloroethoxy)methane	0.507	0.455	50.00	44.86		AVRG	-10.3	
1,1'-Biphenyl	1.446	1.485	50.00	51.38		AVRG	2.8	
bis(2-Chloroethyl)ether	1.428	1.539	50.00	53.86		AVRG	7.7	
2,2-Oxybis(1-chloropropane)	2.575	1.762	50.00	39.82		2ORDR	-20.4	
Bis(2-ethylhexyl)phthalate	1.275	1.201	50.00	47.08		AVRG	-5.8	
4-Bromophenyl-phenylether	0.208	0.209	50.00	50.06		AVRG	0.1	
Butylbenzylphthalate	0.954	0.948	50.00	49.72		AVRG	-0.6	
Caprolactam	0.111	0.146	50.00	65.79		AVRG	31.6	
4-Chloroaniline	0.475	0.450	50.00	47.35		AVRG	-5.3	
Carbazole	0.853	0.838	50.00	49.12		AVRG	-1.8	
4-Chloro-3-methylphenol	0.327	0.319	50.00	48.74		AVRG	-2.5	20.0
2-Chloronaphthalene (beta)	1.083	1.141	50.00	52.68		AVRG	5.4	
2-Chlorophenol	1.285	1.226	50.00	47.72		AVRG	-4.6	
4-Chlorophenyl-phenylether	0.542	0.572	50.00	52.82		AVRG	5.6	
Dibenzofuran	1.556	1.499	50.00	48.16		AVRG	-3.7	
3,3'-Dichlorobenzidine	0.314	0.720	50.00	114.4		AVRG	128.7	
2,4-Dichlorophenol	0.307	0.318	50.00	51.85		AVRG	3.7	20.0
Diethylphthalate	1.349	1.491	50.00	55.24		AVRG	10.5	
2,4-Dimethylphenol	0.384	0.301	50.00	39.21		AVRG	-21.6	
Dimethylphthalate	1.318	1.398	50.00	53.05		AVRG	6.1	
Di-n-butylphthalate	1.461	1.415	50.00	48.40		AVRG	-3.2	
4,6-Dinitro-2-methylphenol	0.110	0.158	50.00	56.34		2ORDR	12.7	
2,4-Dinitrophenol	0.111	0.208	50.00	65.84	0.050	2ORDR	31.7	
2,4-Dinitrotoluene	0.353	0.424	50.00	48.87		LINR	-2.3	
2,6-Dinitrotoluene	0.292	0.368	50.00	53.06		LINR	6.1	
Di-n-octylphthalate	2.700	2.722	50.00	50.39		AVRG	0.8	20.0
Hexachlorobenzene	0.237	0.223	50.00	47.08		AVRG	-5.8	
Hexachlorobutadiene	0.175	0.170	50.00	48.82		AVRG	-2.4	20.0
Hexachlorocyclopentadiene	0.178	0.214	50.00	50.93	0.050	2ORDR	1.9	
Hexachloroethane	0.664	0.640	50.00	48.26		AVRG	-3.5	
Isophorone	0.808	0.704	50.00	43.58		AVRG	-12.8	
4-Methylphenol (p-cresol)	1.225	1.018	50.00	41.54		AVRG	-16.9	
2-Methylphenol (o-cresol)	1.243	1.223	50.00	49.20		AVRG	-1.6	
2-Nitroaniline	0.446	0.455	50.00	50.96		AVRG	1.9	

FORM VII SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Instrument ID: BNA1 Calibration Date: 11/27/09 Time: 1420

Lab File ID: SEQ-CCV1 Init. Calib. Date(s): 11/04/09 11/21/09

Init. Calib. Times: 0923 1640

COMPOUND	$\overline{RRF}$	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
3-Nitroaniline	0.336	0.499	50.00	62.95		2ORDR	25.9	
4-Nitroaniline	0.253	0.398	50.00	62.06		2ORDR	24.1	
Nitrobenzene	0.418	0.389	50.00	46.55		AVRG	-6.9	
2-Nitrophenol	0.223	0.267	50.00	59.84		AVRG	19.7	20.0
4-Nitrophenol	0.262	0.268	50.00	44.71	0.050	2ORDR	-10.6	
N-Nitrosodiphenylamine(1)	0.499	0.505	50.00	50.60		AVRG	1.2	20.0
N-Nitroso-di-n-propylamine	0.955	0.698	50.00	39.78	0.050	2ORDR	-20.4	
Pentachlorophenol	0.138	0.128	50.00	43.28		LINR	-13.4	20.0
Phenol	1.678	1.592	50.00	47.42		AVRG	-5.2	20.0
2,4,5-Trichlorophenol	0.396	0.416	50.00	52.50		AVRG	5.0	
2,4,6-Trichlorophenol	0.370	0.394	50.00	48.04		LINR	-3.9	20.0
2-Fluorophenol	1.553	1.256	100.0	80.87		AVRG	-19.1	
Phenol-d6	1.787	1.487	100.0	83.24		AVRG	-16.8	
Nitrobenzene-d5	0.455	0.424	50.00	46.59		AVRG	-6.8	
2-Fluorobiphenyl	1.263	1.271	50.00	50.32		AVRG	0.6	
2,4,6-Tribromophenol	0.116	0.110	100.0	79.40		LINR	-20.6	
Terphenyl-d14	0.908	0.913	50.00	50.27		AVRG	0.5	

(1) Cannot be separated from Diphenylamine

FORM VII SV

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Lab File ID: SEQ-TUN2 DFTPP Injection Date: 11/27/09

Instrument ID: BNA1 DFTPP Injection Time: 2238

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	38.4
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	61.5
70	Less than 2.0% of mass 69	0.2 (0.4)1
127	40.0 - 60.0% of mass 198	49.7
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.7
275	10.0 - 30.0% of mass 198	16.9
365	Greater than 1.0% of mass 198	1.54
441	Present, but less than mass 443	7.3
442	Greater than 40.0% of mass 198	48.1
443	17.0 - 23.0% of mass 442	9.4 (19.5)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV50PPM	SEQ-CCV2	SEQ-CCV2	11/27/09	2300
02	9K19024-BLK1	9K19024-BLK1	K19024B1	11/27/09	2335
03	9K19024-BLK1	9K19024-BS1	K19024L1	11/28/09	0011
04	9K19024-BLK1	9K19024-BSD1	K19024D1	11/28/09	0048
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FORM V SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Instrument ID: BNA1 Calibration Date: 11/27/09 Time: 2300

Lab File ID: SEQ-CCV2 Init. Calib. Date(s): 11/04/09 11/21/09

Init. Calib. Times: 0847 1640

COMPOUND	$\overline{RRF}$	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D	
Acetophenone	1.649	1.250	50.00	37.89		AVRG	-24.2		
Atrazine	0.203	0.057	50.00	13.99		AVRG	-72.0		
Benzaldehyde	1.280	1.124	50.00	43.89		AVRG	-12.2		
bis(2-Chloroethoxy)methane	0.507	0.476	50.00	46.96		AVRG	-6.1		
1,1'-Biphenyl	1.446	1.402	50.00	48.49		AVRG	-3.0		
bis(2-Chloroethyl)ether	1.428	1.471	50.00	51.50		AVRG	3.0		
2,2-Oxybis(1-chloropropane)	2.575	1.768	50.00	40.03		2ORDR	-19.9		
Bis(2-ethylhexyl)phthalate	1.275	1.177	50.00	46.16		AVRG	-7.7		
4-Bromophenyl-phenylether	0.208	0.209	50.00	50.19		AVRG	0.4		
Butylbenzylphthalate	0.954	0.929	50.00	48.71		AVRG	-2.6		
Caprolactam	0.111	0.142	50.00	63.97		AVRG	27.9		
4-Chloroaniline	0.475	0.460	50.00	48.41		AVRG	-3.2		
Carbazole	0.853	0.874	50.00	51.28		AVRG	2.6		
4-Chloro-3-methylphenol	0.327	0.334	50.00	50.98		AVRG	2.0	20.0	
2-Chloronaphthalene (beta)	1.083	1.018	50.00	47.00		AVRG	-6.0		
2-Chlorophenol	1.285	1.110	50.00	43.19		AVRG	-13.6		
4-Chlorophenyl-phenylether	0.542	0.548	50.00	50.59		AVRG	1.2		
Dibenzofuran	1.556	1.538	50.00	49.42		AVRG	-1.2		
3,3'-Dichlorobenzidine	0.314	0.594	50.00	94.40		AVRG	88.8		
2,4-Dichlorophenol	0.307	0.319	50.00	52.08		AVRG	4.2	20.0	
Diethylphthalate	1.349	1.400	50.00	51.87		AVRG	3.7		
2,4-Dimethylphenol	0.384	0.311	50.00	40.49		AVRG	-19.0		
Dimethylphthalate	1.318	1.300	50.00	49.34		AVRG	-1.3		
Di-n-butylphthalate	1.461	1.361	50.00	46.57		AVRG	-6.8		
4,6-Dinitro-2-methylphenol	0.110	0.158	50.00	56.39		2ORDR	12.8		
2,4-Dinitrophenol	0.111	0.191	50.00	61.86	0.050	2ORDR	23.7		
2,4-Dinitrotoluene	0.353	0.439	50.00	50.54		LINR	1.1		
2,6-Dinitrotoluene	0.292	0.388	50.00	55.92		LINR	11.8		
Di-n-octylphthalate	2.700	3.389	50.00	62.76		AVRG	25.5	20.0	<
Hexachlorobenzene	0.237	0.220	50.00	46.39		AVRG	-7.2		
Hexachlorobutadiene	0.175	0.167	50.00	47.89		AVRG	-4.2	20.0	
Hexachlorocyclopentadiene	0.178	0.184	50.00	43.86	0.050	2ORDR	-12.3		
Hexachloroethane	0.664	0.617	50.00	46.51		AVRG	-7.0		
Isophorone	0.808	0.670	50.00	41.43		AVRG	-17.1		
4-Methylphenol (p-cresol)	1.225	1.028	50.00	41.96		AVRG	-16.1		
2-Methylphenol (o-cresol)	1.243	1.205	50.00	48.47		AVRG	-3.0		
2-Nitroaniline	0.446	0.445	50.00	49.88		AVRG	-0.2		

FORM VII SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Instrument ID: BNA1 Calibration Date: 11/27/09 Time: 2300

Lab File ID: SEQ-CCV2 Init. Calib. Date(s): 11/04/09 11/21/09

Init. Calib. Times: 0847 1640

COMPOUND	$\overline{RRF}$	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
3-Nitroaniline	0.336	0.478	50.00	60.57		2ORDR	21.1	
4-Nitroaniline	0.253	0.368	50.00	57.89		2ORDR	15.8	
Nitrobenzene	0.418	0.372	50.00	44.59		AVRG	-10.8	
2-Nitrophenol	0.223	0.267	50.00	59.93		AVRG	19.9	20.0
4-Nitrophenol	0.262	0.261	50.00	43.66	0.050	2ORDR	-12.7	
N-Nitrosodiphenylamine(1)	0.499	0.493	50.00	49.35		AVRG	-1.3	20.0
N-Nitroso-di-n-propylamine	0.955	0.673	50.00	38.08	0.050	2ORDR	-23.8	
Pentachlorophenol	0.138	0.128	50.00	43.21		LINR	-13.6	20.0
Phenol	1.678	1.558	50.00	46.41		AVRG	-7.2	20.0
2,4,5-Trichlorophenol	0.396	0.408	50.00	51.49		AVRG	3.0	
2,4,6-Trichlorophenol	0.370	0.375	50.00	45.75		LINR	-8.5	20.0
2-Fluorophenol	1.553	1.221	100.0	78.61		AVRG	-21.4	
Phenol-d6	1.787	1.442	100.0	80.71		AVRG	-19.3	
Nitrobenzene-d5	0.455	0.399	50.00	43.79		AVRG	-12.4	
2-Fluorobiphenyl	1.263	1.284	50.00	50.82		AVRG	1.6	
2,4,6-Tribromophenol	0.116	0.116	100.0	83.84		LINR	-16.2	
Terphenyl-d14	0.908	0.972	50.00	53.56		AVRG	7.1	

(1) Cannot be separated from Diphenylamine

FORM VII SV

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Lab File ID: SEQ-TUN1 DFTPP Injection Date: 12/03/09

Instrument ID: BNA1 DFTPP Injection Time: 1144

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	43.8
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	69.9
70	Less than 2.0% of mass 69	0.1 (0.2)1
127	40.0 - 60.0% of mass 198	48.2
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.5
275	10.0 - 30.0% of mass 198	19.7
365	Greater than 1.0% of mass 198	2.04
441	Present, but less than mass 443	8.8
442	Greater than 40.0% of mass 198	56.9
443	17.0 - 23.0% of mass 442	11.3 (19.9)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV50PPM	SEQ-CCV1	SEQ-CCV1	12/03/09	1206
02	NTC21SB02-SO	0911147-01	1114701	12/03/09	2247
03					
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FORM V SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Instrument ID: BNA1 Calibration Date: 12/03/09 Time: 1206

Lab File ID: SEQ-CCV21 ML 12/9/09 Init. Calib. Date(s): 11/04/09 11/21/09

Init. Calib. Times: 0923 1640

COMPOUND	$\overline{RRF}$	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acetophenone	1.649	1.290	50.00	39.12		AVRG	-21.8	
Atrazine	0.203	0.188	50.00	46.36		AVRG	-7.3	
Benzaldehyde	1.280	1.001	50.00	39.08		AVRG	-21.8	
bis(2-Chloroethoxy)methane	0.507	0.510	50.00	50.27		AVRG	0.5	
1,1'-Biphenyl	1.446	1.511	50.00	52.25		AVRG	4.5	
bis(2-Chloroethyl)ether	1.428	1.330	50.00	46.55		AVRG	-6.9	
2,2-Oxybis(1-chloropropane)	2.575	1.967	50.00	47.06		2ORDR	-5.9	
Bis(2-ethylhexyl)phthalate	1.275	1.360	50.00	53.32		AVRG	6.6	
4-Bromophenyl-phenylether	0.208	0.238	50.00	57.03		AVRG	14.1	
Butylbenzylphthalate	0.954	1.049	50.00	55.03		AVRG	10.0	
Caprolactam	0.111	0.120	50.00	54.22		AVRG	8.4	
4-Chloroaniline	0.475	0.454	50.00	47.74		AVRG	-4.5	
Carbazole	0.853	1.029	50.00	60.36		AVRG	20.7	
4-Chloro-3-methylphenol	0.327	0.325	50.00	49.65		AVRG	-0.7	20.0
2-Chloronaphthalene (beta)	1.083	1.144	50.00	52.83		AVRG	5.7	
2-Chlorophenol	1.285	1.102	50.00	42.90		AVRG	-14.2	
4-Chlorophenyl-phenylether	0.542	0.507	50.00	46.77		AVRG	-6.4	
Dibenzofuran	1.556	1.468	50.00	47.18		AVRG	-5.6	
3,3'-Dichlorobenzidine	0.314	0.419	50.00	66.58		AVRG	33.2	
2,4-Dichlorophenol	0.307	0.321	50.00	52.43		AVRG	4.9	20.0
Diethylphthalate	1.349	1.492	50.00	55.28		AVRG	10.6	
2,4-Dimethylphenol	0.384	0.299	50.00	38.89		AVRG	-22.2	
Dimethylphthalate	1.318	1.436	50.00	54.48		AVRG	9.0	
Di-n-butylphthalate	1.461	1.604	50.00	54.87		AVRG	9.7	
4,6-Dinitro-2-methylphenol	0.110	0.147	50.00	53.18		2ORDR	6.4	
2,4-Dinitrophenol	0.111	0.174	50.00	57.85	0.050	2ORDR	15.7	
2,4-Dinitrotoluene	0.353	0.423	50.00	48.72		LINR	-2.5	
2,6-Dinitrotoluene	0.292	0.380	50.00	54.81		LINR	9.6	
Di-n-octylphthalate	2.700	2.739	50.00	50.71		AVRG	1.4	20.0
Hexachlorobenzene	0.237	0.250	50.00	52.92		AVRG	5.8	
Hexachlorobutadiene	0.175	0.150	50.00	42.86		AVRG	-14.3	20.0
Hexachlorocyclopentadiene	0.178	0.191	50.00	45.55	0.050	2ORDR	-8.9	
Hexachloroethane	0.664	0.567	50.00	42.70		AVRG	-14.6	
Isophorone	0.808	0.852	50.00	52.74		AVRG	5.5	
4-Methylphenol (p-cresol)	1.225	1.000	50.00	40.82		AVRG	-18.4	
2-Methylphenol (o-cresol)	1.243	1.139	50.00	45.82		AVRG	-8.4	
2-Nitroaniline	0.446	0.527	50.00	58.99		AVRG	18.0	

FORM VII SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Instrument ID: BNA1 Calibration Date: 12/03/09 Time: 1206

Lab File ID: SEQ-CCV~~2~~1 12/9/09 Init. Calib. Date(s): 11/04/09 11/21/09

Init. Calib. Times: 0923 1640

COMPOUND	$\overline{RRF}$	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D	
3-Nitroaniline	0.336	0.486	50.00	61.42		2ORDR	22.8		
4-Nitroaniline	0.253	0.429	50.00	66.36		2ORDR	32.7		
Nitrobenzene	0.418	0.412	50.00	49.41		AVRG	-1.2		
2-Nitrophenol	0.223	0.272	50.00	60.99		AVRG	22.0	20.0	<
4-Nitrophenol	0.262	0.302	50.00	50.44	0.050	2ORDR	0.9		
N-Nitrosodiphenylamine(1)	0.499	0.598	50.00	59.86		AVRG	19.7	20.0	
N-Nitroso-di-n-propylamine	0.955	0.785	50.00	45.86	0.050	2ORDR	-8.3		
Pentachlorophenol	0.138	0.166	50.00	54.17		LINR	8.3	20.0	
Phenol	1.678	1.536	50.00	45.74		AVRG	-8.5	20.0	
2,4,5-Trichlorophenol	0.396	0.390	50.00	49.20		AVRG	-1.6		
2,4,6-Trichlorophenol	0.370	0.374	50.00	45.58		LINR	-8.8	20.0	
2-Fluorophenol	1.553	1.161	100.0	74.75		AVRG	-25.2		
Phenol-d6	1.787	1.409	100.0	78.85		AVRG	-21.1		
Nitrobenzene-d5	0.455	0.454	50.00	49.85		AVRG	-0.3		
2-Fluorobiphenyl	1.263	1.276	50.00	50.51		AVRG	1.0		
2,4,6-Tribromophenol	0.116	0.133	100.0	96.00		LINR	-4.0		
Terphenyl-d14	0.908	1.028	50.00	56.64		AVRG	13.3		

(1) Cannot be separated from Diphenylamine

FORM VII SV

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Lab File ID: SEQ-TUN1 DFTPP Injection Date: 12/04/09

Instrument ID: BNA1 DFTPP Injection Time: 1012

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	30.3
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	52.8
70	Less than 2.0% of mass 69	0.1 (0.2)1
127	40.0 - 60.0% of mass 198	44.0
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.8
275	10.0 - 30.0% of mass 198	17.9
365	Greater than 1.0% of mass 198	1.84
441	Present, but less than mass 443	8.0
442	Greater than 40.0% of mass 198	52.6
443	17.0 - 23.0% of mass 442	10.1 (19.1)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV50PPM	SEQ-CCV1	SEQ-CCV1	12/04/09	1034
02	NTC21MW0101	0911181-02	1118102	12/04/09	1559
03	NTC21MW0601	0911181-03	1118103	12/04/09	1635
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FORM V SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Instrument ID: BNA1 Calibration Date: 12/04/09 Time: 1034

Lab File ID: SEQ-CCV1 Init. Calib. Date(s): 11/04/09 11/21/09

Init. Calib. Times: 0847 1640

COMPOUND	$\overline{RRF}$	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acetophenone	1.649	1.184	50.00	35.88		AVRG	-28.2	
Atrazine	0.203	0.219	50.00	53.89		AVRG	7.8	
Benzaldehyde	1.280	0.886	50.00	34.58		AVRG	-30.8	
bis(2-Chloroethoxy)methane	0.507	0.400	50.00	39.48		AVRG	-21.0	
1,1'-Biphenyl	1.446	1.363	50.00	47.16		AVRG	-5.7	
bis(2-Chloroethyl)ether	1.428	1.288	50.00	45.09		AVRG	-9.8	
2,2-Oxybis(1-chloropropane)	2.575	1.436	50.00	29.49		2ORDR	-41.0	
Bis(2-ethylhexyl)phthalate	1.275	1.178	50.00	46.20		AVRG	-7.6	
4-Bromophenyl-phenylether	0.208	0.221	50.00	53.03		AVRG	6.0	
Butylbenzylphthalate	0.954	0.912	50.00	47.82		AVRG	-4.4	
Caprolactam	0.111	0.144	50.00	65.31		AVRG	30.6	
4-Chloroaniline	0.475	0.420	50.00	44.14		AVRG	-11.7	
Carbazole	0.853	0.875	50.00	51.32		AVRG	2.6	
4-Chloro-3-methylphenol	0.327	0.299	50.00	45.69		AVRG	-8.6	20.0
2-Chloronaphthalene (beta)	1.083	1.046	50.00	48.31		AVRG	-3.4	
2-Chlorophenol	1.285	1.096	50.00	42.65		AVRG	-14.7	
4-Chlorophenyl-phenylether	0.542	0.519	50.00	47.89		AVRG	-4.2	
Dibenzofuran	1.556	1.476	50.00	47.45		AVRG	-5.1	
3,3'-Dichlorobenzidine	0.314	0.398	50.00	63.31		AVRG	26.6	
2,4-Dichlorophenol	0.307	0.311	50.00	50.74		AVRG	1.5	20.0
Diethylphthalate	1.349	1.320	50.00	48.92		AVRG	-2.2	
2,4-Dimethylphenol	0.384	0.298	50.00	38.70		AVRG	-22.6	
Dimethylphthalate	1.318	1.433	50.00	54.40		AVRG	8.8	
Di-n-butylphthalate	1.461	1.362	50.00	46.59		AVRG	-6.8	
4,6-Dinitro-2-methylphenol	0.110	0.165	50.00	58.42		2ORDR	16.8	
2,4-Dinitrophenol	0.111	0.212	50.00	66.70	0.050	2ORDR	33.4	
2,4-Dinitrotoluene	0.353	0.435	50.00	50.09		LINR	0.2	
2,6-Dinitrotoluene	0.292	0.422	50.00	60.88		LINR	21.8	
Di-n-octylphthalate	2.700	2.386	50.00	44.19		AVRG	-11.6	20.0
Hexachlorobenzene	0.237	0.249	50.00	52.61		AVRG	5.2	
Hexachlorobutadiene	0.175	0.168	50.00	48.01		AVRG	-4.0	20.0
Hexachlorocyclopentadiene	0.178	0.194	50.00	46.16	0.050	2ORDR	-7.7	
Hexachloroethane	0.664	0.591	50.00	44.50		AVRG	-11.0	
Isophorone	0.808	0.645	50.00	39.94		AVRG	-20.1	
4-Methylphenol (p-cresol)	1.225	0.914	50.00	37.28		AVRG	-25.4	
2-Methylphenol (o-cresol)	1.243	1.143	50.00	45.97		AVRG	-8.0	
2-Nitroaniline	0.446	0.373	50.00	41.84		AVRG	-16.3	

FORM VII SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Instrument ID: BNA1 Calibration Date: 12/04/09 Time: 1034

Lab File ID: SEQ-CCV1 Init. Calib. Date(s): 11/04/09 11/21/09

Init. Calib. Times: 0847 1640

COMPOUND	$\overline{RRF}$	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
3-Nitroaniline	0.336	0.464	50.00	58.83		2ORDR	17.7	
4-Nitroaniline	0.253	0.366	50.00	57.57		2ORDR	15.1	
Nitrobenzene	0.418	0.342	50.00	40.92		AVRG	-18.2	
2-Nitrophenol	0.223	0.255	50.00	57.16		AVRG	14.3	20.0
4-Nitrophenol	0.262	0.211	50.00	35.48	0.050	2ORDR	-29.0	
N-Nitrosodiphenylamine(1)	0.499	0.540	50.00	54.09		AVRG	8.2	20.0
N-Nitroso-di-n-propylamine	0.955	0.612	50.00	34.08	0.050	2ORDR	-31.8	
Pentachlorophenol	0.138	0.170	50.00	55.14		LINR	10.3	20.0
Phenol	1.678	1.378	50.00	41.05		AVRG	-17.9	20.0
2,4,5-Trichlorophenol	0.396	0.436	50.00	54.96		AVRG	9.9	
2,4,6-Trichlorophenol	0.370	0.429	50.00	52.18		LINR	4.4	20.0
2-Fluorophenol	1.553	1.139	100.0	73.32		AVRG	-26.7	
Phenol-d6	1.787	1.299	100.0	72.69		AVRG	-27.3	
Nitrobenzene-d5	0.455	0.383	50.00	42.06		AVRG	-15.9	
2-Fluorobiphenyl	1.263	1.209	50.00	47.87		AVRG	-4.2	
2,4,6-Tribromophenol	0.116	0.123	100.0	88.80		LINR	-11.2	
Terphenyl-d14	0.908	0.987	50.00	54.38		AVRG	8.8	

(1) Cannot be separated from Diphenylamine

FORM VII SV

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Lab File ID: SEQ-TUN1 Re-Analysis of Sample DFTPP Injection Date: 12/07/09

Instrument ID: BNA1 Analysis Not used/reported DFTPP Injection Time: 1231

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	36.7
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	58.2
70	Less than 2.0% of mass 69	0.1 (0.1)1
127	40.0 - 60.0% of mass 198	46.6
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.8
275	10.0 - 30.0% of mass 198	19.0
365	Greater than 1.0% of mass 198	2.08
441	Present, but less than mass 443	9.2
442	Greater than 40.0% of mass 198	59.4
443	17.0 - 23.0% of mass 442	11.7 (19.7)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV50PPM	SEQ-CCV2	SEQ-CCV2	12/07/09	1253
02	9L04012-BLK1	9L04012-BLK1	L04012B1	12/07/09	1553
03	9L04012-BLK1	9L04012-BS1	L04012L1	12/07/09	1629
04	NTC21SB02-SO	0911147-01RE	1114701R	12/07/09	2149
05	NTC21SB02-SO	0911147-01RE	1114701M	12/07/09	2224
06	NTC21SB02-SO	0911147-01RE	1114701S	12/07/09	2300
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FORM V SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Instrument ID: BNA1 Calibration Date: 12/07/09 Time: 1253

Lab File ID: SEQ-CCV2 Init. Calib. Date(s): 11/04/09 11/21/09

Init. Calib. Times: 0923 1640

COMPOUND	$\overline{RRF}$	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acetophenone	1.649	1.302	50.00	39.48		AVRG	-21.0	
Atrazine	0.203	0.200	50.00	49.33		AVRG	-1.3	
Benzaldehyde	1.280	1.112	50.00	43.44		AVRG	-13.1	
bis(2-Chloroethoxy)methane	0.507	0.451	50.00	44.43		AVRG	-11.1	
1,1'-Biphenyl	1.446	1.402	50.00	48.48		AVRG	-3.0	
bis(2-Chloroethyl)ether	1.428	1.401	50.00	49.03		AVRG	-1.9	
2,2-Oxybis(1-chloropropane)	2.575	1.696	50.00	37.63		2ORDR	-24.7	
Bis(2-ethylhexyl)phthalate	1.275	1.496	50.00	58.68		AVRG	17.4	
4-Bromophenyl-phenylether	0.208	0.244	50.00	58.47		AVRG	16.9	
Butylbenzylphthalate	0.954	1.161	50.00	60.87		AVRG	21.7	
Caprolactam	0.111	0.148	50.00	66.72		AVRG	33.4	
4-Chloroaniline	0.475	0.470	50.00	49.42		AVRG	-1.2	
Carbazole	0.853	0.907	50.00	53.21		AVRG	6.4	
4-Chloro-3-methylphenol	0.327	0.324	50.00	49.58		AVRG	-0.8	20.0
2-Chloronaphthalene (beta)	1.083	1.067	50.00	49.27		AVRG	-1.5	
2-Chlorophenol	1.285	1.181	50.00	45.97		AVRG	-8.0	
4-Chlorophenyl-phenylether	0.542	0.550	50.00	50.75		AVRG	1.5	
Dibenzofuran	1.556	1.542	50.00	49.56		AVRG	-0.9	
3,3'-Dichlorobenzidine	0.314	0.345	50.00	54.80		AVRG	9.6	
2,4-Dichlorophenol	0.307	0.338	50.00	55.15		AVRG	10.3	20.0
Diethylphthalate	1.349	1.446	50.00	53.58		AVRG	7.2	
2,4-Dimethylphenol	0.384	0.331	50.00	43.02		AVRG	-14.0	
Dimethylphthalate	1.318	1.440	50.00	54.66		AVRG	9.3	
Di-n-butylphthalate	1.461	1.489	50.00	50.95		AVRG	1.9	
4,6-Dinitro-2-methylphenol	0.110	0.162	50.00	57.55		2ORDR	15.1	
2,4-Dinitrophenol	0.111	0.174	50.00	57.85	0.050	2ORDR	15.7	
2,4-Dinitrotoluene	0.353	0.435	50.00	50.08		LINR	0.2	
2,6-Dinitrotoluene	0.292	0.368	50.00	53.10		LINR	6.2	
Di-n-octylphthalate	2.700	2.622	50.00	48.55		AVRG	-2.9	20.0
Hexachlorobenzene	0.237	0.264	50.00	55.78		AVRG	11.6	
Hexachlorobutadiene	0.175	0.170	50.00	48.74		AVRG	-2.5	20.0
Hexachlorocyclopentadiene	0.178	0.187	50.00	44.54	0.050	2ORDR	-10.9	
Hexachloroethane	0.664	0.628	50.00	47.32		AVRG	-5.4	
Isophorone	0.808	0.702	50.00	43.43		AVRG	-13.1	
4-Methylphenol (p-cresol)	1.225	1.032	50.00	42.10		AVRG	-15.8	
2-Methylphenol (o-cresol)	1.243	1.184	50.00	47.60		AVRG	-4.8	
2-Nitroaniline	0.446	0.389	50.00	43.54		AVRG	-12.9	

FORM VII SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Instrument ID: BNA1 Calibration Date: 12/07/09 Time: 1253

Lab File ID: SEQ-CCV2 Init. Calib. Date(s): 11/04/09 11/21/09

Init. Calib. Times: 0923 1640

COMPOUND	$\overline{RRF}$	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
3-Nitroaniline	0.336	0.455	50.00	57.83		2ORDR	15.7	
4-Nitroaniline	0.253	0.370	50.00	58.25		2ORDR	16.5	
Nitrobenzene	0.418	0.403	50.00	48.30		AVRG	-3.4	
2-Nitrophenol	0.223	0.261	50.00	58.47		AVRG	16.9	20.0
4-Nitrophenol	0.262	0.240	50.00	40.13	0.050	2ORDR	-19.7	
N-Nitrosodiphenylamine(1)	0.499	0.528	50.00	52.85		AVRG	5.7	20.0
N-Nitroso-di-n-propylamine	0.955	0.769	50.00	44.73	0.050	2ORDR	-10.5	
Pentachlorophenol	0.138	0.157	50.00	51.56		LINR	3.1	20.0
Phenol	1.678	1.588	50.00	47.31		AVRG	-5.4	20.0
2,4,5-Trichlorophenol	0.396	0.428	50.00	54.02		AVRG	8.0	
2,4,6-Trichlorophenol	0.370	0.404	50.00	49.25		LINR	-1.5	20.0
2-Fluorophenol	1.553	1.210	100.0	77.89		AVRG	-22.1	
Phenol-d6	1.787	1.464	100.0	81.93		AVRG	-18.1	
Nitrobenzene-d5	0.455	0.429	50.00	47.14		AVRG	-5.7	
2-Fluorobiphenyl	1.263	1.297	50.00	51.35		AVRG	2.7	
2,4,6-Tribromophenol	0.116	0.129	100.0	92.93		LINR	-7.1	
Terphenyl-d14	0.908	1.245	50.00	68.59		AVRG	37.2	

(1) Cannot be separated from Diphenylamine

FORM VII SV

FORM 4
SEMIVOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

9K18009-BLK1

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Lab File ID: K18009B1 Lab Sample ID: 9K18009-BLK1

Instrument ID: BNA1 Date Extracted: 11/19/09

Matrix: (soil/water) WATER Date Analyzed: 11/24/09

Level:(low/med) LOW GPC Cleanup: (Y/N) N Time Analyzed: 1629

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	9K18009-BLK1	9K18009-BS1	K18009L1	11/24/09
02	NTC21MW0501	0911151-01	1115101	11/25/09
03	NTC21-FD1116	0911151-02	1115102	11/25/09
04	NTC21MW0401	0911151-05	1115105	11/25/09
05	NTC21MW0501M	0911151-01MS	1115101M	11/25/09
06	NTC21MW0501M	0911151-01MSD	1115101S	11/25/09
07	NTC21MW0201	0911151-03	1115103	11/25/09
08	NTC21MW0301	0911151-04	1115104	11/25/09
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COMMENTS:

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

9K18009-BLK1

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 9K18009-BLK1

Sample wt/vol: 1000 (g/mL) ML Lab File ID: K18009B1

% Moisture: _____ decanted: (Y/N)___ Date Sampled: _____

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:11/19/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 11/24/09 16:29

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	0.75	5.0		U
1912-24-9	Atrazine	0.69	5.0		U
100-52-7	Benzaldehyde	0.57	5.0		U
111-91-1	bis(2-Chloroethoxy)methane	0.52	5.0		U
92-52-4	1,1'-Biphenyl	0.39	5.0		U
111-44-4	bis(2-Chloroethyl)ether	0.45	5.0		U
108-60-1	2,2-Oxybis(1-chloropropane)	0.85	5.0		U
117-81-7	Bis(2-ethylhexyl)phthalate	1.3	5.0		U
101-55-3	4-Bromophenyl-phenylether	0.57	5.0		U
85-68-7	Butylbenzylphthalate	0.82	5.0		U
105-60-2	Caprolactam	0.36	5.0	0.80	J
106-47-8	4-Chloroaniline	0.95	5.0		U
86-74-8	Carbazole	0.69	5.0		U
59-50-7	4-Chloro-3-methylphenol	0.58	5.0		U
91-58-7	2-Chloronaphthalene (beta)	0.58	5.0		U
95-57-8	2-Chlorophenol	0.59	5.0		U
7005-72-3	4-Chlorophenyl-phenylether	0.89	5.0		U
132-64-9	Dibenzofuran	0.65	5.0		U
91-94-1	3,3'-Dichlorobenzidine	0.89	5.0		U
120-83-2	2,4-Dichlorophenol	0.44	5.0		U
84-66-2	Diethylphthalate	1.0	5.0		U
105-67-9	2,4-Dimethylphenol	0.71	20		U
131-11-3	Dimethylphthalate	0.74	5.0		U
84-74-2	Di-n-butylphthalate	1.3	5.0		U
534-52-1	4,6-Dinitro-2-methylphenol	0.74	20		U
51-28-5	2,4-Dinitrophenol	0.85	50		U
121-14-2	2,4-Dinitrotoluene	0.49	5.0		U
606-20-2	2,6-Dinitrotoluene	0.66	5.0		U
117-84-0	Di-n-octylphthalate	0.33	5.0		U
118-74-1	Hexachlorobenzene	0.47	5.0		U
87-68-3	Hexachlorobutadiene	0.93	5.0		U
77-47-4	Hexachlorocyclopentadiene	0.89	5.0		U
67-72-1	Hexachloroethane	0.46	5.0		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

9K18009-BLK1

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 9K18009-BLK1

Sample wt/vol: 1000 (g/mL) ML Lab File ID: K18009B1

% Moisture: _____ decanted: (Y/N)___ Date Sampled: _____

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:11/19/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 11/24/09 16:29

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	0.55	5.0		U
106-44-5	4-Methylphenol (p-cresol)	0.77	5.0		U
95-48-7	2-Methylphenol (o-cresol)	0.83	5.0		U
88-74-4	2-Nitroaniline	1.2	20		U
99-09-2	3-Nitroaniline	1.0	20		U
100-01-6	4-Nitroaniline	2.0	20		U
98-95-3	Nitrobenzene	0.62	5.0		U
88-75-5	2-Nitrophenol	0.74	5.0		U
100-02-7	4-Nitrophenol	0.83	20		U
86-30-6	N-Nitrosodiphenylamine (1)	0.46	5.0		U
621-64-7	N-Nitroso-di-n-propylamine	0.90	5.0		U
87-86-5	Pentachlorophenol	1.0	20		U
108-95-2	Phenol	0.46	5.0		U
95-95-4	2,4,5-Trichlorophenol	0.50	5.0		U
88-06-2	2,4,6-Trichlorophenol	0.73	5.0		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 4
SEMIVOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

9K19024-BLK1

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Lab File ID: K19024B1 Lab Sample ID: 9K19024-BLK1

Instrument ID: BNA1 Date Extracted: 11/20/09

Matrix: (soil/water) WATER Date Analyzed: 11/27/09

Level:(low/med) LOW GPC Cleanup: (Y/N) N Time Analyzed: 2335

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	9K19024-BLK1	9K19024-BS1	K19024L1	11/28/09
02	9K19024-BLK1	9K19024-BSD1	K19024D1	11/28/09
03	NTC21MW0101	0911181-02	1118102	12/04/09
04	NTC21MW0601	0911181-03	1118103	12/04/09
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COMMENTS:

page 1 of 1

FORM IV SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

9K19024-BLK1

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 9K19024-BLK1

Sample wt/vol: 1000 (g/mL) ML Lab File ID: K19024B1

% Moisture: _____ decanted: (Y/N)___ Date Sampled: _____

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:11/20/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 11/27/09 23:35

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	0.75	5.0		UY
1912-24-9	Atrazine	0.69	5.0		UY
100-52-7	Benzaldehyde	0.57	5.0		U
111-91-1	bis(2-Chloroethoxy)methane	0.52	5.0		U
92-52-4	1,1'-Biphenyl	0.39	5.0		U
111-44-4	bis(2-Chloroethyl)ether	0.45	5.0		U
108-60-1	2,2-Oxybis(1-chloropropane)	0.85	5.0		U
117-81-7	Bis(2-ethylhexyl)phthalate	1.3	5.0		U
101-55-3	4-Bromophenyl-phenylether	0.57	5.0		U
85-68-7	Butylbenzylphthalate	0.82	5.0		U
105-60-2	Caprolactam	0.36	5.0	1.5	J
106-47-8	4-Chloroaniline	0.95	5.0		U
86-74-8	Carbazole	0.69	5.0		U
59-50-7	4-Chloro-3-methylphenol	0.58	5.0		U
91-58-7	2-Chloronaphthalene (beta)	0.58	5.0		U
95-57-8	2-Chlorophenol	0.59	5.0		U
7005-72-3	4-Chlorophenyl-phenylether	0.89	5.0		U
132-64-9	Dibenzofuran	0.65	5.0		U
91-94-1	3,3'-Dichlorobenzidine	0.89	5.0		U
120-83-2	2,4-Dichlorophenol	0.44	5.0		U
84-66-2	Diethylphthalate	1.0	5.0		U
105-67-9	2,4-Dimethylphenol	0.71	20		U
131-11-3	Dimethylphthalate	0.74	5.0		U
84-74-2	Di-n-butylphthalate	1.3	5.0		U
534-52-1	4,6-Dinitro-2-methylphenol	0.74	20		U
51-28-5	2,4-Dinitrophenol	0.85	50		U
121-14-2	2,4-Dinitrotoluene	0.49	5.0		U
606-20-2	2,6-Dinitrotoluene	0.66	5.0		U
117-84-0	Di-n-octylphthalate	0.33	5.0		U
118-74-1	Hexachlorobenzene	0.47	5.0		U
87-68-3	Hexachlorobutadiene	0.93	5.0		U
77-47-4	Hexachlorocyclopentadiene	0.89	5.0		U
67-72-1	Hexachloroethane	0.46	5.0		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

9K19024-BLK1

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 9K19024-BLK1

Sample wt/vol: 1000 (g/mL) ML Lab File ID: K19024B1

% Moisture: _____ decanted: (Y/N)___ Date Sampled: _____

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:11/20/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 11/27/09 23:35

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	0.55	5.0		U
106-44-5	4-Methylphenol (p-cresol)	0.77	5.0		U
95-48-7	2-Methylphenol (o-cresol)	0.83	5.0		U
88-74-4	2-Nitroaniline	1.2	20		U
99-09-2	3-Nitroaniline	1.0	20		U
100-01-6	4-Nitroaniline	2.0	20		U
98-95-3	Nitrobenzene	0.62	5.0		U
88-75-5	2-Nitrophenol	0.74	5.0		U
100-02-7	4-Nitrophenol	0.83	20		U
86-30-6	N-Nitrosodiphenylamine (1)	0.46	5.0		U
621-64-7	N-Nitroso-di-n-propylamine	0.90	5.0		U
87-86-5	Pentachlorophenol	1.0	20		U
108-95-2	Phenol	0.46	5.0		U
95-95-4	2,4,5-Trichlorophenol	0.50	5.0		U
88-06-2	2,4,6-Trichlorophenol	0.73	5.0		U

(1) - Cannot be separated from Diphenylamine

12/9/09

FORM I SV

FORM 4
SEMIVOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

9K23034-BLK1

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Lab File ID: K23034B1 Lab Sample ID: 9K23034-BLK1

Instrument ID: BNA1 Date Extracted: 11/24/09

Matrix: (soil/water) SOIL Date Analyzed: 11/27/09

Level:(low/med) LOW GPC Cleanup: (Y/N) N Time Analyzed: 1456

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	9K23034-BLK1	9K23034-BS1	K23034L1	11/27/09
02	NTC21SB02-SO	0911147-01	1114701	12/03/09
03				
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COMMENTS:

FORM IV SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

9K23034-BLK1

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) SOIL Lab Sample ID: 9K23034-BLK1

Sample wt/vol: 15.0 (g/mL) G Lab File ID: K23034B1

% Moisture: 0 decanted: (Y/N) N Date Sampled: _____

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:11/24/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 11/27/09 14:56

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	41	330		U
1912-24-9	Atrazine	28	330		U
100-52-7	Benzaldehyde	55	330		U
111-91-1	bis(2-Chloroethoxy)methane	31	330		U
92-52-4	1,1'-Biphenyl	29	330		U
111-44-4	bis(2-Chloroethyl)ether	41	330		U
108-60-1	2,2-Oxybis(1-chloropropane)	51	670		U
117-81-7	Bis(2-ethylhexyl)phthalate	36	330		U
101-55-3	4-Bromophenyl-phenylether	26	330		U
85-68-7	Butylbenzylphthalate	30	330		U
105-60-2	Caprolactam	67	330		U
106-47-8	4-Chloroaniline	48	330		U
86-74-8	Carbazole	36	670		U
59-50-7	4-Chloro-3-methylphenol	28	330		U
91-58-7	2-Chloronaphthalene (beta)	32	330		U
95-57-8	2-Chlorophenol	41	330		U
7005-72-3	4-Chlorophenyl-phenylether	31	330		U
132-64-9	Dibenzofuran	24	330		U
91-94-1	3,3'-Dichlorobenzidine	31	330		U
120-83-2	2,4-Dichlorophenol	19	330		U
84-66-2	Diethylphthalate	34	330	140	J
105-67-9	2,4-Dimethylphenol	21	670		U
131-11-3	Dimethylphthalate	30	330		U
84-74-2	Di-n-butylphthalate	30	330		U
534-52-1	4,6-Dinitro-2-methylphenol	22	1300		U
51-28-5	2,4-Dinitrophenol	130	3300		U
121-14-2	2,4-Dinitrotoluene	24	330		U
606-20-2	2,6-Dinitrotoluene	38	330		U
117-84-0	Di-n-octylphthalate	27	330		U
118-74-1	Hexachlorobenzene	35	330		U
87-68-3	Hexachlorobutadiene	33	330		U
77-47-4	Hexachlorocyclopentadiene	61	330		U
67-72-1	Hexachloroethane	39	670		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

9K23034-BLK1

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) SOIL Lab Sample ID: 9K23034-BLK1

Sample wt/vol: 15.0 (g/mL) G Lab File ID: K23034B1

% Moisture: 0 decanted: (Y/N) N Date Sampled: _____

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:11/24/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 11/27/09 14:56

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	28	330		U
106-44-5	4-Methylphenol (p-cresol)	26	330		U
95-48-7	2-Methylphenol (o-cresol)	39	330		U
88-74-4	2-Nitroaniline	32	1300		U
99-09-2	3-Nitroaniline	47	1300		U
100-01-6	4-Nitroaniline	100	1300		U
98-95-3	Nitrobenzene	34	330		U
88-75-5	2-Nitrophenol	22	330		U
100-02-7	4-Nitrophenol	81	1300		U
86-30-6	N-Nitrosodiphenylamine (1)	32	330		U
621-64-7	N-Nitroso-di-n-propylamine	55	330		U
87-86-5	Pentachlorophenol	34	1300		U
108-95-2	Phenol	36	330		U
95-95-4	2,4,5-Trichlorophenol	27	330		U
88-06-2	2,4,6-Trichlorophenol	35	330		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 4
SEMIVOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

9L04012-BLK1

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Lab File ID: L04012B1 Lab Sample ID: 9L04012-BLK1

Instrument ID: BNA1 Date Extracted: 12/04/09

Matrix: (soil/water) SOIL Date Analyzed: 12/07/09

Level:(low/med) LOW GPC Cleanup: (Y/N) N Time Analyzed: 1553

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	9L04012-BLK1	9L04012-BS1	L04012L1	12/07/09
02	NTC21SB02-SO	0911147-01RE	1114701R	12/07/09
03	NTC21SB02-SO	0911147-01RE	1114701M	12/07/09
04	NTC21SB02-SO	0911147-01RE	1114701S	12/07/09
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COMMENTS:

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FORM IV SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

9L04012-BLK1

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) SOIL Lab Sample ID: 9L04012-BLK1

Sample wt/vol: 15.0 (g/mL) G Lab File ID: L04012B1

% Moisture: 0 decanted: (Y/N) N Date Sampled: _____

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:12/04/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 12/07/09 15:53

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	41	330		U
1912-24-9	Atrazine	28	330		U
100-52-7	Benzaldehyde	55	330		U
111-91-1	bis(2-Chloroethoxy)methane	31	330		U
92-52-4	1,1'-Biphenyl	29	330		U
111-44-4	bis(2-Chloroethyl)ether	41	330		U
108-60-1	2,2-Oxybis(1-chloropropane)	51	670		U
117-81-7	Bis(2-ethylhexyl)phthalate	36	330		U
101-55-3	4-Bromophenyl-phenylether	26	330		U
85-68-7	Butylbenzylphthalate	30	330		U
105-60-2	Caprolactam	67	330		U
106-47-8	4-Chloroaniline	48	330		U
86-74-8	Carbazole	36	670		U
59-50-7	4-Chloro-3-methylphenol	28	330		U
91-58-7	2-Chloronaphthalene (beta)	32	330		U
95-57-8	2-Chlorophenol	41	330		U
7005-72-3	4-Chlorophenyl-phenylether	31	330		U
132-64-9	Dibenzofuran	24	330		U
91-94-1	3,3'-Dichlorobenzidine	31	330		U
120-83-2	2,4-Dichlorophenol	19	330		U
84-66-2	Diethylphthalate	34	330		U
105-67-9	2,4-Dimethylphenol	21	670		U
131-11-3	Dimethylphthalate	30	330		U
84-74-2	Di-n-butylphthalate	30	330		U
534-52-1	4,6-Dinitro-2-methylphenol	22	1300		U
51-28-5	2,4-Dinitrophenol	130	3300		U
121-14-2	2,4-Dinitrotoluene	24	330		U
606-20-2	2,6-Dinitrotoluene	38	330		U
117-84-0	Di-n-octylphthalate	27	330		U
118-74-1	Hexachlorobenzene	35	330		U
87-68-3	Hexachlorobutadiene	33	330		U
77-47-4	Hexachlorocyclopentadiene	61	330		U
67-72-1	Hexachloroethane	39	670		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

9L04012-BLK1

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) SOIL Lab Sample ID: 9L04012-BLK1

Sample wt/vol: 15.0 (g/mL) G Lab File ID: L04012B1

% Moisture: 0 decanted: (Y/N) N Date Sampled: _____

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:12/04/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 12/07/09 15:53

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	28	330		U
106-44-5	4-Methylphenol (p-cresol)	26	330		U
95-48-7	2-Methylphenol (o-cresol)	39	330		U
88-74-4	2-Nitroaniline	32	1300		U
99-09-2	3-Nitroaniline	47	1300		U
100-01-6	4-Nitroaniline	100	1300		U
98-95-3	Nitrobenzene	34	330		U
88-75-5	2-Nitrophenol	22	330		U
100-02-7	4-Nitrophenol	81	1300		U
86-30-6	N-Nitrosodiphenylamine (1)	32	330		U
621-64-7	N-Nitroso-di-n-propylamine	55	330		U
87-86-5	Pentachlorophenol	34	1300		U
108-95-2	Phenol	36	330		U
95-95-4	2,4,5-Trichlorophenol	27	330		U
88-06-2	2,4,6-Trichlorophenol	35	330		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 2
WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

	CLIENT SAMPLE NO.	S1 (2FP) #	S2 (PHL) #	S3 (NBZ) #	S4 (FBP) #	S5 (TBP) #	S6 (TPH) #	S7 #	S8 #	TOT OUT
01	9K18009-BLK1	32	22	68	76	84	90			0
02	9K18009-BLK1	33	21	69	82	77	111			0
03	NTC21MW0501	29	19	72	84	75	92			0
04	NTC21-FD1116	36	24	72	83	87	105			0
05	NTC21MW0401	28	20	68	89	65	78			0
06	NTC21MW0501M	30	18	67	82	79	104			0
07	NTC21MW0501M	30	20	70	86	77	106			0
08	NTC21MW0201	31	19	74	89	98	105			0
09	NTC21MW0301	27	20	67	85	76	104			0
10	9K19024-BLK1	28	19	64	80	74	84			0
11	9K19024-BLK1	40	26	76	89	82	95			0
12	9K19024-BLK1	32	21	70	89	86	88			0
13	NTC21MW0101	29	20	70	78	81	96			0
14	NTC21MW0601	24	18	64	72	68	86			0
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		EL QC LIMITS	SPIKE CONC (UG/L)
S1 (2FP)	= 2-Fluorophenol	(15-110)	100
S2 (PHL)	= Phenol-d6	(15-110)	100
S3 (NBZ)	= Nitrobenzene-d5	(30-110)	50
S4 (FBP)	= 2-Fluorobiphenyl	(35-110)	50
S5 (TBP)	= 2,4,6-Tribromophenol	(45-125)	100
S6 (TPH)	= Terphenyl-d14	(55-125)	50

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate results reported from a diluted analysis

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix Spike - Client Sample No.: 9K18009-BLK1

COMPOUND	SPIKE ADDED (UG/L)	SAMPLE CONCENTRATION (UG/L)	LCS CONCENTRATION (UG/L)	LCS % REC #	QC. LIMITS REC.
Acetophenone	50.00	0.0000	35.45	71	50-110
Atrazine	50.00	0.0000	49.22	98	70-115
Benzaldehyde	50.00	0.0000	37.58	75	10-180
bis(2-Chloroethoxy)meth	50.00	0.0000	42.21	84	45-105
1,1'-Biphenyl	50.00	0.0000	41.79	84	50-110
bis(2-Chloroethyl)ether	50.00	0.0000	39.98	80	35-110
2,2-Oxybis(1-chloroprop	50.00	0.0000	35.95	72	25-130
Bis(2-ethylhexyl)phthal	50.00	0.0000	54.61	109	40-125
4-Bromophenyl-phenyleth	50.00	0.0000	46.89	94	50-115
Butylbenzylphthalate	50.00	0.0000	65.51	131*	45-115
Caprolactam	50.00	0.8003	9.018	16*	20-110
4-Chloroaniline	50.00	0.0000	26.06	52	15-110
Carbazole	50.00	0.0000	50.15	100	50-115
4-Chloro-3-methylphenol	50.00	0.0000	37.98	76	45-110
2-Chloronaphthalene (be	50.00	0.0000	44.60	89	50-105
2-Chlorophenol	50.00	0.0000	36.20	72	35-105
4-Chlorophenyl-phenylet	50.00	0.0000	47.78	96	50-110
Dibenzofuran	50.00	0.0000	46.73	93	55-105
3,3'-Dichlorobenzidine	50.00	0.0000	36.28	72	20-110
2,4-Dichlorophenol	50.00	0.0000	42.61	85	50-105
Diethylphthalate	50.00	0.0000	55.62	111	40-120
2,4-Dimethylphenol	50.00	0.0000	27.79	56	30-110
Dimethylphthalate	50.00	0.0000	54.07	108	25-125
Di-n-butylphthalate	50.00	0.0000	50.60	101	55-115
4,6-Dinitro-2-methylphe	50.00	0.0000	59.93	120	40-130
2,4-Dinitrophenol	50.00	0.0000	64.93	130	15-140
2,4-Dinitrotoluene	50.00	0.0000	51.13	102	50-120
2,6-Dinitrotoluene	50.00	0.0000	54.66	109	50-115

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix Spike - Client Sample No.: 9K18009-BLK1

COMPOUND	SPIKE ADDED (UG/L)	SAMPLE CONCENTRATION (UG/L)	LCS CONCENTRATION (UG/L)	LCS % REC #	QC. LIMITS REC.
Di-n-octylphthalate	50.00	0.0000	69.22	138*	35-135
Hexachlorobenzene	50.00	0.0000	51.37	103	50-110
Hexachlorobutadiene	50.00	0.0000	39.92	80	25-105
Hexachlorocyclopentadie	50.00	0.0000	35.58	71	10-110
Hexachloroethane	50.00	0.0000	30.14	60	30- 95
Isophorone	50.00	0.0000	38.72	77	50-110
4-Methylphenol (p-creso	50.00	0.0000	26.72	53	30-110
2-Methylphenol (o-creso	50.00	0.0000	29.40	59	40-110
2-Nitroaniline	50.00	0.0000	36.68	73	50-115
3-Nitroaniline	50.00	0.0000	39.45	79	20-125
4-Nitroaniline	50.00	0.0000	38.32	77	35-120
Nitrobenzene	50.00	0.0000	37.78	76	45-110
2-Nitrophenol	50.00	0.0000	49.57	99	40-115
4-Nitrophenol	50.00	0.0000	7.742	15	0-125
N-Nitrosodiphenylamine	50.00	0.0000	45.63	91	50-110
N-Nitroso-di-n-prop.(1)	50.00	0.0000	38.42	77	35-130
Pentachlorophenol	50.00	0.0000	56.47	113	40-115
Phenol	50.00	0.0000	13.59	27	0-115
2,4,5-Trichlorophenol	50.00	0.0000	49.93	100	50-110
2,4,6-Trichlorophenol	50.00	0.0000	48.20	96	50-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 3 out of 48 outside limits

COMMENTS:

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix Spike - Client Sample No.: 9K19024-BLK1

COMPOUND	SPIKE ADDED (UG/L)	SAMPLE CONCENTRATION (UG/L)	LCS CONCENTRATION (UG/L)	LCS % REC #	QC. LIMITS REC.
Acetophenone	50.00	0.0000	37.66	75	50-110
Atrazine	50.00	0.0000	47.33	95	70-115
Benzaldehyde	50.00	0.0000	43.88	88	10-180
bis(2-Chloroethoxy)meth	50.00	0.0000	47.33	95	45-105
1,1'-Biphenyl	50.00	0.0000	42.22	84	50-110
bis(2-Chloroethyl)ether	50.00	0.0000	47.29	94	35-110
2,2-Oxybis(1-chloroprop	50.00	0.0000	39.88	80	25-130
Bis(2-ethylhexyl)phthal	50.00	0.0000	55.01	110	40-125
4-Bromophenyl-phenyleth	50.00	0.0000	47.74	95	50-115
Butylbenzylphthalate	50.00	0.0000	59.58	119*	45-115
Caprolactam	50.00	1.532	10.36	18*	20-110
4-Chloroaniline	50.00	0.0000	35.13	70	15-110
Carbazole	50.00	0.0000	52.71	105	50-115
4-Chloro-3-methylphenol	50.00	0.0000	46.52	93	45-110
2-Chloronaphthalene (be	50.00	0.0000	47.95	96	50-105
2-Chlorophenol	50.00	0.0000	41.23	82	35-105
4-Chlorophenyl-phenylet	50.00	0.0000	54.56	109	50-110
Dibenzofuran	50.00	0.0000	47.79	96	55-105
3,3'-Dichlorobenzidine	50.00	0.0000	47.81	96	20-110
2,4-Dichlorophenol	50.00	0.0000	48.48	97	50-105
Diethylphthalate	50.00	0.0000	55.21	110	40-120
2,4-Dimethylphenol	50.00	0.0000	37.18	74	30-110
Dimethylphthalate	50.00	0.0000	53.86	108	25-125
Di-n-butylphthalate	50.00	0.0000	50.22	100	55-115
4,6-Dinitro-2-methylphe	50.00	0.0000	62.46	125	40-130
2,4-Dinitrophenol	50.00	0.0000	67.22	134	15-140
2,4-Dinitrotoluene	50.00	0.0000	53.77	108	50-120
2,6-Dinitrotoluene	50.00	0.0000	54.89	110	50-115

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix Spike - Client Sample No.: 9K19024-BLK1

COMPOUND	SPIKE ADDED (UG/L)	SAMPLE CONCENTRATION (UG/L)	LCS CONCENTRATION (UG/L)	LCS % REC #	QC. LIMITS REC.
Di-n-octylphthalate	50.00	0.0000	64.53	129	35-135
Hexachlorobenzene	50.00	0.0000	49.16	98	50-110
Hexachlorobutadiene	50.00	0.0000	48.69	97	25-105
Hexachlorocyclopentadie	50.00	0.0000	42.30	85	10-110
Hexachloroethane	50.00	0.0000	42.62	85	30- 95
Isophorone	50.00	0.0000	44.17	88	50-110
4-Methylphenol (p-creso	50.00	0.0000	31.15	62	30-110
2-Methylphenol (o-creso	50.00	0.0000	35.12	70	40-110
2-Nitroaniline	50.00	0.0000	46.56	93	50-115
3-Nitroaniline	50.00	0.0000	51.61	103	20-125
4-Nitroaniline	50.00	0.0000	59.13	118	35-120
Nitrobenzene	50.00	0.0000	41.69	83	45-110
2-Nitrophenol	50.00	0.0000	55.46	111	40-115
4-Nitrophenol	50.00	0.0000	15.14	30	0-125
N-Nitrosodiphenylamine	50.00	0.0000	49.19	98	50-110
N-Nitroso-di-n-prop.(1)	50.00	0.0000	43.07	86	35-130
Pentachlorophenol	50.00	0.0000	53.50	107	40-115
Phenol	50.00	0.0000	16.10	32	0-115
2,4,5-Trichlorophenol	50.00	0.0000	53.15	106	50-110
2,4,6-Trichlorophenol	50.00	0.0000	49.14	98	50-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix Spike - Client Sample No.: 9K19024-BLK1

COMPOUND	SPIKE ADDED (UG/L)	LCSD CONCENTRATION (UG/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Acetophenone	50.00	31.81	64	17	30	50-110
Atrazine	50.00	46.60	93	2	30	70-115
Benzaldehyde	50.00	37.08	74	17	30	10-180
bis(2-Chloroethoxy)meth	50.00	44.65	89	6	30	45-105
1,1'-Biphenyl	50.00	42.00	84	0	30	50-110
bis(2-Chloroethyl)ether	50.00	39.15	78	19	30	35-110
2,2-Oxybis(1-chloroprop	50.00	32.71	65	20	30	25-130
Bis(2-ethylhexyl)phthal	50.00	50.94	102	8	30	40-125
4-Bromophenyl-phenyleth	50.00	44.19	88	8	30	50-115
Butylbenzylphthalate	50.00	54.92	110	8	30	45-115
Caprolactam	50.00	13.39	24	26	30	20-110
4-Chloroaniline	50.00	30.94	62	13	30	15-110
Carbazole	50.00	50.57	101	4	30	50-115
4-Chloro-3-methylphenol	50.00	42.30	85	10	30	45-110
2-Chloronaphthalene (be	50.00	47.50	95	1	30	50-105
2-Chlorophenol	50.00	34.08	68	19	30	35-105
4-Chlorophenyl-phenylet	50.00	51.96	104	5	30	50-110
Dibenzofuran	50.00	47.19	94	1	30	55-105
3,3'-Dichlorobenzidine	50.00	38.91	78	20	30	20-110
2,4-Dichlorophenol	50.00	41.29	82	16	30	50-105
Diethylphthalate	50.00	54.00	108	2	30	40-120
2,4-Dimethylphenol	50.00	31.93	64	15	30	30-110
Dimethylphthalate	50.00	55.55	111	3	30	25-125
Di-n-butylphthalate	50.00	50.81	102	1	30	55-115
4,6-Dinitro-2-methylphe	50.00	60.66	121	3	30	40-130
2,4-Dinitrophenol	50.00	73.56	147*	9	30	15-140
2,4-Dinitrotoluene	50.00	54.77	110	2	30	50-120
2,6-Dinitrotoluene	50.00	57.48	115	5	30	50-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix Spike - Client Sample No.: 9K19024-BLK1

COMPOUND	SPIKE ADDED (UG/L)	LCSD CONCENTRATION (UG/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Di-n-octylphthalate	50.00	61.26	122	5	30	35-135
Hexachlorobenzene	50.00	47.06	94	4	30	50-110
Hexachlorobutadiene	50.00	42.18	84	14	30	25-105
Hexachlorocyclopentadie	50.00	40.82	82	4	30	10-110
Hexachloroethane	50.00	33.15	66	25	30	30- 95
Isophorone	50.00	40.60	81	8	30	50-110
4-Methylphenol (p-creso	50.00	25.89	52	18	30	30-110
2-Methylphenol (o-creso	50.00	30.93	62	13	30	40-110
2-Nitroaniline	50.00	45.42	91	2	30	50-115
3-Nitroaniline	50.00	52.23	104	1	30	20-125
4-Nitroaniline	50.00	59.64	119	1	30	35-120
Nitrobenzene	50.00	36.94	74	12	30	45-110
2-Nitrophenol	50.00	49.60	99	11	30	40-115
4-Nitrophenol	50.00	16.19	32	7	30	0-125
N-Nitrosodiphenylamine	50.00	44.25	88	10	30	50-110
N-Nitroso-di-n-prop.(1)	50.00	34.28	68	23	30	35-130
Pentachlorophenol	50.00	56.20	112	5	30	40-115
Phenol	50.00	12.44	25	26	30	0-115
2,4,5-Trichlorophenol	50.00	54.04	108	2	30	50-110
2,4,6-Trichlorophenol	50.00	50.65	101	3	30	50-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 48 outside limits
Spike Recovery: 3 out of 96 outside limits

COMMENTS: _____

FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Lab File ID (Standard): SEQ-CCV1 Date Analyzed: 11/24/09

Instrument ID: BNA1 Time Analyzed: 1404

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	828394	5.52	2475786	6.88	1418296	10.02
	UPPER LIMIT	1656788	6.02	4951572	7.38	2836592	10.52
	LOWER LIMIT	414197	5.02	1237893	6.38	709148	9.52
	CLIENT SAMPLE NO.						
01	9K18009-BLK1	902257	5.52	2919863	6.88	1512911	10.03
02	9K18009-BLK1	777308	5.52	2459085	6.88	1251276	10.03
03	NTC21MW0501	850549	5.52	2599494	6.88	1323093	10.02
04	NTC21-FD1116	727369	5.52	2436256	6.88	1273931	10.02
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IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Lab File ID (Standard): SEQ-CCV1 Date Analyzed: 11/24/09

Instrument ID: BNA1 Time Analyzed: 1404

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	2088409	13.80	1224504	21.43	591014	25.43
	UPPER LIMIT	4176818	14.30	2449008	21.93	1182028	25.93
	LOWER LIMIT	1044205	13.30	612252	20.93	295507	24.93
	CLIENT SAMPLE NO.						
01	9K18009-BLK1	2065548	13.80	1521393	21.43	1104919	25.44
02	9K18009-BLK1	2021018	13.80	1051167	21.44	467214	25.43
03	NTC21MW0501	2033272	13.79	1277119	21.42	948942	25.43
04	NTC21-FD1116	1740688	13.79	1026452	21.42	636522	25.43
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IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Lab File ID (Standard): SEQ-CCV2 Date Analyzed: 11/25/09

Instrument ID: BNA1 Time Analyzed: 0411

		IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA #	RT #
	12 HOUR STD	726169	5.52	2318984	6.89	1191201	10.03
	UPPER LIMIT	1452338	6.02	4637968	7.39	2382402	10.53
	LOWER LIMIT	363085	5.02	1159492	6.39	595601	9.53
	CLIENT SAMPLE NO.						
01	NTC21MW0401	847721	5.52	2602135	6.88	1319652	10.02
02	NTC21MW0501M	792969	5.52	2391003	6.89	1293988	10.03
03	NTC21MW0501M	744447	5.52	2296975	6.88	1277446	10.03
04	NTC21MW0201	821690	5.52	2380684	6.88	1311381	10.03
05	NTC21MW0301	845276	5.52	2653236	6.87	1293202	10.02
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IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Lab File ID (Standard): SEQ-CCV2 Date Analyzed: 11/25/09

Instrument ID: BNA1 Time Analyzed: 0411

		IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
	12 HOUR STD	2075213	13.80	1037775	21.44	545636	25.43
	UPPER LIMIT	4150426	14.30	2075550	21.94	1091272	25.93
	LOWER LIMIT	1037607	13.30	518888	20.94	272818	24.93
	CLIENT SAMPLE NO.						
01	NTC21MW0401	2009209	13.79	1170080	21.42	837796	25.43
02	NTC21MW0501M	2060642	13.80	1151692	21.44	557714	25.43
03	NTC21MW0501M	2052182	13.80	1158016	21.44	595692	25.43
04	NTC21MW0201	1795393	13.80	1160786	21.43	814070	25.44
05	NTC21MW0301	2037819	13.79	1062023	21.42	507947	25.43
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IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Lab File ID (Standard): SEQ-CCV1 Date Analyzed: 12/04/09

Instrument ID: BNA1 Time Analyzed: 1034

		IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA #	RT #
	12 HOUR STD	1207059	5.39	3979822	6.72	2144585	9.81
	UPPER LIMIT	2414118	5.89	7959644	7.22	4289170	10.31
	LOWER LIMIT	603530	4.89	1989911	6.22	1072293	9.31
	CLIENT SAMPLE NO.						
01	NTC21MW0101	1238730	5.38	3817600	6.71	2217037	9.80
02	NTC21MW0601	1261003	5.39	3857675	6.71	2177667	9.80
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IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Lab File ID (Standard): SEQ-CCV1 Date Analyzed: 12/04/09

Instrument ID: BNA1 Time Analyzed: 1034

	IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
12 HOUR STD	3396112	13.56	2092833	21.19	1491215	25.25
UPPER LIMIT	6792224	14.06	4185666	21.69	2982430	25.75
LOWER LIMIT	1698056	13.06	1046417	20.69	745608	24.75
CLIENT SAMPLE NO.						
01 NTC21MW0101	3226270	13.56	1865277	21.18	1349541	25.24
02 NTC21MW0601	3294036	13.56	2142313	21.18	1782747	25.25
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IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

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FORM VIII SV

ORGANIC CASE NARRATIVE
Tetra Tech NUS, Inc./Great Lakes, IL CTO064
Project Manager: B. Cummings
SDG: CTO064_002
Work order: 0911147, 0911151 and 0911181

PAH

Sampled	Received	Lab ID	Client ID
11/13/2009	11/14/2009	0911147-01	NTC21SB02-SO-0406
11/15/2009	11/17/2009	0911151-01	NTC21MW0501
11/16/2009	11/17/2009	0911151-02	NTC21-FD111609-01
11/16/2009	11/17/2009	0911151-03	NTC21MW0201
11/16/2009	11/17/2009	0911151-04	NTC21MW0301
11/16/2009	11/17/2009	0911151-05	NTC21MW0401
11/17/2009	11/18/2009	0911181-02	NTC21MW0101
11/17/2009	11/18/2009	0911181-03	NTC21MW0601

Low Concentration PAH Samples

Method: The samples were analyzed by USEPA SW-846 Methods 3510C/8270C or 3546/8270C (separatory funnel or microwave extraction followed by capillary column GC/MS) for waters or solids upon receipt to the laboratory in satisfactory condition.

Comments: The analyses for these samples were satisfactorily completed within sample holding times and met the corresponding specifications with the following exceptions:

- Note: These samples were analyzed for full-scan, low-concentration PAHs by employing a combination of sensitivity enhancing techniques in the extraction and analysis processes. AFCEE 4.02 Table 7.2.3.1-2 limits were applied for LCS/MS/MSD and surrogate.
- DFTPP Tuning: All method tuning criteria were met.
- Initial Calibration Criteria: All calibration criteria were met.
- Continuing Calibration Criteria: In the continuing calibration verification analyzed 11/20/09, benzo(a)anthracene exceeded 20% difference with a positive bias of 20.8%. In the continuing calibration verification analyzed 11/25/09, benzo(a)anthracene and chrysene exceeded 20% difference with positive biases of 23.9% and 21.5%. In the continuing calibration verification analyzed 12/1/09, benzo(a)anthracene and chrysene exceeded 20% difference with positive biases of 28.8% and 26%. Reported concentrations for these compounds above the quantitation limit in the associated samples were qualified with an "X" to indicate a potential positive bias. All other calibration criteria were within limits.
- Method Blank Results: Several compounds were detected in water method blank 9K19024-BLK2 with concentrations up to 0.15µg/L. Naphthalene, 2-methylnaphthalene and phenanthrene were detected in water method blank 9K18009-BLK2 at concentrations less than the quantitation limit. Reported concentrations in the associated samples are qualified with a "B". The soil method blanks had no target analytes detected.
- Surrogate Recoveries: All surrogate recoveries were within limits.
- LCS/LCSD Results: All recoveries and relative percent differences were within limits.
- MS/MSD Results: All recoveries and relative percent differences were within limits.
- Internal Standard Area Counts: All area counts were within limits.
- Dilutions: All samples were analyzed without dilution. Sample NTC21SB02-SO-0406 was also analyzed at a 5x dilution.
- Manual integrations: Quantitation signals were manually integrated in order to accurately reflect the peak areas based on the technical judgment of the analyst. A listing of the manual

integrations performed and reason for the integration is included with the logs. Before and after "pictures" are available where manual integrations were performed.

I certify that, to the best of my knowledge and based upon my inquiry of those individuals immediately responsible for obtaining the information, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in the case narrative, as verified by the following signature.

Marcia K. McGinnity
Data Quality Manager

ANALYTICAL REPORT TERMS AND QUALIFIERS (ORGANIC)

MDL: The method detection limit (MDL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The MDL is determined from analysis of a sample containing the analyte in a given matrix.

EQL: The estimated quantitation limit (EQL), also known as the reporting limit (RL), is defined as the estimated concentration above which quantitative results can be obtained with a specific degree of confidence. Empirical Laboratories defines the EQL to be at or near the lowest standard of the calibration curve.

U: The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte quantitated below the MDL.

B: The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the correct sample result might be less than the reported result and, perhaps, zero.

D: When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".

E: The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound.

J: The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The mass spectral data pass the identification criteria showing that the compound is present, but the calculated result is less than the EQL. One should feel confident that the result is greater than zero and less than the EQL.

P: The associated numerical value is an estimated quantity. There is greater than a 40% difference between the two GC columns for the detected concentrations. The higher of the two values is reported.

M: The presence of an "M" to the right of an analytical result indicates that the sample matrix interfered with the quantitation of the analyte. In GC and HPLC, results are reported from the column with the lower concentration.

I: The presence of an "I" to the right of an analytical result that the presence of a qualitative interference could have caused a false positive or over estimation of the analyte. In GC and HPLC, results are reported from the column with the lower concentration.

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA57943

Lab File ID: DF1112B1 DFTPP Injection Date: 11/12/09

Instrument ID: BNA4 DFTPP Injection Time: 1524

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	42.1
68	Less than 2.0% of mass 69	0.8 (1.6)1
69	Mass 69 relative abundance	48.6
70	Less than 2.0% of mass 69	0.2 (0.5)1
127	40.0 - 60.0% of mass 198	54.8
197	Less than 1.0% of mass 198	0.5
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.0
275	10.0 - 30.0% of mass 198	21.8
365	Greater than 1.0% of mass 198	2.27
441	Present, but less than mass 443	9.8
442	Greater than 40.0% of mass 198	60.7
443	17.0 - 23.0% of mass 442	12.6 (20.7)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CA0.05PPM	SEQ-CAL2	CAL2	11/12/09	1543
02	CA0.1PPM	SEQ-CAL3	CAL3	11/12/09	1616
03	CA0.25PPM	SEQ-CAL4	CAL4	11/12/09	1650
04	CA0.5PPM	SEQ-CAL5	CAL5	11/12/09	1724
05	CA1PPM	SEQ-CAL6	CAL6	11/12/09	1758
06	CA2PPM	SEQ-CAL7	CAL7	11/12/09	1832
07	CA5PPM	SEQ-CAL8	CAL8	11/12/09	1906
08	CA10PPM	SEQ-CAL9	CAL9	11/12/09	1940
09	CA20PPM	SEQ-CALA	CAL10	11/12/09	2014
10	CA40PPM	SEQ-CALB	CAL11	11/12/09	2048
11	CA50PPM	SEQ-CALC	CAL12	11/12/09	2122
12	ICV5PPM	ICV5PPM	ICV1	11/12/09	2155
13					
14					
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21					
22					

page 1 of 1

FORM V SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA60637

Instrument ID: BNA4 Calibration Date(s): 11/09/09 11/12/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 1046 2122

RF50: CAL12

COMPOUND	RF50	CURVE	COEFFICENTS A0	A1	%RSD OR R^2
Acenaphthene	0.674	AVRG		0.74579723	3.3
Acenaphthylene	0.920	AVRG		0.99965749	4.5
Anthracene	0.915	AVRG		0.99484542	3.9
Benzo(a)anthracene	0.840	AVRG		0.75815117	9.6
Benzo(b)fluoranthene	1.210	AVRG		1.17686358	5.8
Benzo(k)fluoranthene	0.994	AVRG		1.16945129	7.1
Benzo(g,h,i)perylene	0.878	AVRG		0.86504517	8.2
Benzo(a)pyrene	0.938	AVRG		0.95923504	5.0
Chrysene	0.724	AVRG		0.73241487	6.7
Dibenz(a,h)anthracene	0.866	AVRG		0.76472942	14.4
Fluoranthene	0.970	AVRG		1.03029443	4.0
Fluorene	0.696	AVRG		0.74573736	2.8
Hexachlorobenzene	0.286	AVRG		0.30903327	3.4
Hexachlorobutadiene	0.217	AVRG		0.23753640	4.0
Hexachlorocyclopentadiene	0.131	AVRG		0.12090964	14.0
Indeno(1,2,3-cd)pyrene	0.888	AVRG		0.77150058	14.3
Isophorone	0.634	AVRG		0.62905814	5.8
1-Methylnaphthalene	0.644	AVRG		0.74077824	4.8
2-Methylnaphthalene	0.704	AVRG		0.80094250	4.6
Naphthalene	1.028	AVRG		1.22403293	6.2
N-Nitroso-di-n-propylamine	0.240	AVRG		0.24733956	10.3
Pentachlorophenol	0.174	LINR	0.94236763	0.17808340	0.999
Phenanthrene	0.981	AVRG		1.06434403	3.6
Pyrene	0.976	AVRG		1.03802662	4.1
2-Fluorobiphenyl	0.757	AVRG		0.86559870	4.5
2,4,6-Tribromophenol	0.160	AVRG		0.14864176	14.0
Terphenyl-d14	0.711	AVRG		0.77694300	6.1

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA60637

Instrument ID: BNA4 Calibration Date(s): 11/09/09 11/12/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 1046 2122

LAB FILE ID: RF0.05: CAL2 RF0.1: CAL3 RF0.25: CAL4
RF0.5: CAL5 RF1: CAL6

COMPOUND	RF0.05	RF0.1	RF0.25	RF0.5	RF1
Acenaphthene	0.754	0.750	0.769	0.757	0.737
Acenaphthylene	0.961	0.951	0.991	0.995	0.984
Anthracene	1.002	0.958	1.010	1.017	0.986
Benzo(a)anthracene	0.716	0.652	0.669	0.731	0.714
Benzo(b)fluoranthene	1.130	1.074	1.127	1.142	1.115
Benzo(k)fluoranthene	1.255	1.209	1.177	1.185	1.159
Benzo(g,h,i)perylene	0.845	0.781	0.776	0.858	0.812
Benzo(a)pyrene	0.918	0.928	0.917	0.952	0.908
Chrysene	0.682	0.660	0.680	0.763	0.722
Dibenz(a,h)anthracene	0.665	0.628	0.640	0.720	0.703
Fluoranthene	1.064	0.989	1.020	1.034	1.019
Fluorene	0.748	0.732	0.758	0.751	0.733
Hexachlorobenzene	0.308	0.310	0.321	0.324	0.306
Hexachlorobutadiene	0.225	0.238	0.240	0.240	0.234
Hexachlorocyclopentadiene			0.092	0.108	0.106
Indeno(1,2,3-cd)pyrene	0.642	0.680	0.650	0.715	0.695
Isophorone	0.562	0.613	0.614	0.613	0.604
1-Methylnaphthalene	0.765	0.764	0.783	0.748	0.738
2-Methylnaphthalene	0.836	0.781	0.840	0.802	0.796
Naphthalene	1.348	1.226	1.262	1.262	1.214
N-Nitroso-di-n-propylamine	0.187	0.214	0.263	0.246	0.251
Pentachlorophenol				0.067	0.080
Phenanthrene	1.110	1.049	1.102	1.089	1.054
Pyrene	1.024	1.010	1.044	1.053	1.023
2-Fluorobiphenyl	0.840	0.872	0.901	0.890	0.874
2,4,6-Tribromophenol			0.112	0.126	0.133
Terphenyl-d14	0.801	0.792	0.839	0.848	0.737

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA60637

Instrument ID: BNA4 Calibration Date(s): 11/09/09 11/12/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 1046 2122

LAB FILE ID: RF2: CAL7 RF5: CAL8 RF10: CAL9
RF20: CAL10 RF40: CAL11

COMPOUND	RF2	RF5	RF10	RF20	RF40
Acenaphthene	0.746	0.758	0.756	0.748	0.754
Acenaphthylene	1.002	1.056	1.062	1.032	1.043
Anthracene	1.008	1.057	1.039	0.981	0.970
Benzo(a)anthracene	0.742	0.830	0.817	0.752	0.875
Benzo(b)fluoranthene	1.156	1.266	1.271	1.183	1.270
Benzo(k)fluoranthene	1.168	1.288	1.226	1.139	1.062
Benzo(g,h,i)perylene	0.795	0.903	0.977	0.936	0.954
Benzo(a)pyrene	0.936	1.028	1.049	0.990	0.986
Chrysene	0.741	0.813	0.787	0.704	0.778
Dibenz(a,h)anthracene	0.683	0.820	0.878	0.889	0.918
Fluoranthene	1.047	1.100	1.090	0.990	1.011
Fluorene	0.741	0.777	0.761	0.748	0.757
Hexachlorobenzene	0.304	0.320	0.311	0.303	0.305
Hexachlorobutadiene	0.238	0.240	0.243	0.244	0.253
Hexachlorocyclopentadiene	0.116	0.128	0.127	0.137	0.144
Indeno(1,2,3-cd)pyrene	0.700	0.810	0.892	0.878	0.936
Isophorone	0.617	0.648	0.651	0.658	0.705
1-Methylnaphthalene	0.737	0.759	0.742	0.730	0.739
2-Methylnaphthalene	0.795	0.826	0.814	0.807	0.808
Naphthalene	1.218	1.248	1.234	1.211	1.214
N-Nitroso-di-n-propylamine	0.260	0.264	0.261	0.263	0.272
Pentachlorophenol	0.101	0.136	0.151	0.162	0.178
Phenanthrene	1.069	1.103	1.084	1.039	1.028
Pyrene	1.053	1.118	1.100	0.989	1.029
2-Fluorobiphenyl	0.882	0.881	0.877	0.868	0.878
2,4,6-Tribromophenol	0.145	0.161	0.166	0.167	0.169
Terphenyl-d14	0.758	0.802	0.799	0.715	0.743

FORM VI SV

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Lab File ID: SEQ-TUN1 DFTPP Injection Date: 11/20/09

Instrument ID: BNA4 DFTPP Injection Time: 0927

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	43.7
68	Less than 2.0% of mass 69	0.8 (1.5)1
69	Mass 69 relative abundance	50.1
70	Less than 2.0% of mass 69	0.2 (0.5)1
127	40.0 - 60.0% of mass 198	55.2
197	Less than 1.0% of mass 198	0.6
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.2
275	10.0 - 30.0% of mass 198	21.4
365	Greater than 1.0% of mass 198	2.15
441	Present, but less than mass 443	9.0
442	Greater than 40.0% of mass 198	57.0
443	17.0 - 23.0% of mass 442	11.8 (20.7)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV5PPM	SEQ-CCV1	SEQ-CCV1	11/20/09	0945
02	9K18009-BLK2	9K18009-BLK2	9K18009B2	11/20/09	1029
03	9K18009-BLK2	9K18009-BS2	9K18009L2	11/20/09	1103
04	NTC21MW0501	0911151-01	1115101	11/20/09	1427
05	NTC21-FD1116	0911151-02	1115102	11/20/09	1501
06	NTC21MW0201	0911151-03	1115103	11/20/09	1535
07	NTC21MW0301	0911151-04	1115104	11/20/09	1609
08	NTC21MW0401	0911151-05	1115105	11/20/09	1642
09	NTC21MW0501M	0911151-01MS	1115101M	11/20/09	1716
10	NTC21MW0501M	0911151-01MSD	1115101S	11/20/09	1750
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page 1 of 1

FORM V SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Instrument ID: BNA4 Calibration Date: 11/20/09 Time: 0945

Lab File ID: SEQ-CCV1 Init. Calib. Date(s): 11/09/09 ~~11/12/09~~

Init. Calib. Times: 1046 2122

COMPOUND	$\overline{RRF}$	RRF5	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acenaphthene	0.746	0.698	5.000	4.676		AVRG	-6.5	20.0
Acenaphthylene	1.000	0.908	5.000	4.542		AVRG	-9.2	20.0
Anthracene	0.995	1.093	5.000	5.492		AVRG	9.8	20.0
Benzo(a)anthracene	0.758	0.916	5.000	6.042		AVRG	20.8	20.0
Benzo(b)fluoranthene	1.177	1.190	5.000	5.055		AVRG	1.1	20.0
Benzo(k)fluoranthene	1.169	1.180	5.000	5.044		AVRG	0.9	20.0
Benzo(g,h,i)perylene	0.865	0.780	5.000	4.509		AVRG	-9.8	20.0
Benzo(a)pyrene	0.959	0.972	5.000	5.065		AVRG	1.3	20.0
Chrysene	0.732	0.847	5.000	5.780		AVRG	15.6	20.0
Dibenz(a,h)anthracene	0.764	0.666	5.000	4.355		AVRG	-12.9	20.0
Fluoranthene	1.030	1.156	5.000	5.608		AVRG	12.2	20.0
Fluorene	0.746	0.719	5.000	4.821		AVRG	-3.6	20.0
Indeno(1,2,3-cd)pyrene	0.771	0.695	5.000	4.502		AVRG	-10.0	20.0
2-Methylnaphthalene	0.801	0.754	5.000	4.708		AVRG	-5.8	20.0
Naphthalene	1.224	1.116	5.000	4.559		AVRG	-8.8	20.0
Phenanthrene	1.064	1.081	5.000	5.076		AVRG	1.5	20.0
Pyrene	1.038	1.170	5.000	5.635		AVRG	12.7	20.0
2-Fluorobiphenyl	0.865	0.816	5.000	4.713		AVRG	-5.7	
Terphenyl-d14	0.777	0.888	5.000	5.714		AVRG	14.3	

FORM VII SV

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Lab File ID: SEQ-TUN1 DFTPP Injection Date: 11/23/09

Instrument ID: BNA4 DFTPP Injection Time: 1122

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	42.7
68	Less than 2.0% of mass 69	0.8 (1.6)1
69	Mass 69 relative abundance	49.1
70	Less than 2.0% of mass 69	0.3 (0.5)1
127	40.0 - 60.0% of mass 198	54.4
197	Less than 1.0% of mass 198	0.6
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.0
275	10.0 - 30.0% of mass 198	21.6
365	Greater than 1.0% of mass 198	2.04
441	Present, but less than mass 443	9.6
442	Greater than 40.0% of mass 198	59.5
443	17.0 - 23.0% of mass 442	12.3 (20.6)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV5PPM	SEQ-CCV1	SEQ-CCV1	11/23/09	1140
02	9K19024-BLK2	9K19024-BLK2	K19024B2	11/23/09	1408
03	9K19024-BLK2	9K19024-BS2	K19024L2	11/23/09	1442
04	NTC21MW0101	0911181-02	1118102	11/23/09	1623
05	NTC21MW0601	0911181-03	1118103	11/23/09	1657
06					
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FORM V SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Instrument ID: BNA4 Calibration Date: 11/23/09 Time: 1140

Lab File ID: SEQ-CCV1 Init. Calib. Date(s): 11/09/09 11/12/09

Init. Calib. Times: 1046 2122

COMPOUND	$\overline{RRF}$	RRF5	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acenaphthene	0.746	0.715	5.000	4.794		AVRG	-4.1	20.0
Acenaphthylene	1.000	0.953	5.000	4.767		AVRG	-4.6	20.0
Anthracene	0.995	1.078	5.000	5.420		AVRG	8.4	20.0
Benzo(a)anthracene	0.758	0.874	5.000	5.767		AVRG	15.3	20.0
Benzo(b)fluoranthene	1.177	1.194	5.000	5.071		AVRG	1.4	20.0
Benzo(k)fluoranthene	1.169	1.168	5.000	4.992		AVRG	-0.2	20.0
Benzo(g,h,i)perylene	0.865	0.791	5.000	4.573		AVRG	-8.5	20.0
Benzo(a)pyrene	0.959	0.964	5.000	5.024		AVRG	0.5	20.0
Chrysene	0.732	0.826	5.000	5.639		AVRG	12.8	20.0
Dibenz(a,h)anthracene	0.764	0.621	5.000	4.063		AVRG	-18.7	20.0
Fluoranthene	1.030	1.172	5.000	5.686		AVRG	13.7	20.0
Fluorene	0.746	0.729	5.000	4.886		AVRG	-2.3	20.0
Indeno(1,2,3-cd)pyrene	0.771	0.672	5.000	4.353		AVRG	-12.9	20.0
2-Methylnaphthalene	0.801	0.793	5.000	4.949		AVRG	-1.0	20.0
Naphthalene	1.224	1.179	5.000	4.815		AVRG	-3.7	20.0
Phenanthrene	1.064	1.086	5.000	5.102		AVRG	2.0	20.0
Pyrene	1.038	1.210	5.000	5.828		AVRG	16.6	20.0
2-Fluorobiphenyl	0.865	0.868	5.000	5.016		AVRG	0.3	
Terphenyl-d14	0.777	0.860	5.000	5.538		AVRG	10.8	

FORM VII SV

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Lab File ID: SEQ-TUN1 DFTPP Injection Date: 11/25/09

Instrument ID: BNA4 DFTPP Injection Time: 1042

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	42.1
68	Less than 2.0% of mass 69	0.8 (1.6)1
69	Mass 69 relative abundance	48.4
70	Less than 2.0% of mass 69	0.2 (0.5)1
127	40.0 - 60.0% of mass 198	54.2
197	Less than 1.0% of mass 198	0.5
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.1
275	10.0 - 30.0% of mass 198	21.9
365	Greater than 1.0% of mass 198	2.23
441	Present, but less than mass 443	10.6
442	Greater than 40.0% of mass 198	65.3
443	17.0 - 23.0% of mass 442	13.1 (20.1)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV5PPM	SEQ-CCV1	SEQ-CCV1	11/25/09	1101
02	9K23034-BLK2	9K23034-BS2	K23034L2	11/25/09	1136
03	9K23034-BLK2	9K23034-BLK2	K23034B2	11/25/09	1209
04	NTC21SB02-SO	0911147-01	1114701	11/25/09	1749
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FORM V SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Instrument ID: BNA4 Calibration Date: 11/25/09 Time: 1101

Lab File ID: SEQ-CCV1 Init. Calib. Date(s): 11/09/09 11/12/09

Init. Calib. Times: 1046 2122

COMPOUND	$\overline{RRF}$	RRF5	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acenaphthene	0.746	0.726	5.000	4.864		AVRG	-2.7	20.0
Acenaphthylene	1.000	0.944	5.000	4.722		AVRG	-5.6	20.0
Anthracene	0.995	1.094	5.000	5.499		AVRG	10.0	20.0
Benzo(a)anthracene	0.758	0.939	5.000	6.196		AVRG	23.9	20.0
Benzo(b)fluoranthene	1.177	1.201	5.000	5.103		AVRG	2.0	20.0
Benzo(k)fluoranthene	1.169	1.179	5.000	5.040		AVRG	0.8	20.0
Benzo(g,h,i)perylene	0.865	0.877	5.000	5.070		AVRG	1.4	20.0
Benzo(a)pyrene	0.959	0.995	5.000	5.185		AVRG	3.7	20.0
Chrysene	0.732	0.890	5.000	6.073		AVRG	21.5	20.0
Dibenz(a,h)anthracene	0.764	0.698	5.000	4.566		AVRG	-8.7	20.0
Fluoranthene	1.030	1.192	5.000	5.784		AVRG	15.7	20.0
Fluorene	0.746	0.741	5.000	4.966		AVRG	-0.7	20.0
Indeno(1,2,3-cd)pyrene	0.771	0.749	5.000	4.855		AVRG	-2.9	20.0
2-Methylnaphthalene	0.801	0.781	5.000	4.877		AVRG	-2.4	20.0
Naphthalene	1.224	1.164	5.000	4.755		AVRG	-4.9	20.0
Phenanthrene	1.064	1.086	5.000	5.103		AVRG	2.1	20.0
Pyrene	1.038	1.221	5.000	5.881		AVRG	17.6	20.0
2-Fluorobiphenyl	0.865	0.847	5.000	4.892		AVRG	-2.2	
Terphenyl-d14	0.777	0.879	5.000	5.659		AVRG	13.2	

FORM VII SV

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Lab File ID: SEQ-TUN2 DFTPP Injection Date: 12/01/09

Instrument ID: BNA4 DFTPP Injection Time: 1807

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	46.1
68	Less than 2.0% of mass 69	0.9 (1.7)1
69	Mass 69 relative abundance	52.4
70	Less than 2.0% of mass 69	0.3 (0.5)1
127	40.0 - 60.0% of mass 198	56.9
197	Less than 1.0% of mass 198	0.6
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.9
275	10.0 - 30.0% of mass 198	20.5
365	Greater than 1.0% of mass 198	1.89
441	Present, but less than mass 443	8.5
442	Greater than 40.0% of mass 198	51.9
443	17.0 - 23.0% of mass 442	10.7 (20.6)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV5PPME	SEQ-CCV2	SEQ-CCV2	12/01/09	1825
02	NTC21SB02-SO	0911147-01DL	1114701D	12/01/09	1859
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FORM V SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Instrument ID: BNA4 Calibration Date: 12/01/09 Time: 1825

Lab File ID: SEQ-CCV2 Init. Calib. Date(s): 11/09/09 11/12/09

Init. Calib. Times: 1046 2122

COMPOUND	$\overline{RRF}$	RRF5	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acenaphthene	0.746	0.741	5.000	4.967		AVRG	-0.6	20.0
Acenaphthylene	1.000	0.962	5.000	4.810		AVRG	-3.8	20.0
Anthracene	0.995	1.058	5.000	5.320		AVRG	6.4	20.0
Benzo(a)anthracene	0.758	0.976	5.000	6.438		AVRG	28.8	20.0
Benzo(b)fluoranthene	1.177	1.183	5.000	5.026		AVRG	0.5	20.0
Benzo(k)fluoranthene	1.169	1.137	5.000	4.861		AVRG	-2.8	20.0
Benzo(g,h,i)perylene	0.865	0.787	5.000	4.550		AVRG	-9.0	20.0
Benzo(a)pyrene	0.959	0.959	5.000	4.997		AVRG	-0.1	20.0
Chrysene	0.732	0.923	5.000	6.301		AVRG	26.0	20.0
Dibenz(a,h)anthracene	0.764	0.693	5.000	4.529		AVRG	-9.4	20.0
Fluoranthene	1.030	1.176	5.000	5.708		AVRG	14.2	20.0
Fluorene	0.746	0.738	5.000	4.950		AVRG	-1.0	20.0
Indeno(1,2,3-cd)pyrene	0.771	0.724	5.000	4.695		AVRG	-6.1	20.0
2-Methylnaphthalene	0.801	0.792	5.000	4.943		AVRG	-1.1	20.0
Naphthalene	1.224	1.159	5.000	4.736		AVRG	-5.3	20.0
Phenanthrene	1.064	1.077	5.000	5.061		AVRG	1.2	20.0
Pyrene	1.038	1.199	5.000	5.777		AVRG	15.5	20.0
2-Fluorobiphenyl	0.865	0.844	5.000	4.876		AVRG	-2.5	
Terphenyl-d14	0.777	0.892	5.000	5.738		AVRG	14.8	

FORM VII SV

FORM 4
SEMIVOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

9K18009-BLK2

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Lab File ID: 9K18009B2 Lab Sample ID: 9K18009-BLK2

Instrument ID: BNA4 Date Extracted: 11/19/09

Matrix: (soil/water) WATER Date Analyzed: 11/20/09

Level:(low/med) LOW GPC Cleanup: (Y/N) N Time Analyzed: 1029

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	9K18009-BLK2	9K18009-BS2	9K18009L2	11/20/09
02	NTC21MW0501	0911151-01	1115101	11/20/09
03	NTC21-FD1116	0911151-02	1115102	11/20/09
04	NTC21MW0201	0911151-03	1115103	11/20/09
05	NTC21MW0301	0911151-04	1115104	11/20/09
06	NTC21MW0401	0911151-05	1115105	11/20/09
07	NTC21MW0501M	0911151-01MS	1115101M	11/20/09
08	NTC21MW0501M	0911151-01MSD	1115101S	11/20/09
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COMMENTS:

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FORM IV SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

9K18009-BLK2

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 9K18009-BLK2

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 9K18009B2

% Moisture: _____ decanted: (Y/N)___ Date Sampled: _____

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:11/19/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 11/20/09 10:29

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	0.020	0.060		U
208-96-8	Acenaphthylene	0.020	0.060		U
120-12-7	Anthracene	0.020	0.060		U
56-55-3	Benzo(a)anthracene	0.020	0.060		U
205-99-2	Benzo(b)fluoranthene	0.020	0.060		U
207-08-9	Benzo(k)fluoranthene	0.020	0.060		U
191-24-2	Benzo(g,h,i)perylene	0.020	0.060		U
50-32-8	Benzo(a)pyrene	0.020	0.060		U
218-01-9	Chrysene	0.020	0.060		U
53-70-3	Dibenz(a,h)anthracene	0.020	0.060		U
206-44-0	Fluoranthene	0.020	0.060		U
86-73-7	Fluorene	0.020	0.060		U
193-39-5	~~Indeno(1,2,3-cd)~~pyrene	0.020	0.060		U
91-57-6	2-Methylnaphthalene	0.020	0.060	0.046	J
91-20-3	Naphthalene	0.020	0.060	0.046	J
85-01-8	Phenanthrene	0.020	0.060	0.026	J
129-00-0	Pyrene	0.020	0.060		U

FORM I SV

FORM 4
SEMIVOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

9K19024-BLK2

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Lab File ID: K19024B2 Lab Sample ID: 9K19024-BLK2

Instrument ID: BNA4 Date Extracted: 11/20/09

Matrix: (soil/water) WATER Date Analyzed: 11/23/09

Level:(low/med) LOW GPC Cleanup: (Y/N) N Time Analyzed: 1408

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	9K19024-BLK2	9K19024-BS2	K19024L2	11/23/09
02	NTC21MW0101	0911181-02	1118102	11/23/09
03	NTC21MW0601	0911181-03	1118103	11/23/09
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FORM IV SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

9K19024-BLK2

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) WATER Lab Sample ID: 9K19024-BLK2

Sample wt/vol: 1000 (g/mL) ML Lab File ID: K19024B2

% Moisture: _____ decanted: (Y/N)___ Date Sampled: _____

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:11/20/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 11/23/09 14:08

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	0.020	0.060	0.045	J
208-96-8	Acenaphthylene	0.020	0.060	0.035	J
120-12-7	Anthracene	0.020	0.060	0.094	
56-55-3	Benzo(a)anthracene	0.020	0.060	0.14	
205-99-2	Benzo(b)fluoranthene	0.020	0.060	0.12	
207-08-9	Benzo(k)fluoranthene	0.020	0.060	0.13	
191-24-2	Benzo(g,h,i)perylene	0.020	0.060		U
50-32-8	Benzo(a)pyrene	0.020	0.060	0.12	
218-01-9	Chrysene	0.020	0.060	0.15	
53-70-3	Dibenz(a,h)anthracene	0.020	0.060		U
206-44-0	Fluoranthene	0.020	0.060	0.13	
86-73-7	Fluorene	0.020	0.060	0.058	J
193-39-5	Indeno(1,2,3-cd)pyrene	0.020	0.060		U
91-57-6	2-Methylnaphthalene	0.020	0.060	0.026	J
91-20-3	Naphthalene	0.020	0.060	0.023	J
85-01-8	Phenanthrene	0.020	0.060	0.10	
129-00-0	Pyrene	0.020	0.060	0.15	

FORM I SV

FORM 4
SEMIVOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

9K23034-BLK2

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Lab File ID: K23034B2 Lab Sample ID: 9K23034-BLK2

Instrument ID: BNA4 Date Extracted: 11/24/09

Matrix: (soil/water) SOIL Date Analyzed: 11/25/09

Level:(low/med) LOW GPC Cleanup: (Y/N) N Time Analyzed: 1209

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	9K23034-BLK2	9K23034-BS2	K23034L2	11/25/09
02	NTC21SB02-SO	0911147-01	1114701	11/25/09
03	NTC21SB02-SO	0911147-01DL	1114701D	12/01/09
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FORM IV SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

9K23034-BLK2

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix: (soil/water) SOIL Lab Sample ID: 9K23034-BLK2

Sample wt/vol: 15.0 (g/mL) G Lab File ID: K23034B2

% Moisture: 0 decanted: (Y/N) N Date Sampled: _____

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:11/24/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 11/25/09 12:09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.3	4.0		U
208-96-8	Acenaphthylene	1.3	4.0		U
120-12-7	Anthracene	1.3	4.0		U
56-55-3	Benzo(a)anthracene	1.3	4.0		U
205-99-2	Benzo(b)fluoranthene	1.3	4.0		U
207-08-9	Benzo(k)fluoranthene	1.3	4.0		U
191-24-2	Benzo(g,h,i)perylene	1.3	4.0		U
50-32-8	Benzo(a)pyrene	1.3	4.0		U
218-01-9	Chrysene	1.3	4.0		U
53-70-3	Dibenz(a,h)anthracene	1.3	4.0		U
206-44-0	Fluoranthene	1.3	4.0		U
86-73-7	Fluorene	1.3	4.0		U
193-39-5	Indeno(1,2,3-cd)pyrene	1.3	4.0		U
91-57-6	2-Methylnaphthalene	1.3	4.0		U
91-20-3	Naphthalene	1.3	4.0		U
85-01-8	Phenanthrene	1.3	4.0		U
129-00-0	Pyrene	1.3	4.0		U

FORM I SV

FORM 2
WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

	CLIENT SAMPLE NO.	S1 (FBP) #	S2 (TPH) #	S3 #	S4 #	S5 #	S6 #	S7 #	S8 #	TOT OUT
01	9K18009-BLK2	73	97							0
02	9K18009-BLK2	73	85							0
03	NTC21MW0501	73	91							0
04	NTC21-FD1116	71	91							0
05	NTC21MW0201	71	94							0
06	NTC21MW0301	68	92							0
07	NTC21MW0401	71	74							0
08	NTC21MW0501M	73	87							0
09	NTC21MW0501M	73	90							0
10	9K19024-BLK2	66	90							0
11	9K19024-BLK2	74	91							0
12	NTC21MW0101	68	89							0
13	NTC21MW0601	63	87							0
14										
15										
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	EL QC LIMITS	SPIKE CONC (UG/L)
S1 (FBP) = 2-Fluorobiphenyl	(34-167)	50
S2 (TPH) = Terphenyl-d14	(34-167)	50

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate results reported from a diluted analysis

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix Spike - Client Sample No.: 9K18009-BLK2

COMPOUND	SPIKE ADDED (UG/L)	SAMPLE CONCENTRATION (UG/L)	LCS CONCENTRATION (UG/L)	LCS % REC #	QC. LIMITS REC.
Acenaphthene	1.000	0.0000	0.7572	76	41-132
Acenaphthylene	1.000	0.0000	0.8173	82	43-140
Anthracene	1.000	0.0000	0.9368	94	50-139
Benzo(a)anthracene	1.000	0.0000	0.9768	98	58-141
Benzo(b)fluoranthene	1.000	0.0000	0.8510	85	42-156
Benzo(k)fluoranthene	1.000	0.0000	0.8311	83	49-165
Benzo(g,h,i)perylene	1.000	0.0000	0.8160	82	12-171
Benzo(a)pyrene	1.000	0.0000	0.8035	80	31-142
Chrysene	1.000	0.0000	1.021	102	51-155
Dibenz(a,h)anthracene	1.000	0.0000	0.6948	69	28-153
Fluoranthene	1.000	0.0000	0.9686	97	47-158
Fluorene	1.000	0.0000	0.8185	82	40-140
Indeno(1,2,3-cd)pyrene	1.000	0.0000	0.7713	77	20-167
2-Methylnaphthalene	1.000	0.04555	0.7084	66	36-121
Naphthalene	1.000	0.04580	0.7315	68	39-125
Phenanthrene	1.000	0.02610	0.9095	88	46-144
Pyrene	1.000	0.0000	1.013	101	39-158

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 17 outside limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Matrix Spike - Client Sample No.: 9K19024-BLK2

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Acenaphthene	1.000	0.04549	0.7189	67	41-132
Acenaphthylene	1.000	0.03480	0.7968	76	43-140
Anthracene	1.000	0.09423	0.8680	77	50-139
Benzo(a)anthracene	1.000	0.1405	0.8846	74	58-141
Benzo(b)fluoranthene	1.000	0.1165	0.7670	65	42-156
Benzo(k)fluoranthene	1.000	0.1329	0.7650	63	49-165
Benzo(g,h,i)perylene	1.000	0.0000	0.8574	86	12-171
Benzo(a)pyrene	1.000	0.1159	0.7260	61	31-142
Chrysene	1.000	0.1507	0.9674	82	51-155
Dibenz(a,h)anthracene	1.000	0.0000	0.7288	73	28-153
Fluoranthene	1.000	0.1312	0.9061	77	47-158
Fluorene	1.000	0.05767	0.7694	71	40-140
Indeno(1,2,3-cd)pyrene	1.000	0.0000	0.7570	76	20-167
2-Methylnaphthalene	1.000	0.02620	0.6890	66	36-121
Naphthalene	1.000	0.02336	0.7302	71	39-125
Phenanthrene	1.000	0.1012	0.8323	73	46-144
Pyrene	1.000	0.1464	0.9444	80	39-158

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 17 outside limits

COMMENTS: _____

FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Lab File ID (Standard): SEQ-CCV1 Date Analyzed: 11/20/09

Instrument ID: BNA4 Time Analyzed: 0945

		IS1 (PHN) AREA #	RT #	IS2 (PRY) AREA #	RT #	AREA #	RT #
	12 HOUR STD	222335	13.42	144520	25.12		
	UPPER LIMIT	444670	13.92	289040	25.62		
	LOWER LIMIT	111168	12.92	72260	24.62		
	CLIENT SAMPLE NO.						
01	9K18009-BLK2	209352	13.42	103593	25.12		
02	9K18009-BLK2	201910	13.42	125335	25.12		
03	NTC21MW0501	205930	13.42	116354	25.12		
04	NTC21-FD1116	206483	13.42	130746	25.12		
05	NTC21MW0201	202657	13.42	130774	25.12		
06	NTC21MW0301	205943	13.42	139411	25.12		
07	NTC21MW0401	201428	13.42	123797	25.12		
08	NTC21MW0501M	208552	13.44	177578	25.14		
09	NTC21MW0501M	201819	13.44	180290	25.14		
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 (PHN) = Phenanthrene-d10
IS2 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

page 1 of 1

FORM VIII SV

FORM 8
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Lab File ID (Standard): SEQ-CCV1 Date Analyzed: 11/23/09

Instrument ID: BNA4 Time Analyzed: 1140

		IS1(PHN) AREA #	RT #	IS2(PRY) AREA #	RT #	AREA #	RT #
	12 HOUR STD	219391	13.42	144313	25.12		
	UPPER LIMIT	438782	13.92	288626	25.62		
	LOWER LIMIT	109696	12.92	72157	24.62		
	CLIENT SAMPLE NO.						
01	9K19024-BLK2	204781	13.43	125048	25.13		
02	9K19024-BLK2	202967	13.42	135253	25.12		
03	NTC21MW0101	228806	13.42	185510	25.12		
04	NTC21MW0601	215922	13.42	151676	25.12		
05							
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20							
21							
22							

IS1 (PHN) = Phenanthrene-d10
IS2 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

page 1 of 1

FORM VIII SV

NTC GREAT LAKES
WATER DATA
CTO064_002

FRACTION	CHEMICAL	NTC21-FD111609-01	UNITS	NTC21MW0201	RPD	D
OS	ACENAPHTHENE	0.03 J	UG/L	ND	200.00	N/A 0.03 < 2X R.L.
OS	ACENAPHTHYLENE	0.03 J	UG/L	ND	200.00	N/A 0.03 < 2X R.L.
OS	ANTHRACENE	0.06	UG/L	ND	200.00	N/A 0.06 < 2X R.L.
OS	BENZO(A)ANTHRACENE	0.09	UG/L	ND	200.00	N/A 0.09 < 2X R.L.
OS	BENZO(A)PYRENE	0.06	UG/L	ND	200.00	N/A 0.06 < 2X R.L.
OS	BENZO(B)FLUORANTHENE	0.08	UG/L	ND	200.00	N/A 0.08 < 2X R.L.
OS	BENZO(K)FLUORANTHENE	0.08	UG/L	ND	200.00	N/A 0.08 < 2X R.L.
OS	CHRYSENE	0.09	UG/L	ND	200.00	N/A 0.09 < 2X R.L.
OS	FLUORANTHENE	0.08	UG/L	ND	200.00	N/A 0.08 < 2X R.L.
OS	FLUORENE	0.04 J	UG/L	ND	200.00	N/A 0.04 < 2X R.L.
OS	PYRENE	0.09	UG/L	ND	200.00	N/A 0.09 < 2X R.L.

Current RPD Quality Control Limit: 30 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

ORGANIC CASE NARRATIVE – PEST/PCBs
Tetra Tech NUS, Inc./Great Lakes, IL CTO064
Project Manager: B. Cummings
SDG: CTO064_002
Work order: 0911147, 0911151 and 0911181

PEST/PCB

Sampled	Received	Lab ID	Client ID
11/13/2009	11/14/2009	0911147-01	NTC21SB02-SO-0406
11/15/2009	11/17/2009	0911151-01	NTC21MW0501
11/16/2009	11/17/2009	0911151-02	NTC21-FD111609-01
11/16/2009	11/17/2009	0911151-03	NTC21MW0201
11/16/2009	11/17/2009	0911151-04	NTC21MW0301
11/16/2009	11/17/2009	0911151-05	NTC21MW0401
11/17/2009	11/18/2009	0911181-02	NTC21MW0101
11/17/2009	11/18/2009	0911181-03	NTC21MW0601

Method: The samples were prepared and analyzed by USEPA SW-846 Methods 3546 or 3510C and 8081A/8082 (microwave or separatory funnel extraction followed by capillary column GC/ECD) for soils or waters upon receipt to the laboratory in satisfactory condition.

Comments: The analyses for these samples were satisfactorily completed within sample holding times and met the corresponding specifications with the following exceptions:

- Performance Evaluation Mix: All method criteria were met.
- Initial Calibration Criteria: All method criteria were met. The multi-component analyte toxaphene was calibrated using a single point at the low point of the calibration curve and verified daily. No further calibration was required as it was not detected in the sample. Aroclors 1016, 1242 and 1260 were fully calibrated. While each aroclor has been validated on the instrument, no other aroclor calibrations were required as no other aroclors were detected.
- Continuing Calibration Criteria: Most analytes were within 20% difference or exceeded with a positive bias and were non-detect in the associated samples. In cases where the results are associated with a positive bias, reported concentrations above the quantitation limits are qualified with an "X" to indicate a potential for a positive bias. In cases where results are associated with a negative bias, these results are qualified with a "Y" to indicate the potential for a negative bias. Where an analyte is not confirmed and is associated to a low CCV, the non-detect result is qualified with a "Z" to indicate potential non-confirmation due to the low bias on the confirmation column.
- Blank Results: No target analytes were confirmed in the method blanks.
- Blank Results: No target analytes were confirmed in the method blanks.
- Surrogate Recoveries: Recoveries were all within limits.
- LCS(/LCSD) Results: All recoveries (and relative percent differences) were within limits or exceeded with a positive bias without unqualified detection (qualified for column difference, matrix or quantitation limit) in the associated samples.
- NTC21MW0501MS/MSD results: All recoveries and relative percent differences were within limits.
- NTC21SB02-SO-0406MS/MSD results: Of 80 single componenet pesticide recoveries, 32 recoveries were outside limits while all relative percent differences were within limits. All primary column PCB recoveries and relative percent differences were within limits. For the confirmation column, the relative percent difference for PCB-1016 exceeded the limit at 35 while the PCB-1260 recoveries were below the limit of 60 at 41%/33%. See form 3s.
- Dilutions: All samples were analyzed without dilution.
- Note: Samples containing PCB may have confirmed pesticide results due to the presence of

PCB.

- Manual integrations: Quantitation signals were manually integrated in order to accurately reflect the peak areas based on the technical judgment of the analyst. A listing of the manual integrations performed and reason for the integration is included with the logs. Before and after "pictures" are available where manual integrations were performed.

I certify that, to the best of my knowledge and based upon my inquiry of those individuals immediately responsible for obtaining the information, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in the case narrative, as verified by the following signature.

Marcia K. McGinnity
Data Quality Manager

ANALYTICAL REPORT TERMS AND QUALIFIERS (ORGANIC)

MDL: The method detection limit (MDL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The MDL is determined from analysis of a sample containing the analyte in a given matrix.

EQL: The estimated quantitation limit (EQL) is defined as the estimated concentration above which quantitative results can be obtained with a specific degree of confidence. Empirical Laboratories defines the EQL to be at or near the lowest standard of the calibration curve.

U: The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte quantitated below the MDL.

B: The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the correct sample result might be less than the reported result and, perhaps, zero.

D: When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".

E: The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound.

J: The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The data pass the identification criteria indicating that the compound is present, but the calculated result is less than the EQL.

P: The associated numerical value is an estimated quantity. There is greater than a 40% difference between the two GC columns for the detected concentrations. The higher of the two values is reported.

M: The presence of an "M" to the right of an analytical result indicates that the sample matrix interfered with the quantitation of the analyte. In GC and HPLC, results are reported from the column with the lower concentration.

I: The presence of an "I" to the right of an analytical result that the presence of a qualitative interference could have caused a false positive or over estimation of the analyte. In GC and HPLC, results are reported from the column with the lower concentration.

INITIAL CALIBRATION STANDARDS

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9K30904	Instrument:	GL-ECD4
Calibration:	9310003 PCB Cal		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
09G0114	1660 ICAL @2500/200 ppb	9K30904-CAL8	013R1301.D	10/27/09 19:46
09G0114	1660 ICAL @2500/200 ppb	9K30904-CAL8	013F1301.D	10/27/09 19:46
09G0115	1660 ICAL @ 1000/50 ppb	9K30904-CAL9	014F1401.D	10/27/09 20:05
09G0115	1660 ICAL @ 1000/50 ppb	9K30904-CAL9	014R1401.D	10/27/09 20:05
09G0116	1660 ICAL @ 750/37.5 ppb	9K30904-CALA	015F1501.D	10/27/09 20:23
09G0116	1660 ICAL @ 750/37.5 ppb	9K30904-CALA	015R1501.D	10/27/09 20:23
09G0117	1660 ICAL @ 500/25 ppb	9K30904-CALB	016F1601.D	10/27/09 20:41
09G0117	1660 ICAL @ 500/25 ppb	9K30904-CALB	016R1601.D	10/27/09 20:41
09G0118	1660 ICAL @ 100/10 ppb	9K30904-CALC	017R1701.D	10/27/09 20:59
09G0118	1660 ICAL @ 100/10 ppb	9K30904-CALC	017F1701.D	10/27/09 20:59
09G0119	1660 ICAL @ 50/5 ppb	9K30904-CALD	018R1801.D	10/27/09 21:18
09G0119	1660 ICAL @ 50/5 ppb	9K30904-CALD	018F1801.D	10/27/09 21:18
09G0120	1660 ICAL @ 25/1 ppb	9K30904-CALE	019F1901.D	10/27/09 21:36
09G0120	1660 ICAL @ 25/1 ppb	9K30904-CALE	019R1901.D	10/27/09 21:36

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA65795

Instrument ID: ECD4 Calibration Date(s): 10/27/09 10/27/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 1946 2136

LAB FILE ID: RF5: 018F1801 RF1: 019F1901

COMPOUND	RF5	RF1	CURVE	COEFFICENT A1	%RSD OR R^2
PCB-1016	2953.120	2844.880	AVRG	2705.34494	9.2
(2)	1021.540	969.680	AVRG	849.299552	16.0
(3)	1344.220	1363.680	AVRG	1190.76601	16.0
(4)	1405.960	1365.240	AVRG	1197.22351	14.1
(5)	1089.640	1100.880	AVRG	1019.62083	5.8
PCB-1260	5948.420	5273.760	AVRG	5056.90184	10.9
(2)	2745.220	2540.400	AVRG	2303.05811	12.8
(3)	2614.540	2400.040	AVRG	2176.92210	14.4
(4)	2569.540	2586.000	AVRG	2361.00634	12.2
(5)	1362.400	1160.040	AVRG	1183.75955	8.6

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA65795

Instrument ID: ECD4 Calibration Date(s): 10/27/09 10/27/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 1946 2136

LAB FILE ID: RF200: 013F1301 RF100: 014F1401 RF50: 015F1501
RF25: 016F1601 RF10: 017F1701

COMPOUND	RF200	RF100	RF50	RF25	RF10
PCB-1016	2392.504	2490.123	2537.576	2672.842	3046.370
(2)	683.563	721.767	772.747	801.820	973.980
(3)	878.712	1193.335	976.347	1275.028	1304.040
(4)	974.738	1070.147	1093.092	1133.838	1337.550
(5)	949.127	980.939	991.684	978.926	1046.150
PCB-1260	4493.655	4574.105	4740.979	4792.344	ϕ5575.050
(2)	2002.329	ϕ2048.860	2097.520	2158.128	2528.950
(3)	1864.822	1792.985	ϕ2023.565	2092.502	2450.000
(4)	ϕ2103.980	1955.088	2222.008	2334.618	2755.810
(5)	1106.587	1095.187	1139.799	ϕ1132.794	1289.510

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FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA65795

Instrument ID: ECD4 Calibration Date(s): 10/27/09 10/27/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 1946 2136

LAB FILE ID: RT1: 013F1301 RT2: 014F1401 RT3: 015F1501
RT4: 016F1601 RT5: 017F1701

COMPOUND	RT1	RT2	RT3	RT4	RT5
PCB-1016	5.325	5.325	5.325	5.325	5.324
(2)	4.559	4.558	4.558	4.558	4.559
(3)	4.867	4.867	4.866	4.866	4.866
(4)	5.042	5.042	5.041	5.041	5.041
(5)	5.479	5.480	5.478	5.478	5.478
PCB-1260	8.414	8.413	8.413	8.413	8.414
(2)	7.029	7.032	7.030	7.030	7.033
(3)	7.765	7.765	7.766	7.766	7.766
(4)	8.022	8.023	8.023	8.021	8.023
(5)	9.472	9.473	9.471	9.473	9.471

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA65795

Instrument ID: ECD4 Calibration Date(s): 10/27/09 10/27/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 1946 2136

LAB FILE ID: RT6: 018F1801 RT7: 019F1901

COMPOUND	RT6	RT7	MEAN RT	RT WINDOW FROM	RT WINDOW TO
PCB-1016	5.326	5.325	5.325	5.302	5.362
(2)	4.559	4.559	4.559	4.533	4.593
(3)	4.867	4.867	4.867	4.843	4.903
(4)	5.042	5.042	5.042	5.018	5.078
(5)	5.479	5.479	5.479	5.457	5.517
PCB-1260	8.416	8.412	8.414	8.387	8.447
(2)	7.034	7.032	7.031	7.008	7.068
(3)	7.767	7.765	7.766	7.742	7.802
(4)	8.022	8.022	8.022	7.998	8.058
(5)	9.474	9.472	9.472	9.447	9.507

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA65795

Instrument ID: ECD4 Calibration Date(s): 10/27/09 10/27/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 1946 2136

LAB FILE ID: RF5: 018R1801 RF1: 019R1901

COMPOUND	RF5	RF1	CURVE	COEFFICENT A1	%RSD OR R^2
PCB-1016 [2C]	3692.660	3638.880	AVRG	3418.67584	7.1
(2)	1496.480	1403.920	AVRG	1287.00267	14.6
(3)	2486.100	2399.360	AVRG	2289.50250	12.9
(4)	1912.140	1752.600	AVRG	1750.41248	7.7
(5)	1993.360	1845.120	AVRG	1755.80158	10.3
PCB-1260 [2C]	9311.600	8146.560	AVRG	8192.63862	8.6
(2)	5393.680	4895.960	AVRG	4794.84187	8.3
(3)	5354.200	4942.000	AVRG	4887.61339	8.3
(4)	5380.300	4443.240	AVRG	4417.72478	16.2
(5)	4853.240	4414.080	AVRG	4221.50459	10.3

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA65795

Instrument ID: ECD4 Calibration Date(s): 10/27/09 10/27/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 1946 2136

LAB FILE ID: RF200: 013R1301 RF100: 014R1401 RF50: 015R1501
RF25: 016R1601 RF10: 017R1701

COMPOUND	RF200	RF100	RF50	RF25	RF10
PCB-1016 [2C]	3121.386	3298.386	3203.263	62704.440	3557.480
(2)	1058.426	1129.954	1175.436	24377.400	1457.800
(3)	2554.818	1789.515	2072.492	41101.520	2434.730
(4)	1584.173	1633.669	1719.863	34173.920	1900.030
(5)	1521.277	1625.124	1656.959	33411.640	1892.970
PCB-1260 [2C]	7460.038	7631.950	7877.533	153561.96	8728.150
(2)	4397.247	4413.930	4599.964	91042.280	5068.270
(3)	4876.736	4127.045	5018.789	93561.360	5006.910
(4)	3904.776	3462.736	4251.447	87159.000	5063.850
(5)	3750.381	3799.829	4015.137	79969.480	4496.360

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FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA65795

Instrument ID: ECD4 Calibration Date(s): 10/27/09 10/27/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 1946 2136

LAB FILE ID: RT1: 013R1301 RT2: 014R1401 RT3: 015R1501
RT4: 016R1601 RT5: 017R1701

COMPOUND	RT1	RT2	RT3	RT4	RT5
PCB-1016 [2C]	4.334	4.333	4.333	4.333	4.333
(2)	3.744	3.743	3.745	3.743	3.743
(3)	3.986	3.985	3.985	3.985	3.984
(4)	4.466	4.465	4.465	4.465	4.464
(5)	4.552	4.552	4.551	4.551	4.551
PCB-1260 [2C]	6.842	6.842	6.841	6.845	6.844
(2)	5.896	5.895	5.896	5.896	5.901
(3)	6.221	6.220	6.221	6.221	6.226
(4)	6.279	6.280	6.280	6.280	6.283
(5)	6.544	6.543	6.543	6.545	6.546

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA65795

Instrument ID: ECD4 Calibration Date(s): 10/27/09 10/27/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 1946 2136

LAB FILE ID: RT6: 018R1801 RT7: 019R1901

COMPOUND	RT6	RT7	MEAN RT	RT WINDOW FROM	RT WINDOW TO
PCB-1016 [2C]	4.334	4.334	4.333	4.300	4.360
(2)	3.744	3.744	3.744	3.708	3.768
(3)	3.984	3.984	3.985	3.950	4.010
(4)	4.464	4.464	4.465	4.430	4.490
(5)	4.553	4.551	4.552	4.518	4.578
PCB-1260 [2C]	6.846	6.844	6.843	6.807	6.867
(2)	5.901	5.897	5.898	5.860	5.920
(3)	6.224	6.222	6.222	6.185	6.245
(4)	6.281	6.281	6.280	6.247	6.307
(5)	6.548	6.544	6.545	6.510	6.570

FORM VI PESTA

INITIAL CALIBRATION STANDARDS
SW8081A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9K31007	Instrument:	GL-ECD4
Calibration:	9310003 PEST Cal.		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
09I0097	Pest ICAL @200ppb	9K31007-CAL1	001R0101.D	11/05/09 18:10
09I0097	Pest ICAL @200ppb	9K31007-CAL1	001F0101.D	11/05/09 18:10
09I0098	Pest ICAL @100ppb	9K31007-CAL2	002R0201.D	11/05/09 18:28
09I0098	Pest ICAL @100ppb	9K31007-CAL2	002F0201.D	11/05/09 18:28
09I0099	Pest ICAL @50ppb	9K31007-CAL3	003R0301.D	11/05/09 18:46
09I0099	Pest ICAL @50ppb	9K31007-CAL3	003F0301.D	11/05/09 18:46
09I0100	Pest ICAL @25ppb	9K31007-CAL4	004R0401.D	11/05/09 19:05
09I0100	Pest ICAL @25ppb	9K31007-CAL4	004F0401.D	11/05/09 19:05
09I0101	Pest @10ppb	9K31007-CAL5	005R0501.D	11/05/09 19:23
09I0101	Pest @10ppb	9K31007-CAL5	005F0501.D	11/05/09 19:23
09I0102	Pest ICAL @5ppb	9K31007-CAL6	006R0601.D	11/05/09 19:41
09I0102	Pest ICAL @5ppb	9K31007-CAL6	006F0601.D	11/05/09 19:41
09I0103	Pest ICAL @1ppb	9K31007-CAL7	007R0701.D	11/05/09 19:59
09I0103	Pest ICAL @1ppb	9K31007-CAL7	007F0701.D	11/05/09 19:59

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA66357

Instrument ID: ECD4 Calibration Date(s): 11/05/09 11/05/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 1810 1959

COMPOUND	CURVE	COEFFICENTS A0	A1	%RSD OR R^2
Aldrin	AVRG		82009.1036	5.0
Alpha-BHC	AVRG		92985.0086	4.8
Alpha-Chlordane	LINR	0.00000000	68783.6350	0.999
Beta-BHC	AVRG		32391.6864	6.7
4,4'-DDD	AVRG		51034.2914	10.7
4,4'-DDE	AVRG		60049.1564	11.2
4,4'-DDT	AVRG		44636.6200	16.3
Delta-BHC	AVRG		72470.1321	7.3
Dieldrin	AVRG		71782.7657	7.0
Endosulfan I	AVRG		68523.9529	9.9
Endosulfan II	AVRG		60058.6414	6.9
Endosulfan Sulfate	AVRG		51459.6764	8.6
Endrin	AVRG		43574.8971	19.2
Endrin Aldehyde	AVRG		54106.7393	10.6
Endrin Ketone	AVRG		66694.7850	8.1
Gamma-BHC	AVRG		80761.8393	4.6
Gamma-Chlordane	AVRG		71850.7993	6.0
Heptachlor	AVRG		68605.3971	5.9
Heptachlor Epoxide	AVRG		73310.0814	5.2
Methoxychlor	AVRG		22688.0421	10.4
TCMX	AVRG		62074.3900	5.3
DCB	AVRG		40627.5279	10.8

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA66357

Instrument ID: ECD4 Calibration Date(s): 11/05/09 11/05/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 1810 1959

LAB FILE ID: RF200: 001F0101 RF100: 002F0201 RF50: 003F0301
RF25: 004F0401 RF10: 005F0501

COMPOUND	RF200	RF100	RF50	RF25	RF10
Aldrin	81409.255	80944.950	86889.880	88575.840	78344.000
Alpha-BHC	95589.900	91708.740	98536.320	98443.400	88068.100
Alpha-Chlordane	68390.920	68253.930	74383.120	77182.120	66959.900
Beta-BHC	29920.565	30545.220	32833.260	35295.760	30965.200
4,4'-DDD	51862.840	55018.340	55096.220	58256.440	47273.800
4,4'-DDE	62509.225	63539.070	65564.140	68704.560	55525.700
4,4'-DDT	50830.080	47135.380	51833.680	51386.000	38584.200
Delta-BHC	73287.865	72229.380	77900.800	80698.280	67499.200
Dieldrin	71642.300	72385.940	77158.200	79447.520	67424.200
Endosulfan I	64556.330	65423.920	71201.040	72029.880	62378.300
Endosulfan II	57430.420	58662.350	65765.180	65664.840	55776.900
Endosulfan Sulfate	51000.345	52564.310	56619.280	57023.200	46759.600
Endrin	55538.480	45726.960	46570.460	50901.080	37928.100
Endrin Aldehyde	46127.645	51813.490	57362.820	55612.720	52015.100
Endrin Ketone	60222.635	65413.220	72066.820	72187.320	62403.300
Gamma-BHC	81476.075	78774.220	84939.180	86423.200	76480.200
Gamma-Chlordane	71452.625	71981.510	77442.720	77830.440	67640.500
Heptachlor	70261.870	67418.550	73430.120	73908.440	63718.400
Heptachlor Epoxide	71209.120	71525.890	76689.540	79615.120	69514.100
Methoxychlor	23900.205	22638.210	24291.420	25584.160	19840.700
TCMX	58952.090	59142.340	64159.480	62963.120	59459.500
DCB	36620.825	38686.930	45242.380	44821.760	36666.400

J.H. 11.8.09

BM 110909

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA66357

Instrument ID: ECD4 Calibration Date(s): 11/05/09 11/05/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 1810 1959

LAB FILE ID: RF5: 006F0601 RF1: 007F0701

COMPOUND	RF5	RF1
Aldrin	78139.800	79760.000
Alpha-BHC	89192.600	89356.000
Alpha-Chlordane	67014.200	110734.00
Beta-BHC	31936.800	35245.000
4,4'-DDD	43651.400	46081.000
4,4'-DDE	50845.400	53656.000
4,4'-DDT	36570.000	36117.000
Delta-BHC	67207.400	68468.000
Dieldrin	65968.200	68453.000
Endosulfan I	62855.200	81223.000
Endosulfan II	56753.800	60357.000
Endosulfan Sulfate	45393.000	50858.000
Endrin	34183.200	34176.000
Endrin Aldehyde	51428.400	64387.000
Endrin Ketone	62161.200	72409.000
Gamma-BHC	77633.000	79607.000
Gamma-Chlordane	67191.800	69416.000
Heptachlor	64746.400	66754.000
Heptachlor Epoxide	69831.800	74785.000
Methoxychlor	19187.600	23374.000
TCMX	61851.200	67993.000
DCB	36649.400	45705.000

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA66357

Instrument ID: ECD4 Calibration Date(s): 11/05/09 11/05/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 1810 1959

LAB FILE ID: RT1: 001F0101 RT2: 002F0201 RT3: 003F0301
RT4: 004F0401 RT5: 005F0501

COMPOUND	RT1	RT2	RT3	RT4	RT5
Aldrin	6.303	6.294	6.294	6.294	6.293
Alpha-BHC	5.065	5.058	5.056	5.055	5.055
Alpha-Chlordane	7.141	7.131	7.131	7.130	7.130
Beta-BHC	5.578	5.571	5.571	5.570	5.570
4,4'-DDD	7.963	7.956	7.957	7.955	7.958
4,4'-DDE	7.351	7.341	7.341	7.342	7.343
4,4'-DDT	8.336	8.329	8.329	8.329	8.328
Delta-BHC	5.823	5.816	5.816	5.815	5.813
Dieldrin	7.513	7.504	7.502	7.502	7.502
Endosulfan I	7.198	7.189	7.187	7.187	7.187
Endosulfan II	8.051	8.043	8.041	8.042	8.042
Endosulfan Sulfate	8.495	8.486	8.486	8.485	8.485
Endrin	7.781	7.773	7.771	7.770	7.770
Endrin Aldehyde	8.210	8.201	8.201	8.199	8.200
Endrin Ketone	9.081	9.073	9.072	9.072	9.072
Gamma-BHC	5.378	5.369	5.369	5.369	5.368
Gamma-Chlordane	7.055	7.044	7.044	7.044	7.043
Heptachlor	5.951	5.943	5.942	5.940	5.942
Heptachlor Epoxide	6.768	6.758	6.756	6.757	6.755
Methoxychlor	8.938	8.929	8.931	8.929	8.930
TCMX	4.646	4.639	4.639	4.639	4.638
DCB	10.746	10.738	10.737	10.737	10.737

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA66357

Instrument ID: ECD4 Calibration Date(s): 11/05/09 11/05/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 1810 1959

LAB FILE ID: RT6: 006F0601 RT7: 007F0701

COMPOUND	RT6	RT7	MEAN RT	RT WINDOW FROM	RT WINDOW TO
Aldrin	6.294	6.293	6.295	6.264	6.324
Alpha-BHC	5.055	5.055	5.057	5.028	5.088
Alpha-Chlordane	7.130	7.130	7.132	7.101	7.161
Beta-BHC	5.570	5.570	5.572	5.541	5.601
4,4'-DDD	7.960	7.962	7.959	7.926	7.986
4,4'-DDE	7.344	7.345	7.344	7.311	7.371
4,4'-DDT	8.330	8.332	8.331	8.299	8.359
Delta-BHC	5.815	5.813	5.816	5.786	5.846
Dieldrin	7.502	7.502	7.504	7.474	7.534
Endosulfan I	7.187	7.187	7.189	7.159	7.219
Endosulfan II	8.042	8.042	8.043	8.013	8.073
Endosulfan Sulfate	8.485	8.485	8.487	8.456	8.516
Endrin	7.770	7.770	7.772	7.743	7.803
Endrin Aldehyde	8.200	8.200	8.201	8.171	8.231
Endrin Ketone	9.072	9.073	9.074	9.043	9.103
Gamma-BHC	5.369	5.368	5.370	5.339	5.399
Gamma-Chlordane	7.044	7.043	7.045	7.014	7.074
Heptachlor	5.940	5.942	5.943	5.913	5.973
Heptachlor Epoxide	6.757	6.755	6.758	6.728	6.788
Methoxychlor	8.932	8.933	8.932	8.899	8.959
TCMX	4.639	4.638	4.640	4.609	4.669
DCB	10.739	10.738	10.739	10.708	10.768

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA66357

Instrument ~~ID:~~ ECD4 Calibration Date(s): 10/27/09 10/27/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 1720 1910

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
Aldrin [2C]	AVRG		94387.5150		16.0
Alpha-BHC [2C]	AVRG		123088.572		11.7
Alpha-Chlordane [2C]	AVRG		81357.7829		14.3
Beta-BHC [2C]	AVRG		44978.4586		16.6
4,4'-DDD [2C]	AVRG		58984.1479		11.6
4,4'-DDE [2C]	AVRG		67517.9086		7.8
4,4'-DDT [2C]	AVRG		48488.9243		9.6
Delta-BHC [2C]	AVRG		94047.2686		9.6
Dieldrin [2C]	AVRG		93309.9814		14.7
Endosulfan I [2C]	LINR	0.00000000	65743.2941		0.997
Endosulfan II [2C]	AVRG		76161.6407		16.2
Endosulfan Sulfate [2C]	AVRG		66889.0143		13.5
Endrin [2C]	AVRG		56552.2293		9.5
Endrin Aldehyde [2C]	2ORDR	0.00000000	1.223e-005	6.823e-013	0.999
Endrin Ketone [2C]	AVRG		88973.6121		19.0
Gamma-BHC [2C]	AVRG		107049.409		14.0
Gamma-Chlordane [2C]	AVRG		83020.8286		10.5
Heptachlor [2C]	AVRG		88073.5407		14.8
Heptachlor Epoxide [2C]	AVRG		84336.0093		17.2
Methoxychlor [2C]	AVRG		27073.3521		11.3
TCMX [2C]	AVRG		82153.2507		16.1
DCB [2C]	AVRG		55280.9943		14.7

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA66357

Instrument ID: ECD4 Calibration Date(s): ~~10/27/09~~ ~~10/27/09~~ 11/05/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 1720 1910

LAB FILE ID: RF200: 005R0501 RF100: 006R0601 RF50: 007R0701
RF25: 008R0801 RF10: 009R0901

COMPOUND	RF200	RF100	RF50	RF25	RF10
Aldrin [2C]	76049.845	77682.380	90661.820	100391.56	94163.800
Alpha-BHC [2C]	111729.83	103956.62	120223.10	127369.76	119366.50
Alpha-Chlordane [2C]	69692.830	71431.870	74986.400	86246.880	79975.700
Beta-BHC [2C]	37832.950	36920.020	42939.700	47505.840	43365.300
4,4'-DDD [2C]	54349.875	57938.020	54510.940	70908.600	61476.200
4,4'-DDE [2C]	64070.840	64605.440	62015.260	78155.920	67924.500
4,4'-DDT [2C]	50064.580	46874.130	50753.520	57054.640	45141.200
Delta-BHC [2C]	85594.600	81710.860	95203.380	103226.04	90170.200
Dieldrin [2C]	76079.350	77398.880	87780.080	101269.36	95027.800
Endosulfan I [2C]	64372.230	67867.130	70630.800	85773.680	79743.700
Endosulfan II [2C]	59929.445	62969.660	73735.700	82197.280	76551.600
Endosulfan Sulfate [2C]	54568.530	58135.410	66515.060	72815.600	66182.700
Endrin [2C]	58745.845	50365.360	54490.600	66604.000	53690.000
Endrin Aldehyde [2C]	51960.710	59120.370	72610.000	76735.320	78777.800
Endrin Ketone [2C]	65959.635	73191.770	86639.660	95182.720	89138.700
Gamma-BHC [2C]	96235.510	86649.810	105660.30	112648.24	100716.60
Gamma-Chlordane [2C]	72680.810	72971.250	82374.820	88433.520	81727.600
Heptachlor [2C]	73099.095	72968.730	85509.000	93571.360	86746.200
Heptachlor Epoxide [2C]	67105.125	68723.240	79600.300	90005.400	84635.600
Methoxychlor [2C]	24517.525	24248.480	25273.280	31793.080	27163.100
TCMX [2C]	69084.095	67659.700	78507.280	82682.480	81116.000
DCB [2C]	44437.890	47138.590	56871.320	61655.760	53598.800

J.H. 11.5.09

BM 110909

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA66357

Instrument ID: ECD4 Calibration Date(s): 10/27/09 10/27/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 1720 1910

LAB FILE ID: RF5: 010R1001 RF1: 011R1101

COMPOUND	RF5	RF1
Aldrin [2C]	101757.20	120006.00
Alpha-BHC [2C]	130118.20	148856.00
Alpha-Chlordane [2C]	83219.400	103951.00
Beta-BHC [2C]	47179.400	59106.000
4,4'-DDD [2C]	50587.400	63118.000
4,4'-DDE [2C]	66615.400	69238.000
4,4'-DDT [2C]	42792.400	46742.000
Delta-BHC [2C]	95673.800	106752.00
Dieldrin [2C]	102245.40	113369.00
Endosulfan I [2C]	82769.200	112472.00
Endosulfan II [2C]	81316.800	96431.000
Endosulfan Sulfate [2C]	68126.800	81879.000
Endrin [2C]	53148.800	58821.000
Endrin Aldehyde [2C]	85967.600	111588.00
Endrin Ketone [2C]	94326.800	118376.00
Gamma-BHC [2C]	113896.40	133539.00
Gamma-Chlordane [2C]	85408.600	97549.000
Heptachlor [2C]	94465.400	110155.00
Heptachlor Epoxide [2C]	90825.400	109457.00
Methoxychlor [2C]	25687.000	30831.000
TCMX [2C]	89458.200	106565.00
DCB [2C]	55146.600	68118.000

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA66357

Instrument ID: ECD4 Calibration Date(s): 10/27/09 10/27/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 1720 1910

LAB FILE ID: RT1: 005R0501 RT2: 006R0601 RT3: 007R0701
RT4: 008R0801 RT5: 009R0901

COMPOUND	RT1	RT2	RT3	RT4	RT5
Aldrin [2C]	5.081	5.081	5.081	5.081	5.080
Alpha-BHC [2C]	4.248	4.250	4.248	4.249	4.249
Alpha-Chlordane [2C]	5.846	5.845	5.844	5.844	5.844
Beta-BHC [2C]	4.773	4.773	4.773	4.772	4.772
4,4'-DDD [2C]	6.620	6.616	6.619	6.622	6.624
4,4'-DDE [2C]	6.040	6.038	6.039	6.039	6.042
4,4'-DDT [2C]	6.900	6.898	6.899	6.901	6.899
Delta-BHC [2C]	4.970	4.968	4.969	4.969	4.969
Dieldrin [2C]	6.161	6.160	6.159	6.161	6.159
Endosulfan I [2C]	5.895	5.893	5.893	5.892	5.892
Endosulfan II [2C]	6.760	6.758	6.758	6.759	6.759
Endosulfan Sulfate [2C]	7.210	7.208	7.209	7.207	7.209
Endrin [2C]	6.440	6.438	6.438	6.437	6.437
Endrin Aldehyde [2C]	6.950	6.946	6.948	6.947	6.949
Endrin Ketone [2C]	7.773	7.770	7.769	7.771	7.770
Gamma-BHC [2C]	4.516	4.516	4.516	4.516	4.515
Gamma-Chlordane [2C]	5.788	5.786	5.788	5.787	5.787
Heptachlor [2C]	4.831	4.831	4.831	4.831	4.830
Heptachlor Epoxide [2C]	5.531	5.530	5.529	5.531	5.530
Methoxychlor [2C]	7.545	7.541	7.544	7.544	7.545
TCMX [2C]	3.855	3.856	3.854	3.856	3.855
DCB [2C]	9.166	9.165	9.166	9.164	9.165

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA66357

Instrument ID: ECD4 Calibration Date(s): 10/27/09 10/27/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 1720 1910

LAB FILE ID: RT6: 010R1001 RT7: 011R1101

COMPOUND	RT6	RT7	MEAN RT	RT WINDOW FROM	RT WINDOW TO
Aldrin [2C]	5.080	5.080	5.081	5.051	5.111
Alpha-BHC [2C]	4.249	4.247	4.248	4.220	4.280
Alpha-Chlordane [2C]	5.844	5.843	5.844	5.815	5.875
Beta-BHC [2C]	4.774	4.772	4.773	4.743	4.803
4,4'-DDD [2C]	6.627	6.627	6.622	6.586	6.646
4,4'-DDE [2C]	6.042	6.043	6.040	6.008	6.068
4,4'-DDT [2C]	6.904	6.903	6.901	6.868	6.928
Delta-BHC [2C]	4.969	4.968	4.969	4.938	4.998
Dieldrin [2C]	6.160	6.158	6.160	6.130	6.190
Endosulfan I [2C]	5.894	5.893	5.893	5.863	5.923
Endosulfan II [2C]	6.760	6.758	6.759	6.728	6.788
Endosulfan Sulfate [2C]	7.210	7.210	7.209	7.178	7.238
Endrin [2C]	6.439	6.437	6.438	6.408	6.468
Endrin Aldehyde [2C]	6.949	6.950	6.948	6.916	6.976
Endrin Ketone [2C]	7.770	7.772	7.771	7.740	7.800
Gamma-BHC [2C]	4.515	4.515	4.516	4.486	4.546
Gamma-Chlordane [2C]	5.789	5.787	5.787	5.756	5.816
Heptachlor [2C]	4.830	4.830	4.831	4.801	4.861
Heptachlor Epoxide [2C]	5.530	5.530	5.530	5.500	5.560
Methoxychlor [2C]	7.549	7.548	7.545	7.511	7.571
TCMX [2C]	3.855	3.855	3.855	3.826	3.886
DCB [2C]	9.167	9.165	9.165	9.135	9.195

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA86329

Instrument ID: ECD4 Calibration Date(s): ~~08/10/09~~ 11/25/09

Column: ZB MR-1 ~~ID~~: 0.32 (mm) Calibration Time(s): ~~1721~~ 1354

RF5: 005F0501

Single Point

COMPOUND	RF5	CURVE	COEFFICENT A1	%RSD OR R^2
Toxaphene	2116.100	AVRG	2116.10000	0.0
(2)	1387.930	AVRG	1387.93000	0.0
(3)	1758.460	AVRG	1758.46000	0.0
(4)	955.400	AVRG	955.400000	0.0
(5)	0749.570	AVRG	749.570000	0.0

BM
1/3009

W
12/2/09

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA86329

Instrument ID: ECD4 Calibration Date(s): ~~08/10/09~~ 11/23/09

Column: ~~ZB~~ MR-1 ID: 0.32 (mm) Calibration Time(s): 1721 1254

RF5: 006F0601

Single Point

COMPOUND	RF5	CURVE	COEFFICENT A1	%RSD OR R^2
Toxaphene	2288.180	AVRG	2288.18000	0.0
(2)	1373.720	AVRG	1373.72000	0.0
(3)	1758.270	AVRG	1758.27000	0.0
(4)	1044.400	AVRG	1044.40000	0.0
(5)	741.840	AVRG	741.840000	0.0

SM 112409

WL 11/24/09

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA86329

Instrument ID: ECD4 Calibration Date(s): ~~08/10/09~~ 11/25/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): ~~1721~~ 1354

RF5: 005R0501

Single point

COMPOUND	RF5	CURVE	COEFFICENT A1	%RSD OR R^2
Toxaphene [2C]	5129.860	AVRG	5129.86000	0.0
(2)	1246.340	AVRG	1246.34000	0.0
(3)	3735.560	AVRG	3735.56000	0.0
(4)	2864.790	AVRG	2864.79000	0.0
(5)	1105.220	AVRG	1105.22000	0.0

BM
11/30/09

WL
12/2/09

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA86329

Instrument ID: ECD4 Calibration Date(s): ~~08/10/09~~ 11/23/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 1721 1254

RF5: 006R~~0601~~

Single point

COMPOUND	RF5	CURVE	COEFFICENT A1	%RSD OR R^2
Toxaphene [2C]	3439.090	AVRG	3439.09000	0.0
(2)	1167.360	AVRG	1167.36000	0.0
(3)	3463.860	AVRG	3463.86000	0.0
(4)	2914.650	AVRG	2914.65000	0.0
(5)	01181.020	AVRG	1181.02000	0.0

BM 11/24/09

M 11/24/09

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA86329

Instrument ID: ECD4 Calibration Date(s): ~~05/15/09~~ 11/25/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): ~~1445~~ 1412

RF5: 006F0601

Single point

COMPOUND	RF5	CURVE	COEFFICENT A1	%RSD OR R^2
Chlordane	22472.000	AVRG	22472.0000	0.0
(2)	2762.600	AVRG	2762.60000	0.0
(3)	3120.200	AVRG	3120.20000	0.0
(4)	3534.000	AVRG	3534.00000	0.0
(5)	7620.000	AVRG	7620.00000	0.0

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA86329

Instrument ID: ECD4 Calibration Date(s): ~~05/15/09~~ 11/23/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 1445 1330

RF5: 008F0801

single point

COMPOUND	RF5	CURVE	COEFFICENT A1	%RSD OR R^2
Chlordane	12883.000	AVRG	12883.0000	0.0
(2)	11904.400	AVRG	11904.4000	0.0
(3)	4352.600	AVRG	4352.60000	0.0
(4)	3299.000	AVRG	3299.00000	0.0
(5)	2412.200	AVRG	2412.20000	0.0

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA86329

Instrument ID: ECD4 Calibration Date(s): ~~05/15/09~~ 11/25/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): ~~1445~~ 1412

RF5: 006R0601

Single Point

COMPOUND	RF5	CURVE	COEFFICENT A1	%RSD OR R^2
Chlordane [2C]	14876.800	AVRG	14876.8000	0.0
(2)	2230.200	AVRG	2230.20000	0.0
(3)	3554.000	AVRG	3554.00000	0.0
(4)	4972.400	AVRG	4972.40000	0.0
(5)	07158.000	AVRG	7158.00000	0.0

FORM VI PESTA

FORM 6
PESTA ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA86329

Instrument ID: ECD4 Calibration Date(s): ~~05/15/09~~ 11/23/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 1445 1330

RF5: 008R0801

Single Point

COMPOUND	RF5	CURVE	COEFFICENT A1	%RSD OR R^2
Chlordane [2C]	22912.200	AVRG	22912.2000	0.0
(2)	8140.200	AVRG	8140.20000	0.0
(3)	4472.400	AVRG	4472.40000	0.0
(4)	5961.400	AVRG	5961.40000	0.0
(5)	4035.200	AVRG	4035.20000	0.0

FORM VI PESTA

INITIAL CALIBRATION STANDARDS
SW8082A

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Sequence: 9K33407
Calibration: 9334002

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Instrument: GL-ECD3

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
09J0211	ARO-1660@2500ppb	9K33407-CAL1	001R0101.D	11/25/09 16:17
09J0211	ARO-1660@2500ppb	9K33407-CAL1	001F0101.D	11/25/09 16:17
09J0212	ARO-1660@1000ppb	9K33407-CAL2	002F0201.D	11/25/09 16:35
09J0212	ARO-1660@1000ppb	9K33407-CAL2	002R0201.D	11/25/09 16:35
09J0213	ARO-1660@750ppb	9K33407-CAL3	003F0301.D	11/25/09 16:53
09J0213	ARO-1660@750ppb	9K33407-CAL3	003R0301.D	11/25/09 16:53
09J0214	ARO-1660@500ppb	9K33407-CAL4	004F0401.D	11/25/09 17:11
09J0214	ARO-1660@500ppb	9K33407-CAL4	004R0401.D	11/25/09 17:11
09J0215	ARO-1660@100ppb	9K33407-CAL5	005F0501.D	11/25/09 17:30
09J0215	ARO-1660@100ppb	9K33407-CAL5	005R0501.D	11/25/09 17:30
09J0216	ARO-1660@50ppb	9K33407-CAL6	006R0601.D	11/25/09 17:48
09J0216	ARO-1660@50ppb	9K33407-CAL6	006F0601.D	11/25/09 17:48
09J0218	ARO-1254@2500ppb	9K33407-CAL7	008F0801.D	11/25/09 18:24
09J0218	ARO-1254@2500ppb	9K33407-CAL7	008R0801.D	11/25/09 18:24
09J0219	ARO-1254@1000ppb	9K33407-CAL8	009F0901.D	11/25/09 18:42
09J0219	ARO-1254@1000ppb	9K33407-CAL8	009R0901.D	11/25/09 18:42
09J0220	ARO-1254@750ppb	9K33407-CAL9	010F1001.D	11/25/09 19:00
09J0220	ARO-1254@750ppb	9K33407-CAL9	010R1001.D	11/25/09 19:00
09J0221	ARO-1254@500ppb	9K33407-CALA	011F1101.D	11/25/09 19:18
09J0221	ARO-1254@500ppb	9K33407-CALA	011R1101.D	11/25/09 19:18
09J0222	ARO-1254@100ppb	9K33407-CALB	012F1201.D	11/25/09 19:37
09J0222	ARO-1254@100ppb	9K33407-CALB	012R1201.D	11/25/09 19:37
09J0223	ARO-1254@50ppb	9K33407-CALC	013F1301.D	11/25/09 19:55
09J0223	ARO-1254@50ppb	9K33407-CALC	013R1301.D	11/25/09 19:55
09J0231	ARO-1248@2500ppb	9K33407-CALD	015R1501.D	11/25/09 20:31
09J0231	ARO-1248@2500ppb	9K33407-CALD	015F1501.D	11/25/09 20:31
09J0232	ARO-1248@1000ppb	9K33407-CALE	016F1601.D	11/25/09 20:49
09J0232	ARO-1248@1000ppb	9K33407-CALE	016R1601.D	11/25/09 20:49
09J0233	ARO-1248@750ppb	9K33407-CALF	017F1701.D	11/25/09 21:07
09J0233	ARO-1248@750ppb	9K33407-CALF	017R1701.D	11/25/09 21:07
09J0234	ARO-1248@500ppb	9K33407-CALG	018F1801.D	11/25/09 21:25
09J0234	ARO-1248@500ppb	9K33407-CALG	018R1801.D	11/25/09 21:25

09J0235	ARO-1248@100ppb	9K33407-CALH	019F1901.D	11/25/09 21:44
09J0235	ARO-1248@100ppb	9K33407-CALH	019R1901.D	11/25/09 21:44
09J0236	ARO-1248@50ppb	9K33407-CALI	020R2001.D	11/25/09 22:02
09J0236	ARO-1248@50ppb	9K33407-CALI	020F2001.D	11/25/09 22:02
09J0354	ARO-1242@2500ppb	9K33407-CALJ	022F2201.D	11/25/09 22:38
09J0354	ARO-1242@2500ppb	9K33407-CALJ	022R2201.D	11/25/09 22:38
09J0355	ARO-1242@1000ppb	9K33407-CALK	023F2301.D	11/25/09 22:56
09J0355	ARO-1242@1000ppb	9K33407-CALK	023R2301.D	11/25/09 22:56
09J0356	ARO-1242@750ppb	9K33407-CALL	024F2401.D	11/25/09 23:15
09J0356	ARO-1242@750ppb	9K33407-CALL	024R2401.D	11/25/09 23:15
09J0357	ARO-1242@500ppb	9K33407-CALM	025F2501.D	11/25/09 23:33
09J0357	ARO-1242@500ppb	9K33407-CALM	025R2501.D	11/25/09 23:33
09J0358	ARO-1242@250ppb	9K33407-CALN	026F2601.D	11/25/09 23:51
09J0358	ARO-1242@250ppb	9K33407-CALN	026R2601.D	11/25/09 23:51
09J0359	ARO-1242@100ppb	9K33407-CALO	027R2701.D	11/26/09 00:09
09J0359	ARO-1242@100ppb	9K33407-CALO	027F2701.D	11/26/09 00:09

FORM 6
PCB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA93233

Instrument ID: ECD3 Calibration Date(s): 11/25/09 11/25/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 1617 1748

RF5: 006F0601

COMPOUND	RF5	CURVE	COEFFICENTS A0	A1	%RSD OR R^2
PCB-1016	2157.040	AVRG		1860.24234	10.7
(2)	650.680	AVRG		608.745167	5.8
(3)	995.840	AVRG		904.751511	12.1
(4)	1006.320	AVRG		927.172278	13.9
(5)	1552.440	AVRG		1204.06339	16.6
PCB-1260	03840.440	AVRG		3604.55739	4.0
(2)	2327.820	AVRG		2101.08062	6.9
(3)	2497.740	AVRG		2329.19152	5.0
(4)	1855.800	AVRG		1646.89806	8.2
(5)	916.900	AVRG		874.063056	3.3
TCMX	19406.600	LINR	0.00000000	34688.9922	0.999
DCB	15733.600	LINR	0.00000000	25158.7439	0.998

FORM VI PCB

FORM 6
PCB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA93233

Instrument ID: ECD3 Calibration Date(s): 11/25/09 11/25/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 1617 1748

LAB FILE ID: RF200: 001F0101 RF100: 002F0201 RF50: 003F0301
RF25: 004F0401 RF10: 005F0501

COMPOUND	RF200	RF100	RF50	RF25	RF10
PCB-1016	1683.668	1746.695	1776.503	1729.678	2067.870
(2)	561.430	608.337	608.316	579.108	644.600
(3)	811.836	846.542	845.939	843.442	1084.910
(4)	818.348	871.409	857.511	855.206	1154.240
(5)	1016.440	1109.575	1103.069	1112.846	1330.010
PCB-1260	3505.422	3582.603	3584.277	3430.542	3684.060
(2)	1965.944	2053.974	2028.065	1999.590	2231.090
(3)	2213.621	2312.069	2293.377	2215.202	2443.140
(4)	1511.506	1592.063	1592.397	1557.902	1771.720
(5)	840.350	867.775	887.665	845.178	886.510
TCMX	34580.140	35521.960	36533.253	35548.280	18928.600
DCB	24968.665	26421.540	27592.960	27005.400	14415.100

BM 113009

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FORM VI PCB

FORM 6
PCB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA93233

Instrument ID: ECD3 Calibration Date(s): 11/25/09 11/25/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 1617 1748

LAB FILE ID: RT1: 001F0101 RT2: 002F0201 RT3: 003F0301
RT4: 004F0401 RT5: 005F0501

COMPOUND	RT1	RT2	RT3	RT4	RT5
PCB-1016	6.321	6.310	6.308	6.310	6.316
(2)	5.426	5.417	5.416	5.417	5.423
(3)	5.782	5.770	5.770	5.770	5.773
(4)	5.992	5.978	5.980	5.978	5.983
(5)	6.387	6.377	6.376	6.377	6.383
PCB-1260	9.661	9.648	9.645	9.647	9.649
(2)	8.529	8.515	8.513	8.513	8.516
(3)	8.879	8.867	8.863	8.863	8.868
(4)	8.971	8.957	8.953	8.955	8.956
(5)	10.769	10.758	10.755	10.755	10.759
TCMX	5.012	5.003	5.003	5.003	5.006
DCB	11.366	11.352	11.348	11.350	11.351

FORM VI PCB

FORM 6
PCB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA93233

Instrument ID: ECD3 Calibration Date(s): 11/25/09 11/25/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 1617 1748

RT6: 006F0601

COMPOUND	RT6	MEAN RT	RT WINDOW FROM	RT WINDOW TO
PCB-1016	6.317	6.314	6.280	6.340
(2)	5.422	5.420	5.387	5.447
(3)	5.772	5.773	5.740	5.800
(4)	5.981	5.982	5.948	6.008
(5)	6.382	6.380	6.347	6.407
PCB-1260	9.649	9.650	9.618	9.678
(2)	8.517	8.517	8.485	8.545
(3)	8.867	8.868	8.837	8.897
(4)	8.957	8.958	8.927	8.987
(5)	10.757	10.759	10.728	10.788
TCMX	5.006	5.006	4.973	5.033
DCB	11.349	11.353	11.322	11.382

FORM VI PCB

FORM 6
PCB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA93233

Instrument ID: ECD3 Calibration Date(s): 11/25/09 11/25/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 1617 1748

RF5: 006R0601

COMPOUND	RF5	CURVE	COEFFICENTS A0	A1	%RSD OR R^2
PCB-1016 [2C]	01225.740	AVRG		979.067756	14.4
(2)	735.120	AVRG		708.350644	4.0
(3)	763.780	AVRG		668.051856	12.0
(4)	345.080	AVRG		360.167833	3.4
(5)	426.800	AVRG		441.270589	7.8
PCB-1260 [2C]	2248.280	AVRG		1854.64086	12.9
(2)	1271.620	AVRG		1010.91060	16.0
(3)	1485.700	AVRG		1200.43860	14.9
(4)	1699.440	AVRG		1365.88327	14.7
(5)	612.960	AVRG		486.182078	16.4
TCMX [2C]	12517.200	LINR	0.00000000	19094.5855	0.998
DCB [2C]	8626.800	AVRG		10395.6386	19.5

FORM VI PCB

FORM 6
PCB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA93233

Instrument ID: ECD3 Calibration Date(s): 11/25/09 11/25/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 1617 1748

LAB FILE ID: RF200: 001R0101 RF100: 002R0201 RF50: 003R0301
RF25: 004R0401 RF10: 005R0501

COMPOUND	RF200	RF100	RF50	RF25	RF10
PCB-1016 [2C]	851.649	896.138	913.949	918.240	1068.690
(2)	657.627	726.448	697.399	711.450	722.060
(3)	578.309	630.719	623.517	640.186	771.800
(4)	349.706	368.511	358.144	360.976	378.590
(5)	406.421	435.573	432.825	438.954	507.050
PCB-1260 [2C]	1612.027	1733.643	1762.933	1734.172	2036.790
(2)	858.972	927.714	926.804	931.614	1148.740
(3)	1026.578	1110.142	1111.532	1112.010	1356.670
(4)	1182.812	1252.358	1274.816	1261.664	1524.210
(5)	412.551	440.987	447.395	444.960	558.240
TCMX [2C]	18900.170	20717.180	20734.400	21014.760	12834.400
DCB [2C]	10319.125	11665.740	12202.107	12214.960	7345.100

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FORM VI PCB

FORM 6
PCB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA93233

Instrument ID: ECD3 Calibration Date(s): 11/25/09 11/25/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 1617 1748

LAB FILE ID: RT1: 001R0101 RT2: 002R0201 RT3: 003R0301
RT4: 004R0401 RT5: 005R0501

COMPOUND	RT1	RT2	RT3	RT4	RT5
PCB-1016 [2C]	5.186	5.184	5.185	5.185	5.186
(2)	5.166	5.164	5.163	5.165	5.166
(3)	5.253	5.250	5.250	5.252	5.255
(4)	5.364	5.362	5.362	5.363	5.366
(5)	5.421	5.417	5.418	5.420	5.421
PCB-1260 [2C]	8.018	8.015	8.015	8.015	8.018
(2)	6.784	6.782	6.782	6.783	6.785
(3)	6.989	6.985	6.985	6.987	6.990
(4)	7.368	7.364	7.365	7.365	7.368
(5)	7.496	7.494	7.493	7.493	7.496
TCMX [2C]	4.123	4.122	4.123	4.123	4.125
DCB [2C]	9.713	9.709	9.708	9.710	9.711

FORM VI PCB

FORM 6
PCB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA93233

Instrument ID: ECD3 Calibration Date(s): 11/25/09 11/25/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 1617 1748

RT6: 006R0601

COMPOUND	RT6	MEAN RT	RT WINDOW FROM	RT WINDOW TO
PCB-1016 [2C]	5.188	5.186	5.154	5.214
(2)	5.166	5.165	5.134	5.194
(3)	5.254	5.252	5.220	5.280
(4)	5.366	5.364	5.332	5.392
(5)	5.421	5.420	5.387	5.447
PCB-1260 [2C]	8.019	8.017	7.985	8.045
(2)	6.786	6.784	6.752	6.812
(3)	6.989	6.987	6.955	7.015
(4)	7.368	7.366	7.334	7.394
(5)	7.496	7.495	7.464	7.524
TCMX [2C]	4.124	4.123	4.092	4.152
DCB [2C]	9.709	9.710	9.679	9.739

FORM VI PCB

FORM 6
PCB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA93233

Instrument ID: ECD3 Calibration Date(s): ~~04/30/09~~ 11/26/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 1634 0009

LAB FILE ID: RF5: 027F2701 RF1: 015F1501

COMPOUND	RF5	RF1	CURVE	COEFFICENT A1	%RSD OR R^2
PCB-1242	1839.680	651.720	AVRG	1467.77884	15.7
(2)	860.840	353.320	AVRG	718.067167	12.4
(3)	953.560	347.960	AVRG	764.769933	14.9
(4)	725.500	231.960	AVRG	581.454644	15.0
(5)	0 847.320	288.360	AVRG	720.858133	10.6

FORM VI PCB

FORM 6
PCB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA93233

Instrument ID: ECD3 Calibration Date(s): ~~04/30/09~~ 11/26/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 1634 0009

LAB FILE ID: RF200: 022F2201 RF100: 023F2301 RF50: 024F2401
RF25: 025F2501 RF10: 026F2601

COMPOUND	RF200	RF100	RF50	RF25	RF10
PCB-1242	1206.782	1320.846	1397.599	1405.246	1636.520
(2)	611.732	654.515	704.800	698.146	778.370
(3)	638.056	681.134	739.208	741.262	835.400
(4)	486.895	518.384	558.899	559.250	639.800
(5)	639.089	664.508	713.008	690.214	771.010

ML
12/2/09

BM
11/30/09

FORM VI PCB

FORM 6
PCB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA93233

Instrument ID: ECD3 Calibration Date(s): ~~04/30/09~~ 11/26/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 1634 0009

LAB FILE ID: RT1: 022F2201 RT2: 023F2301 RT3: 024F2401
RT4: 025F2501 RT5: 026F2601

COMPOUND	RT1	RT2	RT3	RT4	RT5
PCB-1242	6.306	6.305	6.306	6.305	6.310
(2)	5.976	5.975	5.976	5.977	5.977
(3)	6.484	6.485	6.486	6.487	6.493
(4)	6.592	6.592	6.594	6.593	6.595
(5)	6.824	6.822	6.824	6.823	6.827

FORM VI PCB

FORM 6
PCB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA93233

Instrument ID: ECD3 Calibration Date(s): ~~04/30/09~~ 11/26/09

Column: ZB MR-1 ID: 0.32 (mm) Calibration Time(s): 1634 0009

LAB FILE ID: RT6: 027F2701 RT7: 015F1501

COMPOUND	RT6	RT7	MEAN RT	RT WINDOW FROM	RT WINDOW TO
PCB-1242	6.311	6.600	6.349	6.275	6.335
(2)	5.978	6.250	6.016	5.945	6.005
(3)	6.493	6.940	6.553	6.455	6.515
(4)	6.595	7.580	6.734	6.562	6.622
(5)	6.826	7.850	6.971	6.792	6.852

FORM VI PCB

FORM 6
PCB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA93233

Instrument ID: ECD3 Calibration Date(s): ~~04/30/09~~ 11/26/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 1634 0009

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
PCB-1242 [2C]	2ORDR	0.00000000	1.166e-003	2.978e-010	0.999
(2)	2ORDR	0.00000000	3.12e-003	1.405e-009	0.999
(3)	2ORDR	0.00000000	1.584e-003	2.318e-010	0.999
(4)	2ORDR	0.00000000	1.756e-003	5.07e-010	0.999
(5)	2ORDR	0.00000000	2.154e-003	5.964e-010	1.000

FORM VI PCB

FORM 6
PCB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA ~~SDG No.:~~ SDGA93233

Instrument ID: ECD3 Calibration Date(s): ~~04/30/09~~ 11/26/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 1634 0009

LAB FILE ID: RF200: 022R2201 RF100: 023R2301 RF50: 024R2401
RF25: 025R2501 RF10: 026R2601

COMPOUND	RF200	RF100	RF50	RF25	RF10
PCB-1242 [2C]	616.419	700.496	770.248	802.902	897.910
(2)	250.419	274.540	298.151	308.382	400.280
(3)	529.242	563.870	618.161	605.790	619.710
(4)	434.042	482.093	529.996	535.510	610.020
(5)	369.898	406.153	442.079	435.138	481.610

BM 11-30-09

WL 12/2/09

FORM VI PCB

FORM 6
PCB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA93233

Instrument ID: ECD3 Calibration Date(s): ~~04/30/09~~ 11/26/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 1634 0009

LAB FILE ID: RF5: 027R2701 RF1: 015R1501

COMPOUND	RF5	RF1
PCB-1242 [2C]	1092.920	862.560
(2)	464.920	334.560
(3)	694.620	597.200
(4)	733.100	298.800
(5)	510.820	294.000

FORM VI PCB

FORM 6
PCB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA93233

Instrument ID: ECD3 Calibration Date(s): ~~04/30/09~~ 11/26/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 1634 0009

LAB FILE ID: RT1: 022R2201 RT2: 023R2301 RT3: 024R2401
RT4: 025R2501 RT5: 026R2601

COMPOUND	RT1	RT2	RT3	RT4	RT5
PCB-1242 [2C]	5.186	5.186	5.186	5.187	5.188
(2)	4.494	4.494	4.494	4.495	4.495
(3)	5.166	5.166	5.166	5.167	5.167
(4)	5.252	5.252	5.254	5.254	5.255
(5)	5.991	5.992	5.992	5.992	5.997

FORM VI PCB

FORM 6
PCB ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: SAS No.: NA SDG No.: SDGA93233

Instrument ID: ECD3 Calibration Date(s): ~~04/30/09~~ 11/26/09

Column: ZB MR-2 ID: 0.32 (mm) Calibration Time(s): 1634 0009

LAB FILE ID: RT6: 027R2701 RT7: 015R1501

COMPOUND	RT6	RT7	MEAN RT	RT WINDOW FROM	RT WINDOW TO
PCB-1242 [2C]	5.188	5.440	5.223	5.156	5.216
(2)	4.495	5.220	4.598	4.464	4.524
(3)	5.167	5.510	5.215	5.136	5.196
(4)	5.255	5.630	5.308	5.222	5.282
(5)	5.998	6.530	6.070	5.962	6.022

FORM VI PCB

BREAKDOWN REPORT

Lab Sample ID: **9K32204-PEM1** **Analyzed:** **11/17/2009**

Column Number **1**

Analyte	**% Breakdown**
	4.82
	11.17

Column Number **2**

Analyte	**% Breakdown**
	4.12
	6.38

BREAKDOWN REPORT

Lab Sample ID: **9K31007-PEM1** **Analyzed:** **11/05/2009**

Column Number **1**

Analyte	**% Breakdown**
	8.68
	13.43

Column Number **2**

Analyte	**% Breakdown**
	7.38
	10.81

BREAKDOWN REPORT

Lab Sample ID: **9L33502-PEM1** **Analyzed:** **11/25/2009**

Column Number **1**

Analyte	**% Breakdown**
4,4'-DDT	3.23
Endrin	7.14

Column Number **2**

Analyte	**% Breakdown**
4,4'-DDT	3.74
Endrin	8.05

BREAKDOWN REPORT

Lab Sample ID: **9K31007-PEM1** **Analyzed:** **11/05/2009**

Column Number **1**

Analyte	**% Breakdown**
4,4'-DDT	8.68
Endrin	13.43

Column Number **2**

Analyte	**% Breakdown**
4,4'-DDT	7.38
Endrin	10.81

ANALYSIS SEQUENCE SUMMARY
SW8081A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9K32204	Instrument:	GL-ECD4
Calibration:	9310003		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Performance Mix	9K32204-PEM1	002F0301.D	11/17/09 20:21
Performance Mix	9K32204-PEM1	002R0301.D	11/17/09 20:21
NTC21-FD111609-01	0911151-02	073F7301.D	11/18/09 00:38
NTC21-FD111609-01	0911151-02	073R7301.D	11/18/09 00:38
NTC21MW0201	0911151-03	074R7401.D	11/18/09 00:56
NTC21MW0201	0911151-03	074F7401.D	11/18/09 00:56
Calibration Check	9K32204-CCV6	058R5801.D	11/18/09 20:02
Calibration Check	9K32204-CCV6	058F5801.D	11/18/09 20:02
Blank	9K17029-BLK1	060F6001.D	11/18/09 20:38
Blank	9K17029-BLK1	060R6001.D	11/18/09 20:38
LCS	9K17029-BS1	061F6101.D	11/18/09 20:57
LCS	9K17029-BS1	061R6101.D	11/18/09 20:57
NTC21MW0501	0911151-01	068F6801.D	11/18/09 23:06
NTC21MW0501	0911151-01	068R6801.D	11/18/09 23:06
NTC21MW0501	9K17029-MS1	069R6901.D	11/18/09 23:24
NTC21MW0501	9K17029-MS1	069F6901.D	11/18/09 23:24
NTC21MW0501	9K17029-MSD1	070R7001.D	11/18/09 23:42
NTC21MW0501	9K17029-MSD1	070F7001.D	11/18/09 23:42
NTC21MW0301	0911151-04	075R7501.D	11/19/09 01:14
NTC21MW0301	0911151-04	075F7501.D	11/19/09 01:14
NTC21MW0401	0911151-05	076F7601.D	11/19/09 01:33
NTC21MW0401	0911151-05	076R7601.D	11/19/09 01:33
Calibration Check	9K32204-CCV8	077F7701.D	11/19/09 01:51
Calibration Check	9K32204-CCV8	077R7701.D	11/19/09 01:51

CONTINUING CALIBRATION CHECK
SW8081A

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: GL-ECD4
Lab File ID: 058F5801.D
Sequence: 9K32204
Lab Sample ID: 9K32204-CCV6

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9310003
Calibration Date: 11/05/09 12:12
Injection Date: 11/18/09
Injection Time: 20:02

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
4,4'-DDE	A	100.0	130.9	60049.16	78627.65		30.9	20 *
4,4'-DDE [2C]	A	100.0	119.1	67517.91	80388.5		19.1	20
4,4'-DDD	A	100.0	133.6	51034.29	68173.12		33.6	20 *
4,4'-DDD [2C]	A	100.0	123.0	58984.15	72530.97		23.0	20 *
4,4'-DDT	A	100.0	125.4	44636.62	55982.21		25.4	20 *
4,4'-DDT [2C]	A	100.0	118.2	48488.93	57296.78		18.2	20
Aldrin	A	100.0	117.1	82009.1	96012.4		17.1	20
Aldrin [2C]	A	100.0	97.57	94387.52	92091.84		-2.4	20
alpha-BHC	A	100.0	124.9	92985.01	116116.4		24.9	20 *
alpha-BHC [2C]	A	100.0	97.76	123088.6	120329.2		-2.2	20
alpha-Chlordane	A	100.0	117.8	76131.17	81045.83		17.8	20
alpha-Chlordane [2C]	A	100.0	105.1	81357.73	85529.35		5.1	20
beta-BHC	A	100.0	125.2	32391.69	40545.87		25.2	20 *
beta-BHC [2C]	A	100.0	96.66	44978.46	43476.68		-3.3	20
delta-BHC	A	100.0	126.0	72470.13	91295.06		26.0	20 *
delta-BHC [2C]	A	100.0	104.9	94047.27	98624.21		4.9	20
Dieldrin	A	100.0	121.0	71782.77	86887.81		21.0	20 *
Dieldrin [2C]	A	100.0	93.88	93309.98	87598.84		-6.1	20
Endosulfan I	A	100.0	115.6	68523.96	79227.63		15.6	20
Endosulfan I [2C]	A	100.0	121.2	80518.39	79662.24		21.2	20 *
Endosulfan II	A	100.0	119.4	60058.64	71709.77		19.4	20
Endosulfan II [2C]	A	100.0	97.16	76161.64	73999.49		-2.8	20
Endosulfan sulfate	A	100.0	121.1	51459.68	62300.32		21.1	20 *
Endosulfan sulfate [2C]	A	100.0	100.5	66889.02	67250.49		0.5	20
Endrin	A	100.0	112.2	43574.9	48870.92		12.2	20
Endrin [2C]	A	100.0	95.06	56552.23	53756.14		-4.9	20
Endrin aldehyde	A	100.0	121.5	54106.74	65740.59		21.5	20 *
Endrin aldehyde [2C]	Q	100.0	126.6	76679.97	73409.45		26.6	20 *
Endrin ketone	A	100.0	125.6	66694.79	83764.49		25.6	20 *

CONTINUING CALIBRATION CHECK

SW8081A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Instrument ID:	GL-ECD4	Calibration:	9310003
Lab File ID:	058R5801.D	Calibration Date:	11/05/09 12:12
Sequence:	9K32204	Injection Date:	11/18/09
Lab Sample ID:	9K32204-CCV6	Injection Time:	20:02

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Endrin ketone [2C]	A	100.0	102.0	88973.61	90767.17		2.0	20
gamma-BHC (Lindane)	A	100.0	123.7	80761.84	99930.67		23.7	20 *
ok gamma-BHC (Lindane) [2C] ok	A	100.0	97.99	107049.4	104897.8		-2.0	20
gamma-Chlordane	A	100.0	116.8	71850.8	83914.3		16.8	20
ok gamma-Chlordane [2C] ok	A	100.0	106.4	83020.8	88370.18		6.4	20
Heptachlor	A	100.0	121.8	68605.39	83574.37		21.8	20 *
Heptachlor [2C]	A	100.0	90.71	88073.54	79894.6		-9.3	20
Heptachlor epoxide	A	100.0	112.5	73310.08	82491.63		12.5	20
Heptachlor epoxide [2C]	A	100.0	98.13	84336.01	82758.17		-1.9	20
Methoxychlor	A	100.0	114.4	22688.04	25943.78		14.4	20
Methoxychlor [2C]	A	100.0	102.6	27073.35	27789.05		2.6	20
Tetrachloro-m-xylene	A	100.0	109.7	62074.39	68114.84		9.7	20
Tetrachloro-m-xylene [2C]	A	100.0	93.18	82153.25	76549.55		-6.8	20
Decachlorobiphenyl	A	100.0	108.8	40627.53	44186.84		8.8	20
Decachlorobiphenyl [2C]	A	100.0	101.8	55280.99	56253.67		1.8	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SW8081A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Instrument ID:	GL-ECD4	Calibration:	9310003
Lab File ID:	077F7701.D	Calibration Date:	11/05/09 12:12
Sequence:	9K32204	Injection Date:	11/19/09
Lab Sample ID:	9K32204-CCV8	Injection Time:	01:51

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
4,4'-DDE	A	100.0	127.1	60049.16	76302.76		27.1	20 *
4,4'-DDE [2C]	A	100.0	123.0	67517.91	83077.83		23.0	20 *
4,4'-DDD	A	100.0	127.0	51034.29	64841.59		27.1	20 *
4,4'-DDD [2C]	A	100.0	124.9	58984.15	73653.65		24.9	20 *
4,4'-DDT	A	100.0	143.6	44636.62	64080.99		43.6	20 *
4,4'-DDT [2C]	A	100.0	144.4	48488.93	70031.92		44.4	20 *
Aldrin	A	100.0	110.6	82009.1	90696.7		10.6	20
Aldrin [2C]	A	100.0	97.27	94387.52	91815.01		-2.7	20
alpha-BHC	A	100.0	115.5	92985.01	107363.9		15.5	20
alpha-BHC [2C]	A	100.0	93.41	123088.6	114981		-6.6	20
alpha-Chlordane	A	100.0	116.5	76131.17	80137.75		16.5	20
alpha-Chlordane [2C]	A	100.0	107.8	81357.73	87666.72		7.8	20
beta-BHC	A	100.0	118.3	32391.69	38317.64		18.3	20
beta-BHC [2C]	A	100.0	94.48	44978.46	42494.86		-5.5	20
delta-BHC	A	100.0	118.2	72470.13	85632.27		18.2	20
delta-BHC [2C]	A	100.0	100.4	94047.27	94430.31		0.4	20
Dieldrin	A	100.0	115.0	71782.77	82553.88		15.0	20
Dieldrin [2C]	A	100.0	94.66	93309.98	88327.83		-5.3	20
Endosulfan I	A	100.0	112.5	68523.96	77097.72		12.5	20
Endosulfan I [2C]	A	100.0	122.4	80518.39	80470.93		22.4	20 *
Endosulfan II	A	100.0	113.7	60058.64	68285.38		13.7	20
Endosulfan II [2C]	A	100.0	98.99	76161.64	75390.91		-1.0	20
Endosulfan sulfate	A	100.0	117.4	51459.68	60433.08		17.4	20
Endosulfan sulfate [2C]	A	100.0	104.4	66889.02	69852.68		4.4	20
Endrin	A	100.0	100.0	43574.9	43597.91		0.05	20
Endrin [2C]	A	100.0	88.78	56552.23	50204.76		-11.2	20
Endrin aldehyde	A	100.0	120.2	54106.74	65037.57		20.2	20 *
Endrin aldehyde [2C]	Q	100.0	134.5	76679.97	76951.14		34.5	20 *
Endrin ketone	A	100.0	120.0	66694.79	80071.85		20.1	20 *

CONTINUING CALIBRATION CHECK
SW8081A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Instrument ID:	GL-ECD4	Calibration:	9310003
Lab File ID:	077R7701.D	Calibration Date:	11/05/09 12:12
Sequence:	9K32204	Injection Date:	11/19/09
Lab Sample ID:	9K32204-CCV8	Injection Time:	01:51

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Endrin ketone [2C]	A	100.0	104.9	88973.61	93341.6		4.9	20
gamma-BHC (Lindane)	A	100.0	115.8	80761.84	93482.87		15.8	20
gamma-BHC (Lindane) [2C]	A	100.0	94.71	107049.4	101388.8		-5.3	20
gamma-Chlordane	A	100.0	112.8	71850.8	81082.53		12.8	20
gamma-Chlordane [2C]	A	100.0	107.4	83020.8	89159.57		7.4	20
Heptachlor	A	100.0	121.9	68605.39	83642.38		21.9	20 *
Heptachlor [2C]	A	100.0	95.48	88073.54	84092.79		-4.5	20
Heptachlor epoxide	A	100.0	107.2	73310.08	78615.4		7.2	20
Heptachlor epoxide [2C]	A	100.0	98.56	84336.01	83125.76		-1.4	20
Methoxychlor	A	100.0	126.4	22688.04	28668.76		26.4	20 *
Methoxychlor [2C]	A	100.0	119.3	27073.35	32298.76		19.3	20
Tetrachloro-m-xylene	A	100.0	105.7	62074.39	65591.45		5.7	20
Tetrachloro-m-xylene [2C]	A	100.0	89.72	82153.25	73705.86		-10.3	20
Decachlorobiphenyl	A	100.0	110.0	40627.53	44691.36		10.0	20
Decachlorobiphenyl [2C]	A	100.0	111.2	55280.99	61492.61		11.2	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

ANALYSIS SEQUENCE SUMMARY
SW8082A

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Sequence: 9K32803
Calibration: 9310003

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Instrument: GL-ECD4

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	9K32803-CCV2	004R0401.D	11/23/09 12:17
Calibration Check	9K32803-CCV2	004F0401.D	11/23/09 12:17
Blank	9K19008-BLK1	009R0901.D	11/23/09 13:49
Blank	9K19008-BLK1	009F0901.D	11/23/09 13:49
LCS	9K19008-BS2	012R1201.D	11/23/09 14:44
LCS	9K19008-BS2	012F1201.D	11/23/09 14:44
LCS Dup	9K19008-BSD2	013R1301.D	11/23/09 15:02
LCS Dup	9K19008-BSD2	013F1301.D	11/23/09 15:02
NTC21MW0101	0911181-02	016R1601.D	11/23/09 15:57
NTC21MW0101	0911181-02	016F1601.D	11/23/09 15:57
NTC21MW0601	0911181-03	017R1701.D	11/23/09 16:15
NTC21MW0601	0911181-03	017F1701.D	11/23/09 16:15
Calibration Check	9K32803-CCV4	029R2901.D	11/23/09 19:54
Calibration Check	9K32803-CCV4	029F2901.D	11/23/09 19:54

CONTINUING CALIBRATION CHECK

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Instrument ID:	GL-ECD4	Calibration:	9310003
Lab File ID:	004F0401.D	Calibration Date:	11/05/09 12:12
Sequence:	9K32803	Injection Date:	11/23/09
Lab Sample ID:	9K32803-CCV2	Injection Time:	12:17

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Aroclor-1016	A	1000	1187	1456.033	1623.511		11.5	20
Aroclor-1016 [2C]	A	1000	936.6	2139.204	1952.649		-8.7	20
Aroclor-1260	A	1000	1230	2741.358	3214.454		17.3	20
Aroclor-1260 [2C]	A	1000	796.7	5461.039	4254.307		-22.1	20 *
Tetrachloro-m-xylene	A	50.00	54.55		67726.08			20
Tetrachloro-m-xylene [2C]	A	50.00	43.11		70831.9			20
Decachlorobiphenyl	A	50.00	63.83		51867.8			20
Decachlorobiphenyl [2C]	A	50.00	61.09		67540.9			20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Instrument ID:	GL-ECD4	Calibration:	9310003
Lab File ID:	029F2901.D	Calibration Date:	11/05/09 12:12
Sequence:	9K32803	Injection Date:	11/23/09
Lab Sample ID:	9K32803-CCV4	Injection Time:	19:54

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Aroclor-1016	A	1000	1244	1456.033	1718.08		18.0	20
Aroclor-1016 [2C]	A	1000	846.5	2139.204	1747.468		-18.3	20
Aroclor-1260	A	1000	1323	2741.358	3460.793		26.2	20 *
Aroclor-1260 [2C]	A	1000	871.2	5461.039	4646.636		-14.9	20
Tetrachloro-m-xylene	A	50.00	55.68		69121.98			20
Tetrachloro-m-xylene [2C]	A	50.00	43.90		72126.22			20
Decachlorobiphenyl	A	50.00	58.36		47421.76			20
Decachlorobiphenyl [2C]	A	50.00	56.04		61964.36			20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

ANALYSIS SEQUENCE SUMMARY
SW8081A

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Sequence: 9K32803
Calibration: 9310003

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Instrument: GL-ECD4

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Performance Mix	9K32803-PEM1	002F0201.D	11/23/09 11:41
Performance Mix	9K32803-PEM1	002R0201.D	11/23/09 11:41
Calibration Check	9K32803-CCV1	003R0301.D	11/23/09 11:59
Calibration Check	9K32803-CCV1	003F0301.D	11/23/09 11:59
Blank	9K19008-BLK1	009R0901.D	11/23/09 13:49
Blank	9K19008-BLK1	009F0901.D	11/23/09 13:49
LCS	9K19008-BS1	010F1001.D	11/23/09 14:07
LCS	9K19008-BS1	010R1001.D	11/23/09 14:07
LCS Dup	9K19008-BSD1	011F1101.D	11/23/09 14:25
LCS Dup	9K19008-BSD1	011R1101.D	11/23/09 14:25
NTC21MW0101	0911181-02	016R1601.D	11/23/09 15:57
NTC21MW0101	0911181-02	016F1601.D	11/23/09 15:57
NTC21MW0601	0911181-03	017R1701.D	11/23/09 16:15
NTC21MW0601	0911181-03	017F1701.D	11/23/09 16:15
Calibration Check	9K32803-CCV3	028F2801.D	11/23/09 19:36
Calibration Check	9K32803-CCV3	028R2801.D	11/23/09 19:36

CONTINUING CALIBRATION CHECK

SW8081A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Instrument ID:	GL-ECD4	Calibration:	9310003
Lab File ID:	003F0301.D	Calibration Date:	11/05/09 12:12
Sequence:	9K32803	Injection Date:	11/23/09
Lab Sample ID:	9K32803-CCV1	Injection Time:	11:59

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
4,4'-DDE	A	100.0	122.2	60049.16	73379.28		22.2	20 *
4,4'-DDE [2C]	A	100.0	110.2	67517.91	74373.65		10.2	20
4,4'-DDD	A	100.0	123.7	51034.29	63122.23		23.7	20 *
4,4'-DDD [2C]	A	100.0	109.4	58984.15	64550.2		9.4	20
4,4'-DDT	A	100.0	148.5	44636.62	66295.54		48.5	20 *
4,4'-DDT [2C]	A	100.0	138.6	48488.93	67207.96		38.6	20 *
Aldrin	A	100.0	110.8	82009.1	90855.91		10.8	20
Aldrin [2C]	A	100.0	89.10	94387.52	84095.24		-10.9	20
alpha-BHC	A	100.0	114.0	92985.01	106003.5		14.0	20
alpha-BHC [2C]	A	100.0	85.48	123088.6	105211.4		-14.5	20
alpha-Chlordane	A	100.0	110.7	76131.17	76150.06		10.7	20
alpha-Chlordane [2C]	A	100.0	96.78	81357.73	78735.25		-3.2	20
beta-BHC	A	100.0	116.8	32391.69	37823.93		16.8	20
beta-BHC [2C]	A	100.0	86.24	44978.46	38789.61		-13.8	20
delta-BHC	A	100.0	120.0	72470.13	86958.32		20.0	20
delta-BHC [2C]	A	100.0	92.88	94047.27	87356.01		-7.1	20
Dieldrin	A	100.0	112.6	71782.77	80850.89		12.6	20
Dieldrin [2C]	A	100.0	87.92	93309.98	82037.33		-12.1	20
Endosulfan I	A	100.0	104.1	68523.96	71330.39		4.1	20
Endosulfan I [2C]	A	100.0	112.8	80518.39	74132.23		12.8	20
Endosulfan II	A	100.0	110.0	60058.64	66066.37		10.0	20
Endosulfan II [2C]	A	100.0	91.57	76161.64	69740.29		-8.4	20
Endosulfan sulfate	A	100.0	118.1	51459.68	60797.63		18.1	20
Endosulfan sulfate [2C]	A	100.0	101.0	66889.02	67561.91		1.0	20
Endrin	A	100.0	159.8	43574.9	69649.95		59.8	20 *
Endrin [2C]	A	100.0	123.8	56552.23	70005.54		23.8	20 *
Endrin aldehyde	A	100.0	99.05	54106.74	53594.5		-0.9	20
Endrin aldehyde [2C]	Q	100.0	99.20	76679.97	60609.81		-0.8	20
Endrin ketone	A	100.0	109.3	66694.79	72889.96		9.3	20

CONTINUING CALIBRATION CHECK
SW8081A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Instrument ID:	GL-ECD4	Calibration:	9310003
Lab File ID:	003R0301.D	Calibration Date:	11/05/09 12:12
Sequence:	9K32803	Injection Date:	11/23/09
Lab Sample ID:	9K32803-CCV1	Injection Time:	11:59

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Endrin ketone [2C]	A	100.0	90.12	88973.61	80182.06		-9.9	20
gamma-BHC (Lindane)	A	100.0	114.2	80761.84	92257.52		14.2	20
gamma-BHC (Lindane) [2C]	A	100.0	86.66	107049.4	92774.32		-13.3	20
gamma-Chlordane	A	100.0	110.2	71850.8	79191.96		10.2	20
gamma-Chlordane [2C]	A	100.0	97.51	83020.8	80954.29		-2.5	20
Heptachlor	A	100.0	124.0	68605.39	85080.98		24.0	20 *
Heptachlor [2C]	A	100.0	91.78	88073.54	80831.32		-8.2	20
Heptachlor epoxide	A	100.0	105.5	73310.08	77343.92		5.5	20
Heptachlor epoxide [2C]	A	100.0	91.38	84336.01	77069.64		-8.6	20
Methoxychlor	A	100.0	140.2	22688.04	31814.51		40.2	20 *
Methoxychlor [2C]	A	100.0	122.9	27073.35	33262.43		22.9	20 *
Tetrachloro-m-xylene	A	100.0	106.4	62074.39	66051.85		6.4	20
Tetrachloro-m-xylene [2C]	A	100.0	83.32	82153.25	68450.66		-16.7	20
Decachlorobiphenyl	A	100.0	129.6	40627.53	52651.64		29.6	20 *
Decachlorobiphenyl [2C]	A	100.0	123.5	55280.99	68267.97		23.5	20 *

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SW8081A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Instrument ID:	GL-ECD4	Calibration:	9310003
Lab File ID:	028F2801.D	Calibration Date:	11/05/09 12:12
Sequence:	9K32803	Injection Date:	11/23/09
Lab Sample ID:	9K32803-CCV3	Injection Time:	19:36

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
4,4'-DDE	A	100.0	130.2	60049.16	78214.87		30.3	20 *
4,4'-DDE [2C]	A	100.0	124.3	67517.91	83946.82		24.3	20 *
4,4'-DDD	A	100.0	129.1	51034.29	65893.19		29.1	20 *
4,4'-DDD [2C]	A	100.0	125.6	58984.15	74069.01		25.6	20 *
4,4'-DDT	A	100.0	145.0	44636.62	64731.68		45.0	20 *
4,4'-DDT [2C]	A	100.0	137.9	48488.93	66849.28		37.9	20 *
Aldrin	A	100.0	112.8	82009.1	92492.75		12.8	20
Aldrin [2C]	A	100.0	95.58	94387.52	90210.99		-4.4	20
alpha-BHC	A	100.0	116.2	92985.01	108047.7		16.2	20
alpha-BHC [2C]	A	100.0	90.15	123088.6	110965		-9.8	20
alpha-Chlordane	A	100.0	114.5	76131.17	78735.57		14.5	20
alpha-Chlordane [2C]	A	100.0	105.5	81357.73	85869.87		5.5	20
beta-BHC	A	100.0	120.1	32391.69	38916.46		20.1	20 *
beta-BHC [2C]	A	100.0	89.90	44978.46	40434.05		-10.1	20
delta-BHC	A	100.0	118.4	72470.13	85803.41		18.4	20
delta-BHC [2C]	A	100.0	96.44	94047.27	90704.8		-3.6	20
Dieldrin	A	100.0	115.7	71782.77	83039.57		15.7	20
Dieldrin [2C]	A	100.0	95.76	93309.98	89352.46		-4.2	20
Endosulfan I	A	100.0	110.4	68523.96	75657.92		10.4	20
Endosulfan I [2C]	A	100.0	125.7	80518.39	82663.33		25.7	20 *
Endosulfan II	A	100.0	115.9	60058.64	69622.85		15.9	20
Endosulfan II [2C]	A	100.0	100.4	76161.64	76501.86		0.4	20
Endosulfan sulfate	A	100.0	117.6	51459.68	60515.55		17.6	20
Endosulfan sulfate [2C]	A	100.0	102.2	66889.02	68354.19		2.2	20
Endrin	A	100.0	79.17	43574.9	34496.69		-20.8	20 *
Endrin [2C]	A	100.0	71.33	56552.23	40339.13		-28.7	20 *
Endrin aldehyde	A	100.0	129.2	54106.74	69902.12		29.2	20 *
Endrin aldehyde [2C]	Q	100.0	154.7	76679.97	85608.33		54.7	20 *
Endrin ketone	A	100.0	123.6	66694.79	82421.32		23.6	20 *

CONTINUING CALIBRATION CHECK
SW8081A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Instrument ID:	GL-ECD4	Calibration:	9310003
Lab File ID:	028R2801.D	Calibration Date:	11/05/09 12:12
Sequence:	9K32803	Injection Date:	11/23/09
Lab Sample ID:	9K32803-CCV3	Injection Time:	19:36

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Endrin ketone [2C]	A	100.0	107.2	88973.61	95429.79		7.3	20
gamma-BHC (Lindane)	A	100.0	116.6	80761.84	94160.57		16.6	20
gamma-BHC (Lindane) [2C]	A	100.0	90.84	107049.4	97247.52		-9.2	20
gamma-Chlordane	A	100.0	115.2	71850.8	82749.37		15.2	20
gamma-Chlordane [2C]	A	100.0	106.8	83020.8	88667.21		6.8	20
Heptachlor	A	100.0	125.3	68605.39	85943.26		25.3	20 *
Heptachlor [2C]	A	100.0	94.09	88073.54	82868.96		-5.9	20
Heptachlor epoxide	A	100.0	109.2	73310.08	80095.05		9.3	20
Heptachlor epoxide [2C]	A	100.0	99.44	84336.01	83862.17		-0.6	20
Methoxychlor	A	100.0	125.4	22688.04	28463.29		25.5	20 *
Methoxychlor [2C]	A	100.0	114.9	27073.35	31107.01		14.9	20
Tetrachloro-m-xylene	A	100.0	110.7	62074.39	68702.58		10.7	20
Tetrachloro-m-xylene [2C]	A	100.0	89.24	82153.25	73309.79		-10.8	20
Decachlorobiphenyl	A	100.0	114.1	40627.53	46354.07		14.1	20
Decachlorobiphenyl [2C]	A	100.0	115.0	55280.99	63566.38		15.0	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

ANALYSIS SEQUENCE SUMMARY
SW8081A

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Sequence: 9L33502
Calibration: 9310003

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Instrument: GL-ECD4

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Performance Mix	9L33502-PEM1	002F0201.D	11/25/09 12:58
Performance Mix	9L33502-PEM1	002R0201.D	11/25/09 12:58
Calibration Check	9L33502-CCV1	003R0301.D	11/25/09 13:17
Calibration Check	9L33502-CCV1	003F0301.D	11/25/09 13:17
Blank	9K19009-BLK1	007R0701.D	11/25/09 14:31
Blank	9K19009-BLK1	007F0701.D	11/25/09 14:31
LCS	9K19009-BS1	008F0801.D	11/25/09 14:49
LCS	9K19009-BS1	008R0801.D	11/25/09 14:49
NTC21SB02-SO-0406	0911147-01	010F1001.D	11/25/09 15:26
NTC21SB02-SO-0406	0911147-01	010R1001.D	11/25/09 15:26
NTC21SB02-SO-0406	9K19009-MS1	011R1101.D	11/25/09 15:45
NTC21SB02-SO-0406	9K19009-MS1	011F1101.D	11/25/09 15:45
NTC21SB02-SO-0406	9K19009-MSD1	012R1201.D	11/25/09 16:03
NTC21SB02-SO-0406	9K19009-MSD1	012F1201.D	11/25/09 16:03
Calibration Check	9L33502-CCV3	015F1501.D	11/25/09 17:45
Calibration Check	9L33502-CCV3	015R1501.D	11/25/09 17:45

CONTINUING CALIBRATION CHECK
SW8081A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Instrument ID:	GL-ECD4	Calibration:	9310003
Lab File ID:	003F0301.D	Calibration Date:	11/05/09 12:12
Sequence:	9L33502	Injection Date:	11/25/09
Lab Sample ID:	9L33502-CCV1	Injection Time:	13:17

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
4,4'-DDD	A	100.0	112.6	51034.29	57470.9		12.6	20
4,4'-DDD [2C]	A	100.0	99.85	58984.15	58897.09		-0.1	20
4,4'-DDE	A	100.0	114.2	60049.16	68585.52		14.2	20
4,4'-DDE [2C]	A	100.0	101.6	67517.91	68601.5		1.6	20
4,4'-DDT	A	100.0	134.4	44636.62	60005.21		34.4	20 *
4,4'-DDT [2C]	A	100.0	116.5	48488.93	56506.67		16.5	20
Aldrin	A	100.0	106.4	82009.1	87250.35		6.4	20
Aldrin [2C]	A	100.0	80.64	94387.52	76111.27		-19.4	20
alpha-BHC	A	100.0	109.9	92985.01	102161.3		9.9	20
alpha-BHC [2C]	A	100.0	78.58	123088.6	96729.47		-21.4	20 *
alpha-Chlordane	A	100.0	103.8	76131.17	71432		3.8	20
alpha-Chlordane [2C]	A	100.0	86.47	81357.73	70347.42		-13.5	20
beta-BHC	A	100.0	111.0	32391.69	35948.95		11.0	20
beta-BHC [2C]	A	100.0	75.66	44978.46	34029.27		-24.3	20 *
delta-BHC	A	100.0	114.0	72470.13	82609.12		14.0	20
delta-BHC [2C]	A	100.0	82.59	94047.27	77675.19		-17.4	20
Dieldrin	A	100.0	104.7	71782.77	75150.92		4.7	20
Dieldrin [2C]	A	100.0	82.77	93309.98	77233.23		-17.2	20
Endosulfan I	A	100.0	99.29	68523.96	68037.29		-0.7	20
Endosulfan I [2C]	A	100.0	104.7	80518.39	68851.05		4.7	20
Endosulfan II	A	100.0	106.0	60058.64	63646.83		6.0	20
Endosulfan II [2C]	A	100.0	82.98	76161.64	63200.9		-17.0	20
Endosulfan sulfate	A	100.0	108.7	51459.68	55916.24		8.7	20
Endosulfan sulfate [2C]	A	100.0	90.49	66889.02	60530.32		-9.5	20
Endrin	A	100.0	136.8	43574.9	59594.58		36.8	20 *
Endrin [2C]	A	100.0	109.0	56552.23	61632.76		9.0	20
Endrin aldehyde	A	100.0	95.14	54106.74	51474.65		-4.9	20
Endrin aldehyde [2C]	Q	100.0	97.13	76679.97	59600.71		-2.9	20
Endrin ketone	A	100.0	101.2	66694.79	67530.16		1.3	20

CONTINUING CALIBRATION CHECK

SW8081A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Instrument ID:	GL-ECD4	Calibration:	9310003
Lab File ID:	003R0301.D	Calibration Date:	11/05/09 12:12
Sequence:	9L33502	Injection Date:	11/25/09
Lab Sample ID:	9L33502-CCV1	Injection Time:	13:17

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Endrin ketone [2C]	A	100.0	82.47	88973.61	73376.15		-17.5	20
gamma-BHC (Lindane)	A	100.0	109.2	80761.84	88199.72		9.2	20
gamma-BHC (Lindane) [2C]	A	100.0	77.98	107049.4	83481.61		-22.0	20 *
gamma-Chlordane	A	100.0	103.3	71850.8	74218.64		3.3	20
gamma-Chlordane [2C]	A	100.0	87.00	83020.8	72226.94		-13.0	20
Heptachlor	A	100.0	119.0	68605.39	81634.45		19.0	20
Heptachlor [2C]	A	100.0	81.99	88073.54	72215.75		-18.0	20
Heptachlor epoxide	A	100.0	100.3	73310.08	73532.31		0.3	20
Heptachlor epoxide [2C]	A	100.0	83.80	84336.01	70675.2		-16.2	20
Methoxychlor	A	100.0	131.7	22688.04	29889.62		31.7	20 *
Methoxychlor [2C]	A	100.0	113.9	27073.35	30832.5		13.9	20
Tetrachloro-m-xylene	A	100.0	101.9	62074.39	63274.39		1.9	20
Tetrachloro-m-xylene [2C]	A	100.0	76.35	82153.25	62724.98		-23.6	20 *
Decachlorobiphenyl	A	100.0	115.1	40627.53	46777.49		15.1	20
Decachlorobiphenyl [2C]	A	100.0	107.6	55280.99	59467.39		7.6	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SW8081A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Instrument ID:	GL-ECD4	Calibration:	9310003
Lab File ID:	015F1501.D	Calibration Date:	11/05/09 12:12
Sequence:	9L33502	Injection Date:	11/25/09
Lab Sample ID:	9L33502-CCV3	Injection Time:	17:45

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
4,4'-DDD	A	100.0	116.3	51034.29	59356.68		16.3	20
4,4'-DDD [2C]	A	100.0	107.4	58984.15	63321.75		7.4	20
4,4'-DDE	A	100.0	111.7	60049.16	67085.7		11.7	20
4,4'-DDE [2C]	A	100.0	99.38	67517.91	67102.69		-0.6	20
4,4'-DDT	A	100.0	100.5	44636.62	44858.36		0.5	20
4,4'-DDT [2C]	A	100.0	89.95	48488.93	43615.38		-10.1	20
Aldrin	A	100.0	105.5	82009.1	86557.22		5.5	20
Aldrin [2C]	A	100.0	81.10	94387.52	76550.18		-18.9	20
alpha-BHC	A	100.0	116.0	92985.01	107891.5		16.0	20
alpha-BHC [2C]	A	100.0	78.61	123088.6	96757.18		-21.4	20 *
alpha-Chlordane	A	100.0	100.5	76131.17	69145.17		0.5	20
alpha-Chlordane [2C]	A	100.0	83.85	81357.73	68218.64		-16.1	20
beta-BHC	A	100.0	114.3	32391.69	37019.7		14.3	20
beta-BHC [2C]	A	100.0	77.23	44978.46	34738.1		-22.8	20 *
delta-BHC	A	100.0	118.2	72470.13	85680.37		18.2	20
delta-BHC [2C]	A	100.0	86.18	94047.27	81047.57		-13.8	20
Dieldrin	A	100.0	99.71	71782.77	71573.46		-0.3	20
Dieldrin [2C]	A	100.0	77.67	93309.98	72472.09		-22.3	20 *
Endosulfan I	A	100.0	96.93	68523.96	66423.48		-3.1	20
Endosulfan I [2C]	A	100.0	101.7	80518.39	66839.35		1.7	20
Endosulfan II	A	100.0	94.69	60058.64	56868.8		-5.3	20
Endosulfan II [2C]	A	100.0	76.83	76161.64	58516.05		-23.2	20 *
Endosulfan sulfate	A	100.0	98.94	51459.68	50913.51		-1.1	20
Endosulfan sulfate [2C]	A	100.0	79.96	66889.02	53481.51		-20.0	20
Endrin	A	100.0	120.8	43574.9	52634.43		20.8	20 *
Endrin [2C]	A	100.0	98.11	56552.23	55484.15		-1.9	20
Endrin aldehyde	A	100.0	86.46	54106.74	46780.9		-13.5	20
Endrin aldehyde [2C]	Q	100.0	80.74	76679.97	51321.21		-19.3	20
Endrin ketone	A	100.0	89.28	66694.79	59548.12		-10.7	20

CONTINUING CALIBRATION CHECK
SW8081A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Instrument ID:	GL-ECD4	Calibration:	9310003
Lab File ID:	015R1501.D	Calibration Date:	11/05/09 12:12
Sequence:	9L33502	Injection Date:	11/25/09
Lab Sample ID:	9L33502-CCV3	Injection Time:	17:45

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Endrin ketone [2C]	A	100.0	66.81	88973.61	59446.86		-33.2	20 *
gamma-BHC (Lindane)	A	100.0	113.1	80761.84	91368.13		13.1	20
gamma-BHC (Lindane) [2C]	A	100.0	76.10	107049.4	81461.51		-23.9	20 *
gamma-Chlordane	A	100.0	101.5	71850.8	72915.69		1.5	20
gamma-Chlordane [2C]	A	100.0	85.03	83020.8	70595.29		-15.0	20
Heptachlor	A	100.0	117.4	68605.39	80582.98		17.5	20
Heptachlor [2C]	A	100.0	79.31	88073.54	69854.5		-20.7	20 *
Heptachlor epoxide	A	100.0	98.86	73310.08	72475.34		-1.1	20
Heptachlor epoxide [2C]	A	100.0	82.19	84336.01	69314.9		-17.8	20
Methoxychlor	A	100.0	98.84	22688.04	22425.46		-1.2	20
Methoxychlor [2C]	A	100.0	83.43	27073.35	22587.91		-16.6	20
Tetrachloro-m-xylene	A	100.0	110.2	62074.39	68379.66		10.2	20
Tetrachloro-m-xylene [2C]	A	100.0	78.88	82153.25	64800.88		-21.1	20 *
Decachlorobiphenyl	A	100.0	90.16	40627.53	36629.78		-9.8	20
Decachlorobiphenyl [2C]	A	100.0	70.12	55280.99	38765.67		-29.9	20 *

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

ANALYSIS SEQUENCE SUMMARY
SW8082A

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Sequence: 9L33502
Calibration: 9310003

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Instrument: GL-ECD4

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	9L33502-CCV2	004R0401.D	11/25/09 13:35
Calibration Check	9L33502-CCV2	004F0401.D	11/25/09 13:35
Blank	9K19009-BLK1	007R0701.D	11/25/09 14:31
Blank	9K19009-BLK1	007F0701.D	11/25/09 14:31
LCS	9K19009-BS2	009R0901.D	11/25/09 15:08
LCS	9K19009-BS2	009F0901.D	11/25/09 15:08
NTC21SB02-SO-0406	9K19009-MS2	013R1301.D	11/25/09 16:22
NTC21SB02-SO-0406	9K19009-MS2	013F1301.D	11/25/09 16:22
NTC21SB02-SO-0406	9K19009-MSD2	014R1401.D	11/25/09 16:40
NTC21SB02-SO-0406	9K19009-MSD2	014F1401.D	11/25/09 16:40
Calibration Check	9L33502-CCV4	016R1601.D	11/25/09 18:04
Calibration Check	9L33502-CCV4	016F1601.D	11/25/09 18:04

CONTINUING CALIBRATION CHECK

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Instrument ID:	GL-ECD4	Calibration:	9310003
Lab File ID:	004F0401.D	Calibration Date:	11/05/09 12:12
Sequence:	9L33502	Injection Date:	11/25/09
Lab Sample ID:	9L33502-CCV2	Injection Time:	13:35

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Aroclor-1016	A	1000	1240	1456.033	1711.503		17.5	20
Aroclor-1016 [2C]	A	1000	798.1	2139.204	1658.37		-22.5	20 *
Aroclor-1260	A	1000	1240	2741.358	3251.076		18.6	20
Aroclor-1260 [2C]	A	1000	781.5	5461.039	4171.052		-23.6	20 *
Tetrachloro-m-xylene	A	50.00	54.68		67888.54			20
Tetrachloro-m-xylene [2C]	A	50.00	38.84		63811.34			20
Decachlorobiphenyl	A	50.00	59.75		48552.48			20
Decachlorobiphenyl [2C]	A	50.00	56.45		62413.62			20

♯ Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Instrument ID:	GL-ECD4	Calibration:	9310003
Lab File ID:	016F1601.D	Calibration Date:	11/05/09 12:12
Sequence:	9L33502	Injection Date:	11/25/09
Lab Sample ID:	9L33502-CCV4	Injection Time:	18:04

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Aroclor-1016	A	1000	1278	1456.033	1745.312		19.9	20
Aroclor-1016 [2C]	A	1000	945.6	2139.204	1976.694		-7.6	20
Aroclor-1260	A	1000	1030	2741.358	2720.055		-0.8	20
Aroclor-1260 [2C]	A	1000	734.4	5461.039	3891.467		-28.7	20 *
Tetrachloro-m-xylene	A	50.00	60.02		74515.86			20
Tetrachloro-m-xylene [2C]	A	50.00	40.84		67098.46			20
Decachlorobiphenyl	A	50.00	43.02		34957.06			20
Decachlorobiphenyl [2C]	A	50.00	37.41		41365.94			20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

ANALYSIS SEQUENCE SUMMARY
SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9L33704	Instrument:	GL-ECD3
Calibration:	9334002		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Check	9L33704-CCV1	002F0201.D	12/02/09 15:42
Calibration Check	9L33704-CCV1	002R0201.D	12/02/09 15:42
Calibration Check	9L33704-CCV2	003F0301.D	12/02/09 16:00
Calibration Check	9L33704-CCV2	003R0301.D	12/02/09 16:00
Calibration Check	9L33704-CCV3	004R0401.D	12/02/09 16:18
Calibration Check	9L33704-CCV3	004F0401.D	12/02/09 16:18
Calibration Check	9L33704-CCV4	005R0501.D	12/02/09 16:37
Calibration Check	9L33704-CCV4	005F0501.D	12/02/09 16:37
NTC21SB02-SO-0406	0911147-01	006F0601.D	12/02/09 16:55
NTC21SB02-SO-0406	0911147-01	006R0601.D	12/02/09 16:55
Calibration Check	9L33704-CCV5	007F0701.D	12/02/09 17:13
Calibration Check	9L33704-CCV5	007R0701.D	12/02/09 17:13
Calibration Check	9L33704-CCV6	008F0801.D	12/02/09 17:31
Calibration Check	9L33704-CCV6	008R0801.D	12/02/09 17:31
Calibration Check	9L33704-CCV7	009F0901.D	12/02/09 17:49
Calibration Check	9L33704-CCV7	009R0901.D	12/02/09 17:49
Calibration Check	9L33704-CCV8	010R1001.D	12/02/09 18:07
Calibration Check	9L33704-CCV8	010F1001.D	12/02/09 18:07

CONTINUING CALIBRATION CHECK
SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Instrument ID:	GL-ECD3	Calibration:	9334002
Lab File ID:	002F0201.D	Calibration Date:	11/25/09 11:06
Sequence:	9L33704	Injection Date:	12/02/09
Lab Sample ID:	9L33704-CCV1	Injection Time:	15:42

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Aroclor-1016	A	1000	1050	1100.995	1154.721		4.9	20
Aroclor-1016 [2C]	A	1000	1042	631.3817	661.365		4.7	20
Aroclor-1260	A	1000	1015	2111.158	2160.277		2.3	20
Aroclor-1260 [2C]	A	1000	986.3	1183.611	1168.019		-1.3	20
Tetrachloro-m-xylene	L	50.00	61.39	30086.47	42592.4		22.8	20 *
Tetrachloro-m-xylene [2C]	L	50.00	62.54	17786.35	23882.2		25.1	20 *
Decachlorobiphenyl	L	50.00	49.09	22689.54	24700.88		-1.8	20
Decachlorobiphenyl [2C]	A	50.00	55.42	10395.64	11522.14		10.8	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Instrument ID:	GL-ECD3	Calibration:	9334002
Lab File ID:	007F0701.D	Calibration Date:	11/25/09 11:06
Sequence:	9L33704	Injection Date:	12/02/09
Lab Sample ID:	9L33704-CCV5	Injection Time:	17:13

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Aroclor-1016	A	1000	867.0	1100.995	952.413		-13.5	20
Aroclor-1016 [2C]	A	1000	881.9	631.3817	544.8446		-13.7	20
Aroclor-1260	A	1000	809.4	2111.158	1714.389		-18.8	20
Aroclor-1260 [2C]	A	1000	702.8	1183.611	831.52		-29.7	20 *
Tetrachloro-m-xylene	L	50.00	51.38	30086.47	35645.78		2.8	20
Tetrachloro-m-xylene [2C]	L	50.00	49.62	17786.35	18949.24		-0.8	20
Decachlorobiphenyl	L	50.00	40.14	22689.54	20198.92		-19.7	20
Decachlorobiphenyl [2C]	A	50.00	39.68	10395.64	8250.06		-20.6	20 *

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Instrument ID:	GL-ECD3	Calibration:	9334002
Lab File ID:	003F0301.D	Calibration Date:	11/25/09 11:06
Sequence:	9L33704	Injection Date:	12/02/09
Lab Sample ID:	9L33704-CCV2	Injection Time:	16:00

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Aroclor-1254	A	1000	1141	1565.641	1758.506		12.3	20
Aroclor-1254 [2C]	Q	1000	1176	956.7487	955.116		17.6	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Instrument ID:	GL-ECD3	Calibration:	9334002
Lab File ID:	008F0801.D	Calibration Date:	11/25/09 11:06
Sequence:	9L33704	Injection Date:	12/02/09
Lab Sample ID:	9L33704-CCV6	Injection Time:	17:31

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Aroclor-1254	A	1000	998.2	1565.641	1540.792		-1.6	20
Aroclor-1254 [2C]	Q	1000	1052	956.7487	868.362		5.2	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Instrument ID:	GL-ECD3	Calibration:	9334002
Lab File ID:	004F0401.D	Calibration Date:	11/25/09 11:06
Sequence:	9L33704	Injection Date:	12/02/09
Lab Sample ID:	9L33704-CCV3	Injection Time:	16:18

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Aroclor-1248	A	1000	1113	1072.982	1193.499		11.2	20
Aroclor-1248 [2C]	A	1000	1042	499.8623	516.6152		3.4	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Instrument ID:	GL-ECD3	Calibration:	9334002
Lab File ID:	009F0901.D	Calibration Date:	11/25/09 11:06
Sequence:	9L33704	Injection Date:	12/02/09
Lab Sample ID:	9L33704-CCV7	Injection Time:	17:49

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Aroclor-1248	A	1000	980.2	1072.982	1050.048		-2.1	20
Aroclor-1248 [2C]	A	1000	848.5	499.8623	422.7204		-15.4	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Instrument ID:	GL-ECD3	Calibration:	9334002
Lab File ID:	005F0501.D	Calibration Date:	11/25/09 11:06
Sequence:	9L33704	Injection Date:	12/02/09
Lab Sample ID:	9L33704-CCV4	Injection Time:	16:37

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Aroclor-1242	A	1000	1086	850.5857	926.515		8.9	20
Aroclor-1242 [2C]	Q	1000	1193	549.3146	586.4314		19.3	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Instrument ID:	GL-ECD3	Calibration:	9334002
Lab File ID:	010F1001.D	Calibration Date:	11/25/09 11:06
Sequence:	9L33704	Injection Date:	12/02/09
Lab Sample ID:	9L33704-CCV8	Injection Time:	18:07

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Aroclor-1242	A	1000	1029	850.5857	877.398		3.2	20
Aroclor-1242 [2C]	Q	1000	1120	549.3146	550.7954		12.0	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

PREPARATION BATCH SUMMARY

SW8081A

Laboratory: Empirical Laboratories, LLC SDG: CTO064_002

Client: Tetra Tech NUS, Inc. (T010) Project: Great Lakes CTO 064 (Site 21)

Batch: 9K17029 Batch Matrix: Water Preparation: EXT_3510

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
NTC21MW0501	0911151-01	11/18/09 11:30	1,080.00	10.00
NTC21-FD111609-01	0911151-02	11/18/09 11:30	1,060.00	10.00
NTC21MW0201	0911151-03	11/18/09 11:30	1,040.00	10.00
NTC21MW0301	0911151-04	11/18/09 11:30	1,020.00	10.00
NTC21MW0401	0911151-05	11/18/09 11:30	1,020.00	10.00
Blank	9K17029-BLK1	11/18/09 11:30	1,000.00	10.00
LCS	9K17029-BS1	11/18/09 11:30	1,000.00	10.00
NTC21MW0501	9K17029-MS1	11/18/09 11:30	1,080.00	10.00
NTC21MW0501	9K17029-MSD1	11/18/09 11:30	1,080.00	10.00

ANALYSIS DATA SHEET

Blank

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_002	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:		Laboratory ID:	9K17029-BLK1	File ID:	060F6001.D
Sampled:		Prepared:	11/18/09 11:30	Analyzed:	11/18/09 20:38
Solids:		Preparation:	EXT_3510	Dilution:	

Batch: 9K17029 Sequence: 9K32204 Calibration: 9310003 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
72-55-9	4,4'-DDE		0.00500	0.0200	U
72-54-8	4,4'-DDD		0.00500	0.0200	U
50-29-3	4,4'-DDT		0.00500	0.0200	U
309-00-2	Aldrin		0.00330	0.0100	U
319-84-6	alpha-BHC		0.00330	0.0100	U
5103-71-9	alpha-Chlordane		0.00330	0.0100	U
319-85-7	beta-BHC		0.00330	0.0100	U
319-86-8	delta-BHC		0.00330	0.0100	U
60-57-1	Dieldrin		0.00500	0.0200	U
959-98-8	Endosulfan I		0.00330	0.0100	U
33213-65-9	Endosulfan II		0.00500	0.0200	U
1031-07-8	Endosulfan sulfate		0.00500	0.0200	U
72-20-8	Endrin		0.00500	0.0200	U
7421-93-4	Endrin aldehyde		0.00500	0.0200	U
53494-70-5	Endrin ketone		0.00500	0.0200	U
58-89-9	gamma-BHC (Lindane)		0.00330	0.0100	U
5566-34-7	gamma-Chlordane		0.00330	0.0100	U
76-44-8	Heptachlor		0.00330	0.0100	U
1024-57-3	Heptachlor epoxide		0.00330	0.0100	U
72-43-5	Methoxychlor		0.00330	0.0100	U
57-74-9	Chlordane (tech)		0.0170	0.0500	U
8001-35-2	Toxaphene		0.330	1.00	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	0.5000	0.4374	87.5	25 - 140	
Tetrachloro-m-xylene [2C]	0.5000	0.3754	75.1	25 - 140	
Decachlorobiphenyl	0.5000	0.4298	86.0	30 - 135	
Decachlorobiphenyl [2C]	0.5000	0.4406	88.1	30 - 135	

* Values outside of QC limits

PREPARATION BATCH SUMMARY

SW8082A

Laboratory: Empirical Laboratories, LLC SDG: CTO064_002

Client: Tetra Tech NUS, Inc. (T010) Project: Great Lakes CTO 064 (Site 21)

Batch: 9K17029 Batch Matrix: Water Preparation: EXT_3510

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
NTC21MW0501	0911151-01	11/18/09 11:30	1,080.00	10.00
NTC21-FD111609-01	0911151-02	11/18/09 11:30	1,060.00	10.00
NTC21MW0201	0911151-03	11/18/09 11:30	1,040.00	10.00
NTC21MW0301	0911151-04	11/18/09 11:30	1,020.00	10.00
NTC21MW0401	0911151-05	11/18/09 11:30	1,020.00	10.00
Blank	9K17029-BLK1	11/18/09 11:30	1,000.00	10.00
LCS	9K17029-BS2	11/18/09 11:30	1,000.00	10.00
NTC21MW0501	9K17029-MS2	11/18/09 11:30	1,080.00	10.00
NTC21MW0501	9K17029-MSD2	11/18/09 11:30	1,080.00	10.00

ANALYSIS DATA SHEET

Blank

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_002	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:		Laboratory ID:	9K17029-BLK1	File ID:	060F6001.D
Sampled:		Prepared:	11/18/09 11:30	Analyzed:	11/18/09 20:38
Solids:		Preparation:	EXT_3510	Dilution:	

Batch: 9K17029 Sequence: 9K32204 Calibration: 9310003 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
12674-11-2	Aroclor-1016		0.120	0.500	U
11104-28-2	Aroclor-1221		0.120	0.500	U
11141-16-5	Aroclor-1232		0.120	0.500	U
53469-21-9	Aroclor-1242		0.120	0.500	U
12672-29-6	Aroclor-1248		0.120	0.500	U
11097-69-1	Aroclor-1254		0.120	0.500	U
11096-82-5	Aroclor-1260		0.120	0.500	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	0.5000	0.4374	87.5	25 - 140	
Tetrachloro-m-xylene [2C]	0.5000	0.3754	75.1	25 - 140	
Decachlorobiphenyl	0.5000	0.4298	86.0	40 - 135	
Decachlorobiphenyl [2C]	0.5000	0.4406	88.1	40 - 135	

* Values outside of QC limits

PREPARATION BATCH SUMMARY

SW8081A

Laboratory: Empirical Laboratories, LLC SDG: CTO064_002

Client: Tetra Tech NUS, Inc. (T010) Project: Great Lakes CTO 064 (Site 21)

Batch: 9K19008 Batch Matrix: Water Preparation: EXT_3510

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
NTC21MW0101	0911181-02	11/23/09 08:30	1,020.00	10.00
NTC21MW0601	0911181-03	11/23/09 08:30	1,020.00	10.00
Blank	9K19008-BLK1	11/19/09 09:19	1,000.00	10.00
LCS	9K19008-BS1	11/19/09 09:19	1,000.00	10.00
LCS Dup	9K19008-BSD1	11/19/09 09:19	1,000.00	10.00

ANALYSIS DATA SHEET

Blank

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_002	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:		Laboratory ID:	9K19008-BLK1	File ID:	009F0901.D
Sampled:		Prepared:	11/19/09 09:19	Analyzed:	11/23/09 13:49
Solids:		Preparation:	EXT_3510	Dilution:	

Batch: 9K19008 Sequence: 9K32803 Calibration: 9310003 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
72-55-9	4,4'-DDE		0.00500	0.0200	U
72-54-8	4,4'-DDD		0.00500	0.0200	U
50-29-3	4,4'-DDT		0.00500	0.0200	U
309-00-2	Aldrin		0.00330	0.0100	U
319-84-6	alpha-BHC		0.00330	0.0100	U
5103-71-9	alpha-Chlordane		0.00330	0.0100	U
319-85-7	beta-BHC		0.00330	0.0100	U
319-86-8	delta-BHC		0.00330	0.0100	U
60-57-1	Dieldrin		0.00500	0.0200	U
959-98-8	Endosulfan I		0.00330	0.0100	U
33213-65-9	Endosulfan II		0.00500	0.0200	U
1031-07-8	Endosulfan sulfate		0.00500	0.0200	U
72-20-8	Endrin		0.00500	0.0200	U
7421-93-4	Endrin aldehyde		0.00500	0.0200	U
53494-70-5	Endrin ketone		0.00500	0.0200	U
58-89-9	gamma-BHC (Lindane)		0.00330	0.0100	U
5566-34-7	gamma-Chlordane		0.00330	0.0100	U
76-44-8	Heptachlor		0.00330	0.0100	U
1024-57-3	Heptachlor epoxide		0.00330	0.0100	U
72-43-5	Methoxychlor		0.00330	0.0100	U
57-74-9	Chlordane (tech)		0.0170	0.0500	U
8001-35-2	Toxaphene		0.330	1.00	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	0.5000	0.4692	93.8	25 - 140	
Tetrachloro-m-xylene [2C]	0.5000	0.3989	79.8	25 - 140	
Decachlorobiphenyl	0.5000	0.5514	110	30 - 135	
Decachlorobiphenyl [2C]	0.5000	0.5856	117	30 - 135	

* Values outside of QC limits

PREPARATION BATCH SUMMARY

SW8082A

Laboratory: Empirical Laboratories, LLC SDG: CTO064_002

Client: Tetra Tech NUS, Inc. (T010) Project: Great Lakes CTO 064 (Site 21)

Batch: 9K19008 Batch Matrix: Water Preparation: EXT_3510

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
NTC21MW0101	0911181-02	11/23/09 08:30	1,020.00	10.00
NTC21MW0601	0911181-03	11/23/09 08:30	1,020.00	10.00
Blank	9K19008-BLK1	11/19/09 09:19	1,000.00	10.00
LCS	9K19008-BS2	11/19/09 09:19	1,000.00	10.00
LCS Dup	9K19008-BSD2	11/19/09 09:19	1,000.00	10.00

ANALYSIS DATA SHEET

Blank

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_002	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:		Laboratory ID:	9K19008-BLK1	File ID:	009F0901.D
Sampled:		Prepared:	11/19/09 09:19	Analyzed:	11/23/09 13:49
Solids:		Preparation:	EXT_3510	Dilution:	

Batch: 9K19008 Sequence: 9K32803 Calibration: 9310003 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
12674-11-2	Aroclor-1016		0.120	0.500	U
11104-28-2	Aroclor-1221		0.120	0.500	U
11141-16-5	Aroclor-1232		0.120	0.500	U
53469-21-9	Aroclor-1242		0.120	0.500	U
12672-29-6	Aroclor-1248		0.120	0.500	U
11097-69-1	Aroclor-1254		0.120	0.500	U
11096-82-5	Aroclor-1260		0.120	0.500	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	0.5000	0.4692	93.8	25 - 140	
Tetrachloro-m-xylene [2C]	0.5000	0.3989	79.8	25 - 140	
Decachlorobiphenyl	0.5000	0.5514	110	40 - 135	
Decachlorobiphenyl [2C]	0.5000	0.5856	117	40 - 135	

* Values outside of QC limits

PREPARATION BATCH SUMMARY
SW8081A

Laboratory: Empirical Laboratories, LLC SDG: CTO064_002

Client: Tetra Tech NUS, Inc. (T010) Project: Great Lakes CTO 064 (Site 21)

Batch: 9K19009 Batch Matrix: Solid Preparation: EXT_3546

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
NTC21SB02-SO-0406	0911147-01	11/24/09 11:20	15.00	5.00
Blank	9K19009-BLK1	11/24/09 11:20	15.00	5.00
LCS	9K19009-BS1	11/24/09 11:20	15.00	5.00
NTC21SB02-SO-0406	9K19009-MS1	11/24/09 11:20	15.00	5.00
NTC21SB02-SO-0406	9K19009-MSD1	11/24/09 11:20	15.00	5.00

ANALYSIS DATA SHEET

Blank

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_002	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:		Laboratory ID:	9K19009-BLK1	File ID:	007F0701.D
Sampled:		Prepared:	11/24/09 11:20	Analyzed:	11/25/09 14:31
Solids:		Preparation:	EXT_3546	Dilution:	

Batch: 9K19009 Sequence: 9L33502 Calibration: 9310003 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg wet)	MDL	MRL	Q
72-54-8	4,4'-DDD		0.170	0.670	U
72-55-9	4,4'-DDE		0.170	0.670	U
50-29-3	4,4'-DDT		0.170	0.670	U
309-00-2	Aldrin		0.110	0.330	U
319-84-6	alpha-BHC		0.110	0.330	U
5103-71-9	alpha-Chlordane		0.110	0.330	U
319-85-7	beta-BHC		0.110	0.330	U
319-86-8	delta-BHC		0.110	0.330	U
60-57-1	Dieldrin		0.170	0.670	U
959-98-8	Endosulfan I		0.110	0.330	U
33213-65-9	Endosulfan II		0.170	0.670	U
1031-07-8	Endosulfan sulfate		0.170	0.670	U
72-20-8	Endrin		0.170	0.670	U
7421-93-4	Endrin aldehyde		0.170	0.670	U
53494-70-5	Endrin ketone		0.170	0.670	U
58-89-9	gamma-BHC (Lindane)		0.110	0.330	U
5566-34-7	gamma-Chlordane		0.110	0.330	U
76-44-8	Heptachlor		0.110	0.330	U
1024-57-3	Heptachlor epoxide		0.110	0.330	U
72-43-5	Methoxychlor		0.110	0.330	U
57-74-9	Chlordane (tech)		0.570	1.70	U
8001-35-2	Toxaphene		11.0	33.0	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg wet)	CONC (ug/Kg wet)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	16.67	17.16	103	30 - 120	
Tetrachloro-m-xylene [2C]	16.67	14.25	85.5	30 - 120	
Decachlorobiphenyl	16.67	19.12	115	35 - 140	
Decachlorobiphenyl [2C]	16.67	19.83	119	35 - 140	

* Values outside of QC limits

PREPARATION BATCH SUMMARY
SW8082A

Laboratory: Empirical Laboratories, LLC
SDG: CTO064_002
Client: Tetra Tech NUS, Inc. (T010)
Project: Great Lakes CTO 064 (Site 21)
Batch: 9K19009 Batch Matrix: Solid
Preparation: EXT_3546

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
NTC21SB02-SO-0406	0911147-01	11/24/09 11:20	15.00	5.00
Blank	9K19009-BLK1	11/24/09 11:20	15.00	5.00
LCS	9K19009-BS2	11/24/09 11:20	15.00	5.00
NTC21SB02-SO-0406	9K19009-MS2	11/24/09 11:20	15.00	5.00
NTC21SB02-SO-0406	9K19009-MSD2	11/24/09 11:20	15.00	5.00

ANALYSIS DATA SHEET

Blank

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_002	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:		Laboratory ID:	9K19009-BLK1	File ID:	007F0701.D
Sampled:		Prepared:	11/24/09 11:20	Analyzed:	11/25/09 14:31
Solids:		Preparation:	EXT_3546	Dilution:	

Batch: 9K19009 Sequence: 9L33502 Calibration: 9310003 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (ug/Kg wet)	MDL	MRL	Q
12674-11-2	Aroclor-1016		4.20	17.0	U
11104-28-2	Aroclor-1221		4.20	17.0	U
11141-16-5	Aroclor-1232		4.20	17.0	U
53469-21-9	Aroclor-1242		4.20	17.0	U
12672-29-6	Aroclor-1248		4.20	17.0	U
11097-69-1	Aroclor-1254		4.20	17.0	U
11096-82-5	Aroclor-1260		4.20	17.0	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg wet)	CONC (ug/Kg wet)	% REC	QC LIMITS	Q
Tetrachloro-m-xylene	16.67	17.16	103	70 - 125	
Tetrachloro-m-xylene [2C]	16.67	14.25	85.5	70 - 125	
Decachlorobiphenyl	16.67	19.12	115	60 - 125	
Decachlorobiphenyl [2C]	16.67	19.83	119	60 - 125	

* Values outside of QC limits

LCS / LCS DUPLICATE RECOVERY

SW8081A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Water		
Batch:	9K19008 affects 1&3	Laboratory ID:	9K19008-BS1
Preparation:	EXT_3510	Initial/Final:	1000 mL / 10 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
4,4'-DDE	1.000	1.135	113	35 - 125
4,4'-DDE [2C]	1.000	1.074	107	35 - 125
4,4'-DDD	1.000	1.159	116	25 - 125
4,4'-DDD [2C]	1.000	1.093	109	25 - 125
4,4'-DDT	**1.000**	**1.306**	**131**	**45 - 125**
4,4'-DDT [2C]	**1.000**	**1.266**	**127**	**45 - 125**
Aldrin	1.000	0.9852	98.5	25 - 125
Aldrin [2C]	1.000	0.7952	79.5	25 - 125
alpha-BHC	1.000	0.9967	99.7	60 - 125
alpha-BHC [2C]	1.000	0.7732	77.3	60 - 125
alpha-Chlordane	1.000	1.008	101	65 - 125
alpha-Chlordane [2C]	1.000	0.9211	92.1	65 - 125
beta-BHC	1.000	1.087	109	65 - 125
beta-BHC [2C]	1.000	0.7870	78.7	65 - 125
delta-BHC	1.000	1.049	105	45 - 125
delta-BHC [2C]	1.000	0.8568	85.7	45 - 125
Dieldrin	1.000	1.032	103	60 - 125
Dieldrin [2C]	1.000	0.8551	85.5	60 - 125
Endosulfan I	1.000	0.9844	98.4	50 - 125
Endosulfan I [2C]	1.000	1.108	111	50 - 125
Endosulfan II	1.000	1.041	104	30 - 125
Endosulfan II [2C]	1.000	0.9081	90.8	30 - 125
Endosulfan sulfate	1.000	1.054	105	55 - 125
Endosulfan sulfate [2C]	1.000	0.9281	92.8	55 - 125
Endrin	1.000	0.9157	91.6	55 - 125
Endrin [2C]	1.000	0.8042	80.4	55 - 125
Endrin aldehyde	1.000	1.075	108	55 - 125
Endrin aldehyde [2C]	1.000	1.204	120	55 - 125
Endrin ketone	1.000	1.098	110	75 - 125
Endrin ketone [2C]	1.000	0.9570	95.7	75 - 125

LCS / LCS DUPLICATE RECOVERY
SW8081A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Water		
Batch:	9K19008	Laboratory ID:	9K19008-BS1
Preparation:	EXT_3510	Initial/Final:	1000 mL / 10 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
gamma-BHC (Lindane)	1.000	1.027	103	25 - 125
gamma-BHC (Lindane) [2C]	1.000	0.7799	78.0	25 - 125
gamma-Chlordane	1.000	1.012	101	60 - 125
gamma-Chlordane [2C]	1.000	0.9314	93.1	60 - 125
Heptachlor	1.000	1.099	110	40 - 125
Heptachlor [2C]	1.000	0.8058	80.6	40 - 125
Heptachlor epoxide	1.000	0.9668	96.7	60 - 125
Heptachlor epoxide [2C]	1.000	0.8815	88.1	60 - 125
Methoxychlor	1.000	1.207	121	55 - 125
Methoxychlor [2C]	1.000	1.121	112	55 - 125

ANALYTE	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
4,4'-DDE	1.000	1.250	125	9.68	30	35 - 125
4,4'-DDE [2C]	1.000	1.187	119	10.0	30	35 - 125
4,4'-DDD	1.000	1.252	125	7.79	30	25 - 125
4,4'-DDD [2C]	1.000	1.197	120	9.02	30	25 - 125
4,4'-DDT	**1.000**	**1.433**	**143 ***	**9.26**	**30**	**45 - 125**
4,4'-DDT [2C]	**1.000**	**1.386**	**139 ***	**9.05**	**30**	**45 - 125**
Aldrin	1.000	1.080	108	9.19	30	25 - 125
Aldrin [2C]	1.000	0.8786	87.9	9.96	30	25 - 125
alpha-BHC	1.000	1.080	108	8.01	30	60 - 125
alpha-BHC [2C]	1.000	0.8494	84.9	9.39	30	60 - 125
alpha-Chlordane	1.000	1.100	110	8.68	30	65 - 125
alpha-Chlordane [2C]	1.000	1.006	101	8.80	30	65 - 125
beta-BHC	1.000	1.170	117	7.36	30	65 - 125
beta-BHC [2C]	1.000	0.8593	85.9	8.78	30	65 - 125
delta-BHC	1.000	1.121	112	6.60	30	45 - 125
delta-BHC [2C]	1.000	0.9246	92.5	7.61	30	45 - 125
Dieldrin	1.000	1.120	112	8.15	30	60 - 125

LCS / LCS DUPLICATE RECOVERY
SW8081A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Water		
Batch:	9K19008	Laboratory ID:	9K19008-BSD1
Preparation:	EXT_3510	Initial/Final:	1000 mL / 10 mL

ANALYTE	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dieldrin [2C]	1.000	0.9267	92.7	8.04	30	60 - 125
Endosulfan I	1.000	1.055	106	6.93	30	50 - 125
Endosulfan I [2C]	1.000	1.201	120	8.00	30	50 - 125
Endosulfan II	1.000	1.119	112	7.18	30	30 - 125
Endosulfan II [2C]	1.000	0.9809	98.1	7.71	30	30 - 125
Endosulfan sulfate	1.000	1.125	113	6.50	30	55 - 125
Endosulfan sulfate [2C]	1.000	1.003	100	7.74	30	55 - 125
Endrin	1.000	0.9435	94.3	2.99	30	55 - 125
Endrin [2C]	1.000	0.8384	83.8	4.16	30	55 - 125
Endrin aldehyde	1.000	1.155	115	7.11	30	55 - 125
Endrin aldehyde [2C]	**1.000**	**1.320**	**132 ***	**9.20**	**30**	**55 - 125**
Endrin ketone	1.000	1.186	119	7.66	30	75 - 125
Endrin ketone [2C]	1.000	1.036	104	7.97	30	75 - 125
gamma-BHC (Lindane)	1.000	1.114	111	8.05	30	25 - 125
gamma-BHC (Lindane) [2C]	1.000	0.8544	85.4	9.12	30	25 - 125
gamma-Chlordane	1.000	1.105	110	8.79	30	60 - 125
gamma-Chlordane [2C]	1.000	1.019	102	8.97	30	60 - 125
Heptachlor	1.000	1.182	118	7.29	30	40 - 125
Heptachlor [2C]	1.000	0.8725	87.3	7.95	30	40 - 125
Heptachlor epoxide	1.000	1.045	105	7.81	30	60 - 125
Heptachlor epoxide [2C]	1.000	0.9544	95.4	7.95	30	60 - 125
Methoxychlor	**1.000**	**1.290**	**129 ***	**6.63**	**30**	**55 - 125**
Methoxychlor [2C]	1.000	1.191	119	6.06	30	55 - 125
Chlordane (tech)		0.0500 U	0		30	50 - 150
Chlordane (tech) [2C]		0.0500 U	0		30	50 - 150
Toxaphene		1.00 U	0		30	50 - 150
Toxaphene [2C]		1.00 U	0		30	50 - 150

LCS / LCS DUPLICATE RECOVERY
SW8081A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Water		
Batch:	9K17029 affecting 201, 301, FB111609-01	Laboratory ID:	9K17029-BS1
Preparation:	EXT_3510	Initial/Final:	1000 mL / 10 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
4,4'-DDE	1.000	1.091	109	35 - 125
4,4'-DDE [2C]	1.000	1.014	101	35 - 125
4,4'-DDD	1.000	1.113	111	25 - 125
4,4'-DDD [2C]	1.000	1.027	103	25 - 125
4,4'-DDT	1.000	1.181	118	45 - 125
4,4'-DDT [2C]	1.000	1.152	115	45 - 125
Aldrin	1.000	0.9254	92.5	25 - 125
Aldrin [2C]	1.000	0.7889	78.9	25 - 125
alpha-BHC	1.000	0.9794	97.9	60 - 125
alpha-BHC [2C]	1.000	0.7789	77.9	60 - 125
alpha-Chlordane	1.000	0.9796	98.0	65 - 125
alpha-Chlordane [2C]	1.000	0.8985	89.9	65 - 125
beta-BHC	1.000	1.038	104	65 - 125
beta-BHC [2C]	1.000	0.7958	79.6	65 - 125
delta-BHC	1.000	1.005	101	45 - 125
delta-BHC [2C]	1.000	0.8567	85.7	45 - 125
Dieldrin	1.000	1.007	101	60 - 125
Dieldrin [2C]	1.000	0.8012	80.1	60 - 125
Endosulfan I	1.000	0.9498	95.0	50 - 125
Endosulfan I [2C]	1.000	1.037	104	50 - 125
Endosulfan II	1.000	1.045	104	30 - 125
Endosulfan II [2C]	1.000	0.8399	84.0	30 - 125
Endosulfan sulfate	1.000	1.025	103	55 - 125
Endosulfan sulfate [2C]	1.000	0.8825	88.2	55 - 125
Endrin	1.000	0.9213	92.1	55 - 125
Endrin [2C]	1.000	0.8003	80.0	55 - 125
Endrin aldehyde	1.000	1.016	102	55 - 125
Endrin aldehyde [2C]	1.000	1.040	104	55 - 125
Endrin ketone	1.000	1.033	103	75 - 125
Endrin ketone [2C]	1.000	0.8776	87.8	75 - 125

LCS / LCS DUPLICATE RECOVERY
SW8081A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Water		
Batch:	9K17029	Laboratory ID:	9K17029-BS1
Preparation:	EXT_3510	Initial/Final:	1000 mL / 10 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
gamma-BHC (Lindane)	1.000	0.9996	100	25 - 125
gamma-BHC (Lindane) [2C]	1.000	0.7963	79.6	25 - 125
gamma-Chlordane	1.000	0.9795	98.0	60 - 125
gamma-Chlordane [2C]	1.000	0.8987	89.9	60 - 125
Heptachlor	1.000	1.030	103	40 - 125
Heptachlor [2C]	1.000	0.7826	78.3	40 - 125
Heptachlor epoxide	1.000	0.9413	94.1	60 - 125
Heptachlor epoxide [2C]	1.000	0.8426	84.3	60 - 125
Methoxychlor	1.000	1.077	108	55 - 125
Methoxychlor [2C]	1.000	0.9989	99.9	55 - 125

LCS / LCS DUPLICATE RECOVERY

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Water		
Batch:	9K17029	Laboratory ID:	9K17029-BS2
Preparation:	EXT_3510	Initial/Final:	1000 mL / 10 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Aroclor-1016	**5.000**	**7.326**	**147**	**25 - 145**
Aroclor-1016 [2C]	5.000	5.167	103	25 - 145
Aroclor-1260	5.000	6.245	125	30 - 145
Aroclor-1260 [2C]	5.000	4.902	98.0	30 - 145

SURROGATE STANDARD RECOVERY AND RT SUMMARY

SW8081A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9K32204	Instrument:	GL-ECD4
		Calibration:	9310003

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
Calibration Check (9K32204-CCV1) ug/L				Lab File ID: 003F0401.D		Analyzed: 11/17/09 20:39		
Tetrachloro-m-xylene	100.0	103	25 - 140	4.378		4.3780	+/-0.030	*
Tetrachloro-m-xylene [2C]	100.0	86.4	25 - 140	3.637		3.6370	+/-0.030	*
Decachlorobiphenyl	100.0	135	30 - 135	10.312		10.3120	+/-0.030	*
Decachlorobiphenyl [2C]	100.0	128	30 - 135	8.753		8.7530	+/-0.030	*
Matrix Spike (9K17029-MS2) ug/L				Lab File ID: 071F7101.D		Analyzed: 11/18/09 00:01		
Tetrachloro-m-xylene	0.4630	91.0	25 - 140	4.374	4.378	-0.0040	+/-0.030	
Tetrachloro-m-xylene [2C]	0.4630	75.6	25 - 140	3.636	3.637	-0.0010	+/-0.030	
Decachlorobiphenyl	0.4630	66.7	30 - 135	10.306	10.312	-0.0060	+/-0.030	
Decachlorobiphenyl [2C]	0.4630	68.3	30 - 135	8.749	8.753	-0.0040	+/-0.030	
Matrix Spike Dup (9K17029-MSD2) ug/L				Lab File ID: 072F7201.D		Analyzed: 11/18/09 00:19		
Tetrachloro-m-xylene	0.4630	92.7	25 - 140	4.374	4.378	-0.0040	+/-0.030	
Tetrachloro-m-xylene [2C]	0.4630	77.9	25 - 140	3.636	3.637	-0.0010	+/-0.030	
Decachlorobiphenyl	0.4630	65.1	30 - 135	10.306	10.312	-0.0060	+/-0.030	
Decachlorobiphenyl [2C]	0.4630	69.8	30 - 135	8.749	8.753	-0.0040	+/-0.030	
NTC21-FD111609-01 (0911151-02) ug/L				Lab File ID: 073F7301.D		Analyzed: 11/18/09 00:38		
Tetrachloro-m-xylene	0.4717	92.1	25 - 140	4.375	4.378	-0.0030	+/-0.030	
Tetrachloro-m-xylene [2C]	0.4717	80.9	25 - 140	3.636	3.637	-0.0010	+/-0.030	
Decachlorobiphenyl	0.4717	86.0	30 - 135	10.305	10.312	-0.0070	+/-0.030	
Decachlorobiphenyl [2C]	0.4717	92.3	30 - 135	8.751	8.753	-0.0020	+/-0.030	
NTC21MW0201 (0911151-03) ug/L				Lab File ID: 074F7401.D		Analyzed: 11/18/09 00:56		
Tetrachloro-m-xylene	0.4808	87.4	25 - 140	4.374	4.378	-0.0040	+/-0.030	
Tetrachloro-m-xylene [2C]	0.4808	75.4	25 - 140	3.636	3.637	-0.0010	+/-0.030	
Decachlorobiphenyl	0.4808	86.5	30 - 135	10.307	10.312	-0.0050	+/-0.030	
Decachlorobiphenyl [2C]	0.4808	92.0	30 - 135	8.749	8.753	-0.0040	+/-0.030	
Calibration Check (9K32204-CCV2) ug/L				Lab File ID: 028F2901.D		Analyzed: 11/18/09 04:17		
Tetrachloro-m-xylene	100.0	106	25 - 140	4.378	4.378	0.0000	+/-0.030	
Tetrachloro-m-xylene [2C]	100.0	98.8	25 - 140	3.638	3.637	0.0010	+/-0.030	
Decachlorobiphenyl	100.0	115	30 - 135	10.309	10.312	-0.0030	+/-0.030	
Decachlorobiphenyl [2C]	100.0	115	30 - 135	8.753	8.753	0.0000	+/-0.030	
Calibration Check (9K32204-CCV3) ug/L				Lab File ID: 032F3201.D		Analyzed: 11/18/09 11:33		
Tetrachloro-m-xylene	50.00	99.1	25 - 140	4.381	4.378	0.0030	+/-0.030	
Tetrachloro-m-xylene [2C]	50.00	90.3	25 - 140	3.632	3.638	-0.0060	+/-0.030	
Decachlorobiphenyl	50.00	104	30 - 135	10.319	10.309	0.0100	+/-0.030	
Decachlorobiphenyl [2C]	50.00	105	30 - 135	8.752	8.753	-0.0010	+/-0.030	

SURROGATE STANDARD RECOVERY AND RT SUMMARY
SW8081A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9K32204	Instrument:	GL-ECD4
		Calibration:	9310003

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
Calibration Check (9K32204-CCV4) ug/L				Lab File ID: 045F4501.D		Analyzed: 11/18/09 15:32		
Tetrachloro-m-xylene	100.0	106	25 - 140	4.375	4.381	-0.0060	+/-0.030	
Tetrachloro-m-xylene [2C]	100.0	96.4	25 - 140	3.637	3.632	0.0050	+/-0.030	
Decachlorobiphenyl	100.0	118	30 - 135	10.307	10.319	-0.0120	+/-0.030	
Decachlorobiphenyl [2C]	100.0	114	30 - 135	8.754	8.752	0.0020	+/-0.030	
Calibration Check (9K32204-CCV5) ug/L				Lab File ID: 046F4601.D		Analyzed: 11/18/09 15:50		
Tetrachloro-m-xylene	50.00	103	25 - 140	4.375	4.375	0.0000	+/-0.030	
Tetrachloro-m-xylene [2C]	50.00	97.2	25 - 140	3.635	3.637	-0.0020	+/-0.030	
Decachlorobiphenyl	50.00	107	30 - 135	10.307	10.307	0.0000	+/-0.030	
Decachlorobiphenyl [2C]	50.00	112	30 - 135	8.75	8.754	-0.0040	+/-0.030	
Calibration Check (9K32204-CCV6) ug/L				Lab File ID: 058F5801.D		Analyzed: 11/18/09 20:02		
Tetrachloro-m-xylene	100.0	110	25 - 140	4.374	4.375	-0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	100.0	93.2	25 - 140	3.636	3.635	0.0010	+/-0.030	
Decachlorobiphenyl	100.0	109	30 - 135	10.306	10.307	-0.0010	+/-0.030	
Decachlorobiphenyl [2C]	100.0	102	30 - 135	8.749	8.75	-0.0010	+/-0.030	
Calibration Check (9K32204-CCV7) ug/L				Lab File ID: 059F5901.D		Analyzed: 11/18/09 20:20		
Tetrachloro-m-xylene	50.00	108	25 - 140	4.374	4.374	0.0000	+/-0.030	
Tetrachloro-m-xylene [2C]	50.00	91.4	25 - 140	3.636	3.636	0.0000	+/-0.030	
Decachlorobiphenyl	50.00	104	30 - 135	10.306	10.306	0.0000	+/-0.030	
Decachlorobiphenyl [2C]	50.00	103	30 - 135	8.751	8.749	0.0020	+/-0.030	
Blank (9K17029-BLK1) ug/L				Lab File ID: 060F6001.D		Analyzed: 11/18/09 20:38		
Tetrachloro-m-xylene	0.5000	87.5	25 - 140	4.374	4.374	0.0000	+/-0.030	
Tetrachloro-m-xylene [2C]	0.5000	75.1	25 - 140	3.635	3.636	-0.0010	+/-0.030	
Decachlorobiphenyl	0.5000	86.0	30 - 135	10.307	10.306	0.0010	+/-0.030	
Decachlorobiphenyl [2C]	0.5000	88.1	30 - 135	8.749	8.751	-0.0020	+/-0.030	
LCS (9K17029-BS1) ug/L				Lab File ID: 061F6101.D		Analyzed: 11/18/09 20:57		
Tetrachloro-m-xylene	0.5000	89.9	25 - 140	4.375	4.374	0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	0.5000	72.9	25 - 140	3.636	3.636	0.0000	+/-0.030	
Decachlorobiphenyl	0.5000	92.4	30 - 135	10.307	10.306	0.0010	+/-0.030	
Decachlorobiphenyl [2C]	0.5000	91.1	30 - 135	8.752	8.751	0.0010	+/-0.030	
LCS (9K17029-BS2) ug/L				Lab File ID: 062F6201.D		Analyzed: 11/18/09 21:15		
Tetrachloro-m-xylene	0.5000	95.1	25 - 140	4.375	4.374	0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	0.5000	77.5	25 - 140	3.637	3.636	0.0010	+/-0.030	
Decachlorobiphenyl	0.5000	84.6	30 - 135	10.305	10.306	-0.0010	+/-0.030	
Decachlorobiphenyl [2C]	0.5000	84.3	30 - 135	8.75	8.751	-0.0010	+/-0.030	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

SW8081A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9K32204	Instrument:	GL-ECD4
		Calibration:	9310003

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
NTC21MW0501 (0911151-01) ug/L				Lab File ID: 068F6801.D		Analyzed: 11/18/09 23:06		
Tetrachloro-m-xylene	0.4630	100	25 - 140	4.375	4.374	0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	0.4630	83.4	25 - 140	3.637	3.636	0.0010	+/-0.030	
Decachlorobiphenyl	0.4630	104	30 - 135	10.305	10.306	-0.0010	+/-0.030	
Decachlorobiphenyl [2C]	0.4630	106	30 - 135	8.752	8.751	0.0010	+/-0.030	
Matrix Spike (9K17029-MS1) ug/L				Lab File ID: 069F6901.D		Analyzed: 11/18/09 23:24		
Tetrachloro-m-xylene	0.4630	92.1	25 - 140	4.375	4.374	0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	0.4630	73.0	25 - 140	3.636	3.636	0.0000	+/-0.030	
Decachlorobiphenyl	0.4630	59.8	30 - 135	10.306	10.306	0.0000	+/-0.030	
Decachlorobiphenyl [2C]	0.4630	61.0	30 - 135	8.748	8.751	-0.0030	+/-0.030	
Matrix Spike Dup (9K17029-MSD1) ug/L				Lab File ID: 070F7001.D		Analyzed: 11/18/09 23:42		
Tetrachloro-m-xylene	0.4630	91.7	25 - 140	4.374	4.374	0.0000	+/-0.030	
Tetrachloro-m-xylene [2C]	0.4630	74.8	25 - 140	3.636	3.636	0.0000	+/-0.030	
Decachlorobiphenyl	0.4630	74.4	30 - 135	10.306	10.306	0.0000	+/-0.030	
Decachlorobiphenyl [2C]	0.4630	75.4	30 - 135	8.75	8.751	-0.0010	+/-0.030	
NTC21MW0301 (0911151-04) ug/L				Lab File ID: 075F7501.D		Analyzed: 11/19/09 01:14		
Tetrachloro-m-xylene	0.4902	97.0	25 - 140	4.375	4.374	0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	0.4902	85.6	25 - 140	3.637	3.636	0.0010	+/-0.030	
Decachlorobiphenyl	0.4902	79.7	30 - 135	10.307	10.306	0.0010	+/-0.030	
Decachlorobiphenyl [2C]	0.4902	87.3	30 - 135	8.749	8.751	-0.0020	+/-0.030	
NTC21MW0401 (0911151-05) ug/L				Lab File ID: 076F7601.D		Analyzed: 11/19/09 01:33		
Tetrachloro-m-xylene	0.4902	89.7	25 - 140	4.374	4.374	0.0000	+/-0.030	
Tetrachloro-m-xylene [2C]	0.4902	78.5	25 - 140	3.636	3.636	0.0000	+/-0.030	
Decachlorobiphenyl	0.4902	43.5	30 - 135	10.308	10.306	0.0020	+/-0.030	
Decachlorobiphenyl [2C]	0.4902	46.8	30 - 135	8.75	8.751	-0.0010	+/-0.030	
Calibration Check (9K32204-CCV8) ug/L				Lab File ID: 077F7701.D		Analyzed: 11/19/09 01:51		
Tetrachloro-m-xylene	100.0	106	25 - 140	4.376	4.374	0.0020	+/-0.030	
Tetrachloro-m-xylene [2C]	100.0	89.7	25 - 140	3.636	3.636	0.0000	+/-0.030	
Decachlorobiphenyl	100.0	110	30 - 135	10.306	10.306	0.0000	+/-0.030	
Decachlorobiphenyl [2C]	100.0	111	30 - 135	8.748	8.751	-0.0030	+/-0.030	
Calibration Check (9K32204-CCV9) ug/L				Lab File ID: 078F7801.D		Analyzed: 11/19/09 02:10		
Tetrachloro-m-xylene	50.00	107	25 - 140	4.374	4.376	-0.0020	+/-0.030	
Tetrachloro-m-xylene [2C]	50.00	91.9	25 - 140	3.636	3.636	0.0000	+/-0.030	
Decachlorobiphenyl	50.00	102	30 - 135	10.304	10.306	-0.0020	+/-0.030	
Decachlorobiphenyl [2C]	50.00	106	30 - 135	8.748	8.748	0.0000	+/-0.030	

SURROGATE STANDARD RECOVERY AND RT SUMMARY
SW8082A

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Sequence: 9K32204

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Instrument: GL-ECD4
Calibration: 9310003

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
Calibration Check (9K32204-CCV6) ug/L				Lab File ID: 058F5801.D		Analyzed: 11/18/09 20:02		
Tetrachloro-m-xylene	100.0	110	25 - 140	4.374	4.375	-0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	100.0	93.2	25 - 140	3.636	3.635	0.0010	+/-0.030	
Decachlorobiphenyl	100.0	109	40 - 135	10.306	10.307	-0.0010	+/-0.030	
Decachlorobiphenyl [2C]	100.0	102	40 - 135	8.749	8.75	-0.0010	+/-0.030	
Calibration Check (9K32204-CCV7) ug/L				Lab File ID: 059F5901.D		Analyzed: 11/18/09 20:20		
Tetrachloro-m-xylene	50.00	108	25 - 140	4.374	4.374	0.0000	+/-0.030	
Tetrachloro-m-xylene [2C]	50.00	91.4	25 - 140	3.636	3.636	0.0000	+/-0.030	
Decachlorobiphenyl	50.00	104	40 - 135	10.306	10.306	0.0000	+/-0.030	
Decachlorobiphenyl [2C]	50.00	103	40 - 135	8.751	8.749	0.0020	+/-0.030	
Blank (9K17029-BLK1) ug/L				Lab File ID: 060F6001.D		Analyzed: 11/18/09 20:38		
Tetrachloro-m-xylene	0.5000	87.5	25 - 140	4.374	4.374	0.0000	+/-0.030	
Tetrachloro-m-xylene [2C]	0.5000	75.1	25 - 140	3.635	3.636	-0.0010	+/-0.030	
Decachlorobiphenyl	0.5000	86.0	40 - 135	10.307	10.306	0.0010	+/-0.030	
Decachlorobiphenyl [2C]	0.5000	88.1	40 - 135	8.749	8.751	-0.0020	+/-0.030	
LCS (9K17029-BS1) ug/L				Lab File ID: 061F6101.D		Analyzed: 11/18/09 20:57		
Tetrachloro-m-xylene	0.5000	89.9	25 - 140	4.375	4.374	0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	0.5000	72.9	25 - 140	3.636	3.636	0.0000	+/-0.030	
Decachlorobiphenyl	0.5000	92.4	40 - 135	10.307	10.306	0.0010	+/-0.030	
Decachlorobiphenyl [2C]	0.5000	91.1	40 - 135	8.752	8.751	0.0010	+/-0.030	
LCS (9K17029-BS2) ug/L				Lab File ID: 062F6201.D		Analyzed: 11/18/09 21:15		
Tetrachloro-m-xylene	0.5000	95.1	25 - 140	4.375	4.374	0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	0.5000	77.5	25 - 140	3.637	3.636	0.0010	+/-0.030	
Decachlorobiphenyl	0.5000	84.6	40 - 135	10.305	10.306	-0.0010	+/-0.030	
Decachlorobiphenyl [2C]	0.5000	84.3	40 - 135	8.75	8.751	-0.0010	+/-0.030	
NTC21MW0501 (0911151-01) ug/L				Lab File ID: 068F6801.D		Analyzed: 11/18/09 23:06		
Tetrachloro-m-xylene	0.4630	100	25 - 140	4.375	4.374	0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	0.4630	83.4	25 - 140	3.637	3.636	0.0010	+/-0.030	
Decachlorobiphenyl	0.4630	104	40 - 135	10.305	10.306	-0.0010	+/-0.030	
Decachlorobiphenyl [2C]	0.4630	106	40 - 135	8.752	8.751	0.0010	+/-0.030	
Matrix Spike (9K17029-MS1) ug/L				Lab File ID: 069F6901.D		Analyzed: 11/18/09 23:24		
Tetrachloro-m-xylene	0.4630	92.1	25 - 140	4.375	4.374	0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	0.4630	73.0	25 - 140	3.636	3.636	0.0000	+/-0.030	
Decachlorobiphenyl	0.4630	59.8	40 - 135	10.306	10.306	0.0000	+/-0.030	
Decachlorobiphenyl [2C]	0.4630	61.0	40 - 135	8.748	8.751	-0.0030	+/-0.030	

SURROGATE STANDARD RECOVERY AND RT SUMMARY
SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9K32204	Instrument:	GL-ECD4
		Calibration:	9310003

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
Matrix Spike Dup (9K17029-MSD1) ug/L				Lab File ID: 070F7001.D		Analyzed: 11/18/09 23:42		
Tetrachloro-m-xylene	0.4630	91.7	25 - 140	4.374	4.374	0.0000	+/-0.030	
Tetrachloro-m-xylene [2C]	0.4630	74.8	25 - 140	3.636	3.636	0.0000	+/-0.030	
Decachlorobiphenyl	0.4630	74.4	40 - 135	10.306	10.306	0.0000	+/-0.030	
Decachlorobiphenyl [2C]	0.4630	75.4	40 - 135	8.75	8.751	-0.0010	+/-0.030	
NTC21MW0301 (0911151-04) ug/L				Lab File ID: 075F7501.D		Analyzed: 11/19/09 01:14		
Tetrachloro-m-xylene	0.4902	97.0	25 - 140	4.375	4.374	0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	0.4902	85.6	25 - 140	3.637	3.636	0.0010	+/-0.030	
Decachlorobiphenyl	0.4902	79.7	40 - 135	10.307	10.306	0.0010	+/-0.030	
Decachlorobiphenyl [2C]	0.4902	87.3	40 - 135	8.749	8.751	-0.0020	+/-0.030	
NTC21MW0401 (0911151-05) ug/L				Lab File ID: 076F7601.D		Analyzed: 11/19/09 01:33		
Tetrachloro-m-xylene	0.4902	89.7	25 - 140	4.374	4.374	0.0000	+/-0.030	
Tetrachloro-m-xylene [2C]	0.4902	78.5	25 - 140	3.636	3.636	0.0000	+/-0.030	
Decachlorobiphenyl	0.4902	43.5	40 - 135	10.308	10.306	0.0020	+/-0.030	
Decachlorobiphenyl [2C]	0.4902	46.8	40 - 135	8.75	8.751	-0.0010	+/-0.030	
Calibration Check (9K32204-CCV8) ug/L				Lab File ID: 077F7701.D		Analyzed: 11/19/09 01:51		
Tetrachloro-m-xylene	100.0	106	25 - 140	4.376	4.374	0.0020	+/-0.030	
Tetrachloro-m-xylene [2C]	100.0	89.7	25 - 140	3.636	3.636	0.0000	+/-0.030	
Decachlorobiphenyl	100.0	110	40 - 135	10.306	10.306	0.0000	+/-0.030	
Decachlorobiphenyl [2C]	100.0	111	40 - 135	8.748	8.751	-0.0030	+/-0.030	
Calibration Check (9K32204-CCV9) ug/L				Lab File ID: 078F7801.D		Analyzed: 11/19/09 02:10		
Tetrachloro-m-xylene	50.00	107	25 - 140	4.374	4.376	-0.0020	+/-0.030	
Tetrachloro-m-xylene [2C]	50.00	91.9	25 - 140	3.636	3.636	0.0000	+/-0.030	
Decachlorobiphenyl	50.00	102	40 - 135	10.304	10.306	-0.0020	+/-0.030	
Decachlorobiphenyl [2C]	50.00	106	40 - 135	8.748	8.748	0.0000	+/-0.030	

SURROGATE STANDARD RECOVERY AND RT SUMMARY
SW8081A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9K32803	Instrument:	GL-ECD4
		Calibration:	9310003

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
Calibration Check (9K32803-CCV1) ug/L				Lab File ID: 003F0301.D		Analyzed: 11/23/09 11:59		
Tetrachloro-m-xylene	100.0	106	25 - 140	4.331		4.3310	+/-0.030	*
Tetrachloro-m-xylene [2C]	100.0	83.3	25 - 140	3.602		3.6020	+/-0.030	*
Decachlorobiphenyl	100.0	130	30 - 135	10.236		10.2360	+/-0.030	*
Decachlorobiphenyl [2C]	100.0	124	30 - 135	8.69		8.6900	+/-0.030	*
Calibration Check (9K32803-CCV2) ug/L				Lab File ID: 004F0401.D		Analyzed: 11/23/09 12:17		
Tetrachloro-m-xylene	50.00	109	25 - 140	4.332	4.331	0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	50.00	86.2	25 - 140	3.602	3.602	0.0000	+/-0.030	
Decachlorobiphenyl	50.00	128	30 - 135	10.237	10.236	0.0010	+/-0.030	
Decachlorobiphenyl [2C]	50.00	122	30 - 135	8.69	8.69	0.0000	+/-0.030	
Blank (9K19008-BLK1) ug/L				Lab File ID: 009F0901.D		Analyzed: 11/23/09 13:49		
Tetrachloro-m-xylene	0.5000	93.8	25 - 140	4.332	4.332	0.0000	+/-0.030	
Tetrachloro-m-xylene [2C]	0.5000	79.8	25 - 140	3.602	3.602	0.0000	+/-0.030	
Decachlorobiphenyl	0.5000	110	30 - 135	10.239	10.237	0.0020	+/-0.030	
Decachlorobiphenyl [2C]	0.5000	117	30 - 135	8.694	8.69	0.0040	+/-0.030	
LCS (9K19008-BS1) ug/L				Lab File ID: 010F1001.D		Analyzed: 11/23/09 14:07		
Tetrachloro-m-xylene	0.5000	99.0	25 - 140	4.334	4.332	0.0020	+/-0.030	
Tetrachloro-m-xylene [2C]	0.5000	80.2	25 - 140	3.604	3.602	0.0020	+/-0.030	
Decachlorobiphenyl	0.5000	105	30 - 135	10.24	10.237	0.0030	+/-0.030	
Decachlorobiphenyl [2C]	0.5000	108	30 - 135	8.697	8.69	0.0070	+/-0.030	
LCS Dup (9K19008-BSD1) ug/L				Lab File ID: 011F1101.D		Analyzed: 11/23/09 14:25		
Tetrachloro-m-xylene	0.5000	110	25 - 140	4.332	4.332	0.0000	+/-0.030	
Tetrachloro-m-xylene [2C]	0.5000	88.5	25 - 140	3.602	3.602	0.0000	+/-0.030	
Decachlorobiphenyl	0.5000	130	30 - 135	10.24	10.237	0.0030	+/-0.030	
Decachlorobiphenyl [2C]	0.5000	134	30 - 135	8.695	8.69	0.0050	+/-0.030	
LCS (9K19008-BS2) ug/L				Lab File ID: 012F1201.D		Analyzed: 11/23/09 14:44		
Tetrachloro-m-xylene	0.5000	101	25 - 140	4.332	4.332	0.0000	+/-0.030	
Tetrachloro-m-xylene [2C]	0.5000	80.1	25 - 140	3.602	3.602	0.0000	+/-0.030	
Decachlorobiphenyl	0.5000	119	30 - 135	10.239	10.237	0.0020	+/-0.030	
Decachlorobiphenyl [2C]	0.5000	117	30 - 135	8.694	8.69	0.0040	+/-0.030	
LCS Dup (9K19008-BSD2) ug/L				Lab File ID: 013F1301.D		Analyzed: 11/23/09 15:02		
Tetrachloro-m-xylene	0.5000	94.8	25 - 140	4.332	4.332	0.0000	+/-0.030	
Tetrachloro-m-xylene [2C]	0.5000	73.1	25 - 140	3.603	3.602	0.0010	+/-0.030	
Decachlorobiphenyl	0.5000	112	30 - 135	10.24	10.237	0.0030	+/-0.030	
Decachlorobiphenyl [2C]	0.5000	106	30 - 135	8.693	8.69	0.0030	+/-0.030	

SURROGATE STANDARD RECOVERY AND RT SUMMARY
SW8081A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9K32803	Instrument:	GL-ECD4
		Calibration:	9310003

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
NTC21MW0101 (0911181-02) ug/L				Lab File ID: 016F1601.D		Analyzed: 11/23/09 15:57		
Tetrachloro-m-xylene	0.4902	104	25 - 140	4.333	4.332	0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	0.4902	83.4	25 - 140	3.603	3.602	0.0010	+/-0.030	
Decachlorobiphenyl	0.4902	106	30 - 135	10.239	10.237	0.0020	+/-0.030	
Decachlorobiphenyl [2C]	0.4902	109	30 - 135	8.694	8.69	0.0040	+/-0.030	
NTC21MW0601 (0911181-03) ug/L				Lab File ID: 017F1701.D		Analyzed: 11/23/09 16:15		
Tetrachloro-m-xylene	0.4902	105	25 - 140	4.332	4.332	0.0000	+/-0.030	
Tetrachloro-m-xylene [2C]	0.4902	88.1	25 - 140	3.604	3.602	0.0020	+/-0.030	
Decachlorobiphenyl	0.4902	113	30 - 135	10.24	10.237	0.0030	+/-0.030	
Decachlorobiphenyl [2C]	0.4902	121	30 - 135	8.692	8.69	0.0020	+/-0.030	
Calibration Check (9K32803-CCV3) ug/L				Lab File ID: 028F2801.D		Analyzed: 11/23/09 19:36		
Tetrachloro-m-xylene	100.0	111	25 - 140	4.333	4.332	0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	100.0	89.2	25 - 140	3.603	3.602	0.0010	+/-0.030	
Decachlorobiphenyl	100.0	114	30 - 135	10.241	10.237	0.0040	+/-0.030	
Decachlorobiphenyl [2C]	100.0	115	30 - 135	8.697	8.69	0.0070	+/-0.030	
Calibration Check (9K32803-CCV4) ug/L				Lab File ID: 029F2901.D		Analyzed: 11/23/09 19:54		
Tetrachloro-m-xylene	50.00	111	25 - 140	4.334	4.333	0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	50.00	87.8	25 - 140	3.604	3.603	0.0010	+/-0.030	
Decachlorobiphenyl	50.00	117	30 - 135	10.241	10.241	0.0000	+/-0.030	
Decachlorobiphenyl [2C]	50.00	112	30 - 135	8.696	8.697	-0.0010	+/-0.030	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9K32803	Instrument:	GL-ECD4
		Calibration:	9310003

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
Calibration Check (9K32803-CCV1) ug/L				Lab File ID: 003F0301.D		Analyzed: 11/23/09 11:59		
Tetrachloro-m-xylene	100.0	106	25 - 140	4.331		4.3310	+/-0.030	*
Tetrachloro-m-xylene [2C]	100.0	83.3	25 - 140	3.602		3.6020	+/-0.030	*
Decachlorobiphenyl	100.0	130	40 - 135	10.236		10.2360	+/-0.030	*
Decachlorobiphenyl [2C]	100.0	124	40 - 135	8.69		8.6900	+/-0.030	*
Calibration Check (9K32803-CCV2) ug/L				Lab File ID: 004F0401.D		Analyzed: 11/23/09 12:17		
Tetrachloro-m-xylene	50.00	109	25 - 140	4.332	4.331	0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	50.00	86.2	25 - 140	3.602	3.602	0.0000	+/-0.030	
Decachlorobiphenyl	50.00	128	40 - 135	10.237	10.236	0.0010	+/-0.030	
Decachlorobiphenyl [2C]	50.00	122	40 - 135	8.69	8.69	0.0000	+/-0.030	
Blank (9K19008-BLK1) ug/L				Lab File ID: 009F0901.D		Analyzed: 11/23/09 13:49		
Tetrachloro-m-xylene	0.5000	93.8	25 - 140	4.332	4.332	0.0000	+/-0.030	
Tetrachloro-m-xylene [2C]	0.5000	79.8	25 - 140	3.602	3.602	0.0000	+/-0.030	
Decachlorobiphenyl	0.5000	110	40 - 135	10.239	10.237	0.0020	+/-0.030	
Decachlorobiphenyl [2C]	0.5000	117	40 - 135	8.694	8.69	0.0040	+/-0.030	
LCS (9K19008-BS1) ug/L				Lab File ID: 010F1001.D		Analyzed: 11/23/09 14:07		
Tetrachloro-m-xylene	0.5000	99.0	25 - 140	4.334	4.332	0.0020	+/-0.030	
Tetrachloro-m-xylene [2C]	0.5000	80.2	25 - 140	3.604	3.602	0.0020	+/-0.030	
Decachlorobiphenyl	0.5000	105	40 - 135	10.24	10.237	0.0030	+/-0.030	
Decachlorobiphenyl [2C]	0.5000	108	40 - 135	8.697	8.69	0.0070	+/-0.030	
LCS Dup (9K19008-BSD1) ug/L				Lab File ID: 011F1101.D		Analyzed: 11/23/09 14:25		
Tetrachloro-m-xylene	0.5000	110	25 - 140	4.332	4.332	0.0000	+/-0.030	
Tetrachloro-m-xylene [2C]	0.5000	88.5	25 - 140	3.602	3.602	0.0000	+/-0.030	
Decachlorobiphenyl	0.5000	130	40 - 135	10.24	10.237	0.0030	+/-0.030	
Decachlorobiphenyl [2C]	0.5000	134	40 - 135	8.695	8.69	0.0050	+/-0.030	
LCS (9K19008-BS2) ug/L				Lab File ID: 012F1201.D		Analyzed: 11/23/09 14:44		
Tetrachloro-m-xylene	0.5000	101	25 - 140	4.332	4.332	0.0000	+/-0.030	
Tetrachloro-m-xylene [2C]	0.5000	80.1	25 - 140	3.602	3.602	0.0000	+/-0.030	
Decachlorobiphenyl	0.5000	119	40 - 135	10.239	10.237	0.0020	+/-0.030	
Decachlorobiphenyl [2C]	0.5000	117	40 - 135	8.694	8.69	0.0040	+/-0.030	
LCS Dup (9K19008-BSD2) ug/L				Lab File ID: 013F1301.D		Analyzed: 11/23/09 15:02		
Tetrachloro-m-xylene	0.5000	94.8	25 - 140	4.332	4.332	0.0000	+/-0.030	
Tetrachloro-m-xylene [2C]	0.5000	73.1	25 - 140	3.603	3.602	0.0010	+/-0.030	
Decachlorobiphenyl	0.5000	112	40 - 135	10.24	10.237	0.0030	+/-0.030	
Decachlorobiphenyl [2C]	0.5000	106	40 - 135	8.693	8.69	0.0030	+/-0.030	

SURROGATE STANDARD RECOVERY AND RT SUMMARY
SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9K32803	Instrument:	GL-ECD4
		Calibration:	9310003

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
NTC21MW0101 (0911181-02) ug/L				Lab File ID: 016F1601.D		Analyzed: 11/23/09 15:57		
Tetrachloro-m-xylene	0.4902	104	25 - 140	4.333	4.332	0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	0.4902	83.4	25 - 140	3.603	3.602	0.0010	+/-0.030	
Decachlorobiphenyl	0.4902	106	40 - 135	10.239	10.237	0.0020	+/-0.030	
Decachlorobiphenyl [2C]	0.4902	109	40 - 135	8.694	8.69	0.0040	+/-0.030	
NTC21MW0601 (0911181-03) ug/L				Lab File ID: 017F1701.D		Analyzed: 11/23/09 16:15		
Tetrachloro-m-xylene	0.4902	105	25 - 140	4.332	4.332	0.0000	+/-0.030	
Tetrachloro-m-xylene [2C]	0.4902	88.1	25 - 140	3.604	3.602	0.0020	+/-0.030	
Decachlorobiphenyl	0.4902	113	40 - 135	10.24	10.237	0.0030	+/-0.030	
Decachlorobiphenyl [2C]	0.4902	121	40 - 135	8.692	8.69	0.0020	+/-0.030	
Calibration Check (9K32803-CCV3) ug/L				Lab File ID: 028F2801.D		Analyzed: 11/23/09 19:36		
Tetrachloro-m-xylene	100.0	111	25 - 140	4.333	4.332	0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	100.0	89.2	25 - 140	3.603	3.602	0.0010	+/-0.030	
Decachlorobiphenyl	100.0	114	40 - 135	10.241	10.237	0.0040	+/-0.030	
Decachlorobiphenyl [2C]	100.0	115	40 - 135	8.697	8.69	0.0070	+/-0.030	
Calibration Check (9K32803-CCV4) ug/L				Lab File ID: 029F2901.D		Analyzed: 11/23/09 19:54		
Tetrachloro-m-xylene	50.00	111	25 - 140	4.334	4.333	0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	50.00	87.8	25 - 140	3.604	3.603	0.0010	+/-0.030	
Decachlorobiphenyl	50.00	117	40 - 135	10.241	10.241	0.0000	+/-0.030	
Decachlorobiphenyl [2C]	50.00	112	40 - 135	8.696	8.697	-0.0010	+/-0.030	

SURROGATE STANDARD RECOVERY AND RT SUMMARY
SW8081A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9L33502	Instrument:	GL-ECD4
		Calibration:	9310003

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
Calibration Check (9L33502-CCV1) ug/L				Lab File ID: 003F0301.D		Analyzed: 11/25/09 13:17		
Tetrachloro-m-xylene	100.0	102	80 - 120	4.279		4.2790	+/-0.030	*
Tetrachloro-m-xylene [2C]	100.0	76.4	80 - 120	3.558		3.5580	+/-0.030	*
Decachlorobiphenyl	100.0	115	80 - 120	10.154		10.1540	+/-0.030	*
Decachlorobiphenyl [2C]	100.0	108	80 - 120	8.616		8.6160	+/-0.030	*
Calibration Check (9L33502-CCV2) ug/L				Lab File ID: 004F0401.D		Analyzed: 11/25/09 13:35		
Tetrachloro-m-xylene	50.00	109	80 - 120	4.279	4.279	0.0000	+/-0.030	
Tetrachloro-m-xylene [2C]	50.00	77.7	80 - 120	3.558	3.558	0.0000	+/-0.030	*
Decachlorobiphenyl	50.00	120	80 - 120	10.151	10.154	-0.0030	+/-0.030	.
Decachlorobiphenyl [2C]	50.00	113	80 - 120	8.616	8.616	0.0000	+/-0.030	
Blank (9K19009-BLK1) ug/Kg wet				Lab File ID: 007F0701.D		Analyzed: 11/25/09 14:31		
Tetrachloro-m-xylene	16.67	103	70 - 125	4.278	4.279	-0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	16.67	85.5	70 - 125	3.559	3.558	0.0010	+/-0.030	
Decachlorobiphenyl	16.67	115	55 - 130	10.153	10.151	0.0020	+/-0.030	
Decachlorobiphenyl [2C]	16.67	119	55 - 130	8.617	8.616	0.0010	+/-0.030	
LCS (9K19009-BS1) ug/Kg wet				Lab File ID: 008F0801.D		Analyzed: 11/25/09 14:49		
Tetrachloro-m-xylene	16.67	106	70 - 125	4.28	4.279	0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	16.67	84.7	70 - 125	3.558	3.558	0.0000	+/-0.030	
Decachlorobiphenyl	16.67	116	55 - 130	10.15	10.151	-0.0010	+/-0.030	
Decachlorobiphenyl [2C]	16.67	117	55 - 130	8.615	8.616	-0.0010	+/-0.030	
LCS (9K19009-BS2) ug/Kg wet				Lab File ID: 009F0901.D		Analyzed: 11/25/09 15:08		
Tetrachloro-m-xylene	16.67	94.0	70 - 125	4.28	4.279	0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	16.67	78.3	70 - 125	3.558	3.558	0.0000	+/-0.030	
Decachlorobiphenyl	16.67	111	55 - 130	10.151	10.151	0.0000	+/-0.030	
Decachlorobiphenyl [2C]	16.67	116	55 - 130	8.615	8.616	-0.0010	+/-0.030	
NTC21SB02-SO-0406 (0911147-01) ug/Kg dry				Lab File ID: 010F1001.D		Analyzed: 11/25/09 15:26		
Tetrachloro-m-xylene	18.75	84.9	30 - 120	4.279	4.279	0.0000	+/-0.030	
Tetrachloro-m-xylene [2C]	18.75	62.2	30 - 120	3.556	3.558	-0.0020	+/-0.030	
Decachlorobiphenyl	18.75	95.2	35 - 140	10.153	10.151	0.0020	+/-0.030	
Decachlorobiphenyl [2C]	18.75	48.2	35 - 140	8.615	8.616	-0.0010	+/-0.030	
Matrix Spike (9K19009-MS1) ug/Kg dry				Lab File ID: 011F1101.D		Analyzed: 11/25/09 15:45		
Tetrachloro-m-xylene	18.75	83.6	70 - 125	4.279	4.279	0.0000	+/-0.030	
Tetrachloro-m-xylene [2C]	18.75	59.4	70 - 125	3.558	3.558	0.0000	+/-0.030	*
Decachlorobiphenyl	18.75	76.1	55 - 130	10.154	10.151	0.0030	+/-0.030	
Decachlorobiphenyl [2C]	18.75	41.8	55 - 130	8.614	8.616	-0.0020	+/-0.030	*

SURROGATE STANDARD RECOVERY AND RT SUMMARY
SW8081A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9L33502	Instrument:	GL-ECD4
		Calibration:	9310003

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
Matrix Spike Dup (9K19009-MSD1) ug/Kg dry				Lab File ID: 012F1201.D		Analyzed: 11/25/09 16:03		
Tetrachloro-m-xylene	18.75	83.7	70 - 125	4.279	4.279	0.0000	+/-0.030	
Tetrachloro-m-xylene [2C]	18.75	58.3	70 - 125	3.558	3.558	0.0000	+/-0.030	*
Decachlorobiphenyl	18.75	82.7	55 - 130	10.151	10.151	0.0000	+/-0.030	
Decachlorobiphenyl [2C]	18.75	43.4	55 - 130	8.616	8.616	0.0000	+/-0.030	*
Matrix Spike (9K19009-MS2) ug/Kg dry				Lab File ID: 013F1301.D		Analyzed: 11/25/09 16:22		
Tetrachloro-m-xylene	18.75	81.0	70 - 125	4.28	4.279	0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	18.75	56.3	70 - 125	3.557	3.558	-0.0010	+/-0.030	*
Decachlorobiphenyl	18.75	72.6	55 - 130	10.154	10.151	0.0030	+/-0.030	
Decachlorobiphenyl [2C]	18.75	34.8	55 - 130	8.614	8.616	-0.0020	+/-0.030	*
Matrix Spike Dup (9K19009-MSD2) ug/Kg dry				Lab File ID: 014F1401.D		Analyzed: 11/25/09 16:40		
Tetrachloro-m-xylene	18.75	81.3	70 - 125	4.28	4.279	0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	18.75	56.6	70 - 125	3.557	3.558	-0.0010	+/-0.030	*
Decachlorobiphenyl	18.75	82.3	55 - 130	10.152	10.151	0.0010	+/-0.030	
Decachlorobiphenyl [2C]	18.75	42.1	55 - 130	8.613	8.616	-0.0030	+/-0.030	*
Calibration Check (9L33502-CCV3) ug/L				Lab File ID: 015F1501.D		Analyzed: 11/25/09 17:45		
Tetrachloro-m-xylene	100.0	110	80 - 120	4.286	4.279	0.0070	+/-0.030	
Tetrachloro-m-xylene [2C]	100.0	78.9	80 - 120	3.554	3.558	-0.0040	+/-0.030	*
Decachlorobiphenyl	100.0	90.2	80 - 120	10.163	10.151	0.0120	+/-0.030	
Decachlorobiphenyl [2C]	100.0	70.1	80 - 120	8.618	8.616	0.0020	+/-0.030	*
Calibration Check (9L33502-CCV4) ug/L				Lab File ID: 016F1601.D		Analyzed: 11/25/09 18:04		
Tetrachloro-m-xylene	50.00	120	80 - 120	4.281	4.286	-0.0050	+/-0.030	
Tetrachloro-m-xylene [2C]	50.00	81.7	80 - 120	3.558	3.554	0.0040	+/-0.030	
Decachlorobiphenyl	50.00	86.0	80 - 120	10.154	10.163	-0.0090	+/-0.030	
Decachlorobiphenyl [2C]	50.00	74.8	80 - 120	8.614	8.618	-0.0040	+/-0.030	*

SURROGATE STANDARD RECOVERY AND RT SUMMARY

SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9L33502	Instrument:	GL-ECD4
		Calibration:	9310003

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
Calibration Check (9L33502-CCV2) ug/L				Lab File ID: 004F0401.D		Analyzed: 11/25/09 13:35		
Tetrachloro-m-xylene	50.00	109	80 - 120	4.279		4.2790	+/-0.030	*
Tetrachloro-m-xylene [2C]	50.00	77.7	80 - 120	3.558		3.5580	+/-0.030	*
Decachlorobiphenyl	50.00	120	80 - 120	10.151		10.1510	+/-0.030	*
Decachlorobiphenyl [2C]	50.00	113	80 - 120	8.616		8.6160	+/-0.030	*
Blank (9K19009-BLK1) ug/Kg wet				Lab File ID: 007F0701.D		Analyzed: 11/25/09 14:31		
Tetrachloro-m-xylene	16.67	103	70 - 125	4.278	4.279	-0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	16.67	85.5	70 - 125	3.559	3.558	0.0010	+/-0.030	
Decachlorobiphenyl	16.67	115	60 - 125	10.153	10.151	0.0020	+/-0.030	
Decachlorobiphenyl [2C]	16.67	119	60 - 125	8.617	8.616	0.0010	+/-0.030	
LCS (9K19009-BS2) ug/Kg wet				Lab File ID: 009F0901.D		Analyzed: 11/25/09 15:08		
Tetrachloro-m-xylene	16.67	94.0	70 - 125	4.28	4.279	0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	16.67	78.3	70 - 125	3.558	3.558	0.0000	+/-0.030	
Decachlorobiphenyl	16.67	111	60 - 125	10.151	10.151	0.0000	+/-0.030	
Decachlorobiphenyl [2C]	16.67	116	60 - 125	8.615	8.616	-0.0010	+/-0.030	
Matrix Spike (9K19009-MS2) ug/Kg dry				Lab File ID: 013F1301.D		Analyzed: 11/25/09 16:22		
Tetrachloro-m-xylene	18.75	81.0	70 - 125	4.28	4.279	0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	18.75	56.3	70 - 125	3.557	3.558	-0.0010	+/-0.030	*
Decachlorobiphenyl	18.75	72.6	60 - 125	10.154	10.151	0.0030	+/-0.030	
Decachlorobiphenyl [2C]	18.75	34.8	60 - 125	8.614	8.616	-0.0020	+/-0.030	*
Matrix Spike Dup (9K19009-MSD2) ug/Kg dry				Lab File ID: 014F1401.D		Analyzed: 11/25/09 16:40		
Tetrachloro-m-xylene	18.75	81.3	70 - 125	4.28	4.279	0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	18.75	56.6	70 - 125	3.557	3.558	-0.0010	+/-0.030	*
Decachlorobiphenyl	18.75	82.3	60 - 125	10.152	10.151	0.0010	+/-0.030	
Decachlorobiphenyl [2C]	18.75	42.1	60 - 125	8.613	8.616	-0.0030	+/-0.030	*
Calibration Check (9L33502-CCV4) ug/L				Lab File ID: 016F1601.D		Analyzed: 11/25/09 18:04		
Tetrachloro-m-xylene	50.00	120	80 - 120	4.281	4.279	0.0020	+/-0.030	
Tetrachloro-m-xylene [2C]	50.00	81.7	80 - 120	3.558	3.558	0.0000	+/-0.030	
Decachlorobiphenyl	50.00	86.0	80 - 120	10.154	10.151	0.0030	+/-0.030	
Decachlorobiphenyl [2C]	50.00	74.8	80 - 120	8.614	8.616	-0.0020	+/-0.030	*

SURROGATE STANDARD RECOVERY AND RT SUMMARY
SW8082A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9L33704	Instrument:	GL-ECD3
		Calibration:	9334002

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
Calibration Check (9L33704-CCV1) ug/L				Lab File ID: 002F0201.D		Analyzed: 12/02/09 15:42		
Tetrachloro-m-xylene	50.00	123	80 - 120	5		5.0000	+/-0.030	*
Tetrachloro-m-xylene [2C]	50.00	125	80 - 120	4.12		4.1200	+/-0.030	*
Decachlorobiphenyl	50.00	98.2	80 - 120	11.353		11.3530	+/-0.030	*
Decachlorobiphenyl [2C]	50.00	111	80 - 120	9.708		9.7080	+/-0.030	*
NTC21SB02-SO-0406 (0911147-01) ug/Kg dry				Lab File ID: 006F0601.D		Analyzed: 12/02/09 16:55		
Tetrachloro-m-xylene	18.75	72.6	70 - 125	4.999		4.9990	+/-0.030	*
Tetrachloro-m-xylene [2C]	18.75	72.0	70 - 125	4.122		4.1220	+/-0.030	*
Decachlorobiphenyl	18.75	89.4	60 - 125	11.349		11.3490	+/-0.030	*
Decachlorobiphenyl [2C]	18.75	65.9	60 - 125	9.709		9.7090	+/-0.030	*
Calibration Check (9L33704-CCV5) ug/L				Lab File ID: 007F0701.D		Analyzed: 12/02/09 17:13		
Tetrachloro-m-xylene	50.00	103	80 - 120	5		5.0000	+/-0.030	*
Tetrachloro-m-xylene [2C]	50.00	99.2	80 - 120	4.123		4.1230	+/-0.030	*
Decachlorobiphenyl	50.00	80.3	80 - 120	11.35		11.3500	+/-0.030	*
Decachlorobiphenyl [2C]	50.00	79.4	80 - 120	9.712		9.7120	+/-0.030	*

FORM X
IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

NTC21MW0501

Lab Name: Empirical Laboratories, LLC

Lab Sample ID: 0911151-01 Date(s) Analyzed: 11/18/2009 11/18/2009

Instrument ID (1): GL-ECD4 Instrument ID (2): GL-ECD4

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
alpha-Chlordane	1	6.76	7.10	7.16	0.00385	
	2	5.52	5.81	5.87	0.00416	8
gamma-Chlordane	1	6.68	7.01	7.07	0.00311	
	2	5.47	5.76	5.82	0.00354	13

FORM X
IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

NTC21MW0601

Lab Name: Empirical Laboratories, LLC

Lab Sample ID: 0911181-03 Date(s) Analyzed: 11/23/2009 11/23/2009

Instrument ID (1): GL-ECD4 Instrument ID (2): GL-ECD4

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
delta-BHC	1	5.46	5.79	5.85	0.0279	
	2	4.68	4.94	5.00	0.0264	5

FORM X
IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

NTC21SB02-SO-0406

Lab Name: Empirical Laboratories, LLC

Lab Sample ID: 0911147-01 Date(s) Analyzed: 11/25/2009 11/25/2009

Instrument ID (1): GL-ECD4 Instrument ID (2): GL-ECD4

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D	
4,4'-DDE	1	6.83	7.31	7.37	17.3		
	2	5.60	6.01	6.07	12.6	32	
4,4'-DDT	1	7.79	8.30	8.36	3.11		
	2	6.42	6.87	6.93	8.53	93	
Aldrin	1	5.80	6.26	6.32	0.839		
	2	4.71	5.05	5.11	0.548	42	
alpha-Chlordane	1	6.62	7.10	7.16	1.34		
	2	5.39	5.81	5.87	0.418	105	M
delta-BHC	1	5.38	5.79	5.85	1.48		
	2	4.62	4.94	5.00	0.524	95	
Dieldrin	1	6.99	7.47	7.53	2.89		
	2	5.70	6.13	6.19	15.1	136	M
Endosulfan I	1	6.65	7.16	7.22	1.32		
	2	5.46	5.86	5.92	4.22	83	
Endosulfan II	1	7.50	8.01	8.07	1.26		
	2	6.30	6.73	6.79	1.02	21	
Endosulfan sulfate	1	7.92	8.46	8.52	3.71		
	2	6.75	7.18	7.24	3.91	5	
Endrin	1	7.26	7.74	7.80	1.84		
	2	5.97	6.41	6.47	0.922	67	
gamma-BHC (Lindane)	1	4.96	5.34	5.40	0.461		
	2	4.19	4.49	4.55	0.440	5	
gamma-Chlordane	1	6.52	7.01	7.07	5.75		
	2	5.35	5.76	5.82	1.07	137	M
Methoxychlor	1	8.41	8.90	8.96	12.4		
	2	7.04	7.51	7.57	34.2	94	

FORM X
IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

NTC21SB02-SO-0406

Lab Name: Empirical Laboratories, LLC

Lab Sample ID: 0911147-01 Date(s) Analyzed: 12/02/2009 12/02/2009

Instrument ID (1): GL-ECD3 Instrument ID (2): GL-ECD3

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Aroclor-1242	1	6.82	6.79	6.85	47.0	
	2	5.99	5.96	6.02	35.7	27
Aroclor-1260	1	10.75	10.73	10.79	122	
	2	8.01	7.99	8.05	90.9	29

ORGANIC CASE NARRATIVE
Tetra Tech NUS, Inc./Great Lakes, IL CTO064
Project Manager: B. Cummings
SDG: CTO064_002
Work order: 0911147, 0911151 and 0911181

Herb

Sampled	Received	Lab ID	Client ID
11/13/2009	11/14/2009	0911147-01	NTC21SB02-SO-0406
11/15/2009	11/17/2009	0911151-01	NTC21MW0501
11/16/2009	11/17/2009	0911151-02	NTC21-FD111609-01
11/16/2009	11/17/2009	0911151-03	NTC21MW0201
11/16/2009	11/17/2009	0911151-04	NTC21MW0301
11/16/2009	11/17/2009	0911151-05	NTC21MW0401
11/17/2009	11/18/2009	0911181-02	NTC21MW0101
11/17/2009	11/18/2009	0911181-03	NTC21MW0601

GC/ECD Herbicides

Method: The samples were analyzed by USEPA SW-846 Methods 8151A (sonication then separatory funnel extraction or separatory funnel extraction followed by esterification then capillary column GC/ECD) soils or waters upon receipt to the laboratory in satisfactory condition.

Comments: The volatile analyses for these samples were satisfactorily completed within sample holding times and met the corresponding specifications with the following note/exceptions:

- Initial Calibration Criteria: All calibration criteria were within limits.
- Continuing Calibration Exceedence: Some analytes in the continuing calibration verifications (CCVs) exceeded the 20%D limit with a positive bias but were not detected in the associated samples above the quantitation limit..
- Method Blank Results: No target analytes were confirmed in the method blanks.
- Surrogate Results: All recoveries were within limits.
- 9K23022-BS1/BSD1 Results: Of 40 recoveries, 12 exceeded limits with a positive bias. No target analytes were detected above the quantitation limit in the associated samples.
- 9K18013-BS1 Results: Of 20 recoveries, 2 exceeded limits with a positive bias. No target analytes were detected above the quantitation limit in the associated samples.
- NTC21MW0501MS/MSD Results: Of 40 recoveries, 11 were outside the acceptance limits while 6 of 20 relative percent differences exceeded limits. See form 3. This is attributed to the sample matrix. Note – MCPP recovered below the detection limit in the primary analysis of the MSD.
- NTC21SB02-SO-406MS/MSD Results: Of 40 recoveries, 4 were outside the acceptance limits while all relative percent differences were within limits. See form 3. This is attributed to the sample matrix. Note – Dalapon recovered below the detection limit in the primary and secondary analyses of the MSD and is counted in the number exceeding limits although below MDL concentrations are reported and within limits.
- Dilutions: All samples were analyzed without dilution.
- Manual integrations: Quantitation signals were manually integrated in order to accurately reflect the peak areas based on the technical judgment of the analyst. A listing of the manual integrations performed and reason for the integration is included with the logs. Before and after "pictures" are available where manual integrations were performed.

I certify that, to the best of my knowledge and based upon my inquiry of those individuals immediately responsible for obtaining the information, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in the case narrative, as verified by the following signature.

Marcia K. McGinnity
Data Quality Manager

ANALYTICAL REPORT TERMS AND QUALIFIERS (ORGANIC)

MDL: The method detection limit (MDL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The MDL is determined from analysis of a sample containing the analyte in a given matrix.

EQL: The estimated quantitation limit (EQL), also known as the reporting limit (RL), is defined as the estimated concentration above which quantitative results can be obtained with a specific degree of confidence. Empirical Laboratories defines the EQL to be at or near the lowest standard of the calibration curve.

U: The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte quantitated below the MDL.

B: The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the correct sample result might be less than the reported result and, perhaps, zero.

D: When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".

E: The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound.

J: The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The mass spectral data pass the identification criteria showing that the compound is present, but the calculated result is less than the EQL. One should feel confident that the result is greater than zero and less than the EQL.

P: The associated numerical value is an estimated quantity. There is greater than a 40% difference between the two GC columns for the detected concentrations. The higher of the two values is reported.

M: The presence of an "M" to the right of an analytical result indicates that the sample matrix interfered with the quantitation of the analyte. In GC and HPLC, results are reported from the column with the lower concentration.

I: The presence of an "I" to the right of an analytical result that the presence of a qualitative interference could have caused a false positive or over estimation of the analyte. In GC and HPLC, results are reported from the column with the lower concentration.

INITIAL CALIBRATION STANDARDS

SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9L33608	Instrument:	GL-ECD3
Calibration:	9336002		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
09J0037	Herb/DCAA @ 100/500 ppb	9L33608-CAL1	027R2701.D	11/30/09 21:53
09J0037	Herb/DCAA @ 100/500 ppb	9L33608-CAL1	027F2701.D	11/30/09 21:53
09J0038	Herb/DCAA @ 50/250 ppb	9L33608-CAL2	028R2801.D	11/30/09 22:18
09J0038	Herb/DCAA @ 50/250 ppb	9L33608-CAL2	028F2801.D	11/30/09 22:18
09J0039	Herb/DCAA @ 40/200 ppb	9L33608-CAL3	029R2901.D	11/30/09 22:43
09J0039	Herb/DCAA @ 40/200 ppb	9L33608-CAL3	029F2901.D	11/30/09 22:43
09J0040	Herb/DCAA @ 25/125 ppb	9L33608-CAL4	030R3001.D	11/30/09 23:09
09J0040	Herb/DCAA @ 25/125 ppb	9L33608-CAL4	030F3001.D	11/30/09 23:09
09J0041	Herb/DCAA @ 20/100 ppb	9L33608-CAL5	031R3101.D	11/30/09 23:34
09J0041	Herb/DCAA @ 20/100 ppb	9L33608-CAL5	031F3101.D	11/30/09 23:34
09J0042	Herb/DCAA @ 10/50 ppb	9L33608-CAL6	032R3201.D	11/30/09 23:59
09J0042	Herb/DCAA @ 10/50 ppb	9L33608-CAL6	032F3201.D	11/30/09 23:59
09J0043	Herb/DCAA @ 5/25 ppb	9L33608-CAL7	033R3301.D	12/01/09 00:25
09J0043	Herb/DCAA @ 5/25 ppb	9L33608-CAL7	033F3301.D	12/01/09 00:25

INITIAL CALIBRATION DATA (Continued)

SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Calibration:	9336002	Instrument:	GL-ECD3
Matrix:	Water	Calibration Date:	11/30/2009 3:25:43PM

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
2,4,5-T	17952.07	17.51252	13.31857	0.1502581			20	
2,4,5-T	17952.07	17.51252	13.31857	0.1502581			20	
2,4,5-T	17952.07	17.51252	13.31857	0.1502581			20	
2,4,5-T [2C]	11255.39	13.27258	10.35071	0.1293439			20	
2,4,5-T [2C]	11255.39	13.27258	10.35071	0.1293439			20	
2,4,5-T [2C]	11255.39	13.27258	10.35071	0.1293439			20	
2,4,5-TP (Silvex)	23514	6.813238	12.40757	4.295922E-02			20	
2,4,5-TP (Silvex)	23514	6.813238	12.40757	4.295922E-02			20	
2,4,5-TP (Silvex)	23514	6.813238	12.40757	4.295922E-02			20	
2,4,5-TP (Silvex) [2C]	13913.26	5.519109	9.579286	8.100855E-02			20	
2,4,5-TP (Silvex) [2C]	13913.26	5.519109	9.579286	8.100855E-02			20	
2,4,5-TP (Silvex) [2C]	13913.26	5.519109	9.579286	8.100855E-02			20	
2,4-D	4822.246	8.138414	10.78957	0.1364571			20	
2,4-D	4822.246	8.138414	10.78957	0.1364571			20	
2,4-D	4822.246	8.138414	10.78957	0.1364571			20	
2,4-D [2C]	3667.983	16.97466	8.421857	9.365086E-02			20	
2,4-D [2C]	3667.983	16.97466	8.421857	9.365086E-02			20	
2,4-D [2C]	3667.983	16.97466	8.421857	9.365086E-02			20	
2,4-DB	2700.461	17.63056	14.68657	0.1088647			20	
2,4-DB	2700.461	17.63056	14.68657	0.1088647			20	
2,4-DB	2700.461	17.63056	14.68657	0.1088647			20	
2,4-DB [2C]	1981.179	7.120159	11.22929	0.1298698			20	
2,4-DB [2C]	1981.179	7.120159	11.22929	0.1298698			20	
2,4-DB [2C]	1981.179	7.120159	11.22929	0.1298698			20	
2,4-Dichlorophenylacetic acid	4005.739	7.846278	8.780286	0.0710067			20	
2,4-Dichlorophenylacetic acid	4005.739	7.846278	8.780286	0.0710067			20	
2,4-Dichlorophenylacetic acid	4005.739	7.846278	8.780286	0.0710067			20	
2,4-Dichlorophenylacetic acid [2C]	3436.096	11.52021	6.976429	9.067983E-02			20	
2,4-Dichlorophenylacetic acid [2C]	3436.096	11.52021	6.976429	9.067983E-02			20	
2,4-Dichlorophenylacetic acid [2C]	3436.096	11.52021	6.976429	9.067983E-02			20	
Dalapon	4555.82	4.197089	3.793143	3.298022E-02			20	
Dalapon	4555.82	4.197089	3.793143	3.298022E-02			20	

INITIAL CALIBRATION DATA (Continued)
SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Calibration:	9336002	Instrument:	GL-ECD3
Matrix:	Water	Calibration Date:	11/30/2009 3:25:43PM

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Dalapon	4555.82	4.197089	3.793143	3.298022E-02			20	
Dalapon [2C]	3350.718	4.205122	3.132429	0.1013811			20	
Dalapon [2C]	3350.718	4.205122	3.132429	0.1013811			20	
Dalapon [2C]	3350.718	4.205122	3.132429	0.1013811			20	
Dicamba	17895.92	7.650475	8.885429	4.536762E-02			20	
Dicamba	17895.92	7.650475	8.885429	4.536762E-02			20	
Dicamba	17895.92	7.650475	8.885429	4.536762E-02			20	
Dicamba [2C]	12098.79	10.4663	7.128857	7.483328E-02			20	
Dicamba [2C]	12098.79	10.4663	7.128857	7.483328E-02			20	
Dicamba [2C]	12098.79	10.4663	7.128857	7.483328E-02			20	
Dichloroprop	4049.994	10.81599	10.18943	4.144465E-02			20	
Dichloroprop	4049.994	10.81599	10.18943	4.144465E-02			20	
Dichloroprop	4049.994	10.81599	10.18943	4.144465E-02			20	
Dichloroprop [2C]	2781.896	14.17422	7.917	8.032961E-02			20	
Dichloroprop [2C]	2781.896	14.17422	7.917	8.032961E-02			20	
Dichloroprop [2C]	2781.896	14.17422	7.917	8.032961E-02			20	
Dinoseb	14255.75	9.303065	14.57586	2.696463E-02			20	
Dinoseb	14255.75	9.303065	14.57586	2.696463E-02			20	
Dinoseb	14255.75	9.303065	14.57586	2.696463E-02			20	
Dinoseb [2C]	8502.918	10.5558	11.12586	4.562422E-02			20	
Dinoseb [2C]	8502.918	10.5558	11.12586	4.562422E-02			20	
Dinoseb [2C]	8502.918	10.5558	11.12586	4.562422E-02			20	
MCPA	28.14434	26.82586	9.627857	2.780226E-02	0.9994081		0.995	
MCPA	28.14434	26.82586	9.627857	2.780226E-02	0.9994081		0.995	
MCPA	28.14434	26.82586	9.627857	2.780226E-02	0.9994081		0.995	
MCPA [2C]	23.06549	18.50647	7.554	5.031408E-02			20	
MCPA [2C]	23.06549	18.50647	7.554	5.031408E-02			20	
MCPA [2C]	23.06549	18.50647	7.554	5.031408E-02			20	
MCPP	20.68656	28.34877	9.176286	6.583185E-03	0.9997211		0.995	
MCPP	20.68656	28.34877	9.176286	6.583185E-03	0.9997211		0.995	
MCPP	20.68656	28.34877	9.176286	6.583185E-03	0.9997211		0.995	
MCPP [2C]	15.97826	16.68715	7.203714	5.600941E-02			20	

INITIAL CALIBRATION DATA (Continued)

SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Calibration:	9336002	Instrument:	GL-ECD3
Matrix:	Water	Calibration Date:	11/30/2009 3:25:43PM

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
MCPP [2C]	15.97826	16.68715	7.203714	5.600941E-02			20	
MCPP [2C]	15.97826	16.68715	7.203714	5.600941E-02			20	

INITIAL CALIBRATION DATA
SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Calibration:	9336002	Instrument:	GL-ECD3
Matrix:	Water	Calibration Date:	11/30/2009 3:25:43PM

	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
Compound	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
2,4,5-T	94.79	20726.48	47.4	20033.14	37.92	18864.9	23.7	17423.84	18.96	12919.3	9.479	14622.53
2,4,5-T	94.79	20726.48	47.4	20033.14	37.92	18864.9	23.7	17423.84	18.96	12919.3	9.479	14622.53
2,4,5-T	94.79	20726.48	47.4	20033.14	37.92	18864.9	23.7	17423.84	18.96	12919.3	9.479	14622.53
2,4,5-T [2C]	94.79	11881.39	47.4	12070.4	37.92	11405.38	23.7	11418.31	18.96	9328.903	9.479	9273.024
2,4,5-T [2C]	94.79	11881.39	47.4	12070.4	37.92	11405.38	23.7	11418.31	18.96	9328.903	9.479	9273.024
2,4,5-T [2C]	94.79	11881.39	47.4	12070.4	37.92	11405.38	23.7	11418.31	18.96	9328.903	9.479	9273.024
2,4,5-TP (Silvex)	95.06	25062.84	47.53	24847.17	38.02	24251.6	23.76	22957.87	19.01	21022.88	9.506	21813.49
2,4,5-TP (Silvex)	95.06	25062.84	47.53	24847.17	38.02	24251.6	23.76	22957.87	19.01	21022.88	9.506	21813.49
2,4,5-TP (Silvex)	95.06	25062.84	47.53	24847.17	38.02	24251.6	23.76	22957.87	19.01	21022.88	9.506	21813.49
2,4,5-TP (Silvex) [2C]	95.06	13779.43	47.53	14424.91	38.02	14390.72	23.76	14574.62	19.01	13486.74	9.506	14321.27
2,4,5-TP (Silvex) [2C]	95.06	13779.43	47.53	14424.91	38.02	14390.72	23.76	14574.62	19.01	13486.74	9.506	14321.27
2,4,5-TP (Silvex) [2C]	95.06	13779.43	47.53	14424.91	38.02	14390.72	23.76	14574.62	19.01	13486.74	9.506	14321.27
2,4-D	940.7	4814.152	470.4	4959.956	376.3	4751.804	235.2	4953.856	188.1	4021.696	94.07	4959.764
2,4-D	940.7	4814.152	470.4	4959.956	376.3	4751.804	235.2	4953.856	188.1	4021.696	94.07	4959.764
2,4-D	940.7	4814.152	470.4	4959.956	376.3	4751.804	235.2	4953.856	188.1	4021.696	94.07	4959.764
2,4-D [2C]	940.7	3245.047	470.4	3510.687	376.3	3382.049	235.2	3714.617	188.1	3081.34	94.07	3777.092
2,4-D [2C]	940.7	3245.047	470.4	3510.687	376.3	3382.049	235.2	3714.617	188.1	3081.34	94.07	3777.092
2,4-D [2C]	940.7	3245.047	470.4	3510.687	376.3	3382.049	235.2	3714.617	188.1	3081.34	94.07	3777.092
2,4-DB	947	3174.997	473.5	3199.104	378.8	2918.965	236.8	2957.268	189.4	2333.728	94.7	2322.292
2,4-DB	947	3174.997	473.5	3199.104	378.8	2918.965	236.8	2957.268	189.4	2333.728	94.7	2322.292
2,4-DB	947	3174.997	473.5	3199.104	378.8	2918.965	236.8	2957.268	189.4	2333.728	94.7	2322.292
2,4-DB [2C]	947	2074.621	473.5	2115.402	378.8	2064.559	236.8	2076.457	189.4	1752.777	94.7	1826.568
2,4-DB [2C]	947	2074.621	473.5	2115.402	378.8	2064.559	236.8	2076.457	189.4	1752.777	94.7	1826.568
2,4-DB [2C]	947	2074.621	473.5	2115.402	378.8	2064.559	236.8	2076.457	189.4	1752.777	94.7	1826.568
2,4-Dichlorophenylacetic acid	468.2	3790.784	234.1	3871.803	187.3	3870.422	117	3867.675	93.64	3802.712	46.82	4184.494
2,4-Dichlorophenylacetic acid	468.2	3790.784	234.1	3871.803	187.3	3870.422	117	3867.675	93.64	3802.712	46.82	4184.494
2,4-Dichlorophenylacetic acid	468.2	3790.784	234.1	3871.803	187.3	3870.422	117	3867.675	93.64	3802.712	46.82	4184.494
2,4-Dichlorophenylacetic acid	468.2	2991.017	234.1	3188.185	187.3	3240.667	117	3407.154	93.64	3347.992	46.82	3685.519
2,4-Dichlorophenylacetic acid	468.2	2991.017	234.1	3188.185	187.3	3240.667	117	3407.154	93.64	3347.992	46.82	3685.519
2,4-Dichlorophenylacetic acid	468.2	2991.017	234.1	3188.185	187.3	3240.667	117	3407.154	93.64	3347.992	46.82	3685.519
Dalapon	2277	4791.788	1138	4508.396	910.8	4620.393	569.2	4363.363	455.4	4321.766	227.7	4483.746

INITIAL CALIBRATION DATA
SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Calibration:	9336002	Instrument:	GL-ECD3
Matrix:	Water	Calibration Date:	11/30/2009 3:25:43PM

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Dalapon	2277	4791.788	1138	4508.396	910.8	4620.393	569.2	4363.363	455.4	4321.766	227.7	4483.746
Dalapon	2277	4791.788	1138	4508.396	910.8	4620.393	569.2	4363.363	455.4	4321.766	227.7	4483.746
Dalapon [2C]	2277	3236.234	1138	3253.006	910.8	3374.526	569.2	3326.381	455.4	3266.741	227.7	3350.347
Dalapon [2C]	2277	3236.234	1138	3253.006	910.8	3374.526	569.2	3326.381	455.4	3266.741	227.7	3350.347
Dalapon [2C]	2277	3236.234	1138	3253.006	910.8	3374.526	569.2	3326.381	455.4	3266.741	227.7	3350.347
Dicamba	94.07	16969.39	47.04	17405.44	37.63	17474.41	23.52	17404.97	18.81	16732.16	9.407	18576.27
Dicamba	94.07	16969.39	47.04	17405.44	37.63	17474.41	23.52	17404.97	18.81	16732.16	9.407	18576.27
Dicamba	94.07	16969.39	47.04	17405.44	37.63	17474.41	23.52	17404.97	18.81	16732.16	9.407	18576.27
Dicamba [2C]	94.07	10598.27	47.04	11366.28	37.63	11540.18	23.52	12025.04	18.81	11746.36	9.407	12928.56
Dicamba [2C]	94.07	10598.27	47.04	11366.28	37.63	11540.18	23.52	12025.04	18.81	11746.36	9.407	12928.56
Dicamba [2C]	94.07	10598.27	47.04	11366.28	37.63	11540.18	23.52	12025.04	18.81	11746.36	9.407	12928.56
Dichloroprop	943.4	3783.987	471.7	3868.817	377.4	3865.326	235.8	3927.918	188.7	3668.792	94.34	4294.181
Dichloroprop	943.4	3783.987	471.7	3868.817	377.4	3865.326	235.8	3927.918	188.7	3668.792	94.34	4294.181
Dichloroprop	943.4	3783.987	471.7	3868.817	377.4	3865.326	235.8	3927.918	188.7	3668.792	94.34	4294.181
Dichloroprop [2C]	943.4	2403.315	471.7	2613.691	377.4	2635.366	235.8	2669.118	188.7	2546.301	94.34	3048.749
Dichloroprop [2C]	943.4	2403.315	471.7	2613.691	377.4	2635.366	235.8	2669.118	188.7	2546.301	94.34	3048.749
Dichloroprop [2C]	943.4	2403.315	471.7	2613.691	377.4	2635.366	235.8	2669.118	188.7	2546.301	94.34	3048.749
Dinoseb	472.6	14552.97	236.3	14682.3	189	14235.25	118.2	14001.46	94.52	12014.92	47.26	13811.7
Dinoseb	472.6	14552.97	236.3	14682.3	189	14235.25	118.2	14001.46	94.52	12014.92	47.26	13811.7
Dinoseb	472.6	14552.97	236.3	14682.3	189	14235.25	118.2	14001.46	94.52	12014.92	47.26	13811.7
Dinoseb [2C]	472.6	7976.798	236.3	8407.978	189	8297.477	118.2	8589.695	94.52	7442.171	47.26	8467.203
Dinoseb [2C]	472.6	7976.798	236.3	8407.978	189	8297.477	118.2	8589.695	94.52	7442.171	47.26	8467.203
Dinoseb [2C]	472.6	7976.798	236.3	8407.978	189	8297.477	118.2	8589.695	94.52	7442.171	47.26	8467.203
MCPA	93460	22.41603	46730	23.52472	37380	23.77344	23360	25.94872	18690	24.80594	9346	33.38723
MCPA	93460	22.41603	46730	23.52472	37380	23.77344	23360	25.94872	18690	24.80594	9346	33.38723
MCPA	93460	22.41603	46730	23.52472	37380	23.77344	23360	25.94872	18690	24.80594	9346	33.38723
MCPA [2C]	93460	19.7921	46730	20.79433	37380	20.60409	23360	22.15963	18690	20.63751	9346	25.87331
MCPA [2C]	93460	19.7921	46730	20.79433	37380	20.60409	23360	22.15963	18690	20.63751	9346	25.87331
MCPA [2C]	93460	19.7921	46730	20.79433	37380	20.60409	23360	22.15963	18690	20.63751	9346	25.87331
MCPP	93900	15.56674	46950	16.67764	37560	17.40083	23480	18.80085	18780	19.35634	9390	24.91108
MCPP	93900	15.56674	46950	16.67764	37560	17.40083	23480	18.80085	18780	19.35634	9390	24.91108

INITIAL CALIBRATION DATA
SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Calibration:	9336002	Instrument:	GL-ECD3
Matrix:	Water	Calibration Date:	11/30/2009 3:25:43PM

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
MCPP	93900	15.56674	46950	16.67764	37560	17.40083	23480	18.80085	18780	19.35634	9390	24.91108
MCPP [2C]	93900	13.63585	46950	14.24509	37560	14.51307	23480	15.26052	18780	15.26049	9390	17.64249
MCPP [2C]	93900	13.63585	46950	14.24509	37560	14.51307	23480	15.26052	18780	15.26049	9390	17.64249
MCPP [2C]	93900	13.63585	46950	14.24509	37560	14.51307	23480	15.26052	18780	15.26049	9390	17.64249

INITIAL CALIBRATION DATA (Continued)

SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Calibration:	9336002	Instrument:	GL-ECD3
Matrix:	Water	Calibration Date:	11/30/2009 3:25:43PM

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
2,4,5-T	4.74	21074.26										
2,4,5-T	4.74	21074.26										
2,4,5-T	4.74	21074.26										
2,4,5-T [2C]	4.74	13410.34										
2,4,5-T [2C]	4.74	13410.34										
2,4,5-T [2C]	4.74	13410.34										
2,4,5-TP (Silvex)	4.753	24642.12										
2,4,5-TP (Silvex)	4.753	24642.12										
2,4,5-TP (Silvex)	4.753	24642.12										
2,4,5-TP (Silvex) [2C]	4.753	12415.11										
2,4,5-TP (Silvex) [2C]	4.753	12415.11										
2,4,5-TP (Silvex) [2C]	4.753	12415.11										
2,4-D	47.04	5294.494										
2,4-D	47.04	5294.494										
2,4-D	47.04	5294.494										
2,4-D [2C]	47.04	4965.051										
2,4-D [2C]	47.04	4965.051										
2,4-D [2C]	47.04	4965.051										
2,4-DB	47.35	1996.874										
2,4-DB	47.35	1996.874										
2,4-DB	47.35	1996.874										
2,4-DB [2C]	47.35	1957.867										
2,4-DB [2C]	47.35	1957.867										
2,4-DB [2C]	47.35	1957.867										
2,4-Dichlorophenylacetic acid	23.41	4652.285										
2,4-Dichlorophenylacetic acid	23.41	4652.285										
2,4-Dichlorophenylacetic acid	23.41	4652.285										
2,4-Dichlorophenylacetic acid	23.41	4192.14										
2,4-Dichlorophenylacetic acid	23.41	4192.14										
2,4-Dichlorophenylacetic acid	23.41	4192.14										
Dalapon	113.8	4801.292										

INITIAL CALIBRATION DATA (Continued)

SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Calibration:	9336002	Instrument:	GL-ECD3
Matrix:	Water	Calibration Date:	11/30/2009 3:25:43PM

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Dalapon	113.8	4801.292										
Dalapon	113.8	4801.292										
Dalapon [2C]	113.8	3647.794										
Dalapon [2C]	113.8	3647.794										
Dalapon [2C]	113.8	3647.794										
Dicamba	4.704	20708.76										
Dicamba	4.704	20708.76										
Dicamba	4.704	20708.76										
Dicamba [2C]	4.704	14486.82										
Dicamba [2C]	4.704	14486.82										
Dicamba [2C]	4.704	14486.82										
Dichloroprop	47.17	4940.937										
Dichloroprop	47.17	4940.937										
Dichloroprop	47.17	4940.937										
Dichloroprop [2C]	47.17	3556.731										
Dichloroprop [2C]	47.17	3556.731										
Dichloroprop [2C]	47.17	3556.731										
Dinoseb	23.63	16491.66										
Dinoseb	23.63	16491.66										
Dinoseb	23.63	16491.66										
Dinoseb [2C]	23.63	10339.1										
Dinoseb [2C]	23.63	10339.1										
Dinoseb [2C]	23.63	10339.1										
MCPA	4673	43.15429										
MCPA	4673	43.15429										
MCPA	4673	43.15429										
MCPA [2C]	4673	31.59748										
MCPA [2C]	4673	31.59748										
MCPA [2C]	4673	31.59748										
MCPP	4695	32.09244										
MCPP	4695	32.09244										

INITIAL CALIBRATION DATA (Continued)

SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Calibration:	9336002	Instrument:	GL-ECD3
Matrix:	Water	Calibration Date:	11/30/2009 3:25:43PM

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
MCPP	4695	32.09244										
MCPP [2C]	4695	21.29031										
MCPP [2C]	4695	21.29031										
MCPP [2C]	4695	21.29031										

ANALYSIS SEQUENCE SUMMARY
SW8151A

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Sequence: 9L33608
Calibration: 9336002

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Instrument: GL-ECD3

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	9L33608-CAL1	027F2701.D	11/30/09 21:53
Cal Standard	9L33608-CAL1	027R2701.D	11/30/09 21:53
Cal Standard	9L33608-CAL2	028F2801.D	11/30/09 22:18
Cal Standard	9L33608-CAL2	028R2801.D	11/30/09 22:18
Cal Standard	9L33608-CAL3	029R2901.D	11/30/09 22:43
Cal Standard	9L33608-CAL3	029F2901.D	11/30/09 22:43
Cal Standard	9L33608-CAL4	030R3001.D	11/30/09 23:09
Cal Standard	9L33608-CAL4	030F3001.D	11/30/09 23:09
Cal Standard	9L33608-CAL5	031R3101.D	11/30/09 23:34
Cal Standard	9L33608-CAL5	031F3101.D	11/30/09 23:34
Cal Standard	9L33608-CAL6	032R3201.D	11/30/09 23:59
Cal Standard	9L33608-CAL6	032F3201.D	11/30/09 23:59
Cal Standard	9L33608-CAL7	033R3301.D	12/01/09 00:25
Cal Standard	9L33608-CAL7	033F3301.D	12/01/09 00:25
Initial Cal Check	9L33608-ICV1	034F3401.D	12/01/09 00:50
Initial Cal Check	9L33608-ICV1	034R3401.D	12/01/09 00:50
Calibration Check	9L33608-CCV1	035R3501.D	12/01/09 01:16
Calibration Check	9L33608-CCV1	035F3501.D	12/01/09 01:16
Blank	9K18015-BLK1	036R3601.D	12/01/09 01:41
Blank	9K18015-BLK1	036F3601.D	12/01/09 01:41
LCS	9K18015-BS1	037R3701.D	12/01/09 02:06
LCS	9K18015-BS1	037F3701.D	12/01/09 02:06
NTC21SB02-SO-0406	0911147-01	039F3901.D	12/01/09 02:57
NTC21SB02-SO-0406	0911147-01	039R3901.D	12/01/09 02:57
NTC21SB02-SO-0406	9K18015-MS1	040F4001.D	12/01/09 03:22
NTC21SB02-SO-0406	9K18015-MS1	040R4001.D	12/01/09 03:22
NTC21SB02-SO-0406	9K18015-MSD1	041F4101.D	12/01/09 03:47
NTC21SB02-SO-0406	9K18015-MSD1	041R4101.D	12/01/09 03:47
Blank	9K23022-BLK1	042R4201.D	12/01/09 04:13
Blank	9K23022-BLK1	042F4201.D	12/01/09 04:13
LCS	9K23022-BS1	043R4301.D	12/01/09 04:38
LCS	9K23022-BS1	043F4301.D	12/01/09 04:38

ANALYSIS SEQUENCE SUMMARY
SW8151A

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Sequence: 9L33608
Calibration: 9336002

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Instrument: GL-ECD3

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
LCS Dup	9K23022-BSD1	044F4401.D	12/01/09 05:03
LCS Dup	9K23022-BSD1	044R4401.D	12/01/09 05:03
NTC21MW0101	0911181-02	046F4601.D	12/01/09 05:53
NTC21MW0101	0911181-02	046R4601.D	12/01/09 05:53
NTC21MW0601	0911181-03	047F4701.D	12/01/09 06:19
NTC21MW0601	0911181-03	047R4701.D	12/01/09 06:19
Calibration Check	9L33608-CCV2	048F4801.D	12/01/09 06:44
Calibration Check	9L33608-CCV2	048R4801.D	12/01/09 06:44
Blank	9K18013-BLK1	049F4901.D	12/01/09 07:09
Blank	9K18013-BLK1	049R4901.D	12/01/09 07:09
LCS	9K18013-BS1	050F5001.D	12/01/09 07:35
LCS	9K18013-BS1	050R5001.D	12/01/09 07:35
NTC21MW0501	0911151-01	056R5601.D	12/01/09 10:06
NTC21MW0501	0911151-01	056F5601.D	12/01/09 10:06
NTC21MW0501	9K18013-MS1	057F5701.D	12/01/09 10:32
NTC21MW0501	9K18013-MS1	057R5701.D	12/01/09 10:32
NTC21MW0501	9K18013-MSD1	058R5801.D	12/01/09 10:57
NTC21MW0501	9K18013-MSD1	058F5801.D	12/01/09 10:57
NTC21-FD111609-01	0911151-02	059R5901.D	12/01/09 11:23
NTC21-FD111609-01	0911151-02	059F5901.D	12/01/09 11:23
NTC21MW0201	0911151-03	060R6001.D	12/01/09 11:48
NTC21MW0201	0911151-03	060F6001.D	12/01/09 11:48
NTC21MW0301	0911151-04	061R6101.D	12/01/09 12:13
NTC21MW0301	0911151-04	061F6101.D	12/01/09 12:13
NTC21MW0401	0911151-05	062R6201.D	12/01/09 12:38
NTC21MW0401	0911151-05	062F6201.D	12/01/09 12:38
Calibration Check	9L33608-CCV3	063R6301.D	12/01/09 13:04
Calibration Check	9L33608-CCV3	063F6301.D	12/01/09 13:04

CONTINUING CALIBRATION CHECK

SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Instrument ID:	GL-ECD3	Calibration:	9336002
Lab File ID:	035F3501.D	Calibration Date:	11/30/09 15:25
Sequence:	9L33608	Injection Date:	12/01/09
Lab Sample ID:	9L33608-CCV1	Injection Time:	01:16

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
2,4,5-T	A	18.96	17.56	17952.07	16627.95		-7.4	20
2,4,5-T [2C]	A	18.96	18.25	11255.39	10837.34		-3.7	20
2,4,5-TP (Silvex)	A	19.01	20.24	23514	25036.03		6.5	20
2,4,5-TP (Silvex) [2C]	A	19.01	20.47	13913.26	14984.53		7.7	20
2,4-D	A	188.1	181.6	4822.246	4656.215		-3.4	20
2,4-D [2C]	A	188.1	173.2	3667.983	3378.283		-7.9	20
2,4-DB	A	189.4	205.1	2700.461	2924.182		8.3	20
2,4-DB [2C]	A	189.4	197.0	1981.179	2060.312		4.0	20
Dalapon	A	455.4	446.2	4555.82	4464.01		-2.0	20
Dalapon [2C]	A	455.4	459.8	3350.718	3382.686		1.0	20
Dicamba	A	18.81	19.40	17895.92	18461.19		3.2	20
Dicamba [2C]	A	18.81	19.34	12098.79	12439.98		2.8	20
Dichloroprop	A	188.7	194.1	4049.994	4166.577		2.9	20
Dichloroprop [2C]	A	188.7	185.4	2781.896	2732.623		-1.8	20
Dinoseb	A	94.52	96.38	14255.75	14537.73		2.0	20
Dinoseb [2C]	A	94.52	93.57	8502.918	8417.975		-1.0	20
MCPA	L	18690	19580	28.14434	27.53628		4.8	20
MCPA [2C]	A	18690	17790	23.06549	21.9542		-4.8	20
MCPP	L	18780	20730	20.68656	21.11816		10.4	20
MCPP [2C]	A	18780	19000	15.97826	16.1664		1.2	20
2,4-Dichlorophenylacetic acid	A	93.64	98.69	4005.739	4221.903		5.4	20
2,4-Dichlorophenylacetic acid [2C	A	93.64	97.02	3436.096	3560.263		3.6	20

♯ Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Instrument ID:	GL-ECD3	Calibration:	9336002
Lab File ID:	048F4801.D	Calibration Date:	11/30/09 15:25
Sequence:	9L33608	Injection Date:	12/01/09
Lab Sample ID:	9L33608-CCV2	Injection Time:	06:44

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
2,4,5-T	A	18.96	18.48	17952.07	17502.8		-2.5	20
2,4,5-T [2C]	A	18.96	20.27	11255.39	12036.45		6.9	20
2,4,5-TP (Silvex)	A	19.01	20.79	23514	25719.36		9.4	20
2,4,5-TP (Silvex) [2C]	A	19.01	21.34	13913.26	15614.62		12.2	20
2,4-D	A	188.1	187.5	4822.246	4808.097		-0.3	20
2,4-D [2C]	A	188.1	176.8	3667.983	3448.581		-6.0	20
2,4-DB	A	189.4	209.7	2700.461	2989.847		10.7	20
2,4-DB [2C]	A	189.4	214.8	1981.179	2247.36		13.4	20
Dalapon	A	455.4	500.4	4555.82	5006.175		9.9	20
Dalapon [2C]	A	455.4	480.5	3350.718	3535.38		5.5	20
Dicamba	A	18.81	18.46	17895.92	17564.22		-1.9	20
Dicamba [2C]	A	18.81	20.02	12098.79	12876.98		6.4	20
Dichloroprop	A	188.7	188.4	4049.994	4044.038		-0.1	20
Dichloroprop [2C]	A	188.7	195.6	2781.896	2883.471		3.7	20
Dinoseb	A	94.52	103.0	14255.75	15534.62		9.0	20
Dinoseb [2C]	A	94.52	100.1	8502.918	9008.369		5.9	20
MCPA	L	18690	19470	28.14434	27.41038		4.2	20
MCPA [2C]	A	18690	18330	23.06549	22.61942		-1.9	20
MCPP	L	18780	20940	20.68656	21.27961		11.5	20
MCPP [2C]	A	18780	19680	15.97826	16.7426		4.8	20
2,4-Dichlorophenylacetic acid	A	93.64	104.2	4005.739	4458.084		11.3	20
2,4-Dichlorophenylacetic acid [2C	A	93.64	103.2	3436.096	3785.551		10.2	20

ǂ Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK
SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Instrument ID:	GL-ECD3	Calibration:	9336002
Lab File ID:	063F6301.D	Calibration Date:	11/30/09 15:25
Sequence:	9L33608	Injection Date:	12/01/09
Lab Sample ID:	9L33608-CCV3	Injection Time:	13:04

COMPOUND	TYPE	CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
		STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
2,4,5-T	A	18.96	19.42	17952.07	18392.72		2.5	20
2,4,5-T [2C]	A	18.96	19.47	11255.39	11562.18		2.7	20
2,4,5-TP (Silvex)	A	19.01	21.06	23514	26050.18		10.8	20
2,4,5-TP (Silvex) [2C]	A	19.01	20.56	13913.26	15048.08		8.2	20
2,4-D	A	188.1	190.1	4822.246	4872.844		1.0	20
2,4-D [2C]	A	188.1	174.3	3667.983	3399.048		-7.3	20
2,4-DB	A	189.4	221.7	2700.461	3160.739		17.0	20
2,4-DB [2C]	A	189.4	207.6	1981.179	2171.948		9.6	20
Dalapon	A	455.4	498.9	4555.82	4990.274		9.5	20
Dalapon [2C]	A	455.4	474.1	3350.718	3487.795		4.1	20
Dicamba	A	18.81	19.20	17895.92	18266.29		2.1	20
Dicamba [2C]	A	18.81	19.66	12098.79	12647.1		4.5	20
Dichloroprop	A	188.7	188.5	4049.994	4045.904		-0.1	20
Dichloroprop [2C]	A	188.7	190.6	2781.896	2809.433		1.0	20
Dinoseb	A	94.52	103.1	14255.75	15544.79		9.0	20
Dinoseb [2C]	A	94.52	97.03	8502.918	8729.655		2.7	20
MCPA	L	18690	19020	28.14434	26.89299		1.8	20
MCPA [2C]	A	18690	17890	23.06549	22.07908		-4.3	20
MCPP	L	18780	20380	20.68656	20.84302		8.5	20
MCPP [2C]	A	18780	19130	15.97826	16.27812		1.9	20
2,4-Dichlorophenylacetic acid	A	93.64	108.0	4005.739	4621.091		15.4	20
2,4-Dichlorophenylacetic acid [2C	A	93.64	101.6	3436.096	3729.71		8.5	20

! Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

Values outside of QC limits

PREPARATION BATCH SUMMARY
SW8151A

Laboratory: Empirical Laboratories, LLC SDG: CTO064_002

Client: Tetra Tech NUS, Inc. (T010) Project: Great Lakes CTO 064 (Site 21)

Batch: 9K18013 Batch Matrix: Water Preparation: EXT_8151

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
NTC21MW0501	0911151-01	11/20/09 14:50	1,020.00	10.00
NTC21-FD111609-01	0911151-02	11/20/09 14:50	1,080.00	10.00
NTC21MW0201	0911151-03	11/20/09 14:50	1,020.00	10.00
NTC21MW0301	0911151-04	11/20/09 14:50	1,020.00	10.00
NTC21MW0401	0911151-05	11/20/09 14:50	1,020.00	10.00
Blank	9K18013-BLK1	11/20/09 14:50	1,000.00	10.00
LCS	9K18013-BS1	11/20/09 14:50	1,000.00	10.00
NTC21MW0501	9K18013-MS1	11/20/09 14:50	1,000.00	10.00
NTC21MW0501	9K18013-MSD1	11/20/09 14:50	1,080.00	10.00

ANALYSIS DATA SHEET

Blank

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_002	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:		Laboratory ID:	9K18013-BLK1	File ID:	049R4901.D
Sampled:		Prepared:	11/20/09 14:50	Analyzed:	12/01/09 07:09
Solids:		Preparation:	EXT_8151	Dilution:	

Batch: 9K18013 Sequence: 9L33608 Calibration: 9336002 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
93-76-5	2,4,5-T		0.0250	0.0500	U
93-72-1	2,4,5-TP (Silvex)		0.0250	0.0500	U
94-75-7	2,4-D		0.250	0.500	U
94-82-6	2,4-DB		0.250	0.500	U
75-99-0	Dalapon		0.625	1.25	U
1918-00-9	Dicamba		0.0250	0.0500	U
120-36-5	Dichloroprop		0.250	0.500	U
88-85-7	Dinoseb		0.125	0.250	U
94-74-6	MCPA		25.0	50.0	U
7085-19-0	MCPP		25.0	50.0	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	1.000	1.027	103	20 - 140	
2,4-Dichlorophenylacetic acid [2C]	1.000	0.9154	91.5	20 - 140	

* Values outside of QC limits

PREPARATION BATCH SUMMARY
SW8151A

Laboratory: Empirical Laboratories, LLC
SDG: CTO064_002
Client: Tetra Tech NUS, Inc. (T010)
Project: Great Lakes CTO 064 (Site 21)
Batch: 9K18015 Batch Matrix: Solid
Preparation: EXT_8151

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
NTC21SB02-SO-0406	0911147-01	11/27/09 11:30	10.00	10.00
Blank	9K18015-BLK1	11/27/09 11:30	10.00	10.00
LCS	9K18015-BS1	11/27/09 11:30	10.00	10.00
NTC21SB02-SO-0406	9K18015-MS1	11/27/09 11:30	10.00	10.00
NTC21SB02-SO-0406	9K18015-MSD1	11/27/09 11:30	10.00	10.00

ANALYSIS DATA SHEET

Blank

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_002	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:		Laboratory ID:	9K18015-BLK1	File ID:	036R3601.D
Sampled:		Prepared:	11/27/09 11:30	Analyzed:	12/01/09 01:41
Solids:		Preparation:	EXT_8151	Dilution:	

Batch: 9K18015 Sequence: 9L33608 Calibration: 9336002 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/Kg wet)	MDL	MRL	Q
93-76-5	2,4,5-T		2.50	5.00	U
93-72-1	2,4,5-TP (Silvex)		2.50	5.00	U
94-75-7	2,4-D		25.0	50.0	U
94-82-6	2,4-DB		25.0	50.0	U
75-99-0	Dalapon		62.5	125	U
1918-00-9	Dicamba		2.50	5.00	U
120-36-5	Dichloroprop		25.0	50.0	U
88-85-7	Dinoseb		12.5	25.0	U
94-74-6	MCPA		2500	5000	U
7085-19-0	MCPP		2500	5000	U

SYSTEM MONITORING COMPOUND	ADDED (ug/Kg wet)	CONC (ug/Kg wet)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	100.0	91.10	91.1	30 - 120	
2,4-Dichlorophenylacetic acid [2C]	100.0	91.47	91.5	30 - 120	

* Values outside of QC limits

PREPARATION BATCH SUMMARY
SW8151A

Laboratory: Empirical Laboratories, LLC SDG: CTO064_002

Client: Tetra Tech NUS, Inc. (T010) Project: Great Lakes CTO 064 (Site 21)

Batch: 9K23022 Batch Matrix: Water Preparation: EXT_8151

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
NTC21MW0101	0911181-02	11/23/09 12:55	1,040.00	10.00
NTC21MW0601	0911181-03	11/23/09 12:55	1,020.00	10.00
Blank	9K23022-BLK1	11/23/09 12:55	1,000.00	10.00
LCS	9K23022-BS1	11/23/09 12:55	1,000.00	10.00
LCS Dup	9K23022-BSD1	11/23/09 12:55	1,000.00	10.00

ANALYSIS DATA SHEET

Blank

Laboratory:	Empirical Laboratories, LLC		SDG:	CTO064_002	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	Great Lakes CTO 064 (Site 21)	
Matrix:		Laboratory ID:	9K23022-BLK1	File ID:	042R4201.D
Sampled:		Prepared:	11/23/09 12:55	Analyzed:	12/01/09 04:13
Solids:		Preparation:	EXT_8151	Dilution:	

Batch: 9K23022 Sequence: 9L33608 Calibration: 9336002 Instrument: GL-ECD3

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	MRL	Q
93-76-5	2,4,5-T		0.0250	0.0500	U
93-72-1	2,4,5-TP (Silvex)		0.0250	0.0500	U
94-75-7	2,4-D		0.250	0.500	U
94-82-6	2,4-DB		0.250	0.500	U
75-99-0	Dalapon		0.625	1.25	U
1918-00-9	Dicamba		0.0250	0.0500	U
120-36-5	Dichloroprop		0.250	0.500	U
88-85-7	Dinoseb		0.125	0.250	U
94-74-6	MCPA		25.0	50.0	U
7085-19-0	MCPP		25.0	50.0	U

SYSTEM MONITORING COMPOUND	ADDED (ug/L)	CONC (ug/L)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	1.000	0.9891	98.9	20 - 140	
2,4-Dichlorophenylacetic acid [2C]	1.000	0.8857	88.6	20 - 140	

* Values outside of QC limits

LCS / LCS DUPLICATE RECOVERY

SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Water		
Batch:	9K18013 affects FD 2D1 3D1	Laboratory ID:	9K18013-BS1
Preparation:	EXT_8151	Initial/Final:	1000 mL / 10 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
2,4,5-T	0.2000	0.2144	107	35 - 110
2,4,5-T [2C]	**0.2000**	**0.3456**	**173**	**35 - 110**
2,4,5-TP (Silvex)	0.2000	0.1685	84.3	50 - 115
2,4,5-TP (Silvex) [2C]	0.2000	0.1652	82.6	50 - 115
2,4-D	2.000	1.849	92.5	35 - 115
2,4-D [2C]	2.000	1.715	85.8	35 - 115
2,4-DB	2.000	1.869	93.4	45 - 130
2,4-DB [2C]	2.000	1.806	90.3	45 - 130
Dalapon	5.000	3.385	67.7	40 - 115
Dalapon [2C]	5.000	3.369	67.4	40 - 115
Dicamba	0.2000	0.1612	80.6	60 - 110
Dicamba [2C]	0.2000	0.1633	81.7	60 - 110
Dichloroprop	2.000	2.247	112	70 - 120
Dichloroprop [2C]	2.000	2.379	119	70 - 120
Dinoseb	**1.000**	**0.9553**	**95.5**	**20 - 95**
Dinoseb [2C]	1.000	0.8457	84.6	20 - 95
MCPA	200.0	167.7	83.9	60 - 145
MCPA [2C]	200.0	162.5	81.3	60 - 145
MCPP	200.0	164.9	82.4	25 - 135
MCPP [2C]	200.0	159.5	79.7	25 - 135

LCS / LCS DUPLICATE RECOVERY
SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Water		
Batch:	9K23022 affect 101	Laboratory ID:	9K23022-BS1
Preparation:	EXT_8151	Initial/Final:	1000 mL / 10 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
2,4,5-T	**0.2000**	**0.2620**	**131**	**35 - 110**
2,4,5-T [2C]	**0.2000**	**0.3087**	**154**	**35 - 110**
2,4,5-TP (Silvex)	0.2000	0.2155	108	50 - 115
2,4,5-TP (Silvex) [2C]	0.2000	0.1837	91.8	50 - 115
2,4-D	2.000	2.128	106	35 - 115
2,4-D [2C]	2.000	1.783	89.2	35 - 115
2,4-DB	2.000	2.095	105	45 - 130
2,4-DB [2C]	2.000	1.777	88.8	45 - 130
Dalapon	5.000	3.946	78.9	40 - 115
Dalapon [2C]	5.000	4.172	83.4	40 - 115
Dicamba	0.2000	0.1941	97.1	60 - 110
Dicamba [2C]	0.2000	0.1762	88.1	60 - 110
Dichloroprop	**2.000**	**2.549**	**127**	**70 - 120**
Dichloroprop [2C]	**2.000**	**2.448**	**122**	**70 - 120**
Dinoseb	**1.000**	**1.060**	**106**	**20 - 95**
Dinoseb [2C]	1.000	0.9099	91.0	20 - 95
MCPA	200.0	215.9	108	60 - 145
MCPA [2C]	200.0	170.2	85.1	60 - 145
MCPP	200.0	189.2	94.6	25 - 135
MCPP [2C]	**200.0**	**318.9**	**159**	**25 - 135**

ANALYTE	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
2,4,5-T	**0.2000**	**0.2721**	**136 ***	**3.82**	**30**	**35 - 110**
2,4,5-T [2C]	**0.2000**	**0.3793**	**190 ***	**20.5**	**30**	**35 - 110**
2,4,5-TP (Silvex)	0.2000	0.2237	112	3.72	30	50 - 115
2,4,5-TP (Silvex) [2C]	0.2000	0.1941	97.1	5.55	30	50 - 115
2,4-D	2.000	2.180	109	2.43	30	35 - 115
2,4-D [2C]	2.000	1.883	94.1	5.45	30	35 - 115
2,4-DB	2.000	2.220	111	5.78	30	45 - 130

LCS / LCS DUPLICATE RECOVERY
SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Water		
Batch:	9K23022	Laboratory ID:	9K23022-BSD1
Preparation:	EXT_8151	Initial/Final:	1000 mL / 10 mL

ANALYTE	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
2,4-DB [2C]	2.000	2.124	106	17.8	30	45 - 130
Dalapon	5.000	4.233	84.7	7.02	30	40 - 115
Dalapon [2C]	5.000	4.542	90.8	8.47	30	40 - 115
Dicamba	0.2000	0.1997	99.8	2.82	30	60 - 110
Dicamba [2C]	0.2000	0.1870	93.5	5.95	30	60 - 110
Dichloroprop	**2.000**	**2.555**	**128 ***	**0.229**	**30**	**70 - 120**
Dichloroprop [2C]	**2.000**	**2.550**	**128 ***	**4.09**	**30**	**70 - 120**
Dinoseb	**1.000**	**1.075**	**107 ***	**1.32**	**30**	**20 - 95**
Dinoseb [2C]	**1.000**	**0.9603**	**96.0 ***	**5.38**	**30**	**20 - 95**
MCPA	200.0	220.7	110	2.21	30	60 - 145
MCPA [2C]	200.0	178.8	89.4	4.94	30	60 - 145
MCPP	200.0	204.0	102	7.52	30	25 - 135
MCPP [2C]	**200.0**	**323.9**	**162 ***	**1.56**	**30**	**25 - 135**

SURROGATE STANDARD RECOVERY AND RT SUMMARY
SW8151A

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Sequence: 9L33608

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Instrument: GL-ECD3
Calibration: 9336002

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
Initial Cal Check (9L33608-ICV1) ug/L				Lab File ID: 034F3401.D		Analyzed: 12/01/09 00:50		
2,4-Dichlorophenylacetic acid	93.64	108	20 - 140	8.782	8.777	0.0050	+/-0.030	
2,4-Dichlorophenylacetic acid [2(	93.64	112	20 - 140	6.977	6.972	0.0050	+/-0.030	
Calibration Check (9L33608-CCV1) ug/L				Lab File ID: 035F3501.D		Analyzed: 12/01/09 01:16		
2,4-Dichlorophenylacetic acid	93.64	105	20 - 140	8.779	8.782	-0.0030	+/-0.030	
2,4-Dichlorophenylacetic acid [2(	93.64	104	20 - 140	6.976	6.977	-0.0010	+/-0.030	
Blank (9K18015-BLK1) ug/Kg wet				Lab File ID: 036F3601.D		Analyzed: 12/01/09 01:41		
2,4-Dichlorophenylacetic acid	100.0	91.1	30 - 120	8.775	8.779	-0.0040	+/-0.030	
2,4-Dichlorophenylacetic acid [2(	100.0	91.5	30 - 120	6.977	6.976	0.0010	+/-0.030	
LCS (9K18015-BS1) ug/Kg wet				Lab File ID: 037F3701.D		Analyzed: 12/01/09 02:06		
2,4-Dichlorophenylacetic acid	100.0	97.0	30 - 120	8.772	8.779	-0.0070	+/-0.030	
2,4-Dichlorophenylacetic acid [2(	100.0	93.9	30 - 120	6.971	6.976	-0.0050	+/-0.030	
NTC21SB02-SO-0406 (0911147-01) ug/Kg dry				Lab File ID: 039F3901.D		Analyzed: 12/01/09 02:57		
2,4-Dichlorophenylacetic acid	112.5	94.0	30 - 120	8.775	8.779	-0.0040	+/-0.030	
2,4-Dichlorophenylacetic acid [2(	112.5	91.7	30 - 120	6.975	6.976	-0.0010	+/-0.030	
Matrix Spike (9K18015-MS1) ug/Kg dry				Lab File ID: 040F4001.D		Analyzed: 12/01/09 03:22		
2,4-Dichlorophenylacetic acid	112.5	91.6	30 - 120	8.771	8.779	-0.0080	+/-0.030	
2,4-Dichlorophenylacetic acid [2(	112.5	86.1	30 - 120	6.97	6.976	-0.0060	+/-0.030	
Matrix Spike Dup (9K18015-MSD1) ug/Kg dry				Lab File ID: 041F4101.D		Analyzed: 12/01/09 03:47		
2,4-Dichlorophenylacetic acid	112.5	90.9	30 - 120	8.772	8.779	-0.0070	+/-0.030	
2,4-Dichlorophenylacetic acid [2(	112.5	85.2	30 - 120	6.971	6.976	-0.0050	+/-0.030	
Blank (9K23022-BLK1) ug/L				Lab File ID: 042F4201.D		Analyzed: 12/01/09 04:13		
2,4-Dichlorophenylacetic acid	1.000	98.9	20 - 140	8.774	8.779	-0.0050	+/-0.030	
2,4-Dichlorophenylacetic acid [2(	1.000	88.6	20 - 140	6.977	6.976	0.0010	+/-0.030	
LCS (9K23022-BS1) ug/L				Lab File ID: 043F4301.D		Analyzed: 12/01/09 04:38		
2,4-Dichlorophenylacetic acid	1.000	101	20 - 140	8.772	8.779	-0.0070	+/-0.030	
2,4-Dichlorophenylacetic acid [2(	1.000	88.2	20 - 140	6.97	6.976	-0.0060	+/-0.030	
LCS Dup (9K23022-BSD1) ug/L				Lab File ID: 044F4401.D		Analyzed: 12/01/09 05:03		
2,4-Dichlorophenylacetic acid	1.000	104	20 - 140	8.772	8.779	-0.0070	+/-0.030	
2,4-Dichlorophenylacetic acid [2(	1.000	92.7	20 - 140	6.972	6.976	-0.0040	+/-0.030	
NTC21MW0101 (0911181-02) ug/L				Lab File ID: 046F4601.D		Analyzed: 12/01/09 05:53		
2,4-Dichlorophenylacetic acid	0.9615	90.6	20 - 140	8.772	8.779	-0.0070	+/-0.030	
2,4-Dichlorophenylacetic acid [2(	0.9615	90.8	20 - 140	6.972	6.976	-0.0040	+/-0.030	

SURROGATE STANDARD RECOVERY AND RT SUMMARY
SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9L33608	Instrument:	GL-ECD3
		Calibration:	9336002

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
NTC21MW0601 (0911181-03) ug/L				Lab File ID: 047F4701.D		Analyzed: 12/01/09 06:19		
2,4-Dichlorophenylacetic acid	0.9804	96.8	20 - 140	8.774	8.779	-0.0050	+/-0.030	
2,4-Dichlorophenylacetic acid [2(	0.9804	88.5	20 - 140	6.976	6.976	0.0000	+/-0.030	
Calibration Check (9L33608-CCV2) ug/L				Lab File ID: 048F4801.D		Analyzed: 12/01/09 06:44		
2,4-Dichlorophenylacetic acid	93.64	111	20 - 140	8.777	8.779	-0.0020	+/-0.030	
2,4-Dichlorophenylacetic acid [2(	93.64	110	20 - 140	6.975	6.976	-0.0010	+/-0.030	
Blank (9K18013-BLK1) ug/L				Lab File ID: 049F4901.D		Analyzed: 12/01/09 07:09		
2,4-Dichlorophenylacetic acid	1.000	103	20 - 140	8.775	8.777	-0.0020	+/-0.030	
2,4-Dichlorophenylacetic acid [2(	1.000	91.5	20 - 140	6.978	6.975	0.0030	+/-0.030	
LCS (9K18013-BS1) ug/L				Lab File ID: 050F5001.D		Analyzed: 12/01/09 07:35		
2,4-Dichlorophenylacetic acid	1.000	88.2	20 - 140	8.771	8.777	-0.0060	+/-0.030	
2,4-Dichlorophenylacetic acid [2(	1.000	87.0	20 - 140	6.971	6.975	-0.0040	+/-0.030	
NTC21MW0501 (0911151-01) ug/L				Lab File ID: 056F5601.D		Analyzed: 12/01/09 10:06		
2,4-Dichlorophenylacetic acid	0.9804	94.3	20 - 140	8.776	8.777	-0.0010	+/-0.030	
2,4-Dichlorophenylacetic acid [2(	0.9804	97.8	20 - 140	6.977	6.975	0.0020	+/-0.030	
Matrix Spike (9K18013-MS1) ug/L				Lab File ID: 057F5701.D		Analyzed: 12/01/09 10:32		
2,4-Dichlorophenylacetic acid	1.000	131	20 - 140	8.767	8.777	-0.0100	+/-0.030	
2,4-Dichlorophenylacetic acid [2(	1.000	82.4	20 - 140	6.972	6.975	-0.0030	+/-0.030	
Matrix Spike Dup (9K18013-MSD1) ug/L				Lab File ID: 058F5801.D		Analyzed: 12/01/09 10:57		
2,4-Dichlorophenylacetic acid	1.852	99.2	20 - 140	8.772	8.777	-0.0050	+/-0.030	
2,4-Dichlorophenylacetic acid [2(	1.852	77.9	20 - 140	6.972	6.975	-0.0030	+/-0.030	
NTC21-FD111609-01 (0911151-02) ug/L				Lab File ID: 059F5901.D		Analyzed: 12/01/09 11:23		
2,4-Dichlorophenylacetic acid	0.9259	88.8	20 - 140	8.773	8.777	-0.0040	+/-0.030	
2,4-Dichlorophenylacetic acid [2(	0.9259	80.2	20 - 140	6.976	6.975	0.0010	+/-0.030	
NTC21MW0201 (0911151-03) ug/L				Lab File ID: 060F6001.D		Analyzed: 12/01/09 11:48		
2,4-Dichlorophenylacetic acid	0.9804	91.8	20 - 140	8.772	8.777	-0.0050	+/-0.030	
2,4-Dichlorophenylacetic acid [2(	0.9804	82.5	20 - 140	6.976	6.975	0.0010	+/-0.030	
NTC21MW0301 (0911151-04) ug/L				Lab File ID: 061F6101.D		Analyzed: 12/01/09 12:13		
2,4-Dichlorophenylacetic acid	0.9804	97.2	20 - 140	8.777	8.777	0.0000	+/-0.030	
2,4-Dichlorophenylacetic acid [2(	0.9804	81.9	20 - 140	6.977	6.975	0.0020	+/-0.030	
NTC21MW0401 (0911151-05) ug/L				Lab File ID: 062F6201.D		Analyzed: 12/01/09 12:38		
2,4-Dichlorophenylacetic acid	0.9804	97.5	20 - 140	8.777	8.777	0.0000	+/-0.030	
2,4-Dichlorophenylacetic acid [2(	0.9804	85.5	20 - 140	6.978	6.975	0.0030	+/-0.030	

SURROGATE STANDARD RECOVERY AND RT SUMMARY
SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9L33608	Instrument:	GL-ECD3
		Calibration:	9336002

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
Calibration Check (9L33608-CCV3) ug/L				Lab File ID: 063F6301.D		Analyzed: 12/01/09 13:04		
2,4-Dichlorophenylacetic acid	93.64	115	20 - 140	8.778	8.777	0.0010	+/-0.030	
2,4-Dichlorophenylacetic acid [2(	93.64	109	20 - 140	6.975	6.975	0.0000	+/-0.030	

FORM 10
HERB IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21-FD
111609-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH NUS

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CT0064_002

Lab Sample ID: 0911151-02 Date(s) Analyzed: 12/01/09 12/01/09

Instrument ID (1): ECD3 Instrument ID (2): ECD3

Column(1): MR-1 ID: 0.32(mm) Column(2): MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Dichloroprop	1	10.21	10.16	10.22	0.3508	
	2	7.93	7.88	7.94	0.4430	23.2
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

page 1 of 1

HERB

FORM 10
HERB IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21MW0101

Lab Name: EMPIRICAL LABS Contract: TETRATECH NUS

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CT0064_002

Lab Sample ID: 0911181-02 Date(s) Analyzed: 12/01/09 12/01/09

Instrument ID (1): ECD3 Instrument ID (2): ECD3

Column(1): MR-1 ID: 0.32(mm) Column(2): MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
2,4-DB	1	14.65	14.65	14.71	0.3522	
	2	11.24	11.19	11.25	0.6285	56.3
2,4,5-TP (Silvex)	1	12.40	12.38	12.44	0.03656	
	2	9.58	9.54	9.60	0.02956	21.2
Dalapon	1	3.79	3.76	3.82	11.69	
	2	3.12	3.10	3.16	0.7505	175.9
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

FORM 10
HERB IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21MW0201

Lab Name: EMPIRICAL LABS Contract: TETRATECH NUS

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CT0064_002

Lab Sample ID: 0911151-03 Date(s) Analyzed: 12/01/09 12/01/09

Instrument ID (1): ECD3 Instrument ID (2): ECD3

Column(1): MR-1 ID: 0.32(mm) Column(2): MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Dichloroprop	1	10.21	10.16	10.22	0.3833	
	2	7.93	7.88	7.94	0.5091	28.2
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

FORM 10
HERB IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21MW0301

Lab Name: EMPIRICAL LABS Contract: TETRATECH NUS

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CT0064_002

Lab Sample ID: 0911151-04 Date(s) Analyzed: 12/01/09 12/01/09

Instrument ID (1): ECD3 Instrument ID (2): ECD3

Column(1): MR-1 ID: 0.32(mm) Column(2): MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Dichloroprop	1	10.21	10.16	10.22	0.3312	
	2	7.94	7.88	7.94	0.3442	3.8
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

page 1 of 1

HERB

FORM 10
HERB IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

NTC21MW0501

Lab Name: EMPIRICAL LABS Contract: TETRATECH NUS

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CT0064_002

Lab Sample ID: 0911151-01 Date(s) Analyzed: 12/01/09 12/01/09

Instrument ID (1): ECD3 Instrument ID (2): ECD3

Column(1): MR-1 ID: 0.32(mm) Column(2): MR-2 ID: 0.32(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Dichloroprop	1	10.21	10.16	10.22	0.7823	
	2	7.94	7.88	7.94	0.3641	73.0
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

page 1 of 1

HERB

NTC GREAT LAKES
WATER DATA
CTO064_002

FRACTION	CHEMICAL	NTC21-FD111609-01	UNITS	NTC21MW0201	RPD	D
HERB	DICHLOROPROP	0.44 J	UG/L	0.5 J	12.77	0.06

Current RPD Quality Control Limit: 30 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE 1 OF 1

CLIENT NTC Great Lakes		JOB NUMBER 01797	
SUBJECT Calculation Verification SDG CTO 06-002			
BASED ON		DRAWING NUMBER	
BY J. Kalinyak	CHECKED BY	APPROVED BY	DATE 01/06/09

VOC trichlorotrifluoromethane

Sample NTC21MW0101

$$\frac{35168 \times 30\ \mu g/l}{891826 \times 0.406} \simeq 2.5\ \mu g/l$$

SVOC - fluoranthene

Sample NTC21MW0501

$$\frac{13699 \times 1000 \times 1\ \mu g/l}{205930 \times 1.030 \times 1080} \simeq 0.059\ \mu g/l$$

Data File: \\ELABNSH05\TARGET\chem\voa3.i\112009V3E.b\1118102.D
Report Date: 21-Nov-2009 08:00

Empirical Laboratories, LLC

Data file : \\ELABNSH05\TARGET\chem\voa3.i\112009V3E.b\1118102.D
Lab Smp Id: 0911181-02 Client Smp ID: NTC21MW0101
Inj Date : 21-NOV-2009 07:58 MS Autotune Date: 12-OCT-2009 11:53
Operator : JJH Inst ID: voa3.i
Smp Info : 0911181-02;;;;;; vial1
Misc Info : tet.v11181;;;;;gm-all.sub;#09J0838
Comment :
Method : \\ELABNSH05\TARGET\chem\voa3.i\112009V3E.b\VWATER3.m
Meth Date : 21-Nov-2009 07:59 ghallquist Quant Type: ISTD
Cal Date : 24-APR-2009 03:33 Cal File: V3STD9A9.D
Als bottle: 26
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: gm-all.sub
Target Version: 4.04
Processing Host: TARGET09_VM

Concentration Formula: Amt * DF * 5*Uf/Vo

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	unit correction factor
Vo	5.000	Volume of sample purged (mL)

11/21/09

mc 11/24/09

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/L)
* 61 Fluorobenzene	96	12.754	12.754	(1.000)	891826	30.0000	
1 Dichlorodifluoromethane	85	Compound Not Detected.					
2 Chloromethane	50	Compound Not Detected.					
4 Vinyl chloride	62	Compound Not Detected.					
7 Bromomethane	94	Compound Not Detected.					
8 Chloroethane	64	Compound Not Detected.					
11 Trichlorofluoromethane	101	5.569	5.569	(0.437)	30199	2.50516	2.505
15 t-Butyl alcohol	59	Compound Not Detected.					
25 Trichlorotrifluoroethane	101	Compound Not Detected.					
10 Acrolein	56	Compound Not Detected.					
21 1,1-Dichloroethene	96	Compound Not Detected.					
14 Acetone	43	5.703	5.685	(0.447)	10196	3.65462	3.655(a)
22 Iodomethane	142	Compound Not Detected.					
28 Carbon disulfide	76	Compound Not Detected.					
24 Methylene chloride	84	Compound Not Detected.					
23 Acrylonitrile	53	Compound Not Detected.					

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Instrument ID: VOA3 Calibration Date: 11/21/09 Time: 0430

Lab File ID: SEQ-CCV3 Init. Calib. Date(s): 12/17/08 10/12/09

Heated Purge: (Y/N) N Init. Calib. Times: 1502 2012

GC Column: RTX-VRX ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF100	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
1,1,2,2-Tetrachloroethane	0.478	0.526	100.0	109.9	0.300	AVRG	9.9	
Tetrachloroethene	0.556	0.495	100.0	89.12		AVRG	-10.9	
Toluene	1.112	1.029	100.0	92.57		AVRG	-7.4	20.0
1,2,4-Trichlorobenzene	0.787	0.738	100.0	93.76		AVRG	-6.2	
1,1,1-Trichloroethane	0.388	0.413	100.0	106.4		AVRG	6.4	
1,1,2-Trichloroethane	0.352	0.333	100.0	94.44		AVRG	-5.6	
Trichloroethene	0.250	0.264	100.0	105.6		AVRG	5.6	
Trichlorotrifluoroethane	0.198	0.189	100.0	95.67		AVRG	-4.3	
Trichlorofluoromethane	0.406	0.429	100.0	105.8		AVRG	5.8	
Vinyl chloride	0.257	0.270	100.0	105.2		AVRG	5.2	20.0
Xylene(total)	5.853	4.988	300.0	255.3		AVRG	-14.8	
Dibromofluoromethane	0.266	0.278	30.00	31.39		AVRG	4.6	
1,2-Dichloroethane-d4	0.055	0.055	30.00	29.69		AVRG	-1.0	
Toluene-d8	2.035	1.823	30.00	26.86		AVRG	-10.4	
Bromofluorobenzene	1.000	0.937	30.00	28.08		AVRG	-6.4	

page 2 of 2

FORM VII VOA

Data File: \\ELABNSH05\TARGET\chem\bna4.i\112009B4.b\1115101.D
Report Date: 30-Nov-2009 10:58

Empirical Laboratories, LLC

Data file : \\ELABNSH05\TARGET\chem\bna4.i\112009B4.b\1115101.D
Lab Smp Id: 0911151-01 Client Smp ID: NTC21MW0501
Inj Date : 20-NOV-2009 14:27 MS Autotune Date: 12-NOV-2009 07:57
Operator : ADM Inst ID: bna4.i
Smp Info : 0911151-01;1;1080;1000;1;UG/L; 19-NOV-2009
Misc Info : tet.b11151;0;;;;9K18009;pahsurmis.sub;9I0151
Comment :
Method : \\ELABNSH05\TARGET\chem\bna4.i\112009B4.b\IXBN4LOW.m
Meth Date : 30-Nov-2009 10:39 amonteiro Quant Type: ISTD
Cal Date : 12-NOV-2009 21:22 Cal File: cal12.D
Als bottle: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: pahsurmis.sub
Target Version: 4.04
Processing Host: TARGET02_VM

Concentration Formula: Amt * DF * Uf * Vt* Vi/(Amt * Vi)

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vt	1000.000	Volume of final extract (uL)
Vi	1.000	Volume injected (uL)
Amt	1080.000	Volume of initial extraction

11/30/09

MC 11/30/09

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/ul)	FINAL (UG/L)
* 101 Phenanthrene-d10	188	13.420	13.420	(1.000)	205930	1.00000	
20 N-Nitroso-di-n-propylamine	70	Compound Not Detected.					
38 Isophorone	82	Compound Not Detected.					
50 Naphthalene	128	6.429	6.438	(0.479)	9374	0.03719	0.03443(a)
52 Hexachlorobutadiene	225	Compound Not Detected.					
54 2-Methylnaphthalene	142	7.498	7.498	(0.559)	4361	0.02644	0.02448(a)
55 1-Methylnaphthalene	142	7.665	7.675	(0.571)	3226	0.02115	0.01958(a)
69 Hexachlorocyclopentadiene	237	Compound Not Detected.					
$ 73 2-Fluorobiphenyl	172	8.186	8.186	(0.610)	6496364	36.4447	33.74(A)
76 Acenaphthylene	151	Compound Not Detected.					
79 Acenaphthene	153	9.673	9.674	(0.721)	3345	0.02178	0.02017(a)
87 Fluorene	166	10.928	10.938	(0.814)	4514	0.02939	0.02722(a)
109 Pentachlorophenol	266	Compound Not Detected.					
$ 106 2,4,6-Tribromophenol	330	11.579	11.561	(0.863)	2937467	95.9649	88.86(A)

Data File: \\ELABNSH05\TARGET\chem\bna4.i\112009B4.b\1115101.D
Report Date: 30-Nov-2009 10:58

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/ul)	FINAL (UG/L)
110 Phenanthrene	178	13.485	13.485	(1.005)	13154	0.06001	0.05557
108 Hexachlorobenzene	284	12.360	12.360	(0.921)	2125	0.03339	0.03092(a)
111 Anthracene	178	13.624	13.634	(1.015)	8399	0.04100	0.03796(a)
115 Fluoranthene	202	16.887	16.888	(1.258)	13699	0.06457	0.05978
133 Pyrene	202	17.520	17.520	(1.305)	12840	0.06007	0.05562
* 153 Perylene-d12	264	25.124	25.124	(1.000)	116354	1.00000	
$ 134 Terphenyl-d14	244	18.208	18.189	(1.357)	7290537	45.5670	42.19(A)
137 Benzo(a)anthracene	228	21.099	21.099	(1.572)	7609	0.04874	0.04513(a)
138 Chrysene	228	21.192	21.201	(1.579)	7458	0.04945	0.04578(a)
155 Benzo(b)fluoranthene	252	24.362	24.371	(0.970)	5807	0.04241	0.03927(a)
156 Benzo(k)fluoranthene	252	24.427	24.436	(0.972)	5338	0.03923	0.03632(a)
157 Benzo(a)pyrene	252	25.022	25.022	(0.996)	3758	0.03367	0.03118(a)
158 Indeno(1,2,3-cd)pyrene	276	Compound Not Detected.					
159 Dibenz(a,h)anthracene	278	Compound Not Detected.					
160 Benzo(g,h,i)perylene	276	Compound Not Detected.					

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_002

Instrument ID: BNA4 Calibration Date: 11/20/09 Time: 0945

Lab File ID: SEQ-CCV1 Init. Calib. Date(s): 11/09/09 11/12/09

Init. Calib. Times: 1046 2122

COMPOUND	$\overline{RRF}$	RRF5	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acenaphthene	0.746	0.698	5.000	4.676		AVRG	-6.5	20.0
Acenaphthylene	1.000	0.908	5.000	4.542		AVRG	-9.2	20.0
Anthracene	0.995	1.093	5.000	5.492		AVRG	9.8	20.0
Benzo(a)anthracene	0.758	0.916	5.000	6.042		AVRG	20.8	20.0
Benzo(b)fluoranthene	1.177	1.190	5.000	5.055		AVRG	1.1	20.0
Benzo(k)fluoranthene	1.169	1.180	5.000	5.044		AVRG	0.9	20.0
Benzo(g,h,i)perylene	0.865	0.780	5.000	4.509		AVRG	-9.8	20.0
Benzo(a)pyrene	0.959	0.972	5.000	5.065		AVRG	1.3	20.0
Chrysene	0.732	0.847	5.000	5.780		AVRG	15.6	20.0
Dibenz(a,h)anthracene	0.764	0.666	5.000	4.355		AVRG	-12.9	20.0
Fluoranthene	1.030	1.156	5.000	5.608		AVRG	12.2	20.0
Fluorene	0.746	0.719	5.000	4.821		AVRG	-3.6	20.0
Indeno(1,2,3-cd)pyrene	0.771	0.695	5.000	4.502		AVRG	-10.0	20.0
2-Methylnaphthalene	0.801	0.754	5.000	4.708		AVRG	-5.8	20.0
Naphthalene	1.224	1.116	5.000	4.559		AVRG	-8.8	20.0
Phenanthrene	1.064	1.081	5.000	5.076		AVRG	1.5	20.0
Pyrene	1.038	1.170	5.000	5.635		AVRG	12.7	20.0
2-Fluorobiphenyl	0.865	0.816	5.000	4.713		AVRG	-5.7	
Terphenyl-d14	0.777	0.888	5.000	5.714		AVRG	14.3	

FORM VII SV

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**B. CUMMINGS**	**DATE:**	**DECEMBER 29, 2009**
FROM:	**LEANNE M. GANSER**	**COPIES:**	**DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION – TOTAL AND DISSOLVED METALS**
NTC GREAT LAKES CTO C064
SAMPLE DELIVERY GROUP (SDG) – CTO064_002

SAMPLES:

1/Soil/Metals/Limited Validation

NTC21SB02-SO-0406

4/Aqueous/Metals/Full Validation
NTC21-FD111609-01 NTC21MW0101 NTC21MW0201
NTC21MW0301

3/Aqueous/Metals/Limited Validation
NTC21MW0401 NTC21MW0501 NTC21MW0601

Overview

The sample set for NTC Great Lakes CTO C064, SDG CTO064_002, consists of one (1) environmental soil sample, and seven (7) environmental aqueous samples. One (1) field duplicate pair was included in this sample delivery group (SDG): NTC21MW0201/NTC21-FD111609-01.

The soil sample and all aqueous samples were analyzed for total target analyte list (TAL) metals. Sample NTC21MW0401 was also analyzed for dissolved TAL metals. The samples were collected by Tetra Tech NUS on November 13 and 15-17, 2009 and analyzed by Empirical Laboratories, LLC. Metals analyses were conducted using SW-846 methods 6010B. Mercury analyses were conducted using SW-846 method 7471A and 7470A.

These data were evaluated based on the following parameters:

* • Data Completeness
* • Holding Times
* • Initial and Continuing Calibrations
• Laboratory Method / Preparation Blanks
* • ICP Interference Analysis
* • Laboratory Control Sample Results
• Matrix Spike Results
* • Laboratory Duplicate Results
• Field Duplicate Results
• ICP Serial Dilution Results
* • Detection Limits
* • Analyte Quantitation

* - All quality control criteria were met for this parameter.

Qualified (if applicable) analytical results are summarized in Appendix A. Results as reported by the laboratory are presented in Appendix B. Appendix C contains the documentation to support the findings as discussed in this validation report.

Laboratory Method / Preparation Blanks

The following metal contaminants were detected in the laboratory method/preparation blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level
Cadmium[1]	0.0544 mg/kg	0.272 mg/kg
Chromium[2]	0.529 ug/L	2.645 ug/L
Total & Dissolved Manganese[3]	1.48 ug/L	7.4 ug/L

1 Maximum concentration in preparation blank affecting sample NTC21SB02-SO-0406 in batch 9K23009.
2 Maximum concentration in preparation blank affecting samples NTC21MW0101 and NTC21MW0601 in batch 9K30911.
3 Maximum concentration in preparation blank affecting all samples in batch 9K30910.

An action level of 5X the maximum contaminant level has been used to evaluate sample data for blank contamination. Sample aliquot, dilution factors, and percent solids, if applicable, were taken into consideration when evaluating for blank contamination. Positive results less than the blank action for cadmium were qualified as nondetects, "U", due to blank contamination. No action was necessary for chromium and manganese results as results were greater than the blank action level or nondetects.

Matrix Spike Results

MS recoveries for antimony, arsenic, copper, and silver were > 125% quality control limit affecting batch 9K30910. Post-digestion spikes were also outside of quality control limits. Positive results reported for arsenic, copper, and silver were qualified as estimated, "J", in samples NTC21-FD111609-01, NTC21MW0101, NTC21MW0201, and NTC21MW0301.

Field Duplicate Results

Field duplicate imprecision (percent difference > two times the reporting limit) was noted for aluminum and lead in sample pair NTC21MW0201/NTC21-FD111609-01. Positive and nondetected results for aluminum and lead in samples NTC21MW0201 and NTC21-FD111609-01were qualified as estimated, "J" and "UJ", respectively.

ICP Serial Dilution Results

ICP serial dilution percent difference was >10% for potassium in sample NTC21MW0501. Positive results reported for potassium were qualified as estimated, "J", in samples NTC21-FD111609-01, NTC21MW0101, NTC21MW0201, and NTC21MW0301.

Notes

Several analytes were analyzed at dilution, resulting in elevated detection limits for aluminum, chromium, lead, selenium, thallium, and zinc in several samples.

TO: B. CUMMINGS – PAGE 3
DATE: DECEMBER 29, 2009

Executive Summary

Laboratory Performance: Cadmium, chromium, and manganese were present in the laboratory preparation blanks. ICP serial dilution results for potassium were outside of quality control limits

Other Factors Affecting Data Quality: MS recoveries for several analytes were outside of quality control limits. Field duplicate imprecision was noted for aluminum and lead.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Review", October 2004 and the DOD document entitled "Quality System Manual (QSM) for Environmental Laboratories" (Jan 2006).

The text of this report has been formulated to address only those problem areas affecting data quality.

Tetra Tech NUS
Leanne M. Ganser
Environmental Scientist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A
QUALIFIED ANALYTICAL RESULTS

Data Validation Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS-GFAA MSA's r < 0.995 / ICP PDS Recovery Noncompliance
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (e.g. base-line drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient r < 0.995
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 01797	NSAMPLE	NTC21SB02-SO-0406		
SDG: CTO064_002	LAB_ID	0911147-01		
FRACTION: M	SAMP_DATE	11/13/2009		
MEDIA: SOIL	QC_TYPE	NM		
	UNITS	MG/KG		
	PCT_SOLIDS	88.9		
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
ALUMINUM		5090		
ANTIMONY		0.27	U	
ARSENIC		4.16		
BARIUM		48.8		
BERYLLIUM		0.28		
CADMIUM		0.74	U	A
CALCIUM		177000		
CHROMIUM		7.97		
COBALT		2.25		
COPPER		9.91		
IRON		6560		
LEAD		10.8		
MAGNESIUM		81500		
MANGANESE		270		
MERCURY		0.03		
NICKEL		4.42		
POTASSIUM		603		
SELENIUM		1.65	U	
SILVER		0.05	U	
SODIUM		289		
THALLIUM		0.16	U	
VANADIUM		10.5		
ZINC		38.5		

PROJ_NO: 01797	NSAMPLE	NTC21-FD111609-01			NTC21MW0101			NTC21MW0201			NTC21MW0301		
SDG: CTO064_002	LAB_ID	0911151-02			0911181-02			0911151-03			0911151-04		
FRACTION: M	SAMP_DATE	11/16/2009			11/17/2009			11/16/2009			11/16/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0			0.0		
	DUP_OF	NTC21MW0201											
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		62.5	UJ	G	252			668	J	G	303		
ANTIMONY		1.25	U		1.25	U		1.25	U		1.25	U	
ARSENIC		6.3	J	D	1.88	J	D	7.26	J	D	0.88	J	D
BARIUM		33.8			123			34.5			33.1		
BERYLLIUM		0.25	U		0.25	U		0.25	U		0.25	U	
CADMIUM		1.11			0.79			0.86			1.34		
CALCIUM		604000			96600			671000			504000		
CHROMIUM		0.75	U		4.13			0.75	U		0.5	U	
COBALT		15.3			1.25	U		15.3			3.55		
COPPER		1.25	U		4.25	J	D	1.25	U		1.25	U	
IRON		30800			22.3			34000			2610		
LEAD		1.88	J	G	1.88	U		9.38	UJ	G	3.75	U	
MAGNESIUM		89700			608			97600			20500		
MANGANESE		2360			0.89			3040			2150		
MERCURY		0.08	U		0.08	U		0.08	U		0.08	U	
NICKEL		10.7			0.75			11.3			0.89		
POTASSIUM		13400	J	I	40200	J	I	13100	J	I	11100	J	I
SELENIUM		5	U		1.63			6.25	U		7.5	U	
SILVER		0.39	J	D	0.25	U		0.47	J	D	0.25	U	
SODIUM		785000			698000			772000			667000		
THALLIUM		3.75	U		0.75	U		2	U		1.5	U	
VANADIUM		1.25	U		4.36			1.25	U		1.25	U	
ZINC		9.01			1.25	U		31.2	U		12.5	U	

PROJ_NO: 01797	NSAMPLE	NTC21MW0401			NTC21MW0501			NTC21MW0601		
SDG: CTO064_002	LAB_ID	0911151-05			0911151-01			0911181-03		
FRACTION: M	SAMP_DATE	11/16/2009			11/15/2009			11/17/2009		
MEDIA: WATER	QC_TYPE	NM			NM			NM		
	UNITS	UG/L			UG/L			UG/L		
	PCT_SOLIDS	0.0			0.0			0.0		
	DUP_OF									
PARAMETER		RESULT	VQL	QLCD	RESULT	VQL	QLCD	RESULT	VQL	QLCD
ALUMINUM		122			145			25	U	
ANTIMONY		1.25	U		1.25	U		1.25	U	
ARSENIC		1.6			2.39			0.75	U	
BARIUM		32.3			422			118		
BERYLLIUM		0.25	U		0.25	U		0.25	U	
CADMIUM		0.69			3.45			0.92		
CALCIUM		121000			374000			142000		
CHROMIUM		0.5	U		2.5	U		0.5	U	
COBALT		1.25	U		4.65			1.25	U	
COPPER		1.25	U		1.25	U		1.25	U	
IRON		752			173			38.3		
LEAD		0.75	U		1.88	U		0.83		
MAGNESIUM		54000			125000			49400		
MANGANESE		168			5400			61.3		
MERCURY		0.08	U		0.08	U		0.08	U	
NICKEL		1.52			1.84			0.75	U	
POTASSIUM		3440			11600			2980		
SELENIUM		1	U		6.25	U		0.75	U	
SILVER		0.25	U		1.3			0.25	U	
SODIUM		55700			1040000			331000		
THALLIUM		0.75	U		3.75	U		0.75	U	
VANADIUM		1.25	U		1.25	U		1.25	U	
ZINC		1.5			6.25	U		2.83		

PROJ_NO: 01797	NSAMPLE	NTC21MW0401		
SDG: CTO064_002	LAB_ID	0911151-06		
FRACTION: MF	SAMP_DATE	11/16/2009		
MEDIA: WATER	QC_TYPE	NM		
	UNITS	UG/L		
	PCT_SOLIDS	0.0		
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
ALUMINUM		12.5	U	
ANTIMONY		1.25	U	
ARSENIC		1.16		
BARIUM		32.4		
BERYLLIUM		0.25	U	
CADMIUM		0.68		
CALCIUM		122000		
CHROMIUM		0.5	U	
COBALT		1.25	U	
COPPER		1.25	U	
IRON		478		
LEAD		1.88	U	
MAGNESIUM		54200		
MANGANESE		161		
MERCURY		0.08	U	
NICKEL		1.7		
POTASSIUM		3360		
SELENIUM		0.75	U	
SILVER		0.25	U	
SODIUM		57100		
THALLIUM		0.75	U	
VANADIUM		1.25	U	
ZINC		1.32		

APPENDIX B
RESULTS AS REPORTED BY THE LABORATORY

ANALYSIS DATA SHEET

NTC21SB02-SO-0406

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 11/13/09 09:12
% Solids: 88.89

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0911147-01
Received: 11/14/09 10:45

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0398	0.0151	0.0384	1		SW7471A	9K30908	11/30/09 18:03
7429-90-5	Aluminum	5090	27.6	110	10	D	SW6010B	9K23009	12/04/09 10:10
7440-36-0	Antimony		0.276	0.827	1	U	SW6010B	9K23009	11/25/09 01:03
7440-38-2	Arsenic	4.16	0.165	0.276	1		SW6010B	9K23009	11/25/09 01:03
7440-39-3	Barium	48.8	0.276	2.21	1		SW6010B	9K23009	11/25/09 01:03
7440-41-7	Beryllium	0.280	0.0551	0.276	1		SW6010B	9K23009	11/25/09 01:03
7440-43-9	Cadmium	0.746	0.276	1.38	5	J D	SW6010B	9K23009	12/04/09 12:32
7440-70-2	Calcium	177000	551	2760	10	D	SW6010B	9K23009	12/04/09 10:10
7440-47-3	Chromium	7.97	0.551	1.38	5	D	SW6010B	9K23009	12/04/09 12:32
7440-48-4	Cobalt	2.25	0.276	0.689	1		SW6010B	9K23009	11/25/09 01:03
7440-50-8	Copper	9.91	0.276	0.551	1		SW6010B	9K23009	11/25/09 01:03
7439-89-6	Iron	6560	1.65	5.51	1		SW6010B	9K23009	11/25/09 01:03
7439-92-1	Lead	10.8	0.827	1.65	10	D	SW6010B	9K23009	12/04/09 10:10
7439-95-4	Magnesium	81500	276	1380	5	D	SW6010B	9K23009	12/04/09 12:32
7439-96-5	Manganese	270	0.165	0.827	1		SW6010B	9K23009	11/25/09 01:03
7440-02-0	Nickel	4.42	0.276	0.551	1		SW6010B	9K23009	11/25/09 01:03
7440-09-7	Potassium	603	55.1	276	1		SW6010B	9K23009	11/25/09 01:03
7782-49-2	Selenium		1.65	2.76	10	U	SW6010B	9K23009	12/04/09 10:10
7440-22-4	Silver		0.0551	0.276	1	U	SW6010B	9K23009	11/25/09 01:03
7440-23-5	Sodium	289	55.1	276	1		SW6010B	9K23009	11/25/09 01:03
7440-28-0	Thallium		0.165	0.441	1	U	SW6010B	9K23009	11/25/09 01:03
7440-62-2	Vanadium	10.5	0.276	0.689	1		SW6010B	9K23009	11/25/09 01:03
7440-66-6	Zinc	38.5	2.76	11.0	10	D	SW6010B	9K23009	12/04/09 10:10

ANALYSIS DATA SHEET

NTC21-FD111609-01

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Ground Water
Sampled: 11/16/09 00:00
% Solids: 0.00

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0911151-02
Received: 11/17/09 08:30

CAS NO.	Analyte	Concentration (ug/L)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0800	0.200	1	U	SW7470A	9L02002	12/03/09 11:55
7429-90-5	Aluminum		62.5	250	5	U	SW6010B	9K30910	12/04/09 13:06
7440-36-0	Antimony		1.25	3.75	1	U N	SW6010B	9K30910	12/01/09 19:37
7440-38-2	Arsenic	6.30	0.750	1.25	1	N	SW6010B	9K30910	12/01/09 19:37
7440-39-3	Barium	33.8	1.25	10.0	1		SW6010B	9K30910	12/01/09 19:37
7440-41-7	Beryllium		0.250	1.25	1	U	SW6010B	9K30910	12/01/09 19:37
7440-43-9	Cadmium	1.11	0.250	1.25	1	J	SW6010B	9K30910	12/01/09 19:37
7440-70-2	Calcium	604000	1250	6250	5	D	SW6010B	9K30910	12/04/09 13:06
7440-47-3	Chromium		0.750	1.25	1	U	SW6010B	9K30910	12/01/09 19:37
7440-48-4	Cobalt	15.3	1.25	3.12	1		SW6010B	9K30910	12/01/09 19:37
7440-50-8	Copper		1.25	2.50	1	U N	SW6010B	9K30910	12/01/09 19:37
7439-89-6	Iron	30800	7.50	25.0	1		SW6010B	9K30910	12/01/09 19:37
7439-92-1	Lead	1.88	1.88	3.75	5	J D	SW6010B	9K30910	12/04/09 13:06
7439-95-4	Magnesium	89700	250	1250	1		SW6010B	9K30910	12/01/09 19:37
7439-96-5	Manganese	2360	0.750	3.75	1		SW6010B	9K30910	12/01/09 19:37
7440-02-0	Nickel	10.7	0.750	2.50	1		SW6010B	9K30910	12/01/09 19:37
7440-09-7	Potassium	13400	250	1250	1		SW6010B	9K30910	12/01/09 19:37
7782-49-2	Selenium		5.00	6.25	5	U	SW6010B	9K30910	12/04/09 13:06
7440-22-4	Silver	0.394	0.250	1.25	1	J N	SW6010B	9K30910	12/01/09 19:37
7440-23-5	Sodium	785000	2500	12500	10	D	SW6010B	9K30910	12/08/09 04:37
7440-28-0	Thallium		3.75	10.0	5	U	SW6010B	9K30910	12/04/09 13:06
7440-62-2	Vanadium		1.25	3.12	1	U	SW6010B	9K30910	12/01/09 19:37
7440-66-6	Zinc	9.01	6.25	25.0	5	J D	SW6010B	9K30910	12/04/09 13:06

ANALYSIS DATA SHEET

NTC21MW0101

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Water
Sampled: 11/17/09 11:45
% Solids: 0.00

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0911181-02
Received: 11/18/09 08:15

CAS NO.	Analyte	Concentration (ug/L)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0800	0.200	1	U	SW7470A	9L02002	12/03/09 12:07
7429-90-5	Aluminum	252	12.5	50.0	1		SW6010B	9K30911	12/01/09 20:54
7440-36-0	Antimony		1.25	3.75	1	U	SW6010B	9K30911	12/01/09 20:54
7440-38-2	Arsenic	1.88	0.750	1.25	1		SW6010B	9K30911	12/01/09 20:54
7440-39-3	Barium	123	1.25	10.0	1		SW6010B	9K30911	12/01/09 20:54
7440-41-7	Beryllium		0.250	1.25	1	U	SW6010B	9K30911	12/01/09 20:54
7440-43-9	Cadmium	0.794	0.250	1.25	1	J	SW6010B	9K30911	12/01/09 20:54
7440-70-2	Calcium	96600	250	1250	1		SW6010B	9K30911	12/01/09 20:54
7440-47-3	Chromium	4.13	0.500	1.25	1		SW6010B	9K30911	12/01/09 20:54
7440-48-4	Cobalt		1.25	3.12	1	U	SW6010B	9K30911	12/01/09 20:54
7440-50-8	Copper	4.25	1.25	2.50	1		SW6010B	9K30911	12/01/09 20:54
7439-89-6	Iron	22.3	7.50	25.0	1	J	SW6010B	9K30911	12/01/09 20:54
7439-92-1	Lead		1.88	3.75	5	U	SW6010B	9K30911	12/09/09 14:33
7439-95-4	Magnesium	608	250	1250	1	J	SW6010B	9K30911	12/01/09 20:54
7439-96-5	Manganese	0.896	0.750	3.75	1	J	SW6010B	9K30911	12/01/09 20:54
7440-02-0	Nickel	0.754	0.750	2.50	1	J	SW6010B	9K30911	12/01/09 20:54
7440-09-7	Potassium	40200	500	2500	2	D	SW6010B	9K30911	12/08/09 04:47
7782-49-2	Selenium	1.63	0.750	1.25	1		SW6010B	9K30911	12/01/09 20:54
7440-22-4	Silver		0.250	1.25	1	U	SW6010B	9K30911	12/01/09 20:54
7440-23-5	Sodium	698000	2500	12500	10	D	SW6010B	9K30911	12/08/09 04:42
7440-28-0	Thallium		0.750	2.00	1	U	SW6010B	9K30911	12/01/09 20:54
7440-62-2	Vanadium	4.36	1.25	3.12	1		SW6010B	9K30911	12/01/09 20:54
7440-66-6	Zinc		1.25	5.00	1	U	SW6010B	9K30911	12/01/09 20:54

ANALYSIS DATA SHEET

NTC21MW0201

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Ground Water
Sampled: 11/16/09 12:46
% Solids: 0.00

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0911151-03
Received: 11/17/09 08:30

CAS NO.	Analyte	Concentration (ug/L)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0800	0.200	1	U	SW7470A	9L02002	12/03/09 11:56
7429-90-5	Aluminum	668	312	1250	25	J D	SW6010B	9K30910	12/04/09 13:28
7440-36-0	Antimony		1.25	3.75	1	U N	SW6010B	9K30910	12/01/09 19:42
7440-38-2	Arsenic	7.26	0.750	1.25	1	N	SW6010B	9K30910	12/01/09 19:42
7440-39-3	Barium	34.5	1.25	10.0	1		SW6010B	9K30910	12/01/09 19:42
7440-41-7	Beryllium		0.250	1.25	1	U	SW6010B	9K30910	12/01/09 19:42
7440-43-9	Cadmium	0.860	0.250	1.25	1	J	SW6010B	9K30910	12/01/09 19:42
7440-70-2	Calcium	671000	6250	31200	25	D	SW6010B	9K30910	12/04/09 13:28
7440-47-3	Chromium		0.750	1.25	1	U	SW6010B	9K30910	12/01/09 19:42
7440-48-4	Cobalt	15.3	1.25	3.12	1		SW6010B	9K30910	12/01/09 19:42
7440-50-8	Copper		1.25	2.50	1	U N	SW6010B	9K30910	12/01/09 19:42
7439-89-6	Iron	34000	7.50	25.0	1		SW6010B	9K30910	12/01/09 19:42
7439-92-1	Lead		9.38	18.8	25	U	SW6010B	9K30910	12/04/09 13:28
7439-95-4	Magnesium	97600	250	1250	1		SW6010B	9K30910	12/01/09 19:42
7439-96-5	Manganese	3040	3.75	18.8	5	D	SW6010B	9K30910	12/04/09 13:33
7440-02-0	Nickel	11.3	0.750	2.50	1		SW6010B	9K30910	12/01/09 19:42
7440-09-7	Potassium	13100	250	1250	1		SW6010B	9K30910	12/01/09 19:42
7782-49-2	Selenium		6.25	6.25	5	U	SW6010B	9K30910	12/04/09 13:33
7440-22-4	Silver	0.478	0.250	1.25	1	J N	SW6010B	9K30910	12/01/09 19:42
7440-23-5	Sodium	772000	6250	31200	25	D	SW6010B	9K30910	12/04/09 13:28
7440-28-0	Thallium		2.00	2.00	1	U	SW6010B	9K30910	12/01/09 19:42
7440-62-2	Vanadium		1.25	3.12	1	U	SW6010B	9K30910	12/01/09 19:42
7440-66-6	Zinc		31.2	125	25	U	SW6010B	9K30910	12/04/09 13:28

ANALYSIS DATA SHEET

NTC21MW0301

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Ground Water
Sampled: 11/16/09 10:05
% Solids: 0.00

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0911151-04
Received: 11/17/09 08:30

CAS NO.	Analyte	Concentration (ug/L)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0800	0.200	1	U	SW7470A	9L02002	12/03/09 11:57
7429-90-5	Aluminum	303	125	500	10	J D	SW6010B	9K30910	12/04/09 13:37
7440-36-0	Antimony		1.25	3.75	1	U N	SW6010B	9K30910	12/01/09 19:47
7440-38-2	Arsenic	0.884	0.750	1.25	1	J N	SW6010B	9K30910	12/01/09 19:47
7440-39-3	Barium	33.1	1.25	10.0	1		SW6010B	9K30910	12/01/09 19:47
7440-41-7	Beryllium		0.250	1.25	1	U	SW6010B	9K30910	12/01/09 19:47
7440-43-9	Cadmium	1.34	0.250	1.25	1		SW6010B	9K30910	12/01/09 19:47
7440-70-2	Calcium	504000	2500	12500	10	D	SW6010B	9K30910	12/04/09 13:37
7440-47-3	Chromium		0.500	1.25	1	U	SW6010B	9K30910	12/01/09 19:47
7440-48-4	Cobalt	3.55	1.25	3.12	1		SW6010B	9K30910	12/01/09 19:47
7440-50-8	Copper		1.25	2.50	1	U N	SW6010B	9K30910	12/01/09 19:47
7439-89-6	Iron	2610	7.50	25.0	1		SW6010B	9K30910	12/01/09 19:47
7439-92-1	Lead		3.75	7.50	10	U	SW6010B	9K30910	12/04/09 13:37
7439-95-4	Magnesium	20500	250	1250	1		SW6010B	9K30910	12/01/09 19:47
7439-96-5	Manganese	2150	0.750	3.75	1		SW6010B	9K30910	12/01/09 19:47
7440-02-0	Nickel	0.899	0.750	2.50	1	J	SW6010B	9K30910	12/01/09 19:47
7440-09-7	Potassium	11100	250	1250	1		SW6010B	9K30910	12/01/09 19:47
7782-49-2	Selenium		7.50	12.5	10	U	SW6010B	9K30910	12/04/09 13:37
7440-22-4	Silver		0.250	1.25	1	U N	SW6010B	9K30910	12/01/09 19:47
7440-23-5	Sodium	667000	2500	12500	10	D	SW6010B	9K30910	12/04/09 13:37
7440-28-0	Thallium		1.50	2.00	1	U	SW6010B	9K30910	12/01/09 19:47
7440-62-2	Vanadium		1.25	3.12	1	U	SW6010B	9K30910	12/01/09 19:47
7440-66-6	Zinc		12.5	50.0	10	U	SW6010B	9K30910	12/04/09 13:37

ANALYSIS DATA SHEET

NTC21MW0401

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Ground Water
Sampled: 11/16/09 13:10
% Solids: 0.00

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0911151-05
Received: 11/17/09 08:30

CAS NO.	Analyte	Concentration (ug/L)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0800	0.200	1	U	SW7470A	9L02002	12/03/09 11:58
7429-90-5	Aluminum	122	12.5	50.0	1		SW6010B	9K30910	12/01/09 19:52
7440-36-0	Antimony		1.25	3.75	1	U N	SW6010B	9K30910	12/01/09 19:52
7440-38-2	Arsenic	1.60	0.750	1.25	1	N	SW6010B	9K30910	12/01/09 19:52
7440-39-3	Barium	32.3	1.25	10.0	1		SW6010B	9K30910	12/01/09 19:52
7440-41-7	Beryllium		0.250	1.25	1	U	SW6010B	9K30910	12/01/09 19:52
7440-43-9	Cadmium	0.693	0.250	1.25	1	J	SW6010B	9K30910	12/01/09 19:52
7440-70-2	Calcium	121000	250	1250	1		SW6010B	9K30910	12/01/09 19:52
7440-47-3	Chromium		0.500	1.25	1	U	SW6010B	9K30910	12/01/09 19:52
7440-48-4	Cobalt		1.25	3.12	1	U	SW6010B	9K30910	12/01/09 19:52
7440-50-8	Copper		1.25	2.50	1	U N	SW6010B	9K30910	12/01/09 19:52
7439-89-6	Iron	752	7.50	25.0	1		SW6010B	9K30910	12/01/09 19:52
7439-92-1	Lead		0.750	1.50	2	U	SW6010B	9K30910	12/04/09 13:42
7439-95-4	Magnesium	54000	250	1250	1		SW6010B	9K30910	12/01/09 19:52
7439-96-5	Manganese	168	0.750	3.75	1		SW6010B	9K30910	12/01/09 19:52
7440-02-0	Nickel	1.52	0.750	2.50	1	J	SW6010B	9K30910	12/01/09 19:52
7440-09-7	Potassium	3440	250	1250	1		SW6010B	9K30910	12/01/09 19:52
7782-49-2	Selenium		1.00	1.25	1	U	SW6010B	9K30910	12/01/09 19:52
7440-22-4	Silver		0.250	1.25	1	U N	SW6010B	9K30910	12/01/09 19:52
7440-23-5	Sodium	55700	250	1250	1		SW6010B	9K30910	12/01/09 19:52
7440-28-0	Thallium		0.750	2.00	1	U	SW6010B	9K30910	12/01/09 19:52
7440-62-2	Vanadium		1.25	3.12	1	U	SW6010B	9K30910	12/01/09 19:52
7440-66-6	Zinc	1.50	1.25	5.00	1	J	SW6010B	9K30910	12/01/09 19:52

ANALYSIS DATA SHEET

NTC21MW0401

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Ground Water
Sampled: 11/16/09 13:10
% Solids: 0.00

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0911151-06
Received: 11/17/09 08:30

CAS NO.	Analyte	Concentration (ug/L)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury (dissolved)		0.0800	0.200	1	U	SW7470A	9L02002	12/03/09 11:59
7429-90-5	Aluminum (dissolved)		12.5	50.0	1	U	SW6010B	9K30910	12/01/09 19:57
7440-36-0	Antimony (dissolved)		1.25	3.75	1	U N	SW6010B	9K30910	12/01/09 19:57
7440-38-2	Arsenic (dissolved)	1.16	0.750	1.25	1	J N	SW6010B	9K30910	12/01/09 19:57
7440-39-3	Barium (dissolved)	32.4	1.25	10.0	1		SW6010B	9K30910	12/01/09 19:57
7440-41-7	Beryllium (dissolved)		0.250	1.25	1	U	SW6010B	9K30910	12/01/09 19:57
7440-43-9	Cadmium (dissolved)	0.689	0.250	1.25	1	J	SW6010B	9K30910	12/01/09 19:57
7440-70-2	Calcium (dissolved)	122000	250	1250	1		SW6010B	9K30910	12/01/09 19:57
7440-47-3	Chromium (dissolved)		0.500	1.25	1	U	SW6010B	9K30910	12/01/09 19:57
7440-48-4	Cobalt (dissolved)		1.25	3.12	1	U	SW6010B	9K30910	12/01/09 19:57
7440-50-8	Copper (dissolved)		1.25	2.50	1	U N	SW6010B	9K30910	12/01/09 19:57
7439-89-6	Iron (dissolved)	478	7.50	25.0	1		SW6010B	9K30910	12/01/09 19:57
7439-92-1	Lead (dissolved)		1.88	3.75	5	U	SW6010B	9K30910	12/04/09 13:47
7439-95-4	Magnesium (dissolved)	54200	250	1250	1		SW6010B	9K30910	12/01/09 19:57
7439-96-5	Manganese (dissolved)	161	0.750	3.75	1		SW6010B	9K30910	12/01/09 19:57
7440-02-0	Nickel (dissolved)	1.70	0.750	2.50	1	J	SW6010B	9K30910	12/01/09 19:57
7440-09-7	Potassium (dissolved)	3360	250	1250	1		SW6010B	9K30910	12/01/09 19:57
7782-49-2	Selenium (dissolved)		0.750	1.25	1	U	SW6010B	9K30910	12/01/09 19:57
7440-22-4	Silver (dissolved)		0.250	1.25	1	U N	SW6010B	9K30910	12/01/09 19:57
7440-23-5	Sodium (dissolved)	57100	250	1250	1		SW6010B	9K30910	12/01/09 19:57
7440-28-0	Thallium (dissolved)		0.750	2.00	1	U	SW6010B	9K30910	12/01/09 19:57
7440-62-2	Vanadium (dissolved)		1.25	3.12	1	U	SW6010B	9K30910	12/01/09 19:57
7440-66-6	Zinc (dissolved)	1.32	1.25	5.00	1	J	SW6010B	9K30910	12/01/09 19:57

ANALYSIS DATA SHEET

NTC21MW0501

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Ground Water
Sampled: 11/15/09 16:26
% Solids: 0.00

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0911151-01
Received: 11/17/09 08:30

CAS NO.	Analyte	Concentration (ug/L)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0800	0.200	1	U	SW7470A	9L02002	12/03/09 11:52
7429-90-5	Aluminum	145	62.5	250	5	J D	SW6010B	9K30910	12/04/09 12:37
7440-36-0	Antimony		1.25	3.75	1	U N	SW6010B	9K30910	12/01/09 19:12
7440-38-2	Arsenic	2.39	0.750	1.25	1	N	SW6010B	9K30910	12/01/09 19:12
7440-39-3	Barium	422	1.25	10.0	1		SW6010B	9K30910	12/01/09 19:12
7440-41-7	Beryllium		0.250	1.25	1	U	SW6010B	9K30910	12/01/09 19:12
7440-43-9	Cadmium	3.45	1.25	6.25	5	J D	SW6010B	9K30910	12/04/09 12:37
7440-70-2	Calcium	374000	1250	6250	5	D	SW6010B	9K30910	12/04/09 12:37
7440-47-3	Chromium		2.50	6.25	5	U	SW6010B	9K30910	12/04/09 12:37
7440-48-4	Cobalt	4.65	1.25	3.12	1		SW6010B	9K30910	12/01/09 19:12
7440-50-8	Copper		1.25	2.50	1	U N	SW6010B	9K30910	12/01/09 19:12
7439-89-6	Iron	173	7.50	25.0	1		SW6010B	9K30910	12/01/09 19:12
7439-92-1	Lead		1.88	3.75	5	U	SW6010B	9K30910	12/04/09 12:37
7439-95-4	Magnesium	125000	1250	6250	5	D	SW6010B	9K30910	12/04/09 12:37
7439-96-5	Manganese	5400	3.75	18.8	5	D	SW6010B	9K30910	12/04/09 12:37
7440-02-0	Nickel	1.84	0.750	2.50	1	J	SW6010B	9K30910	12/01/09 19:12
7440-09-7	Potassium	11600	250	1250	1		SW6010B	9K30910	12/01/09 19:12
7782-49-2	Selenium		6.25	6.25	5	U	SW6010B	9K30910	12/04/09 12:37
7440-22-4	Silver	1.30	0.250	1.25	1	N	SW6010B	9K30910	12/01/09 19:12
7440-23-5	Sodium	1040000	6250	31200	25	D	SW6010B	9K30910	12/04/09 12:42
7440-28-0	Thallium		3.75	10.0	5	U	SW6010B	9K30910	12/04/09 12:37
7440-62-2	Vanadium		1.25	3.12	1	U	SW6010B	9K30910	12/01/09 19:12
7440-66-6	Zinc		6.25	25.0	5	U	SW6010B	9K30910	12/04/09 12:37

ANALYSIS DATA SHEET

NTC21MW0601

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Water
Sampled: 11/17/09 14:05
% Solids: 0.00

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0911181-03
Received: 11/18/09 08:15

CAS NO.	Analyte	Concentration (ug/L)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury		0.0800	0.200	1	U	SW7470A	9L02003	12/03/09 12:10
7429-90-5	Aluminum		25.0	100	2	U	SW6010B	9K30911	12/08/09 05:35
7440-36-0	Antimony		1.25	3.75	1	U	SW6010B	9K30911	12/01/09 20:58
7440-38-2	Arsenic		0.750	1.25	1	U	SW6010B	9K30911	12/01/09 20:58
7440-39-3	Barium	118	1.25	10.0	1		SW6010B	9K30911	12/01/09 20:58
7440-41-7	Beryllium		0.250	1.25	1	U	SW6010B	9K30911	12/01/09 20:58
7440-43-9	Cadmium	0.927	0.250	1.25	1	J	SW6010B	9K30911	12/01/09 20:58
7440-70-2	Calcium	142000	500	2500	2	D	SW6010B	9K30911	12/08/09 05:35
7440-47-3	Chromium		0.500	1.25	1	U	SW6010B	9K30911	12/01/09 20:58
7440-48-4	Cobalt		1.25	3.12	1	U	SW6010B	9K30911	12/01/09 20:58
7440-50-8	Copper		1.25	2.50	1	U	SW6010B	9K30911	12/01/09 20:58
7439-89-6	Iron	38.3	7.50	25.0	1		SW6010B	9K30911	12/01/09 20:58
7439-92-1	Lead	0.836	0.750	1.50	2	J D	SW6010B	9K30911	12/09/09 14:38
7439-95-4	Magnesium	49400	250	1250	1		SW6010B	9K30911	12/01/09 20:58
7439-96-5	Manganese	61.3	0.750	3.75	1		SW6010B	9K30911	12/01/09 20:58
7440-02-0	Nickel		0.750	2.50	1	U	SW6010B	9K30911	12/01/09 20:58
7440-09-7	Potassium	2980	250	1250	1		SW6010B	9K30911	12/01/09 20:58
7782-49-2	Selenium		0.750	1.25	1	U	SW6010B	9K30911	12/01/09 20:58
7440-22-4	Silver		0.250	1.25	1	U	SW6010B	9K30911	12/01/09 20:58
7440-23-5	Sodium	331000	1250	6250	5	D	SW6010B	9K30911	12/08/09 05:31
7440-28-0	Thallium		0.750	2.00	1	U	SW6010B	9K30911	12/01/09 20:58
7440-62-2	Vanadium		1.25	3.12	1	U	SW6010B	9K30911	12/01/09 20:58
7440-66-6	Zinc	2.83	2.50	10.0	2	J D	SW6010B	9K30911	12/09/09 14:38

APPENDIX C
SUPPORT DOCUMENTATION

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HERB	UG/L	NTC21MW0201	0911151-03	NM	11/16/2009	11/20/2009	12/01/2009	4.086	10.87	14.96
HG	MG/KG	NTC21SB02-SO-0406	0911147-01	NM	11/13/2009	11/30/2009	11/30/2009	16.89	0.481	17.37
HG	UG/L	NTC21MW0401	0911151-05	NM	11/16/2009	12/02/2009	12/03/2009	15.75	1.196	16.95
HG	UG/L	NTC21MW0101	0911181-02	NM	11/17/2009	12/02/2009	12/03/2009	14.81	1.202	16.02
HG	UG/L	NTC21MW0601	0911181-03	NM	11/17/2009	12/02/2009	12/03/2009	14.72	1.199	15.92
HG	UG/L	NTC21MW0501	0911151-01	NM	11/15/2009	12/02/2009	12/03/2009	16.62	1.192	17.81
HG	UG/L	NTC21MW0201	0911151-03	NM	11/16/2009	12/02/2009	12/03/2009	15.77	1.194	16.97
HG	UG/L	NTC21MW0301	0911151-04	NM	11/16/2009	12/02/2009	12/03/2009	15.88	1.195	17.08
HG	UG/L	NTC21-FD111609-01	0911151-02	NM	11/16/2009	12/02/2009	12/03/2009	16.30	1.194	17.5
M	MG/KG	NTC21SB02-SO-0406	0911147-01	NM	11/13/2009	11/23/2009	11/25/2009	9.943	1.717	11.66
M	MG/KG	NTC21SB02-SO-0406	0911147-01RE1	NM	11/13/2009	11/23/2009	12/04/2009	9.943	11.1	21.04
M	MG/KG	NTC21SB02-SO-0406	0911147-01RE3	NM	11/13/2009	11/23/2009	12/04/2009	9.943	11.2	21.14
M	UG/L	NTC21MW0601	0911181-03RE2	NM	11/17/2009	11/30/2009	12/08/2009	12.72	7.931	20.65
M	UG/L	NTC21MW0401	0911151-05	NM	11/16/2009	11/30/2009	12/01/2009	13.75	1.531	15.28
M	UG/L	NTC21MW0401	0911151-05RE1	NM	11/16/2009	11/30/2009	12/04/2009	13.75	4.274	18.02
M	UG/L	NTC21MW0501	0911151-01	NM	11/15/2009	11/30/2009	12/01/2009	14.61	1.503	16.12
M	UG/L	NTC21MW0501	0911151-01RE1	NM	11/15/2009	11/30/2009	12/04/2009	14.61	4.228	18.84
M	UG/L	NTC21MW0501	0911151-01RE2	NM	11/15/2009	11/30/2009	12/04/2009	14.61	4.232	18.84

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
M	UG/L	NTC21MW0601	0911181-03RE1	NM	11/17/2009	11/30/2009	12/08/2009	12.72	7.928	20.64
M	UG/L	NTC21MW0301	0911151-04RE1	NM	11/16/2009	11/30/2009	12/04/2009	13.88	4.270	18.15
M	UG/L	NTC21MW0601	0911181-03RE3	NM	11/17/2009	11/30/2009	12/09/2009	12.72	9.308	22.02
M	UG/L	NTC21-FD111609-01	0911151-02RE2	NM	11/16/2009	11/30/2009	12/08/2009	14.3	7.895	22.19
M	UG/L	NTC21MW0601	0911181-03	NM	11/17/2009	11/30/2009	12/01/2009	12.72	1.572	14.29
M	UG/L	NTC21MW0201	0911151-03RE2	NM	11/16/2009	11/30/2009	12/04/2009	13.77	4.267	18.03
M	UG/L	NTC21MW0201	0911151-03RE1	NM	11/16/2009	11/30/2009	12/04/2009	13.77	4.264	18.03
M	UG/L	NTC21MW0201	0911151-03	NM	11/16/2009	11/30/2009	12/01/2009	13.77	1.524	15.29
M	UG/L	NTC21MW0101	0911181-02RE3	NM	11/17/2009	11/30/2009	12/09/2009	12.81	9.304	22.12
M	UG/L	NTC21MW0101	0911181-02RE2	NM	11/17/2009	11/30/2009	12/08/2009	12.81	7.897	20.71
M	UG/L	NTC21MW0101	0911181-02	NM	11/17/2009	11/30/2009	12/01/2009	12.81	1.569	14.38
M	UG/L	NTC21MW0101	0911181-02RE1	NM	11/17/2009	11/30/2009	12/08/2009	12.81	7.894	20.71
M	UG/L	NTC21-FD111609-01	0911151-02RE1	NM	11/16/2009	11/30/2009	12/04/2009	14.3	4.249	18.55
M	UG/L	NTC21-FD111609-01	0911151-02	NM	11/16/2009	11/30/2009	12/01/2009	14.3	1.520	15.82
M	UG/L	NTC21MW0301	0911151-04	NM	11/16/2009	11/30/2009	12/01/2009	13.88	1.527	15.40
HGF	UG/L	NTC21MW0401	0911151-06	NM	11/16/2009	12/02/2009	12/03/2009	15.75	1.197	16.95
MF	UG/L	NTC21MW0401	0911151-06	NM	11/16/2009	11/30/2009	12/01/2009	13.75	1.534	15.28
MF	UG/L	NTC21MW0401	0911151-06RE1	NM	11/16/2009	11/30/2009	12/04/2009	13.75	4.277	18.03

INORGANIC CASE NARRATIVE
TETRA TECH NUS
Great Lakes NTC
SDG# DRAFT CTO064_002
Work Order #0911147, 0911151, 0911181
November, 2009

Empirical Laboratories ID	Client ID
0911147-01	NTC21SB02-SO-0406
0911151-01	NTC21MW0501
0911151-02	NTC21-FD111609-01
0911151-03	NTC21MW0201
0911151-04	NTC21MW0301
0911151-05	NTC21MW0401
0911151-06	NTC21MW0401
0911181-01	FB-111709-01
0911181-02	NTC21MW0101
0911181-03	NTC21MW0601

I certify that, based upon my inquiry of those individuals immediately responsible for obtaining the information and to the best of my knowledge, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in the case narrative, as verified by the following signature.

Betty DeVille

Betty DeVille
Inorganic Lab Manager

I. RECEIPT

No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody included with this data package.

I. HOLDING TIMES

A. Sample Preparation: All holding times were met.

B. Sample Analysis: All holding times were met.

II. METHODS

US EPA SW846 method 3050B was used to digest soil samples, method 3005A was used for total and dissolved waters and method 6010B was used for analysis of ICAP metals. Method 7471A was used for soil samples and method 7470A was used for total and dissolved waters to digest and analyze mercury. Standard Methods 19th Edition method 2540B was used to analyze % solids. Note: The "U" flag indicates that the sample concentration is reported down to the laboratory MDL. The "J" flag indicates that the analyte result is between the laboratory reporting limit and the laboratory MDL. All methods performed according to EPA guidelines and Empirical Laboratories

Standard Operating Procedures.

III. PREPARATION

All methods performed according to EPA guidelines and Empirical Laboratories Standard Operating Procedures.

IV. ANALYSIS

A. Calibration: All calibration criteria were met with the following exceptions: 9K32903-CCV9 was out of the specification limits of 90 to 110% for calcium at 88.1%, chromium at 88.6% and for magnesium at 88.8%. 9K32903-CCVA was out of the specification limits for calcium at 88.1%, for chromium at 89.2% and for magnesium at 87.9%. 9K32903-CCVB was out of the specification limits for calcium at 88.4%, for chromium at 86.2% and for magnesium at 87.1%. These CCV's impacted sample NTC21SB02-SO-0406.

9L34212-CCVA, CCVB and CCVC were out of the specification limits for manganese at 117, 114 and 115%. These CCVs impacted samples NTC09SB07B-SO-0406 and NTC09SB07C-SO-0204. No samples were impacted by these CCVs.

B. Blanks: All blank criteria were met.

C. Spikes: All matrix spikes quality control criteria were met with the following exceptions: The matrix spike was out of the specification limits of 80 to120% for antimony at 157%, for arsenic at 160%, for copper at 134% and for silver at 151% for NTC21MW0501. The post digestion spike recovery was at 183% for antimony, at 185% for arsenic, at 152% for copper and at 176% for silver. **All associated data are flagged with an "N" on the final report.**

D. Duplicates: All duplicate quality control criteria were met.

E. Samples: All sample analysis proceeded normally with the following exceptions: Some metal concentrations were over the linear range which necessitated dilution. When these metals have IEC's for other metals those metals have to be reported from the diluted aliquot so that the IEC can be calculated correctly.

F. Laboratory Control Samples: All percent recovery quality control criteria were met.

G. **Serial Dilution:** All serial dilution quality control criteria were met.

CTO064_002 Metals

TETRA TECH NUS, INC

CHAIN OF CUSTODY
NUMBER: ED00000105-3

Project No:	Facility:	Project Manager:	Carrier:	Laboratory Name:
112G01797	**GREAT LAKES NTC**	**Biff Cummings**	**Federal Express**	**Empirical Laboritories, LLC. 227 French Landing Drive Nashville, TN 37228**
Task No: **0064**	Turn Around Time: **Standard**	Field Ops Leader: **Shannon Hill**	Carrier/Waybill No. **8631 3888 3733 0215**	Point of Contact: **Janice Shilling 615.345.1115 ext. 256**

Date	Sample ID #	Time	Analysis	Loc ID	Matrix	Description	Preservative	Container Count	Container Type	Container Reqs	Comments
11/13/2009	NTC21SB02-SO-0406	09:12	**SW-846 8270C/8181/8081A/8082/6010B**	NTC21SB02	SO	TCL SVOCs/Herb/Pest/PCB/TAL Metals	4°C	3	Glass - Clear	4 oz. wide-mouth w/Teflon cap	—01
11/13/2009	NTC21SB02-SO-0406	09:12	**SW-846 8260B**	NTC21SB02	SO	TCL VOCs	4° C/HNaO4S/MeOH	4	TerraCore	TerraCore	

0911147

1. Relinquished By: **Shannon Hill**	Date: 11/13/2009	Time: 18:11	Received By: **Federal Express**	Date: 11/13/2009	Time: 19:11
2. Relinquished By:	Date:	Time:	Received By:	Date:	Time:
3. Relinquished By:	Date:	Time:	Received By:	Date: 11/14/09	Time: 10:45

2.8°C

Comments:

CTO064 002 Metals

TETRA TECH NUS, INC

CHAIN OF CUSTODY
NUMBER: ED00000105-4

Project No:	Facility:	Project Manager:	Carrier:	Laboratory Name:
112G01797	**GREAT LAKES NTC**	**Biff Cummings**	**Federal Express**	**Empirical Laboritories, LLC. 227 French Landing Drive Nashville, TN 37228**
Task No:	Turn Around Time:	Field Ops Leader:	Carrier/Waybill No.	Point of Contact:
0064	**Standard**	**Shannon Hill**	**8631 3888 3744 0215**	**Janice Shilling 615.345.1115 ext. 256**

Date	Sample ID #	Time	Analysis	Loc ID	Matrix	Description	Preservative	Container Count	Container Type	Container Reqs	Comments
11/15/2009	NTC21MW0501	16:26	**SW-846 8270C/8181/8081A/8082**	NTC21-MW05	GW	TCL SVOCs/Herb/Pest/PCB	4°C	18	Glass - Amber	1L	MS/MSD -01
11/15/2009	NTC21MW0501	16:26	**SW-846 6010B**	NTC21-MW05	GW	TAL Metals (Total)	4°C/HNO3	3	Plastic - PE	250ml	MS/MSD
11/15/2009	NTC21MW0501	16:26	**SW-846 8260B**	NTC21-MW05	GW	TCL VOCs	4°C/HCL	9	Glass - Clear	40ml vials	MS/MSD
11/16/2009	NTC21-FD111609-01	00:00	**SW-846 8270C/8181/8081A/8082**	QC	GW	TCL SVOCs/Herb/Pest/PCB	4°C	6	Glass - Amber	1L	-02
11/16/2009	NTC21-FD111609-01	00:00	**SW-846 6010B**	QC	GW	TAL Metals (Total)	4°C/HNO3	1	Plastic - PE	250ml	
11/16/2009	NTC21-FD111609-01	00:00	**SW-846 8260B**	QC	GW	TCL VOCs	4°C/HCL	3	Glass - Clear	40ml vials	
11/16/2009	NTC21MW0201	12:46	**SW-846 8270C/8181/8081A/8082**	NTC21-MW02	GW	TCL SVOCs/Herb/Pest/PCB	4°C	6	Glass - Amber	1L	-03
11/16/2009	NTC21MW0201	12:46	**SW-846 6010B**	NTC21-MW02	GW	TAL Metals (Total)	4°C/HNO3	1	Plastic - PE	250ml	
11/16/2009	NTC21MW0201	12:46	**SW-846 8260B**	NTC21-MW02	GW	TCL VOCs	4°C/HCL	3	Glass - Clear	40ml vials	
11/16/2009	NTC21MW0301	10:05	**SW-846 6010B**	NTC21-MW03	GW	TAL Metals (Total)	4°C/HNO3	1	Plastic - PE	250ml	-04
11/16/2009	NTC21MW0301	10:05	**SW-846 8260B**	NTC21-MW03	GW	TCL VOCs	4°C/HCL	3	Glass - Clear	40ml vials	
11/16/2009	NTC21MW0301	10:05	**SW-846 8270C/8181/8081A/8082**	NTC21-MW03	GW	TCL SVOCs/Herb/Pest/PCB	4°C	6	Glass - Amber	1L	
11/16/2009	NTC21MW0401	13:10	**SW-846 6010B - Filtered**	NTC21-MW04	GW	TAL Metals (Dissolved)	4°C/HNO3	1	Plastic - PE	250ml	-06
11/16/2009	NTC21MW0401	13:10	**SW-846 8270C/8181/8081A/8082**	NTC21-MW04	GW	TCL SVOCs/Herb/Pest/PCB	4°C	6	Glass - Amber	1L	-05
11/16/2009	NTC21MW0401	13:10	**SW-846 6010B**	NTC21-MW04	GW	TAL Metals (Total)	4°C/HNO3	1	Plastic - PE	250ml	
11/16/2009	NTC21MW0401	13:10	**SW-846 8260B**	NTC21-MW04	GW	TCL VOCs	4°C/HCL	3	Glass - Clear	40ml vials	

0911151

1. Relinquished By: **Shannon Hill**	Date: 11/16/2009	Time: 17:46	Received By: **Federal Express**	Date: 11/16/2009	Time: 18:46
2. Relinquished By: Nicole Rochner	Date: 11/16/2009	Time:	Received By:	Date:	Time:
3. Relinquished By:	Date:	Time:	Received By: [signature]	Date: 11/17/09	Time: 08:30

0.10C

CTO064_002 Metals

TETRA TECH NUS, INC

CHAIN OF CUSTODY
NUMBER: ED00000105-6

Project No:	Facility:	Project Manager:	Carrier:	Laboratory Name:
112G01797	**GREAT LAKES NTC**	**Biff Cummings**	**Federal Express**	**Empirical Laboritories, LLC. 227 French Landing Drive Nashville, TN 37228**
Task No:	Turn Around Time:	Field Ops Leader:	Carrier/Waybill No.	Point of Contact:
0064	**Standard**	**Shannon Hill**	**8631 2526 7844 0215**	**Janice Shilling 615.345.1115 ext. 256**

Date	Sample ID #	Time	Analysis	Loc ID	Matrix	Description	Preservative	Container Count	Container Type	Container Reqs	Comments
11/17/2009	FB-111709-01	08:00	**SW-846 8260B**	QC	AQ	TCL VOCs	4°C/HCL	2	Glass - Clear	40ml vials	-01
11/17/2009	NTC21MW0101	11:45	**SW-846 6010B**	NTC21-MW01	GW	TAL Metals (Total)	4°C/HNO3	1	Plastic - PE	250ml	-02
11/17/2009	NTC21MW0101	11:45	**SW-846 8260B**	NTC21-MW01	GW	TCL VOCs	4°C/HCL	3	Glass - Clear	40ml vials	
11/17/2009	NTC21MW0101	11:45	**SW-846 8270C/8181/8081A/8082**	NTC21-MW01	GW	TCL SVOCs/Herb/Pest/PCB	4°C	6	Glass - Amber	1L	
11/17/2009	NTC21MW0601	14:05	**SW-846 8260B**	NTC21-MW06	GW	TCL VOCs	4°C/HCL	3	Glass - Clear	40ml vials	-03
11/17/2009	NTC21MW0601	14:05	**SW-846 8270C/8181/8081A/8082**	NTC21-MW06	GW	TCL SVOCs/Herb/Pest/PCB	4°C	6	Glass - Amber	1L	
11/17/2009	NTC21MW0601	14:05	**SW-846 6010B**	NTC21-MW06	GW	TAL Metals (Total)	4°C/HNO3	1	Plastic - PE	250ml	

0911181

1. Relinquished By: **Shannon Hill**	Date: 11/17/2009	Time: 18:50	Received By: **Federal Express**	Date: 11/17/2009	Time: 19:50
2. Relinquished By:	Date:	Time:	Received By:	Date:	Time:
3. Relinquished By:	Date:	Time:	Received By:	Date: 11/18/09	Time: 08:15

3.8°C

Comments:

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0911147 Number of Coolers: 1 of 1

Client: Tetra Tech NUS Project: CTO-064

Date/Time Received: **11/14/09 10:45** Date cooler(s) opened: **11/14/09**

Opened By (print): **WILLIAM SCHWAB** (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered

EL Courier Other: _____

If applicable, enter airbill number here: 7752

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 1 Seal date: 11/13/09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A
7. Was project identifiable from custody papers? ..... Yes No N/A
8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 2-8°C

Dates samples were logged-in: **11/16/09**

9. Initial this form to acknowledge login of sample(s): (Name): Will Schwab (Initial): WS
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A Soils

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0911151 Number of Coolers: 1 of 5

Client: Tetra Tech NUS Project: Great Lakes CTO-064

Date/Time Received: 11/17/09 08:30 Date cooler(s) opened: 11/17/09

Opened By (print): WILLIAM SCHWAB (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered

EL Courier Other: _____

If applicable, enter airbill number here: 1726

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 1 Seal date: 11/16/09 Seal Initials: -

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A
7. Was project identifiable from custody papers? ..... Yes No N/A
8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 0.1°C

Dates samples were logged-in: 11/17/09

9. Initial this form to acknowledge login of sample(s): (Name): Will Schwab (Initial): WS
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A

plt for total - dissolve metals all <2

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0911151 Number of Coolers: 2 of 5

Client: Tetra Tech NUS Project: Great Lakes CTO-064

Date/Time Received: 11/17/09 08:30 Date cooler(s) opened: 11/17/09

Opened By (print): WILLIAM SCHWAB (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered

EL Courier Other: _____

If applicable, enter airbill number here: 1690

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 1 Seal date: 11/16/09 Seal Initials: -

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A

4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A

5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A

6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A

7. Was project identifiable from custody papers? ..... Yes No N/A

8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 1.4°C

~~Dates samples were logged in:~~ 11/17/09

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____

10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A

11. Did all bottles arrive unbroken? ..... Yes No N/A

12. Was all required bottle label information complete? ..... Yes No N/A

13. Did all bottle labels agree with custody papers? ..... Yes No N/A

14. Were correct containers used for the analyses indicated? ..... Yes No N/A

15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A

16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A

17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A

18. Was headspace present in any included VOA vials? ..... Yes No N/A

See page 1 5

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0911151 Number of Coolers: 3 ~~1~~ of 5

Client: Tetra Tech NUS Project: Great Lakes CTO-064

Date/Time Received: 11/17/09 08:30 Date cooler(s) opened: 11/17/09

Opened By (print): WILLIAM SCHWAB (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered

EL Courier Other: _____

If applicable, enter airbill number here: 1737

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 1 Seal date: 11/16/09 Seal Initials: _____

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A
7. Was project identifiable from custody papers? ..... Yes No N/A
8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 1.10c

Dates samples were logged-in: 11/17/09

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

see page ~~1~~ 3 of 5

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0911151 Number of Coolers: 4 of 5

Client: Tetra Tech NUS Project: Great Lakes CTO-064

Date/Time Received: 11/17/09 08:30 Date cooler(s) opened: 11/17/09

Opened By (print): WILLIAM SCHWAB (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered

EL Courier Other: _____

If applicable, enter airbill number here: 1715

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 1 Seal date: 11/16/09 Seal Initials: _____

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A

4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A

5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A

6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A

7. Was project identifiable from custody papers? ..... Yes No N/A

8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 3.1°C

Dates samples were logged in: 11/17/09

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____

10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A

11. Did all bottles arrive unbroken? ..... Yes No N/A

12. Was all required bottle label information complete? ..... Yes No N/A

13. Did all bottle labels agree with custody papers? ..... Yes No N/A

14. Were correct containers used for the analyses indicated? ..... Yes No N/A

15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A

16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A

17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A

18. Was headspace present in any included VOA vials? ..... Yes No N/A

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

See page 1 of 5

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0911151 Number of Coolers: 5 of 5

Client: Tetra Tech NUS Project: Great Lakes CTO-064

Date/Time Received: 11/17/09 08:30 Date cooler(s) opened: 11/17/09

Opened By (print): ~~WILLIAM SCHWAB~~ (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered

EL Courier Other: _____

If applicable, enter airbill number here: 1748

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 1 Seal date: 11/16/09 Seal Initials: _____

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A
7. Was project identifiable from custody papers? ..... Yes No N/A
8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 4.4°C

Dates samples were logged-in: 11/17/09

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

See page 1 of 5

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0911181 Number of Coolers: 1 of 2

Client: Tetra Tech NUS Project: CTO-064

Date/Time Received: 11/18/09 08:15 Date cooler(s) opened: 11/18/09

Opened By (print): WILLIAM SCHWAB (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered

EL Courier Other: -

If applicable, enter airbill number here: 6859

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 1 Seal date: 11/17/09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A

4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A

5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A

6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A

7. Was project identifiable from custody papers? ..... Yes No N/A

8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 3-8°C

Dates samples were logged-in: 11/18/09

9. Initial this form to acknowledge login of sample(s): (Name): Will Schwab (Initial): WS

10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A

11. Did all bottles arrive unbroken? ..... Yes No N/A

12. Was all required bottle label information complete? ..... Yes No N/A

13. Did all bottle labels agree with custody papers? ..... Yes No N/A

14. Were correct containers used for the analyses indicated? ..... Yes No N/A

15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A

16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A

17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A

18. Was headspace present in any included VOA vials? ..... Yes No N/A

pH for metals all <2

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0911181 Number of Coolers: 2 of 2

Client: Tetra Tech NUS Project: CTO-064

Date/Time Received: 11/18/09 08:15 Date cooler(s) opened: 11/18/09

Opened By (print): WILLIAM SCHWAB (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered

EL Courier Other: _____

If applicable, enter airbill number here: 7844

2. Were custody seals on outside of cooler(s)? ..... (Yes) No

How many: 1 Seal date: 11/17/09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival? ..... (Yes) No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... (Yes) No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... (Yes) No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... (Yes) No N/A
7. Was project identifiable from custody papers? ..... (Yes) No N/A
8. If required, was enough ice present in the cooler(s)? ..... (Yes) No N/A

Type of Coolant: (WET) DRY BLUE NONE Temperature of Samples upon Receipt: 4.3°C

Dates samples ~~were logged-in:~~ 11/18/09

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A

See page 1 of 7

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

NTC GREAT LAKES
WATER DATA
CTO064_002

FRACTION	CHEMICAL	NTC21MW0201	UNITS	NTC21-FD111609-01	RPD	D
M	ALUMINUM	668 DJ	UG/L	ND	200.00	668.00
M	ARSENIC	7.26 N	UG/L	6.3 N	14.16	0.96
M	BARIUM	34.5	UG/L	33.8	2.05	0.70
M	CADMIUM	0.86 J	UG/L	1.11 J	25.38	0.25
M	CALCIUM	671000 D	UG/L	604000 D	10.51	67000.00
M	COBALT	15.3	UG/L	15.3	0.00	0.00
M	IRON	34000	UG/L	30800	9.88	3200.00
M	LEAD	ND	UG/L	1.88 DJ	200.00	1.88
M	MAGNESIUM	97600	UG/L	89700	8.44	7900.00
M	MANGANESE	3040 D	UG/L	2360	25.19	680.00
M	NICKEL	11.3	UG/L	10.7	5.45	0.60
M	POTASSIUM	13100	UG/L	13400	2.26	300.00
M	SILVER	0.47 JN	UG/L	0.39 JN	18.60	0.08
M	SODIUM	772000 D	UG/L	785000 D	1.67	13000.00
M	ZINC	ND	UG/L	9.01 DJ ok	200.00	9.01

ok:
result < 5 x RL
D < 2 x RL

Current RPD Quality Control Limit: ~~35~~ 30 %.
Shaded cells indicate RPDs that exceed the applicable quality control limit.

Sample Calc

NT (2) - FD111609-01

Sample Name: 0911151-02 Acquired: 12/1/2009 19:37:44 Type: Unk

Method: DuoEnviroMethodNEW(v920) Mode: CONC Corr. Factor: 1.000000

User: rburr Custom ID1: Custom ID2: Custom ID3:

Comment: TETRA /4X Arsenic reported result: 6.3 µg/L

Elem	Ag3280	Al3961	As1890	B_2496	Ba2335	Be3130	Ca3179
Units	ppb	ppb	ppb	ppb	ppb	ppb	ppm
Avg	**1.5748**	F **-705.40**	**25.201**	**3936.3**	**135.02**	**.12585**	F **1897.8**
Stddev	.2404	.19	7.547	32.1	.12	.01072	25.8
%RSD	15.266	.02713	29.948	.81515	.08795	8.5181	1.3608
#1	1.6762	-705.50	27.938	3913.9	134.91	.13526	1869.2
#2	1.7478	-705.18	30.998	3922.0	135.14	.11418	1905.2
#3	1.3003	-705.52	16.667	3973.1	135.01	.12810	1919.2

Elem	Cd2288	Co2286	Cr2677	Cu3247	Fe2611	K_7664	Mg2790
Units	ppb	ppb	ppb	ppb	ppb	ppm	ppm
Avg	**4.4570**	**61.239**	F **-2.0349**	**-.91647**	**123080.**	**53.581**	**358.97**
Stddev	.4056	.376	.2107	.07287	1201.	.902	1.75
%RSD	9.1011	.61451	10.352	7.9506	.97544	1.6826	.48857
#1	4.8853	60.817	-1.8793	-.85387	121970.	54.302	357.25
#2	4.4071	61.360	-1.9507	-.89909	122930.	53.870	358.90
#3	4.0787	61.540	-2.2746	-.99646	124350.	52.570	360.76

Elem	Mn2576	Mo2020	Na5895	Ni2316	Pb2203	Sb2068	Se1960
Units	ppb	ppb	ppm	ppb	ppb	ppb	ppb
Avg	**9455.8**	**1.3122**	^ *****	**42.700**	F **-7.0333**	**1.3912**	F **-25.176**
Stddev	240.5	.2991	-----	.759	.3938	2.8534	3.018
%RSD	2.5433	22.792	-----	1.7786	5.5996	205.10	11.987
#1	9178.1	1.0902	^ -----	42.681	-7.4612	2.7083	-22.042
#2	9594.9	1.1941	^ -----	41.950	-6.9530	-1.8829	-25.424
#3	9594.5	1.6523	^ -----	43.469	-6.6859	3.3482	-28.062

Elem	Sn1899	Ti3349	Tl1908	V_2924	Zn2062
Units	ppb	ppb	ppb	ppb	ppb
Avg	**-.20761**	F **-32.569**	F **-8.3128**	**1.5878**	**31.465**
Stddev	.72537	.379	1.6207	.1344	1.822
%RSD	349.39	1.1628	19.497	8.4638	5.7918
#1	-1.0276	-32.342	-6.5117	1.4847	31.219
#2	.35017	-32.359	-9.6536	1.7398	29.778
#3	.05462	-33.006	-8.7729	1.5389	33.398

25.201 ppb × $\frac{25}{100}$ = 6.3 µg/L

$\frac{\text{final volume}}{\text{initial volume}}$

ANALYSIS SEQUENCE SUMMARY
SW6010B

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9K32903	Instrument:	ME-ICP
Calibration:	9334004		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	9K32903-CAL1	112409A-001	11/24/09 10:09
Cal Standard	9K32903-CAL2	112409A-002	11/24/09 10:15
Cal Standard	9K32903-CAL3	112409A-003	11/24/09 10:20
Cal Standard	9K32903-CAL4	112409A-004	11/24/09 10:25
Cal Standard	9K32903-CAL5	112409A-005	11/24/09 10:31
Cal Standard	9K32903-CAL6	112409A-006	11/24/09 10:37
Cal Standard	9K32903-CAL7	112409A-007	11/24/09 10:44
Cal Standard	9K32903-CAL8	112409A-008	11/24/09 10:50
Cal Standard	9K32903-CAL9	112409A-009	11/24/09 10:56
Initial Cal Check	9K32903-ICV1	112409B-001	11/24/09 11:36
Initial Cal Blank	9K32903-ICB1	112409B-002	11/24/09 11:43
Instrument RL Check	9K32903-CRL1	112409B-003	11/24/09 11:48
Instrument RL Check	9K32903-CRL2	112409B-005	11/24/09 11:59
Interference Check A	9K32903-IFA1	112409B-012	11/24/09 12:34
Interference Check B	9K32903-IFB1	112409B-013	11/24/09 12:39
Calibration Check	9K32903-CCV1	112409B-015	11/24/09 12:50
Calibration Blank	9K32903-CCB1	112409B-016	11/24/09 12:57
Calibration Check	9K32903-CCV9	112409B-131	11/24/09 22:35
Calibration Blank	9K32903-CCB9	112409B-132	11/24/09 22:42
Blank	9K23009-BLK1	112409B-133	11/24/09 22:47
LCS	9K23009-BS1	112409B-134	11/24/09 22:52
Calibration Check	9K32903-CCVA	112409B-151	11/25/09 00:17
Calibration Blank	9K32903-CCBA	112409B-152	11/25/09 00:24
NTC21SB02-SO-0406	0911147-01	112409B-160	11/25/09 01:03
Calibration Check	9K32903-CCVB	112409B-170	11/25/09 01:52
Calibration Blank	9K32903-CCBB	112409B-171	11/25/09 01:59

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9334004
Sequence: 9K32903

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9K32903-ICV1	Aluminum	10000	9953	99.5	ug/L	+/- 10.00%
	Antimony	1000	991.2	99.1	ug/L	+/- 10.00%
	Arsenic	1000	958.6	95.9	ug/L	+/- 10.00%
	Barium	1000	1014	101	ug/L	+/- 10.00%
	Beryllium	1000	995.7	99.6	ug/L	+/- 10.00%
	Cadmium	1000	1047	105	ug/L	+/- 10.00%
	Calcium	50000	49290	98.6	ug/L	+/- 10.00%
	Chromium	1000	979.9	98.0	ug/L	+/- 10.00%
	Cobalt	1000	982.9	98.3	ug/L	+/- 10.00%
	Copper	1000	1008	101	ug/L	+/- 10.00%
	Iron	10000	10030	100	ug/L	+/- 10.00%
	Lead	1000	984.0	98.4	ug/L	+/- 10.00%
	Magnesium	50000	48620	97.2	ug/L	+/- 10.00%
	Manganese	1000	1026	103	ug/L	+/- 10.00%
	Nickel	1000	976.1	97.6	ug/L	+/- 10.00%
	Potassium	10000	9848	98.5	ug/L	+/- 10.00%
	Selenium	1000	1000	100	ug/L	+/- 10.00%
	Silver	500.0	490.8	98.2	ug/L	+/- 10.00%
	Sodium	50000	50080	100	ug/L	+/- 10.00%
	Thallium	1000	954.3	95.4	ug/L	+/- 10.00%
	Vanadium	1000	980.1	98.0	ug/L	+/- 10.00%
	Zinc	1000	977.9	97.8	ug/L	+/- 10.00%
9K32903-CCV1	Aluminum	10000	9957	99.6	ug/L	+/- 10.00%
	Antimony	1000	1008	101	ug/L	+/- 10.00%
	Arsenic	1000	1012	101	ug/L	+/- 10.00%
	Barium	1000	976.9	97.7	ug/L	+/- 10.00%
	Beryllium	1000	1032	103	ug/L	+/- 10.00%
	Cadmium	1000	1045	104	ug/L	+/- 10.00%
	Calcium	50000	49190	98.4	ug/L	+/- 10.00%
	Chromium	1000	988.7	98.9	ug/L	+/- 10.00%
	Cobalt	1000	991.8	99.2	ug/L	+/- 10.00%
	Copper	1000	1015	102	ug/L	+/- 10.00%
	Iron	10000	10000	100	ug/L	+/- 10.00%
	Lead	1000	1005	100	ug/L	+/- 10.00%
	Magnesium	50000	48750	97.5	ug/L	+/- 10.00%
	Manganese	1000	1035	103	ug/L	+/- 10.00%
	Nickel	1000	989.9	99.0	ug/L	+/- 10.00%
	Potassium	10000	9821	98.2	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9334004
Sequence: 9K32903

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9K32903-CCV1	Selenium	1000	1009	101	ug/L	+/- 10.00%
	Silver	500.0	482.9	96.6	ug/L	+/- 10.00%
	Sodium	50000	49960	99.9	ug/L	+/- 10.00%
	Thallium	1000	1006	101	ug/L	+/- 10.00%
	Vanadium	1000	980.9	98.1	ug/L	+/- 10.00%
	Zinc	1000	994.7	99.5	ug/L	+/- 10.00%
9K32903-CCV9	Aluminum	10000	9609	96.1	ug/L	+/- 10.00%
	Antimony	1000	972.6	97.3	ug/L	+/- 10.00%
	Arsenic	1000	981.6	98.2	ug/L	+/- 10.00%
	Barium	1000	947.3	94.7	ug/L	+/- 10.00%
	Beryllium	1000	934.1	93.4	ug/L	+/- 10.00%
	Cadmium	1000	1002	100	ug/L	+/- 10.00%
	Calcium	**50000**	**44040**	**88.1**	**ug/L**	+/- 10.00%
	Chromium	**1000**	**885.9**	**88.6**	**ug/L**	+/- 10.00%
	Cobalt	1000	936.6	93.7	ug/L	+/- 10.00%
	Copper	1000	974.5	97.5	ug/L	+/- 10.00%
	Iron	10000	9477	94.8	ug/L	+/- 10.00%
	Lead	1000	941.8	94.2	ug/L	+/- 10.00%
	Magnesium	**50000**	**44390**	**88.8**	**ug/L**	+/- 10.00%
	Manganese	1000	984.8	98.5	ug/L	+/- 10.00%
	Nickel	1000	950.5	95.1	ug/L	+/- 10.00%
	Potassium	10000	10130	101	ug/L	+/- 10.00%
	Selenium	1000	995.5	99.6	ug/L	+/- 10.00%
	Silver	500.0	476.0	95.2	ug/L	+/- 10.00%
	Sodium	50000	50040	100	ug/L	+/- 10.00%
	Thallium	1000	981.8	98.2	ug/L	+/- 10.00%
	Vanadium	1000	934.1	93.4	ug/L	+/- 10.00%
	Zinc	1000	930.6	93.1	ug/L	+/- 10.00%
9K32903-CCVA	Aluminum	10000	9409	94.1	ug/L	+/- 10.00%
	Antimony	1000	944.3	94.4	ug/L	+/- 10.00%
	Arsenic	1000	958.9	95.9	ug/L	+/- 10.00%
	Barium	1000	931.2	93.1	ug/L	+/- 10.00%
	Beryllium	1000	930.4	93.0	ug/L	+/- 10.00%
	Cadmium	1000	983.2	98.3	ug/L	+/- 10.00%
NA	**Calcium**	**50000**	**44040**	**88.1**	**ug/L**	+/- 10.00%
NA	**Chromium**	**1000**	**891.8**	**89.2**	**ug/L**	+/- 10.00%
	Cobalt	1000	916.5	91.6	ug/L	+/- 10.00%
	Copper	1000	954.9	95.5	ug/L	+/- 10.00%

NA - Not applicable, re-analyzed for analysis in separate sequence

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9334004
Sequence: 9K32903

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9K32903-CCVA	Iron	10000	9322	93.2	ug/L	+/- 10.00%
	Lead	1000	917.7	91.8	ug/L	+/- 10.00%
NA	**Magnesium**	**50000**	**43940**	**87.9**	**ug/L**	+/- 10.00%
	Manganese	1000	983.4	98.3	ug/L	+/- 10.00%
	Nickel	1000	930.8	93.1	ug/L	+/- 10.00%
	Potassium	10000	9779	97.8	ug/L	+/- 10.00%
	Selenium	1000	966.8	96.7	ug/L	+/- 10.00%
	Silver	500.0	465.4	93.1	ug/L	+/- 10.00%
	Sodium	50000	48530	97.1	ug/L	+/- 10.00%
	Thallium	1000	956.1	95.6	ug/L	+/- 10.00%
	Vanadium	1000	930.9	93.1	ug/L	+/- 10.00%
	Zinc	1000	922.6	92.3	ug/L	+/- 10.00%
9K32903-CCVB	Aluminum	10000	9317	93.2	ug/L	+/- 10.00%
	Antimony	1000	937.8	93.8	ug/L	+/- 10.00%
	Arsenic	1000	953.7	95.4	ug/L	+/- 10.00%
	Barium	1000	931.2	93.1	ug/L	+/- 10.00%
	Beryllium	1000	924.3	92.4	ug/L	+/- 10.00%
	Cadmium	1000	976.8	97.7	ug/L	+/- 10.00%
NA	**Calcium**	**50000**	**44190**	**88.4**	**ug/L**	+/- 10.00%
NA	**Chromium**	**1000**	**861.8**	**86.2**	**ug/L**	+/- 10.00%
	Cobalt	1000	910.0	91.0	ug/L	+/- 10.00%
	Copper	1000	933.0	93.3	ug/L	+/- 10.00%
	Iron	10000	9322	93.2	ug/L	+/- 10.00%
	Lead	1000	906.7	90.7	ug/L	+/- 10.00%
NA	**Magnesium**	**50000**	**43540**	**87.1**	**ug/L**	+/- 10.00%
	Manganese	1000	967.3	96.7	ug/L	+/- 10.00%
	Nickel	1000	926.3	92.6	ug/L	+/- 10.00%
	Potassium	10000	9880	98.8	ug/L	+/- 10.00%
	Selenium	1000	960.7	96.1	ug/L	+/- 10.00%
	Silver	500.0	468.5	93.7	ug/L	+/- 10.00%
	Sodium	50000	48450	96.9	ug/L	+/- 10.00%
	Thallium	1000	948.4	94.8	ug/L	+/- 10.00%
	Vanadium	1000	913.8	91.4	ug/L	+/- 10.00%
	Zinc	1000	927.9	92.8	ug/L	+/- 10.00%

NA- Not applicable, re-analyzed for analytes in separate sequence

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
SDG: CTO064_002
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP
Project: Great Lakes CTO 064 (Site 21)
Sequence: 9K32903
Calibration: 9334004

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9K32903-ICB1	Aluminum	1.999	50.0	200	ug/L	U	SW6010B
	Antimony	0.1866	5.00	15.0	ug/L	U	SW6010B
	Arsenic	-1.180	3.00	5.00	ug/L	U	SW6010B
	Barium	0.1830	5.00	40.0	ug/L	U	SW6010B
	Beryllium	0.1267	1.00	5.00	ug/L	U	SW6010B
	Cadmium	0.4927	1.00	5.00	ug/L	U	SW6010B
	Calcium	5.330	1000	5000	ug/L	U	SW6010B
	Chromium	0.2250	2.00	5.00	ug/L	U	SW6010B
	Cobalt	0.2494	5.00	12.5	ug/L	U	SW6010B
	Copper	0.2780	5.00	10.0	ug/L	U	SW6010B
	Iron	0.03526	30.0	100	ug/L	U	SW6010B
	Lead	-0.3842	1.50	3.00	ug/L	U	SW6010B
	Magnesium	3.380	1000	5000	ug/L	U	SW6010B
	Manganese	0.1342	3.00	15.0	ug/L	U	SW6010B
	Nickel	-0.07707	3.00	10.0	ug/L	U	SW6010B
	Potassium	4.550	1000	5000	ug/L	U	SW6010B
	Selenium	1.838	3.00	5.00	ug/L	U	SW6010B
	Silver	0.1113	1.00	5.00	ug/L	U	SW6010B
	Sodium	5.630	1000	5000	ug/L	U	SW6010B
	Thallium	0.8418	3.00	8.00	ug/L	U	SW6010B
	Vanadium	0.01153	5.00	12.5	ug/L	U	SW6010B
	Zinc	0.06791	5.00	20.0	ug/L	U	SW6010B
9K32903-CCB1	Aluminum	24.0	50.0	200	ug/L	U	SW6010B
	Antimony	1.10	5.00	15.0	ug/L	U	SW6010B
	Arsenic	-0.328	3.00	5.00	ug/L	U	SW6010B
	Barium	0.187	5.00	40.0	ug/L	U	SW6010B
	Beryllium	0.227	1.00	5.00	ug/L	U	SW6010B
	Cadmium	0.674	1.00	5.00	ug/L	U	SW6010B
	Calcium	36.4	1000	5000	ug/L	U	SW6010B
	Chromium	0.520	2.00	5.00	ug/L	U	SW6010B
	Cobalt	0.227	5.00	12.5	ug/L	U	SW6010B
	Copper	0.552	5.00	10.0	ug/L	U	SW6010B
	Iron	12.1	30.0	100	ug/L	U	SW6010B

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
SDG: CTO064_002
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP
Project: Great Lakes CTO 064 (Site 21)
Sequence: 9K32903
Calibration: 9334004

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9K32903-CCB1	Lead	-0.667	1.50	3.00	ug/L	U	SW6010B
	Magnesium	28.6	1000	5000	ug/L	U	SW6010B
	Manganese	0.371	3.00	15.0	ug/L	U	SW6010B
	Nickel	-0.149	3.00	10.0	ug/L	U	SW6010B
	Potassium	8.54	1000	5000	ug/L	U	SW6010B
	Selenium	0.447	3.00	5.00	ug/L	U	SW6010B
	Silver	-0.0358	1.00	5.00	ug/L	U	SW6010B
	Sodium	18.7	1000	5000	ug/L	U	SW6010B
	Thallium	1.56	3.00	8.00	ug/L	U	SW6010B
	Vanadium	0.177	5.00	12.5	ug/L	U	SW6010B
	Zinc	0.0552	5.00	20.0	ug/L	U	SW6010B
9K32903-CCB9	Aluminum	9.96	50.0	200	ug/L	U	SW6010B
	Antimony	0.524	5.00	15.0	ug/L	U	SW6010B
	Arsenic	0.336	3.00	5.00	ug/L	U	SW6010B
	Barium	0.399	5.00	40.0	ug/L	U	SW6010B
	Beryllium	0.0960	1.00	5.00	ug/L	U	SW6010B
	Cadmium	0.656	1.00	5.00	ug/L	U	SW6010B
	Calcium	106	1000	5000	ug/L	U	SW6010B
	Chromium	0.184	2.00	5.00	ug/L	U	SW6010B
	Cobalt	0.150	5.00	12.5	ug/L	U	SW6010B
	Copper	0.244	5.00	10.0	ug/L	U	SW6010B
	Iron	16.2	30.0	100	ug/L	U	SW6010B
	Lead	-0.185	1.50	3.00	ug/L	U	SW6010B
	Magnesium	53.9	1000	5000	ug/L	U	SW6010B
	Manganese	1.24	3.00	15.0	ug/L	U	SW6010B
	Nickel	0.486	3.00	10.0	ug/L	U	SW6010B
	Potassium	18.5	1000	5000	ug/L	U	SW6010B
	Selenium	1.29	3.00	5.00	ug/L	U	SW6010B
	Silver	-0.0951	1.00	5.00	ug/L	U	SW6010B
	Sodium	5.51	1000	5000	ug/L	U	SW6010B
	Thallium	0.678	3.00	8.00	ug/L	U	SW6010B
	Vanadium	0.197	5.00	12.5	ug/L	U	SW6010B
	Zinc	-0.0144	5.00	20.0	ug/L	U	SW6010B

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
SDG: CTO064_002
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP
Project: Great Lakes CTO 064 (Site 21)
Sequence: 9K32903
Calibration: 9334004

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9K23009-BLK1	Aluminum	0.229	2.50	10.0	mg/Kg wet	U	SW6010B
	Antimony	0.0254	0.250	0.750	mg/Kg wet	U	SW6010B
	Arsenic	-0.0421	0.150	0.250	mg/Kg wet	U	SW6010B
	Barium	0.00232	0.250	2.00	mg/Kg wet	U	SW6010B
	Beryllium	-0.000686	0.0500	0.250	mg/Kg wet	U	SW6010B
	Cadmium	0.0544	0.0500	0.250	mg/Kg wet	J	SW6010B
	Calcium	1.32	50.0	250	mg/Kg wet	U	SW6010B
	Chromium	0.0432	0.100	0.250	mg/Kg wet	U	SW6010B
	Cobalt	0.00304	0.250	0.625	mg/Kg wet	U	SW6010B
	Copper	0.00141	0.250	0.500	mg/Kg wet	U	SW6010B
	Iron	0.357	1.50	5.00	mg/Kg wet	U	SW6010B
	Lead	-0.0591	0.0750	0.150	mg/Kg wet	U	SW6010B
	Magnesium	0.190	50.0	250	mg/Kg wet	U	SW6010B
	Manganese	0.0313	0.150	0.750	mg/Kg wet	U	SW6010B
	Nickel	-0.0113	0.250	0.500	mg/Kg wet	U	SW6010B
	Potassium	1.51	50.0	250	mg/Kg wet	U	SW6010B
	Silver	-0.0144	0.0500	0.250	mg/Kg wet	U	SW6010B
	Sodium	0.440	50.0	250	mg/Kg wet	U	SW6010B
	Thallium	-0.115	0.150	0.400	mg/Kg wet	U	SW6010B
	Vanadium	-0.00926	0.250	0.625	mg/Kg wet	U	SW6010B
	Zinc	0.215	0.250	1.00	mg/Kg wet	U	SW6010B
9K32903-CCBA	Aluminum	6.79	50.0	200	ug/L	U	SW6010B
	Antimony	0.0837	5.00	15.0	ug/L	U	SW6010B
	Arsenic	-0.131	3.00	5.00	ug/L	U	SW6010B
	Barium	0.492	5.00	40.0	ug/L	U	SW6010B
	Beryllium	0.0190	1.00	5.00	ug/L	U	SW6010B
	Cadmium	0.436	1.00	5.00	ug/L	U	SW6010B
	Calcium	25.7	1000	5000	ug/L	U	SW6010B
	Chromium	0.236	2.00	5.00	ug/L	U	SW6010B
	Cobalt	0.0937	5.00	12.5	ug/L	U	SW6010B
	Copper	0.0520	5.00	10.0	ug/L	U	SW6010B
	Iron	11.7	30.0	100	ug/L	U	SW6010B
	Lead	-0.634	1.50	3.00	ug/L	U	SW6010B

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
SDG: CTO064_002
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP
Project: Great Lakes CTO 064 (Site 21)
Sequence: 9K32903
Calibration: 9334004

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9K32903-CCBA	Magnesium	12.5	1000	5000	ug/L	U	SW6010B
	Manganese	2.65	3.00	15.0	ug/L	U	SW6010B
	Nickel	0.428	3.00	10.0	ug/L	U	SW6010B
	Potassium	9.90	1000	5000	ug/L	U	SW6010B
	Selenium	2.05	3.00	5.00	ug/L	U	SW6010B
	Silver	0.0499	1.00	5.00	ug/L	U	SW6010B
	Sodium	-3.97	1000	5000	ug/L	U	SW6010B
	Thallium	0.822	3.00	8.00	ug/L	U	SW6010B
	Vanadium	-0.146	5.00	12.5	ug/L	U	SW6010B
	Zinc	-0.0126	5.00	20.0	ug/L	U	SW6010B
9K32903-CCBB	Aluminum	2.09	50.0	200	ug/L	U	SW6010B
	Antimony	-0.0158	5.00	15.0	ug/L	U	SW6010B
	Arsenic	-0.888	3.00	5.00	ug/L	U	SW6010B
	Barium	0.294	5.00	40.0	ug/L	U	SW6010B
	Beryllium	0.0135	1.00	5.00	ug/L	U	SW6010B
	Cadmium	0.391	1.00	5.00	ug/L	U	SW6010B
	Calcium	-1.92	1000	5000	ug/L	U	SW6010B
	Chromium	0.296	2.00	5.00	ug/L	U	SW6010B
	Cobalt	0.210	5.00	12.5	ug/L	U	SW6010B
	Copper	-0.0977	5.00	10.0	ug/L	U	SW6010B
	Iron	0.701	30.0	100	ug/L	U	SW6010B
	Lead	-0.145	1.50	3.00	ug/L	U	SW6010B
	Magnesium	0.550	1000	5000	ug/L	U	SW6010B
	Manganese	0.491	3.00	15.0	ug/L	U	SW6010B
	Nickel	0.784	3.00	10.0	ug/L	U	SW6010B
	Potassium	10.7	1000	5000	ug/L	U	SW6010B
	Selenium	1.35	3.00	5.00	ug/L	U	SW6010B
	Silver	0.0670	1.00	5.00	ug/L	U	SW6010B
	Sodium	-1.20	1000	5000	ug/L	U	SW6010B
	Thallium	0.616	3.00	8.00	ug/L	U	SW6010B
	Vanadium	0.00708	5.00	12.5	ug/L	U	SW6010B
	Zinc	-0.0568	5.00	20.0	ug/L	U	SW6010B

ANALYSIS SEQUENCE SUMMARY
SW6010B

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9L33717	Instrument:	ME-ICP
Calibration:	9337001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	9L33717-CAL1	120109C-001	12/01/09 13:31
Cal Standard	9L33717-CAL2	120109C-002	12/01/09 13:36
Cal Standard	9L33717-CAL3	120109C-003	12/01/09 13:41
Cal Standard	9L33717-CAL4	120109C-004	12/01/09 13:46
Cal Standard	9L33717-CAL5	120109C-005	12/01/09 13:51
Cal Standard	9L33717-CAL6	120109C-006	12/01/09 13:57
Cal Standard	9L33717-CAL7	120109C-007	12/01/09 14:06
Cal Standard	9L33717-CAL8	120109C-008	12/01/09 14:12
Cal Standard	9L33717-CAL9	120109C-009	12/01/09 14:18
Initial Cal Check	9L33717-ICV1	120109D-001	12/01/09 14:53
Initial Cal Blank	9L33717-ICB1	120109D-002	12/01/09 15:00
Instrument RL Check	9L33717-CRL1	120109D-003	12/01/09 15:05
Instrument RL Check	9L33717-CRL2	120109D-004	12/01/09 15:09
Interference Check A	9L33717-IFA1	120109D-011	12/01/09 15:43
Interference Check B	9L33717-IFB1	120109D-012	12/01/09 15:48
Calibration Check	9L33717-CCV1	120109D-014	12/01/09 15:58
Calibration Blank	9L33717-CCB1	120109D-015	12/01/09 16:06
Calibration Check	9L33717-CCV3	120109G-017	12/01/09 17:44
Calibration Blank	9L33717-CCB3	120109G-018	12/01/09 17:52
Blank	9K30910-BLK1	120109G-019	12/01/09 17:56
LCS	9K30910-BS1	120109G-020	12/01/09 18:01
Calibration Check	9L33717-CCV4	120109G-031	12/01/09 18:55
Calibration Blank	9L33717-CCB4	120109G-032	12/01/09 19:03
NTC21MW0501	0911151-01	120109G-034	12/01/09 19:12
NTC21MW0501	9K30910-DUP1	120109G-035	12/01/09 19:17
NTC21MW0501	9K30910-MS1	120109G-036	12/01/09 19:22
NTC21MW0501	9K30910-PS1	120109G-037	12/01/09 19:27
NTC21MW0501	9L33717-SRD2	120109G-038	12/01/09 19:32
NTC21-FD111609-01	0911151-02	120109G-039	12/01/09 19:37
NTC21MW0201	0911151-03	120109G-040	12/01/09 19:42
NTC21MW0301	0911151-04	120109G-041	12/01/09 19:47
NTC21MW0401	0911151-05	120109G-042	12/01/09 19:52

ANALYSIS SEQUENCE SUMMARY
SW6010B

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9L33717	Instrument:	ME-ICP
Calibration:	9337001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
NTC21MW0401	0911151-06	120109G-043	12/01/09 19:57
Calibration Check	9L33717-CCV5	120109G-047	12/01/09 20:16
Calibration Blank	9L33717-CCB5	120109G-048	12/01/09 20:24
Blank	9K30911-BLK1	120109G-049	12/01/09 20:28
LCS	9K30911-BS1	120109G-050	12/01/09 20:33
NTC21MW0101	0911181-02	120109G-054	12/01/09 20:54
NTC21MW0601	0911181-03	120109G-055	12/01/09 20:58
Calibration Check	9L33717-CCV6	120109G-061	12/01/09 21:28
Calibration Blank	9L33717-CCB6	120109G-062	12/01/09 21:36

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9337001
Sequence: 9L33717

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9L33717-ICV1	Aluminum	10000	9915	99.2	ug/L	+/- 10.00%
	Antimony	1000	1028	103	ug/L	+/- 10.00%
	Arsenic	1000	1036	104	ug/L	+/- 10.00%
	Barium	1000	1087	109	ug/L	+/- 10.00%
	Beryllium	1000	1032	103	ug/L	+/- 10.00%
	Cadmium	1000	1059	106	ug/L	+/- 10.00%
	Calcium	50000	49130	98.3	ug/L	+/- 10.00%
	Chromium	1000	995.6	99.6	ug/L	+/- 10.00%
	Cobalt	1000	1013	101	ug/L	+/- 10.00%
	Copper	1000	1035	103	ug/L	+/- 10.00%
	Iron	10000	10040	100	ug/L	+/- 10.00%
	Lead	1000	1034	103	ug/L	+/- 10.00%
	Magnesium	50000	48710	97.4	ug/L	+/- 10.00%
	Manganese	1000	1022	102	ug/L	+/- 10.00%
	Nickel	1000	1003	100	ug/L	+/- 10.00%
	Potassium	10000	9978	99.8	ug/L	+/- 10.00%
	Selenium	1000	1068	107	ug/L	+/- 10.00%
	Silver	500.0	476.1	95.2	ug/L	+/- 10.00%
	Sodium	50000	50560	101	ug/L	+/- 10.00%
	Thallium	1000	1011	101	ug/L	+/- 10.00%
	Vanadium	1000	1018	102	ug/L	+/- 10.00%
	Zinc	1000	1061	106	ug/L	+/- 10.00%
9L33717-CCV1	Aluminum	10000	9984	99.8	ug/L	+/- 10.00%
	Antimony	1000	1023	102	ug/L	+/- 10.00%
	Arsenic	1000	1036	104	ug/L	+/- 10.00%
	Barium	1000	1060	106	ug/L	+/- 10.00%
	Beryllium	1000	1047	105	ug/L	+/- 10.00%
	Cadmium	1000	1060	106	ug/L	+/- 10.00%
	Calcium	50000	50400	101	ug/L	+/- 10.00%
	Chromium	1000	994.8	99.5	ug/L	+/- 10.00%
	Cobalt	1000	1004	100	ug/L	+/- 10.00%
	Copper	1000	1032	103	ug/L	+/- 10.00%
	Iron	10000	10210	102	ug/L	+/- 10.00%
	Lead	1000	1013	101	ug/L	+/- 10.00%
	Magnesium	50000	48840	97.7	ug/L	+/- 10.00%
	Manganese	1000	1045	105	ug/L	+/- 10.00%
	Nickel	1000	1004	100	ug/L	+/- 10.00%
	Potassium	10000	9936	99.4	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9337001
Sequence: 9L33717

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9L33717-CCV1	Selenium	1000	1035	103	ug/L	+/- 10.00%
	Silver	500.0	490.5	98.1	ug/L	+/- 10.00%
	Sodium	50000	51310	103	ug/L	+/- 10.00%
	Thallium	1000	1012	101	ug/L	+/- 10.00%
	Vanadium	1000	1002	100	ug/L	+/- 10.00%
	Zinc	1000	1030	103	ug/L	+/- 10.00%
9L33717-CCV3	Aluminum	10000	10050	101	ug/L	+/- 10.00%
	Antimony	1000	1009	101	ug/L	+/- 10.00%
	Arsenic	1000	1032	103	ug/L	+/- 10.00%
	Barium	1000	1020	102	ug/L	+/- 10.00%
	Beryllium	1000	1039	104	ug/L	+/- 10.00%
	Cadmium	1000	1059	106	ug/L	+/- 10.00%
	Calcium	50000	50090	100	ug/L	+/- 10.00%
	Chromium	1000	966.9	96.7	ug/L	+/- 10.00%
	Cobalt	1000	986.2	98.6	ug/L	+/- 10.00%
	Copper	1000	1014	101	ug/L	+/- 10.00%
	Iron	10000	10040	100	ug/L	+/- 10.00%
	Lead	1000	983.1	98.3	ug/L	+/- 10.00%
	Magnesium	50000	48500	97.0	ug/L	+/- 10.00%
	Manganese	1000	1058	106	ug/L	+/- 10.00%
	Nickel	1000	1001	100	ug/L	+/- 10.00%
	Potassium	10000	10080	101	ug/L	+/- 10.00%
	Selenium	1000	995.3	99.5	ug/L	+/- 10.00%
	Silver	500.0	500.8	100	ug/L	+/- 10.00%
	Sodium	50000	52840	106	ug/L	+/- 10.00%
	Thallium	1000	1007	101	ug/L	+/- 10.00%
	Vanadium	1000	968.4	96.8	ug/L	+/- 10.00%
	Zinc	1000	977.7	97.8	ug/L	+/- 10.00%
9L33717-CCV4	Aluminum	10000	10040	100	ug/L	+/- 10.00%
	Antimony	1000	1033	103	ug/L	+/- 10.00%
	Arsenic	1000	1051	105	ug/L	+/- 10.00%
	Barium	1000	1036	104	ug/L	+/- 10.00%
	Beryllium	1000	1010	101	ug/L	+/- 10.00%
	Cadmium	1000	1055	105	ug/L	+/- 10.00%
	Calcium	50000	47190	94.4	ug/L	+/- 10.00%
	Chromium	1000	935.2	93.5	ug/L	+/- 10.00%
	Cobalt	1000	998.0	99.8	ug/L	+/- 10.00%
	Copper	1000	1020	102	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9337001
Sequence: 9L33717

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9L33717-CCV4	Iron	10000	9540	95.4	ug/L	+/- 10.00%
	Lead	1000	1001	100	ug/L	+/- 10.00%
	Magnesium	50000	47450	94.9	ug/L	+/- 10.00%
	Manganese	1000	1016	102	ug/L	+/- 10.00%
	Nickel	1000	1006	101	ug/L	+/- 10.00%
	Potassium	10000	10190	102	ug/L	+/- 10.00%
	Selenium	1000	1036	104	ug/L	+/- 10.00%
	Silver	500.0	484.7	96.9	ug/L	+/- 10.00%
	Sodium	50000	52350	105	ug/L	+/- 10.00%
	Thallium	1000	1012	101	ug/L	+/- 10.00%
	Vanadium	1000	953.6	95.4	ug/L	+/- 10.00%
	Zinc	1000	986.2	98.6	ug/L	+/- 10.00%
9L33717-CCV5	Aluminum	10000	9607	96.1	ug/L	+/- 10.00%
	Antimony	1000	939.6	94.0	ug/L	+/- 10.00%
	Arsenic	1000	974.7	97.5	ug/L	+/- 10.00%
	Barium	1000	1008	101	ug/L	+/- 10.00%
	Beryllium	1000	1023	102	ug/L	+/- 10.00%
	Cadmium	1000	1034	103	ug/L	+/- 10.00%
	Calcium	50000	53450	107	ug/L	+/- 10.00%
	Chromium	1000	1000	100	ug/L	+/- 10.00%
	Cobalt	1000	959.0	95.9	ug/L	+/- 10.00%
	Copper	1000	961.8	96.2	ug/L	+/- 10.00%
	Iron	10000	10040	100	ug/L	+/- 10.00%
	Lead	1000	956.3	95.6	ug/L	+/- 10.00%
	Magnesium	50000	48100	96.2	ug/L	+/- 10.00%
	Manganese	1000	1091	109	ug/L	+/- 10.00%
	Nickel	1000	970.1	97.0	ug/L	+/- 10.00%
	Potassium	10000	9401	94.0	ug/L	+/- 10.00%
	Selenium	1000	931.4	93.1	ug/L	+/- 10.00%
	Silver	500.0	512.1	102	ug/L	+/- 10.00%
	Sodium	50000	48090	96.2	ug/L	+/- 10.00%
	Thallium	1000	959.3	95.9	ug/L	+/- 10.00%
	Vanadium	1000	976.3	97.6	ug/L	+/- 10.00%
	Zinc	1000	1011	101	ug/L	+/- 10.00%
9L33717-CCV6	Aluminum	10000	9680	96.8	ug/L	+/- 10.00%
	Antimony	1000	933.8	93.4	ug/L	+/- 10.00%
	Arsenic	1000	978.0	97.8	ug/L	+/- 10.00%
	Barium	1000	988.3	98.8	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9337001
Sequence: 9L33717

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9L33717-CCV6	Beryllium	1000	1000	100	ug/L	+/- 10.00%
	Cadmium	1000	1026	103	ug/L	+/- 10.00%
	Calcium	50000	52000	104	ug/L	+/- 10.00%
	Chromium	1000	971.3	97.1	ug/L	+/- 10.00%
	Cobalt	1000	950.3	95.0	ug/L	+/- 10.00%
	Copper	1000	968.7	96.9	ug/L	+/- 10.00%
	Iron	10000	9717	97.2	ug/L	+/- 10.00%
	Lead	1000	943.6	94.4	ug/L	+/- 10.00%
	Magnesium	50000	47330	94.7	ug/L	+/- 10.00%
	Manganese	1000	1086	109	ug/L	+/- 10.00%
	Nickel	1000	966.0	96.6	ug/L	+/- 10.00%
	Potassium	10000	9550	95.5	ug/L	+/- 10.00%
	Selenium	1000	920.0	92.0	ug/L	+/- 10.00%
	Silver	500.0	518.9	104	ug/L	+/- 10.00%
	Sodium	50000	48550	97.1	ug/L	+/- 10.00%
	Thallium	1000	957.2	95.7	ug/L	+/- 10.00%
	Vanadium	1000	956.0	95.6	ug/L	+/- 10.00%
	Zinc	1000	987.0	98.7	ug/L	+/- 10.00%

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
SDG: CTO064_002
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP
Project: Great Lakes CTO 064 (Site 21)
Sequence: 9L33717
Calibration: 9337001

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9L33717-ICB1	Aluminum	3.027	50.0	200	ug/L	U	SW6010B
	Antimony	-0.4225	5.00	15.0	ug/L	U	SW6010B
	Arsenic	1.016	3.00	5.00	ug/L	U	SW6010B
	Barium	0.1676	5.00	40.0	ug/L	U	SW6010B
	Beryllium	0.1254	1.00	5.00	ug/L	U	SW6010B
	Cadmium	0.5766	1.00	5.00	ug/L	U	SW6010B
	Calcium	6.590	1000	5000	ug/L	U	SW6010B
	Chromium	0.1187	2.00	5.00	ug/L	U	SW6010B
	Cobalt	0.08376	5.00	12.5	ug/L	U	SW6010B
	Copper	0.5098	5.00	10.0	ug/L	U	SW6010B
	Iron	2.060	30.0	100	ug/L	U	SW6010B
	Lead	-0.1374	1.50	3.00	ug/L	U	SW6010B
	Magnesium	9.590	1000	5000	ug/L	U	SW6010B
	Manganese	0.2036	3.00	15.0	ug/L	U	SW6010B
	Nickel	-0.8426	3.00	10.0	ug/L	U	SW6010B
	Potassium	3.530	1000	5000	ug/L	U	SW6010B
	Selenium	-0.04247	3.00	5.00	ug/L	U	SW6010B
	Silver	0.1710	1.00	5.00	ug/L	U	SW6010B
	Sodium	12.63	1000	5000	ug/L	U	SW6010B
	Thallium	0.2374	3.00	8.00	ug/L	U	SW6010B
	Vanadium	0.08479	5.00	12.5	ug/L	U	SW6010B
	Zinc	0.1411	5.00	20.0	ug/L	U	SW6010B
9L33717-CCB1	Aluminum	24.8	50.0	200	ug/L	U	SW6010B
	Antimony	0.328	5.00	15.0	ug/L	U	SW6010B
	Arsenic	-0.257	3.00	5.00	ug/L	U	SW6010B
	Barium	0.281	5.00	40.0	ug/L	U	SW6010B
	Beryllium	0.146	1.00	5.00	ug/L	U	SW6010B
	Cadmium	0.646	1.00	5.00	ug/L	U	SW6010B
	Calcium	33.0	1000	5000	ug/L	U	SW6010B
	Chromium	0.249	2.00	5.00	ug/L	U	SW6010B
	Cobalt	0.229	5.00	12.5	ug/L	U	SW6010B
	Copper	0.149	5.00	10.0	ug/L	U	SW6010B
	Iron	9.09	30.0	100	ug/L	U	SW6010B

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
SDG: CTO064_002
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP
Project: Great Lakes CTO 064 (Site 21)
Sequence: 9L33717
Calibration: 9337001

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9L33717-CCB1	Lead	0.698	1.50	3.00	ug/L	U	SW6010B
	Magnesium	31.3	1000	5000	ug/L	U	SW6010B
	Manganese	0.215	3.00	15.0	ug/L	U	SW6010B
	Nickel	0.301	3.00	10.0	ug/L	U	SW6010B
	Potassium	28.1	1000	5000	ug/L	U	SW6010B
	Selenium	1.49	3.00	5.00	ug/L	U	SW6010B
	Silver	0.245	1.00	5.00	ug/L	U	SW6010B
	Sodium	30.6	1000	5000	ug/L	U	SW6010B
	Thallium	0.553	3.00	8.00	ug/L	U	SW6010B
	Vanadium	0.146	5.00	12.5	ug/L	U	SW6010B
	Zinc	0.263	5.00	20.0	ug/L	U	SW6010B
9L33717-CCB3	Aluminum	3.63	50.0	200	ug/L	U	SW6010B
	Antimony	0.402	5.00	15.0	ug/L	U	SW6010B
	Arsenic	-0.754	3.00	5.00	ug/L	U	SW6010B
	Barium	0.752	5.00	40.0	ug/L	U	SW6010B
	Beryllium	0.0696	1.00	5.00	ug/L	U	SW6010B
	Cadmium	0.135	1.00	5.00	ug/L	U	SW6010B
	Calcium	3.13	1000	5000	ug/L	U	SW6010B
	Chromium	0.315	2.00	5.00	ug/L	U	SW6010B
	Cobalt	0.199	5.00	12.5	ug/L	U	SW6010B
	Copper	-0.0983	5.00	10.0	ug/L	U	SW6010B
	Iron	7.65	30.0	100	ug/L	U	SW6010B
	Lead	0.302	1.50	3.00	ug/L	U	SW6010B
	Magnesium	6.95	1000	5000	ug/L	U	SW6010B
	Manganese	0.981	3.00	15.0	ug/L	U	SW6010B
	Nickel	1.23	3.00	10.0	ug/L	U	SW6010B
	Potassium	24.0	1000	5000	ug/L	U	SW6010B
	Selenium	-0.138	3.00	5.00	ug/L	U	SW6010B
	Silver	0.174	1.00	5.00	ug/L	U	SW6010B
	Sodium	6.28	1000	5000	ug/L	U	SW6010B
	Thallium	0.263	3.00	8.00	ug/L	U	SW6010B
	Vanadium	0.233	5.00	12.5	ug/L	U	SW6010B
	Zinc	0.358	5.00	20.0	ug/L	U	SW6010B

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
SDG: CTO064_002
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP
Project: Great Lakes CTO 064 (Site 21)
Sequence: 9L33717
Calibration: 9337001

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9K30910-BLK1	Aluminum	6.52	12.5	50.0	ug/L	U	SW6010B
	Aluminum (dissolved)	6.52	12.5	50.0	ug/L	U	SW6010B
	Antimony	-0.252	1.25	3.75	ug/L	U	SW6010B
	Antimony (dissolved)	-0.252	1.25	3.75	ug/L	U	SW6010B
	Arsenic	0.130	0.750	1.25	ug/L	U	SW6010B
	Arsenic (dissolved)	0.130	0.750	1.25	ug/L	U	SW6010B
	Barium	0.0273	1.25	10.0	ug/L	U	SW6010B
	Barium (dissolved)	0.0273	1.25	10.0	ug/L	U	SW6010B
	Beryllium	0.0382	0.250	1.25	ug/L	U	SW6010B
	Beryllium (dissolved)	0.0382	0.250	1.25	ug/L	U	SW6010B
	Cadmium	0.00132	0.250	1.25	ug/L	U	SW6010B
	Cadmium (dissolved)	0.00132	0.250	1.25	ug/L	U	SW6010B
	Calcium	2.67	250	1250	ug/L	U	SW6010B
	Calcium (dissolved)	2.67	250	1250	ug/L	U	SW6010B
	Chromium	0.00905	0.500	1.25	ug/L	U	SW6010B
	Chromium (dissolved)	0.00905	0.500	1.25	ug/L	U	SW6010B
	Cobalt	-0.0147	1.25	3.12	ug/L	U	SW6010B
	Cobalt (dissolved)	-0.0147	1.25	3.12	ug/L	U	SW6010B
	Copper	0.00872	1.25	2.50	ug/L	U	SW6010B
	Copper (dissolved)	0.00872	1.25	2.50	ug/L	U	SW6010B
	Iron	5.52	7.50	25.0	ug/L	U	SW6010B
	Iron (dissolved)	5.52	7.50	25.0	ug/L	U	SW6010B
	Lead	-0.236	0.375	0.750	ug/L	U	SW6010B
	Lead (dissolved)	-0.236	0.375	0.750	ug/L	U	SW6010B
	Magnesium	5.75	250	1250	ug/L	U	SW6010B
	Magnesium (dissolved)	5.75	250	1250	ug/L	U	SW6010B
	Manganese	1.48	0.750	3.75	ug/L	J	SW6010B
	Manganese (dissolved)	1.48	0.750	3.75	ug/L	J	SW6010B
	Nickel	0.278	0.750	2.50	ug/L	U	SW6010B
	Nickel (dissolved)	0.278	0.750	2.50	ug/L	U	SW6010B
	Potassium	9.90	250	1250	ug/L	U	SW6010B
	Potassium (dissolved)	9.90	250	1250	ug/L	U	SW6010B
	Selenium	0.129	0.750	1.25	ug/L	U	SW6010B

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
SDG: CTO064_002
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP
Project: Great Lakes CTO 064 (Site 21)
Sequence: 9L33717
Calibration: 9337001

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9K30910-BLK1	Selenium (dissolved)	0.129	0.750	1.25	ug/L	U	SW6010B
	Silver	0.0555	0.250	1.25	ug/L	U	SW6010B
	Silver (dissolved)	0.0555	0.250	1.25	ug/L	U	SW6010B
	Sodium	3.52	250	1250	ug/L	U	SW6010B
	Sodium (dissolved)	3.52	250	1250	ug/L	U	SW6010B
	Thallium	0.218	0.750	2.00	ug/L	U	SW6010B
	Thallium (dissolved)	0.218	0.750	2.00	ug/L	U	SW6010B
	Vanadium	0.0110	1.25	3.12	ug/L	U	SW6010B
	Vanadium (dissolved)	0.0110	1.25	3.12	ug/L	U	SW6010B
	Zinc	0.176	1.25	5.00	ug/L	U	SW6010B
	Zinc (dissolved)	0.176	1.25	5.00	ug/L	U	SW6010B
9L33717-CCB4	Aluminum	1.52	50.0	200	ug/L	U	SW6010B
	Antimony	-0.408	5.00	15.0	ug/L	U	SW6010B
	Arsenic	0.398	3.00	5.00	ug/L	U	SW6010B
	Barium	0.376	5.00	40.0	ug/L	U	SW6010B
	Beryllium	0.0336	1.00	5.00	ug/L	U	SW6010B
	Cadmium	0.676	1.00	5.00	ug/L	U	SW6010B
	Calcium	10.7	1000	5000	ug/L	U	SW6010B
	Chromium	0.236	2.00	5.00	ug/L	U	SW6010B
	Cobalt	0.252	5.00	12.5	ug/L	U	SW6010B
	Copper	-0.0695	5.00	10.0	ug/L	U	SW6010B
	Iron	-0.820	30.0	100	ug/L	U	SW6010B
	Lead	0.720	1.50	3.00	ug/L	U	SW6010B
	Magnesium	-0.230	1000	5000	ug/L	U	SW6010B
	Manganese	0.344	3.00	15.0	ug/L	U	SW6010B
	Nickel	0.626	3.00	10.0	ug/L	U	SW6010B
	Potassium	32.2	1000	5000	ug/L	U	SW6010B
	Selenium	-0.0687	3.00	5.00	ug/L	U	SW6010B
	Silver	0.163	1.00	5.00	ug/L	U	SW6010B
	Sodium	92.9	1000	5000	ug/L	U	SW6010B
	Thallium	1.00	3.00	8.00	ug/L	U	SW6010B
	Vanadium	0.0125	5.00	12.5	ug/L	U	SW6010B
	Zinc	0.266	5.00	20.0	ug/L	U	SW6010B

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP
Sequence: 9L33717

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9337001

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9L33717-CCB5	Aluminum	1.13	50.0	200	ug/L	U	SW6010B
	Antimony	-0.0651	5.00	15.0	ug/L	U	SW6010B
	Arsenic	0.898	3.00	5.00	ug/L	U	SW6010B
	Barium	0.155	5.00	40.0	ug/L	U	SW6010B
	Beryllium	0.0289	1.00	5.00	ug/L	U	SW6010B
	Cadmium	-0.200	1.00	5.00	ug/L	U	SW6010B
	Calcium	7.25	1000	5000	ug/L	U	SW6010B
	Chromium	-0.0245	2.00	5.00	ug/L	U	SW6010B
	Cobalt	0.106	5.00	12.5	ug/L	U	SW6010B
	Copper	-0.424	5.00	10.0	ug/L	U	SW6010B
	Iron	0.404	30.0	100	ug/L	U	SW6010B
	Lead	-0.211	1.50	3.00	ug/L	U	SW6010B
	Magnesium	8.06	1000	5000	ug/L	U	SW6010B
	Manganese	0.0946	3.00	15.0	ug/L	U	SW6010B
	Nickel	0.972	3.00	10.0	ug/L	U	SW6010B
	Potassium	32.3	1000	5000	ug/L	U	SW6010B
	Selenium	-0.254	3.00	5.00	ug/L	U	SW6010B
	Silver	0.171	1.00	5.00	ug/L	U	SW6010B
	Sodium	179	1000	5000	ug/L	U	SW6010B
	Thallium	1.10	3.00	8.00	ug/L	U	SW6010B
	Vanadium	-0.105	5.00	12.5	ug/L	U	SW6010B
	Zinc	0.206	5.00	20.0	ug/L	U	SW6010B
9K30911-BLK1	Aluminum	0.603	12.5	50.0	ug/L	U	SW6010B
	Antimony	-0.0399	1.25	3.75	ug/L	U	SW6010B
	Arsenic	0.280	0.750	1.25	ug/L	U	SW6010B
	Barium	0.0166	1.25	10.0	ug/L	U	SW6010B
	Beryllium	0.0175	0.250	1.25	ug/L	U	SW6010B
	Cadmium	-0.0913	0.250	1.25	ug/L	U	SW6010B
	Calcium	6.52	250	1250	ug/L	U	SW6010B
	Chromium	0.529	0.500	1.25	ug/L	J	SW6010B
	Cobalt	-0.0173	1.25	3.12	ug/L	U	SW6010B
	Copper	-0.0153	1.25	2.50	ug/L	U	SW6010B
	Iron	4.36	7.50	25.0	ug/L	U	SW6010B

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP
Sequence: 9L33717

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9337001

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9K30911-BLK1	Lead	0.170	0.375	0.750	ug/L	U	SW6010B
	Magnesium	2.73	250	1250	ug/L	U	SW6010B
	Nickel	0.416	0.750	2.50	ug/L	U	SW6010B
	Potassium	11.9	250	1250	ug/L	U	SW6010B
	Selenium	-0.389	0.750	1.25	ug/L	U	SW6010B
	Silver	0.0564	0.250	1.25	ug/L	U	SW6010B
	Sodium	42.7	250	1250	ug/L	U	SW6010B
	Thallium	0.171	0.750	2.00	ug/L	U	SW6010B
	Vanadium	-0.0550	1.25	3.12	ug/L	U	SW6010B
	Zinc	0.599	1.25	5.00	ug/L	U	SW6010B
9L33717-CCB6	Aluminum	3.46	50.0	200	ug/L	U	SW6010B
	Antimony	-0.0265	5.00	15.0	ug/L	U	SW6010B
	Arsenic	1.21	3.00	5.00	ug/L	U	SW6010B
	Barium	0.187	5.00	40.0	ug/L	U	SW6010B
	Beryllium	0.0777	1.00	5.00	ug/L	U	SW6010B
	Cadmium	-0.369	1.00	5.00	ug/L	U	SW6010B
	Calcium	43.0	1000	5000	ug/L	U	SW6010B
	Chromium	0.0934	2.00	5.00	ug/L	U	SW6010B
	Cobalt	0.0750	5.00	12.5	ug/L	U	SW6010B
	Copper	-0.586	5.00	10.0	ug/L	U	SW6010B
	Iron	-0.548	30.0	100	ug/L	U	SW6010B
	Lead	0.445	1.50	3.00	ug/L	U	SW6010B
	Magnesium	7.86	1000	5000	ug/L	U	SW6010B
	Manganese	0.198	3.00	15.0	ug/L	U	SW6010B
	Nickel	1.34	3.00	10.0	ug/L	U	SW6010B
	Potassium	47.5	1000	5000	ug/L	U	SW6010B
	Selenium	-0.588	3.00	5.00	ug/L	U	SW6010B
	Silver	0.222	1.00	5.00	ug/L	U	SW6010B
	Sodium	158	1000	5000	ug/L	U	SW6010B
	Thallium	0.992	3.00	8.00	ug/L	U	SW6010B
	Vanadium	-0.0207	5.00	12.5	ug/L	U	SW6010B
	Zinc	0.208	5.00	20.0	ug/L	U	SW6010B

ICP INTERFERENCE CHECK SAMPLE

SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP
Sequence: 9L33717

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9337001

Lab Sample ID	Analyte	True	Found	%R	Units
9L33717-IFA1	Aluminum	500000	529,040.00	106	ug/L
	Antimony		5.94		ug/L
	Arsenic		1.79		ug/L
	Barium		2.77		ug/L
	Beryllium		0.16		ug/L
	Cadmium		0.33		ug/L
	Calcium	500000	488,250.00	97.6	ug/L
	Chromium		-2.03		ug/L
	Cobalt		3.70		ug/L
	Copper		-8.63		ug/L
	Iron	200000	197,680.00	98.8	ug/L
	Lead		6.95		ug/L
	Magnesium	500000	503,880.00	101	ug/L
	Manganese		-0.16		ug/L
	Nickel		-11.13		ug/L
	Potassium		-45.41		ug/L
	Selenium		-10.27		ug/L
	Silver		0.21		ug/L
	Sodium		65.30		ug/L
	Thallium		-2.10		ug/L
	Vanadium		0.70		ug/L
	Zinc		0.93		ug/L
9L33717-IFB1	Aluminum	500000	493,050.00	98.6	ug/L
	Antimony	600.0	659.15	110	ug/L
	Arsenic	100.0	114.76	115	ug/L
	Barium	500.0	561.38	112	ug/L
	Beryllium	500.0	456.71	91.3	ug/L
	Cadmium	1000	1,169.50	117	ug/L
	Calcium	500000	455,290.00	91.1	ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6010B

Laboratory: Empirical Laboratories, LLC

SDG: CTO064_002

Client: Tetra Tech NUS, Inc. (T010)

Project: Great Lakes CTO 064 (Site 21)

Instrument ID: ME-ICP

Calibration: 9337001

Sequence: 9L33717

Lab Sample ID	Analyte	True	Found	%R	Units
9L33717-IFB1	Chromium	500.0	415.12	83.0	ug/L
	Cobalt	500.0	474.07	94.8	ug/L
	Copper	500.0	500.71	100	ug/L
	Iron	200000	182,470.00	91.2	ug/L
	Lead	50.00	51.24	102	ug/L
	Magnesium	500000	464,750.00	93.0	ug/L
	Manganese	500.0	424.70	84.9	ug/L
	Nickel	1000	891.46	89.1	ug/L
	Potassium		-10.07		ug/L
	Selenium	50.00	49.79	99.6	ug/L
	Silver	200.0	199.11	99.6	ug/L
	Sodium		127.59		ug/L
	Thallium	100.0	81.74	81.7	ug/L
	Vanadium	500.0	428.19	85.6	ug/L
	Zinc	1000	961.73	96.2	ug/L

ANALYSIS SEQUENCE SUMMARY
SW6010B

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9L33812	Instrument:	ME-ICP
Calibration:	9338008		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	9L33812-CAL1	120309A-001	12/03/09 11:10
Cal Standard	9L33812-CAL2	120309A-002	12/03/09 11:15
Cal Standard	9L33812-CAL3	120309A-003	12/03/09 11:21
Cal Standard	9L33812-CAL5	120309A-005	12/03/09 11:32
Cal Standard	9L33812-CAL6	120309A-006	12/03/09 11:38
Cal Standard	9L33812-CAL7	120309A-007	12/03/09 11:46
Cal Standard	9L33812-CAL8	120309A-008	12/03/09 11:51
Initial Cal Check	9L33812-ICV1	120309B-001	12/03/09 12:29
Initial Cal Blank	9L33812-ICB1	120309B-002	12/03/09 12:36
Instrument RL Check	9L33812-CRL1	120309B-003	12/03/09 12:41
Instrument RL Check	9L33812-CRL2	120309B-005	12/03/09 12:51
Instrument RL Check	9L33812-CRL3	120309B-006	12/03/09 12:56
Interference Check A	9L33812-IFA1	120309B-013	12/03/09 13:30
Interference Check B	9L33812-IFB1	120309B-014	12/03/09 13:35
Calibration Check	9L33812-CCV1	120309B-016	12/03/09 13:46
Calibration Blank	9L33812-CCB1	120309B-017	12/03/09 13:53
Calibration Check	9L33812-CCV2	120309B-028	12/03/09 14:45
Calibration Blank	9L33812-CCB2	120309B-029	12/03/09 14:53
Calibration Check	9L33812-CCV9	120309E-001	12/04/09 09:40
Calibration Blank	9L33812-CCB9	120309E-002	12/04/09 09:47
NTC21SB02-SO-0406	0911147-01RE1 Al, Ca, Pb, Se, Zn	120309E-007	12/04/09 10:10
Calibration Check	9L33812-CCVA	120309E-012	12/04/09 10:34
Calibration Blank	9L33812-CCBA	120309E-013	12/04/09 10:41
LCS	9K30910-BS2	120309E-020	12/04/09 11:17
Calibration Check	9L33812-CCVB	120309E-029	12/04/09 12:02
Calibration Blank	9L33812-CCBB	120309E-030	12/04/09 12:09
NTC21SB02-SO-0406	0911147-01RE3 Cd, Cr, Mg,	120309F-003	12/04/09 12:32
NTC21MW0501	0911151-01RE1	120309F-004	12/04/09 12:37
NTC21MW0501	0911151-01RE2	120309F-005	12/04/09 12:42
NTC21MW0501	9L33812-SRDB	120309F-006	12/04/09 12:47
NTC21MW0501	9L33812-SRDC	120309F-007	12/04/09 12:51
NTC21MW0501	9K30910-DUP3	120309F-008	12/04/09 12:56

ANALYSIS SEQUENCE SUMMARY
SW6010B

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9L33812	Instrument:	ME-ICP
Calibration:	9338008		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
NTC21MW0501	9K30910-DUP4	120309F-009	12/04/09 13:01
NTC21-FD111609-01	0911151-02RE1	120309F-010	12/04/09 13:06
Calibration Check	9L33812-CCVC	120309F-011	12/04/09 13:11
Calibration Blank	9L33812-CCBC	120309F-012	12/04/09 13:19
NTC21MW0201	0911151-03RE1	120309F-014	12/04/09 13:28
NTC21MW0201	0911151-03RE2	120309F-015	12/04/09 13:33
NTC21MW0301	0911151-04RE1	120309F-016	12/04/09 13:37
NTC21MW0401	0911151-05RE1	120309F-017	12/04/09 13:42
NTC21MW0401	0911151-06RE1	120309F-018	12/04/09 13:47
Calibration Check	9L33812-CCVD	120309F-019	12/04/09 13:52
Calibration Blank	9L33812-CCBD	120309F-020	12/04/09 14:00

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9338008
Sequence: 9L33812

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9L33812-ICV1	Aluminum	10000	10030	100	ug/L	+/- 10.00%
	Cadmium	1000	1062	106	ug/L	+/- 10.00%
	Calcium	50000	50080	100	ug/L	+/- 10.00%
	Chromium	1000	998.7	99.9	ug/L	+/- 10.00%
	Lead	1000	989.2	98.9	ug/L	+/- 10.00%
	Magnesium	50000	49860	99.7	ug/L	+/- 10.00%
	Manganese	1000	1029	103	ug/L	+/- 10.00%
	Selenium	1000	1019	102	ug/L	+/- 10.00%
	Sodium	50000	51020	102	ug/L	+/- 10.00%
	Thallium	1000	963.1	96.3	ug/L	+/- 10.00%
	Zinc	1000	1004	100	ug/L	+/- 10.00%
9L33812-CCV1	Aluminum	10000	10070	101	ug/L	+/- 10.00%
	Cadmium	1000	1080	108	ug/L	+/- 10.00%
	Calcium	50000	49820	99.6	ug/L	+/- 10.00%
	Chromium	1000	1006	101	ug/L	+/- 10.00%
	Lead	1000	1025	103	ug/L	+/- 10.00%
	Magnesium	50000	49430	98.9	ug/L	+/- 10.00%
	Manganese	1000	1053	105	ug/L	+/- 10.00%
	Selenium	1000	1046	105	ug/L	+/- 10.00%
	Sodium	50000	50410	101	ug/L	+/- 10.00%
	Thallium	1000	1026	103	ug/L	+/- 10.00%
	Zinc	1000	1048	105	ug/L	+/- 10.00%
9L33812-CCV2	Aluminum	10000	10340	103	ug/L	+/- 10.00%
	Cadmium	1000	1100	110	ug/L	+/- 10.00%
	Calcium	50000	48050	96.1	ug/L	+/- 10.00%
	Chromium	1000	1000	100	ug/L	+/- 10.00%
	Lead	1000	1045	104	ug/L	+/- 10.00%
	Magnesium	50000	49480	99.0	ug/L	+/- 10.00%
	Manganese	1000	1057	106	ug/L	+/- 10.00%
	Selenium	1000	1088	109	ug/L	+/- 10.00%
	Sodium	50000	52800	106	ug/L	+/- 10.00%
	Thallium	1000	1059	106	ug/L	+/- 10.00%
	Zinc	1000	1039	104	ug/L	+/- 10.00%
9L33812-CCV9	Aluminum	10000	9693	96.9	ug/L	+/- 10.00%
	Cadmium	1000	1030	103	ug/L	+/- 10.00%
	Calcium	50000	46970	93.9	ug/L	+/- 10.00%
	Chromium	1000	957.6	95.8	ug/L	+/- 10.00%
	Lead	1000	981.4	98.1	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9338008
Sequence: 9L33812

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9L33812-CCV9	Magnesium	50000	45880	91.8	ug/L	+/- 10.00%
	Manganese	1000	999.1	99.9	ug/L	+/- 10.00%
	Selenium	1000	988.1	98.8	ug/L	+/- 10.00%
	Sodium	50000	47690	95.4	ug/L	+/- 10.00%
	Thallium	1000	971.5	97.2	ug/L	+/- 10.00%
	Zinc	1000	1011	101	ug/L	+/- 10.00%
9L33812-CCVA	Aluminum	10000	9878	98.8	ug/L	+/- 10.00%
	Cadmium	1000	1042	104	ug/L	+/- 10.00%
	Calcium	50000	45980	92.0	ug/L	+/- 10.00%
	Chromium	1000	932.3	93.2	ug/L	+/- 10.00%
	Lead	1000	999.8	100	ug/L	+/- 10.00%
	Magnesium	50000	45300	90.6	ug/L	+/- 10.00%
	Manganese	1000	982.4	98.2	ug/L	+/- 10.00%
	Selenium	1000	1012	101	ug/L	+/- 10.00%
	Sodium	50000	47910	95.8	ug/L	+/- 10.00%
	Thallium	1000	980.2	98.0	ug/L	+/- 10.00%
	Zinc	1000	1020	102	ug/L	+/- 10.00%
9L33812-CCVB	Aluminum	10000	9904	99.0	ug/L	+/- 10.00%
	Cadmium	1000	1049	105	ug/L	+/- 10.00%
	Calcium	50000	46860	93.7	ug/L	+/- 10.00%
	Chromium	1000	938.5	93.9	ug/L	+/- 10.00%
	Lead	1000	1002	100	ug/L	+/- 10.00%
	Magnesium	50000	45970	91.9	ug/L	+/- 10.00%
	Manganese	1000	997.0	99.7	ug/L	+/- 10.00%
	Selenium	1000	1019	102	ug/L	+/- 10.00%
	Sodium	50000	48780	97.6	ug/L	+/- 10.00%
	Thallium	1000	994.0	99.4	ug/L	+/- 10.00%
	Zinc	1000	1017	102	ug/L	+/- 10.00%
9L33812-CCVC	Aluminum	10000	9809	98.1	ug/L	+/- 10.00%
	Cadmium	1000	1047	105	ug/L	+/- 10.00%
	Calcium	50000	45900	91.8	ug/L	+/- 10.00%
	Chromium	1000	912.2	91.2	ug/L	+/- 10.00%
	Lead	1000	999.2	99.9	ug/L	+/- 10.00%
	Magnesium	50000	45360	90.7	ug/L	+/- 10.00%
	Manganese	1000	969.1	96.9	ug/L	+/- 10.00%
	Selenium	1000	1023	102	ug/L	+/- 10.00%
	Sodium	50000	48730	97.5	ug/L	+/- 10.00%
	Thallium	1000	994.4	99.4	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9338008
Sequence: 9L33812

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9L33812-CCVC	Zinc	1000	1007	101	ug/L	+/- 10.00%
9L33812-CCVD	Aluminum	10000	9861	98.6	ug/L	+/- 10.00%
	Cadmium	1000	1033	103	ug/L	+/- 10.00%
	Calcium	50000	45800	91.6	ug/L	+/- 10.00%
	Chromium	1000	921.1	92.1	ug/L	+/- 10.00%
	Lead	1000	987.1	98.7	ug/L	+/- 10.00%
	Magnesium	50000	45610	91.2	ug/L	+/- 10.00%
	Manganese	1000	981.2	98.1	ug/L	+/- 10.00%
	Selenium	1000	1014	101	ug/L	+/- 10.00%
	Sodium	50000	49830	99.7	ug/L	+/- 10.00%
	Thallium	1000	984.8	98.5	ug/L	+/- 10.00%
	Zinc	1000	987.9	98.8	ug/L	+/- 10.00%

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
SDG: CTO064_002
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP
Project: Great Lakes CTO 064 (Site 21)
Sequence: 9L33812
Calibration: 9338008

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9L33812-ICB1	Aluminum	-0.8473	50.0	200	ug/L	U	SW6010B
	Cadmium	0.2363	1.00	5.00	ug/L	U	SW6010B
	Calcium	0.1700	1000	5000	ug/L	U	SW6010B
	Chromium	0.2348	2.00	5.00	ug/L	U	SW6010B
	Lead	0.01638	1.50	3.00	ug/L	U	SW6010B
	Magnesium	-2.530	1000	5000	ug/L	U	SW6010B
	Manganese	0.04190	3.00	15.0	ug/L	U	SW6010B
	Selenium	0.08067	3.00	5.00	ug/L	U	SW6010B
	Sodium	-5.440	1000	5000	ug/L	U	SW6010B
	Thallium	0.1471	3.00	8.00	ug/L	U	SW6010B
	Zinc	0.1096	5.00	20.0	ug/L	U	SW6010B
9L33812-CCB1	Aluminum	23.6	50.0	200	ug/L	U	SW6010B
	Cadmium	0.525	1.00	5.00	ug/L	U	SW6010B
	Calcium	25.3	1000	5000	ug/L	U	SW6010B
	Chromium	0.430	2.00	5.00	ug/L	U	SW6010B
	Lead	0.516	1.50	3.00	ug/L	U	SW6010B
	Magnesium	25.4	1000	5000	ug/L	U	SW6010B
	Manganese	0.275	3.00	15.0	ug/L	U	SW6010B
	Selenium	-0.329	3.00	5.00	ug/L	U	SW6010B
	Sodium	14.7	1000	5000	ug/L	U	SW6010B
	Thallium	0.607	3.00	8.00	ug/L	U	SW6010B
	Zinc	0.607	5.00	20.0	ug/L	U	SW6010B
9L33812-CCB2	Aluminum	4.47	50.0	200	ug/L	U	SW6010B
	Cadmium	0.262	1.00	5.00	ug/L	U	SW6010B
	Calcium	25.6	1000	5000	ug/L	U	SW6010B
	Chromium	0.190	2.00	5.00	ug/L	U	SW6010B
	Lead	0.425	1.50	3.00	ug/L	U	SW6010B
	Magnesium	43.4	1000	5000	ug/L	U	SW6010B
	Manganese	0.00316	3.00	15.0	ug/L	U	SW6010B
	Selenium	-0.367	3.00	5.00	ug/L	U	SW6010B
	Sodium	837	1000	5000	ug/L	U	SW6010B
	Thallium	-0.221	3.00	8.00	ug/L	U	SW6010B
	Zinc	0.0154	5.00	20.0	ug/L	U	SW6010B

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP
Sequence: 9L33812

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9338008

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9L33812-CCB9	Aluminum	0.600	50.0	200	ug/L	U	SW6010B
	Cadmium	0.0430	1.00	5.00	ug/L	U	SW6010B
	Calcium	-1.29	1000	5000	ug/L	U	SW6010B
	Chromium	0.155	2.00	5.00	ug/L	U	SW6010B
	Lead	0.513	1.50	3.00	ug/L	U	SW6010B
	Magnesium	1.53	1000	5000	ug/L	U	SW6010B
	Manganese	-0.0279	3.00	15.0	ug/L	U	SW6010B
	Selenium	0.133	3.00	5.00	ug/L	U	SW6010B
	Sodium	-18.6	1000	5000	ug/L	U	SW6010B
	Thallium	0.783	3.00	8.00	ug/L	U	SW6010B
	Zinc	0.221	5.00	20.0	ug/L	U	SW6010B
9L33812-CCBA	Aluminum	4.46	50.0	200	ug/L	U	SW6010B
	Cadmium	0.0628	1.00	5.00	ug/L	U	SW6010B
	Calcium	21.4	1000	5000	ug/L	U	SW6010B
	Chromium	0.348	2.00	5.00	ug/L	U	SW6010B
	Lead	0.626	1.50	3.00	ug/L	U	SW6010B
	Magnesium	7.76	1000	5000	ug/L	U	SW6010B
	Manganese	0.199	3.00	15.0	ug/L	U	SW6010B
	Selenium	-1.17	3.00	5.00	ug/L	U	SW6010B
	Sodium	-2.23	1000	5000	ug/L	U	SW6010B
	Thallium	0.360	3.00	8.00	ug/L	U	SW6010B
	Zinc	0.503	5.00	20.0	ug/L	U	SW6010B
9L33812-CCBB	Aluminum	4.70	50.0	200	ug/L	U	SW6010B
	Cadmium	0.115	1.00	5.00	ug/L	U	SW6010B
	Calcium	4.29	1000	5000	ug/L	U	SW6010B
	Chromium	0.332	2.00	5.00	ug/L	U	SW6010B
	Lead	0.0465	1.50	3.00	ug/L	U	SW6010B
	Magnesium	-10.2	1000	5000	ug/L	U	SW6010B
	Manganese	0.187	3.00	15.0	ug/L	U	SW6010B
	Selenium	-0.0346	3.00	5.00	ug/L	U	SW6010B
	Sodium	10.8	1000	5000	ug/L	U	SW6010B
	Thallium	0.0567	3.00	8.00	ug/L	U	SW6010B
	Zinc	0.246	5.00	20.0	ug/L	U	SW6010B

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP
Sequence: 9L33812

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9338008

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9L33812-CCBC	Aluminum	4.85	50.0	200	ug/L	U	SW6010B
	Cadmium	0.329	1.00	5.00	ug/L	U	SW6010B
	Calcium	15.6	1000	5000	ug/L	U	SW6010B
	Chromium	0.492	2.00	5.00	ug/L	U	SW6010B
	Lead	0.878	1.50	3.00	ug/L	U	SW6010B
	Magnesium	-2.84	1000	5000	ug/L	U	SW6010B
	Manganese	0.615	3.00	15.0	ug/L	U	SW6010B
	Selenium	0.186	3.00	5.00	ug/L	U	SW6010B
	Sodium	71.8	1000	5000	ug/L	U	SW6010B
	Thallium	0.478	3.00	8.00	ug/L	U	SW6010B
	Zinc	0.353	5.00	20.0	ug/L	U	SW6010B
9L33812-CCBD	Aluminum	0.917	50.0	200	ug/L	U	SW6010B
	Cadmium	0.309	1.00	5.00	ug/L	U	SW6010B
	Calcium	2.28	1000	5000	ug/L	U	SW6010B
	Chromium	0.117	2.00	5.00	ug/L	U	SW6010B
	Lead	0.814	1.50	3.00	ug/L	U	SW6010B
	Magnesium	-4.24	1000	5000	ug/L	U	SW6010B
	Manganese	0.0844	3.00	15.0	ug/L	U	SW6010B
	Selenium	-0.108	3.00	5.00	ug/L	U	SW6010B
	Sodium	33.0	1000	5000	ug/L	U	SW6010B
	Thallium	0.123	3.00	8.00	ug/L	U	SW6010B
	Zinc	0.227	5.00	20.0	ug/L	U	SW6010B

ICP INTERFERENCE CHECK SAMPLE

SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP
Sequence: 9L33812

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9338008

Lab Sample ID	Analyte	True	Found	%R	Units
9L33812-IFA1	Aluminum	500000	515,430.00	103	ug/L
	Cadmium		0.57		ug/L
	Calcium	500000	479,100.00	95.8	ug/L
	Chromium		-1.60		ug/L
	Lead		5.42		ug/L
	Magnesium	500000	505,620.00	101	ug/L
	Manganese		0.59		ug/L
	Selenium		0.06		ug/L
	Sodium		58.72		ug/L
	Thallium		3.27		ug/L
	Zinc		-0.22		ug/L
9L33812-IFB1	Aluminum	500000	484,790.00	97.0	ug/L
	Cadmium	1000	1,179.60	118	ug/L
	Calcium	500000	447,290.00	89.5	ug/L
	Chromium	500.0	426.93	85.4	ug/L
	Lead	50.00	52.62	105	ug/L
	Magnesium	500000	470,380.00	94.1	ug/L
	Manganese	500.0	442.09	88.4	ug/L
	Selenium	50.00	52.58	105	ug/L
	Sodium		132.52		ug/L
	Thallium	100.0	87.52	87.5	ug/L
	Zinc	1000	964.17	96.4	ug/L

ANALYSIS SEQUENCE SUMMARY
SW6010B

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9L34212	Instrument:	ME-ICP
Calibration:	9342006		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	9L34212-CAL1	120709A-001	12/07/09 13:48
Cal Standard	9L34212-CAL2	120709A-002	12/07/09 13:53
Cal Standard	9L34212-CAL3	120709A-003	12/07/09 13:59
Cal Standard	9L34212-CAL5	120709A-005	12/07/09 14:09
Cal Standard	9L34212-CAL6	120709A-006	12/07/09 14:14
Cal Standard	9L34212-CAL7	120709A-007	12/07/09 14:20
Cal Standard	9L34212-CAL8	120709A-008	12/07/09 14:27
Initial Cal Check	9L34212-ICV1	120709B-001	12/07/09 15:04
Initial Cal Blank	9L34212-ICB1	120709B-002	12/07/09 15:14
Instrument RL Check	9L34212-CRL1	120709B-003	12/07/09 15:18
Instrument RL Check	9L34212-CRL2	120709B-004	12/07/09 15:23
Instrument RL Check	9L34212-CRL3	120709B-005	12/07/09 15:28
Interference Check A	9L34212-IFA1	120709B-012	12/07/09 16:02
Interference Check B	9L34212-IFB1	120709B-013	12/07/09 16:07
Calibration Check	9L34212-CCV1	120709B-015	12/07/09 16:18
Calibration Blank	9L34212-CCB1	120709B-016	12/07/09 16:25
Calibration Check	9L34212-CCVA	120709C-128	12/08/09 03:46
Calibration Blank	9L34212-CCBA	120709C-129	12/08/09 03:54
NTC21-FD111609-01	0911151-02RE2	120709C-138	12/08/09 04:37
NTC21MW0101	0911181-02RE1	120709C-139	12/08/09 04:42
NTC21MW0101	0911181-02RE2	120709C-140	12/08/09 04:47
Calibration Check	9L34212-CCVB	120709C-141	12/08/09 04:53
Calibration Blank	9L34212-CCBB	120709C-142	12/08/09 05:00
Blank	9K30911-BLK2	120709C-143	12/08/09 05:05
NTC21MW0601	0911181-03RE1	120709C-148	12/08/09 05:31
NTC21MW0601	0911181-03RE2	120709C-149	12/08/09 05:35
Calibration Check	9L34212-CCVC	120709C-153	12/08/09 05:57
Calibration Blank	9L34212-CCBC	120709C-154	12/08/09 06:04

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9342006
Sequence: 9L34212

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9L34212-ICV1	Aluminum	10000	9962	99.6	ug/L	+/- 10.00%
	Calcium	50000	49150	98.3	ug/L	+/- 10.00%
	Manganese	1000	1054	105	ug/L	+/- 10.00%
	Potassium	10000	9866	98.7	ug/L	+/- 10.00%
	Sodium	50000	50740	101	ug/L	+/- 10.00%
9L34212-CCV1	Aluminum	10000	9918	99.2	ug/L	+/- 10.00%
	Calcium	50000	50940	102	ug/L	+/- 10.00%
	Manganese	1000	1072	107	ug/L	+/- 10.00%
	Potassium	10000	9714	97.1	ug/L	+/- 10.00%
	Sodium	50000	50520	101	ug/L	+/- 10.00%
9L34212-CCVA	Aluminum	10000	9656	96.6	ug/L	+/- 10.00%
	Calcium	50000	49840	99.7	ug/L	+/- 10.00%
NA	**Manganese**	**1000**	**1170**	**117**	**ug/L**	+/- 10.00%
	Potassium	10000	9550	95.5	ug/L	+/- 10.00%
	Sodium	50000	54550	109	ug/L	+/- 10.00%
9L34212-CCVB	Aluminum	10000	9678	96.8	ug/L	+/- 10.00%
	Calcium	50000	48930	97.9	ug/L	+/- 10.00%
NA	**Manganese**	**1000**	**1137**	**114**	**ug/L**	+/- 10.00%
	Potassium	10000	9627	96.3	ug/L	+/- 10.00%
	Sodium	50000	54400	109	ug/L	+/- 10.00%
9L34212-CCVC	Aluminum	10000	9676	96.8	ug/L	+/- 10.00%
	Calcium	50000	48580	97.2	ug/L	+/- 10.00%
NA	**Manganese**	**1000**	**1147**	**115**	**ug/L**	+/- 10.00%
	Potassium	10000	9607	96.1	ug/L	+/- 10.00%
	Sodium	50000	54920	110	ug/L	+/- 10.00%

NA - Not applicable, analyzed for analyte in different sequence

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP
Sequence: 9L34212

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9342006

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9L34212-ICB1	Aluminum	3.378	50.0	200	ug/L	U	SW6010B
	Calcium	2.190	1000	5000	ug/L	U	SW6010B
	Manganese	0.05847	3.00	15.0	ug/L	U	SW6010B
	Potassium	4.290	1000	5000	ug/L	U	SW6010B
	Sodium	0.2200	1000	5000	ug/L	U	SW6010B
9L34212-CCB1	Aluminum	11.7	50.0	200	ug/L	U	SW6010B
	Calcium	15.6	1000	5000	ug/L	U	SW6010B
	Manganese	0.221	3.00	15.0	ug/L	U	SW6010B
	Potassium	9.34	1000	5000	ug/L	U	SW6010B
	Sodium	15.4	1000	5000	ug/L	U	SW6010B
9L34212-CCBA	Aluminum	3.94	50.0	200	ug/L	U	SW6010B
	Calcium	9.92	1000	5000	ug/L	U	SW6010B
	Manganese	0.227	3.00	15.0	ug/L	U	SW6010B
	Potassium	2.43	1000	5000	ug/L	U	SW6010B
	Sodium	66.5	1000	5000	ug/L	U	SW6010B
9L34212-CCBB	Aluminum	2.35	50.0	200	ug/L	U	SW6010B
	Calcium	12.1	1000	5000	ug/L	U	SW6010B
	Manganese	0.205	3.00	15.0	ug/L	U	SW6010B
	Potassium	14.2	1000	5000	ug/L	U	SW6010B
	Sodium	135	1000	5000	ug/L	U	SW6010B
9K30911-BLK2	Manganese	0.0429	0.750	3.75	ug/L	U	SW6010B
9L34212-CCBC	Aluminum	3.18	50.0	200	ug/L	U	SW6010B
	Calcium	3.52	1000	5000	ug/L	U	SW6010B
	Manganese	0.141	3.00	15.0	ug/L	U	SW6010B
	Potassium	15.3	1000	5000	ug/L	U	SW6010B
	Sodium	45.5	1000	5000	ug/L	U	SW6010B

ICP INTERFERENCE CHECK SAMPLE

SW6010B

Laboratory: Empirical Laboratories, LLC

SDG: CTO064_002

Client: Tetra Tech NUS, Inc. (T010)

Project: Great Lakes CTO 064 (Site 21)

Instrument ID: ME-ICP

Calibration: 9342006

Sequence: 9L34212

Lab Sample ID	Analyte	True	Found	%R	Units
9L34212-IFA1	Aluminum	500000	517,820.00	104	ug/L
	Calcium	500000	489,160.00	97.8	ug/L
	Manganese		-0.10		ug/L
	Potassium		-73.84		ug/L
	Sodium		42.49		ug/L
9L34212-IFB1	Aluminum	500000	488,270.00	97.7	ug/L
	Calcium	500000	453,460.00	90.7	ug/L
	Manganese	500.0	450.29	90.1	ug/L
	Potassium		-52.43		ug/L
	Sodium		157.03		ug/L

ANALYSIS SEQUENCE SUMMARY
SW6010B

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9L34316	Instrument:	ME-ICP
Calibration:	9343007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	9L34316-CAL1	120909A-001	12/09/09 11:35
Cal Standard	9L34316-CAL2	120909A-002	12/09/09 11:40
Cal Standard	9L34316-CAL3	120909A-003	12/09/09 11:45
Cal Standard	9L34316-CAL6	120909A-006	12/09/09 12:03
Initial Cal Check	9L34316-ICV1	120909B-001	12/09/09 12:56
Initial Cal Blank	9L34316-ICB1	120909B-002	12/09/09 13:04
Instrument RL Check	9L34316-CRL1	120909B-003	12/09/09 13:08
Instrument RL Check	9L34316-CRL2	120909B-005	12/09/09 13:18
Interference Check A	9L34316-IFA1	120909B-012	12/09/09 13:52
Interference Check B	9L34316-IFB1	120909B-013	12/09/09 13:57
Calibration Check	9L34316-CCV1	120909B-015	12/09/09 14:08
Calibration Blank	9L34316-CCB1	120909B-016	12/09/09 14:15
Blank	9K23009-BLK3	120909B-017	12/09/09 14:20
NTC21MW0101	0911181-02RE3	120909B-020	12/09/09 14:33
NTC21MW0601	0911181-03RE3	120909B-021	12/09/09 14:38
Calibration Check	9L34316-CCV2	120909B-029	12/09/09 15:17
Calibration Blank	9L34316-CCB2	120909B-030	12/09/09 15:24

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9343007
Sequence: 9L34316

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9L34316-ICV1	Lead	1000	983.5	98.4	ug/L	+/- 10.00%
	Selenium	1000	1010	101	ug/L	+/- 10.00%
	Zinc	1000	992.6	99.3	ug/L	+/- 10.00%
9L34316-CCV1	Lead	1000	974.5	97.4	ug/L	+/- 10.00%
	Selenium	1000	997.2	99.7	ug/L	+/- 10.00%
	Zinc	1000	988.6	98.9	ug/L	+/- 10.00%
9L34316-CCV2	Lead	1000	1010	101	ug/L	+/- 10.00%
	Selenium	1000	1013	101	ug/L	+/- 10.00%
	Zinc	1000	1018	102	ug/L	+/- 10.00%

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP
Sequence: 9L34316

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9343007

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9L34316-ICB1	Lead	0.5286	1.50	3.00	ug/L	U	SW6010B
	Selenium	1.044	3.00	5.00	ug/L	U	SW6010B
	Zinc	-0.01885	5.00	20.0	ug/L	U	SW6010B
9L34316-CCB1	Lead	0.847	1.50	3.00	ug/L	U	SW6010B
	Selenium	0.621	3.00	5.00	ug/L	U	SW6010B
	Zinc	0.320	5.00	20.0	ug/L	U	SW6010B
9K23009-BLK3	Selenium	0.149	0.150	0.250	mg/Kg wet	U	SW6010B
9L34316-CCB2	Lead	1.25	1.50	3.00	ug/L	U	SW6010B
	Selenium	1.40	3.00	5.00	ug/L	U	SW6010B
	Zinc	-0.0111	5.00	20.0	ug/L	U	SW6010B

ICP INTERFERENCE CHECK SAMPLE

SW6010B

Laboratory: Empirical Laboratories, LLC
SDG: CTO064_002
Client: Tetra Tech NUS, Inc. (T010)
Project: Great Lakes CTO 064 (Site 21)
Instrument ID: ME-ICP
Calibration: 9343007
Sequence: 9L34316

Lab Sample ID	Analyte	True	Found	%R	Units
9L34316-IFA1	Lead		11.30		ug/L
	Selenium		-1.36		ug/L
	Zinc		-0.75		ug/L
9L34316-IFB1	Lead	50.00	55.36	111	ug/L
	Selenium	50.00	52.16	104	ug/L
	Zinc	1000	960.57	96.1	ug/L

ANALYSIS SEQUENCE SUMMARY
SW7471A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9L33503	Instrument:	ME-FIMS
Calibration:	9335001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	9L33503-CAL1	113009S-002	11/30/09 16:26
Cal Standard	9L33503-CAL3	113009S-004	11/30/09 16:27
Cal Standard	9L33503-CAL2	113009S-003	11/30/09 16:27
Cal Standard	9L33503-CAL4	113009S-005	11/30/09 16:29
Cal Standard	9L33503-CAL5	113009S-006	11/30/09 16:30
Cal Standard	9L33503-CAL6	113009S-007	11/30/09 16:31
Cal Standard	9L33503-CAL7	113009S-008	11/30/09 16:33
Cal Standard	9L33503-CAL8	113009S-009	11/30/09 16:34
Initial Cal Check	9L33503-ICV1	113009S-010	11/30/09 16:37
Initial Cal Blank	9L33503-ICB1	113009S-011	11/30/09 16:39
Instrument RL Check	9L33503-CRL1	113009S-012	11/30/09 16:40
Calibration Check	9L33503-CCV1	113009S-022	11/30/09 16:53
Calibration Blank	9L33503-CCB1	113009S-023	11/30/09 16:54
Calibration Check	9L33503-CCV2	113009S-034	11/30/09 17:08
Calibration Blank	9L33503-CCB2	113009S-035	11/30/09 17:09
LCS	9K30908-BS1	113009S-041	11/30/09 17:17
Blank	9K30908-BLK1	113009S-042	11/30/09 17:18
Calibration Check	9L33503-CCV3	113009S-046	11/30/09 17:23
Calibration Blank	9L33503-CCB3	113009S-047	11/30/09 17:25
Calibration Check	9L33503-CCV5	113009S-070	11/30/09 17:54
Calibration Blank	9L33503-CCB5	113009S-071	11/30/09 17:55
NTC21SB02-SO-0406	0911147-01	113009S-077	11/30/09 18:03
Calibration Check	9L33503-CCV6	113009S-082	11/30/09 18:08
Calibration Blank	9L33503-CCB6	113009S-083	11/30/09 18:10
Calibration Check	9L33503-CCV7	113009S-094	11/30/09 18:24
Calibration Blank	9L33503-CCB7	113009S-095	11/30/09 18:25
Instrument RL Check	9L33503-CRL2	113009S-105	11/30/09 18:37
Calibration Check	9L33503-CCV8	113009S-106	11/30/09 18:39
Calibration Blank	9L33503-CCB8	113009S-107	11/30/09 18:40

INITIAL AND CONTINUING CALIBRATION CHECK

SW7471A

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-FIMS

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9335001
Sequence: 9L33503

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9L33503-ICV1	Mercury	4.000	4.183	105	ug/L	+/- 15.00%
9L33503-CCV1	Mercury	4.000	3.880	97.0	ug/L	+/- 15.00%
9L33503-CCV2	Mercury	4.000	3.759	94.0	ug/L	+/- 15.00%
9L33503-CCV3	Mercury	2.000	1.886	94.3	ug/L	+/- 15.00%
9L33503-CCV5	Mercury	4.000	3.821	95.5	ug/L	+/- 15.00%
9L33503-CCV6	Mercury	4.000	3.757	93.9	ug/L	+/- 15.00%
9L33503-CCV7	Mercury	2.000	1.878	93.9	ug/L	+/- 15.00%
9L33503-CCV8	Mercury	2.000	1.874	93.7	ug/L	+/- 15.00%

BLANKS
SW7471A

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-FIMS
Sequence: 9L33503

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9335001

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9L33503-ICB1	Mercury	0.003378	0.480	1.20	ug/L	U	SW7471A
9L33503-CCB1	Mercury	0.00747	0.480	1.20	ug/L	U	SW7471A
9L33503-CCB2	Mercury	0.00611	0.480	1.20	ug/L	U	SW7471A
9K30908-BLK1	Mercury	0.000503	0.0130	0.0330	mg/Kg wet	U	SW7471A
9L33503-CCB3	Mercury	0.00668	0.480	1.20	ug/L	U	SW7471A
9L33503-CCB5	Mercury	0.0114	0.480	1.20	ug/L	U	SW7471A
9L33503-CCB6	Mercury	0.00674	0.480	1.20	ug/L	U	SW7471A
9L33503-CCB7	Mercury	0.00937	0.480	1.20	ug/L	U	SW7471A
9L33503-CCB8	Mercury	0.00452	0.480	1.20	ug/L	U	SW7471A

ANALYSIS SEQUENCE SUMMARY
SW7470A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9L33808	Instrument:	ME-FIMS
Calibration:	9338007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	9L33808-CAL1	120309W-002	12/03/09 11:22
Cal Standard	9L33808-CAL2	120309W-003	12/03/09 11:23
Cal Standard	9L33808-CAL3	120309W-004	12/03/09 11:24
Cal Standard	9L33808-CAL4	120309W-005	12/03/09 11:25
Cal Standard	9L33808-CAL5	120309W-006	12/03/09 11:27
Cal Standard	9L33808-CAL6	120309W-007	12/03/09 11:28
Cal Standard	9L33808-CAL7	120309W-008	12/03/09 11:29
Cal Standard	9L33808-CAL8	120309W-009	12/03/09 11:31
Initial Cal Check	9L33808-ICV1	120309W-010	12/03/09 11:38
Initial Cal Blank	9L33808-ICB1	120309W-011	12/03/09 11:39
Instrument RL Check	9L33808-CRL1	120309W-012	12/03/09 11:40
LCS	9L02002-BS1	120309W-013	12/03/09 11:42
LCS	9L02002-BS1	120309W-013	12/03/09 11:42
Blank	9L02002-BLK1	120309W-014	12/03/09 11:43
Blank	9L02002-BLK1	120309W-014	12/03/09 11:43
Calibration Check	9L33808-CCV1	120309W-022	12/03/09 11:50
Calibration Blank	9L33808-CCB1	120309W-023	12/03/09 11:51
NTC21MW0501	0911151-01	120309W-024	12/03/09 11:52
NTC21MW0501	9L02002-MS1	120309W-025	12/03/09 11:53
NTC21MW0501	9L02002-DUP1	120309W-026	12/03/09 11:54
NTC21-FD111609-01	0911151-02	120309W-027	12/03/09 11:55
NTC21MW0201	0911151-03	120309W-028	12/03/09 11:56
NTC21MW0301	0911151-04	120309W-029	12/03/09 11:57
NTC21MW0401	0911151-05	120309W-030	12/03/09 11:58
NTC21MW0401	0911151-06	120309W-031	12/03/09 11:59
Calibration Check	9L33808-CCV2	120309W-034	12/03/09 12:01
Calibration Blank	9L33808-CCB2	120309W-035	12/03/09 12:03
NTC21MW0101	0911181-02	120309W-040	12/03/09 12:07
LCS	9L02003-BS1	120309W-041	12/03/09 12:08
Blank	9L02003-BLK1	120309W-042	12/03/09 12:09
NTC21MW0601	0911181-03	120309W-043	12/03/09 12:10
Calibration Check	9L33808-CCV3	120309W-046	12/03/09 12:13

ANALYSIS SEQUENCE SUMMARY
SW7470A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9L33808	Instrument:	ME-FIMS
Calibration:	9338007		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Calibration Blank	9L33808-CCB3	120309W-047	12/03/09 12:14
Calibration Check	9L33808-CCV6	120309W-082	12/03/09 12:48
Calibration Blank	9L33808-CCB6	120309W-083	12/03/09 12:50
Instrument RL Check	9L33808-CRL2	120309W-089	12/03/09 12:56
Calibration Check	9L33808-CCV7	120309W-090	12/03/09 12:57
Calibration Blank	9L33808-CCB7	120309W-091	12/03/09 12:59

INITIAL AND CONTINUING CALIBRATION CHECK

SW7470A

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-FIMS

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9338007
Sequence: 9L33808

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9L33808-ICV1	Mercury	4.000	4.077	102	ug/L	+/- 15.00%
9L33808-CCV1	Mercury	4.000	3.904	97.6	ug/L	+/- 15.00%
9L33808-CCV2	Mercury	4.000	3.986	99.7	ug/L	+/- 15.00%
9L33808-CCV3	Mercury	2.000	1.961	98.0	ug/L	+/- 15.00%
9L33808-CCV6	Mercury	4.000	4.063	102	ug/L	+/- 15.00%
9L33808-CCV7	Mercury	2.000	2.009	100	ug/L	+/- 15.00%

BLANKS
SW7470A

Laboratory: Empirical Laboratories, LLC
SDG: CTO064_002
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-FIMS
Project: Great Lakes CTO 064 (Site 21)
Sequence: 9L33808
Calibration: 9338007

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9L33808-ICB1	Mercury	-0.02211	0.0800	0.200	ug/L	U	SW7470A
9L02002-BLK1	Mercury	-0.0189	0.0800	0.200	ug/L	U	SW7470A
	Mercury (dissolved)	-0.0189	0.0800	0.200	ug/L	U	SW7470A
9L33808-CCB1	Mercury	-0.0190	0.0800	0.200	ug/L	U	SW7470A
9L33808-CCB2	Mercury	-0.0183	0.0800	0.200	ug/L	U	SW7470A
9L02003-BLK1	Mercury	-0.0185	0.0800	0.200	ug/L	U	SW7470A
9L33808-CCB3	Mercury	-0.0169	0.0800	0.200	ug/L	U	SW7470A
9L33808-CCB6	Mercury	-0.0145	0.0800	0.200	ug/L	U	SW7470A
9L33808-CCB7	Mercury	-0.0246	0.0800	0.200	ug/L	U	SW7470A

LCS / LCS DUPLICATE RECOVERY
SW6010B

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Water		
Batch:	9K30910	Laboratory ID:	9K30910-BS1
Preparation:	MET_3005A_LOW	Initial/Final:	100 mL / 25 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Aluminum	40.04	42.78	107	80 - 120
Aluminum (dissolved)	40.04	42.78	107	80 - 120
Antimony	5.004	4.058	81.1	80 - 120
Antimony (dissolved)	5.004	4.058	81.1	80 - 120
Arsenic	5.004	4.282	85.6	80 - 120
Arsenic (dissolved)	5.004	4.282	85.6	80 - 120
Barium	40.04	33.94	84.8	80 - 120
Barium (dissolved)	40.04	33.94	84.8	80 - 120
Beryllium	1.001	0.9300	92.9	80 - 120
Beryllium (dissolved)	1.001	0.9300	92.9	80 - 120
Cadmium	2.502	2.245	89.7	80 - 120
Cadmium (dissolved)	2.502	2.245	89.7	80 - 120
Calcium	600.0	554.5	92.4	80 - 120
Calcium (dissolved)	600.0	554.5	92.4	80 - 120
Chromium	4.004	3.468	86.6	80 - 120
Chromium (dissolved)	4.004	3.468	86.6	80 - 120
Cobalt	10.01	8.118	81.1	80 - 120
Cobalt (dissolved)	10.01	8.118	81.1	80 - 120
Copper	5.004	4.774	95.4	80 - 120
Copper (dissolved)	5.004	4.774	95.4	80 - 120
Iron	20.02	21.97	110	80 - 120
Iron (dissolved)	20.02	21.97	110	80 - 120
Lead	5.004	4.359	87.1	80 - 120
Lead (dissolved)	5.004	4.359	87.1	80 - 120
Magnesium	600.0	540.1	90.0	80 - 120
Magnesium (dissolved)	600.0	540.1	90.0	80 - 120
Manganese	10.01	10.11	101	80 - 120
Manganese (dissolved)	10.01	10.11	101	80 - 120
Nickel	10.01	8.729	87.2	80 - 120
Nickel (dissolved)	10.01	8.729	87.2	80 - 120

LCS / LCS DUPLICATE RECOVERY
SW6010B

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Water		
Batch:	9K30910	Laboratory ID:	9K30910-BS1
Preparation:	MET_3005A_LOW	Initial/Final:	100 mL / 25 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Potassium	600.0	590.9	98.5	80 - 120
Potassium (dissolved)	600.0	590.9	98.5	80 - 120
Silver	5.004	5.003	100	80 - 120
Silver (dissolved)	5.004	5.003	100	80 - 120
Sodium	600.0	656.6	109	80 - 120
Sodium (dissolved)	600.0	656.6	109	80 - 120
Thallium	5.004	4.193	83.8	80 - 120
Thallium (dissolved)	5.004	4.193	83.8	80 - 120
Vanadium	10.01	8.394	83.9	80 - 120
Vanadium (dissolved)	10.01	8.394	83.9	80 - 120
Zinc	10.01	8.198	81.9	80 - 120
Zinc (dissolved)	10.01	8.198	81.9	80 - 120

LCS / LCS DUPLICATE RECOVERY
SW6010B

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Water		
Batch:	9K30910	Laboratory ID:	9K30910-BS2
Preparation:	MET_3005A_LOW	Initial/Final:	100 mL / 25 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Selenium	5.004	4.164	83.2	80 - 120
Selenium (dissolved)	5.004	4.164	83.2	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW6010B

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Water		
Batch:	9K30911	Laboratory ID:	9K30911-BS1
Preparation:	MET_3005A_LOW	Initial/Final:	100 mL / 25 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Aluminum	40.04	38.73	96.7	80 - 120
Antimony	5.004	4.054	81.0	80 - 120
Arsenic	5.004	4.551	90.9	80 - 120
Barium	40.04	36.70	91.7	80 - 120
Beryllium	1.001	0.9673	96.6	80 - 120
Cadmium	2.502	2.212	88.4	80 - 120
Calcium	600.0	657.2	110	80 - 120
Chromium	4.004	3.894	97.3	80 - 120
Cobalt	10.01	8.528	85.2	80 - 120
Copper	5.004	4.643	92.8	80 - 120
Iron	20.02	19.80	98.9	80 - 120
Lead	5.004	4.818	96.3	80 - 120
Magnesium	600.0	570.1	95.0	80 - 120
Manganese	10.01	10.94	109	80 - 120
Nickel	10.01	9.042	90.3	80 - 120
Potassium	600.0	563.8	94.0	80 - 120
Selenium	5.004	4.072	81.4	80 - 120
Silver	5.004	5.204	104	80 - 120
Sodium	600.0	633.8	106	80 - 120
Thallium	5.004	4.516	90.2	80 - 120
Vanadium	10.01	9.386	93.8	80 - 120
Zinc	10.01	9.623	96.1	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW7470A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Water		
Batch:	9L02002	Laboratory ID:	9L02002-BS1
Preparation:	pMercury-W SW 7470A	Initial/Final:	30 mL / 30 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Mercury	2.000	2.074	104	80 - 120
Mercury (dissolved)	2.000	2.074	104	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW7470A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Matrix:	Water		
Batch:	9L02003	Laboratory ID:	9L02003-BS1
Preparation:	pMercury-W SW 7470A	Initial/Final:	30 mL / 30 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Mercury	2.000	2.112	106	80 - 120

Metals in Water by ICP-AES - Quality Control

Analyte	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 9K32903											
Instrument RL Check				Prepared & Analyzed: 11/24/2009							
Barium	40.57			ug/L	40.00		101	80-120			
Manganese	16.41			ug/L	15.00		109	80-120			
Instrument RL Check				Prepared & Analyzed: 11/24/2009							
Aluminum	210.2			ug/L	200.0		105	80-120			
Antimony	14.50			ug/L	15.00		96.7	80-120			
Arsenic	4.290			ug/L	5.000		85.8	80-120			
Beryllium	5.094			ug/L	5.000		102	80-120			
Cadmium	5.367			ug/L	5.000		107	80-120			
Calcium	4883			ug/L	5000		97.7	80-120			
Chromium	5.104			ug/L	5.000		102	80-120			
Cobalt	12.12			ug/L	12.50		96.9	80-120			
Copper	10.32			ug/L	10.00		103	80-120			
Iron	107.3			ug/L	100.0		107	80-120			
Lead	3.216			ug/L	3.000		107	80-120			
Magnesium	4762			ug/L	5000		95.2	80-120			
Nickel	9.398			ug/L	10.00		94.0	80-120			
Potassium	4916			ug/L	5000		98.3	80-120			
Selenium	4.406			ug/L	5.000		88.1	80-120			
Silver	1.887			ug/L	2.000		94.4	80-120			
Sodium	4543			ug/L	5000		90.9	80-120			
Thallium	8.467			ug/L	8.000		106	80-120			
Vanadium	12.15			ug/L	12.50		97.2	80-120			
Zinc	19.42			ug/L	20.00		97.1	80-120			
Batch 9L33717											
Instrument RL Check				Prepared & Analyzed: 12/01/2009							
Barium	41.22			ug/L	40.00		103	80-120			
Manganese	15.75			ug/L	15.00		105	80-120			

Metals in Water by ICP-AES - Quality Control

Analyte	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 9L33717											
Instrument RL Check				Prepared & Analyzed: 12/01/2009							
Aluminum	197.9			ug/L	200.0		99.0	80-120			
Antimony	14.10			ug/L	15.00		94.0	80-120			
Arsenic	4.624			ug/L	5.000		92.5	80-120			
Beryllium	5.091			ug/L	5.000		102	80-120			
Cadmium	5.495			ug/L	5.000		110	80-120			
Calcium	4914			ug/L	5000		98.3	80-120			
Chromium	5.321			ug/L	5.000		106	80-120			
Cobalt	11.87			ug/L	12.50		95.0	80-120			
Copper	10.74			ug/L	10.00		107	80-120			
Iron	102.5			ug/L	100.0		103	80-120			
Lead	2.609			ug/L	3.000		87.0	80-120			
Magnesium	4729			ug/L	5000		94.6	80-120			
Nickel	8.623			ug/L	10.00		86.2	80-120			
Potassium	4758			ug/L	5000		95.2	80-120			
Selenium	4.199			ug/L	5.000		84.0	80-120			
Silver	2.117			ug/L	2.000		106	80-120			
Sodium	5071			ug/L	5000		101	80-120			
Thallium	8.021			ug/L	8.000		100	80-120			
Vanadium	12.92			ug/L	12.50		103	80-120			
Zinc	19.36			ug/L	20.00		96.8	80-120			
Batch 9L33812											
Instrument RL Check				Prepared & Analyzed: 12/03/2009							
Manganese	15.66			ug/L	15.00		104	80-120			
Instrument RL Check				Prepared & Analyzed: 12/03/2009							
Aluminum	209.0			ug/L	200.0		104	80-120			
Cadmium	5.038			ug/L	5.000		101	80-120			
Calcium	5074			ug/L	5000		101	80-120			
Chromium	5.140			ug/L	5.000		103	80-120			
Magnesium	4859			ug/L	5000		97.2	80-120			
Selenium	4.510			ug/L	5.000		90.2	80-120			
Sodium	4940			ug/L	5000		98.8	80-120			
Thallium	7.462			ug/L	8.000		93.3	80-120			
Zinc	19.10			ug/L	20.00		95.5	80-120			

Metals in Water by ICP-AES - Quality Control

Analyte	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 9L33812											
Instrument RL Check				Prepared & Analyzed: 12/03/2009							
Lead	2.677			ug/L	3.000		89.2	80-120			
Batch 9L34212											
Instrument RL Check				Prepared & Analyzed: 12/07/2009							
Manganese	16.66			ug/L	15.00		111	80-120			
Instrument RL Check				Prepared & Analyzed: 12/07/2009							
Aluminum	208.7			ug/L	200.0		104	80-120			
Calcium	5245			ug/L	5000		105	80-120			
Potassium	4915			ug/L	5000		98.3	80-120			
Sodium	5462			ug/L	5000		109	80-120			
Batch 9L34316											
Instrument RL Check				Prepared & Analyzed: 12/09/2009							
Lead	3.413			ug/L	3.000		114	80-120			
Selenium	4.995			ug/L	5.000		99.9	80-120			
Zinc	19.56			ug/L	20.00		97.8	80-120			

Mercury by CVAA - Quality Control

Analyte	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 9L33503											
Instrument RL Check			Prepared & Analyzed: 11/30/2009								
Mercury	0.2016			ug/L	0.2000		101	70-130			
Instrument RL Check			Prepared & Analyzed: 11/30/2009								
Mercury	0.1920			ug/L	0.2000		96.0	70-130			
Batch 9L33808											
Instrument RL Check			Prepared: 12/02/2009 Analyzed: 12/03/2009								
Mercury	0.1629			ug/L	0.2000		81.5	70-130			
Instrument RL Check			Prepared: 12/02/2009 Analyzed: 12/03/2009								
Mercury	0.1743			ug/L	0.2000		87.2	70-130			

DUPLICATES
SW6010B

NTC21MW0501

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Water
Batch: 9K30910
Preparation: MET_3005A_LOW
Source Sample Name: NTC21MW0501

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 9K30910-DUP1
Lab Source ID: 0911151-01
Initial/Final: 100 mL / 25 mL
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (ug/L)	DUPLICATE CONCENTRATION (ug/L)	RPD %	Q	METHOD
Antimony	20	3.75 U	3.75 U			SW6010B
Arsenic	20	2.39	2.883	18.6		SW6010B
Barium	20	422	392.3	7.22		SW6010B
Beryllium	20	1.25 U	1.25 U			SW6010B
Cobalt	20	4.65	4.359	6.39		SW6010B
Copper	20	2.50 U	2.50 U			SW6010B
Iron	20	173	166.2	3.90		SW6010B
Nickel	20	1.84 J	2.50 J	13.3		SW6010B
Potassium	20	11600	11160	3.67		SW6010B
Silver	20	1.30	1.25 J	12.4		SW6010B
Vanadium	20	3.12 U	3.12 U			SW6010B

DUPLICATES
SW6010B

NTC21MW0501

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Water
Batch: 9K30910
Preparation: MET_3005A_LOW
Source Sample Name: NTC21MW0501

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 9K30910-DUP3
Lab Source ID: 0911151-01RE1
Initial/Final: 100 mL / 25 mL
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (ug/L)	DUPLICATE CONCENTRATION (ug/L)	RPD %	Q	METHOD
Aluminum	20	145 JD	250 JD	1.09		SW6010B
Cadmium	20	3.45 JD	6.25 JD	7.00		SW6010B
Calcium	20	374000 D	384500 D	2.80		SW6010B
Chromium	20	6.25 U	6.25 U			SW6010B
Lead	20	3.75 U	3.75 U			SW6010B
Magnesium	20	125000 D	128600 D	3.21		SW6010B
Manganese	20	5400 BD	5704 BD	5.45		SW6010B
Selenium	20	6.25 U	6.25 U			SW6010B
Thallium	20	10.0 U	10.0 U			SW6010B
Zinc	20	25.0 U	25.0 U			SW6010B

DUPLICATES
SW6010B

NTC21MW0501

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Water
Batch: 9K30910
Preparation: MET_3005A_LOW
Source Sample Name: NTC21MW0501

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 9K30910-DUP4
Lab Source ID: 0911151-01RE2
Initial/Final: 100 mL / 25 mL
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (ug/L)	DUPLICATE CONCENTRATION (ug/L)	RPD %	Q	METHOD
Sodium	20	1040000 D	1095000 D	4.88		SW6010B

DUPLICATES

SW7470A

NTC21MW0501

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Water
Batch: 9L02002
Preparation: pMercury-W SW 7470A
Source Sample Name: NTC21MW0501

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 9L02002-DUP1
Lab Source ID: 0911151-01
Initial/Final: 30 mL / 30 mL
% Solids:

ANALYTE	CONTROL LIMIT	SAMPLE CONCENTRATION (ug/L)	DUPLICATE CONCENTRATION (ug/L)	RPD %	Q	METHOD
Mercury	20	0.200 U	0.200 U			SW7470A

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW6010B

NTC21MW0501

Laboratory: Empirical Laboratories, LLC

SDG: CTO064_002

Client: Tetra Tech NUS, Inc. (T010)

Project: Great Lakes CTO 064 (Site 21)

Matrix: Water

Batch: 9K30910

% Solids:

Source Sample Name: **0911151-01**

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
Antimony	125.0	ND	196.3	157	N	80 - 120
Arsenic	125.0	2.392	202.4	160	N	80 - 120
Barium	500.0	421.7	971.8	110		80 - 120
Beryllium	12.50	ND	10.45	83.6		80 - 120
Cobalt	125.0	4.647	121.9	93.8		80 - 120
Copper	62.50	ND	83.44	134	N	80 - 120
Iron	250.0	172.8	382.2	83.7		80 - 120
Nickel	125.0	1.843	115.2	90.7		80 - 120
Potassium	1250	11580	13090	121		80 - 120
Silver	62.50	1.302	95.49	151	N	80 - 120
Vanadium	125.0	ND	103.9	83.1		80 - 120

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW7470A

NTC21MW0501

Laboratory: Empirical Laboratories, LLC

SDG: CTO064_002

Client: Tetra Tech NUS, Inc. (T010)

Project: Great Lakes CTO 064 (Site 21)

Matrix: Water

Batch: 9L02002

% Solids:

Source Sample Name: **0911151-01**

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
Mercury	2.000	ND	1.713	85.7		80 - 120

POST DIGEST SPIKE SAMPLE RECOVERY

SW6010B

NTC21MW0501

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Water
Batch: 9K30910
Preparation: MET_3005A_LOW

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 9K30910-PS1
Lab Source ID: 0911151-01
Initial/Final: 100 mL / 25 mL

Analyte	Spike Sample Result (SSR) (ug/L)	Sample Result (SR) (ug/L)	Spike Added (SA) (ug/L)	%R	Control Limit %R
Antimony	**457.4**	**ND**	**250.0**	**183**	**85 - 115**
Arsenic	**472.4**	**9.568**	**250.0**	**185**	**85 - 115**
Barium	**4304**	**1687**	**2000**	**131**	**85 - 115**
Beryllium	48.04	ND	50.00	95.9	85 - 115
Cobalt	558.8	18.59	500.0	108	85 - 115
Copper	**383.5**	**ND**	**250.0**	**152**	**85 - 115**
Iron	1655	691.2	1000	96.3	85 - 115
Nickel	527.8	7.374	500.0	104	85 - 115
Potassium	**56650**	**46330**	**5000**	**207**	**85 - 115**
Silver	**445.6**	**5.208**	**250.0**	**176**	**85 - 115**
Vanadium	473.1	ND	500.0	95.5	85 - 115

SERIAL DILUTION

SW6010B

NTC21MW0501

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Water
Sequence: 9L33717
Preparation: 9K25003

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 9L33717-SRD2
Lab Source ID: 0911151-01
Initial/Final: 100 / 25

Analyte	Initial Sample Result (I)	Serial Dilution Result (S)	% Difference	Q	Method	QC Limits % Difference
Antimony	ND	ND			SW6010B	10
Arsenic	9.5682	ND			SW6010B	10
Barium	1686.7	1584.9	6.04		SW6010B	10
Beryllium	ND	ND			SW6010B	10
Cobalt	18.588	ND			SW6010B	10
Copper	ND	ND			SW6010B	10
Iron	691.25	710.8	2.83		SW6010B	10
Nickel	7.3737	ND			SW6010B	10
Potassium	46327	38996	15.8		SW6010B	10
Silver	5.2083	ND			SW6010B	10
Vanadium	ND	ND			SW6010B	10

SERIAL DILUTION

SW6010B

NTC21MW0501

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Water
Sequence: 9L33812
Preparation: 9K25003

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 9L33812-SRDB
Lab Source ID: 0911151-01RE1
Initial/Final: 100 / 25

Analyte	Initial Sample Result (I)	Serial Dilution Result (S)	% Difference	Q	Method	QC Limits % Difference
Aluminum	115.72	396.31	242		SW6010B	10
Cadmium	2.7608	ND			SW6010B	10
Calcium	299120	302050	0.980		SW6010B	10
Chromium	ND	ND			SW6010B	10
Lead	ND	ND			SW6010B	10
Magnesium	99654	97780	1.88		SW6010B	10
Manganese	4320.8	4522.1	4.66		SW6010B	10
Selenium	ND	ND			SW6010B	10
Thallium	ND	ND			SW6010B	10
Zinc	ND	ND			SW6010B	10

SERIAL DILUTION

SW6010B

NTC21MW0501

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Water
Sequence: 9L33812
Preparation: 9K25003

SDG: CTO064_002
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 9L33812-SRDC
Lab Source ID: 0911151-01RE2
Initial/Final: 100 / 25

Analyte	Initial Sample Result (I)	Serial Dilution Result (S)	% Difference	Q	Method	QC Limits % Difference
Sodium	166850	169790	1.76		SW6010B	10

PREPARATION BATCH SUMMARY
SW6010B

Laboratory: Empirical Laboratories, LLC
SDG: CTO064_002
Client: Tetra Tech NUS, Inc. (T010)
Project: Great Lakes CTO 064 (Site 21)
Batch: 9K23009 Batch Matrix: Solid
Preparation: MET_3050B

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
NTC21SB02-SO-0406	0911147-01	11/23/09 07:50	2.04	100.00
NTC21SB02-SO-0406	0911147-01RE1	11/23/09 07:50	2.04	100.00
NTC21SB02-SO-0406	0911147-01RE3	11/23/09 07:50	2.04	100.00
Blank	9K23009-BLK1	11/23/09 07:50	2.00	100.00
Blank	9K23009-BLK3	11/23/09 07:50	2.00	100.00
LCS	9K23009-BS1	11/23/09 07:50	2.00	100.00

PREPARATION BATCH SUMMARY

SW6010B

Laboratory: Empirical Laboratories, LLC SDG: CTO064_002

Client: Tetra Tech NUS, Inc. (T010) Project: Great Lakes CTO 064 (Site 21)

Batch: 9K30910 Batch Matrix: Water Preparation: MET_3005A_LOW

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
NTC21MW0501	0911151-01	11/30/09 07:08	100.00	25.00
NTC21MW0501	0911151-01RE1	11/30/09 07:08	100.00	25.00
NTC21MW0501	0911151-01RE2	11/30/09 07:08	100.00	25.00
NTC21-FD111609-01	0911151-02	11/30/09 07:08	100.00	25.00
NTC21-FD111609-01	0911151-02RE1	11/30/09 07:08	100.00	25.00
NTC21-FD111609-01	0911151-02RE2	11/30/09 07:08	100.00	25.00
NTC21MW0201	0911151-03	11/30/09 07:08	100.00	25.00
NTC21MW0201	0911151-03RE1	11/30/09 07:08	100.00	25.00
NTC21MW0201	0911151-03RE2	11/30/09 07:08	100.00	25.00
NTC21MW0301	0911151-04	11/30/09 07:08	100.00	25.00
NTC21MW0301	0911151-04RE1	11/30/09 07:08	100.00	25.00
NTC21MW0401	0911151-05	11/30/09 07:08	100.00	25.00
NTC21MW0401	0911151-05RE1	11/30/09 07:08	100.00	25.00
NTC21MW0401	0911151-06	11/30/09 07:08	100.00	25.00
NTC21MW0401	0911151-06RE1	11/30/09 07:08	100.00	25.00
Blank	9K30910-BLK1	11/30/09 07:08	100.00	25.00
LCS	9K30910-BS1	11/30/09 07:08	100.00	25.00
LCS	9K30910-BS2	11/30/09 07:08	100.00	25.00
NTC21MW0501	9K30910-DUP1	11/30/09 07:08	100.00	25.00
NTC21MW0501	9K30910-DUP3	11/30/09 07:08	100.00	25.00
NTC21MW0501	9K30910-DUP4	11/30/09 07:08	100.00	25.00
NTC21MW0501	9K30910-MS1	11/30/09 07:08	100.00	25.00
NTC21MW0501	9K30910-PS1	11/30/09 07:08	100.00	25.00

PREPARATION BATCH SUMMARY
SW6010B

Laboratory: Empirical Laboratories, LLC
SDG: CTO064_002
Client: Tetra Tech NUS, Inc. (T010)
Project: Great Lakes CTO 064 (Site 21)
Batch: 9K30911 Batch Matrix: Water
Preparation: MET_3005A_LOW

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
NTC21MW0101	0911181-02	11/30/09 07:15	100.00	25.00
NTC21MW0101	0911181-02RE1	11/30/09 07:15	100.00	25.00
NTC21MW0101	0911181-02RE2	11/30/09 07:15	100.00	25.00
NTC21MW0101	0911181-02RE3	11/30/09 07:15	100.00	25.00
NTC21MW0601	0911181-03	11/30/09 07:15	100.00	25.00
NTC21MW0601	0911181-03RE1	11/30/09 07:15	100.00	25.00
NTC21MW0601	0911181-03RE2	11/30/09 07:15	100.00	25.00
NTC21MW0601	0911181-03RE3	11/30/09 07:15	100.00	25.00
Blank	9K30911-BLK1	11/30/09 07:15	100.00	25.00
Blank	9K30911-BLK2	11/30/09 07:15	100.00	25.00
LCS	9K30911-BS1	11/30/09 07:15	100.00	25.00

PREPARATION BATCH SUMMARY

SW7471A

Laboratory: Empirical Laboratories, LLC SDG: CTO064_002

Client: Tetra Tech NUS, Inc. (T010) Project: Great Lakes CTO 064 (Site 21)

Batch: 9K30908 Batch Matrix: Solid Preparation: MET_HG_S

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
NTC21SB02-SO-0406	0911147-01	11/30/09 06:30	0.29	50.00
Blank	9K30908-BLK1	11/30/09 06:30	0.30	50.00
LCS	9K30908-BS1	11/30/09 06:30	0.34	50.00

PREPARATION BATCH SUMMARY

SW7470A

Laboratory: Empirical Laboratories, LLC
SDG: CTO064_002
Client: Tetra Tech NUS, Inc. (T010)
Project: Great Lakes CTO 064 (Site 21)
Batch: 9L02002 Batch Matrix: Water
Preparation: pMercury-W SW 7470A

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
NTC21MW0501	0911151-01	12/02/09 07:16	30.00	30.00
NTC21-FD111609-01	0911151-02	12/02/09 07:16	30.00	30.00
NTC21MW0201	0911151-03	12/02/09 07:16	30.00	30.00
NTC21MW0301	0911151-04	12/02/09 07:16	30.00	30.00
NTC21MW0401	0911151-05	12/02/09 07:16	30.00	30.00
NTC21MW0401	0911151-06	12/02/09 07:16	30.00	30.00
NTC21MW0101	0911181-02	12/02/09 07:16	30.00	30.00
Blank	9L02002-BLK1	12/02/09 07:16	30.00	30.00
Blank	9L02002-BLK1	12/02/09 07:16	30.00	30.00
LCS	9L02002-BS1	12/02/09 07:16	30.00	30.00
LCS	9L02002-BS1	12/02/09 07:16	30.00	30.00
NTC21MW0501	9L02002-DUP1	12/02/09 07:16	30.00	30.00
NTC21MW0501	9L02002-MS1	12/02/09 07:16	30.00	30.00

PREPARATION BATCH SUMMARY

SW7470A

Laboratory: Empirical Laboratories, LLC

SDG: CTO064_002

Client: Tetra Tech NUS, Inc. (T010)

Project: Great Lakes CTO 064 (Site 21)

Batch: 9L02003 Batch Matrix: Water

Preparation: pMercury-W SW 7470A

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
NTC21MW0601	0911181-03	12/02/09 07:23	30.00	30.00
Blank	9L02003-BLK1	12/02/09 07:23	30.00	30.00
LCS	9L02003-BS1	12/02/09 07:23	30.00	30.00

METHOD DETECTION AND REPORTING LIMITS

Laboratory: Empirical Laboratories, LLC **SDG:** CTO064_002

Client: Tetra Tech NUS, Inc. (T010) **Project:** Great Lakes CTO 064 (Site 21)

Matrix: Water **Instrument:** ME-ICP

Analyte	MDL	MRL	Units	Method
Aluminum	12.5	50.0	ug/L	SW6010B
	2.50	10.0	mg/Kg	SW6010B
Aluminum (dissolved)	12.5	50.0	ug/L	SW6010B
Antimony	1.25	3.75	ug/L	SW6010B
	0.250	0.750	mg/Kg	SW6010B
Antimony (dissolved)	1.25	3.75	ug/L	SW6010B
Arsenic	0.750	1.25	ug/L	SW6010B
	0.150	0.250	mg/Kg	SW6010B
Arsenic (dissolved)	0.750	1.25	ug/L	SW6010B
Barium	0.250	2.00	mg/Kg	SW6010B
	1.25	10.0	ug/L	SW6010B
Barium (dissolved)	1.25	10.0	ug/L	SW6010B
Beryllium	0.0500	0.250	mg/Kg	SW6010B
	0.250	1.25	ug/L	SW6010B
Beryllium (dissolved)	0.250	1.25	ug/L	SW6010B
Cadmium	0.0500	0.250	mg/Kg	SW6010B
	0.250	1.25	ug/L	SW6010B
Cadmium (dissolved)	0.250	1.25	ug/L	SW6010B
Calcium	50.0	250	mg/Kg	SW6010B
	250	1250	ug/L	SW6010B
Calcium (dissolved)	250	1250	ug/L	SW6010B
Chromium	0.100	0.250	mg/Kg	SW6010B
	0.500	1.25	ug/L	SW6010B
Chromium (dissolved)	0.500	1.25	ug/L	SW6010B
Cobalt	0.250	0.625	mg/Kg	SW6010B
	1.25	3.12	ug/L	SW6010B
Cobalt (dissolved)	1.25	3.12	ug/L	SW6010B
Copper	0.250	0.500	mg/Kg	SW6010B
	1.25	2.50	ug/L	SW6010B
Copper (dissolved)	1.25	2.50	ug/L	SW6010B
Iron	1.50	5.00	mg/Kg	SW6010B
	7.50	25.0	ug/L	SW6010B
Iron (dissolved)	7.50	25.0	ug/L	SW6010B
Lead	0.0750	0.150	mg/Kg	SW6010B
	0.375	0.750	ug/L	SW6010B
Lead (dissolved)	0.375	0.750	ug/L	SW6010B
Magnesium	50.0	250	mg/Kg	SW6010B

METHOD DETECTION AND REPORTING LIMITS

Laboratory: Empirical Laboratories, LLC **SDG:** CTO064_002

Client: Tetra Tech NUS, Inc. (T010) **Project:** Great Lakes CTO 064 (Site 21)

Matrix: Water **Instrument:** ME-ICP

Analyte	MDL	MRL	Units	Method
Magnesium	250	1250	ug/L	SW6010B
Magnesium (dissolved)	250	1250	ug/L	SW6010B
Manganese	0.150	0.750	mg/Kg	SW6010B
	0.750	3.75	ug/L	SW6010B
Manganese (dissolved)	0.750	3.75	ug/L	SW6010B
Nickel	0.250	0.500	mg/Kg	SW6010B
	0.750	2.50	ug/L	SW6010B
Nickel (dissolved)	0.750	2.50	ug/L	SW6010B
Potassium	50.0	250	mg/Kg	SW6010B
	250	1250	ug/L	SW6010B
Potassium (dissolved)	250	1250	ug/L	SW6010B
Selenium	0.150	0.250	mg/Kg	SW6010B
	0.750	1.25	ug/L	SW6010B
Selenium (dissolved)	0.750	1.25	ug/L	SW6010B
Silver	0.0500	0.250	mg/Kg	SW6010B
	0.250	1.25	ug/L	SW6010B
Silver (dissolved)	0.250	1.25	ug/L	SW6010B
Sodium	50.0	250	mg/Kg	SW6010B
	250	1250	ug/L	SW6010B
Sodium (dissolved)	250	1250	ug/L	SW6010B
Thallium	0.150	0.400	mg/Kg	SW6010B
	0.750	2.00	ug/L	SW6010B
Thallium (dissolved)	0.750	2.00	ug/L	SW6010B
Vanadium	0.250	0.625	mg/Kg	SW6010B
	1.25	3.12	ug/L	SW6010B
Vanadium (dissolved)	1.25	3.12	ug/L	SW6010B
Zinc	0.250	1.00	mg/Kg	SW6010B
	1.25	5.00	ug/L	SW6010B
Zinc (dissolved)	1.25	5.00	ug/L	SW6010B

METHOD DETECTION AND REPORTING LIMITS

Laboratory: Empirical Laboratories, LLC **SDG:** CTO064_002

Client: Tetra Tech NUS, Inc. (T010) **Project:** Great Lakes CTO 064 (Site 21)

Matrix: Water **Instrument:** ME-FIMS

Analyte	MDL	MRL	Units	Method
Mercury	0.0800	0.200	ug/L	SW7470A
Mercury (dissolved)	0.0800	0.200	ug/L	SW7470A
Mercury	0.0130	0.0330	mg/Kg	SW7471A
	~~0.0800~~	~~0.200~~	~~mg/Kg~~	~~SW7471A~~

SMO 12/10/09

Soil sample

SAMPLE	LAB_ID	ANAL_BATCH	PREP_BATCH	PREP_TYPE	ANAL_DATE	PARA	FRACTION	LAB_RES	LAB_QUAL	UNITS	DIL_FACTOR
NTC21SB02-SO-0406	0911147-01	9K32903	9K23009	3050B	11/25/2009 1:03	ANTIMONY	M	0.27	U	MG/KG	1
NTC21SB02-SO-0406	0911147-01	9K32903	9K23009	3050B	11/25/2009 1:03	ARSENIC	M	4.16		MG/KG	1
NTC21SB02-SO-0406	0911147-01	9K32903	9K23009	3050B	11/25/2009 1:03	BARIUM	M	48.8		MG/KG	1
NTC21SB02-SO-0406	0911147-01	9K32903	9K23009	3050B	11/25/2009 1:03	BERYLLIUM	M	0.28		MG/KG	1
NTC21SB02-SO-0406	0911147-01	9K32903	9K23009	3050B	11/25/2009 1:03	COBALT	M	2.25		MG/KG	1
NTC21SB02-SO-0406	0911147-01	9K32903	9K23009	3050B	11/25/2009 1:03	COPPER	M	9.91		MG/KG	1
NTC21SB02-SO-0406	0911147-01	9K32903	9K23009	3050B	11/25/2009 1:03	IRON	M	6560		MG/KG	1
NTC21SB02-SO-0406	0911147-01	9K32903	9K23009	3050B	11/25/2009 1:03	MANGANESE	M	270		MG/KG	1
NTC21SB02-SO-0406	0911147-01	9L33503	9K30908	METHOD	11/30/2009 18:03	MERCURY	M	0.03		MG/KG	1
NTC21SB02-SO-0406	0911147-01	9K32903	9K23009	3050B	11/25/2009 1:03	NICKEL	M	4.42		MG/KG	1
NTC21SB02-SO-0406	0911147-01	9K32903	9K23009	3050B	11/25/2009 1:03	POTASSIUM	M	603		MG/KG	1
NTC21SB02-SO-0406	0911147-01	9K32903	9K23009	3050B	11/25/2009 1:03	SILVER	M	0.05	U	MG/KG	1
NTC21SB02-SO-0406	0911147-01	9K32903	9K23009	3050B	11/25/2009 1:03	SODIUM	M	289		MG/KG	1
NTC21SB02-SO-0406	0911147-01	9K32903	9K23009	3050B	11/25/2009 1:03	THALLIUM	M	0.16	U	MG/KG	1
NTC21SB02-SO-0406	0911147-01	9K32903	9K23009	3050B	11/25/2009 1:03	VANADIUM	M	10.5		MG/KG	1
NTC21SB02-SO-0406	0911147-01RE1	9L33812	9K23009	3050B	12/4/2009 10:10	ALUMINUM	M	5090	D	MG/KG	10
NTC21SB02-SO-0406	0911147-01RE1	9L33812	9K23009	3050B	12/4/2009 10:10	CALCIUM	M	177000	D	MG/KG	10
NTC21SB02-SO-0406	0911147-01RE1	9L33812	9K23009	3050B	12/4/2009 10:10	LEAD	M	10.8	D	MG/KG	10
NTC21SB02-SO-0406	0911147-01RE1	9L33812	9K23009	3050B	12/4/2009 10:10	SELENIUM	M	1.65	U	MG/KG	10
NTC21SB02-SO-0406	0911147-01RE1	9L33812	9K23009	3050B	12/4/2009 10:10	ZINC	M	38.5	D	MG/KG	10
NTC21SB02-SO-0406	0911147-01RE3	9L33812	9K23009	3050B	12/4/2009 12:32	CADMIUM	M	0.74	DJ	MG/KG	5
NTC21SB02-SO-0406	0911147-01RE3	9L33812	9K23009	3050B	12/4/2009 12:32	CHROMIUM	M	7.97	D	MG/KG	5
NTC21SB02-SO-0406	0911147-01RE3	9L33812	9K23009	3050B	12/4/2009 12:32	MAGNESIUM	M	81500	D	MG/KG	5

Filtered
Aqueous sample

SAMPLE	LAB_ID	ANAL_BATCH	PREP_BATCH	PREP_TYPE	ANAL_DATE	PARA	FRACTION	LAB_RES	LAB_QUAL	UNITS	DIL_FACTOR
NTC21MW0401	0911151-06	9L33717	9K30910	3005A	12/1/2009 19:57	ALUMINUM	MF	12.5	U	UG/L	1
NTC21MW0401	0911151-06	9L33717	9K30910	3005A	12/1/2009 19:57	ANTIMONY	MF	1.25	UN	UG/L	1
NTC21MW0401	0911151-06	9L33717	9K30910	3005A	12/1/2009 19:57	ARSENIC	MF	1.16	JN	UG/L	1
NTC21MW0401	0911151-06	9L33717	9K30910	3005A	12/1/2009 19:57	BARIUM	MF	32.4		UG/L	1
NTC21MW0401	0911151-06	9L33717	9K30910	3005A	12/1/2009 19:57	BERYLLIUM	MF	0.25	U	UG/L	1
NTC21MW0401	0911151-06	9L33717	9K30910	3005A	12/1/2009 19:57	CADMIUM	MF	0.68	J	UG/L	1
NTC21MW0401	0911151-06	9L33717	9K30910	3005A	12/1/2009 19:57	CALCIUM	MF	122000		UG/L	1
NTC21MW0401	0911151-06	9L33717	9K30910	3005A	12/1/2009 19:57	CHROMIUM	MF	0.5	U	UG/L	1
NTC21MW0401	0911151-06	9L33717	9K30910	3005A	12/1/2009 19:57	COBALT	MF	1.25	U	UG/L	1
NTC21MW0401	0911151-06	9L33717	9K30910	3005A	12/1/2009 19:57	COPPER	MF	1.25	UN	UG/L	1
NTC21MW0401	0911151-06	9L33717	9K30910	3005A	12/1/2009 19:57	IRON	MF	478		UG/L	1
NTC21MW0401	0911151-06	9L33717	9K30910	3005A	12/1/2009 19:57	MAGNESIUM	MF	54200		UG/L	1
NTC21MW0401	0911151-06	9L33717	9K30910	3005A	12/1/2009 19:57	MANGANESE	MF	161		UG/L	1
NTC21MW0401	0911151-06	9L33808	9L02002	7470A	12/3/2009 11:59	MERCURY	MF	0.08	U	UG/L	1
NTC21MW0401	0911151-06	9L33717	9K30910	3005A	12/1/2009 19:57	NICKEL	MF	1.7	J	UG/L	1
NTC21MW0401	0911151-06	9L33717	9K30910	3005A	12/1/2009 19:57	POTASSIUM	MF	3360		UG/L	1
NTC21MW0401	0911151-06	9L33717	9K30910	3005A	12/1/2009 19:57	SELENIUM	MF	0.75	U	UG/L	1
NTC21MW0401	0911151-06	9L33717	9K30910	3005A	12/1/2009 19:57	SILVER	MF	0.25	UN	UG/L	1
NTC21MW0401	0911151-06	9L33717	9K30910	3005A	12/1/2009 19:57	SODIUM	MF	57100		UG/L	1
NTC21MW0401	0911151-06	9L33717	9K30910	3005A	12/1/2009 19:57	THALLIUM	MF	0.75	U	UG/L	1
NTC21MW0401	0911151-06	9L33717	9K30910	3005A	12/1/2009 19:57	VANADIUM	MF	1.25	U	UG/L	1
NTC21MW0401	0911151-06	9L33717	9K30910	3005A	12/1/2009 19:57	ZINC	MF	1.32	J	UG/L	1
NTC21MW0401	0911151-06RE1	9L33812	9K30910	3005A	12/4/2009 13:47	LEAD	MF	1.88	U	UG/L	5

Aqueous

SAMPLE	LAB_ID	ANAL_BATCH	PREP_BATCH	PREP_TYPE	ANAL_DATE	PARA	FRACTION	LAB_RES	LAB_QUAL	UNITS	DIL_FACTOR
NTC21MW0501	0911151-01	9L33717	9K30910	3005A	12/1/2009 19:12	ANTIMONY	M	1.25	UN	UG/L	1
NTC21MW0501	0911151-01	9L33717	9K30910	3005A	12/1/2009 19:12	ARSENIC	M	2.39	N	UG/L	1
NTC21MW0501	0911151-01	9L33717	9K30910	3005A	12/1/2009 19:12	BARIUM	M	422		UG/L	1
NTC21MW0501	0911151-01	9L33717	9K30910	3005A	12/1/2009 19:12	BERYLLIUM	M	0.25	U	UG/L	1
NTC21MW0501	0911151-01	9L33717	9K30910	3005A	12/1/2009 19:12	COBALT	M	4.65		UG/L	1
NTC21MW0501	0911151-01	9L33717	9K30910	3005A	12/1/2009 19:12	COPPER	M	1.25	UN	UG/L	1
NTC21MW0501	0911151-01	9L33717	9K30910	3005A	12/1/2009 19:12	IRON	M	173		UG/L	1
NTC21MW0501	0911151-01	9L33717	9K30910	3005A	12/1/2009 19:12	NICKEL	M	1.84	J	UG/L	1
NTC21MW0501	0911151-01	9L33717	9K30910	3005A	12/1/2009 19:12	POTASSIUM	M	11600		UG/L	1
NTC21MW0501	0911151-01	9L33717	9K30910	3005A	12/1/2009 19:12	SILVER	M	1.3	N	UG/L	1
NTC21MW0501	0911151-01	9L33717	9K30910	3005A	12/1/2009 19:12	VANADIUM	M	1.25	U	UG/L	1
NTC21-FD111609-01	0911151-02	9L33717	9K30910	3005A	12/1/2009 19:37	ANTIMONY	M	1.25	UN	UG/L	1
NTC21-FD111609-01	0911151-02	9L33717	9K30910	3005A	12/1/2009 19:37	ARSENIC	M	6.3	N	UG/L	1
NTC21-FD111609-01	0911151-02	9L33717	9K30910	3005A	12/1/2009 19:37	BARIUM	M	33.8		UG/L	1
NTC21-FD111609-01	0911151-02	9L33717	9K30910	3005A	12/1/2009 19:37	BERYLLIUM	M	0.25	U	UG/L	1
NTC21-FD111609-01	0911151-02	9L33717	9K30910	3005A	12/1/2009 19:37	CADMIUM	M	1.11	J	UG/L	1
NTC21-FD111609-01	0911151-02	9L33717	9K30910	3005A	12/1/2009 19:37	CHROMIUM	M	0.75	U	UG/L	1
NTC21-FD111609-01	0911151-02	9L33717	9K30910	3005A	12/1/2009 19:37	COBALT	M	15.3		UG/L	1
NTC21-FD111609-01	0911151-02	9L33717	9K30910	3005A	12/1/2009 19:37	COPPER	M	1.25	UN	UG/L	1
NTC21-FD111609-01	0911151-02	9L33717	9K30910	3005A	12/1/2009 19:37	IRON	M	30800		UG/L	1
NTC21-FD111609-01	0911151-02	9L33717	9K30910	3005A	12/1/2009 19:37	MAGNESIUM	M	89700		UG/L	1
NTC21-FD111609-01	0911151-02	9L33717	9K30910	3005A	12/1/2009 19:37	MANGANESE	M	2360		UG/L	1
NTC21-FD111609-01	0911151-02	9L33717	9K30910	3005A	12/1/2009 19:37	NICKEL	M	10.7		UG/L	1
NTC21-FD111609-01	0911151-02	9L33717	9K30910	3005A	12/1/2009 19:37	POTASSIUM	M	13400		UG/L	1
NTC21-FD111609-01	0911151-02	9L33717	9K30910	3005A	12/1/2009 19:37	SILVER	M	0.39	JN	UG/L	1
NTC21-FD111609-01	0911151-02	9L33717	9K30910	3005A	12/1/2009 19:37	VANADIUM	M	1.25	U	UG/L	1
NTC21MW0201	0911151-03	9L33717	9K30910	3005A	12/1/2009 19:42	ANTIMONY	M	1.25	UN	UG/L	1
NTC21MW0201	0911151-03	9L33717	9K30910	3005A	12/1/2009 19:42	ARSENIC	M	7.26	N	UG/L	1
NTC21MW0201	0911151-03	9L33717	9K30910	3005A	12/1/2009 19:42	BARIUM	M	34.5		UG/L	1
NTC21MW0201	0911151-03	9L33717	9K30910	3005A	12/1/2009 19:42	BERYLLIUM	M	0.25	U	UG/L	1
NTC21MW0201	0911151-03	9L33717	9K30910	3005A	12/1/2009 19:42	CADMIUM	M	0.86	J	UG/L	1
NTC21MW0201	0911151-03	9L33717	9K30910	3005A	12/1/2009 19:42	CHROMIUM	M	0.75	U	UG/L	1
NTC21MW0201	0911151-03	9L33717	9K30910	3005A	12/1/2009 19:42	COBALT	M	15.3		UG/L	1
NTC21MW0201	0911151-03	9L33717	9K30910	3005A	12/1/2009 19:42	COPPER	M	1.25	UN	UG/L	1
NTC21MW0201	0911151-03	9L33717	9K30910	3005A	12/1/2009 19:42	IRON	M	34000		UG/L	1
NTC21MW0201	0911151-03	9L33717	9K30910	3005A	12/1/2009 19:42	MAGNESIUM	M	97600		UG/L	1
NTC21MW0201	0911151-03	9L33717	9K30910	3005A	12/1/2009 19:42	NICKEL	M	11.3		UG/L	1
NTC21MW0201	0911151-03	9L33717	9K30910	3005A	12/1/2009 19:42	POTASSIUM	M	13100		UG/L	1
NTC21MW0201	0911151-03	9L33717	9K30910	3005A	12/1/2009 19:42	SILVER	M	0.47	JN	UG/L	1
NTC21MW0201	0911151-03	9L33717	9K30910	3005A	12/1/2009 19:42	THALLIUM	M	2	U	UG/L	1
NTC21MW0201	0911151-03	9L33717	9K30910	3005A	12/1/2009 19:42	VANADIUM	M	1.25	U	UG/L	1
NTC21MW0301	0911151-04	9L33717	9K30910	3005A	12/1/2009 19:47	ANTIMONY	M	1.25	UN	UG/L	1
NTC21MW0301	0911151-04	9L33717	9K30910	3005A	12/1/2009 19:47	ARSENIC	M	0.88	JN	UG/L	1
NTC21MW0301	0911151-04	9L33717	9K30910	3005A	12/1/2009 19:47	BARIUM	M	33.1		UG/L	1
NTC21MW0301	0911151-04	9L33717	9K30910	3005A	12/1/2009 19:47	BERYLLIUM	M	0.25	U	UG/L	1
NTC21MW0301	0911151-04	9L33717	9K30910	3005A	12/1/2009 19:47	CADMIUM	M	1.34		UG/L	1
NTC21MW0301	0911151-04	9L33717	9K30910	3005A	12/1/2009 19:47	CHROMIUM	M	0.5	U	UG/L	1
NTC21MW0301	0911151-04	9L33717	9K30910	3005A	12/1/2009 19:47	COBALT	M	3.55		UG/L	1

2 of 4
Aqueous

SAMPLE	LAB_ID	ANAL_BATCH	PREP_BATCH	PREP_TYPE	ANAL_DATE	PARA	FRACTION	LAB_RES	LAB_QUAL	UNITS	DIL_FACTOR
NTC21MW0301	0911151-04	9L33717	9K30910	3005A	12/1/2009 19:47	COPPER	M	1.25	UN	UG/L	1
NTC21MW0301	0911151-04	9L33717	9K30910	3005A	12/1/2009 19:47	IRON	M	2610		UG/L	1
NTC21MW0301	0911151-04	9L33717	9K30910	3005A	12/1/2009 19:47	MAGNESIUM	M	20500		UG/L	1
NTC21MW0301	0911151-04	9L33717	9K30910	3005A	12/1/2009 19:47	MANGANESE	M	2150		UG/L	1
NTC21MW0301	0911151-04	9L33717	9K30910	3005A	12/1/2009 19:47	NICKEL	M	0.89	J	UG/L	1
NTC21MW0301	0911151-04	9L33717	9K30910	3005A	12/1/2009 19:47	POTASSIUM	M	11100		UG/L	1
NTC21MW0301	0911151-04	9L33717	9K30910	3005A	12/1/2009 19:47	SILVER	M	0.25	UN	UG/L	1
NTC21MW0301	0911151-04	9L33717	9K30910	3005A	12/1/2009 19:47	THALLIUM	M	1.5	U	UG/L	1
NTC21MW0301	0911151-04	9L33717	9K30910	3005A	12/1/2009 19:47	VANADIUM	M	1.25	U	UG/L	1
NTC21MW0401	0911151-05	9L33717	9K30910	3005A	12/1/2009 19:52	ALUMINUM	M	122		UG/L	1
NTC21MW0401	0911151-05	9L33717	9K30910	3005A	12/1/2009 19:52	ANTIMONY	M	1.25	UN	UG/L	1
NTC21MW0401	0911151-05	9L33717	9K30910	3005A	12/1/2009 19:52	ARSENIC	M	1.6	N	UG/L	1
NTC21MW0401	0911151-05	9L33717	9K30910	3005A	12/1/2009 19:52	BARIUM	M	32.3		UG/L	1
NTC21MW0401	0911151-05	9L33717	9K30910	3005A	12/1/2009 19:52	BERYLLIUM	M	0.25	U	UG/L	1
NTC21MW0401	0911151-05	9L33717	9K30910	3005A	12/1/2009 19:52	CADMIUM	M	0.69	J	UG/L	1
NTC21MW0401	0911151-05	9L33717	9K30910	3005A	12/1/2009 19:52	CALCIUM	M	121000		UG/L	1
NTC21MW0401	0911151-05	9L33717	9K30910	3005A	12/1/2009 19:52	CHROMIUM	M	0.5	U	UG/L	1
NTC21MW0401	0911151-05	9L33717	9K30910	3005A	12/1/2009 19:52	COBALT	M	1.25	U	UG/L	1
NTC21MW0401	0911151-05	9L33717	9K30910	3005A	12/1/2009 19:52	COPPER	M	1.25	UN	UG/L	1
NTC21MW0401	0911151-05	9L33717	9K30910	3005A	12/1/2009 19:52	IRON	M	752		UG/L	1
NTC21MW0401	0911151-05	9L33717	9K30910	3005A	12/1/2009 19:52	MAGNESIUM	M	54000		UG/L	1
NTC21MW0401	0911151-05	9L33717	9K30910	3005A	12/1/2009 19:52	MANGANESE	M	168		UG/L	1
NTC21MW0401	0911151-05	9L33717	9K30910	3005A	12/1/2009 19:52	NICKEL	M	1.52	J	UG/L	1
NTC21MW0401	0911151-05	9L33717	9K30910	3005A	12/1/2009 19:52	POTASSIUM	M	3440		UG/L	1
NTC21MW0401	0911151-05	9L33717	9K30910	3005A	12/1/2009 19:52	SELENIUM	M	1	U	UG/L	1
NTC21MW0401	0911151-05	9L33717	9K30910	3005A	12/1/2009 19:52	SILVER	M	0.25	UN	UG/L	1
NTC21MW0401	0911151-05	9L33717	9K30910	3005A	12/1/2009 19:52	SODIUM	M	55700		UG/L	1
NTC21MW0401	0911151-05	9L33717	9K30910	3005A	12/1/2009 19:52	THALLIUM	M	0.75	U	UG/L	1
NTC21MW0401	0911151-05	9L33717	9K30910	3005A	12/1/2009 19:52	VANADIUM	M	1.25	U	UG/L	1
NTC21MW0401	0911151-05	9L33717	9K30910	3005A	12/1/2009 19:52	ZINC	M	1.5	J	UG/L	1
NTC21MW0101	0911181-02	9L33717	9K30911	3005A	12/1/2009 20:54	ALUMINUM	M	252		UG/L	1
NTC21MW0101	0911181-02	9L33717	9K30911	3005A	12/1/2009 20:54	ANTIMONY	M	1.25	U	UG/L	1
NTC21MW0101	0911181-02	9L33717	9K30911	3005A	12/1/2009 20:54	ARSENIC	M	1.88		UG/L	1
NTC21MW0101	0911181-02	9L33717	9K30911	3005A	12/1/2009 20:54	BARIUM	M	123		UG/L	1
NTC21MW0101	0911181-02	9L33717	9K30911	3005A	12/1/2009 20:54	BERYLLIUM	M	0.25	U	UG/L	1
NTC21MW0101	0911181-02	9L33717	9K30911	3005A	12/1/2009 20:54	CADMIUM	M	0.79	J	UG/L	1
NTC21MW0101	0911181-02	9L33717	9K30911	3005A	12/1/2009 20:54	CALCIUM	M	96600		UG/L	1
NTC21MW0101	0911181-02	9L33717	9K30911	3005A	12/1/2009 20:54	CHROMIUM	M	4.13		UG/L	1
NTC21MW0101	0911181-02	9L33717	9K30911	3005A	12/1/2009 20:54	COBALT	M	1.25	U	UG/L	1
NTC21MW0101	0911181-02	9L33717	9K30911	3005A	12/1/2009 20:54	COPPER	M	4.25		UG/L	1
NTC21MW0101	0911181-02	9L33717	9K30911	3005A	12/1/2009 20:54	IRON	M	22.3	J	UG/L	1
NTC21MW0101	0911181-02	9L33717	9K30911	3005A	12/1/2009 20:54	MAGNESIUM	M	608	J	UG/L	1
NTC21MW0101	0911181-02	9L33717	9K30911	3005A	12/1/2009 20:54	MANGANESE	M	0.89	J	UG/L	1
NTC21MW0101	0911181-02	9L33717	9K30911	3005A	12/1/2009 20:54	NICKEL	M	0.75	J	UG/L	1
NTC21MW0101	0911181-02	9L33717	9K30911	3005A	12/1/2009 20:54	SELENIUM	M	1.63		UG/L	1
NTC21MW0101	0911181-02	9L33717	9K30911	3005A	12/1/2009 20:54	SILVER	M	0.25	U	UG/L	1
NTC21MW0101	0911181-02	9L33717	9K30911	3005A	12/1/2009 20:54	THALLIUM	M	0.75	U	UG/L	1
NTC21MW0101	0911181-02	9L33717	9K30911	3005A	12/1/2009 20:54	VANADIUM	M	4.36		UG/L	1

SAMPLE	LAB_ID	ANAL_BATCH	PREP_BATCH	PREP_TYPE	ANAL_DATE	PARA	FRACTION	LAB_RES	LAB_QUAL	UNITS	DIL_FACTOR
NTC21MW0101	0911181-02	9L33717	9K30911	3005A	12/1/2009 20:54	ZINC	M	1.25	U	UG/L	1
NTC21MW0601	0911181-03	9L33717	9K30911	3005A	12/1/2009 20:58	ANTIMONY	M	1.25	U	UG/L	1
NTC21MW0601	0911181-03	9L33717	9K30911	3005A	12/1/2009 20:58	ARSENIC	M	0.75	U	UG/L	1
NTC21MW0601	0911181-03	9L33717	9K30911	3005A	12/1/2009 20:58	BARIUM	M	118		UG/L	1
NTC21MW0601	0911181-03	9L33717	9K30911	3005A	12/1/2009 20:58	BERYLLIUM	M	0.25	U	UG/L	1
NTC21MW0601	0911181-03	9L33717	9K30911	3005A	12/1/2009 20:58	CADMIUM	M	0.92	J	UG/L	1
NTC21MW0601	0911181-03	9L33717	9K30911	3005A	12/1/2009 20:58	CHROMIUM	M	0.5	U	UG/L	1
NTC21MW0601	0911181-03	9L33717	9K30911	3005A	12/1/2009 20:58	COBALT	M	1.25	U	UG/L	1
NTC21MW0601	0911181-03	9L33717	9K30911	3005A	12/1/2009 20:58	COPPER	M	1.25	U	UG/L	1
NTC21MW0601	0911181-03	9L33717	9K30911	3005A	12/1/2009 20:58	IRON	M	38.3		UG/L	1
NTC21MW0601	0911181-03	9L33717	9K30911	3005A	12/1/2009 20:58	MAGNESIUM	M	49400		UG/L	1
NTC21MW0601	0911181-03	9L33717	9K30911	3005A	12/1/2009 20:58	MANGANESE	M	61.3		UG/L	1
NTC21MW0601	0911181-03	9L33717	9K30911	3005A	12/1/2009 20:58	NICKEL	M	0.75	U	UG/L	1
NTC21MW0601	0911181-03	9L33717	9K30911	3005A	12/1/2009 20:58	POTASSIUM	M	2980		UG/L	1
NTC21MW0601	0911181-03	9L33717	9K30911	3005A	12/1/2009 20:58	SELENIUM	M	0.75	U	UG/L	1
NTC21MW0601	0911181-03	9L33717	9K30911	3005A	12/1/2009 20:58	SILVER	M	0.25	U	UG/L	1
NTC21MW0601	0911181-03	9L33717	9K30911	3005A	12/1/2009 20:58	THALLIUM	M	0.75	U	UG/L	1
NTC21MW0601	0911181-03	9L33717	9K30911	3005A	12/1/2009 20:58	VANADIUM	M	1.25	U	UG/L	1
NTC21MW0501	0911151-01	9L33808	9L02002	7470A	12/3/2009 11:52	MERCURY	M	0.08	U	UG/L	1
NTC21-FD111609-01	0911151-02	9L33808	9L02002	7470A	12/3/2009 11:55	MERCURY	M	0.08	U	UG/L	1
NTC21MW0201	0911151-03	9L33808	9L02002	7470A	12/3/2009 11:56	MERCURY	M	0.08	U	UG/L	1
NTC21MW0301	0911151-04	9L33808	9L02002	7470A	12/3/2009 11:57	MERCURY	M	0.08	U	UG/L	1
NTC21MW0401	0911151-05	9L33808	9L02002	7470A	12/3/2009 11:58	MERCURY	M	0.08	U	UG/L	1
NTC21MW0101	0911181-02	9L33808	9L02002	7470A	12/3/2009 12:07	MERCURY	M	0.08	U	UG/L	1
NTC21MW0601	0911181-03	9L33808	9L02003	7470A	12/3/2009 12:10	MERCURY	M	0.08	U	UG/L	1

SAMPLE	LAB_ID	ANAL_BATCH	PREP_BATCH	PREP_TYPE	ANAL_DATE	PARA	FRACTION	LAB_RES	LAB_QUAL	UNITS	DIL_FACTOR
NTC21MW0501	0911151-01RE1	9L33812	9K30910	3005A	12/4/2009 12:37	ALUMINUM	M	145	DJ	UG/L	5
NTC21MW0501	0911151-01RE1	9L33812	9K30910	3005A	12/4/2009 12:37	CADMIUM	M	3.45	DJ	UG/L	5
NTC21MW0501	0911151-01RE1	9L33812	9K30910	3005A	12/4/2009 12:37	CALCIUM	M	374000	D	UG/L	5
NTC21MW0501	0911151-01RE1	9L33812	9K30910	3005A	12/4/2009 12:37	CHROMIUM	M	2.5	U	UG/L	5
NTC21MW0501	0911151-01RE1	9L33812	9K30910	3005A	12/4/2009 12:37	LEAD	M	1.88	U	UG/L	5
NTC21MW0501	0911151-01RE1	9L33812	9K30910	3005A	12/4/2009 12:37	MAGNESIUM	M	125000	D	UG/L	5
NTC21MW0501	0911151-01RE1	9L33812	9K30910	3005A	12/4/2009 12:37	MANGANESE	M	5400	D	UG/L	5
NTC21MW0501	0911151-01RE1	9L33812	9K30910	3005A	12/4/2009 12:37	SELENIUM	M	6.25	U	UG/L	5
NTC21MW0501	0911151-01RE1	9L33812	9K30910	3005A	12/4/2009 12:37	THALLIUM	M	3.75	U	UG/L	5
NTC21MW0501	0911151-01RE1	9L33812	9K30910	3005A	12/4/2009 12:37	ZINC	M	6.25	U	UG/L	5
NTC21MW0501	0911151-01RE2	9L33812	9K30910	3005A	12/4/2009 12:42	SODIUM	M	1040000	D	UG/L	25
NTC21-FD111609-01	0911151-02RE1	9L33812	9K30910	3005A	12/4/2009 13:06	ALUMINUM	M	62.5	U	UG/L	5
NTC21-FD111609-01	0911151-02RE1	9L33812	9K30910	3005A	12/4/2009 13:06	CALCIUM	M	604000	D	UG/L	5
NTC21-FD111609-01	0911151-02RE1	9L33812	9K30910	3005A	12/4/2009 13:06	LEAD	M	1.88	DJ	UG/L	5
NTC21-FD111609-01	0911151-02RE1	9L33812	9K30910	3005A	12/4/2009 13:06	SELENIUM	M	5	U	UG/L	5
NTC21-FD111609-01	0911151-02RE1	9L33812	9K30910	3005A	12/4/2009 13:06	THALLIUM	M	3.75	U	UG/L	5
NTC21-FD111609-01	0911151-02RE1	9L33812	9K30910	3005A	12/4/2009 13:06	ZINC	M	9.01	DJ	UG/L	5
NTC21MW0201	0911151-03RE1	9L33812	9K30910	3005A	12/4/2009 13:28	ALUMINUM	M	668	DJ	UG/L	25
NTC21MW0201	0911151-03RE1	9L33812	9K30910	3005A	12/4/2009 13:28	CALCIUM	M	671000	D	UG/L	25
NTC21MW0201	0911151-03RE1	9L33812	9K30910	3005A	12/4/2009 13:28	LEAD	M	9.38	U	UG/L	25
NTC21MW0201	0911151-03RE1	9L33812	9K30910	3005A	12/4/2009 13:28	SODIUM	M	772000	D	UG/L	25
NTC21MW0201	0911151-03RE1	9L33812	9K30910	3005A	12/4/2009 13:28	ZINC	M	31.2	U	UG/L	25
NTC21MW0201	0911151-03RE2	9L33812	9K30910	3005A	12/4/2009 13:33	MANGANESE	M	3040	D	UG/L	5
NTC21MW0201	0911151-03RE2	9L33812	9K30910	3005A	12/4/2009 13:33	SELENIUM	M	6.25	U	UG/L	5
NTC21MW0301	0911151-04RE1	9L33812	9K30910	3005A	12/4/2009 13:37	ALUMINUM	M	303	DJ	UG/L	10
NTC21MW0301	0911151-04RE1	9L33812	9K30910	3005A	12/4/2009 13:37	CALCIUM	M	504000	D	UG/L	10
NTC21MW0301	0911151-04RE1	9L33812	9K30910	3005A	12/4/2009 13:37	LEAD	M	3.75	U	UG/L	10
NTC21MW0301	0911151-04RE1	9L33812	9K30910	3005A	12/4/2009 13:37	SELENIUM	M	7.5	U	UG/L	10
NTC21MW0301	0911151-04RE1	9L33812	9K30910	3005A	12/4/2009 13:37	SODIUM	M	667000	D	UG/L	10
NTC21MW0301	0911151-04RE1	9L33812	9K30910	3005A	12/4/2009 13:37	ZINC	M	12.5	U	UG/L	10
NTC21MW0401	0911151-05RE1	9L33812	9K30910	3005A	12/4/2009 13:42	LEAD	M	0.75	U	UG/L	2
NTC21-FD111609-01	0911151-02RE2	9L34212	9K30910	3005A	12/8/2009 4:37	SODIUM	M	785000	D	UG/L	10
NTC21MW0101	0911181-02RE1	9L34212	9K30911	3005A	12/8/2009 4:42	SODIUM	M	698000	D	UG/L	10
NTC21MW0101	0911181-02RE2	9L34212	9K30911	3005A	12/8/2009 4:47	POTASSIUM	M	40200	D	UG/L	2
NTC21MW0601	0911181-03RE1	9L34212	9K30911	3005A	12/8/2009 5:31	SODIUM	M	331000	D	UG/L	5
NTC21MW0601	0911181-03RE2	9L34212	9K30911	3005A	12/8/2009 5:35	ALUMINUM	M	25	U	UG/L	2
NTC21MW0601	0911181-03RE2	9L34212	9K30911	3005A	12/8/2009 5:35	CALCIUM	M	142000	D	UG/L	2
NTC21MW0101	0911181-02RE3	9L34316	9K30911	3005A	12/9/2009 14:33	LEAD	M	1.88	U	UG/L	5
NTC21MW0601	0911181-03RE3	9L34316	9K30911	3005A	12/9/2009 14:38	LEAD	M	0.83	DJ	UG/L	2
NTC21MW0601	0911181-03RE3	9L34316	9K30911	3005A	12/9/2009 14:38	ZINC	M	2.83	DJ	UG/L	2

interference checks

SAMPLE	LAB_ID	ANAL_BATCH	PREP_BATCH	PREP_TYPE	ANAL_DATE	PARA	FRACTION	LAB_RES	LAB_QUAL	UNITS	DIL_FACTOR
NTC21MW0401	0911151-05	9L33717	9K30910	3005A	12/1/2009 19:52	CALCIUM	M	121000		UG/L	1
NTC21MW0101	0911181-02	9L33717	9K30911	3005A	12/1/2009 20:54	CALCIUM	M	96600		UG/L	1
NTC21MW0501	0911151-01RE1	9L33812	9K30910	3005A	12/4/2009 12:37	CALCIUM	M	374000	D	UG/L	5
NTC21-FD111609-01	0911151-02RE1	9L33812	9K30910	3005A	12/4/2009 13:06	CALCIUM	M	604000	D	UG/L	5
NTC21MW0201	0911151-03RE1	9L33812	9K30910	3005A	12/4/2009 13:28	CALCIUM	M	671000	D	UG/L	25
NTC21MW0301	0911151-04RE1	9L33812	9K30910	3005A	12/4/2009 13:37	CALCIUM	M	504000	D	UG/L	10
NTC21MW0601	0911181-03RE2	9L34212	9K30911	3005A	12/8/2009 5:35	CALCIUM	M	142000	D	UG/L	2

interference if >250,000 µg/L

- No interference, calcium >250,000 µg/L, analyzed at dilution

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**B. CUMMINGS**	**DATE:**	**JANUARY 8, 2010**
FROM:	**JOSEPH KALINYAK**	**COPIES:**	**DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION: VOC/SVOC/PAH**
CTO C064, NTC GREAT LAKES
SDG CTO064_003

SAMPLES: 1 / Soil / VOC / SVOC / PAH

NTC01-Composite

1 / Aqueous / VOC

NTC01-TB111809-01

OVERVIEW

The sample set for CTO C064, NTC Great Lakes, SDG CTO064_003 consists of one (1) aqueous trip blank and one (1) soil environmental sample. The samples were analyzed for target compound list (TCL) volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PAH), and semi-volatile organic compounds (SVOC). The trip blank was analyzed for TCL VOCs. There were no field duplicate pairs included in this sample delivery group (SDG).

The samples were collected by TetraTech NUS on November 11, 2009 and analyzed by Empirical Laboratories, LLC. All analyses were conducted using USEPA SW-846 Methods 8260B and 8270C analytical and reporting protocols.

The data contained in this SDG were validated with regard to the following parameters:

* • Data Completeness
* • Holding Times
* • GC/MS Tuning
* • Initial and Continuing Calibration
* • Laboratory Blank Analyses
* • Compound Quantitation
* • Compound Identification
* • Detection Limits

The symbol (*) indicates that quality control criteria were met for this parameter. Problems affecting data quality are discussed below; documentation supporting these findings is presented in Appendix C. Qualified Analytical results are presented in Appendix A. Results as reported by the laboratory are presented in Appendix B.

VOC

The following compounds were detected in the method blanks:

Compound	Maximum Conc. (µg/l)	Blank Action Level (µg/l)
Methylene chloride (1)	0.22	2.20
1,2,4-Trichlorobenzene (1)	0.12	0.60

Compound	Maximum Conc. µg/kg	Action Level µg/kg
Methylene chloride [2]	0.68	6.80

[1] Maximum concentration detected in the aqueous method blank V3BLK1124 affecting SDG aqueous sample NTC01-TB111809-01.
[2] Maximum concentration detected in the soil method blank V5BLK1125 affecting soil sample NTC01-Composite.

An action level of 10X the maximum contaminant concentration for the common laboratory contaminant methylene chloride and 5X the maximum contaminant concentration for other contaminants was established to evaluate sample data for blank contamination. Dilution factors, % moisture, and sample aliquots, if applicable, were taken into consideration during the application of the action level when evaluating for blank contamination for each individual sample. The aqueous trip blank was not qualified due to method blank contamination.

Blank Actions

- Value < Reporting Limit (RL); value followed by a U, raise value to CRQL.
- Value > RL and < Action level; report value followed by a U.

A continuing calibration percent difference (%D) was greater than the 25% quality control limit for acetone, 2-butanone, chloromethane, dichlorodifluoromethane, and 4-methyl-2-pentanone on instrument VOA3 on 11/24/09 @ 12:17 affecting sample NTC01-TB111809-01. The positive and non-detected results for the aforementioned analytes for the sample NTC01-TB111809-01 were qualified estimated, (J) and (UJ), respectively.

A continuing calibration percent difference (%D) was greater than the 25% quality control limit for 2-butanone and methyl acetate on instrument VOA5 on 11/25/09 at 09:05 affecting sample NTC01-Composite. The positive and non-detected sample results for the aforementioned samples for 2-butanone and methyl acetate were qualified estimated, (J) and (UJ), respectively.

SVOC

The following compounds were detected in the method blank 9K23034-BLK1:

Compound	Maximum Conc. (µg/kg)	Blank Action Level (µg/kg)
Diethylphthalate	140	1400

An action level of 10X the maximum contaminant concentration for phthalate contaminants was established to evaluate sample data for blank contamination. Dilution factors, % moisture, and sample aliquots, if applicable, were taken into consideration during the application of the action level when evaluating for blank contamination for each individual sample. The affected sample was not qualified due to method blank contamination.

The continuing calibration %D was greater than the 25% quality control limit for instrument BNA1 on 12/03/09 @ 12:06 for 3,3'-dichlorobenzidiene and 4-nitroaniline affecting sample NTC01-Composite. The non-detected 3,3'-dichlorobenzidiene and 4-nitroaniline results for the sample NTC01-Composite were qualified estimated, (UJ).

The continuing calibration %D was greater than the 25% quality control limit for instrument BNA1 on 11/27/09 @ 14:20 for atrazine, caprolactam, 3,3'-dichlorobenzidine, 3-nitroaniline, and 2,4-dinitrophenolbenzo(k)fluoranthene affecting the analysis of the method blank. No action was taken as the sample was a method blank.

PAH

There were no data validation issues.

ADDITIONAL COMMENTS

Positive results less than the reporting limit (RL) were qualified as estimated, (J), due to uncertainty near the detection limit.

EXECUTIVE SUMMARY

Laboratory Performance Issues: VOC method blank contamination resulted in sample data qualification for methylene chloride. VOC continuing calibration %Ds greater than the 25% quality control limits for a number of analytes resulted in data qualification of the positive and non-detected sample analytes.

SVOC continuing calibration %Ds greater than the 25% quality control limit for a 3,3'-dichlorobenzidiene and 4-nitroaniline resulted in data qualification of the non-detected SVOC sample analytes.

Other factors affecting data quality: Positive results less than the reporting limit (RL) were qualified estimated, (J), due to uncertainty near the detection limit.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (October 1999) and the Department of Defense (DoD) document entitled "Quality Systems Manual (QSM) for Environmental Laboratories" (January 2006). The text of this report has been formulated to address only those problem areas affecting data quality.

Tetra Tech NUS
Joseph Kalinyak
Chemist/Data Validator

TetraTech NUS
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Support Documentation

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

VALUE QUALIFIER KEY (VAL QUAL)

U – The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ – The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R – The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

DATA QUALIFICATION CODE (QUAL CODE)

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's r < 0.995 / ICP PDS Recovery Noncompliance
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (e.g. base-line drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient r < 0.995
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 01797	NSAMPLE	NTC01-Composite		
SDG: CTO064_003	LAB_ID	0911196-01		
FRACTION: OS	SAMP_DATE	11/18/2009		
MEDIA: SOIL	QC_TYPE	NM		
	UNITS	UG/KG		
	PCT_SOLIDS	83.0		
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
1,1-BIPHENYL		400	U	
2,2'-OXYBIS(1-CHLOROPROPANE)		800	U	
2,4,5-TRICHLOROPHENOL		400	U	
2,4,6-TRICHLOROPHENOL		400	U	
2,4-DICHLOROPHENOL		400	U	
2,4-DIMETHYLPHENOL		800	U	
2,4-DINITROPHENOL		4000	U	
2,4-DINITROTOLUENE		400	U	
2,6-DINITROTOLUENE		400	U	
2-CHLORONAPHTHALENE		400	U	
2-CHLOROPHENOL		400	U	
2-METHYLNAPHTHALENE		56		
2-METHYLPHENOL		400	U	
2-NITROANILINE		1600	U	
2-NITROPHENOL		400	U	
3,3'-DICHLOROBENZIDINE		400	UJ	C
3-NITROANILINE		1600	U	
4,6-DINITRO-2-METHYLPHENOL		1600	U	
4-BROMOPHENYL PHENYL ETHER		400	U	
4-CHLORO-3-METHYLPHENOL		400	U	
4-CHLOROANILINE		400	U	
4-CHLOROPHENYL PHENYL ETHER		400	U	
4-METHYLPHENOL		400	U	
4-NITROANILINE		1600	UJ	C
4-NITROPHENOL		1600	U	
ACENAPHTHENE		4.8	U	
ACENAPHTHYLENE		4.8	U	
ACETOPHENONE		400	U	
ANTHRACENE		4.8	U	
ATRAZINE		400	U	
BENZALDEHYDE		400	U	
BENZO(A)ANTHRACENE		4.8	U	
BENZO(A)PYRENE		4.8	U	
BENZO(B)FLUORANTHENE		4.8	U	
BENZO(G,H,I)PERYLENE		26		
BENZO(K)FLUORANTHENE		4.8	U	

PROJ_NO: 01797	NSAMPLE	NTC01-Composite		
SDG: CTO064_003	LAB_ID	0911196-01		
FRACTION: OS	SAMP_DATE	11/18/2009		
MEDIA: SOIL	QC_TYPE	NM		
	UNITS	UG/KG		
	PCT_SOLIDS	83.0		
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
BIS(2-CHLOROETHOXY)METHANE		400	U	
BIS(2-CHLOROETHYL)ETHER		400	U	
BIS(2-ETHYLHEXYL)PHTHALATE		400	U	
BUTYL BENZYL PHTHALATE		400	U	
CAPROLACTAM		400	U	
CARBAZOLE		800	U	
CHRYSENE		4.8	U	
DIBENZO(A,H)ANTHRACENE		4.8	U	
DIBENZOFURAN		400	U	
DIETHYL PHTHALATE		400	U	
DIMETHYL PHTHALATE		400	U	
DI-N-BUTYL PHTHALATE		400	U	
DI-N-OCTYL PHTHALATE		400	U	
FLUORANTHENE		4.8	U	
FLUORENE		4.8	U	
HEXACHLOROBENZENE		400	U	
HEXACHLOROBUTADIENE		400	U	
HEXACHLOROCYCLOPENTADIENE		400	U	
HEXACHLOROETHANE		800	U	
INDENO(1,2,3-CD)PYRENE		4.8	U	
ISOPHORONE		400	U	
NAPHTHALENE		16		
NITROBENZENE		400	U	
N-NITROSO-DI-N-PROPYLAMINE		400	U	
N-NITROSODIPHENYLAMINE		400	U	
PENTACHLOROPHENOL		1600	U	
PHENANTHRENE		53		
PHENOL		400	U	
PYRENE		20		

PROJ_NO: 01797	NSAMPLE	NTC01-Composite
SDG: CTO064_003	LAB_ID	0911196-01
FRACTION: OV	SAMP_DATE	11/18/2009
MEDIA: SOIL	QC_TYPE	NM
	UNITS	UG/KG
	PCT_SOLIDS	83.0
	DUP_OF	

PARAMETER	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	4.6	U	
1,1,2,2-TETRACHLOROETHANE	4.6	U	
1,1,2-TRICHLOROETHANE	4.6	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	4.6	U	
1,1-DICHLOROETHANE	4.6	U	
1,1-DICHLOROETHENE	4.6	U	
1,2,4-TRICHLOROBENZENE	4.6	U	
1,2-DIBROMO-3-CHLOROPROPANE	4.6	U	
1,2-DIBROMOETHANE	4.6	U	
1,2-DICHLOROBENZENE	4.6	U	
1,2-DICHLOROETHANE	4.6	U	
1,2-DICHLOROPROPANE	4.6	U	
1,3-DICHLOROBENZENE	4.6	U	
1,4-DICHLOROBENZENE	4.6	U	
2-BUTANONE	12	J	C
2-HEXANONE	4.6	U	
4-METHYL-2-PENTANONE	4.6	U	
ACETONE	4.6	U	
BENZENE	0.74	J	P
BROMODICHLOROMETHANE	9.3	U	
BROMOFORM	4.6	U	
BROMOMETHANE	9.3	U	
CARBON DISULFIDE	4.6	U	
CARBON TETRACHLORIDE	4.6	U	
CHLOROBENZENE	4.6	U	
CHLORODIBROMOMETHANE	4.6	U	
CHLOROETHANE	9.3	U	
CHLOROFORM	4.6	U	
CHLOROMETHANE	9.3	U	
CIS-1,2-DICHLOROETHENE	9.3	U	
CIS-1,3-DICHLOROPROPENE	4.6	U	
CYCLOHEXANE	1.4	J	P
DICHLORODIFLUOROMETHANE	4.6	U	
ETHYLBENZENE	4.6	U	
ISOPROPYLBENZENE	4.6	U	
METHYL ACETATE	9.3	UJ	C

PROJ_NO: 01797	NSAMPLE	NTC01-Composite		
SDG: CTO064_003	LAB_ID	0911196-01		
FRACTION: OV	SAMP_DATE	11/18/2009		
MEDIA: SOIL	QC_TYPE	NM		
	UNITS	UG/KG		
	PCT_SOLIDS	83.0		
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
METHYL CYCLOHEXANE		2.1	J	P
METHYL TERT-BUTYL ETHER		4.6	U	
METHYLENE CHLORIDE		9.3	U	A
STYRENE		4.6	U	
TETRACHLOROETHENE		4.6	U	
TOLUENE		4.6	U	
TOTAL XYLENES		4.6	U	
TRANS-1,2-DICHLOROETHENE		4.6	U	
TRANS-1,3-DICHLOROPROPENE		4.6	U	
TRICHLOROETHENE		4.6	U	
TRICHLOROFLUOROMETHANE		4.6	U	
VINYL CHLORIDE		4.6	U	

PROJ_NO: 01797	NSAMPLE	NTC01-TB111809-01
SDG: CTO064_003	LAB_ID	0911196-02
FRACTION: OV	SAMP_DATE	11/18/2009
MEDIA: WATER	QC_TYPE	NM
	UNITS	UG/L
	PCT_SOLIDS	0.0
	DUP_OF	

PARAMETER	RESULT	VQL	QLCD
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	2	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	10	UJ	C
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	UJ	C
ACETONE	5.6	J	C
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	2	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	2	U	
CHLOROFORM	1	U	
CHLOROMETHANE	0.45	J	C
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	2	UJ	C
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
METHYL ACETATE	2	U	

PROJ_NO: 01797	NSAMPLE	NTC01-TB111809-01
SDG: CTO064_003	LAB_ID	0911196-02
FRACTION: OV	SAMP_DATE	11/18/2009
MEDIA: WATER	QC_TYPE	NM
	UNITS	UG/L
	PCT_SOLIDS	0.0
	DUP_OF	

PARAMETER	RESULT	VQL	QLCD
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	0.75	J	P
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	2	U	
VINYL CHLORIDE	1	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC01-TB
111809-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_003

Matrix: (soil/water) WATER Lab Sample ID: 0911196-02

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1119602

Level: (low/med) LOW Date Sampled: 11/18/09 08:00

% Moisture: not dec. _____ Date Analyzed: 11/24/09 21:14

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	0.84	10	5.6	J
71-43-2	Benzene	0.11	1.0		U
75-27-4	Bromodichloromethane	0.10	1.0		U
75-25-2	Bromoform	0.10	1.0		U
74-83-9	Bromomethane	0.32	2.0		U
78-93-3	2-Butanone	1.0	10		U
75-15-0	Carbon disulfide	0.13	1.0		U
56-23-5	Carbon tetrachloride	0.15	1.0		U
108-90-7	Chlorobenzene	0.10	1.0		U
75-00-3	Chloroethane	0.18	2.0		U
67-66-3	Chloroform	0.11	1.0		U
74-87-3	Chloromethane	0.29	2.0	0.45	J
110-82-7	Cyclohexane	0.20	1.0		U
124-48-1	Dibromochloromethane	0.10	1.0		U
96-12-8	1,2-Dibromo-3-chloropropane	0.11	1.0		U
106-93-4	1,2-Dibromoethane	0.10	1.0		U
95-50-1	1,2-Dichlorobenzene	0.10	1.0		U
541-73-1	1,3-Dichlorobenzene	0.13	1.0		U
106-46-7	1,4-Dichlorobenzene	0.10	1.0		U
75-71-8	Dichlorodifluoromethane	0.22	2.0		U
75-34-3	1,1-Dichloroethane	0.12	1.0		U
107-06-2	1,2-Dichloroethane	0.10	1.0		U
75-35-4	1,1-Dichloroethene	0.15	1.0		U
156-59-2	cis-1,2-Dichloroethene	0.13	1.0		U
156-60-5	trans-1,2-Dichloroethene	0.13	1.0		U
78-87-5	1,2-Dichloropropane	0.10	1.0		U
10061-01-5	cis-1,3-Dichloropropene	0.11	1.0		U
10061-02-6	trans-1,3-Dichloropropene	0.10	1.0		U
100-41-4	Ethylbenzene	0.13	1.0		U
591-78-6	2-Hexanone	0.30	5.0		U
98-82-8	Isopropylbenzene	0.15	1.0		U
79-20-9	Methyl acetate	0.30	2.0		U
75-09-2	Methylene chloride	0.14	2.0	0.75	JB
108-87-2	Methyl cyclohexane	0.17	1.0		U
1634-04-4	Methyl-tert-butyl-ether	0.10	1.0		U
108-10-1	4-Methyl-2-pentanone	0.29	5.0		U
100-42-5	Styrene	0.10	1.0		U
79-34-5	1,1,2,2-Tetrachloroethane	0.10	1.0		U
127-18-4	Tetrachloroethene	0.15	1.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC01-TB
111809-01

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_003

Matrix: (soil/water) WATER Lab Sample ID: 0911196-02

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: 1119602

Level: (low/med) LOW Date Sampled: 11/18/09 08:00

% Moisture: not dec. _____ Date Analyzed: 11/24/09 21:14

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.10	1.0		U
120-82-1	1,2,4-Trichlorobenzene	0.10	1.0		U
71-55-6	1,1,1-Trichloroethane	0.17	1.0		U
79-00-5	1,1,2-Trichloroethane	0.10	1.0		U
79-01-6	Trichloroethene	0.13	1.0		U
76-13-1	Trichlorotrifluoroethane	0.18	2.0		U
75-69-4	Trichlorofluoromethane	0.17	2.0		U
75-01-4	Vinyl chloride	0.18	1.0		U
1330-20-7	Xylene(total)	0.22	1.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC01-COMPOSITE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_003

Matrix: (soil/water) SOIL Lab Sample ID: 0911196-01

Sample wt/vol: 6.5 (g/mL) G Lab File ID: 1119601B

Level: (low/med) LOW Date Sampled: 11/18/09 09:30

% Moisture: not dec. 17 Date Analyzed: 11/25/09 11:41

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	1.8	4.6		U
71-43-2	Benzene	0.44	4.6	0.74	J
75-27-4	Bromodichloromethane	0.28	9.3		U
75-25-2	Bromoform	0.93	4.6		U
74-83-9	Bromomethane	0.67	9.3		U
78-93-3	2-Butanone	1.3	4.6	12	
75-15-0	Carbon disulfide	1.2	4.6		U
56-23-5	Carbon tetrachloride	0.82	4.6		U
108-90-7	Chlorobenzene	0.32	4.6		U
75-00-3	Chloroethane	1.0	9.3		U
67-66-3	Chloroform	0.51	4.6		U
74-87-3	Chloromethane	0.48	9.3		U
110-82-7	Cyclohexane	0.50	4.6	1.4	J
124-48-1	Dibromochloromethane	0.32	4.6		U
96-12-8	1,2-Dibromo-3-chloropropane	1.1	4.6		U
106-93-4	1,2-Dibromoethane	0.40	4.6		U
95-50-1	1,2-Dichlorobenzene	0.34	4.6		U
541-73-1	1,3-Dichlorobenzene	0.78	4.6		U
106-46-7	1,4-Dichlorobenzene	0.51	4.6		U
75-71-8	Dichlorodifluoromethane	1.0	4.6		U
75-34-3	1,1-Dichloroethane	0.50	4.6		U
107-06-2	1,2-Dichloroethane	0.43	4.6		U
75-35-4	1,1-Dichloroethene	1.1	4.6		U
156-59-2	cis-1,2-Dichloroethene	1.1	9.3		U
156-60-5	trans-1,2-Dichloroethene	1.0	4.6		U
78-87-5	1,2-Dichloropropane	0.43	4.6		U
10061-01-5	cis-1,3-Dichloropropene	0.46	4.6		U
10061-02-6	trans-1,3-Dichloropropene	0.30	4.6		U
100-41-4	Ethylbenzene	0.70	4.6		U
591-78-6	2-Hexanone	2.1	4.6		U
98-82-8	Isopropylbenzene	0.82	4.6		U
79-20-9	Methyl acetate	1.5	9.3		U
75-09-2	Methylene chloride	0.58	9.3	0.62	JB
108-87-2	Methyl cyclohexane	0.28	4.6	2.1	J
1634-04-4	Methyl-tert-butyl-ether	0.30	4.6		U
108-10-1	4-Methyl-2-pentanone	0.54	4.6		U
100-42-5	Styrene	0.32	4.6		U
79-34-5	1,1,2,2-Tetrachloroethane	0.40	4.6		U
127-18-4	Tetrachloroethene	0.90	4.6		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC01-COMPOSITE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_003

Matrix: (soil/water) SOIL Lab Sample ID: 0911196-01

Sample wt/vol: 6.5 (g/mL) G Lab File ID: 1119601B

Level: (low/med) LOW Date Sampled: 11/18/09 09:30

% Moisture: not dec. 17 Date Analyzed: 11/25/09 11:41

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.80	4.6		U
120-82-1	1,2,4-Trichlorobenzene	0.17	4.6		U
71-55-6	1,1,1-Trichloroethane	0.84	4.6		U
79-00-5	1,1,2-Trichloroethane	0.32	4.6		U
79-01-6	Trichloroethene	0.79	4.6		U
76-13-1	Trichlorotrifluoroethane	0.51	4.6		U
75-69-4	Trichlorofluoromethane	0.88	4.6		U
75-01-4	Vinyl chloride	1.0	4.6		U
1330-20-7	Xylene(total)	0.65	4.6		U

FORM I VOA

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC01-COMPOSITE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_003

Matrix: (soil/water) SOIL Lab Sample ID: 0911196-01

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1119601

% Moisture: 17 decanted: (Y/N) N Date Sampled: 11/18/09 09:30

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:11/24/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 12/03/09 22:12

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	49	400		UY
1912-24-9	Atrazine	34	400		U
100-52-7	Benzaldehyde	66	400		UY
111-91-1	bis(2-Chloroethoxy)methane	37	400		U
92-52-4	1,1'-Biphenyl	35	400		U
111-44-4	bis(2-Chloroethyl)ether	49	400		U
108-60-1	2,2-Oxybis(1-chloropropane)	61	800		U
117-81-7	Bis(2-ethylhexyl)phthalate	43	400		U
101-55-3	4-Bromophenyl-phenylether	31	400		U
85-68-7	Butylbenzylphthalate	36	400		U
105-60-2	Caprolactam	81	400		UY
106-47-8	4-Chloroaniline	57	400		U
86-74-8	Carbazole	43	800		U
59-50-7	4-Chloro-3-methylphenol	33	400		U
91-58-7	2-Chloronaphthalene (beta)	38	400		U
95-57-8	2-Chlorophenol	49	400		U
7005-72-3	4-Chlorophenyl-phenylether	37	400		U
132-64-9	Dibenzofuran	29	400		U
91-94-1	3,3'-Dichlorobenzidine	38	400		U
120-83-2	2,4-Dichlorophenol	22	400		U
84-66-2	Diethylphthalate	41	400		U
105-67-9	2,4-Dimethylphenol	26	800		UY
131-11-3	Dimethylphthalate	36	400		U
84-74-2	Di-n-butylphthalate	36	400		U
534-52-1	4,6-Dinitro-2-methylphenol	26	1600		U
51-28-5	2,4-Dinitrophenol	160	4000		U
121-14-2	2,4-Dinitrotoluene	29	400		U
606-20-2	2,6-Dinitrotoluene	45	400		U
117-84-0	Di-n-octylphthalate	32	400		U
118-74-1	Hexachlorobenzene	42	400		U
87-68-3	Hexachlorobutadiene	39	400		U
77-47-4	Hexachlorocyclopentadiene	73	400		U
67-72-1	Hexachloroethane	47	800		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC01-COMPOSITE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_003

Matrix: (soil/water) SOIL Lab Sample ID: 0911196-01

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1119601

% Moisture: 17 decanted: (Y/N) N Date Sampled: 11/18/09 09:30

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:11/24/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 12/03/09 22:12

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	34	400		U
106-44-5	4-Methylphenol (p-cresol)	32	400		U
95-48-7	2-Methylphenol (o-cresol)	46	400		U
88-74-4	2-Nitroaniline	38	1600		U
99-09-2	3-Nitroaniline	56	1600		U
100-01-6	4-Nitroaniline	120	1600		U
98-95-3	Nitrobenzene	41	400		U
88-75-5	2-Nitrophenol	26	400		U
100-02-7	4-Nitrophenol	97	1600		U
86-30-6	N-Nitrosodiphenylamine (1)	38	400		U
621-64-7	N-Nitroso-di-n-propylamine	66	400		U
87-86-5	Pentachlorophenol	40	1600		U
108-95-2	Phenol	43	400		U
95-95-4	2,4,5-Trichlorophenol	32	400		U
88-06-2	2,4,6-Trichlorophenol	42	400		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NTC01-COMPOSITE

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_003

Matrix: (soil/water) SOIL Lab Sample ID: 0911196-01

Sample wt/vol: 15.0 (g/mL) G Lab File ID: 1119601

% Moisture: 17 decanted: (Y/N) N Date Sampled: 11/18/09 09:30

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:11/24/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 11/25/09 16:41

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.6	4.8		U
208-96-8	Acenaphthylene	1.6	4.8		U
120-12-7	Anthracene	1.6	4.8		U
56-55-3	Benzo(a)anthracene	1.6	4.8		U
205-99-2	Benzo(b)fluoranthene	1.6	4.8		U
207-08-9	Benzo(k)fluoranthene	1.6	4.8		U
191-24-2	Benzo(g,h,i)perylene	1.6	4.8	26	
50-32-8	Benzo(a)pyrene	1.6	4.8		U
218-01-9	Chrysene	1.6	4.8		U
53-70-3	Dibenz(a,h)anthracene	1.6	4.8		U
206-44-0	Fluoranthene	1.6	4.8		U
86-73-7	Fluorene	1.6	4.8		U
193-39-5	Indeno(1,2,3-cd)pyrene	1.6	4.8		U
91-57-6	2-Methylnaphthalene	1.6	4.8	56	
91-20-3	Naphthalene	1.6	4.8	16	
85-01-8	Phenanthrene	1.6	4.8	53	
129-00-0	Pyrene	1.6	4.8	20	

FORM I SV

APPENDIX C

SUPPORT DOCUMENTATION

HOLDTIME

SDG CTO064_003

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	NTC01-Composite	0911196-01	NM	11/18/2009	11/30/2009	12/01/2009	12.08	0.899	12.98
M	MG/KG	NTC01-Composite	0911196-01RE3	NM	11/18/2009	12/02/2009	12/09/2009	14.04	7.169	21.21
M	MG/KG	NTC01-Composite	0911196-01RE2	NM	11/18/2009	12/02/2009	12/08/2009	14.04	5.755	19.79
M	MG/KG	NTC01-Composite	0911196-01RE1	NM	11/18/2009	12/02/2009	12/08/2009	14.04	5.751	19.79
M	MG/KG	NTC01-Composite	0911196-01	NM	11/18/2009	12/02/2009	12/03/2009	14.04	1.302	15.34
OS	%	NTC01-Composite	0911196-01	NM	11/18/2009	11/24/2009	12/03/2009	6.076	9.453	15.53
OS	%	NTC01-Composite	0911196-01	NM	11/18/2009	11/24/2009	11/25/2009	6.076	1.223	7.299
OS	UG/KG	NTC01-Composite	0911196-01	NM	11/18/2009	11/24/2009	12/03/2009	6.076	9.453	15.53
OS	UG/KG	NTC01-Composite	0911196-01	NM	11/18/2009	11/24/2009	11/25/2009	6.076	1.223	7.299
OV	%	NTC01-TB111809-01	0911196-02	NM	11/18/2009	11/24/2009	11/24/2009	6.551	0	6.551
OV	%	NTC01-Composite	0911196-01	NM	11/18/2009	11/25/2009	11/25/2009	7.091	0	7.091
OV	UG/KG	NTC01-Composite	0911196-01	NM	11/18/2009	11/25/2009	11/25/2009	7.091	0	7.091
OV	UG/L	NTC01-TB111809-01	0911196-02	NM	11/18/2009	11/24/2009	11/24/2009	6.551	0	6.551

EMPIRICAL LABORATORIES, LLC - CHAIN OF CUSTODY RECORD

SHIP TO: 621 Mainstream Drive, Suite 270 ♦ Nashville, TN 37228 ♦ 615-345-1115 ♦ (fax) 615-846-5426

8212

Send Results to:
Name Bob Davis
Company THMS
Address 601 Andersen Dr.
City Pgh
State, Zip PA, 15220
Phone 412-921-7090
Fax
E-mail Robert.Davis@thmrcd.com

Send Invoice to:
Name Same
Company
Address
City
State, Zip
Phone
Fax
E-mail

Project No./Name:

Sampler's (Signature):

Analysis Requirements:

Lab Use Only:

VOA Headspace	Y	N	NA
Field Filtered	Y	N	NA
Correct Containers	Y	N	NA
Discrepancies	Y	N	NA
Cust. Seals Intact	Y	N	NA
Containers Intact	Y	N	NA

Airbill #: 8631 2526 9652 0215

CAR #: —

Lab Use Only Lab #	Date/Time Sampled	Sample Description	Sample Matrix	TAL VOC	SVOC	RCRA 8 metals	Comments	No. of Bottles	Lab Use Only Containers/Pres.
0911196-01	11/18/09 0930	NTC01-composite	~~SO~~ 1	4	2	1		8	3S-0, 1U 3M
-02	11/18/09 0800	NTC01-TB111809-01	Aq	1				1	1S-HY

Sample Kit Prep'd by: (Signature)	Date/Time	Received By: (Signature)
	11/18/09 1530	
Relinquished by: (Signature)	Date/Time	Received By: (Signature)
	11/19/09 1000	
Relinquished by: (Signature)	Date/Time	Received By: (Signature)
Received for Laboratory by: (Signature)	Date/Time	*Temperature*
	11/20/09 08:15	0.4°C

REMARKS:

Details:
Page ____ of ____
Cooler No. ____ of ____
Date Shipped ____
Shipped By ____
Turnaround ____

Distribution: Original and yellow copies accompany sample shipment to laboratory; Pink retained by samplers.

CT0064 0830 RC Submit

5

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0911196 Number of Coolers: 1 of 1

Client: Tetra Tech NUS Project: CTO-064

Date/Time Received: **11/20/09 08:15** Date cooler(s) opened: **11/20/09**

Opened By (print): **WILLIAM SCHWAB** (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered

EL Courier Other: _____

If applicable, enter airbill number here: 9652

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 1 Seal date: 11/19/09 Seal Initials: _____

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A
7. Was project identifiable from custody papers? ..... Yes No N/A
8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 0.49

Dates samples were logged-in: **11/20/09**

9. Initial this form to acknowledge login of sample(s): (Name): Will Schwab (Initial): ws
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

Sample Delivery Group Assignment Form

CLIENT: Tetra Tech NUS, Inc. (T010)
PROJECT NAME: Great Lakes CTO 064 (Site 21)
SDG #:CTO064_003
MATRIX: Soil/Water

QC LEVEL: EDD/IV
Report Due: 12/15/2009
Client Sample Count: 1

Sample Type	Sampled	Received	Lab ID	Client ID	SM2540B	SW6010B	SW7471A	SW8260B	SW8270C
Composite	11/18/2009	11/20/2009	0911196-01	NTC01-Composite	X	X	X	X	X
Trip Blank	11/18/2009	11/20/2009	0911196-02	NTC01-TB111809-01				X	

ORGANIC CASE NARRATIVE
Tetra Tech NUS, Inc./Great Lakes, IL CTO064
Project Manager: B. Cummings
SDG: CTO064_003
Work order: 0911196

Sampled	Received	Lab ID	Client ID
11/18/2009	11/20/2009	0911196-01	NTC01-Composite
11/18/2009	11/20/2009	0911196-02	NTC01-TB111809-01

Volatiles

Method: The samples were extracted/analyzed for a client specified analyte list by USEPA SW-846 Methods 5030B/8260B (purge and trap then capillary column GC/MS) for waters or 5035B/8260B (Encore field sampling followed by laboratory preservation the purge and trap followed by capillary column GC/MS) for solids upon receipt to the laboratory in satisfactory condition.

Comments: The volatile analyses for these samples were satisfactorily completed within sample holding times and met the corresponding specifications with the following note/exceptions:

- BFB Tuning: All method tuning criteria were met.
- Calibration Criteria: All calibration criteria were met.
- Method Blank Results: One or more target analytes were detected in the method blanks at concentrations less than ½ the quantitation limits. Reported concentrations in the samples are qualified with a "B".
- Surrogate Recoveries: Recovery of d8-toluene exceeded the limit of 120% at 126% in sample NTC01-Composite. All other recoveries were within limits.
- V3BLK1124LCS Results: Recoveries of acetone and chloromethane exceeded the limits of 140% and 125% at 192% and 144% while all other recoveries were within limits.
- V5BLK1125LCS/LCSD Results: Recoveries of 1,1-dichloroethane were below the limit of 75% at (82%)/71% while all other recoveries and relative percent differences were within limits.
- MS/MSD Results: Not applicable
- Internal Standard Area Counts: Area counts for internal standard d4-1,4-dichlorobenzene were less than 50% of that found in the associated calibration verification standard at 31% in sample NTC01-Composite. This is consistent with the original analysis of this sample which was not reported due to other quality control issues. All other area counts were within limits. This internal standard is associated to analytes 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2,4-trichlorobenzene and 1,1,2,2-tetrachloroethane.
- Dilutions: All samples were analyzed without dilution.
- Manual integrations: Quantitation signals were manually integrated in order to accurately reflect the peak areas based on the technical judgment of the analyst. A listing of the manual integrations performed and reason for the integration is included with the logs. Before and after "pictures" are available where manual integrations were performed.

Semi-Volatiles

Method: The samples were analyzed by USEPA SW-846 Methods 3546/8270C (microwave extraction followed by capillary column GC/MS) for solids upon receipt to the laboratory in satisfactory condition.

Comments: The volatile analyses for these samples were satisfactorily completed within sample holding times and met the corresponding specifications with the following note/exceptions:

- DFTPP Tuning: All method tuning criteria were met.
- Calibration Criteria: All initial calibration criteria were met.
- Continuing Calibration Exceedence: The continuing calibration compound (CCC) 2-nitrophenol exceeded method criteria of 20% difference with a positive bias of 22%D in the continuing calibration verification (CCV) analyzed on 120309. Evaluating all other compounds against the 20%D criteria, a total of 5 compounds exceeded with positive biases with no reported concentrations for these compounds in the associated samples while acetophenone, benzaldehyde and 2,4-dimethylphenol exceeded with negative biases of 21.8%, % and 23.8%. The continuing calibration compound (CCC) di-n-octylphthalate exceeded method criteria of 20% difference with a positive bias of 22%D in the CCV analyzed on 120309 at 1206. Evaluating all other compounds against the 20%D criteria, a total of 5 compounds exceeded with positive biases with no reported concentrations for these compounds above the quantitation limit in the associated samples while acetophenone, benzaldehye and 2,4-dimethylphenol exceeded with negative biases of 21.8%, 21.8% and 22.2%. All compounds that recovered outside of 20%D with negative biases were qualified with a "Y" in the associated samples to indicate a potential negative bias. All other method criteria were met.
- Method Blank Results: One or more target analytes were detected in the method blanks at concentrations less than ½ the quantitation limits. Reported concentrations in the associated samples are qualified with a "B".
- Surrogate Recoveries: All recoveries were within limits.
- 9K23034-BLK1LCS Results: Recovery of caprolactam was below the limit of 50% at 6% while all other recoveries were within limits. Results for caprolactam are qualified with a "Y" to indicate a potential negative bias.
- MS/MSD Results: Not applicable.
- Internal Standard Area Counts: All area counts were within limits.
- Dilutions: All samples were analyzed without dilution.
- Manual integrations: Quantitation signals were manually integrated in order to accurately reflect the peak areas based on the technical judgment of the analyst. A listing of the manual integrations performed and reason for the integration is included with the logs. Before and after "pictures" are available where manual integrations were performed.

Low Concentration PAH Samples

Method: The samples were analyzed by USEPA SW-846 Methods 3546/8270C (microwave extraction followed by capillary column GC/MS) for solids upon receipt to the laboratory in satisfactory condition.

Comments: The analyses for these samples were satisfactorily completed within sample holding times and met the corresponding specifications with the following exceptions:

- Note: These samples were analyzed for full-scan, low-concentration PAHs by employing a combination of sensitivity enhancing techniques in the extraction and analysis processes. AFCEE 4.02 Table 7.2.3.1-2 limits were applied for LCS/MS/MSD and surrogate.
- DFTPP Tuning: All method tuning criteria were met.
- Initial Calibration Criteria: All calibration criteria were met.
- Continuing Calibration Criteria: In the continuing calibration verification, benzo(a)anthracene and chrysene exceeded 20% difference with positive biases of 23.9% and 21.5%. Reported concentrations for these compounds above the quantitation limit in the

associated samples were qualified with an "X" to indicate a potential positive bias. All other calibration criteria were within limits.

- Method Blank Results: No target analytes were detected.
- Surrogate Recoveries: All surrogate recoveries were within limits.
- LCS Results: All recoveries were within limits.
- MS/MSD Results: Not applicable.
- Internal Standard Area Counts: All area counts were within limits.
- Dilutions: All samples were analyzed without dilution.
- Manual integrations: Quantitation signals were manually integrated in order to accurately reflect the peak areas based on the technical judgment of the analyst. A listing of the manual integrations performed and reason for the integration is included with the logs. Before and after "pictures" are available where manual integrations were performed.

I certify that, to the best of my knowledge and based upon my inquiry of those individuals immediately responsible for obtaining the information, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in the case narrative, as verified by the following signature.

Marcia K. McGinnity
Data Quality Manager

ANALYTICAL REPORT TERMS AND QUALIFIERS (ORGANIC)

MDL: The method detection limit (MDL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The MDL is determined from analysis of a sample containing the analyte in a given matrix.

EQL: The estimated quantitation limit (EQL), also known as the reporting limit (RL), is defined as the estimated concentration above which quantitative results can be obtained with a specific degree of confidence. Empirical Laboratories defines the EQL to be at or near the lowest standard of the calibration curve.

U: The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte quantitated below the MDL.

B: The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the correct sample result might be less than the reported result and, perhaps, zero.

D: When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".

E: The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound.

J: The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The mass spectral data pass the identification criteria showing that the compound is present, but the calculated result is less than the EQL. One should feel confident that the result is greater than zero and less than the EQL.

P: The associated numerical value is an estimated quantity. There is greater than a 40% difference between the two GC columns for the detected concentrations. The higher of the two values is reported.

M: The presence of an "M" to the right of an analytical result indicates that the sample matrix interfered with the quantitation of the analyte. In GC and HPLC, results are reported from the column with the lower concentration.

I: The presence of an "I" to the right of an analytical result that the presence of a qualitative interference could have caused a false positive or over estimation of the analyte. In GC and HPLC, results are reported from the column with the lower concentration.

William Schwab

From: Kim Kostzer [kkostzer@empirlabs.com]
Sent: Friday, November 20, 2009 2:53 PM
To: wschwab@empirlabs.com
Subject: RE: samples received 11/20/09

yes

Kim Kostzer
Project Manager
Empirical Laboratories, LLC
Main: 615.345.1115

-----Original Message-----
From: William Schwab [mailto:wschwab@empirlabs.com]
Sent: Friday, November 20, 2009 2:41 PM
To: kkostzer@empirlabs.com
Subject: RE: samples received 11/20/09

Kim, i noticed for this same project the client is requesting TAL VOC, are they meaning TCL VOC since they are also requesting RCRA metals?? Please verify>

William Schwab
Sample Receiving Group Leader
Empirical Laboratories, LLC
Main: 615.345.1115 ext. 237

-----Original Message-----
From: Kim Kostzer [mailto:kkostzer@empirlabs.com]
Sent: Friday, November 20, 2009 2:38 PM
To: wschwab@empirlabs.com
Subject: FW: samples received 11/20/09

Kim Kostzer
Project Manager
Empirical Laboratories, LLC
Main: 615.345.1115

-----Original Message-----
From: Davis, Robert [mailto:Robert.Davis@tetratech.com]
Sent: Friday, November 20, 2009 1:22 PM
To: kkostzer@empirlabs.com
Subject: RE: samples received 11/20/09

The sample you received today should be NTC01.... - yes that should be for CTO064.

We did receive the data packages - Tobrena is going thru them and loading them into our

database. If there are any questions Tobrena will contact Marcia or you.

Thanks for the follow up on the EDD

From: Kim Kostzer [mailto:kkostzer@empirlabs.com]
Sent: Friday, November 20, 2009 2:17 PM
To: Davis, Robert
Subject: samples received 11/20/09

Bob,

We received samples today and there is no project name on COC. There is NS Great Lakes site 21 on the containers. I just wanted to verify that this should be for CTO064 NS Great Lakes.

Also is all ok with the data packages? I spoke with Marcia and she said you and Tobrena should have everything.

Thanks,

Kim

PLEASE NOTE: Our laboratory will be closed on Thursday, November 26th and Friday, November 27th for the Thanksgiving Holiday. We will resume accepting shipments/coolers on Saturday, November 28th.

Kim Kostzer
Project Manager
Empirical Laboratories, LLC
621 Mainstream Drive, Suite 270 I Nashville, TN 37228 I www.empirlabs.com
Main: 615.345.1115 I Toll free: 877.345.1113 I Fax: 615.846.5426

Recipient of the 2008 Region IV (Southeastern US) Subcontractor of the Year from the Small Business Administration.
Celebrating over 40 years of excellence, Empirical Laboratories is certified as a Woman-Owned Small Business and a Small Disadvantaged Business. Come visit our website at www.empirlabs.com today.

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMPIRICAL LABS Contract: SHAW

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: SDGA33683

Lab File ID: V3BFB01 BFB Injection Date: 10/12/09

Instrument ID: VOA3 BFB Injection Time: 1312

GC Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	29.6
75	30.0 - 60.0% of mass 95	52.3
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.2
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	73.6
175	5.0 - 9.0% of mass 174	5.7 (7.7)1
176	95.0 - 101.0% of mass 174	71.5 (97.1)1
177	5.0 - 9.0% of mass 176	6.0 (8.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	V3STD0.5PPB	V3STD0.5PPB	V3STD02	10/12/09	1614
02	V3STD1.0PPB	V3STD1.0PPB	V3STD03	10/12/09	1644
03	V3STD2.0PPB	V3STD2.0PPB	V3STD04	10/12/09	1714
04	V3STD10PPB	V3STD10PPB	V3STD05	10/12/09	1743
05	V3STD20PPB	V3STD20PPB	V3STD06	10/12/09	1813
06	V3STD50PPB	V3STD50PPB	V3STD07	10/12/09	1843
07	V3BLK1012LCS	V3BLK1012LCS	V3ICV	10/12/09	1913
08	V3STD100PPB	V3STD100PPB	V3STD08	10/12/09	1942
09	V3STD200PPB	V3STD200PPB	V3STD09	10/12/09	2012
10					
11					
12					
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15					
16					
17					
18					
19					
20					
21					
22					

page 1 of 1

FORM V VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: ELABN Case No.: NA SAS No.: NA SDG No.: SDGA33683

Instrument ID: VOA3 Calibration Date(s): 09/17/09 10/12/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 2112 2012

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
Acetone	LINR	0.00000000	9.385e-002		0.999
~~Acrolein~~	AVRG		~~4.486e-002~~		12.8
Acrylonitrile	AVRG		0.11329471		8.8
tert-Amyl Methyl Ether	LINR	0.00000000	0.60328977		1.000
Benzene	AVRG		0.88941215		9.9
Bromobenzene	AVRG		0.64641101		4.9
Bromochloromethane	AVRG		0.11632930		5.8
Bromodichloromethane	AVRG		0.32984959		3.5
Bromoform	AVRG		0.34714353		11.1
Bromomethane	AVRG		0.12449631		13.7
2-Butanone	LINR	0.00000000	0.12531256		0.999
~~t-Butyl alcohol~~	~~LINR~~	~~0.00000000~~	~~2.24e-002~~		0.999
n-Butylbenzene	AVRG		1.55506839		9.1
sec-Butylbenzene	AVRG		2.02838705		8.6
tert-Butylbenzene	AVRG		1.65331483		8.8
Carbon disulfide	AVRG		0.62096673		3.1
Carbon tetrachloride	AVRG		0.31558979		10.9
Chlorobenzene	AVRG		1.32777819		11.4
Chloroethane	AVRG		0.13101950		5.8
2-Chloroethyl vinyl ether	AVRG		0.19450128		5.6
Chloroform	AVRG		0.43317325		11.6
Chloromethane	AVRG		0.25526870		9.9
2-Chlorotoluene	AVRG		1.58753096		5.3
4-Chlorotoluene	AVRG		1.67032443		8.0
Cyclohexane	AVRG		0.49447323		1.9
Dibromochloromethane	AVRG		0.45999360		7.5
1,2-Dibromo-3-chloropropane	AVRG		0.11145982		11.9
1,2-Dibromoethane	AVRG		0.46773984		10.3
Dibromomethane	AVRG		0.15934104		6.6
1,2-Dichlorobenzene	AVRG		1.09401151		5.8
1,3-Dichlorobenzene	AVRG		1.14531003		8.3
1,4-Dichlorobenzene	AVRG		1.17428723		10.0
Dichlorodifluoromethane	AVRG		0.24340780		13.0
1,1-Dichloroethane	AVRG		0.49046577		3.8
1,2-Dichloroethane	AVRG		0.44584641		5.6
1,1-Dichloroethene	AVRG		0.18688498		14.2
cis-1,2-Dichloroethene	AVRG		0.23327282		10.8

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: ELABN Case No.: NA SAS No.: NA SDG No.: SDGA33683

Instrument ID: VOA3 Calibration Date(s): 09/17/09 10/12/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 2112 2012

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
1,2-Dichloroethene(total)	AVRG		0.22760225		12.3
trans-1,2-Dichloroethene	AVRG		0.22193167		14.0
1,2-Dichloropropane	AVRG		0.29288175		3.4
1,3-Dichloropropane	AVRG		0.74284923		11.6
2,2-Dichloropropane	AVRG		0.32773912		3.7
1,1-Dichloropropene	AVRG		0.32185055		1.6
cis-1,3-Dichloropropene	AVRG		0.40005200		4.8
trans-1,3-Dichloropropene	AVRG		0.64114084		6.8
Ethylbenzene	AVRG		2.38031316		7.9
Ethyl methacrylate	AVRG		0.52790774		5.0
Hexachlorobutadiene	LINR	1.058e-002	0.35728447		1.000
2-Hexanone	2ORDR	0.00000000	2.06152414	0.16503605	1.000
Iodomethane	AVRG		0.35274598		13.8
Isopropylbenzene	AVRG		2.02653496		14.4
p-Isopropyltoluene	AVRG		1.44569355		4.7
Methyl acetate	AVRG		0.28942455		5.0
Methylene chloride	AVRG		0.23647749		13.5
Methyl cyclohexane	AVRG		0.32251755		2.0
Methyl methacrylate	LINR	0.00000000	0.29958173		1.000
4-Methyl-2-pentanone	AVRG		0.28817802		10.4
MTBE	AVRG		0.59661813		4.3
Naphthalene	AVRG		1.38737911		13.3
n-Propylbenzene	AVRG		2.37163275		11.1
Styrene	AVRG		1.52030518		10.1
1,1,1,2-Tetrachloroethane	AVRG		0.47833719		14.7
1,1,2,2-Tetrachloroethane	AVRG		0.47856319		4.3
Tetrachloroethene	AVRG		0.55589010		8.3
Tetrahydrofuran	AVRG		8.314e-002		4.2
Toluene	AVRG		1.11212877		7.4
1,2,3-Trichlorobenzene	LINR	0.00000000	0.65850597		1.000
1,2,4-Trichlorobenzene	AVRG		0.78674535		13.3
1,1,1-Trichloroethane	AVRG		0.38771407		9.2
1,1,2-Trichloroethane	AVRG		0.35233165		11.8
Trichloroethene	AVRG		0.25004135		3.3
Trichlorofluoromethane	AVRG		0.40550760		13.3
Trichlorotrifluoroethane	AVRG		0.19758528		1.4
1,2,3-Trichloropropane	AVRG		0.17422607		7.0

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: ELABN Case No.: NA SAS No.: NA SDG No.: SDGA33683

Instrument ID: VOA3 Calibration Date(s): 09/17/09 10/12/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 2112 2012

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
1,2,4-Trimethylbenzene	AVRG		1.79845945		6.6
1,3,5-Trimethylbenzene	AVRG		1.74476312		6.6
Vinyl acetate	AVRG		0.50111991		10.7
Vinyl chloride	AVRG		0.25724626		10.7
m,p-Xylene	AVRG		1.89208279		11.9
Xylene(total)	AVRG		5.85356072		10.8
1-Chlorohexane	AVRG		0.61205175		11.0
Di-isopropyl ether	AVRG		1.08475337		4.5
ETBE	AVRG		0.84255390		2.6
Dibromofluoromethane	AVRG		0.26569486		6.9
1,2-Dichloroethane-d4	AVRG		5.533e-002		5.4
Toluene-d8	AVRG		2.03555440		3.4
Bromofluorobenzene	AVRG		1.00058384		4.6

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: ELABN Case No.: NA SAS No.: NA SDG No.: SDGA33683

Instrument ID: VOA3 Calibration Date(s): 09/17/09 10/12/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 2112 2012

LAB FILE ID: RF0.25: V3STD01 RF0.5: V3STD02 RF1: V3STD03
RF2: V3STD04 RF10: V3STD05

COMPOUND	RF0.25	RF0.5	RF1	RF2	RF10
Acetone		0.294	0.095	0.041	0.104
Acrolein		0.058	0.045	0.044	0.040
Acrylonitrile		0.136	0.107	0.109	0.114
tert-Amyl Methyl Ether			0.984	0.803	0.620
Benzene		1.090	0.902	0.859	0.882
Bromobenzene			0.716	0.625	0.644
Bromochloromethane		0.130	0.122	0.112	0.112
Bromodichloromethane		0.336	0.334	0.308	0.322
Bromoform		0.406	0.308	0.290	0.323
Bromomethane		0.150	0.127	0.112	0.097
2-Butanone				0.075	0.109
t-Butyl alcohol		0.207	0.022	0.023	0.021
n-Butylbenzene			1.813	1.553	1.507
sec-Butylbenzene			2.241	2.081	2.070
tert-Butylbenzene			1.807	1.744	1.683
Carbon disulfide			0.616	0.599	0.599
Carbon tetrachloride		0.384	0.270	0.281	0.302
Chlorobenzene			1.473	1.412	1.409
Chloroethane		0.146	0.136	0.121	0.129
2-Chloroethyl vinyl ether		0.188	0.174	0.188	0.203
Chloroform		0.553	0.445	0.404	0.420
Chloromethane		0.236	0.251	0.224	0.234
2-Chlorotoluene			1.707	1.554	1.620
4-Chlorotoluene			1.852	1.677	1.722
Cyclohexane			0.484	0.503	0.482
Dibromochloromethane		0.507	0.413	0.417	0.450
1,2-Dibromo-3-chloropropane			0.105	0.094	0.103
1,2-Dibromoethane		0.570	0.473	0.467	0.457
Dibromomethane		0.180	0.170	0.154	0.154
1,2-Dichlorobenzene			1.188	1.067	1.103
1,3-Dichlorobenzene			1.335	1.152	1.140
1,4-Dichlorobenzene			1.372	1.243	1.195
Dichlorodifluoromethane		0.320	0.239	0.219	0.232
1,1-Dichloroethane		0.533	0.482	0.480	0.476
1,2-Dichloroethane		0.488	0.473	0.426	0.446
1,1-Dichloroethene		0.252	0.177	0.178	0.167
cis-1,2-Dichloroethene		0.294	0.222	0.227	0.219

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: ELABN Case No.: NA SAS No.: NA SDG No.: SDGA33683

Instrument ID: VOA3 Calibration Date(s): 09/17/09 10/12/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 2112 2012

LAB FILE ID: RF0.25: V3STD01 RF0.5: V3STD02 RF1: V3STD03
RF2: V3STD04 RF10: V3STD05

COMPOUND	RF0.25	RF0.5	RF1	RF2	RF10
1,2-Dichloroethene(total)		0.297	0.218	0.217	0.214
trans-1,2-Dichloroethene		0.299	0.213	0.207	0.209
1,2-Dichloropropane		0.310	0.282	0.299	0.295
1,3-Dichloropropane		0.913	0.769	0.760	0.750
2,2-Dichloropropane			0.310	0.314	0.329
1,1-Dichloropropene			0.328	0.317	0.316
cis-1,3-Dichloropropene		0.431	0.394	0.368	0.388
trans-1,3-Dichloropropene		0.703	0.565	0.628	0.643
Ethylbenzene			2.583	2.452	2.434
Ethyl methacrylate		0.487	0.518	0.524	0.523
Hexachlorobutadiene			0.725	0.413	0.336
2-Hexanone			0.252	0.388	0.421
Iodomethane		0.444	0.317	0.290	0.377
Isopropylbenzene			2.253	2.260	2.138
p-Isopropyltoluene			1.536	1.421	1.451
Methyl acetate		0.300	0.276	0.319	0.275
Methylene chloride		0.315	0.235	0.227	0.225
Methyl cyclohexane			0.335	0.319	0.317
Methyl methacrylate			0.180	0.270	0.280
4-Methyl-2-pentanone		0.238	0.280	0.251	0.307
MTBE		0.624	0.616	0.542	0.590
Naphthalene			1.736	1.352	1.173
n-Propylbenzene			2.619	2.501	2.491
Styrene			1.583	1.534	1.626
1,1,1,2-Tetrachloroethane		0.638	0.483	0.436	0.462
1,1,2,2-Tetrachloroethane			0.520	0.478	0.482
Tetrachloroethene			0.598	0.597	0.564
Tetrahydrofuran				0.089	0.082
Toluene			1.164	1.178	1.150
1,2,3-Trichlorobenzene			1.024	0.706	0.606
1,2,4-Trichlorobenzene			1.018	0.772	0.707
1,1,1-Trichloroethane		0.474	0.374	0.370	0.366
1,1,2-Trichloroethane		0.427	0.388	0.333	0.352
Trichloroethene			0.253	0.258	0.245
Trichlorofluoromethane		0.537	0.395	0.377	0.389
Trichlorotrifluoroethane			0.200	0.195	0.198
1,2,3-Trichloropropane			0.192	0.174	0.181

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: ELABN Case No.: NA SAS No.: NA SDG No.: SDGA33683

Instrument ID: VOA3 Calibration Date(s): 09/17/09 10/12/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 2112 2012

LAB FILE ID: RF0.25: V3STD01 RF0.5: V3STD02 RF1: V3STD03
RF2: V3STD04 RF10: V3STD05

COMPOUND	RF0.25	RF0.5	RF1	RF2	RF10
1,2,4-Trimethylbenzene			1.899	1.853	1.836
1,3,5-Trimethylbenzene			1.838	1.755	1.799
Vinyl acetate		0.406	0.453	0.462	0.525
Vinyl chloride		0.323	0.257	0.234	0.244
m,p-Xylene			2.072	2.045	2.008
Xylene(total)			6.392	6.287	6.150
1-Chlorohexane			0.712	0.659	0.622
Di-isopropyl ether		1.163	1.052	0.997	1.077
ETBE			0.860	0.801	0.840
Dibromofluoromethane	0.313	0.260	0.262	0.264	0.263
1,2-Dichloroethane-d4	0.062	0.055	0.054	0.055	0.054
Toluene-d8		2.071	2.082	2.117	2.074
Bromofluorobenzene		1.003	1.015	1.047	1.036

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: ELABN Case No.: NA SAS No.: NA SDG No.: SDGA33683

Instrument ID: VOA3 Calibration Date(s): 09/17/09 10/12/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 2112 2012

LAB FILE ID: RF20: V3STD06 RF50: V3STD07 RF100: V3STD08
RF200: V3STD09

COMPOUND	RF20	RF50	RF100	RF200
Acetone	0.083	0.095	0.095	0.094
Acrolein	0.044	0.041	0.043	0.043
Acrylonitrile	0.117	0.109	0.108	0.106
tert-Amyl Methyl Ether	0.624	0.600	0.610	0.602
Benzene	0.896	0.847	0.842	0.797
Bromobenzene	0.644	0.632	0.641	0.623
Bromochloromethane	0.115	0.110	0.113	0.115
Bromodichloromethane	0.346	0.329	0.337	0.326
Bromoform	0.350	0.362	0.382	0.357
Bromomethane	0.111	0.124	0.132	0.141
2-Butanone	0.116	0.119	0.121	0.127
t-Butyl alcohol	0.022	0.020	0.022	0.023
n-Butylbenzene	1.598	1.562	1.515	1.338
sec-Butylbenzene	2.118	2.045	1.964	1.678
tert-Butylbenzene	1.746	1.648	1.573	1.372
Carbon disulfide	0.635	0.614	0.639	0.645
Carbon tetrachloride	0.319	0.320	0.326	0.322
Chlorobenzene	1.426	1.303	1.235	1.036
Chloroethane	0.128	0.126	0.128	0.134
2-Chloroethyl vinyl ether	0.209	0.200	0.198	0.194
Chloroform	0.423	0.403	0.410	0.406
Chloromethane	0.255	0.261	0.277	0.303
2-Chlorotoluene	1.642	1.573	1.580	1.436
4-Chlorotoluene	1.756	1.661	1.593	1.432
Cyclohexane	0.504	0.490	0.501	0.496
Dibromochloromethane	0.480	0.479	0.489	0.445
1,2-Dibromo-3-chloropropane	0.106	0.117	0.122	0.133
1,2-Dibromoethane	0.477	0.450	0.449	0.398
Dibromomethane	0.159	0.152	0.155	0.150
1,2-Dichlorobenzene	1.146	1.096	1.068	0.990
1,3-Dichlorobenzene	1.159	1.116	1.089	1.026
1,4-Dichlorobenzene	1.191	1.120	1.099	1.000
Dichlorodifluoromethane	0.240	0.234	0.231	0.232
1,1-Dichloroethane	0.497	0.480	0.490	0.486
1,2-Dichloroethane	0.457	0.429	0.431	0.417
1,1-Dichloroethene	0.184	0.176	0.181	0.180
cis-1,2-Dichloroethene	0.231	0.221	0.222	0.230

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: ELABN Case No.: NA SAS No.: NA SDG No.: SDGA33683

Instrument ID: VOA3 Calibration Date(s): 09/17/09 10/12/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 2112 2012

LAB FILE ID: RF20: V3STD06 RF50: V3STD07 RF100: V3STD08
RF200: V3STD09

COMPOUND	RF20	RF50	RF100	RF200
1,2-Dichloroethene(total)	0.222	0.214	0.218	0.222
trans-1,2-Dichloroethene	0.213	0.207	0.214	0.214
1,2-Dichloropropane	0.301	0.285	0.290	0.283
1,3-Dichloropropane	0.736	0.721	0.682	0.611
2,2-Dichloropropane	0.344	0.331	0.336	0.331
1,1-Dichloropropene	0.328	0.318	0.325	0.321
cis-1,3-Dichloropropene	0.415	0.403	0.410	0.391
trans-1,3-Dichloropropene	0.671	0.655	0.666	0.597
Ethylbenzene	2.492	2.255	2.066	
Ethyl methacrylate	0.562	0.553	0.553	0.502
Hexachlorobutadiene	0.338	0.346	0.355	0.358
2-Hexanone	0.441	0.428	0.405	0.352
Iodomethane	0.386	0.351	0.339	0.318
Isopropylbenzene	2.187	2.033	1.874	1.440
p-Isopropyltoluene	1.494	1.464	1.437	1.317
Methyl acetate	0.295	0.284	0.286	0.281
Methylene chloride	0.222	0.222	0.223	0.224
Methyl cyclohexane	0.327	0.319	0.320	0.320
Methyl methacrylate	0.298	0.299	0.304	0.298
4-Methyl-2-pentanone	0.324	0.309	0.306	0.289
MTBE	0.596	0.586	0.602	0.616
Naphthalene	1.278	1.292	1.505	1.375
n-Propylbenzene	2.518	2.396	2.241	1.836
Styrene	1.663	1.569	1.462	1.204
1,1,1,2-Tetrachloroethane	0.486	0.461	0.458	0.401
1,1,2,2-Tetrachloroethane	0.482	0.468	0.463	0.457
Tetrachloroethene	0.582	0.552	0.531	0.467
Tetrahydrofuran	0.084	0.079	0.082	0.083
Toluene	1.151	1.128	1.074	0.941
1,2,3-Trichlorobenzene	0.635	0.642	0.674	0.656
1,2,4-Trichlorobenzene	0.749	0.740	0.780	0.742
1,1,1-Trichloroethane	0.389	0.377	0.379	0.372
1,1,2-Trichloroethane	0.365	0.332	0.329	0.292
Trichloroethene	0.262	0.245	0.249	0.238
Trichlorofluoromethane	0.402	0.384	0.388	0.373
Trichlorotrifluoroethane	0.202	0.194	0.198	0.196
1,2,3-Trichloropropane	0.178	0.173	0.169	0.152

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: ELABN Case No.: NA SAS No.: NA SDG No.: SDGA33683

Instrument ID: VOA3 Calibration Date(s): 09/17/09 10/12/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 2112 2012

LAB FILE ID: RF20: V3STD06 RF50: V3STD07 RF100: V3STD08
RF200: V3STD09

COMPOUND	RF20	RF50	RF100	RF200
1,2,4-Trimethylbenzene	1.869	1.825	1.761	1.546
1,3,5-Trimethylbenzene	1.841	1.763	1.712	1.506
Vinyl acetate	0.555	0.538	0.544	0.526
Vinyl chloride	0.255	0.245	0.250	0.249
m,p-Xylene	1.980	1.750	1.497	
Xylene(total)	6.095	5.437	4.759	
1-Chlorohexane	0.622	0.600	0.571	0.498
Di-isopropyl ether	1.119	1.079	1.106	1.085
ETBE	0.871	0.834	0.852	0.840
Dibromofluoromethane	0.258	0.261	0.257	0.252
1,2-Dichloroethane-d4	0.054	0.052	0.054	0.057
Toluene-d8	2.016	2.048	1.971	1.904
Bromofluorobenzene	1.016	1.014	0.970	0.902

FORM VI VOA

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_003

Lab File ID: SEQ-TUN1 BFB Injection Date: 11/24/09

Instrument ID: VOA3 BFB Injection Time: 1146

GC Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	31.5
75	30.0 - 60.0% of mass 95	53.4
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.3
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	79.0
175	5.0 - 9.0% of mass 174	5.5 (6.9)1
176	95.0 - 101.0% of mass 174	78.5 (99.4)1
177	5.0 - 9.0% of mass 176	4.8 (6.1)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SEQ-CCV1	SEQ-CCV1	SEQ-CCV1	11/24/09	1217
02	V3BLK1124LCS	9K25008-BS1	V3LCS01	11/24/09	1246
03	V3BLK1124	9K25008-BLK1	V3BLK01	11/24/09	1413
04	NTC01-TB1118	0911196-02	1119602	11/24/09	2114
05					
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page 1 of 1

FORM V VOA

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_003

Instrument ID: VOA3 Calibration Date: 11/24/09 Time: 1217

Lab File ID: SEQ-CCV1 Init. Calib. Date(s): 12/17/08 10/12/09

Heated Purge: (Y/N) N Init. Calib. Times: 1502 2012

GC Column: RTX-VRX ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF100	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acetone	0.113	0.182	200.0	388.0		LINR	94.0	
Benzene	0.889	0.866	100.0	97.33		AVRG	-2.7	
Bromodichloromethane	0.330	0.395	100.0	119.8		AVRG	19.8	
Bromoform	0.347	0.402	100.0	115.7	0.100	AVRG	15.7	
Bromomethane	0.124	0.125	100.0	100.3		AVRG	0.3	
2-Butanone	0.111	0.178	200.0	283.4		LINR	41.7	
Carbon disulfide	0.621	0.580	100.0	93.45		AVRG	-6.5	
Carbon tetrachloride	0.316	0.376	100.0	119.0		AVRG	19.0	
Chlorobenzene	1.328	1.192	100.0	89.80	0.300	AVRG	-10.2	
Chloroethane	0.131	0.157	100.0	120.1		AVRG	20.1	
Chloroform	0.433	0.457	100.0	105.4		AVRG	5.4	20.0
Chloromethane	0.255	0.362	100.0	141.8	0.100	AVRG	41.8	
Cyclohexane	0.494	0.445	100.0	89.97		AVRG	-10.0	
Dibromochloromethane	0.460	0.502	100.0	109.0		AVRG	9.0	
1,2-Dibromo-3-chloropropane	0.111	0.132	100.0	118.7		AVRG	18.7	
1,2-Dibromoethane	0.468	0.436	100.0	93.32		AVRG	-6.7	
1,2-Dichlorobenzene	1.094	1.048	100.0	95.82		AVRG	-4.2	
1,3-Dichlorobenzene	1.145	1.059	100.0	92.46		AVRG	-7.5	
1,4-Dichlorobenzene	1.174	1.086	100.0	92.47		AVRG	-7.5	
Dichlorodifluoromethane	0.243	0.314	100.0	129.2		AVRG	29.2	
1,1-Dichloroethane	0.490	0.486	100.0	99.14	0.100	AVRG	-0.9	
1,2-Dichloroethane	0.446	0.504	100.0	113.1		AVRG	13.1	
1,1-Dichloroethene	0.187	0.171	100.0	91.43		AVRG	-8.6	20.0
cis-1,2-Dichloroethene	0.233	0.226	100.0	96.71		AVRG	-3.3	
trans-1,2-Dichloroethene	0.222	0.206	100.0	92.60		AVRG	-7.4	
1,2-Dichloropropane	0.293	0.295	100.0	100.6		AVRG	0.6	20.0
cis-1,3-Dichloropropene	0.400	0.440	100.0	109.9		AVRG	9.9	
trans-1,3-Dichloropropene	0.641	0.651	100.0	101.5		AVRG	1.5	
Ethylbenzene	2.380	2.058	100.0	86.46		AVRG	-13.5	20.0
2-Hexanone	0.384	0.461	200.0	236.8		2ORDR	18.4	
Isopropylbenzene	2.026	1.788	100.0	88.22		AVRG	-11.8	
Methyl acetate	0.290	0.266	100.0	91.78		AVRG	-8.2	
Methylene chloride	0.237	0.232	100.0	98.15		AVRG	-1.8	
Methyl cyclohexane	0.322	0.290	100.0	89.88		AVRG	-10.1	
Methyl-tert-butyl-ether	0.596	0.593	100.0	99.41		AVRG	-0.6	
4-Methyl-2-pentanone	0.288	0.394	200.0	273.5		AVRG	36.8	
Styrene	1.520	1.367	100.0	89.91		AVRG	-10.1	

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FORM VII VOA

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_003

Instrument ID: VOA3 Calibration Date: 11/24/09 Time: 1217

Lab File ID: SEQ-CCV1 Init. Calib. Date(s): 12/17/08 10/12/09

Heated Purge: (Y/N) N Init. Calib. Times: 1502 2012

GC Column: RTX-VRX ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF100	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
1,1,2,2-Tetrachloroethane	0.478	0.490	100.0	102.5	0.300	AVRG	2.5	
Tetrachloroethene	0.556	0.474	100.0	85.21		AVRG	-14.8	
Toluene	1.112	0.960	100.0	86.36		AVRG	-13.6	20.0
1,2,4-Trichlorobenzene	0.787	0.722	100.0	91.82		AVRG	-8.2	
1,1,1-Trichloroethane	0.388	0.423	100.0	109.1		AVRG	9.1	
1,1,2-Trichloroethane	0.352	0.320	100.0	90.92		AVRG	-9.1	
Trichloroethene	0.250	0.262	100.0	104.9		AVRG	4.9	
Trichlorotrifluoroethane	0.198	0.191	100.0	96.65		AVRG	-3.4	
Trichlorofluoromethane	0.406	0.466	100.0	114.9		AVRG	14.9	
Vinyl chloride	0.257	0.275	100.0	106.8		AVRG	6.8	20.0
Xylene(total)	5.853	4.797	300.0	245.7		AVRG	-18.0	
Dibromofluoromethane	0.266	0.285	30.00	32.16		AVRG	7.2	
1,2-Dichloroethane-d4	0.055	0.053	30.00	28.84		AVRG	-3.9	
Toluene-d8	2.035	1.798	30.00	26.50		AVRG	-11.6	
Bromofluorobenzene	1.000	0.940	30.00	28.20		AVRG	-6.0	

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FORM VII VOA

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

V3BLK1124

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_003

Lab File ID: V3BLK01 Lab Sample ID: 9K25008-BLK1

Date Analyzed: 11/24/09 Time Analyzed: 1413

Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) N

Instrument ID: VOA3

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	V3BLK1124LCS	9K25008-BS1	V3LCS01	1246
02	NTC01-TB1118	0911196-02	1119602	2114
03				
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COMMENTS:

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FORM IV VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V3BLK1124

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_003

Matrix: (soil/water) WATER Lab Sample ID: 9K25008-BLK1

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V3BLK01

Level: (low/med) LOW Date Sampled: _____

% Moisture: not dec. _____ Date Analyzed: 11/24/09 14:13

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	0.84	10		U
71-43-2	Benzene	0.11	1.0		U
75-27-4	Bromodichloromethane	0.10	1.0		U
75-25-2	Bromoform	0.10	1.0		U
74-83-9	Bromomethane	0.32	2.0		U
78-93-3	2-Butanone	1.0	10		U
75-15-0	Carbon disulfide	0.13	1.0		U
56-23-5	Carbon tetrachloride	0.15	1.0		U
108-90-7	Chlorobenzene	0.10	1.0		U
75-00-3	Chloroethane	0.18	2.0		U
67-66-3	Chloroform	0.11	1.0		U
74-87-3	Chloromethane	0.29	2.0		U
110-82-7	Cyclohexane	0.20	1.0		U
124-48-1	Dibromochloromethane	0.10	1.0		U
96-12-8	1,2-Dibromo-3-chloropropane	0.11	1.0		U
106-93-4	1,2-Dibromoethane	0.10	1.0		U
95-50-1	1,2-Dichlorobenzene	0.10	1.0		U
541-73-1	1,3-Dichlorobenzene	0.13	1.0		U
106-46-7	1,4-Dichlorobenzene	0.10	1.0		U
75-71-8	Dichlorodifluoromethane	0.22	2.0		U
75-34-3	1,1-Dichloroethane	0.12	1.0		U
107-06-2	1,2-Dichloroethane	0.10	1.0		U
75-35-4	1,1-Dichloroethene	0.15	1.0		U
156-59-2	cis-1,2-Dichloroethene	0.13	1.0		U
156-60-5	trans-1,2-Dichloroethene	0.13	1.0		U
78-87-5	1,2-Dichloropropane	0.10	1.0		U
10061-01-5	cis-1,3-Dichloropropene	0.11	1.0		U
10061-02-6	trans-1,3-Dichloropropene	0.10	1.0		U
100-41-4	Ethylbenzene	0.13	1.0		U
591-78-6	2-Hexanone	0.30	5.0		U
98-82-8	Isopropylbenzene	0.15	1.0		U
79-20-9	Methyl acetate	0.30	2.0		U
75-09-2	Methylene chloride	0.14	2.0	0.22	U
108-87-2	Methyl cyclohexane	0.17	1.0		U
1634-04-4	Methyl-tert-butyl-ether	0.10	1.0		U
108-10-1	4-Methyl-2-pentanone	0.29	5.0		U
100-42-5	Styrene	0.10	1.0		U
79-34-5	1,1,2,2-Tetrachloroethane	0.10	1.0		U
127-18-4	Tetrachloroethene	0.15	1.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V3BLK1124

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_003

Matrix: (soil/water) WATER Lab Sample ID: 9K25008-BLK1

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V3BLK01

Level: (low/med) LOW Date Sampled: _____

% Moisture: not dec. _____ Date Analyzed: 11/24/09 14:13

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3------	Toluene	0.10	1.0		U
120-82-1-----	1,2,4-Trichlorobenzene	0.10	1.0	0.12	U
71-55-6-------	1,1,1-Trichloroethane	0.17	1.0		U
79-00-5-------	1,1,2-Trichloroethane	0.10	1.0		U
79-01-6-------	Trichloroethene	0.13	1.0		U
76-13-1-------	Trichlorotrifluoroethane	0.18	2.0		U
75-69-4-------	Trichlorofluoromethane	0.17	2.0		U
75-01-4-------	Vinyl chloride	0.18	1.0		U
1330-20-7-----	Xylene(total)	0.22	1.0		U

FORM I VOA

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA83153

Lab File ID: V5BFB01 BFB Injection Date: 10/02/09

Instrument ID: VOA5 BFB Injection Time: 1020

GC Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.7
75	30.0 - 60.0% of mass 95	42.5
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.0
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	100.8
175	5.0 - 9.0% of mass 174	7.7 (7.7)1
176	95.0 - 101.0% of mass 174	98.5 (97.7)1
177	5.0 - 9.0% of mass 176	7.0 (7.1)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01		V5STD2PPB	V5STD01	10/02/09	1051
02		V5STD5PPB	V5STD02	10/02/09	1122
03		V5STD10PPB	V5STD03	10/02/09	1153
04		V5STD20PPB	V5STD04	10/02/09	1224
05		V5STD50PPB	V5STD05	10/02/09	1256
06	V5BLK1002LCS	V5BLK1002LCS	V5ICV01	10/02/09	1327
07		V5STD100PPB	V5STD06	10/02/09	1358
08		V5STD200PPB	V5STD07	10/02/09	1429
09					
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22					

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FORM V VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5 Calibration Date(s): 10/02/09 10/02/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 1051 1429

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
Acetone	LINR	0.00000000	8.817e-002		0.998
~~Acrolein~~	AVRG		~~3.143e-002~~		~~14.3~~
Acrylonitrile	AVRG		6.189e-002		14.6
Benzene	AVRG		1.15969595		9.2
Bromobenzene	AVRG		0.93913497		5.3
Bromochloromethane	AVRG		0.18430562		8.6
Bromodichloromethane	AVRG		0.38634915		9.0
Bromoform	AVRG		0.47469350		14.9
Bromomethane	AVRG		0.26616532		8.8
2-Butanone	LINR	0.00000000	0.11978584		0.998
n-Butylbenzene	AVRG		2.79599379		7.6
sec-Butylbenzene	AVRG		3.43982164		10.1
tert-Butylbenzene	AVRG		2.15176029		8.3
Carbon disulfide	AVRG		0.83259214		7.5
Carbon tetrachloride	AVRG		0.38767632		8.3
Chlorobenzene	AVRG		2.14944782		10.8
Chloroethane	AVRG		0.17168868		7.3
2-Chloroethyl vinyl ether	LINR	0.00000000	0.10213250		0.999
Chloroform	AVRG		0.60797242		8.9
1-Chlorohexane	AVRG		1.11788394		10.5
Chloromethane	AVRG		0.38328271		9.2
2-Chlorotoluene	AVRG		2.23457226		7.2
4-Chlorotoluene	AVRG		2.15033461		10.1
Cyclohexane	AVRG		0.47956779		6.9
Dibromochloromethane	AVRG		0.80065580		8.2
1,2-Dibromo-3-chloropropane	AVRG		0.13210715		8.4
1,2-Dibromoethane	AVRG		0.66539171		6.3
Dibromomethane	AVRG		0.18730109		5.9
1,2-Dichlorobenzene	AVRG		1.55427247		6.1
1,3-Dichlorobenzene	AVRG		1.71929684		5.2
~~t-Butyl alcohol~~	~~AVRG~~		~~1.703e-002~~		12.8
1,4-Dichlorobenzene	AVRG		1.75615514		15.0
Dichlorodifluoromethane	AVRG		0.35896206		8.5
1,1-Dichloroethane	AVRG		0.45846995		6.2
1,2-Dichloroethane	AVRG		0.34215185		5.1
1,1-Dichloroethene	AVRG		0.23719959		9.4
cis-1,2-Dichloroethene	AVRG		0.36055185		6.8

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5 Calibration Date(s): 10/02/09 10/02/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 1051 1429

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
1,2-Dichloroethene(total)	AVRG		0.30975638		5.9
trans-1,2-Dichloroethene	AVRG		0.25896091		5.2
1,2-Dichloropropane	AVRG		0.30746477		8.4
1,3-Dichloropropane	AVRG		0.92500533		8.0
2,2-Dichloropropane	AVRG		0.41704008		9.2
1,1-Dichloropropene	AVRG		0.40171491		13.6
cis-1,3-Dichloropropene	AVRG		0.42905979		11.2
trans-1,3-Dichloropropene	LINR	0.00000000	0.85487363		0.997
Ethylbenzene	AVRG		3.31658815		12.1
Ethyl methacrylate	LINR	0.00000000	0.70394267		0.998
Hexachlorobutadiene	AVRG		0.67985507		5.4
2-Hexanone	LINR	0.00000000	0.41901345		0.995
Iodomethane	LINR	0.00000000	0.51839912		0.998
Isopropylbenzene	AVRG		2.72467361		11.4
p-Isopropyltoluene	AVRG		2.60106959		9.6
Methyl acetate	AVRG		0.17290943		10.0
Methyl cyclohexane	AVRG		0.46797921		9.5
Methylene chloride	2ORDR	0.00000000	2.94325149	0.63578538	0.998
Methyl methacrylate	LINR	0.00000000	0.19079860		0.999
4-Methyl-2-pentanone	AVRG		0.20599337		11.5
MTBE	AVRG		0.44857601		7.0
Naphthalene	AVRG		1.79270322		11.5
n-Propylbenzene	AVRG		3.67059246		11.5
Styrene	2ORDR	0.00000000	0.43162839	1.456e-002	0.998
1,1,1,2-Tetrachloroethane	AVRG		0.74283743		8.1
1,1,2,2-Tetrachloroethane	AVRG		0.71598392		5.2
Tetrachloroethene	AVRG		0.98088101		11.3
Tetrahydrofuran	LINR	0.00000000	5.376e-002		1.000
Toluene	AVRG		1.76055311		7.5
1,2,3-Trichlorobenzene	AVRG		0.99252560		6.8
1,2,4-Trichlorobenzene	AVRG		1.11556143		7.3
1,1,1-Trichloroethane	AVRG		0.42292084		5.8
1,1,2-Trichloroethane	AVRG		0.52513858		10.2
Trichloroethene	AVRG		0.32005131		6.8
Trichlorotrifluoroethane	AVRG		0.28745575		7.3
Trichlorofluoromethane	AVRG		0.44415423		7.4
1,2,3-Trichloropropane	AVRG		0.16530343		6.1

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5 Calibration Date(s): 10/02/09 10/02/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 1051 1429

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
1,2,4-Trimethylbenzene	AVRG		2.49443663		7.3
1,3,5-Trimethylbenzene	AVRG		2.45476551		8.1
Vinyl acetate	AVRG		0.43517186		14.9
Vinyl chloride	2ORDR	0.00000000	2.46148664	0.80791744	1.000
m,p-Xylene	2ORDR	0.00000000	0.21241081	1.61e-002	0.999
Xylene(total)	2ORDR	0.00000000	8.17e-002	2.704e-003	0.999
Di-Isopropyl Ether	AVRG		1.06658300		9.1
ETBE	AVRG		0.71078471		13.4
tert-Amyl Methyl Ether	AVRG		0.60852190		8.6
Dibromofluoromethane	AVRG		0.33611443		3.5
1,2-Dichloroethane-d4	AVRG		4.804e-002		5.2
Toluene-d8	AVRG		2.22430730		4.3
Bromofluorobenzene	AVRG		0.89721421		3.8

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5 Calibration Date(s): 10/02/09 10/02/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 1051 1429

LAB FILE ID: RF2: V5STD01 RF5: V5STD02 RF10: V5STD03
RF20: V5STD04 RF50: V5STD05

COMPOUND	RF2	RF5	RF10	RF20	RF50
Acetone	0.163	0.102	0.091	0.102	0.094
Acrolein	0.038	0.029	0.027	0.036	0.032
Acrylonitrile	0.080	0.055	0.054	0.068	0.058
Benzene	1.228	1.058	1.082	1.338	1.166
Bromobenzene	0.966	0.844	0.928	1.002	0.920
Bromochloromethane	0.195	0.161	0.166	0.204	0.190
Bromodichloromethane	0.391	0.359	0.340	0.438	0.380
Bromoform	0.422	0.377	0.419	0.487	0.506
Bromomethane	0.290	0.227	0.240	0.278	0.276
2-Butanone	0.144	0.072	0.090	0.122	0.128
n-Butylbenzene	2.684	2.665	2.873	3.030	3.028
sec-Butylbenzene	3.230	3.462	3.571	3.911	3.636
tert-Butylbenzene	2.000	1.986	2.089	2.392	2.379
Carbon disulfide	0.866	0.789	0.718	0.901	0.872
Carbon tetrachloride	0.363	0.352	0.351	0.426	0.406
Chlorobenzene	2.274	2.187	2.158	2.366	2.355
Chloroethane	0.186	0.178	0.160	0.183	0.169
2-Chloroethyl vinyl ether	0.076	0.060	0.072	0.101	0.098
Chloroform	0.707	0.556	0.563	0.641	0.618
1-Chlorohexane	1.126	1.034	1.095	1.305	1.225
Chloromethane	0.437	0.358	0.353	0.426	0.389
2-Chlorotoluene	2.079	2.096	2.317	2.516	2.305
4-Chlorotoluene	2.201	1.860	2.102	2.436	2.346
Cyclohexane	0.468	0.424	0.496	0.522	0.470
Dibromochloromethane	0.790	0.709	0.750	0.878	0.894
1,2-Dibromo-3-chloropropane	0.132	0.120	0.119	0.130	0.132
1,2-Dibromoethane	0.671	0.647	0.612	0.715	0.728
Dibromomethane	0.188	0.183	0.171	0.208	0.186
1,2-Dichlorobenzene	1.638	1.481	1.578	1.656	1.550
1,3-Dichlorobenzene	1.776	1.596	1.655	1.846	1.796
t-Butyl alcohol	0.021	0.014	0.015	0.019	0.016
1,4-Dichlorobenzene	2.174	1.812	1.789	1.916	1.709
Dichlorodifluoromethane	0.386	0.320	0.323	0.402	0.365
1,1-Dichloroethane	0.498	0.427	0.438	0.492	0.470
1,2-Dichloroethane	0.350	0.325	0.315	0.363	0.349
1,1-Dichloroethene	0.270	0.225	0.207	0.258	0.230
cis-1,2-Dichloroethene	0.366	0.332	0.324	0.384	0.367

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5 Calibration Date(s): 10/02/09 10/02/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 1051 1429

LAB FILE ID: RF2: V5STD01 RF5: V5STD02 RF10: V5STD03
RF20: V5STD04 RF50: V5STD05

COMPOUND	RF2	RF5	RF10	RF20	RF50
1,2-Dichloroethene(total)	0.312	0.284	0.289	0.328	0.313
trans-1,2-Dichloroethene	0.258	0.235	0.254	0.272	0.259
1,2-Dichloropropane	0.271	0.294	0.297	0.336	0.338
1,3-Dichloropropane	0.948	0.881	0.887	1.047	0.995
2,2-Dichloropropane	0.422	0.361	0.371	0.466	0.424
1,1-Dichloropropene	0.368	0.323	0.352	0.468	0.428
cis-1,3-Dichloropropene	0.414	0.371	0.376	0.482	0.483
trans-1,3-Dichloropropene	0.641	0.648	0.741	0.938	0.931
Ethylbenzene	3.510	3.271	3.181	3.583	3.856
Ethyl methacrylate	0.524	0.540	0.590	0.685	0.786
Hexachlorobutadiene	0.708	0.610	0.662	0.723	0.696
2-Hexanone	0.313	0.338	0.357	0.439	0.459
Iodomethane	0.391	0.375	0.427	0.556	0.528
Isopropylbenzene	2.703	2.638	2.679	3.106	3.040
p-Isopropyltoluene	2.648	2.639	2.678	2.922	2.760
Methyl acetate	0.208	0.173	0.163	0.176	0.163
Methyl cyclohexane	0.428	0.427	0.439	0.540	0.479
Methylene chloride	0.897	0.418	0.334	0.342	0.274
Methyl methacrylate	0.131	0.108	0.129	0.179	0.194
4-Methyl-2-pentanone	0.202	0.174	0.173	0.229	0.224
MTBE	0.495	0.406	0.426	0.481	0.452
Naphthalene	2.132	1.476	1.624	1.847	1.775
n-Propylbenzene	3.496	3.407	3.780	4.324	4.004
Styrene	1.803	1.741	1.652	2.344	2.285
1,1,1,2-Tetrachloroethane	0.730	0.701	0.717	0.833	0.812
1,1,2,2-Tetrachloroethane	0.746	0.656	0.698	0.747	0.753
Tetrachloroethene	1.121	0.982	0.997	1.058	1.029
Tetrahydrofuran	0.078	0.044	0.050	0.051	0.054
Toluene	1.876	1.761	1.746	1.818	1.910
1,2,3-Trichlorobenzene	1.097	0.878	0.950	1.024	0.998
1,2,4-Trichlorobenzene	1.184	0.952	1.126	1.197	1.131
1,1,1-Trichloroethane	0.430	0.389	0.392	0.450	0.421
1,1,2-Trichloroethane	0.553	0.498	0.497	0.620	0.553
Trichloroethene	0.326	0.301	0.312	0.360	0.319
Trichlorotrifluoroethane	0.302	0.262	0.266	0.318	0.287
Trichlorofluoromethane	0.440	0.398	0.414	0.491	0.466
1,2,3-Trichloropropane	0.177	0.159	0.158	0.174	0.175

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5 Calibration Date(s): 10/02/09 10/02/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 1051 1429

LAB FILE ID: RF2: V5STD01 RF5: V5STD02 RF10: V5STD03
RF20: V5STD04 RF50: V5STD05

COMPOUND	RF2	RF5	RF10	RF20	RF50
1,2,4-Trimethylbenzene	2.543	2.453	2.610	2.771	2.412
1,3,5-Trimethylbenzene	2.344	2.269	2.479	2.715	2.667
Vinyl acetate	0.364	0.345	0.407	0.509	0.468
Vinyl chloride	0.363	0.289	0.246	0.391	0.341
m,p-Xylene	2.916	2.747	2.630	2.832	2.808
Xylene(total)	8.690	8.227	7.925	8.644	8.564
Di-Isopropyl Ether	1.042	0.915	0.973	1.128	1.129
ETBE	0.599	0.583	0.674	0.804	0.772
tert-Amyl Methyl Ether	0.701	0.558	0.540	0.638	0.607
Dibromofluoromethane	0.343	0.327	0.344	0.346	0.330
1,2-Dichloroethane-d4	0.051	0.050	0.049	0.046	0.047
Toluene-d8	2.136	2.303	2.253	2.154	2.381
Bromofluorobenzene	0.884	0.942	0.881	0.877	0.932

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5 Calibration Date(s): 10/02/09 10/02/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 1051 1429

LAB FILE ID: RF100: V5STD06 RF200: V5STD07

COMPOUND	RF100	RF200
Acetone	0.093	0.086
Acrolein	0.031	0.026
Acrylonitrile	0.060	0.059
Benzene	1.204	1.042
Bromobenzene	0.959	0.954
Bromochloromethane	0.192	0.182
Bromodichloromethane	0.425	0.372
Bromoform	0.543	0.568
Bromomethane	0.282	0.269
2-Butanone	0.127	0.117
n-Butylbenzene	2.850	2.443
sec-Butylbenzene	3.459	2.810
tert-Butylbenzene	2.217	1.998
Carbon disulfide	0.866	0.817
Carbon tetrachloride	0.420	0.397
Chlorobenzene	1.991	1.714
Chloroethane	0.172	0.152
2-Chloroethyl vinyl ether	0.106	0.101
Chloroform	0.605	0.565
1-Chlorohexane	1.087	0.952
Chloromethane	0.362	0.358
2-Chlorotoluene	2.244	2.085
4-Chlorotoluene	2.216	1.890
Cyclohexane	0.512	0.464
Dibromochloromethane	0.795	0.788
1,2-Dibromo-3-chloropropane	0.143	0.149
1,2-Dibromoethane	0.646	0.638
Dibromomethane	0.192	0.182
1,2-Dichlorobenzene	1.592	1.384
1,3-Dichlorobenzene	1.690	1.676
t-Butyl alcohol	0.018	0.016
1,4-Dichlorobenzene	1.541	1.352
Dichlorodifluoromethane	0.366	0.350
1,1-Dichloroethane	0.438	0.445
1,2-Dichloroethane	0.358	0.335
1,1-Dichloroethene	0.248	0.222
cis-1,2-Dichloroethene	0.389	0.361

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5 Calibration Date(s): 10/02/09 10/02/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 1051 1429

LAB FILE ID: RF100: V5STD06 RF200: V5STD07

COMPOUND	RF100	RF200
1,2-Dichloroethene(total)	0.334	0.309
trans-1,2-Dichloroethene	0.278	0.258
1,2-Dichloropropane	0.326	0.291
1,3-Dichloropropane	0.876	0.840
2,2-Dichloropropane	0.449	0.426
1,1-Dichloropropene	0.454	0.417
cis-1,3-Dichloropropene	0.467	0.410
trans-1,3-Dichloropropene	0.915	0.832
Ethylbenzene	3.228	2.586
Ethyl methacrylate	0.722	0.694
Hexachlorobutadiene	0.678	0.681
2-Hexanone	0.458	0.405
Iodomethane	0.555	0.508
Isopropylbenzene	2.750	2.157
p-Isopropyltoluene	2.407	2.153
Methyl acetate	0.172	0.154
Methyl cyclohexane	0.513	0.449
Methylene chloride	0.291	0.249
Methyl methacrylate	0.193	0.190
4-Methyl-2-pentanone	0.223	0.216
MTBE	0.448	0.431
Naphthalene	1.877	1.819
n-Propylbenzene	3.658	3.024
Styrene	1.825	1.687
1,1,1,2-Tetrachloroethane	0.742	0.664
1,1,2,2-Tetrachloroethane	0.727	0.685
Tetrachloroethene	0.892	0.788
Tetrahydrofuran	0.053	0.054
Toluene	1.703	1.510
1,2,3-Trichlorobenzene	1.004	0.997
1,2,4-Trichlorobenzene	1.136	1.082
1,1,1-Trichloroethane	0.450	0.428
1,1,2-Trichloroethane	0.492	0.463
Trichloroethene	0.328	0.294
Trichlorotrifluoroethane	0.301	0.275
Trichlorofluoromethane	0.470	0.431
1,2,3-Trichloropropane	0.162	0.151

FORM VI VOA

FORM 6
VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: Case No.: NA SAS No.: NA SDG No.: SDGA18241

Instrument ID: VOA5 Calibration Date(s): 10/02/09 10/02/09

Column: RTX-VRX ID: 0.25 (mm) Calibration Time(s): 1051 1429

LAB FILE ID: RF100: V5STD06 RF200: V5STD07

COMPOUND	RF100	RF200
1,2,4-Trimethylbenzene	2.491	2.181
1,3,5-Trimethylbenzene	2.520	2.188
Vinyl acetate	0.500	0.453
Vinyl chloride	0.306	0.259
m,p-Xylene	2.266	1.712
Xylene(total)	7.002	5.507
Di-Isopropyl Ether	1.195	1.084
ETBE	0.817	0.727
tert-Amyl Methyl Ether	0.608	0.608
Dibromofluoromethane	0.347	0.316
1,2-Dichloroethane-d4	0.048	0.044
Toluene-d8	2.222	2.121
Bromofluorobenzene	0.917	0.846

FORM VI VOA

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_003

Lab File ID: SEQ-TUN1 BFB Injection Date: 11/25/09

Instrument ID: VOA5 BFB Injection Time: 0834

GC Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	23.9
75	30.0 - 60.0% of mass 95	45.9
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.1
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	58.8
175	5.0 - 9.0% of mass 174	4.9 (8.3)1
176	95.0 - 101.0% of mass 174	57.0 (97.0)1
177	5.0 - 9.0% of mass 176	3.9 (6.9)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SEQ-CCV1	SEQ-CCV1	SEQ-CCV1	11/25/09	0905
02	V5BLK1125LCS	V5BLK1125LCS	V5LCS01	11/25/09	0937
03	V5BLK1125	V5BLK1125	V5BLK01	11/25/09	1110
04	NTC01-COMPOS	0911196-01	1119601B	11/25/09	1141
05	V5BLK1125LCS	V5BLK1125LCSD	V5LCSD01	11/25/09	1314
06					
07					
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FORM V VOA

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_003

Instrument ID: VOA5 Calibration Date: 11/25/09 Time: 0905

Lab File ID: SEQ-CCV1 Init. Calib. Date(s): 01/16/09 10/02/09

Heated Purge: (Y/N) Y Init. Calib. Times: 0950 1429

GC Column: RTX-VRX ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF100	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acetone	0.104	0.102	200.0	230.6		LINR	15.3	
Benzene	1.160	1.084	100.0	93.51		AVRG	-6.5	
Bromodichloromethane	0.386	0.382	100.0	98.82		AVRG	-1.2	
Bromoform	0.474	0.490	100.0	103.1	0.100	AVRG	3.1	
Bromomethane	0.266	0.273	100.0	102.5		AVRG	2.5	
2-Butanone	0.114	0.153	200.0	255.5		LINR	27.8	
Carbon disulfide	0.833	0.666	100.0	79.93		AVRG	-20.1	
Carbon tetrachloride	0.388	0.391	100.0	100.9		AVRG	0.9	
Chlorobenzene	2.149	1.989	100.0	92.55	0.300	AVRG	-7.4	
Chloroethane	0.171	0.151	100.0	87.97		AVRG	-12.0	
Chloroform	0.608	0.542	100.0	89.22		AVRG	-10.8	20.0
Chloromethane	0.383	0.354	100.0	92.31	0.100	AVRG	-7.7	
Cyclohexane	0.479	0.453	100.0	94.47		AVRG	-5.5	
Dibromochloromethane	0.800	0.808	100.0	100.9		AVRG	0.9	
1,2-Dibromo-3-chloropropane	0.132	0.136	100.0	102.8		AVRG	2.8	
1,2-Dibromoethane	0.665	0.678	100.0	101.9		AVRG	1.9	
1,2-Dichlorobenzene	1.554	1.367	100.0	87.93		AVRG	-12.1	
1,3-Dichlorobenzene	1.719	1.497	100.0	87.08		AVRG	-12.9	
1,4-Dichlorobenzene	1.756	1.478	100.0	84.18		AVRG	-15.8	
Dichlorodifluoromethane	0.359	0.375	100.0	104.4		AVRG	4.4	
1,1-Dichloroethane	0.458	0.546	100.0	119.1	0.100	AVRG	19.1	
1,2-Dichloroethane	0.342	0.325	100.0	95.04		AVRG	-5.0	
1,1-Dichloroethene	0.237	0.199	100.0	83.97		AVRG	-16.0	20.0
cis-1,2-Dichloroethene	0.360	0.340	100.0	94.36		AVRG	-5.6	
trans-1,2-Dichloroethene	0.259	0.220	100.0	85.15		AVRG	-14.8	
1,2-Dichloropropane	0.308	0.308	100.0	100.2		AVRG	0.2	20.0
cis-1,3-Dichloropropene	0.429	0.434	100.0	101.2		AVRG	1.2	
trans-1,3-Dichloropropene	0.806	0.872	100.0	102.0		LINR	2.0	
Ethylbenzene	3.316	3.144	100.0	94.80		AVRG	-5.2	20.0
2-Hexanone	0.396	0.516	200.0	246.5		LINR	23.2	
Isopropylbenzene	2.725	2.677	100.0	98.24		AVRG	-1.8	
Methyl acetate	0.173	0.111	100.0	64.31		AVRG	-35.7	
Methylene chloride	0.401	0.235	100.0	80.82		2ORDR	-19.2	
Methyl cyclohexane	0.468	0.424	100.0	90.71		AVRG	-9.3	
Methyl-tert-butyl-ether	0.448	0.413	100.0	92.12		AVRG	-7.9	
4-Methyl-2-pentanone	0.206	0.243	200.0	235.6		AVRG	17.8	
Styrene	1.905	1.973	100.0	104.1		2ORDR	4.1	

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FORM VII VOA

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_003

Instrument ID: VOA5 Calibration Date: 11/25/09 Time: 0905

Lab File ID: SEQ-CCV1 Init. Calib. Date(s): 01/16/09 10/02/09

Heated Purge: (Y/N) Y Init. Calib. Times: 0950 1429

GC Column: RTX-VRX ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF100	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
1,1,2,2-Tetrachloroethane	0.716	0.620	100.0	86.54	0.300	AVRG	-13.5	
Tetrachloroethene	0.981	0.953	100.0	97.20		AVRG	-2.8	
Toluene	1.760	1.692	100.0	96.09		AVRG	-3.9	20.0
1,2,4-Trichlorobenzene	1.115	1.050	100.0	94.13		AVRG	-5.9	
1,1,1-Trichloroethane	0.423	0.411	100.0	97.12		AVRG	-2.9	
1,1,2-Trichloroethane	0.525	0.493	100.0	93.89		AVRG	-6.1	
Trichloroethene	0.320	0.327	100.0	102.3		AVRG	2.3	
Trichlorotrifluoroethane	0.287	0.233	100.0	80.95		AVRG	-19.0	
Trichlorofluoromethane	0.444	0.412	100.0	92.80		AVRG	-7.2	
Vinyl chloride	0.314	0.259	100.0	81.95		2ORDR	-18.0	20.0
Xylene(total)	7.794	6.976	300.0	299.4		2ORDR	-0.2	
Dibromofluoromethane	0.336	0.357	30.00	31.86		AVRG	6.2	
1,2-Dichloroethane-d4	0.048	0.050	30.00	31.25		AVRG	4.2	
Toluene-d8	2.224	2.461	30.00	33.19		AVRG	10.6	
Bromofluorobenzene	0.897	1.032	30.00	34.51		AVRG	15.0	

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

V5BLK1125

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_003

Lab File ID: V5BLK01 Lab Sample ID: V5BLK1125

Date Analyzed: 11/25/09 Time Analyzed: 1110

Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) Y

Instrument ID: VOA5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	V5BLK1125LCS	V5BLK1125LCS	V5LCS01	0937
02	NTC01-COMPOS	0911196-01	1119601B	1141
03	V5BLK1125LCS	V5BLK1125LCSD	V5LCSD01	1314
04				
05				
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COMMENTS:

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FORM IV VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V5BLK1125

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_003

Matrix: (soil/water) SOIL Lab Sample ID: V5BLK1125

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5BLK01

Level: (low/med) LOW Date Sampled: _____

% Moisture: not dec. 0 Date Analyzed: 11/25/09 11:10

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
67-64-1	Acetone	2.0	5.0		U
71-43-2	Benzene	0.47	5.0		U
75-27-4	Bromodichloromethane	0.30	10		U
75-25-2	Bromoform	1.0	5.0		U
74-83-9	Bromomethane	0.72	10		U
78-93-3	2-Butanone	1.4	5.0		U
75-15-0	Carbon disulfide	1.3	5.0		U
56-23-5	Carbon tetrachloride	0.88	5.0		U
108-90-7	Chlorobenzene	0.34	5.0		U
75-00-3	Chloroethane	1.1	10		U
67-66-3	Chloroform	0.55	5.0		U
74-87-3	Chloromethane	0.52	10		U
110-82-7	Cyclohexane	0.54	5.0		U
124-48-1	Dibromochloromethane	0.34	5.0		U
96-12-8	1,2-Dibromo-3-chloropropane	1.2	5.0		U
106-93-4	1,2-Dibromoethane	0.43	5.0		U
95-50-1	1,2-Dichlorobenzene	0.37	5.0		U
541-73-1	1,3-Dichlorobenzene	0.84	5.0		U
106-46-7	1,4-Dichlorobenzene	0.55	5.0		U
75-71-8	Dichlorodifluoromethane	1.1	5.0		U
75-34-3	1,1-Dichloroethane	0.54	5.0		U
107-06-2	1,2-Dichloroethane	0.46	5.0		U
75-35-4	1,1-Dichloroethene	1.2	5.0		U
156-59-2	cis-1,2-Dichloroethene	1.2	10		U
156-60-5	trans-1,2-Dichloroethene	1.1	5.0		U
78-87-5	1,2-Dichloropropane	0.46	5.0		U
10061-01-5	cis-1,3-Dichloropropene	0.50	5.0		U
10061-02-6	trans-1,3-Dichloropropene	0.32	5.0		U
100-41-4	Ethylbenzene	0.75	5.0		U
591-78-6	2-Hexanone	2.3	5.0		U
98-82-8	Isopropylbenzene	0.88	5.0		U
79-20-9	Methyl acetate	1.6	10		U
75-09-2	Methylene chloride	0.62	10	0.68	J
108-87-2	Methyl cyclohexane	0.30	5.0		U
1634-04-4	Methyl-tert-butyl-ether	0.32	5.0		U
108-10-1	4-Methyl-2-pentanone	0.58	5.0		U
100-42-5	Styrene	0.35	5.0		U
79-34-5	1,1,2,2-Tetrachloroethane	0.43	5.0		U
127-18-4	Tetrachloroethene	0.97	5.0		U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V5BLK1125

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_003

Matrix: (soil/water) SOIL Lab Sample ID: V5BLK1125

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5BLK01

Level: (low/med) LOW Date Sampled: _____

% Moisture: not dec. 0 Date Analyzed: 11/25/09 11:10

GC Column: RTX-VRX ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
108-88-3	Toluene	0.86	5.0		U
120-82-1	1,2,4-Trichlorobenzene	0.18	5.0		U
71-55-6	1,1,1-Trichloroethane	0.90	5.0		U
79-00-5	1,1,2-Trichloroethane	0.35	5.0		U
79-01-6	Trichloroethene	0.85	5.0		U
76-13-1	Trichlorotrifluoroethane	0.55	5.0		U
75-69-4	Trichlorofluoromethane	0.95	5.0		U
75-01-4	Vinyl chloride	1.1	5.0		U
1330-20-7	Xylene(total)	0.70	5.0		U

FORM I VOA

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA17287

Lab File ID: SEQ-TUN1 DFTPP Injection Date: 11/04/09

Instrument ID: BNA1 DFTPP Injection Time: 0825

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
51	30.0 - 60.0% of mass 198	42.8	
68	Less than 2.0% of mass 69	0.0	(0.0)1
69	Mass 69 relative abundance	67.0	
70	Less than 2.0% of mass 69	0.2	(0.3)1
127	40.0 - 60.0% of mass 198	46.5	
197	Less than 1.0% of mass 198	0.0	
198	Base Peak, 100% relative abundance	100.0	
199	5.0 to 9.0% of mass 198	6.9	
275	10.0 - 30.0% of mass 198	17.2	
365	Greater than 1.0% of mass 198	1.76	
441	Present, but less than mass 443	7.8	
442	Greater than 40.0% of mass 198	51.8	
443	17.0 - 23.0% of mass 442	10.3	(19.9)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	BNACALA1.0PP	SEQ-CAL2	SEQ-CAL2	11/04/09	0923
02	BNACALA2.0PP	SEQ-CAL3	SEQ-CAL3	11/04/09	0959
03	BNACALA5.0PP	SEQ-CAL4	SEQ-CAL4	11/04/09	1035
04	BNACALA10.0P	SEQ-CAL5	SEQ-CAL5	11/04/09	1112
05	BNACALA20.0P	SEQ-CAL6	SEQ-CAL6	11/04/09	1148
06	BNACALA40.0P	SEQ-CAL7	SEQ-CAL7	11/04/09	1224
07	BNACALA50.0P	SEQ-CAL8	SEQ-CAL8	11/04/09	1301
08	BNACALA60.0P	SEQ-CAL9	SEQ-CAL9	11/04/09	1338
09	BNACALA80.0P	SEQ-CALA	SEQ-CALA	11/04/09	1414
10	BNACALA100.0	SEQ-CALB	SEQ-CALB	11/04/09	1542
11	BNACALB1.0PP	SEQ-CALD	SEQ-CALD	11/04/09	1730
12	BNACALB2.0PP	SEQ-CALE	SEQ-CALE	11/04/09	1807
13	BNACALB5.0PP	SEQ-CALF	SEQ-CALF	11/04/09	1843
14	BNACALB10.0P	SEQ-CALG	SEQ-CALG	11/04/09	1919
15	BNACALB20.0P	SEQ-CALH	SEQ-CALH	11/04/09	1955
16					
17					
18					
19					
20					
21					
22					

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FORM V SV

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA17287

Lab File ID: SEQ-TUN2 DFTPP Injection Date: 11/04/09

Instrument ID: BNA1 DFTPP Injection Time: 2103

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	44.6
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	68.0
70	Less than 2.0% of mass 69	0.2 (0.3)1
127	40.0 - 60.0% of mass 198	48.4
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.0
275	10.0 - 30.0% of mass 198	16.9
365	Greater than 1.0% of mass 198	1.87
441	Present, but less than mass 443	7.4
442	Greater than 40.0% of mass 198	48.4
443	17.0 - 23.0% of mass 442	9.6 (19.8)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	BNACALB50.0P	SEQ-CALJ	SEQ-CALJ	11/04/09	2126
02	BNACALB60.0P	SEQ-CALK	SEQ-CALK	11/04/09	2202
03	BNACALB80.0P	SEQ-CALL	SEQ-CALL	11/04/09	2238
04	BNACALB100.0	SEQ-CALM	SEQ-CALM	11/04/09	2313
05	ICV1-50PPM	SEQ-ICV1	SEQ-ICV1	11/04/09	2349
06	ICV1A-50PPM	SEQ-ICV3	SEQ-ICV3	11/05/09	0101
07	ICV2A-50PPM	SEQ-ICV4	SEQ-ICV4	11/05/09	0137
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

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FORM V SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA86373

Instrument ID: BNA1 Calibration Date(s): 11/04/09 11/04/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0923 2313

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
Acenaphthene	AVRG		1.06284152		6.3
Acenaphthylene	AVRG		1.46066854		7.6
Acetophenone	AVRG		1.64909400		13.0
Aniline	AVRG		2.01828543		11.7
Anthracene	AVRG		0.98192517		5.3
Benzoic acid	2ORDR	0.12321304	3.34219057	-0.5325076	0.996
Benzo(a)anthracene	AVRG		1.02364724		5.8
Benzo(b)fluoranthene	AVRG		1.11611668		13.0
Benzo(k)fluoranthene	AVRG		1.13565422		14.0
Benzo(g,h,i)perylene	AVRG		0.53752343		11.2
Benzo(a)pyrene	LINR	0.00000000	1.05770635		0.996
Benzyl alcohol	AVRG		0.92473242		6.2
bis(2-Chloroethoxy)methane	AVRG		0.50716725		12.8
1,1'-Biphenyl	AVRG		1.44566742		7.9
bis(2-Chloroethyl)ether	AVRG		1.42849220		14.6
bis(2-Chloroisopropyl)ether	2ORDR	0.00000000	0.22792103	0.10183793	0.998
Bis(2-ethylhexyl)phthalate	AVRG		1.27512350		13.1
4-Bromophenyl-phenylether	AVRG		0.20853771		5.5
Butylbenzylphthalate	AVRG		0.95351456		14.4
Carbazole	AVRG		0.85263644		6.2
4-Chloroaniline	AVRG		0.47534389		10.3
Caprolactam	AVRG		0.11067848		11.3
4-Chloro-3-methylphenol	AVRG		0.32715264		10.5
2-Chloronaphthalene	AVRG		1.08273095		4.0
2-Chlorophenol	AVRG		1.28452001		11.4
4-Chlorophenyl-phenylether	AVRG		0.54199820		4.1
Chrysene	AVRG		0.96539168		5.6
Dibenz(a,h)anthracene	2ORDR	1.899e-002	2.00693431	-0.2463653	0.998
Dibenzofuran	AVRG		1.55600942		5.0
1,3-Dichlorobenzene	AVRG		1.36631772		10.6
1,4-Dichlorobenzene	AVRG		1.24910110		9.8
1,2-Dichlorobenzene	AVRG		1.20761982		11.9
2,4-Dichlorophenol	AVRG		0.30656766		10.0
2,6-Dichlorophenol	AVRG		0.29130539		10.5
Diethylphthalate	AVRG		1.34935597		5.1
2,4-Dimethylphenol	AVRG		0.38441605		12.0
Dimethylphthalate	AVRG		1.31765363		4.5

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA86373

Instrument ID: BNA1 Calibration Date(s): 11/04/09 11/04/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0923 2313

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
Di-n-butylphthalate	AVRG		1.46154006		9.9
4,6-Dinitro-2-methylphenol	2ORDR	0.16252585	6.90456966	-2.9810031	0.997
2,4-Dinitrophenol	2ORDR	0.22338235	6.44651440	-3.7969989	0.990
2,4-Dinitrotoluene	LINR	0.00000000	0.43440198		0.998
2,6-Dinitrotoluene	LINR	0.00000000	0.34658681		0.996
1,2-Diphenylhydrazine	AVRG		1.08311538		14.6
Di-n-octylphthalate	AVRG		2.70041527		14.8
Fluoranthene	AVRG		0.89752410		6.6
Fluorene	AVRG		1.17184057		4.6
Hexachlorobenzene	AVRG		0.23676557		3.3
Hexachlorobutadiene	AVRG		0.17459508		6.4
Hexachlorocyclopentadiene	2ORDR	0.00000000	4.86095632	-0.4072599	0.992
Hexachloroethane	AVRG		0.66364076		9.5
Indeno(1,2,3-cd)pyrene	2ORDR	1.16e-002	2.09215650	-0.2790025	0.998
Isophorone	AVRG		0.80804350		10.6
2-Methylnaphthalene	AVRG		0.58683980		9.0
1-Methylnaphthalene	AVRG		0.50541876		7.4
4-Methylphenol	AVRG		1.22535151		9.6
3-Methylphenol	AVRG		1.22880659		9.2
Naphthalene	AVRG		0.96646467		12.4
2-Methylphenol	AVRG		1.24321184		6.3
2-Nitroaniline	AVRG		0.44636107		12.6
3-Nitroaniline	2ORDR	0.00000000	2.70296877	-0.2860563	0.997
4-Nitroaniline	2ORDR	0.00000000	3.46706704	-0.6969726	0.993
Nitrobenzene	AVRG		0.41752872		12.4
2-Nitrophenol	AVRG		0.22302425		12.7
4-Nitrophenol	2ORDR	0.10509973	2.70371589	0.96455740	0.993
N-Nitroso-di-methylamine	AVRG		1.06926336		12.5
N-Nitrosodiphenylamine	AVRG		0.49942652		7.1
N-Nitroso-di-n-propylamine	2ORDR	-1.04e-002	0.94403214	0.23852993	0.998
Pentachlorophenol	LINR	0.17596574	0.17673923		0.998
Phenanthrene	AVRG		0.96542045		4.5
Phenol	AVRG		1.67859697		14.2
Pyrene	AVRG		1.51900735		8.6
Pyridine	AVRG		1.77503937		8.5
1,2,4,5-Tetrachlorobenzene	AVRG		0.30989782		7.4
1,2,4-Trichlorobenzene	AVRG		0.32279108		5.5

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA86373

Instrument ID: BNA1 Calibration Date(s): 11/04/09 11/04/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0923 2313

COMPOUND	CURVE	COEFFICENTS A0	A1	A2	%RSD OR R^2
2,4,5-Trichlorophenol	AVRG		0.39635192		14.8
2,4,6-Trichlorophenol	LINR	1.543e-002	0.41585612		0.998
1,4-Dioxane	AVRG		0.76017709		6.9
2-Fluorophenol	AVRG		1.55324382		12.2
Phenol-d6	AVRG		1.78691664		13.6
Nitrobenzene-d5	AVRG		0.45516119		13.0
2-Fluorobiphenyl	AVRG		1.26310883		6.7
2,4,6-Tribromophenol	LINR	0.00000000	0.13850672		0.998
Terphenyl-d14	AVRG		0.90768440		13.4

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA86373

Instrument ID: BNA1 Calibration Date(s): 11/04/09 11/04/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0923 2313

COMPOUND	CURVE	COEFFICENTS A0	A1	%RSD OR R^2
Atrazine	AVRG		0.20324921	8.8
Benzidine	LINR	0.00000000	0.72953254	0.998
Benzaldehyde	AVRG		1.28057399	10.3
3,3'-Dichlorobenzidine	AVRG		0.31460741	13.4
2,3,4,6-Tetrachlorophenol	LINR	0.12687530	0.28002550	0.997
2-Chloroacetophenone	AVRG		0.63498709	7.2
2-Chlorobenzalmalononitrile	AVRG		0.29992935	6.1

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA86373 S1

Instrument ID: BNA1 Calibration Date(s): 11/04/09 11/04/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0923 2313

LAB FILE ID: RF1: SEQ-CAL2 RF2: SEQ-CAL3 RF5: SEQ-CAL4
RF10: SEQ-CAL5 RF20: SEQ-CAL6

COMPOUND	RF1	RF2	RF5	RF10	RF20
Acenaphthene	1.011	1.105	1.113	1.110	1.159
Acenaphthylene	1.355	1.460	1.608	1.541	1.649
Acetophenone	1.761	1.874	1.894	1.791	1.786
Aniline	2.100	2.284	2.257	2.310	2.168
Anthracene	0.894	0.980	1.017	1.054	1.030
Benzoic acid			0.081	0.146	0.237
Benzo(a)anthracene	0.949	0.917	0.983	1.010	1.053
Benzo(b)fluoranthene	0.857	0.898	1.052	1.132	1.121
Benzo(k)fluoranthene	0.806	0.964	1.046	1.143	1.170
Benzo(g,h,i)perylene	0.523	0.434	0.465	0.516	0.578
Benzo(a)pyrene	0.677	0.731	0.813	0.913	0.949
Benzyl alcohol	0.831	0.836	0.941	0.988	0.997
bis(2-Chloroethoxy)methane	0.551	0.581	0.568	0.558	0.562
1,1'-Biphenyl	1.378	1.480	1.572	1.540	1.589
bis(2-Chloroethyl)ether	1.503	1.665	1.666	1.618	1.566
bis(2-Chloroisopropyl)ether	3.044	3.324	3.104	3.059	2.725
Bis(2-ethylhexyl)phthalate		0.942	1.100	1.244	1.330
4-Bromophenyl-phenylether	0.185	0.194	0.208	0.209	0.212
Butylbenzylphthalate		0.715	0.820	0.930	0.963
Carbazole	0.734	0.820	0.885	0.856	0.890
4-Chloroaniline	0.425	0.449	0.506	0.514	0.576
Caprolactam		0.082	0.130	0.116	0.113
4-Chloro-3-methylphenol	0.256	0.316	0.339	0.355	0.381
2-Chloronaphthalene	1.062	1.133	1.119	1.099	1.130
2-Chlorophenol	1.315	1.435	1.429	1.445	1.369
4-Chlorophenyl-phenylether	0.511	0.541	0.537	0.511	0.550
Chrysene	0.870	0.918	0.933	0.950	0.990
Dibenz(a,h)anthracene	0.408	0.416	0.392	0.430	0.525
Dibenzofuran	1.507	1.586	1.661	1.612	1.668
1,3-Dichlorobenzene	1.405	1.527	1.480	1.495	1.465
1,4-Dichlorobenzene	1.270	1.352	1.346	1.382	1.358
1,2-Dichlorobenzene	1.230	1.367	1.340	1.338	1.317
2,4-Dichlorophenol	0.239	0.282	0.306	0.327	0.347
2,6-Dichlorophenol	0.218	0.273	0.299	0.301	0.316
Diethylphthalate	1.250	1.319	1.423	1.419	1.445
2,4-Dimethylphenol	0.411	0.417	0.437	0.442	0.414
Dimethylphthalate	1.216	1.299	1.376	1.368	1.412

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA86373

Instrument ID: BNA1 Calibration Date(s): 11/04/09 11/04/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0923 2313

LAB FILE ID: RF1: SEQ-CAL2 RF2: SEQ-CAL3 RF5: SEQ-CAL4
RF10: SEQ-CAL5 RF20: SEQ-CAL6

COMPOUND	RF1	RF2	RF5	RF10	RF20
Di-n-butylphthalate	1.236	1.400	1.562	1.639	1.639
4,6-Dinitro-2-methylphenol			0.023	0.048	0.088
2,4-Dinitrophenol			0.009	0.029	0.067
2,4-Dinitrotoluene	0.149	0.187	0.294	0.345	0.412
2,6-Dinitrotoluene	0.149	0.204	0.268	0.287	0.326
1,2-Diphenylhydrazine	1.154	1.233	1.222	1.249	1.234
Di-n-octylphthalate			2.086	2.585	2.634
Fluoranthene	0.800	0.830	0.866	0.928	0.971
Fluorene	1.055	1.163	1.158	1.195	1.226
Hexachlorobenzene	0.234	0.224	0.237	0.240	0.237
Hexachlorobutadiene	0.153	0.176	0.182	0.189	0.182
Hexachlorocyclopentadiene	0.116	0.120	0.141	0.163	0.188
Hexachloroethane	0.680	0.703	0.735	0.744	0.708
Indeno(1,2,3-cd)pyrene	0.376	0.342	0.415	0.442	0.544
Isophorone	0.694	0.812	0.912	0.928	0.912
2-Methylnaphthalene	0.557	0.591	0.621	0.646	0.654
1-Methylnaphthalene	0.484	0.544	0.522	0.533	0.555
4-Methylphenol	1.061	1.320	1.298	1.362	1.342
3-Methylphenol	1.095	1.320	1.298	1.362	1.342
Naphthalene	0.954	1.059	1.084	1.085	1.081
2-Methylphenol	1.162	1.297	1.297	1.354	1.352
2-Nitroaniline	0.316	0.378	0.465	0.495	0.492
3-Nitroaniline	0.202	0.228	0.271	0.306	0.366
4-Nitroaniline	0.166	0.145	0.142	0.192	0.267
Nitrobenzene	0.411	0.476	0.485	0.453	0.471
2-Nitrophenol		0.173	0.188	0.206	0.232
4-Nitrophenol			0.153	0.215	0.280
N-Nitroso-di-methylamine	1.074	1.269	1.111	1.190	1.135
N-Nitrosodiphenylamine	0.418	0.469	0.528	0.537	0.521
N-Nitroso-di-n-propylamine	1.092	1.226	1.145	1.080	1.013
Pentachlorophenol				0.083	0.118
Phenanthrene	0.899	0.967	0.960	1.006	1.010
Phenol	1.813	1.929	1.828	1.963	1.858
Pyrene	1.299	1.510	1.482	1.561	1.561
Pyridine	1.804	1.956	1.917	1.945	1.897
1,2,4,5-Tetrachlorobenzene	0.286	0.291	0.320	0.332	0.336
1,2,4-Trichlorobenzene	0.312	0.329	0.333	0.338	0.348

FORM VI SV

BRATION DATA

Lab Name: [illegible]

Lab Code: [illegible] Case No.: [illegible] SDG No.: SDGA86373

Instrument ID: BNA[illegible] Date(s): 11/04/09 11/04/09

Column: [illegible] SILICA [illegible] Calibration Time(s): 0923 2313

LAB FILE ID: [illegible] RF1: [illegible] RF2: [illegible] RF5: SEQ-CAL4
RF10: SEQ-CAL5 RF20: [illegible]

COMPOUND	RF1	RF2	RF5	RF10	RF20
2,4,5-Trichlorophenol	[illegible]	0.335	0.[illegible]84	0.393	0.4[illegible]
2,4,6-Trichlorophenol	0.204	0.[illegible]	0.[illegible]57	0.378	0.4[illegible]
1,4-Dioxane	[illegible]	0.[illegible]64	0.[illegible]97	0.819	0.[illegible]
2-Fluorophenol	[illegible]	1.762	1.[illegible]11	1.760	1.6[illegible]
Phenol-d6	1.823	2.[illegible]48	1.[illegible]76	2.048	1.9[illegible]
Nitrobenzene-d5	0.476	0.534	0.[illegible]38	0.463	0.5[illegible]
2-Fluorobiphenyl	1.204	1.190	1.[illegible]86	1.360	1.3[illegible]
2,4,6-Tribromophenol	0.054	0.069	0.[illegible]98	0.115	0.1[illegible]
Terphenyl-d14	0.716	0.809	0.[illegible]35	0.884	0.9[illegible]

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA86373

Instrument ID: BNA1 Calibration Date(s): 11/04/09 11/04/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0923 2313

LAB FILE ID: RF40: SEQ-CAL7 RF50: SEQ-CAL8 RF60: SEQ-CAL9
RF80: SEQ-CALA RF100: SEQ-CALB

COMPOUND	RF40	RF50	RF60	RF80	RF100
Acenaphthene	1.024	1.053	1.093	1.036	0.925
Acenaphthylene	1.388	1.425	1.472	1.407	1.300
Acetophenone	1.498	1.456	1.469	1.312	
Aniline	1.900	1.923	1.856	1.683	1.701
Anthracene	0.990	0.992	1.013	0.941	0.908
Benzoic acid	0.251	0.272	0.318	0.315	0.322
Benzo(a)anthracene	1.016	1.068	1.058	1.081	1.102
Benzo(b)fluoranthene	1.147	1.190	1.213	1.313	1.238
Benzo(k)fluoranthene	1.174	1.216	1.199	1.349	1.288
Benzo(g,h,i)perylene	0.507	0.587	0.549	0.590	0.625
Benzo(a)pyrene	0.942	1.003	1.074	1.075	1.075
Benzyl alcohol	0.919	0.959	0.964	0.923	0.890
bis(2-Chloroethoxy)methane	0.469	0.465	0.486	0.432	0.400
1,1'-Biphenyl	1.446	1.443	1.455	1.340	1.214
bis(2-Chloroethyl)ether	1.356	1.338	1.334	1.160	1.079
bis(2-Chloroisopropyl)ether	2.195	2.049	1.972	1.701	
Bis(2-ethylhexyl)phthalate	1.336	1.400	1.236	1.422	1.465
4-Bromophenyl-phenylether	0.204	0.215	0.219	0.222	0.216
Butylbenzylphthalate	0.955	1.017	0.913	1.089	1.180
Carbazole	0.862	0.849	0.929	0.875	0.826
4-Chloroaniline	0.463	0.462	0.502	0.442	0.414
Caprolactam	0.107	0.111	0.115	0.110	0.112
4-Chloro-3-methylphenol	0.317	0.332	0.354	0.318	0.303
2-Chloronaphthalene	1.028	1.080	1.110	1.055	1.011
2-Chlorophenol	1.292	1.196	1.248	1.097	1.020
4-Chlorophenyl-phenylether	0.523	0.556	0.572	0.573	0.545
Chrysene	0.932	1.016	0.992	1.002	1.051
Dibenz(a,h)anthracene	0.471	0.563	0.564	0.560	0.610
Dibenzofuran	1.523	1.524	1.578	1.460	1.441
1,3-Dichlorobenzene	1.362	1.343	1.334	1.190	1.063
1,4-Dichlorobenzene	1.230	1.214	1.245	1.082	1.011
1,2-Dichlorobenzene	1.170	1.186	1.164	1.034	0.928
2,4-Dichlorophenol	0.318	0.303	0.338	0.310	0.296
2,6-Dichlorophenol	0.290	0.299	0.334	0.298	0.284
Diethylphthalate	1.315	1.361	1.375	1.337	1.250
2,4-Dimethylphenol	0.355	0.347	0.376	0.330	0.312
Dimethylphthalate	1.296	1.340	1.314	1.311	1.245

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA86373

Instrument ID: BNA1 Calibration Date(s): 11/04/09 11/04/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0923 2313

LAB FILE ID: RF40: SEQ-CAL7 RF50: SEQ-CAL8 RF60: SEQ-CAL9
RF80: SEQ-CALA RF100: SEQ-CALB

COMPOUND	RF40	RF50	RF60	RF80	RF100
Di-n-butylphthalate	1.523	1.479	1.491	1.411	1.234
4,6-Dinitro-2-methylphenol	0.120	0.133	0.150	0.155	0.163
2,4-Dinitrophenol	0.106	0.137	0.168	0.178	0.194
2,4-Dinitrotoluene	0.402	0.419	0.446	0.433	0.441
2,6-Dinitrotoluene	0.303	0.330	0.349	0.353	0.353
1,2-Diphenylhydrazine	1.059	0.988	0.988	0.896	0.807
Di-n-octylphthalate	3.044	3.229	2.623		
Fluoranthene	0.915	0.915	0.976	0.926	0.848
Fluorene	1.144	1.207	1.244	1.186	1.138
Hexachlorobenzene	0.226	0.236	0.239	0.242	0.252
Hexachlorobutadiene	0.170	0.180	0.184	0.168	0.162
Hexachlorocyclopentadiene	0.183	0.210	0.234	0.219	0.207
Hexachloroethane	0.646	0.640	0.648	0.574	0.559
Indeno(1,2,3-cd)pyrene	0.461	0.534	0.530	0.562	0.591
Isophorone	0.756	0.728	0.836	0.768	0.733
2-Methylnaphthalene	0.571	0.585	0.625	0.539	0.480
1-Methylnaphthalene	0.491	0.498	0.527	0.461	0.439
4-Methylphenol	1.187	1.249	1.279	1.118	1.037
3-Methylphenol	1.187	1.249	1.279	1.118	1.037
Naphthalene	0.909	0.867	0.913	0.746	
2-Methylphenol	1.169	1.204	1.258	1.188	1.149
2-Nitroaniline	0.465	0.453	0.486	0.461	0.452
3-Nitroaniline	0.352	0.393	0.428	0.399	0.411
4-Nitroaniline	0.278	0.299	0.360	0.342	0.336
Nitrobenzene	0.401	0.375	0.406	0.354	0.343
2-Nitrophenol	0.232	0.231	0.261	0.244	0.239
4-Nitrophenol	0.265	0.295	0.314	0.301	0.275
N-Nitroso-di-methylamine	0.934	0.950	0.890		
N-Nitrosodiphenylamine	0.500	0.497	0.530	0.492	0.502
N-Nitroso-di-n-propylamine	0.842	0.814	0.845	0.774	0.723
Pentachlorophenol	0.137	0.145	0.157	0.162	0.165
Phenanthrene	0.988	0.991	1.004	0.942	0.887
Phenol	1.616	1.587	1.561	1.374	1.256
Pyrene	1.507	1.545	1.330	1.695	1.699
Pyridine	1.708	1.694	1.701	1.571	1.557
1,2,4,5-Tetrachlorobenzene	0.308	0.316	0.339	0.299	0.271
1,2,4-Trichlorobenzene	0.313	0.318	0.338	0.309	0.289

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA86373

Instrument ID: BNA1 Calibration Date(s): 11/04/09 11/04/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0923 2313

LAB FILE ID: RF40: SEQ-CAL7 RF50: SEQ-CAL8 RF60: SEQ-CAL9
RF80: SEQ-CALA RF100: SEQ-CALB

COMPOUND	RF40	RF50	RF60	RF80	RF100
2,4,5-Trichlorophenol	0.396	0.437	0.440	0.452	0.434
2,4,6-Trichlorophenol	0.389	0.416	0.430	0.420	0.404
1,4-Dioxane	0.749	0.763	0.744	0.687	0.671
2-Fluorophenol	1.430	1.342	1.285		
Phenol-d6	1.692	1.645	1.573	1.337	
Nitrobenzene-d5	0.438	0.409	0.438	0.388	0.364
2-Fluorobiphenyl	1.221	1.234	1.263	1.210	1.112
2,4,6-Tribromophenol	0.133	0.132	0.143	0.140	0.139
Terphenyl-d14	0.967	1.003	0.884	1.139	

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA863735

Instrument ID: BNA1 Calibration Date(s): 11/04/09 11/04/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0923 2313

LAB FILE ID: RF1: SEQ-CALD RF2: SEQ-CALE RF5: SEQ-CALF
RF10: SEQ-CALG RF20: SEQ-CALH

COMPOUND	RF1	RF2	RF5	RF10	RF20
Atrazine	0.169	0.179	0.203	0.204	0.210
Benzidine		0.502	0.513	0.596	0.671
Benzaldehyde	1.391	1.374	1.442	1.346	1.378
3,3'-Dichlorobenzidine	0.264	0.273	0.278	0.284	0.319
2,3,4,6-Tetrachlorophenol			0.102	0.155	0.210
2-Chloroacetophenone	0.572	0.628	0.678	0.688	0.694
2-Chlorobenzalmalononitrile	0.279	0.299	0.307	0.326	0.327

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA86373

Instrument ID: BNA1 Calibration Date(s): 11/04/09 11/04/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 0923 2313

LAB FILE ID: RF40: RF50: SEQ-CALJ RF60: SEQ-CALK
RF80: SEQ-CALL RF100: SEQ-CALM

COMPOUND	RF40	RF50	RF60	RF80	RF100
Atrazine		0.211	0.220	0.221	0.212
Benzidine		0.750	0.719	0.742	0.724
Benzaldehyde		1.176	1.196	1.147	1.075
3,3'-Dichlorobenzidine		0.328	0.344	0.387	0.354
2,3,4,6-Tetrachlorophenol		0.227	0.255	0.266	0.269
2-Chloroacetophenone		0.610	0.637	0.637	0.571
2-Chlorobenzalmalononitrile		0.297	0.288	0.301	0.276

FORM VI SV

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: ~~CTO064~~ 003

Lab File ID: SEQ-TUN1 DFTPP Injection Date: 11/27/09

Instrument ID: BNA1 DFTPP Injection Time: 1357

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	38.4
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	64.7
70	Less than 2.0% of mass 69	0.2 (0.3)1
127	40.0 - 60.0% of mass 198	49.1
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.2
275	10.0 - 30.0% of mass 198	17.0
365	Greater than 1.0% of mass 198	1.56
441	Present, but less than mass 443	7.8
442	Greater than 40.0% of mass 198	48.6
443	17.0 - 23.0% of mass 442	9.8 (20.1)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SEQ-CCV1	SEQ-CCV1	SEQ-CCV1	11/27/09	1420
02	9K23034-BLK1	9K23034-BLK1	K23034B1	11/27/09	1456
03	9K23034-BLK1	9K23034-BS1	K23034L1	11/27/09	1532
04					
05					
06					
07					
08					
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FORM V SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_003

Instrument ID: BNA1 Calibration Date: 11/27/09 Time: 1420

Lab File ID: SEQ-CCV1 Init. Calib. Date(s): 11/04/09 11/21/09

Init. Calib. Times: 0923 1640

COMPOUND	$\overline{RRF}$	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acetophenone	1.649	1.270	50.00	38.50		AVRG	-23.0	
Atrazine	0.203	0.057	50.00	13.94		AVRG	-72.1	
Benzaldehyde	1.280	0.985	50.00	38.47		AVRG	-23.1	
bis(2-Chloroethoxy)methane	0.507	0.455	50.00	44.86		AVRG	-10.3	
1,1'-Biphenyl	1.446	1.485	50.00	51.38		AVRG	2.8	
bis(2-Chloroethyl)ether	1.428	1.539	50.00	53.86		AVRG	7.7	
2,2-Oxybis(1-chloropropane)	2.575	1.762	50.00	39.82		2ORDR	-20.4	
Bis(2-ethylhexyl)phthalate	1.275	1.201	50.00	47.08		AVRG	-5.8	
4-Bromophenyl-phenylether	0.208	0.209	50.00	50.06		AVRG	0.1	
Butylbenzylphthalate	0.954	0.948	50.00	49.72		AVRG	-0.6	
Caprolactam	0.111	0.146	50.00	65.79		AVRG	31.6	
4-Chloroaniline	0.475	0.450	50.00	47.35		AVRG	-5.3	
Carbazole	0.853	0.838	50.00	49.12		AVRG	-1.8	
4-Chloro-3-methylphenol	0.327	0.319	50.00	48.74		AVRG	-2.5	20.0
2-Chloronaphthalene (beta)	1.083	1.141	50.00	52.68		AVRG	5.4	
2-Chlorophenol	1.285	1.226	50.00	47.72		AVRG	-4.6	
4-Chlorophenyl-phenylether	0.542	0.572	50.00	52.82		AVRG	5.6	
Dibenzofuran	1.556	1.499	50.00	48.16		AVRG	-3.7	
3,3'-Dichlorobenzidine	0.314	0.720	50.00	114.4		AVRG	128.7	
2,4-Dichlorophenol	0.307	0.318	50.00	51.85		AVRG	3.7	20.0
Diethylphthalate	1.349	1.491	50.00	55.24		AVRG	10.5	
2,4-Dimethylphenol	0.384	0.301	50.00	39.21		AVRG	-21.6	
Dimethylphthalate	1.318	1.398	50.00	53.05		AVRG	6.1	
Di-n-butylphthalate	1.461	1.415	50.00	48.40		AVRG	-3.2	
4,6-Dinitro-2-methylphenol	0.110	0.158	50.00	56.34		2ORDR	12.7	
2,4-Dinitrophenol	0.111	0.208	50.00	65.84	0.050	2ORDR	31.7	
2,4-Dinitrotoluene	0.353	0.424	50.00	48.87		LINR	-2.3	
2,6-Dinitrotoluene	0.292	0.368	50.00	53.06		LINR	6.1	
Di-n-octylphthalate	2.700	2.722	50.00	50.39		AVRG	0.8	20.0
Hexachlorobenzene	0.237	0.223	50.00	47.08		AVRG	-5.8	
Hexachlorobutadiene	0.175	0.170	50.00	48.82		AVRG	-2.4	20.0
Hexachlorocyclopentadiene	0.178	0.214	50.00	50.93	0.050	2ORDR	1.9	
Hexachloroethane	0.664	0.640	50.00	48.26		AVRG	-3.5	
Isophorone	0.808	0.704	50.00	43.58		AVRG	-12.8	
4-Methylphenol (p-cresol)	1.225	1.018	50.00	41.54		AVRG	-16.9	
2-Methylphenol (o-cresol)	1.243	1.223	50.00	49.20		AVRG	-1.6	
2-Nitroaniline	0.446	0.455	50.00	50.96		AVRG	1.9	

FORM VII SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_003

Instrument ID: BNA1 Calibration Date: 11/27/09 Time: 1420

Lab File ID: SEQ-CCV1 Init. Calib. Date(s): 11/04/09 11/21/09

Init. Calib. Times: 0923 1640

COMPOUND	$\overline{RRF}$	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
3-Nitroaniline	0.336	0.499	50.00	62.95		2ORDR	25.9	
4-Nitroaniline	0.253	0.398	50.00	62.06		2ORDR	24.1	
Nitrobenzene	0.418	0.389	50.00	46.55		AVRG	-6.9	
2-Nitrophenol	0.223	0.267	50.00	59.84		AVRG	19.7	20.0
4-Nitrophenol	0.262	0.268	50.00	44.71	0.050	2ORDR	-10.6	
N-Nitrosodiphenylamine(1)	0.499	0.505	50.00	50.60		AVRG	1.2	20.0
N-Nitroso-di-n-propylamine	0.955	0.698	50.00	39.78	0.050	2ORDR	-20.4	
Pentachlorophenol	0.138	0.128	50.00	43.28		LINR	-13.4	20.0
Phenol	1.678	1.592	50.00	47.42		AVRG	-5.2	20.0
2,4,5-Trichlorophenol	0.396	0.416	50.00	52.50		AVRG	5.0	
2,4,6-Trichlorophenol	0.370	0.394	50.00	48.04		LINR	-3.9	20.0
2-Fluorophenol	1.553	1.256	100.0	80.87		AVRG	-19.1	
Phenol-d6	1.787	1.487	100.0	83.24		AVRG	-16.8	
Nitrobenzene-d5	0.455	0.424	50.00	46.59		AVRG	-6.8	
2-Fluorobiphenyl	1.263	1.271	50.00	50.32		AVRG	0.6	
2,4,6-Tribromophenol	0.116	0.110	100.0	79.40		LINR	-20.6	
Terphenyl-d14	0.908	0.913	50.00	50.27		AVRG	0.5	

(1) Cannot be separated from Diphenylamine

FORM VII SV

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_003

Lab File ID: SEQ-TUN1 DFTPP Injection Date: 12/03/09

Instrument ID: BNA1 DFTPP Injection Time: 1144

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
51	30.0 - 60.0% of mass 198	43.8	
68	Less than 2.0% of mass 69	0.0	(0.0)1
69	Mass 69 relative abundance	69.9	
70	Less than 2.0% of mass 69	0.1	(0.2)1
127	40.0 - 60.0% of mass 198	48.2	
197	Less than 1.0% of mass 198	0.0	
198	Base Peak, 100% relative abundance	100.0	
199	5.0 to 9.0% of mass 198	6.5	
275	10.0 - 30.0% of mass 198	19.7	
365	Greater than 1.0% of mass 198	2.04	
441	Present, but less than mass 443	8.8	
442	Greater than 40.0% of mass 198	56.9	
443	17.0 - 23.0% of mass 442	11.3	(19.9)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV50PPM	SEQ-CCV1	SEQ-CCV1	12/03/09	1206
02	NTC01-COMPOS	0911196-01	1119601	12/03/09	2212
03					
04					
05					
06					
07					
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22					

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FORM V SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_003

Instrument ID: BNA1 Calibration Date: 12/03/09 Time: 1206

Lab File ID: SEQ-CCV2 Init. Calib. Date(s): 11/04/09 ~~11/21/09~~

Init. Calib. Times: 0923 1640

COMPOUND	$\overline{RRF}$	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acetophenone	1.649	1.290	50.00	39.12		AVRG	-21.8	
Atrazine	0.203	0.188	50.00	46.36		AVRG	-7.3	
Benzaldehyde	1.280	1.001	50.00	39.08		AVRG	-21.8	
bis(2-Chloroethoxy)methane	0.507	0.510	50.00	50.27		AVRG	0.5	
1,1'-Biphenyl	1.446	1.511	50.00	52.25		AVRG	4.5	
bis(2-Chloroethyl)ether	1.428	1.330	50.00	46.55		AVRG	-6.9	
2,2-Oxybis(1-chloropropane)	2.575	1.967	50.00	47.06		2ORDR	-5.9	
Bis(2-ethylhexyl)phthalate	1.275	1.360	50.00	53.32		AVRG	6.6	
4-Bromophenyl-phenylether	0.208	0.238	50.00	57.03		AVRG	14.1	
Butylbenzylphthalate	0.954	1.049	50.00	55.03		AVRG	10.0	
Caprolactam	0.111	0.120	50.00	54.22		AVRG	8.4	
4-Chloroaniline	0.475	0.454	50.00	47.74		AVRG	-4.5	
Carbazole	0.853	1.029	50.00	60.36		AVRG	20.7	
4-Chloro-3-methylphenol	0.327	0.325	50.00	49.65		AVRG	-0.7	20.0
2-Chloronaphthalene (beta)	1.083	1.144	50.00	52.83		AVRG	5.7	
2-Chlorophenol	1.285	1.102	50.00	42.90		AVRG	-14.2	
4-Chlorophenyl-phenylether	0.542	0.507	50.00	46.77		AVRG	-6.4	
Dibenzofuran	1.556	1.468	50.00	47.18		AVRG	-5.6	
3,3'-Dichlorobenzidine	0.314	0.419	50.00	66.58		AVRG	33.2	
2,4-Dichlorophenol	0.307	0.321	50.00	52.43		AVRG	4.9	20.0
Diethylphthalate	1.349	1.492	50.00	55.28		AVRG	10.6	
2,4-Dimethylphenol	0.384	0.299	50.00	38.89		AVRG	-22.2	
Dimethylphthalate	1.318	1.436	50.00	54.48		AVRG	9.0	
Di-n-butylphthalate	1.461	1.604	50.00	54.87		AVRG	9.7	
4,6-Dinitro-2-methylphenol	0.110	0.147	50.00	53.18		2ORDR	6.4	
2,4-Dinitrophenol	0.111	0.174	50.00	57.85	0.050	2ORDR	15.7	
2,4-Dinitrotoluene	0.353	0.423	50.00	48.72		LINR	-2.5	
2,6-Dinitrotoluene	0.292	0.380	50.00	54.81		LINR	9.6	
Di-n-octylphthalate	2.700	2.739	50.00	50.71		AVRG	1.4	20.0
Hexachlorobenzene	0.237	0.250	50.00	52.92		AVRG	5.8	
Hexachlorobutadiene	0.175	0.150	50.00	42.86		AVRG	-14.3	20.0
Hexachlorocyclopentadiene	0.178	0.191	50.00	45.55	0.050	2ORDR	-8.9	
Hexachloroethane	0.664	0.567	50.00	42.70		AVRG	-14.6	
Isophorone	0.808	0.852	50.00	52.74		AVRG	5.5	
4-Methylphenol (p-cresol)	1.225	1.000	50.00	40.82		AVRG	-18.4	
2-Methylphenol (o-cresol)	1.243	1.139	50.00	45.82		AVRG	-8.4	
2-Nitroaniline	0.446	0.527	50.00	58.99		AVRG	18.0	

FORM VII SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_003

Instrument ID: BNA1 Calibration Date: 12/03/09 Time: 1206

Lab File ID: SEQ-CCV2 Init. Calib. Date(s): 11/04/09 11/21/09

Init. Calib. Times: 0923 1640

COMPOUND	$\overline{RRF}$	RRF50	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D	
3-Nitroaniline	0.336	0.486	50.00	61.42		2ORDR	22.8		
4-Nitroaniline	0.253	0.429	50.00	66.36		2ORDR	32.7		
Nitrobenzene	0.418	0.412	50.00	49.41		AVRG	-1.2		
2-Nitrophenol	0.223	0.272	50.00	60.99		AVRG	22.0	20.0	<
4-Nitrophenol	0.262	0.302	50.00	50.44	0.050	2ORDR	0.9		
N-Nitrosodiphenylamine(1)	0.499	0.598	50.00	59.86		AVRG	19.7	20.0	
N-Nitroso-di-n-propylamine	0.955	0.785	50.00	45.86	0.050	2ORDR	-8.3		
Pentachlorophenol	0.138	0.166	50.00	54.17		LINR	8.3	20.0	
Phenol	1.678	1.536	50.00	45.74		AVRG	-8.5	20.0	
2,4,5-Trichlorophenol	0.396	0.390	50.00	49.20		AVRG	-1.6		
2,4,6-Trichlorophenol	0.370	0.374	50.00	45.58		LINR	-8.8	20.0	
2-Fluorophenol	1.553	1.161	100.0	74.75		AVRG	-25.2		
Phenol-d6	1.787	1.409	100.0	78.85		AVRG	-21.1		
Nitrobenzene-d5	0.455	0.454	50.00	49.85		AVRG	-0.3		
2-Fluorobiphenyl	1.263	1.276	50.00	50.51		AVRG	1.0		
2,4,6-Tribromophenol	0.116	0.133	100.0	96.00		LINR	-4.0		
Terphenyl-d14	0.908	1.028	50.00	56.64		AVRG	13.3		

(1) Cannot be separated from Diphenylamine

FORM VII SV

FORM 4
SEMIVOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

9K23034-BLK1

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_003

Lab File ID: K23034B1 Lab Sample ID: 9K23034-BLK1

Instrument ID: BNA1 Date Extracted: 11/24/09

Matrix: (soil/water) SOIL Date Analyzed: 11/27/09

Level:(low/med) LOW GPC Cleanup: (Y/N) N Time Analyzed: 1456

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	9K23034-BLK1	9K23034-BS1	K23034L1	11/27/09
02	NTC01-COMPOS	0911196-01	1119601	12/03/09
03				
04				
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COMMENTS:

page 1 of 1

FORM IV SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

9K23034-BLK1

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_003

Matrix: (soil/water) SOIL Lab Sample ID: 9K23034-BLK1

Sample wt/vol: 15.0 (g/mL) G Lab File ID: K23034B1

% Moisture: 0 decanted: (Y/N) N Date Sampled: _____

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:11/24/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 11/27/09 14:56

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
98-86-2	Acetophenone	41	330		U
1912-24-9	Atrazine	28	330		U
100-52-7	Benzaldehyde	55	330		U
111-91-1	bis(2-Chloroethoxy)methane	31	330		U
92-52-4	1,1'-Biphenyl	29	330		U
111-44-4	bis(2-Chloroethyl)ether	41	330		U
108-60-1	2,2-Oxybis(1-chloropropane)	51	670		U
117-81-7	Bis(2-ethylhexyl)phthalate	36	330		U
101-55-3	4-Bromophenyl-phenylether	26	330		U
85-68-7	Butylbenzylphthalate	30	330		U
105-60-2	Caprolactam	67	330		UY
106-47-8	4-Chloroaniline	48	330		U
86-74-8	Carbazole	36	670		U
59-50-7	4-Chloro-3-methylphenol	28	330		U
91-58-7	2-Chloronaphthalene (beta)	32	330		U
95-57-8	2-Chlorophenol	41	330		U
7005-72-3	4-Chlorophenyl-phenylether	31	330		U
132-64-9	Dibenzofuran	24	330		U
91-94-1	3,3'-Dichlorobenzidine	31	330		U
120-83-2	2,4-Dichlorophenol	19	330		U
84-66-2	Diethylphthalate	34	330	140	J
105-67-9	2,4-Dimethylphenol	21	670		U
131-11-3	Dimethylphthalate	30	330		U
84-74-2	Di-n-butylphthalate	30	330		U
534-52-1	4,6-Dinitro-2-methylphenol	22	1300		U
51-28-5	2,4-Dinitrophenol	130	3300		U
121-14-2	2,4-Dinitrotoluene	24	330		U
606-20-2	2,6-Dinitrotoluene	38	330		U
117-84-0	Di-n-octylphthalate	27	330		U
118-74-1	Hexachlorobenzene	35	330		U
87-68-3	Hexachlorobutadiene	33	330		U
77-47-4	Hexachlorocyclopentadiene	61	330		U
67-72-1	Hexachloroethane	39	670		U

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

9K23034-BLK1

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_003

Matrix: (soil/water) SOIL Lab Sample ID: 9K23034-BLK1

Sample wt/vol: 15.0 (g/mL) G Lab File ID: K23034B1

% Moisture: 0 decanted: (Y/N) N Date Sampled: _____

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:11/24/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 11/27/09 14:56

Injection Volume: 0.5(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-59-1	Isophorone	28	330		U
106-44-5	4-Methylphenol (p-cresol)	26	330		U
95-48-7	2-Methylphenol (o-cresol)	39	330		U
88-74-4	2-Nitroaniline	32	1300		U
99-09-2	3-Nitroaniline	47	1300		U
100-01-6	4-Nitroaniline	100	1300		U
98-95-3	Nitrobenzene	34	330		U
88-75-5	2-Nitrophenol	22	330		U
100-02-7	4-Nitrophenol	81	1300		U
86-30-6	N-Nitrosodiphenylamine (1)	32	330		U
621-64-7	N-Nitroso-di-n-propylamine	55	330		U
87-86-5	Pentachlorophenol	34	1300		U
108-95-2	Phenol	36	330		U
95-95-4	2,4,5-Trichlorophenol	27	330		U
88-06-2	2,4,6-Trichlorophenol	35	330		U

(1) - Cannot be separated from Diphenylamine

FORM I SV

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA57943

Lab File ID: DF1112B1 DFTPP Injection Date: 11/12/09

Instrument ID: BNA4 DFTPP Injection Time: 1524

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	42.1
68	Less than 2.0% of mass 69	0.8 (1.6)1
69	Mass 69 relative abundance	48.6
70	Less than 2.0% of mass 69	0.2 (0.5)1
127	40.0 - 60.0% of mass 198	54.8
197	Less than 1.0% of mass 198	0.5
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.0
275	10.0 - 30.0% of mass 198	21.8
365	Greater than 1.0% of mass 198	2.27
441	Present, but less than mass 443	9.8
442	Greater than 40.0% of mass 198	60.7
443	17.0 - 23.0% of mass 442	12.6 (20.7)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CA0.05PPM	SEQ-CAL2	CAL2	11/12/09	1543
02	CA0.1PPM	SEQ-CAL3	CAL3	11/12/09	1616
03	CA0.25PPM	SEQ-CAL4	CAL4	11/12/09	1650
04	CA0.5PPM	SEQ-CAL5	CAL5	11/12/09	1724
05	CA1PPM	SEQ-CAL6	CAL6	11/12/09	1758
06	CA2PPM	SEQ-CAL7	CAL7	11/12/09	1832
07	CA5PPM	SEQ-CAL8	CAL8	11/12/09	1906
08	CA10PPM	SEQ-CAL9	CAL9	11/12/09	1940
09	CA20PPM	SEQ-CALA	CAL10	11/12/09	2014
10	CA40PPM	SEQ-CALB	CAL11	11/12/09	2048
11	CA50PPM	SEQ-CALC	CAL12	11/12/09	2122
12	ICV5PPM	ICV5PPM	ICV1	11/12/09	2155
13					
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page 1 of 1

FORM V SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA60637

Instrument ID: BNA4 Calibration Date(s): 11/09/09 11/12/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 1046 2122

RF50: CAL12

COMPOUND	RF50	CURVE	COEFFICENTS A0	A1	%RSD OR R^2
Acenaphthene	0.674	AVRG		0.74579723	3.3
Acenaphthylene	0.920	AVRG		0.99965749	4.5
Anthracene	0.915	AVRG		0.99484542	3.9
Benzo(a)anthracene	0.840	AVRG		0.75815117	9.6
Benzo(b)fluoranthene	1.210	AVRG		1.17686358	5.8
Benzo(k)fluoranthene	0.994	AVRG		1.16945129	7.1
Benzo(g,h,i)perylene	0.878	AVRG		0.86504517	8.2
Benzo(a)pyrene	0.938	AVRG		0.95923504	5.0
Chrysene	0.724	AVRG		0.73241487	6.7
Dibenz(a,h)anthracene	0.866	AVRG		0.76472942	14.4
Fluoranthene	0.970	AVRG		1.03029443	4.0
Fluorene	0.696	AVRG		0.74573736	2.8
Hexachlorobenzene	0.286	AVRG		0.30903327	3.4
Hexachlorobutadiene	0.217	AVRG		0.23753640	4.0
Hexachlorocyclopentadiene	0.131	AVRG		0.12090964	14.0
Indeno(1,2,3-cd)pyrene	0.888	AVRG		0.77150058	14.3
Isophorone	0.634	AVRG		0.62905814	5.8
1-Methylnaphthalene	0.644	AVRG		0.74077824	4.8
2-Methylnaphthalene	0.704	AVRG		0.80094250	4.6
Naphthalene	1.028	AVRG		1.22403293	6.2
N-Nitroso-di-n-propylamine	0.240	AVRG		0.24733956	10.3
Pentachlorophenol	0.174	LINR	0.94236763	0.17808340	0.999
Phenanthrene	0.981	AVRG		1.06434403	3.6
Pyrene	0.976	AVRG		1.03802662	4.1
2-Fluorobiphenyl	0.757	AVRG		0.86559870	4.5
2,4,6-Tribromophenol	0.160	AVRG		0.14864176	14.0
Terphenyl-d14	0.711	AVRG		0.77694300	6.1

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA60637

Instrument ID: BNA4 Calibration Date(s): 11/09/09 11/12/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 1046 2122

LAB FILE ID: RF0.05: CAL2 RF0.1: CAL3 RF0.25: CAL4
RF0.5: CAL5 RF1: CAL6

COMPOUND	RF0.05	RF0.1	RF0.25	RF0.5	RF1
Acenaphthene	0.754	0.750	0.769	0.757	0.737
Acenaphthylene	0.961	0.951	0.991	0.995	0.984
Anthracene	1.002	0.958	1.010	1.017	0.986
Benzo(a)anthracene	0.716	0.652	0.669	0.731	0.714
Benzo(b)fluoranthene	1.130	1.074	1.127	1.142	1.115
Benzo(k)fluoranthene	1.255	1.209	1.177	1.185	1.159
Benzo(g,h,i)perylene	0.845	0.781	0.776	0.858	0.812
Benzo(a)pyrene	0.918	0.928	0.917	0.952	0.908
Chrysene	0.682	0.660	0.680	0.763	0.722
Dibenz(a,h)anthracene	0.665	0.628	0.640	0.720	0.703
Fluoranthene	1.064	0.989	1.020	1.034	1.019
Fluorene	0.748	0.732	0.758	0.751	0.733
Hexachlorobenzene	0.308	0.310	0.321	0.324	0.306
Hexachlorobutadiene	0.225	0.238	0.240	0.240	0.234
Hexachlorocyclopentadiene			0.092	0.108	0.106
Indeno(1,2,3-cd)pyrene	0.642	0.680	0.650	0.715	0.695
Isophorone	0.562	0.613	0.614	0.613	0.604
1-Methylnaphthalene	0.765	0.764	0.783	0.748	0.738
2-Methylnaphthalene	0.836	0.781	0.840	0.802	0.796
Naphthalene	1.348	1.226	1.262	1.262	1.214
N-Nitroso-di-n-propylamine	0.187	0.214	0.263	0.246	0.251
Pentachlorophenol				0.067	0.080
Phenanthrene	1.110	1.049	1.102	1.089	1.054
Pyrene	1.024	1.010	1.044	1.053	1.023
2-Fluorobiphenyl	0.840	0.872	0.901	0.890	0.874
2,4,6-Tribromophenol			0.112	0.126	0.133
Terphenyl-d14	0.801	0.792	0.839	0.848	0.737

FORM VI SV

FORM 6
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA60637

Instrument ID: BNA4 Calibration Date(s): 11/09/09 11/12/09

Column: FUSED SILICA ID: 0.25 (mm) Calibration Time(s): 1046 2122

LAB FILE ID: RF2: CAL7 RF5: CAL8 RF10: CAL9
RF20: CAL10 RF40: CAL11

COMPOUND	RF2	RF5	RF10	RF20	RF40
Acenaphthene	0.746	0.758	0.756	0.748	0.754
Acenaphthylene	1.002	1.056	1.062	1.032	1.043
Anthracene	1.008	1.057	1.039	0.981	0.970
Benzo(a)anthracene	0.742	0.830	0.817	0.752	0.875
Benzo(b)fluoranthene	1.156	1.266	1.271	1.183	1.270
Benzo(k)fluoranthene	1.168	1.288	1.226	1.139	1.062
Benzo(g,h,i)perylene	0.795	0.903	0.977	0.936	0.954
Benzo(a)pyrene	0.936	1.028	1.049	0.990	0.986
Chrysene	0.741	0.813	0.787	0.704	0.778
Dibenz(a,h)anthracene	0.683	0.820	0.878	0.889	0.918
Fluoranthene	1.047	1.100	1.090	0.990	1.011
Fluorene	0.741	0.777	0.761	0.748	0.757
Hexachlorobenzene	0.304	0.320	0.311	0.303	0.305
Hexachlorobutadiene	0.238	0.240	0.243	0.244	0.253
Hexachlorocyclopentadiene	0.116	0.128	0.127	0.137	0.144
Indeno(1,2,3-cd)pyrene	0.700	0.810	0.892	0.878	0.936
Isophorone	0.617	0.648	0.651	0.658	0.705
1-Methylnaphthalene	0.737	0.759	0.742	0.730	0.739
2-Methylnaphthalene	0.795	0.826	0.814	0.807	0.808
Naphthalene	1.218	1.248	1.234	1.211	1.214
N-Nitroso-di-n-propylamine	0.260	0.264	0.261	0.263	0.272
Pentachlorophenol	0.101	0.136	0.151	0.162	0.178
Phenanthrene	1.069	1.103	1.084	1.039	1.028
Pyrene	1.053	1.118	1.100	0.989	1.029
2-Fluorobiphenyl	0.882	0.881	0.877	0.868	0.878
2,4,6-Tribromophenol	0.145	0.161	0.166	0.167	0.169
Terphenyl-d14	0.758	0.802	0.799	0.715	0.743

FORM VI SV

SEMIVOLATILE INITIAL CALIBRATION VERIFICATION

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA60637

Instrument ID: BNA4 Calibration Date: 11/12/09 Time: 2155

Lab File ID: ICV1 Init. Calib. Date(s): 11/09/09 11/12/09

Init. Calib. Times: 1046 2122

COMPOUND	$\overline{RRF}$	RRF5	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acenaphthene	0.746	0.759	5.000	5.088		AVRG	1.8	25.0
Acenaphthylene	1.000	0.930	5.000	4.650		AVRG	-7.0	25.0
Anthracene	0.995	1.056	5.000	5.306		AVRG	6.1	25.0
Benzo(a)anthracene	0.758	0.870	5.000	5.736		AVRG	14.7	25.0
Benzo(b)fluoranthene	1.177	1.245	5.000	5.289		AVRG	5.8	25.0
Benzo(k)fluoranthene	1.169	1.273	5.000	5.441		AVRG	8.8	25.0
Benzo(g,h,i)perylene	0.865	0.855	5.000	4.944		AVRG	-1.1	25.0
Benzo(a)pyrene	0.959	0.994	5.000	5.183		AVRG	3.7	25.0
Chrysene	0.732	0.847	5.000	5.780		AVRG	15.6	25.0
Dibenz(a,h)anthracene	0.764	0.792	5.000	5.176		AVRG	3.5	25.0
Fluoranthene	1.030	1.128	5.000	5.472		AVRG	9.4	25.0
Fluorene	0.746	0.773	5.000	5.185		AVRG	3.7	25.0
Hexachlorobenzene	0.309	0.314	5.000	5.073		AVRG	1.4	25.0
Hexachlorobutadiene	0.237	0.257	5.000	5.402		AVRG	8.0	25.0
Hexachlorocyclopentadiene	0.121	0.145	5.000	6.013	0.050	AVRG	20.2	25.0
Indeno(1,2,3-cd)pyrene	0.771	0.793	5.000	5.140		AVRG	2.8	25.0
Isophorone	0.629	0.757	5.000	6.019		AVRG	20.4	25.0
1-Methylnaphthalene	0.741	0.665	5.000	4.490		AVRG	-10.2	25.0
2-Methylnaphthalene	0.801	0.761	5.000	4.750		AVRG	-5.0	25.0
Naphthalene	1.224	1.190	5.000	4.862		AVRG	-2.8	25.0
N-Nitroso-di-n-propylamine	0.247	0.287	5.000	5.808	0.050	AVRG	16.2	25.0
Pentachlorophenol	0.131	0.138	5.000	4.823		LINR	-3.5	25.0
Phenanthrene	1.064	1.096	5.000	5.149		AVRG	3.0	25.0
Pyrene	1.038	1.146	5.000	5.519		AVRG	10.4	25.0

ICV SV

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_003

Lab File ID: SEQ-TUN1 DFTPP Injection Date: 11/25/09

Instrument ID: BNA4 DFTPP Injection Time: 1042

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	42.1
68	Less than 2.0% of mass 69	0.8 (1.6)1
69	Mass 69 relative abundance	48.4
70	Less than 2.0% of mass 69	0.2 (0.5)1
127	40.0 - 60.0% of mass 198	54.2
197	Less than 1.0% of mass 198	0.5
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.1
275	10.0 - 30.0% of mass 198	21.9
365	Greater than 1.0% of mass 198	2.23
441	Present, but less than mass 443	10.6
442	Greater than 40.0% of mass 198	65.3
443	17.0 - 23.0% of mass 442	13.1 (20.1)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CCV5PPM	SEQ-CCV1	SEQ-CCV1	11/25/09	1101
02	9K23034-BLK2	9K23034-BS2	K23034L2	11/25/09	1136
03	9K23034-BLK2	9K23034-BLK2	K23034B2	11/25/09	1209
04	NTC01-COMPOS	0911196-01	1119601	11/25/09	1641
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

page 1 of 1

FORM V SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_003

Instrument ID: BNA4 Calibration Date: 11/25/09 Time: 1101

Lab File ID: SEQ-CCV1 Init. Calib. Date(s): 11/09/09 11/12/09

Init. Calib. Times: 1046 2122

COMPOUND	$\overline{RRF}$	RRF5	CURVE AMOUNT	CCAL AMOUNT	MIN RRF	CURVE	%D	MAX %D
Acenaphthene	0.746	0.726	5.000	4.864		AVRG	-2.7	20.0
Acenaphthylene	1.000	0.944	5.000	4.722		AVRG	-5.6	20.0
Anthracene	0.995	1.094	5.000	5.499		AVRG	10.0	20.0
Benzo(a)anthracene	0.758	0.939	5.000	6.196		AVRG	23.9	20.0
Benzo(b)fluoranthene	1.177	1.201	5.000	5.103		AVRG	2.0	20.0
Benzo(k)fluoranthene	1.169	1.179	5.000	5.040		AVRG	0.8	20.0
Benzo(g,h,i)perylene	0.865	0.877	5.000	5.070		AVRG	1.4	20.0
Benzo(a)pyrene	0.959	0.995	5.000	5.185		AVRG	3.7	20.0
Chrysene	0.732	0.890	5.000	6.073		AVRG	21.5	20.0
Dibenz(a,h)anthracene	0.764	0.698	5.000	4.566		AVRG	-8.7	20.0
Fluoranthene	1.030	1.192	5.000	5.784		AVRG	15.7	20.0
Fluorene	0.746	0.741	5.000	4.966		AVRG	-0.7	20.0
Indeno(1,2,3-cd)pyrene	0.771	0.749	5.000	4.855		AVRG	-2.9	20.0
2-Methylnaphthalene	0.801	0.781	5.000	4.877		AVRG	-2.4	20.0
Naphthalene	1.224	1.164	5.000	4.755		AVRG	-4.9	20.0
Phenanthrene	1.064	1.086	5.000	5.103		AVRG	2.1	20.0
Pyrene	1.038	1.221	5.000	5.881		AVRG	17.6	20.0
2-Fluorobiphenyl	0.865	0.847	5.000	4.892		AVRG	-2.2	
Terphenyl-d14	0.777	0.879	5.000	5.659		AVRG	13.2	

FORM VII SV

FORM 4
SEMIVOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

9K23034-BLK2

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_003

Lab File ID: K23034B2 Lab Sample ID: 9K23034-BLK2

Instrument ID: BNA4 Date Extracted: 11/24/09

Matrix: (soil/water) SOIL Date Analyzed: 11/25/09

Level:(low/med) LOW GPC Cleanup: (Y/N) N Time Analyzed: 1209

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	9K23034-BLK2	9K23034-BS2	K23034L2	11/25/09
02	NTC01-COMPOS	0911196-01	1119601	11/25/09
03				
04				
05				
06				
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COMMENTS:

page 1 of 1

FORM IV SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

9K23034-BLK2

Lab Name: EMPIRICAL LABS Contract: TETRATECH

Lab Code: NA Case No.: NA SAS No.: NA SDG No.: CTO064_003

Matrix: (soil/water) SOIL Lab Sample ID: 9K23034-BLK2

Sample wt/vol: 15.0 (g/mL) G Lab File ID: K23034B2

% Moisture: 0 decanted: (Y/N) N Date Sampled: _____

Extraction: (SepF/Cont/Sonc/Soxh) SOXH Date Extracted:11/24/09

Concentrated Extract Volume: 1000.0(uL) Date Analyzed: 11/25/09 12:09

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
83-32-9	Acenaphthene	1.3	4.0		U
208-96-8	Acenaphthylene	1.3	4.0		U
120-12-7	Anthracene	1.3	4.0		U
56-55-3	Benzo(a)anthracene	1.3	4.0		U
205-99-2	Benzo(b)fluoranthene	1.3	4.0		U
207-08-9	Benzo(k)fluoranthene	1.3	4.0		U
191-24-2	Benzo(g,h,i)perylene	1.3	4.0		U
50-32-8	Benzo(a)pyrene	1.3	4.0		U
218-01-9	Chrysene	1.3	4.0		U
53-70-3	Dibenz(a,h)anthracene	1.3	4.0		U
206-44-0	Fluoranthene	1.3	4.0		U
86-73-7	Fluorene	1.3	4.0		U
193-39-5	Indeno(1,2,3-cd)pyrene	1.3	4.0		U
91-57-6	2-Methylnaphthalene	1.3	4.0		U
91-20-3	Naphthalene	1.3	4.0		U
85-01-8	Phenanthrene	1.3	4.0		U
129-00-0	Pyrene	1.3	4.0		U

FORM I SV

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**B. CUMMINGS**	**DATE:**	**DECEMBER 28, 2009**
FROM:	**LEANNE M. GANSER**	**COPIES:**	**DV FILE**

SUBJECT: **LIMITED INORGANIC DATA VALIDATION – METALS**
NTC GREAT LAKES CTO C064
SAMPLE DELIVERY GROUP (SDG) – CTO064_003

SAMPLES:

1/Soil/Metals/

NTC01-Composite

Overview

The sample set for NTC Great Lakes CTO C064, SDG CTO064_003, consists of one (1) environmental soil sample.

NTC01-Composite was analyzed for total target analyte list (TAL) metals. The sample was collected by Tetra Tech NUS on November 18, 2009 and analyzed by Empirical Laboratories, LLC. Metals analyses were conducted using SW-846 methods 6010B. Mercury analyses were conducted using SW-846 method 7471A.

These data were evaluated based on the following parameters:

* • Data Completeness
* • Holding Times
• Initial and Continuing Calibrations
* • Laboratory Method / Preparation Blanks
* • Detection Limits

* - All quality control criteria were met for this parameter.

Qualified (if applicable) analytical results are summarized in Appendix A. Results as reported by the laboratory are presented in Appendix B. Appendix C contains the documentation to support the findings as discussed in this validation report.

Initial and Continuing Calibrations

The continuing calibration percent recovery on 12/08/2009 at 03:46, instrument ME-ICP for chromium was < 90% quality control limit affecting sample NTC01-Composite in batch 9L34212. The positive result for chromium was qualified as estimated, "J" in sample NTC01-Composite.

Notes

Nondetected results were reported at the reporting limit by the laboratory in the EDD. The results were modified by the reviewer to reflect the minimum detection limit.

Executive Summary

Laboratory Performance: Calibration noncompliance was noted for chromium.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Review", October 2004 and the DOD document entitled "Quality System Manual (QSM) for Environmental Laboratories" (Jan 2006).

The text of this report has been formulated to address only those problem areas affecting data quality.

Tetra Tech NUS
Leanne M. Ganser
Environmental Scientist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A
QUALIFIED ANALYTICAL RESULTS

Data Validation Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (e.g. % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS-GFAA MSA's r < 0.995 / ICP PDS Recovery Noncompliance
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (e.g. base-line drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; e.g. chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient r < 0.995
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is greater than sample activity

PROJ_NO: 01797	NSAMPLE	NTC01-Composite		
SDG: CTO064_003	LAB_ID	0911196-01		
FRACTION: M	SAMP_DATE	11/18/2009		
MEDIA: SOIL	QC_TYPE	NM		
	UNITS	MG/KG		
	PCT_SOLIDS	83.5		
	DUP_OF			
PARAMETER		RESULT	VQL	QLCD
ALUMINUM		11100		
ANTIMONY		0.286	U	
ARSENIC		8.34		
BARIUM		68.9		
BERYLLIUM		0.617		
CADMIUM		0.115	U	
CALCIUM		72500		
CHROMIUM		17.8	J	C
COBALT		12.9		
COPPER		25		
IRON		20900		
LEAD		12.7		
MAGNESIUM		34500		
MANGANESE		462		
MERCURY		0.0741		
NICKEL		30.4		
POTASSIUM		2980		
SELENIUM		0.172	U	
SILVER		0.0573	U	
SODIUM		207		
THALLIUM		0.229	U	
VANADIUM		20.3		
ZINC		55		

APPENDIX B
RESULTS AS REPORTED BY THE LABORATORY

ANALYSIS DATA SHEET

NTC01-Composite

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Soil
Sampled: 11/18/09 09:30
% Solids: 83.51

SDG: CTO064_003
Project: Great Lakes CTO 064 (Site 21)
Laboratory ID: 0911196-01
Received: 11/20/09 08:15

CAS NO.	Analyte	Concentration (mg/Kg dry)	MDL	RL	Dilution Factor	Q	Method	Batch	Analyzed
7439-97-6	Mercury	0.0741	0.0161	0.0409	1		SW7471A	9K30923	12/01/09 08:55
7429-90-5	Aluminum	11100	14.3	57.3	5	D	SW6010B	9L02006	12/08/09 04:28
7440-36-0	Antimony		0.286	0.859	1	U	SW6010B	9L02006	12/03/09 17:41
7440-38-2	Arsenic	8.34	0.172	0.286	1		SW6010B	9L02006	12/03/09 17:41
7440-39-3	Barium	68.9	0.286	2.29	1		SW6010B	9L02006	12/03/09 17:41
7440-41-7	Beryllium	0.617	0.0573	0.286	1		SW6010B	9L02006	12/03/09 17:41
7440-43-9	Cadmium		0.115	0.573	2	U	SW6010B	9L02006	12/08/09 04:33
7440-70-2	Calcium	72500	286	1430	5	D	SW6010B	9L02006	12/08/09 04:28
7440-47-3	Chromium	17.8	0.229	0.573	2	D	SW6010B	9L02006	12/08/09 04:33
7440-48-4	Cobalt	12.9	0.286	0.716	1		SW6010B	9L02006	12/03/09 17:41
7440-50-8	Copper	25.0	0.286	0.573	1		SW6010B	9L02006	12/03/09 17:41
7439-89-6	Iron	20900	1.72	5.73	1		SW6010B	9L02006	12/03/09 17:41
7439-92-1	Lead	12.7	0.430	0.859	5	D	SW6010B	9L02006	12/09/09 14:29
7439-95-4	Magnesium	34500	115	573	2	D	SW6010B	9L02006	12/08/09 04:33
7439-96-5	Manganese	462	0.172	0.859	1		SW6010B	9L02006	12/03/09 17:41
7440-02-0	Nickel	30.4	0.286	0.573	1		SW6010B	9L02006	12/03/09 17:41
7440-09-7	Potassium	2980	57.3	286	1		SW6010B	9L02006	12/03/09 17:41
7782-49-2	Selenium		0.172	0.286	1	U	SW6010B	9L02006	12/03/09 17:41
7440-22-4	Silver		0.0573	0.286	1	U	SW6010B	9L02006	12/03/09 17:41
7440-23-5	Sodium	207	57.3	286	1	J	SW6010B	9L02006	12/03/09 17:41
7440-28-0	Thallium		0.229	0.458	1	U	SW6010B	9L02006	12/03/09 17:41
7440-62-2	Vanadium	20.3	0.286	0.716	1		SW6010B	9L02006	12/03/09 17:41
7440-66-6	Zinc	55.0	1.43	5.73	5	D	SW6010B	9L02006	12/09/09 14:29

APPENDIX C
SUPPORT DOCUMENTATION

HOLDTIME

SDG CTO064_003

SORT	UNITS	NSAMPLE	LAB_ID	QC_TYPE	SAMP_DATE	EXTR_DATE	ANAL_DATE	SMP_EXTR	EXTR_ANL	SMP_ANL
HG	MG/KG	NTC01-Composite	0911196-01	NM	11/18/2009	11/30/2009	12/01/2009	12.08	0.899	12.98
M	MG/KG	NTC01-Composite	0911196-01RE3	NM	11/18/2009	12/02/2009	12/09/2009	14.04	7.169	21.21
M	MG/KG	NTC01-Composite	0911196-01RE2	NM	11/18/2009	12/02/2009	12/08/2009	14.04	5.755	19.79
M	MG/KG	NTC01-Composite	0911196-01RE1	NM	11/18/2009	12/02/2009	12/08/2009	14.04	5.751	19.79
M	MG/KG	NTC01-Composite	0911196-01	NM	11/18/2009	12/02/2009	12/03/2009	14.04	1.302	15.34
OS	%	NTC01-Composite	0911196-01	NM	11/18/2009	11/24/2009	12/03/2009	6.076	9.453	15.53
OS	%	NTC01-Composite	0911196-01	NM	11/18/2009	11/24/2009	11/25/2009	6.076	1.223	7.299
OS	UG/KG	NTC01-Composite	0911196-01	NM	11/18/2009	11/24/2009	12/03/2009	6.076	9.453	15.53
OS	UG/KG	NTC01-Composite	0911196-01	NM	11/18/2009	11/24/2009	11/25/2009	6.076	1.223	7.299
OV	%	NTC01-TB111809-01	0911196-02	NM	11/18/2009	11/24/2009	11/24/2009	6.551	0	6.551
OV	%	NTC01-Composite	0911196-01	NM	11/18/2009	11/25/2009	11/25/2009	7.091	0	7.091
OV	UG/KG	NTC01-Composite	0911196-01	NM	11/18/2009	11/25/2009	11/25/2009	7.091	0	7.091
OV	UG/L	NTC01-TB111809-01	0911196-02	NM	11/18/2009	11/24/2009	11/24/2009	6.551	0	6.551

limits of 90 to 110% for barium at 82.4, 84.9 and 85.1%, and CCVA was out of the specification limits for chromium at 88.9%. None of these CCVs impacted barium. CCVA impacted the sample for chromium.

B. **Blanks:** All blank criteria were met.

C. **Spikes:** All matrix spikes quality control criteria were met.

D. **Duplicates:** All duplicate quality control criteria were met.

E. **Samples:** All sample analysis proceeded normally with the following exceptions: Some metal concentrations were over the linear range which necessitated dilution. When these metals have IEC's for other metals those metals have to be reported from the diluted aliquot so that the IEC can be calculated correctly.

F. **Laboratory Control Samples:** All percent recovery quality control criteria were met.

G. **Serial Dilution:** All serial dilution quality control criteria were met.

EMPIRICAL LABORATORIES, LLC - CHAIN OF CUSTODY RECORD

SHIP TO: 621 Mainstream Drive, Suite 270 ♦ Nashville, TN 37228 ♦ 615-345-1115 ♦ (fax) 615-846-5426

8212

Send Results to:
Name Bob Davis
Company THMS
Address 601 Andersen Dr.
City Pgh
State, Zip PA, 15220
Phone 412-921-7090
Fax
E-mail Robert.Davis@Thmatech.com

Send Invoice to:
Name Same
Company
Address
City
State, Zip
Phone
Fax
E-mail

Project No./Name:

Sampler's (Signature):

Analysis Requirements: TAL VOC, SVOC, RCRA 8 metals

Lab Use Only:

VOA Headspace	Y	N	NA
Field Filtered	Y	N	NA
Correct Containers	Y	N	NA
Discrepancies	Y	N	NA
Cust. Seals Intact	Y	N	NA
Containers Intact	Y	N	NA

Airbill #: 8631 2526 9652 021

CAR #: —

Lab Use Only Lab #	Date/Time Sampled	Sample Description	Sample Matrix	TAL VOC	SVOC	RCRA 8 metals	Comments	No. of Bottles	Lab Use Only Containers/Pres.
0911196-01	11/18/09 0930	NTC01-composite	~~SOIL~~ 1	4	2	1		8	3S-0, 1U 3M
-02	11/18/09 0800	NTC01-TB111809-01	Aq	1				1	1S-HY

Sample Kit Prep'd by: (Signature)	Date/Time	Received By: (Signature)
	11/19/09 1530	
Relinquished by: (Signature)	**Date/Time**	**Received By: (Signature)**
	11/19/09 1600	
Relinquished by: (Signature)	**Date/Time**	**Received By: (Signature)**
Received for Laboratory by: (Signature)	***Date/Time***	***Temperature***
	11/20/09 08:15	0.4°C

REMARKS:

Details:
Page _____ of _____
Cooler No. ____ of _____
Date Shipped _____
Shipped By _____
Turnaround _____

Distribution: Original and yellow copies accompany sample shipment to laboratory; Pink retained by samplers.

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0911196 Number of Coolers: 1 of 1

Client: Tetra Tech NUS Project: CTO-064

Date/Time Received: **11/20/09 08:15** Date cooler(s) opened: **11/20/09**

Opened By (print): **WILLIAM SCHWAB** (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered

EL Courier Other: _____

If applicable, enter airbill number here: 9652

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 1 Seal date: 11/19/09 Seal Initials: _____

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... Yes No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... Yes No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... Yes No N/A
7. Was project identifiable from custody papers? ..... Yes No N/A
8. If required, was enough ice present in the cooler(s)? ..... Yes No N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 0.4°C

Dates samples were logged-in: **11/20/09**

9. Initial this form to acknowledge login of sample(s): (Name): Will Schwab (Initial): ws

10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

ANALYSIS SEQUENCE SUMMARY
SW6010B

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_003
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9L33812	Instrument:	ME-ICP
Calibration:	9338008		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	9L33812-CAL1	120309A-001	12/03/09 11:10
Cal Standard	9L33812-CAL2	120309A-002	12/03/09 11:15
Cal Standard	9L33812-CAL3	120309A-003	12/03/09 11:21
Cal Standard	9L33812-CAL4	120309A-004	12/03/09 11:26
Cal Standard	9L33812-CAL5	120309A-005	12/03/09 11:32
Cal Standard	9L33812-CAL6	120309A-006	12/03/09 11:38
Cal Standard	9L33812-CAL7	120309A-007	12/03/09 11:46
Cal Standard	9L33812-CAL8	120309A-008	12/03/09 11:51
Cal Standard	9L33812-CAL9	120309A-009	12/03/09 11:56
Initial Cal Check	9L33812-ICV1	120309B-001	12/03/09 12:29
Initial Cal Blank	9L33812-ICB1	120309B-002	12/03/09 12:36
Instrument RL Check	9L33812-CRL1	120309B-003	12/03/09 12:41
Instrument RL Check	9L33812-CRL2	120309B-005	12/03/09 12:51
Instrument RL Check	9L33812-CRL3	120309B-006	12/03/09 12:56
Interference Check A	9L33812-IFA1	120309B-013	12/03/09 13:30
Interference Check B	9L33812-IFB1	120309B-014	12/03/09 13:35
Calibration Check	9L33812-CCV1	120309B-016	12/03/09 13:46
Calibration Blank	9L33812-CCB1	120309B-017	12/03/09 13:53
Calibration Check	9L33812-CCV3	120309C-009	12/03/09 15:42
Calibration Blank	9L33812-CCB3	120309C-010	12/03/09 15:49
Blank	9L02006-BLK1	120309D-001	12/03/09 16:04
LCS	9L02006-BS1	120309D-002	12/03/09 16:09
Calibration Check	9L33812-CCV4	120309D-013	12/03/09 17:02
Calibration Blank	9L33812-CCB4	120309D-014	12/03/09 17:09
NTC01-Composite	0911196-01	120309D-021	12/03/09 17:41
Calibration Check	9L33812-CCV5	120309D-028	12/03/09 18:14
Calibration Blank	9L33812-CCB5	120309D-029	12/03/09 18:22

ANALYSIS SEQUENCE SUMMARY
SW6010B

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_003
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9L34212	Instrument:	ME-ICP
Calibration:	9342006		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	9L34212-CAL1	120709A-001	12/07/09 13:48
Cal Standard	9L34212-CAL2	120709A-002	12/07/09 13:53
Cal Standard	9L34212-CAL3	120709A-003	12/07/09 13:59
Cal Standard	9L34212-CAL4	120709A-004	12/07/09 14:04
Cal Standard	9L34212-CAL5	120709A-005	12/07/09 14:09
Cal Standard	9L34212-CAL6	120709A-006	12/07/09 14:14
Cal Standard	9L34212-CAL7	120709A-007	12/07/09 14:20
Cal Standard	9L34212-CAL8	120709A-008	12/07/09 14:27
Initial Cal Check	9L34212-ICV1	120709B-001	12/07/09 15:04
Initial Cal Blank	9L34212-ICB1	120709B-002	12/07/09 15:14
Instrument RL Check	9L34212-CRL1	120709B-003	12/07/09 15:18
Instrument RL Check	9L34212-CRL2	120709B-004	12/07/09 15:23
Instrument RL Check	9L34212-CRL3	120709B-005	12/07/09 15:28
Interference Check A	9L34212-IFA1	120709B-012	12/07/09 16:02
Interference Check B	9L34212-IFB1	120709B-013	12/07/09 16:07
Calibration Check	9L34212-CCV1	120709B-015	12/07/09 16:18
Calibration Blank	9L34212-CCB1	120709B-016	12/07/09 16:25
Calibration Check	9L34212-CCVA	120709C-128	12/08/09 03:46
Calibration Blank	9L34212-CCBA	120709C-129	12/08/09 03:54
NTC01-Composite	0911196-01RE1 Al, Ca	120709C-136	12/08/09 04:28
NTC01-Composite	0911196-01RE2 Cd, Cr, Mg	120709C-137	12/08/09 04:33
Calibration Check	9L34212-CCVB	120709C-141	12/08/09 04:53
Calibration Blank	9L34212-CCBB	120709C-142	12/08/09 05:00
LCS	9L02006-BS2	120709C-146	12/08/09 05:19
Calibration Check	9L34212-CCVC	120709C-153	12/08/09 05:57
Calibration Blank	9L34212-CCBC	120709C-154	12/08/09 06:04

ANALYSIS SEQUENCE SUMMARY
SW6010B

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_003
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9L34316	Instrument:	ME-ICP
Calibration:	9345002		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	9L34316-CAL1	120909A-001	12/09/09 11:35
Cal Standard	9L34316-CAL2	120909A-002	12/09/09 11:40
Cal Standard	9L34316-CAL3	120909A-003	12/09/09 11:45
Cal Standard	9L34316-CAL6	120909A-006	12/09/09 12:03
Initial Cal Check	9L34316-ICV1	120909B-001	12/09/09 12:56
Initial Cal Blank	9L34316-ICB1	120909B-002	12/09/09 13:04
Instrument RL Check	9L34316-CRL2	120909B-005	12/09/09 13:18
Interference Check A	9L34316-IFA1	120909B-012	12/09/09 13:52
Interference Check B	9L34316-IFB1	120909B-013	12/09/09 13:57
Calibration Check	9L34316-CCV1	120909B-015	12/09/09 14:08
Calibration Blank	9L34316-CCB1	120909B-016	12/09/09 14:15
NTC01-Composite	0911196-01RE3 Pd	Zn 120909B-019	12/09/09 14:29
Calibration Check	9L34316-CCV2	120909B-029	12/09/09 15:17
Calibration Blank	9L34316-CCB2	120909B-030	12/09/09 15:24

ANALYSIS SEQUENCE SUMMARY
SW7471A

Laboratory:	Empirical Laboratories, LLC	SDG:	CTO064_003
Client:	Tetra Tech NUS, Inc. (T010)	Project:	Great Lakes CTO 064 (Site 21)
Sequence:	9L33805	Instrument:	ME-FIMS
Calibration:	9338004		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	9L33805-CAL1	COPY120109S-002	12/01/09 07:27
Cal Standard	9L33805-CAL2	COPY120109S-003	12/01/09 07:28
Cal Standard	9L33805-CAL3	COPY120109S-004	12/01/09 07:29
Cal Standard	9L33805-CAL4	COPY120109S-005	12/01/09 07:30
Cal Standard	9L33805-CAL5	COPY120109S-006	12/01/09 07:31
Cal Standard	9L33805-CAL6	COPY120109S-007	12/01/09 07:33
Cal Standard	9L33805-CAL7	COPY120109S-008	12/01/09 07:34
Cal Standard	9L33805-CAL8	COPY120109S-009	12/01/09 07:35
Initial Cal Check	9L33805-ICV1	COPY120109S-010	12/01/09 07:40
Initial Cal Blank	9L33805-ICB1	COPY120109S-011	12/01/09 07:41
Instrument RL Check	9L33805-CRL1	COPY120109S-012	12/01/09 07:42
Calibration Check	9L33805-CCV1	COPY120109S-022	12/01/09 07:54
Calibration Blank	9L33805-CCB1	COPY120109S-023	12/01/09 07:56
Calibration Check	9L33805-CCV3	COPY120109S-046	12/01/09 08:24
Calibration Blank	9L33805-CCB3	COPY120109S-047	12/01/09 08:26
LCS	9K30923-BS1	COPY120109S-049	12/01/09 08:28
Blank	9K30923-BLK1	COPY120109S-050	12/01/09 08:29
Calibration Check	9L33805-CCV4	COPY120109S-058	12/01/09 08:39
Calibration Blank	9L33805-CCB4	COPY120109S-059	12/01/09 08:40
Calibration Check	9L33805-CCV5	COPY120109S-070	12/01/09 08:53
Calibration Blank	9L33805-CCB5	COPY120109S-071	12/01/09 08:55
NTC01-Composite	0911196-01	COPY120109S-072	12/01/09 08:55
Instrument RL Check	9L33805-CRL2	COPY120109S-074	12/01/09 09:02
Calibration Check	9L33805-CCV6	COPY120109S-075	12/01/09 09:03
Calibration Blank	9L33805-CCB6	COPY120109S-076	12/01/09 09:04

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP

SDG: CTO064_003
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9338008
Sequence: 9L33812

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9L33812-ICV1	Aluminum	10000	10030	100	ug/L	+/- 10.00%
	Antimony	1000	1014	101	ug/L	+/- 10.00%
	Arsenic	1000	985.3	98.5	ug/L	+/- 10.00%
	Barium	1000	1073	107	ug/L	+/- 10.00%
	Beryllium	1000	1022	102	ug/L	+/- 10.00%
	Cadmium	1000	1062	106	ug/L	+/- 10.00%
	Calcium	50000	50080	100	ug/L	+/- 10.00%
	Chromium	1000	998.7	99.9	ug/L	+/- 10.00%
	Cobalt	1000	1002	100	ug/L	+/- 10.00%
	Copper	1000	1011	101	ug/L	+/- 10.00%
	Iron	10000	10470	105	ug/L	+/- 10.00%
	Lead	1000	989.2	98.9	ug/L	+/- 10.00%
	Magnesium	50000	49860	99.7	ug/L	+/- 10.00%
	Manganese	1000	1029	103	ug/L	+/- 10.00%
	Nickel	1000	991.7	99.2	ug/L	+/- 10.00%
	Potassium	10000	10010	100	ug/L	+/- 10.00%
	Selenium	1000	1019	102	ug/L	+/- 10.00%
	Silver	500.0	503.7	101	ug/L	+/- 10.00%
	Sodium	50000	51020	102	ug/L	+/- 10.00%
	Thallium	1000	963.1	96.3	ug/L	+/- 10.00%
	Vanadium	1000	980.5	98.0	ug/L	+/- 10.00%
	Zinc	1000	1004	100	ug/L	+/- 10.00%
9L33812-CCV1	Aluminum	10000	10070	101	ug/L	+/- 10.00%
	Antimony	1000	1038	104	ug/L	+/- 10.00%
	Arsenic	1000	1052	105	ug/L	+/- 10.00%
	Barium	1000	1068	107	ug/L	+/- 10.00%
	Beryllium	1000	1039	104	ug/L	+/- 10.00%
	Cadmium	1000	1080	108	ug/L	+/- 10.00%
	Calcium	50000	49820	99.6	ug/L	+/- 10.00%
	Chromium	1000	1006	101	ug/L	+/- 10.00%
	Cobalt	1000	1017	102	ug/L	+/- 10.00%
	Copper	1000	1026	103	ug/L	+/- 10.00%
	Iron	10000	10450	105	ug/L	+/- 10.00%
	Lead	1000	1025	103	ug/L	+/- 10.00%
	Magnesium	50000	49430	98.9	ug/L	+/- 10.00%
	Manganese	1000	1053	105	ug/L	+/- 10.00%
	Nickel	1000	1025	102	ug/L	+/- 10.00%
	Potassium	10000	10070	101	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP

SDG: CTO064_003
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9338008
Sequence: 9L33812

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9L33812-CCV1	Selenium	1000	1046	105	ug/L	+/- 10.00%
	Silver	500.0	507.1	101	ug/L	+/- 10.00%
	Sodium	50000	50410	101	ug/L	+/- 10.00%
	Thallium	1000	1026	103	ug/L	+/- 10.00%
	Vanadium	1000	996.0	99.6	ug/L	+/- 10.00%
	Zinc	1000	1048	105	ug/L	+/- 10.00%
9L33812-CCV3	Aluminum	10000	10280	103	ug/L	+/- 10.00%
	Antimony	1000	1056	106	ug/L	+/- 10.00%
	Arsenic	1000	1062	106	ug/L	+/- 10.00%
	Barium	1000	1066	107	ug/L	+/- 10.00%
	Beryllium	1000	1048	105	ug/L	+/- 10.00%
	Cadmium	1000	1080	108	ug/L	+/- 10.00%
	Calcium	50000	49650	99.3	ug/L	+/- 10.00%
	Chromium	1000	1028	103	ug/L	+/- 10.00%
	Cobalt	1000	1021	102	ug/L	+/- 10.00%
	Copper	1000	1044	104	ug/L	+/- 10.00%
	Iron	10000	10610	106	ug/L	+/- 10.00%
	Lead	1000	1023	102	ug/L	+/- 10.00%
	Magnesium	50000	49960	99.9	ug/L	+/- 10.00%
	Manganese	1000	1066	107	ug/L	+/- 10.00%
	Nickel	1000	1026	103	ug/L	+/- 10.00%
	Potassium	10000	10380	104	ug/L	+/- 10.00%
	Selenium	1000	1047	105	ug/L	+/- 10.00%
	Silver	500.0	514.3	103	ug/L	+/- 10.00%
	Sodium	50000	52140	104	ug/L	+/- 10.00%
	Thallium	1000	1032	103	ug/L	+/- 10.00%
	Vanadium	1000	1000	100	ug/L	+/- 10.00%
	Zinc	1000	1035	103	ug/L	+/- 10.00%
9L33812-CCV4	Aluminum	10000	10360	104	ug/L	+/- 10.00%
	Antimony	1000	1058	106	ug/L	+/- 10.00%
	Arsenic	1000	1063	106	ug/L	+/- 10.00%
	Barium	1000	1063	106	ug/L	+/- 10.00%
	Beryllium	1000	1032	103	ug/L	+/- 10.00%
	Cadmium	1000	1074	107	ug/L	+/- 10.00%
	Calcium	50000	48440	96.9	ug/L	+/- 10.00%
	Chromium	1000	996.1	99.6	ug/L	+/- 10.00%
	Cobalt	1000	1017	102	ug/L	+/- 10.00%
	Copper	1000	1035	103	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP

SDG: CTO064_003
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9338008
Sequence: 9L33812

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9L33812-CCV4	Iron	10000	10420	104	ug/L	+/- 10.00%
	Lead	1000	1019	102	ug/L	+/- 10.00%
	Magnesium	50000	49380	98.8	ug/L	+/- 10.00%
	Manganese	1000	1036	104	ug/L	+/- 10.00%
	Nickel	1000	1027	103	ug/L	+/- 10.00%
	Potassium	10000	10550	106	ug/L	+/- 10.00%
	Selenium	1000	1053	105	ug/L	+/- 10.00%
	Silver	500.0	505.6	101	ug/L	+/- 10.00%
	Sodium	50000	52730	105	ug/L	+/- 10.00%
	Thallium	1000	1032	103	ug/L	+/- 10.00%
	Vanadium	1000	973.6	97.4	ug/L	+/- 10.00%
	Zinc	1000	1026	103	ug/L	+/- 10.00%
9L33812-CCV5	Aluminum	10000	10180	102	ug/L	+/- 10.00%
	Antimony	1000	1044	104	ug/L	+/- 10.00%
	Arsenic	1000	1053	105	ug/L	+/- 10.00%
	Barium	1000	1052	105	ug/L	+/- 10.00%
	Beryllium	1000	1016	102	ug/L	+/- 10.00%
	Cadmium	1000	1061	106	ug/L	+/- 10.00%
	Calcium	50000	48270	96.5	ug/L	+/- 10.00%
	Chromium	1000	1003	100	ug/L	+/- 10.00%
	Cobalt	1000	1003	100	ug/L	+/- 10.00%
	Copper	1000	1022	102	ug/L	+/- 10.00%
	Iron	10000	10360	104	ug/L	+/- 10.00%
	Lead	1000	1003	100	ug/L	+/- 10.00%
	Magnesium	50000	48610	97.2	ug/L	+/- 10.00%
	Manganese	1000	1027	103	ug/L	+/- 10.00%
	Nickel	1000	1011	101	ug/L	+/- 10.00%
	Potassium	10000	10310	103	ug/L	+/- 10.00%
	Selenium	1000	1042	104	ug/L	+/- 10.00%
	Silver	500.0	507.0	101	ug/L	+/- 10.00%
	Sodium	50000	51090	102	ug/L	+/- 10.00%
	Thallium	1000	1019	102	ug/L	+/- 10.00%
	Vanadium	1000	961.4	96.1	ug/L	+/- 10.00%
	Zinc	1000	1017	102	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP

SDG: CTO064_003
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9342006
Sequence: 9L34212

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9L34212-ICV1	Aluminum	10000	9962	99.6	ug/L	+/- 10.00%
	Barium	1000	1017	102	ug/L	+/- 10.00%
	Cadmium	1000	1044	104	ug/L	+/- 10.00%
	Calcium	50000	49150	98.3	ug/L	+/- 10.00%
	Chromium	1000	974.7	97.5	ug/L	+/- 10.00%
	Magnesium	50000	48020	96.0	ug/L	+/- 10.00%
9L34212-CCV1	Aluminum	10000	9918	99.2	ug/L	+/- 10.00%
	Barium	1000	1027	103	ug/L	+/- 10.00%
	Cadmium	1000	1061	106	ug/L	+/- 10.00%
	Calcium	50000	50940	102	ug/L	+/- 10.00%
	Chromium	1000	1021	102	ug/L	+/- 10.00%
	Magnesium	50000	49530	99.1	ug/L	+/- 10.00%
9L34212-CCVA	Aluminum	10000	9656	96.6	ug/L	+/- 10.00%
	Barium	**1000**	**823.9**	**82.4**	**ug/L**	+/- 10.00%
	Cadmium	1000	1030	103	ug/L	+/- 10.00%
	Calcium	50000	49840	99.7	ug/L	+/- 10.00%
	Chromium	**1000**	**888.7**	**88.9**	**ug/L**	+/- 10.00%
	Magnesium	50000	46670	93.3	ug/L	+/- 10.00%
9L34212-CCVB	Aluminum	10000	9678	96.8	ug/L	+/- 10.00%
	Barium	**1000**	**849.4**	**84.9**	**ug/L**	+/- 10.00%
	Cadmium	1000	1026	103	ug/L	+/- 10.00%
	Calcium	50000	48930	97.9	ug/L	+/- 10.00%
	Chromium	1000	903.1	90.3	ug/L	+/- 10.00%
	Magnesium	50000	46370	92.7	ug/L	+/- 10.00%
9L34212-CCVC	Aluminum	10000	9676	96.8	ug/L	+/- 10.00%
	Barium	**1000**	**850.6**	**85.1**	**ug/L**	+/- 10.00%
	Cadmium	1000	1034	103	ug/L	+/- 10.00%
	Calcium	50000	48580	97.2	ug/L	+/- 10.00%
	Chromium	1000	911.2	91.1	ug/L	+/- 10.00%
	Magnesium	50000	46280	92.6	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP

SDG: CTO064_003
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9345002
Sequence: 9L34316

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9L34316-ICV1	Lead	1000	983.5	98.4	ug/L	+/- 10.00%
	Zinc	1000	992.6	99.3	ug/L	+/- 10.00%
9L34316-CCV1	Lead	1000	974.5	97.4	ug/L	+/- 10.00%
	Zinc	1000	988.6	98.9	ug/L	+/- 10.00%
9L34316-CCV2	Lead	1000	1010	101	ug/L	+/- 10.00%
	Zinc	1000	1018	102	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW7471A

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-FIMS

SDG: CTO064_003
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9338004
Sequence: 9L33805

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
9L33805-ICV1	Mercury	4.000	4.135	103	ug/L	+/- 15.00%
9L33805-CCV1	Mercury	4.000	3.948	98.7	ug/L	+/- 15.00%
9L33805-CCV3	Mercury	2.000	1.939	97.0	ug/L	+/- 15.00%
9L33805-CCV4	Mercury	2.000	1.981	99.0	ug/L	+/- 15.00%
9L33805-CCV5	Mercury	4.000	3.895	97.4	ug/L	+/- 15.00%
9L33805-CCV6	Mercury	4.000	3.936	98.4	ug/L	+/- 15.00%

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP
Sequence: 9L33812

SDG: CTO064_003
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9338008

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9L33812-ICB1	Aluminum	-0.8473	50.0	200	ug/L	U	SW6010B
	Antimony	-1.056	5.00	15.0	ug/L	U	SW6010B
	Arsenic	-0.9216	3.00	5.00	ug/L	U	SW6010B
	Barium	0.1172	5.00	40.0	ug/L	U	SW6010B
	Beryllium	-0.001090	1.00	5.00	ug/L	U	SW6010B
	Cadmium	0.2363	1.00	5.00	ug/L	U	SW6010B
	Calcium	0.1700	1000	5000	ug/L	U	SW6010B
	Chromium	0.2348	2.00	5.00	ug/L	U	SW6010B
	Cobalt	0.2270	5.00	12.5	ug/L	U	SW6010B
	Copper	0.1997	5.00	10.0	ug/L	U	SW6010B
	Iron	-0.1070	30.0	100	ug/L	U	SW6010B
	Lead	0.01638	1.50	3.00	ug/L	U	SW6010B
	Magnesium	-2.530	1000	5000	ug/L	U	SW6010B
	Manganese	0.04190	3.00	15.0	ug/L	U	SW6010B
	Nickel	-0.1469	3.00	10.0	ug/L	U	SW6010B
	Potassium	-3.100	1000	5000	ug/L	U	SW6010B
	Selenium	0.08067	3.00	5.00	ug/L	U	SW6010B
	Silver	-0.03269	1.00	5.00	ug/L	U	SW6010B
	Sodium	-5.440	1000	5000	ug/L	U	SW6010B
	Thallium	0.1471	3.00	8.00	ug/L	U	SW6010B
	Vanadium	0.1155	5.00	12.5	ug/L	U	SW6010B
	Zinc	0.1096	5.00	20.0	ug/L	U	SW6010B
9L33812-CCB1	Aluminum	23.6	50.0	200	ug/L	U	SW6010B
	Antimony	-0.696	5.00	15.0	ug/L	U	SW6010B
	Arsenic	-0.445	3.00	5.00	ug/L	U	SW6010B
	Barium	0.261	5.00	40.0	ug/L	U	SW6010B
	Beryllium	0.393	1.00	5.00	ug/L	U	SW6010B
	Cadmium	0.525	1.00	5.00	ug/L	U	SW6010B
	Calcium	25.3	1000	5000	ug/L	U	SW6010B
	Chromium	0.430	2.00	5.00	ug/L	U	SW6010B
	Cobalt	0.414	5.00	12.5	ug/L	U	SW6010B
	Copper	0.119	5.00	10.0	ug/L	U	SW6010B
	Iron	17.1	30.0	100	ug/L	U	SW6010B

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP
Sequence: 9L33812

SDG: CTO064_003
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9338008

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9L33812-CCB1	Lead	0.516	1.50	3.00	ug/L	U	SW6010B
	Magnesium	25.4	1000	5000	ug/L	U	SW6010B
	Manganese	0.275	3.00	15.0	ug/L	U	SW6010B
	Nickel	0.429	3.00	10.0	ug/L	U	SW6010B
	Potassium	0.290	1000	5000	ug/L	U	SW6010B
	Selenium	-0.329	3.00	5.00	ug/L	U	SW6010B
	Silver	-0.0778	1.00	5.00	ug/L	U	SW6010B
	Sodium	14.7	1000	5000	ug/L	U	SW6010B
	Thallium	0.607	3.00	8.00	ug/L	U	SW6010B
	Vanadium	0.440	5.00	12.5	ug/L	U	SW6010B
	Zinc	0.607	5.00	20.0	ug/L	U	SW6010B
9L33812-CCB3	Aluminum	15.7	50.0	200	ug/L	U	SW6010B
	Antimony	-0.463	5.00	15.0	ug/L	U	SW6010B
	Arsenic	-1.47	3.00	5.00	ug/L	U	SW6010B
	Barium	0.311	5.00	40.0	ug/L	U	SW6010B
	Beryllium	0.0586	1.00	5.00	ug/L	U	SW6010B
	Cadmium	0.260	1.00	5.00	ug/L	U	SW6010B
	Calcium	6.52	1000	5000	ug/L	U	SW6010B
	Chromium	0.543	2.00	5.00	ug/L	U	SW6010B
	Cobalt	0.0413	5.00	12.5	ug/L	U	SW6010B
	Copper	0.0562	5.00	10.0	ug/L	U	SW6010B
	Iron	49.4	30.0	100	ug/L	J	SW6010B
	Lead	0.227	1.50	3.00	ug/L	U	SW6010B
	Magnesium	2.36	1000	5000	ug/L	U	SW6010B
	Manganese	4.30	3.00	15.0	ug/L	J	SW6010B
	Nickel	-0.0357	3.00	10.0	ug/L	U	SW6010B
	Potassium	7.68	1000	5000	ug/L	U	SW6010B
	Selenium	-1.45	3.00	5.00	ug/L	U	SW6010B
	Silver	-0.242	1.00	5.00	ug/L	U	SW6010B
	Sodium	36.2	1000	5000	ug/L	U	SW6010B
	Thallium	0.559	3.00	8.00	ug/L	U	SW6010B
	Vanadium	0.293	5.00	12.5	ug/L	U	SW6010B
	Zinc	0.225	5.00	20.0	ug/L	U	SW6010B

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
SDG: CTO064_003
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP
Project: Great Lakes CTO 064 (Site 21)
Sequence: 9L33812
Calibration: 9338008

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9L02006-BLK1	Aluminum	0.340	2.50	10.0	mg/Kg wet	U	SW6010B
	Antimony	0.0259	0.250	0.750	mg/Kg wet	U	SW6010B
	Arsenic	-0.0921	0.150	0.250	mg/Kg wet	U	SW6010B
	Barium	0.00786	0.250	2.00	mg/Kg wet	U	SW6010B
	Beryllium	-0.000386	0.0500	0.250	mg/Kg wet	U	SW6010B
	Cadmium	0.0527	0.0500	0.250	mg/Kg wet	J	SW6010B
	Calcium	0.222	50.0	250	mg/Kg wet	U	SW6010B
	Chromium	0.0457	0.100	0.250	mg/Kg wet	U	SW6010B
	Cobalt	-0.00459	0.250	0.625	mg/Kg wet	U	SW6010B
	Copper	0.00747	0.250	0.500	mg/Kg wet	U	SW6010B
	Iron	0.318	1.50	5.00	mg/Kg wet	U	SW6010B
	Lead	0.0448	0.0750	0.150	mg/Kg wet	U	SW6010B
	Magnesium	-0.254	50.0	250	mg/Kg wet	U	SW6010B
	Manganese	0.00763	0.150	0.750	mg/Kg wet	U	SW6010B
	Nickel	-0.0170	0.250	0.500	mg/Kg wet	U	SW6010B
	Potassium	1.32	50.0	250	mg/Kg wet	U	SW6010B
	Selenium	0.137	0.150	0.250	mg/Kg wet	U	SW6010B
	Silver	-0.0154	0.0500	0.250	mg/Kg wet	U	SW6010B
	Sodium	0.594	50.0	250	mg/Kg wet	U	SW6010B
	Thallium	-0.162	0.150	0.400	mg/Kg wet	J	SW6010B
	Vanadium	-0.00488	0.250	0.625	mg/Kg wet	U	SW6010B
	Zinc	0.275	0.250	1.00	mg/Kg wet	J	SW6010B
9L33812-CCB4	Aluminum	23.6	50.0	200	ug/L	U	SW6010B
	Antimony	-0.0957	5.00	15.0	ug/L	U	SW6010B
	Arsenic	-0.410	3.00	5.00	ug/L	U	SW6010B
	Barium	0.454	5.00	40.0	ug/L	U	SW6010B
	Beryllium	0.101	1.00	5.00	ug/L	U	SW6010B
	Cadmium	0.389	1.00	5.00	ug/L	U	SW6010B
	Calcium	33.3	1000	5000	ug/L	U	SW6010B
	Chromium	0.446	2.00	5.00	ug/L	U	SW6010B
	Cobalt	0.120	5.00	12.5	ug/L	U	SW6010B
	Copper	-0.0287	5.00	10.0	ug/L	U	SW6010B
	Iron	29.3	30.0	100	ug/L	U	SW6010B

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP
Sequence: 9L33812

SDG: CTO064_003
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9338008

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9L33812-CCB4	Lead	0.407	1.50	3.00	ug/L	U	SW6010B
	Magnesium	16.9	1000	5000	ug/L	U	SW6010B
	Manganese	1.67	3.00	15.0	ug/L	U	SW6010B
	Nickel	0.0439	3.00	10.0	ug/L	U	SW6010B
	Potassium	13.4	1000	5000	ug/L	U	SW6010B
	Selenium	-0.449	3.00	5.00	ug/L	U	SW6010B
	Silver	-0.222	1.00	5.00	ug/L	U	SW6010B
	Sodium	4.15	1000	5000	ug/L	U	SW6010B
	Thallium	0.805	3.00	8.00	ug/L	U	SW6010B
	Vanadium	0.116	5.00	12.5	ug/L	U	SW6010B
	Zinc	0.348	5.00	20.0	ug/L	U	SW6010B
9L33812-CCB5	Aluminum	7.51	50.0	200	ug/L	U	SW6010B
	Antimony	-0.166	5.00	15.0	ug/L	U	SW6010B
	Arsenic	-0.763	3.00	5.00	ug/L	U	SW6010B
	Barium	0.325	5.00	40.0	ug/L	U	SW6010B
	Beryllium	0.100	1.00	5.00	ug/L	U	SW6010B
	Cadmium	0.248	1.00	5.00	ug/L	U	SW6010B
	Calcium	7.98	1000	5000	ug/L	U	SW6010B
	Chromium	0.273	2.00	5.00	ug/L	U	SW6010B
	Cobalt	0.113	5.00	12.5	ug/L	U	SW6010B
	Copper	-0.339	5.00	10.0	ug/L	U	SW6010B
	Iron	4.71	30.0	100	ug/L	U	SW6010B
	Lead	0.166	1.50	3.00	ug/L	U	SW6010B
	Magnesium	-0.350	1000	5000	ug/L	U	SW6010B
	Manganese	0.267	3.00	15.0	ug/L	U	SW6010B
	Nickel	-0.0140	3.00	10.0	ug/L	U	SW6010B
	Potassium	24.3	1000	5000	ug/L	U	SW6010B
	Selenium	-0.955	3.00	5.00	ug/L	U	SW6010B
	Silver	0.105	1.00	5.00	ug/L	U	SW6010B
	Sodium	-6.32	1000	5000	ug/L	U	SW6010B
	Thallium	0.267	3.00	8.00	ug/L	U	SW6010B
	Vanadium	0.202	5.00	12.5	ug/L	U	SW6010B
	Zinc	0.0701	5.00	20.0	ug/L	U	SW6010B

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
SDG: CTO064_003
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP
Project: Great Lakes CTO 064 (Site 21)
Sequence: 9L34212
Calibration: 9342006

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9L34212-ICB1	Aluminum	3.378	50.0	200	ug/L	U	SW6010B
	Barium	0.1187	5.00	40.0	ug/L	U	SW6010B
	Cadmium	-0.3232	1.00	5.00	ug/L	U	SW6010B
	Calcium	2.190	1000	5000	ug/L	U	SW6010B
	Chromium	0.09751	2.00	5.00	ug/L	U	SW6010B
	Magnesium	-4.920	1000	5000	ug/L	U	SW6010B
9L34212-CCB1	Aluminum	11.7	50.0	200	ug/L	U	SW6010B
	Barium	0.241	5.00	40.0	ug/L	U	SW6010B
	Cadmium	0.103	1.00	5.00	ug/L	U	SW6010B
	Calcium	15.6	1000	5000	ug/L	U	SW6010B
	Chromium	0.119	2.00	5.00	ug/L	U	SW6010B
	Magnesium	9.79	1000	5000	ug/L	U	SW6010B
9L34212-CCBA	Aluminum	3.94	50.0	200	ug/L	U	SW6010B
	Barium	0.169	5.00	40.0	ug/L	U	SW6010B
	Cadmium	-1.01	1.00	5.00	ug/L	J	SW6010B
	Calcium	9.92	1000	5000	ug/L	U	SW6010B
	Chromium	0.0273	2.00	5.00	ug/L	U	SW6010B
	Magnesium	0.380	1000	5000	ug/L	U	SW6010B
9L34212-CCBB	Aluminum	2.35	50.0	200	ug/L	U	SW6010B
	Barium	0.157	5.00	40.0	ug/L	U	SW6010B
	Cadmium	-0.726	1.00	5.00	ug/L	U	SW6010B
	Calcium	12.1	1000	5000	ug/L	U	SW6010B
	Chromium	0.0645	2.00	5.00	ug/L	U	SW6010B
	Magnesium	-5.23	1000	5000	ug/L	U	SW6010B
9L34212-CCBC	Aluminum	3.18	50.0	200	ug/L	U	SW6010B
	Barium	0.115	5.00	40.0	ug/L	U	SW6010B
	Cadmium	-0.669	1.00	5.00	ug/L	U	SW6010B
	Calcium	3.52	1000	5000	ug/L	U	SW6010B
	Chromium	0.249	2.00	5.00	ug/L	U	SW6010B
	Magnesium	-5.83	1000	5000	ug/L	U	SW6010B

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
SDG: CTO064_003
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP
Project: Great Lakes CTO 064 (Site 21)
Sequence: 9L34316
Calibration: 9345002

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9L34316-ICB1	Lead	0.5286	1.50	3.00	ug/L	U	SW6010B
	Zinc	-0.01885	5.00	20.0	ug/L	U	SW6010B
9L34316-CCB1	Lead	0.847	1.50	3.00	ug/L	U	SW6010B
	Zinc	0.320	5.00	20.0	ug/L	U	SW6010B
9L34316-CCB2	Lead	1.25	1.50	3.00	ug/L	U	SW6010B
	Zinc	-0.0111	5.00	20.0	ug/L	U	SW6010B

BLANKS
SW7471A

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-FIMS
Sequence: 9L33805

SDG: CTO064_003
Project: Great Lakes CTO 064 (Site 21)
Calibration: 9338004

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
9L33805-ICB1	Mercury	-0.02321	0.480	1.20	ug/L	U	SW7471A
9L33805-CCB1	Mercury	-0.0192	0.480	1.20	ug/L	U	SW7471A
9L33805-CCB3	Mercury	-0.0198	0.480	1.20	ug/L	U	SW7471A
9K30923-BLK1	Mercury	-0.00252	0.0130	0.0330	mg/Kg wet	U	SW7471A
9L33805-CCB4	Mercury	-0.0160	0.480	1.20	ug/L	U	SW7471A
9L33805-CCB5	Mercury	-0.0199	0.480	1.20	ug/L	U	SW7471A
9L33805-CCB6	Mercury	-0.0146	0.480	1.20	ug/L	U	SW7471A

PREPARATION BATCH SUMMARY
SW6010B

Laboratory: Empirical Laboratories, LLC
SDG: CTO064_003
Client: Tetra Tech NUS, Inc. (T010)
Project: Great Lakes CTO 064 (Site 21)
Batch: 9L02006 Batch Matrix: Solid
Preparation: MET_3050B

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
NTC01-Composite	0911196-01	12/02/09 10:26	2.09	100.00
NTC01-Composite	0911196-01RE1	12/02/09 10:26	2.09	100.00
NTC01-Composite	0911196-01RE2	12/02/09 10:26	2.09	100.00
NTC01-Composite	0911196-01RE3	12/02/09 10:26	2.09	100.00
Blank	9L02006-BLK1	12/02/09 10:26	2.00	100.00
LCS	9L02006-BS1	12/02/09 10:26	2.00	100.00
LCS	9L02006-BS2	12/02/09 10:26	2.00	100.00

PREPARATION BATCH SUMMARY

SW7471A

Laboratory: Empirical Laboratories, LLC SDG: CTO064_003

Client: Tetra Tech NUS, Inc. (T010) Project: Great Lakes CTO 064 (Site 21)

Batch: 9K30923 Batch Matrix: Solid Preparation: MET_HG_S

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
NTC01-Composite	0911196-01	11/30/09 11:21	0.29	50.00
Blank	9K30923-BLK1	11/30/09 11:21	0.30	50.00
LCS	9K30923-BS1	11/30/09 11:21	0.30	50.00

METHOD DETECTION AND REPORTING LIMITS

Laboratory: Empirical Laboratories, LLC
SDG: CTO064_003
Client: Tetra Tech NUS, Inc. (T010)
Project: Great Lakes CTO 064 (Site 21)
Matrix: Solid
Instrument: ME-ICP

Analyte	MDL	MRL	Units	Method
Aluminum	2.50	10.0	mg/Kg	SW6010B
	12.5	50.0	ug/L	SW6010B
Antimony	0.250	0.750	mg/Kg	SW6010B
	1.25	3.75	ug/L	SW6010B
Arsenic	0.150	0.250	mg/Kg	SW6010B
	0.750	1.25	ug/L	SW6010B
Barium	0.250	2.00	mg/Kg	SW6010B
	1.25	10.0	ug/L	SW6010B
Beryllium	0.0500	0.250	mg/Kg	SW6010B
	0.250	1.25	ug/L	SW6010B
Cadmium	0.0500	0.250	mg/Kg	SW6010B
	0.250	1.25	ug/L	SW6010B
Calcium	50.0	250	mg/Kg	SW6010B
	250	1250	ug/L	SW6010B
Chromium	0.100	0.250	mg/Kg	SW6010B
	0.500	1.25	ug/L	SW6010B
Cobalt	0.250	0.625	mg/Kg	SW6010B
	1.25	3.12	ug/L	SW6010B
Copper	0.250	0.500	mg/Kg	SW6010B
	1.25	2.50	ug/L	SW6010B
Iron	1.50	5.00	mg/Kg	SW6010B
	7.50	25.0	ug/L	SW6010B
Lead	0.0750	0.150	mg/Kg	SW6010B
	0.375	0.750	ug/L	SW6010B
Magnesium	50.0	250	mg/Kg	SW6010B
	250	1250	ug/L	SW6010B
Manganese	0.150	0.750	mg/Kg	SW6010B
	0.750	3.75	ug/L	SW6010B
Nickel	0.250	0.500	mg/Kg	SW6010B
	0.750	2.50	ug/L	SW6010B
Potassium	50.0	250	mg/Kg	SW6010B
	250	1250	ug/L	SW6010B
Selenium	0.150	0.250	mg/Kg	SW6010B
	0.750	1.25	ug/L	SW6010B
Silver	0.0500	0.250	mg/Kg	SW6010B
	0.250	1.25	ug/L	SW6010B
Sodium	50.0	250	mg/Kg	SW6010B

SAMPLE	LAB_ID	ANAL_BATCH	ANAL_DATE	SDG	PARA	LAB_RES	LAB_QUAL	UNITS	DIL_FACTOR
NTC01-Composite	0911196-01	9L33812	12/3/2009 17:41	CTO064_003	ANTIMONY	0.859	U	MG/KG	1
NTC01-Composite	0911196-01	9L33812	12/3/2009 17:41	CTO064_003	ARSENIC	8.34		MG/KG	1
NTC01-Composite	0911196-01	9L33812	12/3/2009 17:41	CTO064_003	BARIUM	68.9		MG/KG	1
NTC01-Composite	0911196-01	9L33812	12/3/2009 17:41	CTO064_003	BERYLLIUM	0.617		MG/KG	1
NTC01-Composite	0911196-01	9L33812	12/3/2009 17:41	CTO064_003	COBALT	12.9		MG/KG	1
NTC01-Composite	0911196-01	9L33812	12/3/2009 17:41	CTO064_003	COPPER	25		MG/KG	1
NTC01-Composite	0911196-01	9L33812	12/3/2009 17:41	CTO064_003	IRON	20900		MG/KG	1
NTC01-Composite	0911196-01	9L33812	12/3/2009 17:41	CTO064_003	MANGANESE	462		MG/KG	1
NTC01-Composite	0911196-01	9L33805	12/1/2009 8:55	CTO064_003	MERCURY	0.0741		MG/KG	1
NTC01-Composite	0911196-01	9L33812	12/3/2009 17:41	CTO064_003	NICKEL	30.4		MG/KG	1
NTC01-Composite	0911196-01	9L33812	12/3/2009 17:41	CTO064_003	POTASSIUM	2980		MG/KG	1
NTC01-Composite	0911196-01	9L33812	12/3/2009 17:41	CTO064_003	SELENIUM	0.286	U	MG/KG	1
NTC01-Composite	0911196-01	9L33812	12/3/2009 17:41	CTO064_003	SILVER	0.286	U	MG/KG	1
NTC01-Composite	0911196-01	9L33812	12/3/2009 17:41	CTO064_003	SODIUM	207	J	MG/KG	1
NTC01-Composite	0911196-01	9L33812	12/3/2009 17:41	CTO064_003	THALLIUM	0.458	U	MG/KG	1
NTC01-Composite	0911196-01	9L33812	12/3/2009 17:41	CTO064_003	VANADIUM	20.3		MG/KG	1
NTC01-Composite	0911196-01RE1	9L34212	12/8/2009 4:28	CTO064_003	ALUMINUM	11100	D	MG/KG	5
NTC01-Composite	0911196-01RE1	9L34212	12/8/2009 4:28	CTO064_003	CALCIUM	72500	D	MG/KG	5
NTC01-Composite	0911196-01RE2	9L34212	12/8/2009 4:33	CTO064_003	CADMIUM	0.573	U	MG/KG	2
NTC01-Composite	0911196-01RE2	9L34212	12/8/2009 4:33	CTO064_003	CHROMIUM	17.8	D	MG/KG	2
NTC01-Composite	0911196-01RE2	9L34212	12/8/2009 4:33	CTO064_003	MAGNESIUM	34500	D	MG/KG	2
NTC01-Composite	0911196-01RE3	9L34316	12/9/2009 14:29	CTO064_003	LEAD	12.7	D	MG/KG	5
NTC01-Composite	0911196-01RE3	9L34316	12/9/2009 14:29	CTO064_003	ZINC	55	D	MG/KG	5

APPENDIX E

SURVEY REPORT

sketch

of

location of 14 monitoring wells at Camp Moffett and Building 1517 Sites at Great Lakes Naval Training Station

scale: 1 inch = 60 feet

All dimensions hereon shown unless it is otherwise noted are given in feet and decimal parts thereof.

Point No.	Monitoring well ID	Northing (NAD 83 US feet)	Easting (NAD 83 US feet)	Elevation of top of well casing (NAVD 88 US feet)	Existing ground elevation (NAVD 88 US feet)
289	NTC9-MW-01	2057135.547	1114814.402	656.615	656.940
291	NTC9-MW-02	2057206.907	1115112.665	654.570	654.855
296	NTC9-MW-03	2057125.326	1115386.740	652.900	653.460
389	NTC9-MW-04	2056769.315	1115416.727	652.730	653.040
268	NTC9-MW-05	2056643.702	1115125.641	655.585	656.155
297	NTC9-MW-06	2056571.300	1115321.670	654.340	654.670
206	NTC9-MW-07	2056381.696	1115125.072	655.310	655.730
256	NTC9-MW-08	2056236.815	1114953.746	657.915	658.545
323	NTC21MW01	2057880.834	1114691.881	660.365	660.630
343	NTC21MW02	2057873.486	1115236.518	653.660	654.245
347	NTC21MW03	2057733.695	1115391.706	652.825	653.315
365	NTC21MW04	2057444.470	1115416.451	652.740	653.105
348	NTC21MW05	2057518.810	1115138.923	655.030	655.280
322	NTC21MW06	2057503.807	1114703.354	659.170	659.530

Note: Elevations shown hereon were obtained using a level.

surveyor's note:

See the table hereon for the northings, eastings, and elevations of the monitoring wells depicted hereon. The AutoCAd points within this drawing are to be used for horizontal locations only.

for

Tetra Tech NUS, Inc.

661 Andersen Drive
Pittsburgh, Pennsylvania, 15220

from the office of:

JAMES ANDERSON COMPANY
Engineers, Planners, and Surveyors
920 West North Shore Drive
Lake Bluff, Illinois, 60044
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James Anderson Company Point No.	Monitoring well ID	Northing (NAD 83 US feet)	Easting (NAD 83 US feet)	Elevation of top of well casing (NAVD 88 US feet)	Existing ground elevation (NAVD 88 US feet)
CAMP MOFFETT SITE					
289	NTC9-MW-01	2057135.547	1114814.402	656.615	656.940
291	NTC9-MW-02	2057206.907	1115112.665	654.570	654.855
296	NTC9-MW-03	2057125.326	1115386.740	652.900	653.460
389	NTC9-MW-04	2056769.315	1115416.727	652.730	653.040
268	NTC9-MW-05	2056643.702	1115125.641	655.585	656.155
297	NTC9-MW-06	2056571.300	1115321.670	654.340	654.670
206	NTC9-MW-07	2056381.696	1115125.072	655.310	655.730
256	NTC9-MW-08	2056236.815	1114953.746	657.915	658.545
BUILDING 1517 SITE					
323	NTC21MW01	2057880.834	1114691.881	660.365	660.630
343	NTC21MW02	2057873.486	1115236.518	653.660	654.245
347	NTC21MW03	2057733.695	1115391.706	652.825	653.315
365	NTC21MW04	2057444.470	1115416.451	652.740	653.105
348	NTC21MW05	2057518.810	1115138.923	655.030	655.280
322	NTC21MW06	2057503.807	1114703.354	659.170	659.530
Note: Elevations shown hereon were obtained using a level.					

Order No. 17265

File No. 9-1-405

for Tetra Tech NUS, Inc.
Monitoring various
Wells at Naval Station
Great Lakes.

November 17, 2009

I.T. VANKOV
C.T. MILLER

STA	+	$\bar{\times}$	−	EL
BM-9	4.66	662.69		658.03 SEE E 688 P. 20 & 21
BM-8	6.29	666.065	2.915	659.775 (659.77)
FH TOP	2.52	667.08	1.505	664.56
BM-7A	2.70	665.57	4.21	662.87

SET "□" ON TOP OF CONC. LIGHT BASE

T/C – TOP OF WELL CASING

T/W – TOP OF WELL LID (FLUSH W/ GROUND)

STA	+	$\bar{\times}$	−	EL
CURB	2.475	661.425	6.62	658.95
BM-7B	3.275	659.335	5.365	656.06
SET "□" ON TOP OF CONC. LIGHT BASE				
BM-7C	5.51	659.225	5.62	653.715
SET "□" ON TOP OF CONC. LIGHT BASE				
BM-7B	5.37	661.435	3.16	656.065
	6.25	665.205	2.48	658.955
BM-7A	4.09	666.96	2.335	662.87
FH TOP	1.74	666.305	2.395	664.565
BM-8			6.52	659.785 (+0.010)
BM-7A	2.545	665.415		662.87
T/W MW-07	6.06	661.79	9.685	655.73
T/C MW-07	8.13	663.44	6.48	655.31
T/W MW-08	4.97	663.515	4.895	658.545
T/C MW-08	6.22	664.135	5.60	657.915

STA	+	⊼	−	EL	
T/W MW-05	5.205	661.36	7.98	656.155	
T/C MW-05	10.13	665.715	5.775	655.585	
BM - 7A			2.85	662.865	(−0.005)
BM - 7B	4.48	650.54		656.06	
T/W MW-01	4.415	661.355	3.60	656.94	
T/C MW-01	3.925	660.54	4.74	656.615	
BM - 7B			4.48	656.06	(±0.000)
BM - 7B	4.155	660.215		656.06	
T/W MW-02	5.335	660.12	5.36	654.855	
T/C MW-02	4.55	659.12	5.62	654.57	
T/W MW-03	4.60	658.06	5.66	653.46	
GRD = T/W − 0.10'					
T/C MW-03	4.855	657.755	5.16	652.90	
BM - 7C			4.04	653.715	(0.000)

STA	+	⊼	−	EL	
BM - 7C	4.695	658.41		653.715	
T/W MW-04	5.50	658.54	5.37	653.04	
T/C MW-04	6.33	659.06	5.81	652.73	
T/W MW-06	4.78	659.45	4.39	654.67	
T/C MW-06	4.01	658.35	5.11	654.34	
	4.765	658.34	4.77	653.58	
BM - 7C			4.63	653.715	(0.000)
BM - 7B	7.145	663.205		656.06	
T/C 21MW06	5.23	664.40	4.035	659.17	
T/W 21MW06	5.73	665.26	4.87	659.53	
T/W 21MW01	4.795	665.425	4.63	660.63	
T/C 21MW01	1.765	662.13	5.06	660.365	
	3.08	659.985	5.225	656.905	

STA	+	⊼	−	EL	
T/W 21MW02	4.785	659.03 ✓	5.74	654.245	✓
T/C 21MW02	5.23	658.89 ✓	5.37	653.66	✓
T/W 21MW03	4.485	657.80 ✓	5.575	653.315	✓
T/C 21MW03	5.31	658.135 ✓	4.975	652.825	✓
T/W 21MW04	4.83	657.935 ✓	5.03	653.105	✓
T/C 21MW04	6.96	659.70 ✓	5.195	652.74	✓
T/W 21MW05	5.38	660.66 ✓	4.42	655.28	✓
T/C 21MW05	6.585	661.615 ✓	5.63	655.03	✓
BM – 7B			5.565	656.05 ✓	(-0.010) ✓

Shannon Hill called this morning to make sure that things are going well. I told her that we are working at the site. I asked her why the number of soil borings written in "Statement of work / scope of work" does not match the number shown on their aerial

photograph sketches. She said that we don't have to survey the soil boring locations because they have been drilled a few months ago and it will be hard to find them. She gave me the phone of Nicole who is at the site if I need help or have questions (724) 601 2196.

Ivo V.

November 18, 2009 I.T. VANKOV

RTK GPS work to locate mon. wells

△100 – SET IRON ROD IN SAND

△101 – SET "X" IN CONC. WALK

△102 – △103 SET PK NAILS

200 – 388

⊼ @ △103 BS △102 0°00'00"

H = -0.013

389 – 403

NOVEMBER 24, 2009

I CHECKED IN GREEN INK THE LEVEL NOTES ON PAGES 70 - 72 HEREIN. R. ROSS

```
JB,NM17265,DT11-17-2009,TM13:52:39
MO,AD0,UN2,SF1.0,EC0,EO0.0,AU0
SP,PN1,N 10000.0,E 10000.0,EL100.0,--TP
--Activating GPS Receiver: Topcon TPS HiPer [HIPER3], COM1, 115200 baud, no parity
--program Version: 4.7.1
--Data Collector Serial Number: SS15A09098
--Activating GPS Receiver: Topcon TPS HiPer [HIPER3], COM1, 115200 baud, no parity
--Date: 11-17-2009  Time: 13:52:40
--Activating GPS Receiver: Topcon TPS HiPer [HIPER2], COM1, 115200 baud, no parity
--Switch projection mode to H: Mapping Plane and V: Localization (+ Geoid)
--No coordinate system is defined.
ES,RD,IF,EM
PJ,TP2048,LA,LN,HT,N ,E ,EL,SC1.0000000000,OO,OT
CS,CO2,ZG,ZN,DN
--Select zone record from database
ES,RD20925604.474167,IF298.2572215381,EMGeodetic Ref System 1980
ST,LA,LN,HT,SC1.0000000000,N 0.0,E 0.0
PJ,TP2062,LA36.4000,LN-88.2000,HT,N 0.0,E 984250.0,EL,SC0.9999750000,OO,OT
DT,DA513,RD20925604.474167,IF298.2572229329,OX0.00000000000,OY0.00000000000,OZ0.0000
0000000,LX0.0,LY0.0,LZ0.0,SP0.000000
HA,N ,E ,TH,TE,RT,SC
VA,PV2,N ,E ,LZ,SO,SA,GNGEOID03 (Conus)
CG,AO1,GO1
CS,CO3,ZGUS State Plane 1983,ZNIllinois East 1201,DNNAD 1983 (Conus)
-->>
-->>  Begin Adjust with Projection.
-->>  End Adjust with Projection.
-->>
--Activating GPS Receiver: Topcon TPS HiPer [HIPER3], COM1, 115200 baud, no parity
--Store remote reference position as new point.
EE,GF0,SG0
EP,TM13:56:12,LA42.225813134,LN-87.56506687,HT635.341577,RH0.0,RV0.0,GM1,CL1
SP,PNBASE_1,N 2082330.338727,E 1088518.428673,EL747.900452,--
--13:56:12,Get base reference position at
ROVER:LA42.225813134,LN-87.56506687,HT635.341577,
RX,DCGETBASE,RA0.0,RE0,FI
BP,PNBASE_1,LA42.225813134,LN-87.56506687,HT635.341577,SG0
--13:55:17,Set ROVER receiver with base reference
position:LA42.225813134,LN-87.56506687,HT635.341577
RX,DCROVER,RA6.997768,RE0,FI
EQ,DCROVER,RXHiPer,RS8QQVEFI68SG,AN0,AI0,ATTopcon HiPer,TS,TA0.0,HO0.0,VO0.347768
AH,DCROVER,MA6.65,ME2,RA6.997768
--07:55:42,Get base reference position at
ROVER:LA42.225813134,LN-87.56506687,HT635.341577,
RX,DCGETBASE,RA0.0,RE0,FI
BP,PNBASE_1,LA42.225813134,LN-87.56506687,HT635.341577,SG0
--07:55:02,Set ROVER receiver with base reference
position:LA42.225813134,LN-87.56506687,HT635.341577
RX,DCROVER,RA6.997768,RE0,FI
EQ,DCROVER,RXHiPer,RS8QQVEFI68SG,AN0,AI0,ATTopcon HiPer,TS,TA0.0,HO0.0,VO0.347768
AH,DCROVER,MA6.65,ME2,RA6.997768
EP,TM07:57:17,LA42.184252751,LN-87.510091818,HT548.662797,RH0.018144,RV0.02321,DH1.0
50914,DV1.367926,GM4,CL1
BL,DCROVER,PN100,DX26883.973209,DY-16397.131496,DZ-19177.992131,--TP,GM4,CL1,HP0.018
144,VP0.02321
CV,DCROVER,SV4,SC0.018069,XX1.711171e-004,XY-3.167838e-005,XZ-3.972050e-005,YY3.5233
32e-004,YZ-2.004201e-004,ZZ3.561669e-004
GS,PN100,N 2056589.803444,E 1114913.993662,EL660.887173,--TP
DP,PN1
--program Version: 4.7.1
--Data Collector Serial Number: SS15A09098
--Activating GPS Receiver: Topcon TPS HiPer [HIPER3], COM1, 115200 baud, no parity
--Date: 11-18-2009  Time: 08:03:58
```

--08:05:12,Get base reference position at
ROVER:LA42.225813134,LN-87.56506687,HT635.341577,
RX,DCGETBASE,RA0.0,RE0,FI
BP,PNBASE_1,LA42.225813134,LN-87.56506687,HT635.341577,SG0
--08:04:24,Set ROVER receiver with base reference
position:LA42.225813134,LN-87.56506687,HT635.341577
RX,DCROVER,RA6.997768,RE0,FI
EQ,DCROVER,RXHiPer,RS8QQVEFI68SG,AN0,AI0,ATTopcon HiPer,TS,TA0.0,HO0.0,VO0.347768
AH,DCROVER,MA6.65,ME2,RA6.997768
EP,TM08:07:12,LA42.184158669,LN-87.505797549,HT543.689592,RH0.015926,RV0.032235,DH1.
177102,DV1.927185,GM4,CL1
BL,DCROVER,PN101,DX27107.192246,DY-16449.230042,DZ-19251.771809,--TP,GM4,CL1,HP0.015
926,VP0.032235
CV,DCROVER,SV4,SC0.019319,XX1.669088e-004,XY-2.177189e-005,XZ1.993207e-005,YY5.15809
9e-004,YZ-4.062177e-004,ZZ6.913710e-004
GS,PN101,N 2056495.820595,E 1115135.631283,EL655.91401,--TP
EP,TM08:08:20,LA42.184156574,LN-87.505792448,HT543.535702,RH0.029524,RV0.048984,DH1.
177101,DV1.953441,GM4,CL1
BL,DCROVER,PN200,DX27111.071987,DY-16450.399208,DZ-19253.443825,--WALKX,GM4,CL1,HP0.
029524,VP0.048984
CV,DCROVER,SV4,SC0.019664,XX1.731568e-004,XY-2.501335e-005,XZ2.547811e-005,YY5.41495
1e-004,YZ-4.356563e-004,ZZ7.374084e-004
GS,PN200,N 2056493.721551,E 1115139.476292,EL655.760112,--WALKX
DP,PN200
EP,TM08:08:54,LA42.184154718,LN-87.50578749,HT543.375029,RH0.032561,RV0.054458,DH1.1
77382,DV1.976393,GM4,CL1
BL,DCROVER,PN200,DX27114.83711,DY-16451.404597,DZ-19254.941405,--WALKX,GM4,CL1,HP0.0
32561,VP0.054458
CV,DCROVER,SV4,SC0.018978,XX1.614603e-004,XY-2.531655e-005,XZ2.762221e-005,YY5.10052
5e-004,YZ-4.174772e-004,ZZ7.035233e-004
GS,PN200,N 2056491.863941,E 1115143.211538,EL655.599435,--WALKX
EP,TM08:09:43,LA42.184154436,LN-87.505730609,HT542.478089,RH0.035824,RV0.057025,DH1.
105741,DV1.760562,GM4,CL1
BL,DCROVER,PN201,DX27157.528455,DY-16449.32973,DZ-19255.756083,--WALKX,GM4,CL1,HP0.0
35824,VP0.057025
CV,DCROVER,SV4,SC0.020161,XX1.987063e-004,XY-1.212899e-005,XZ-7.610680e-006,YY5.9650
36e-004,YZ-4.156599e-004,ZZ6.416606e-004
GS,PN201,N 2056491.821801,E 1115185.950254,EL654.702851,--WALKX
EP,TM08:10:19,LA42.184127051,LN-87.50573091,HT542.556781,RH0.034561,RV0.055251,DH1.0
67521,DV1.635976,GM4,CL1
BL,DCROVER,PN202,DX27158.005677,DY-16468.045221,DZ-19276.204138,--WALKX,GM4,CL1,HP0.
034561,VP0.055251
CV,DCROVER,SV4,SC0.018465,XX1.750808e-004,XY-1.284326e-006,XZ-2.650055e-005,YY5.0918
40e-004,YZ-3.178406e-004,ZZ4.574806e-004
GS,PN202,N 2056464.098873,E 1115185.882448,EL654.78101,--WALKX
EP,TM08:10:59,LA42.184127364,LN-87.505787717,HT543.371961,RH0.037221,RV0.057199,DH1.
066669,DV1.642516,GM4,CL1
BL,DCROVER,PN203,DX27115.366566,DY-16470.036687,DZ-19275.421515,--WALKX,GM4,CL1,HP0.
037221,VP0.057199
CV,DCROVER,SV4,SC0.020071,XX2.071049e-004,XY-2.299331e-006,XZ-2.918352e-005,YY6.0369
57e-004,YZ-3.803217e-004,ZZ5.472145e-004
GS,PN203,N 2056464.172406,E 1115143.198881,EL655.595835,--WALKX
EP,TM08:11:39,LA42.184064375,LN-87.505788287,HT543.431152,RH0.039714,RV0.06921,DH1.1
80532,DV2.064501,GM4,CL1
BL,DCROVER,PN204,DX27116.55046,DY-16512.990714,DZ-19322.536185,--WALKX,GM4,CL1,HP0.0
39714,VP0.06921
CV,DCROVER,SV4,SC0.02078,XX1.942548e-004,XY-4.048126e-005,XZ5.195789e-005,YY6.383269
e-004,YZ-5.546090e-004,ZZ9.203841e-004
GS,PN204,N 2056400.407402,E 1115143.1326,EL655.653802,--WALKX
EP,TM08:12:17,LA42.184064651,LN-87.505834219,HT544.053215,RH0.036893,RV0.065067,DH1.
181747,DV2.086292,GM4,CL1
BL,DCROVER,PN205,DX27082.072506,DY-16514.557792,DZ-19321.911107,--WALKX,GM4,CL1,HP0.
036893,VP0.065067

CV,DCROVER,SV4,SC0.021873,XX2.153921e-004,XY-4.767845e-005,XZ6.267059e-005,YY7.14365
2e-004,YZ-6.285682e-004,ZZ1.039721e-003
GS,PN205,N 2056400.490214,E 1115108.62019,EL656.275578,--WALKX
EP,TM08:14:41,LA42.184045993,LN-87.505812466,HT543.133156,RH0.035846,RV0.065151,DH1.
187126,DV2.162486,GM4,CL1
BL,DCROVER,PN206,DX27098.85783,DY-16525.970059,DZ-19336.497953,--MW-07,GM4,CL1,HP0.0
35846,VP0.065151
CV,DCROVER,SV4,SC0.020512,XX1.899381e-004,XY-5.120277e-005,XZ7.149009e-005,YY6.50685
5e-004,YZ-5.965453e-004,ZZ9.762374e-004
GS,PN206,N 2056381.696234,E 1115125.072034,EL655.355296,--MW-07
EP,TM08:15:33,LA42.184013208,LN-87.505834724,HT542.776698,RH0.030528,RV0.056429,DH1.
191045,DV2.207632,GM4,CL1
BL,DCROVER,PN207,DX27082.973518,DY-16548.660796,DZ-19361.282149,--WALKX,GM4,CL1,HP0.
030528,VP0.056429
CV,DCROVER,SV4,SC0.020224,XX1.849472e-004,XY-5.534257e-005,XZ7.909998e-005,YY6.45420
5e-004,YZ-6.046299e-004,ZZ9.838209e-004
GS,PN207,N 2056348.412418,E 1115108.536916,EL654.998061,--WALKX
EP,TM08:16:52,LA42.18401345,LN-87.505871883,HT543.754676,RH0.030639,RV0.057714,DH1.1
9648,DV2.26284,GM4,CL1
BL,DCROVER,PN208,DX27055.093229,DY-16550.26621,DZ-19360.442466,--WALKX,GM4,CL1,HP0.0
30639,VP0.057714
CV,DCROVER,SV4,SC0.019263,XX1.681502e-004,XY-5.657123e-005,XZ8.255365e-005,YY5.99761
1e-004,YZ-5.755230e-004,ZZ9.304052e-004
GS,PN208,N 2056348.498959,E 1115080.615963,EL655.975808,--WALKX
EP,TM08:17:34,LA42.184064889,LN-87.505871416,HT544.688146,RH0.03744,RV0.07156,DH1.19
9728,DV2.293086,GM4,CL1
BL,DCROVER,PN209,DX27054.154957,DY-16515.913423,DZ-19321.305291,--WALKX,GM4,CL1,HP0.
03744,VP0.07156
CV,DCROVER,SV4,SC0.021468,XX2.091066e-004,XY-7.479667e-005,XZ1.101237e-004,YY7.54738
6e-004,YZ-7.333248e-004,ZZ1.181456e-003
GS,PN209,N 2056400.572616,E 1115080.671402,EL656.910277,--WALKX
EP,TM08:18:19,LA42.184065087,LN-87.505917314,HT545.450467,RH0.034701,RV0.067011,DH1.
203613,DV2.32723,GM4,CL1
BL,DCROVER,PN210,DX27019.70785,DY-16517.63632,DZ-19320.644333,--WALKX,GM4,CL1,HP0.03
4701,VP0.067011
CV,DCROVER,SV4,SC0.022252,XX2.249951e-004,XY-8.570092e-005,XZ1.271766e-004,YY8.22259
7e-004,YZ-8.091462e-004,ZZ1.298999e-003
GS,PN210,N 2056400.576511,E 1115046.184423,EL657.672311,--WALKX
EP,TM08:19:04,LA42.184122278,LN-87.505916687,HT545.348564,RH0.035382,RV0.068876,DH1.
207745,DV2.36167,GM4,CL1
BL,DCROVER,PN211,DX27018.71358,DY-16478.597003,DZ-19277.898381,--WALKX,GM4,CL1,HP0.0
35382,VP0.068876
CV,DCROVER,SV4,SC0.022328,XX2.269046e-004,XY-9.191535e-005,XZ1.373017e-004,YY8.39632
0e-004,YZ-8.365106e-004,ZZ1.338228e-003
GS,PN211,N 2056458.473218,E 1115046.326656,EL657.571521,--WALKX
EP,TM08:19:32,LA42.184122322,LN-87.505917524,HT545.255674,RH0.036508,RV0.071853,DH1.
210589,DV2.384415,GM4,CL1
BL,DCROVER,PN212,DX27018.081511,DY-16478.5217,DZ-19277.927655,--WALKX,GM4,CL1,HP0.03
6508,VP0.071853
CV,DCROVER,SV4,SC0.02238,XX2.282294e-004,XY-9.612559e-005,XZ1.441172e-004,YY8.513283
e-004,YZ-8.547787e-004,ZZ1.364393e-003
GS,PN212,N 2056458.514615,E 1115045.697632,EL657.478626,--WALKX
EP,TM08:20:08,LA42.184129824,LN-87.505922655,HT545.306886,RH0.03918,RV0.077556,DH1.2
13681,DV2.408399,GM4,CL1
BL,DCROVER,PN213,DX27014.038571,DY-16473.595712,DZ-19272.277336,--WALK
PC,GM4,CL1,HP0.03918,VP0.077556
CV,DCROVER,SV4,SC0.020938,XX2.000201e-004,XY-8.765871e-005,XZ1.318626e-004,YY7.52294
7e-004,YZ-7.613182e-004,ZZ1.212415e-003
GS,PN213,N 2056466.086496,E 1115041.799402,EL657.52995,--WALK PC
EP,TM08:20:43,LA42.184140754,LN-87.505925896,HT545.291433,RH0.03862,RV0.082329,DH1.2
38819,DV2.644069,GM4,CL1
BL,DCROVER,PN214,DX27011.325205,DY-16466.232026,DZ-19264.104825,--WALK
POC,GM4,CL1,HP0.03862,VP0.082329

CV,DCROVER,SV4,SC0.022899,XX2.382808e-004,XY-6.434895e-005,XZ1.321701e-004,YY1.13436
0e-003,YZ-1.068914e-003,ZZ1.540454e-003
GS,PN214,N 2056477.137656,E 1115039.301481,EL657.514689,--WALK POC
EP,TM08:21:20,LA42.184156392,LN-87.505920498,HT545.379645,RH0.039422,RV0.079358,DH1.
221739,DV2.46786,GM4,CL1
BL,DCROVER,PN215,DX27014.981337,DY-16455.49589,DZ-19252.338688,--WALK
PT,GM4,CL1,HP0.039422,VP0.079358
CV,DCROVER,SV4,SC0.021466,XX2.109694e-004,XY-1.015879e-004,XZ1.538046e-004,YY8.09441
4e-004,YZ-8.344344e-004,ZZ1.321500e-003
GS,PN215,N 2056492.990667,E 1115043.267725,EL657.603238,--WALK PT
EP,TM08:21:53,LA42.184160337,LN-87.505917244,HT545.307032,RH0.038164,RV0.077412,DH1.
225862,DV2.496869,GM4,CL1
BL,DCROVER,PN216,DX27017.32121,DY-16452.664138,DZ-19249.434395,--WALKX,GM4,CL1,HP0.0
38164,VP0.077412
CV,DCROVER,SV4,SC0.02154,XX2.128039e-004,XY-1.069345e-004,XZ1.622709e-004,YY8.239819
e-004,YZ-8.564807e-004,ZZ1.352946e-003
GS,PN216,N 2056496.997861,E 1115045.689392,EL657.530723,--WALKX
EP,TM08:22:20,LA42.184160425,LN-87.505916375,HT545.285492,RH0.036493,RV0.074892,DH1.
229803,DV2.523837,GM4,CL1
BL,DCROVER,PN217,DX27017.971341,DY-16452.563992,DZ-19249.383252,--WALKX,GM4,CL1,HP0.
036493,VP0.074892
CV,DCROVER,SV4,SC0.021992,XX2.222283e-004,XY-1.160163e-004,XZ1.763592e-004,YY8.67594
6e-004,YZ-9.084700e-004,ZZ1.431741e-003
GS,PN217,N 2056497.090336,E 1115046.342287,EL657.50919,--WALKX
EP,TM08:23:13,LA42.184218357,LN-87.505915846,HT545.298432,RH0.039252,RV0.081237,DH1.
29011,DV3.30303,GM4,CL1
BL,DCROVER,PN218,DX27016.887402,DY-16413.10745,DZ-19206.005387,--WALKX,GM4,CL1,HP0.0
39252,VP0.081237
CV,DCROVER,SV4,SC0.021878,XX2.174964e-004,XY-2.715629e-006,XZ9.194751e-005,YY1.62860
9e-003,YZ-1.449703e-003,ZZ1.769955e-003
GS,PN218,N 2056555.736811,E 1115046.406307,EL657.523256,--WALKX
EP,TM08:23:58,LA42.184218138,LN-87.505870635,HT544.542684,RH0.033084,RV0.085828,DH1.
291131,DV3.367497,GM4,CL1
BL,DCROVER,PN219,DX27050.818963,DY-16411.423373,DZ-19206.677947,--WALKX,GM4,CL1,HP0.
033084,VP0.085828
CV,DCROVER,SV4,SC0.022272,XX2.262968e-004,XY-1.536222e-005,XZ1.091587e-004,YY1.73360
5e-003,YZ-1.565003e-003,ZZ1.910432e-003
GS,PN219,N 2056555.708317,E 1115080.376794,EL656.767791,--WALKX
--Detected change of base reference position during RTK survey.
--Store remote reference position as new point.
EE,GF0,SG0
EP,TM08:25:13,LA42.032602423,LN-88.015205416,HT631.916059,RH0.0,RV0.0,GM1,CL1
SP,PNBASE_2,N 1963589.519028,E 1066320.158747,EL742.267582,--
--08:25:13,Get base reference position at
ROVER:LA42.032602423,LN-88.015205416,HT631.916059,
RX,DCGETBASE,RA0.0,RE0,FI
BP,PNBASE_2,LA42.032602423,LN-88.015205416,HT631.916059,SG0
RX,DCROVER,RA6.997768,RE0,FI
EQ,DCROVER,RXHiPer,RS8QQVEFI68SG,AN0,AI0,ATTopcon HiPer,TS,TA0.0,HO0.0,VO0.347768
AH,DCROVER,MA6.65,ME2,RA6.997768
--Detected change of base reference position during RTK survey.
--08:28:23,Get base reference position at
ROVER:LA42.225813134,LN-87.56506687,HT635.341577,
RX,DCGETBASE,RA0.0,RE0,FI
BP,PNBASE_1,LA42.225813134,LN-87.56506687,HT635.341577,SG0
RX,DCROVER,RA6.997768,RE0,FI
EQ,DCROVER,RXHiPer,RS8QQVEFI68SG,AN0,AI0,ATTopcon HiPer,TS,TA0.0,HO0.0,VO0.347768
AH,DCROVER,MA6.65,ME2,RA6.997768
EP,TM08:28:48,LA42.184217697,LN-87.505833275,HT544.164871,RH0.016895,RV0.048032,DH1.
311416,DV3.840559,GM4,CL1
BL,DCROVER,PN220,DX27078.87148,DY-16410.391265,DZ-19207.262521,--WALKX,GM4,CL1,HP0.0
16895,VP0.048032
CV,DCROVER,SV4,SC0.021125,XX2.104080e-004,XY-1.054223e-004,XZ2.006918e-004,YY1.85605

3e-003,YZ-1.812562e-003,ZZ2.210244e-003
GS,PN220,N 2056555.421297,E 1115108.449477,EL656.390206,--WALKX
EP,TM08:29:39,LA42.184217803,LN-87.505786787,HT543.556464,RH0.035439,RV0.105051,DH1.
317626,DV3.932099,GM4,CL1
BL,DCROVER,PN221,DX27113.757158,DY-16408.558888,DZ-19207.592886,--WALKX,GM4,CL1,HP0.
035439,VP0.105051
CV,DCROVER,SV4,SC0.02124,XX2.143224e-004,XY-1.259918e-004,XZ2.247797e-004,YY1.931545
e-003,YZ-1.907922e-003,ZZ2.326008e-003
GS,PN221,N 2056555.726948,E 1115143.377063,EL655.782097,--WALKX
EP,TM08:46:53,LA42.184284298,LN-87.510377915,HT548.537827,RH0.086256,RV0.28769,DH1.5
35681,DV5.121964,GM4,CL1
BL,DCROVER,PN222,DX26668.347912,DY-16383.618277,DZ-19154.45987,--BCX,GM4,CL1,HP0.086
256,VP0.28769
CV,DCROVER,SV4,SC0.026291,XX4.411306e-004,XY-7.612589e-004,XZ9.775572e-004,YY3.45218
7e-003,YZ-3.721640e-003,ZZ4.487085e-003
GS,PN222,N 2056620.518825,E 1114698.856109,EL660.761009,--BCX
EP,TM08:47:50,LA42.184279205,LN-87.510392027,HT548.220507,RH0.035925,RV0.082844,DH1.
094387,DV2.523672,GM4,CL1
BL,DCROVER,PN223,DX26657.873596,DY-16387.249962,DZ-19158.486501,--BC
PC,GM4,CL1,HP0.035925,VP0.082844
CV,DCROVER,SV4,SC0.0191,XX1.748387e-004,XY3.376143e-005,XZ-1.831884e-006,YY1.156253e
-003,YZ-8.731209e-004,ZZ9.737184e-004
GS,PN223,N 2056615.302721,E 1114688.282706,EL660.443501,--BC PC
EP,TM08:50:15,LA42.184335262,LN-87.510351763,HT546.063786,RH0.037887,RV0.087353,DH1.
088215,DV2.508494,GM4,CL1
BL,DCROVER,PN224,DX26686.613476,DY-16346.347264,DZ-19117.973179,--WALKX,GM4,CL1,HP0.
037887,VP0.087353
CV,DCROVER,SV4,SC0.018661,XX1.678817e-004,XY2.034988e-005,XZ8.230045e-006,YY1.107999
e-003,YZ-8.318154e-004,ZZ9.226942e-004
GS,PN224,N 2056672.220155,E 1114718.213118,EL658.28812,--WALKX
EP,TM08:50:53,LA42.184324887,LN-87.510361314,HT548.211898,RH0.042302,RV0.097459,DH1.
086926,DV2.503759,GM4,CL1
BL,DCROVER,PN225,DX26679.766789,DY-16355.268572,DZ-19124.293457,--BC
PT,GM4,CL1,HP0.042302,VP0.097459
CV,DCROVER,SV4,SC0.018636,XX1.676867e-004,XY1.742559e-005,XZ1.059056e-005,YY1.105170
e-003,YZ-8.281054e-004,ZZ9.173614e-004
GS,PN225,N 2056661.677728,E 1114711.096572,EL660.435971,--BC PT
EP,TM08:51:29,LA42.184333167,LN-87.510382758,HT547.9206,RH0.047553,RV0.109453,DH1.08
5775,DV2.498914,GM4,CL1
BL,DCROVER,PN226,DX26663.446184,DY-16350.018827,DZ-19118.290998,--BC
POC,GM4,CL1,HP0.047553,VP0.109453
CV,DCROVER,SV4,SC0.018952,XX1.736621e-004,XY1.513019e-005,XZ1.333657e-005,YY1.142631
e-003,YZ-8.544234e-004,ZZ9.452811e-004
GS,PN226,N 2056669.968226,E 1114694.937576,EL660.144698,--BC POC
EP,TM08:52:02,LA42.184348916,LN-87.51039116,HT547.780043,RH0.042638,RV0.098052,DH1.0
84598,DV2.493243,GM4,CL1
BL,DCROVER,PN227,DX26656.731056,DY-16339.427016,DZ-19106.596046,--BC
PC,GM4,CL1,HP0.042638,VP0.098052
CV,DCROVER,SV4,SC0.018929,XX1.735063e-004,XY1.204510e-005,XZ1.580263e-005,YY1.139192
e-003,YZ-8.498401e-004,ZZ9.388970e-004
GS,PN227,N 2056685.874539,E 1114688.534305,EL660.004394,--BC PC
EP,TM08:52:35,LA42.184338422,LN-87.510420029,HT547.794505,RH0.041466,RV0.0952,DH1.08
3585,DV2.487676,GM4,CL1
BL,DCROVER,PN228,DX26635.323162,DY-16347.397078,DZ-19114.441887,--BC,GM4,CL1,HP0.041
466,VP0.0952
CV,DCROVER,SV4,SC0.019568,XX1.856679e-004,XY9.970456e-006,XZ1.924873e-005,YY1.216392
e-003,YZ-9.053632e-004,ZZ9.989759e-004
GS,PN228,N 2056675.129185,E 1114666.903844,EL660.018471,--BC
EP,TM08:53:11,LA42.184293936,LN-87.510384093,HT548.383273,RH0.042387,RV0.097165,DH1.
082585,DV2.481425,GM4,CL1
BL,DCROVER,PN229,DX26663.458719,DY-16377.114992,DZ-19147.349061,--BC
POC,GM4,CL1,HP0.042387,VP0.097165
CV,DCROVER,SV4,SC0.018896,XX1.734058e-004,XY6.271751e-006,XZ2.039456e-005,YY1.132931

e-003,YZ-8.409296e-004,ZZ9.265508e-004
GS,PN229,N 2056630.24856,E 1114694.159152,EL660.606602,--BC POC
EP,TM08:53:41,LA42.184298901,LN-87.51037332,HT548.427656,RH0.043084,RV0.098601,DH1.0
81761,DV2.475575,GM4,CL1
BL,DCROVER,PN230,DX26671.422059,DY-16373.462921,DZ-19143.602081,--BC
POC,GM4,CL1,HP0.043084,VP0.098601
CV,DCROVER,SV4,SC0.019219,XX1.796150e-004,XY3.788462e-006,XZ2.326051e-005,YY1.170403
e-003,YZ-8.665410e-004,ZZ9.535708e-004
GS,PN230,N 2056635.320754,E 1114702.224963,EL660.65115,--BC POC
EP,TM08:54:06,LA42.184300053,LN-87.510363482,HT548.487467,RH0.043777,RV0.100045,DH1.
081136,DV2.470627,GM4,CL1
BL,DCROVER,PN231,DX26678.780682,DY-16372.445408,DZ-19142.699373,--BC
POC,GM4,CL1,HP0.043777,VP0.100045
CV,DCROVER,SV4,SC0.019539,XX1.858433e-004,XY1.743817e-006,XZ2.577122e-005,YY1.208295
e-003,YZ-8.927313e-004,ZZ9.814168e-004
GS,PN231,N 2056636.528852,E 1114709.609602,EL660.711045,--BC POC
EP,TM08:54:30,LA42.184298601,LN-87.510356749,HT548.343077,RH0.042325,RV0.096604,DH1.
080595,DV2.465908,GM4,CL1
BL,DCROVER,PN232,DX26683.869419,DY-16373.138062,DZ-19143.883848,--BC
POC,GM4,CL1,HP0.042325,VP0.096604
CV,DCROVER,SV4,SC0.019203,XX1.796786e-004,XY-4.056819e-007,XZ2.654376e-005,YY1.16545
6e-003,YZ-8.592079e-004,ZZ9.436166e-004
GS,PN232,N 2056635.087286,E 1114714.676875,EL660.566669,--BC POC
EP,TM08:54:56,LA42.18429454,LN-87.510353623,HT548.509468,RH0.043744,RV0.099705,DH1.0
80049,DV2.46064,GM4,CL1
BL,DCROVER,PN233,DX26686.325031,DY-16375.938364,DZ-19146.811867,--BC
POC,GM4,CL1,HP0.043744,VP0.099705
CV,DCROVER,SV4,SC0.018521,XX1.673093e-004,XY-2.313164e-006,XZ2.621203e-005,YY1.08251
7e-003,YZ-7.962559e-004,ZZ8.735952e-004
GS,PN233,N 2056630.989822,E 1114717.048936,EL660.733001,--BC POC
EP,TM08:55:19,LA42.184290742,LN-87.510353614,HT548.53968,RH0.048407,RV0.110138,DH1.0
79656,DV2.456481,GM4,CL1
BL,DCROVER,PN234,DX26686.429736,DY-16378.546886,DZ-19149.634813,--BC
POC,GM4,CL1,HP0.048407,VP0.110138
CV,DCROVER,SV4,SC0.023091,XX2.602807e-004,XY-5.992717e-006,XZ4.261588e-005,YY1.68053
8e-003,YZ-1.233817e-003,ZZ1.352550e-003
GS,PN234,N 2056627.145125,E 1114717.077541,EL660.76314,--BC POC
EP,TM08:55:41,LA42.184286275,LN-87.510355877,HT548.680943,RH0.046536,RV0.105712,DH1.
079217,DV2.451372,GM4,CL1
BL,DCROVER,PN235,DX26684.848411,DY-16381.757168,DZ-19152.883927,--BC
POC,GM4,CL1,HP0.046536,VP0.105712
CV,DCROVER,SV4,SC0.019829,XX1.921294e-004,XY-6.531007e-006,XZ3.306491e-005,YY1.23726
8e-003,YZ-9.062650e-004,ZZ9.924938e-004
GS,PN235,N 2056622.613399,E 1114715.402656,EL660.904302,--BC POC
EP,TM08:56:11,LA42.184284526,LN-87.510361545,HT548.813817,RH0.042915,RV0.097401,DH1.
07875,DV2.445257,GM4,CL1
BL,DCROVER,PN236,DX26680.640916,DY-16383.20596,DZ-19154.103637,--BC
PT,GM4,CL1,HP0.042915,VP0.097401
CV,DCROVER,SV4,SC0.019497,XX1.859491e-004,XY-8.681816e-006,XZ3.378762e-005,YY1.19364
9e-003,YZ-8.718540e-004,ZZ9.536947e-004
GS,PN236,N 2056620.819001,E 1114711.15403,EL661.037107,--BC PT
EP,TM08:57:35,LA42.184069589,LN-87.510394525,HT549.07656,RH0.046452,RV0.104654,DH1.0
77639,DV2.425986,GM4,CL1
BL,DCROVER,PN237,DX26661.377624,DY-16530.698931,DZ-19314.832606,--BC
PT,GM4,CL1,HP0.046452,VP0.104654
CV,DCROVER,SV4,SC0.018471,XX1.674365e-004,XY-1.407071e-005,XZ3.506702e-005,YY1.06365
0e-003,YZ-7.698528e-004,ZZ8.391047e-004
GS,PN237,N 2056403.100215,E 1114687.60776,EL661.295473,--BC PT
EP,TM08:58:02,LA42.18405705,LN-87.510387539,HT549.224298,RH0.042907,RV0.096402,DH1.0
77377,DV2.41953,GM4,CL1
BL,DCROVER,PN238,DX26666.947748,DY-16539.150417,DZ-19324.120439,--BC
POC,GM4,CL1,HP0.042907,VP0.096402
CV,DCROVER,SV4,SC0.019467,XX1.861776e-004,XY-1.783733e-005,XZ4.058674e-005,YY1.17844

4e-003,YZ-8.502707e-004,ZZ9.256638e-004
GS,PN238,N 2056390.436445,E 1114692.928731,EL661.443012,--BC POC
EP,TM08:58:26,LA42.184053005,LN-87.510373669,HT549.123199,RH0.049094,RV0.110008,DH1.
077182,DV2.413696,GM4,CL1
BL,DCROVER,PN239,DX26677.462396,DY-16541.439232,DZ-19327.216366,--BC
PC,GM4,CL1,HP0.049094,VP0.110008
CV,DCROVER,SV4,SC0.019467,XX1.863487e-004,XY-1.978443e-005,XZ4.201485e-005,YY1.17564
0e-003,YZ-8.458177e-004,ZZ9.198404e-004
GS,PN239,N 2056386.4012,E 1114703.372857,EL661.341922,--BC PC
EP,TM08:58:52,LA42.184052919,LN-87.510362903,HT549.03671,RH0.042905,RV0.095919,DH1.0
77007,DV2.407031,GM4,CL1
BL,DCROVER,PN240,DX26685.546244,DY-16541.130936,DZ-19327.339409,--BC
PT,GM4,CL1,HP0.042905,VP0.095919
CV,DCROVER,SV4,SC0.019467,XX1.865275e-004,XY-2.195520e-005,XZ4.358910e-005,YY1.17228
7e-003,YZ-8.406111e-004,ZZ9.130762e-004
GS,PN240,N 2056386.359388,E 1114711.462687,EL661.255499,--BC PT
EP,TM08:59:15,LA42.184057336,LN-87.510355481,HT549.452677,RH0.049906,RV0.111349,DH1.
076899,DV2.401526,GM4,CL1
BL,DCROVER,PN241,DX26691.017524,DY-16538.221075,DZ-19323.752473,--BC
POC,GM4,CL1,HP0.049906,VP0.111349
CV,DCROVER,SV4,SC0.018468,XX1.680072e-004,XY-2.133841e-005,XZ4.036387e-005,YY1.05253
5e-003,YZ-7.526480e-004,ZZ8.167186e-004
GS,PN241,N 2056390.862618,E 1114717.013625,EL661.671599,--BC POC
EP,TM08:59:37,LA42.18406195,LN-87.510361404,HT549.628644,RH0.049899,RV0.111129,DH1.0
76822,DV2.39596,GM4,CL1
BL,DCROVER,PN242,DX26686.457727,DY-16535.375969,DZ-19320.179936,--BC
PC,GM4,CL1,HP0.049899,VP0.111129
CV,DCROVER,SV4,SC0.018804,XX1.743155e-004,XY-2.381872e-005,XZ4.305227e-005,YY1.08835
4e-003,YZ-7.759526e-004,ZZ8.411243e-004
GS,PN242,N 2056395.508022,E 1114712.537468,EL661.847618,--BC PC
EP,TM09:00:03,LA42.184062437,LN-87.510379614,HT549.757688,RH0.04642,RV0.103037,DH1.0
76771,DV2.389309,GM4,CL1
BL,DCROVER,PN243,DX26672.775861,DY-16535.652806,DZ-19319.728542,--BCX,GM4,CL1,HP0.04
642,VP0.103037
CV,DCROVER,SV4,SC0.01978,XX1.930432e-004,XY-2.837737e-005,XZ4.905900e-005,YY1.200753
e-003,YZ-8.532614e-004,ZZ9.238605e-004
GS,PN243,N 2056395.923405,E 1114698.85271,EL661.976557,--BCX
EP,TM09:00:37,LA42.184021737,LN-87.510424036,HT549.196007,RH0.04487,RV0.099199,DH1.0
76771,DV2.380501,GM4,CL1
BL,DCROVER,PN244,DX26640.44558,DY-16564.205478,DZ-19350.575768,--BC,GM4,CL1,HP0.0448
7,VP0.099199
CV,DCROVER,SV4,SC0.01912,XX1.805841e-004,XY-2.912820e-005,XZ4.765103e-005,YY1.117220
e-003,YZ-7.901245e-004,ZZ8.541012e-004
GS,PN244,N 2056354.533915,E 1114665.709578,EL661.413806,--BC
EP,TM09:01:40,LA42.183997739,LN-87.510375778,HT549.305233,RH0.050197,RV0.11071,DH1.0
76964,DV2.364174,GM4,CL1
BL,DCROVER,PN245,DX26677.296167,DY-16579.268571,DZ-19368.467478,--WALKX,GM4,CL1,HP0.
050197,VP0.11071
CV,DCROVER,SV4,SC0.019463,XX1.874948e-004,XY-3.481366e-005,XZ5.251148e-005,YY1.14878
1e-003,YZ-8.054214e-004,ZZ8.681057e-004
GS,PN245,N 2056330.446761,E 1114702.105326,EL661.522871,--WALKX
EP,TM09:02:11,LA42.183997522,LN-87.510317987,HT548.976568,RH0.051638,RV0.113866,DH1.
15143,DV2.538834,GM4,CL1
BL,DCROVER,PN246,DX26720.68539,DY-16577.545187,DZ-19368.851227,--WALKX,GM4,CL1,HP0.0
51638,VP0.113866
CV,DCROVER,SV4,SC0.020476,XX1.855704e-004,XY-2.079172e-005,XZ2.053833e-005,YY1.17026
4e-003,YZ-9.026885e-004,ZZ1.101443e-003
GS,PN246,N 2056330.473105,E 1114745.527812,EL661.194566,--WALKX
EP,TM09:02:35,LA42.184007291,LN-87.510317922,HT548.593656,RH0.055845,RV0.122343,DH1.
107217,DV2.423912,GM4,CL1
BL,DCROVER,PN247,DX26720.474385,DY-16570.608177,DZ-19361.796022,--WALKX,GM4,CL1,HP0.
055845,VP0.122343
CV,DCROVER,SV4,SC0.019347,XX1.771213e-004,XY-3.072974e-005,XZ3.965136e-005,YY1.09058

0e-003,YZ-7.912511e-004,ZZ9.001477e-004
GS,PN247,N 2056340.361967,E 1114745.521042,EL660.811845,--WALKX
EP,TM09:02:58,LA42.184024805,LN-87.510317821,HT548.522101,RH0.047485,RV0.10327,DH1.0
77587,DV2.34273,GM4,CL1
BL,DCROVER,PN248,DX26720.100184,DY-16558.625292,DZ-19348.732295,--WALKX,GM4,CL1,HP0.
047485,VP0.10327
CV,DCROVER,SV4,SC0.018829,XX1.758894e-004,XY-3.816078e-005,XZ5.277456e-005,YY1.06337
8e-003,YZ-7.364674e-004,ZZ7.906219e-004
GS,PN248,N 2056358.092296,E 1114745.495964,EL660.74063,--WALKX
EP,TM09:03:26,LA42.184024601,LN-87.510373233,HT549.033714,RH0.048302,RV0.104666,DH1.
077906,DV2.335157,GM4,CL1
BL,DCROVER,PN249,DX26678.513152,DY-16560.704048,DZ-19348.54113,--WALKX,GM4,CL1,HP0.0
48302,VP0.104666
CV,DCROVER,SV4,SC0.019154,XX1.821351e-004,XY-4.143174e-005,XZ5.583162e-005,YY1.09596
0e-003,YZ-7.556817e-004,ZZ8.101006e-004
GS,PN249,N 2056357.649141,E 1114703.863409,EL661.251888,--WALKX
EP,TM09:03:49,LA42.184007561,LN-87.510374783,HT549.27741,RH0.044963,RV0.097082,DH1.0
78234,DV2.328376,GM4,CL1
BL,DCROVER,PN250,DX26677.79165,DY-16572.53136,DZ-19361.133214,--WALKX,GM4,CL1,HP0.04
4963,VP0.097082
CV,DCROVER,SV4,SC0.019159,XX1.823568e-004,XY-4.317180e-005,XZ5.692490e-005,YY1.09264
6e-003,YZ-7.503674e-004,ZZ8.033748e-004
GS,PN250,N 2056340.393708,E 1114702.796713,EL661.495244,--WALKX
--Date: 11-18-2009 Time: 09:03:58
EP,TM09:04:40,LA42.184007306,LN-87.510246193,HT548.130256,RH0.046601,RV0.100025,DH1.
078981,DV2.315329,GM4,CL1
BL,DCROVER,PN251,DX26774.319271,DY-16568.233874,DZ-19362.096262,--BCX,GM4,CL1,HP0.04
6601,VP0.100025
CV,DCROVER,SV4,SC0.019535,XX1.897867e-004,XY-4.817788e-005,XZ6.116667e-005,YY1.12804
0e-003,YZ-7.686759e-004,ZZ8.209682e-004
GS,PN251,N 2056340.683338,E 1114799.414409,EL660.348897,--BCX
EP,TM09:06:08,LA42.184007003,LN-87.510173025,HT548.118525,RH0.050206,RV0.106535,DH1.
08064,DV2.292782,GM4,CL1
BL,DCROVER,PN252,DX26829.265339,DY-16566.370054,DZ-19362.331509,--BCX,GM4,CL1,HP0.05
0206,VP0.106535
CV,DCROVER,SV4,SC0.019908,XX1.974479e-004,XY-5.589290e-005,XZ6.689194e-005,YY1.15683
6e-003,YZ-7.770596e-004,ZZ8.262358e-004
GS,PN252,N 2056340.687726,E 1114854.390822,EL660.337623,--BCX
EP,TM09:06:37,LA42.184021111,LN-87.510172975,HT548.04786,RH0.053768,RV0.11782,DH1.16
6364,DV2.602324,GM4,CL1
BL,DCROVER,PN253,DX26828.93989,DY-16556.70857,DZ-19351.81686,--BC
PT,GM4,CL1,HP0.053768,VP0.11782
CV,DCROVER,SV4,SC0.021138,XX2.606051e-004,XY-2.046250e-004,XZ1.798702e-004,YY1.43295
0e-003,YZ-9.885310e-004,ZZ9.775464e-004
GS,PN253,N 2056354.970164,E 1114854.346953,EL660.267232,--BC PT
EP,TM09:07:17,LA42.184025073,LN-87.510168419,HT547.966478,RH0.046798,RV0.098363,DH1.
082544,DV2.272559,GM4,CL1
BL,DCROVER,PN254,DX26832.257576,DY-16553.821976,DZ-19348.905608,--BC
PC,GM4,CL1,HP0.046798,VP0.098363
CV,DCROVER,SV4,SC0.017671,XX1.557550e-004,XY-4.809352e-005,XZ5.488302e-005,YY9.00596
3e-004,YZ-5.966280e-004,ZZ6.317060e-004
GS,PN254,N 2056359.000259,E 1114857.747656,EL660.185955,--BC PC
EP,TM09:07:46,LA42.184024691,LN-87.510138381,HT548.282898,RH0.046859,RV0.098011,DH1.
083324,DV2.26534,GM4,CL1
BL,DCROVER,PN255,DX26854.830134,DY-16553.469657,DZ-19348.978886,--BCX,GM4,CL1,HP0.04
6859,VP0.098011
CV,DCROVER,SV4,SC0.019967,XX1.989261e-004,XY-6.312835e-005,XZ7.095542e-005,YY1.14504
9e-003,YZ-7.548808e-004,ZZ7.980788e-004
GS,PN255,N 2056358.741202,E 1114880.318656,EL660.502558,--BCX
EP,TM09:09:26,LA42.183903837,LN-87.510041579,HT545.934014,RH0.045708,RV0.094419,DH1.
08654,DV2.239791,GM4,CL1
BL,DCROVER,PN256,DX26930.539074,DY-16631.304615,DZ-19441.034415,--MW-08,GM4,CL1,HP0.
045708,VP0.094419

CV,DCROVER,SV4,SC0.018716,XX1.749357e-004,XY-6.094059e-005,XZ6.497609e-005,YY9.90337
3e-004,YZ-6.406966e-004,ZZ6.735119e-004
GS,PN256,N 2056236.814867,E 1114953.745487,EL658.151944,--MW-08
EP,TM09:09:54,LA42.183902922,LN-87.510022507,HT545.679071,RH0.053027,RV0.108884,DH1.
087746,DV2.231525,GM4,CL1
BL,DCROVER,PN257,DX26944.875879,DY-16631.201982,DZ-19441.891322,--WALK
PC,GM4,CL1,HP0.053027,VP0.108884
CV,DCROVER,SV4,SC0.019755,XX1.949420e-004,XY-6.984540e-005,XZ7.326501e-005,YY1.09764
1e-003,YZ-7.055618e-004,ZZ7.402632e-004
GS,PN257,N 2056235.96958,E 1114968.080625,EL657.897104,--WALK PC
EP,TM09:10:39,LA42.184014206,LN-87.510021319,HT546.565276,RH0.046438,RV0.094632,DH1.
089568,DV2.220062,GM4,CL1
BL,DCROVER,PN258,DX26942.947572,DY-16556.040879,DZ-19357.984344,--WALKX,GM4,CL1,HP0.
046438,VP0.094632
CV,DCROVER,SV4,SC0.019456,XX1.891030e-004,XY-7.040738e-005,XZ7.219578e-005,YY1.05660
9e-003,YZ-6.728106e-004,ZZ7.039010e-004
GS,PN258,N 2056348.626715,E 1114968.333642,EL658.785475,--WALKX
EP,TM09:11:11,LA42.183994215,LN-87.505984248,HT546.328108,RH0.049358,RV0.101285,DH1.
26184,DV2.587947,GM4,CL1
BL,DCROVER,PN259,DX26971.287164,DY-16568.433998,DZ-19373.109594,--WALKX,GM4,CL1,HP0.
049358,VP0.101285
CV,DCROVER,SV4,SC0.022152,XX2.026456e-004,XY3.649264e-005,XZ3.264188e-005,YY1.604715
e-003,YZ-8.533139e-004,ZZ7.469736e-004
GS,PN259,N 2056328.548413,E 1114996.301926,EL658.548153,--WALKX
EP,TM09:12:36,LA42.183992969,LN-87.505731975,HT542.070246,RH0.167833,RV0.355878,DH3.
170815,DV6.723485,GM4,CL1
BL,DCROVER,PN260,DX27160.621589,DY-16559.023628,DZ-19376.908779,--WALKX,GM4,CL1,HP0.
167833,VP0.355878
CV,DCROVER,SV4,SC0.051156,XX4.915866e-004,XY1.864698e-003,XZ-6.269357e-004,YY1.19283
0e-002,YZ-4.485044e-003,ZZ1.963171e-003
GS,PN260,N 2056328.364087,E 1115185.854212,EL654.29187,--WALKX
EP,TM09:13:15,LA42.184012632,LN-87.50573189,HT542.197824,RH0.038993,RV0.077613,DH1.0
97108,DV2.181606,GM4,CL1
BL,DCROVER,PN261,DX27160.185503,DY-16545.725091,DZ-19362.102365,--WALKX,GM4,CL1,HP0.
038993,VP0.077613
CV,DCROVER,SV4,SC0.018345,XX1.680182e-004,XY-7.031269e-005,XZ6.703280e-005,YY9.15340
0e-004,YZ-5.633793e-004,ZZ5.834119e-004
GS,PN261,N 2056348.269545,E 1115185.804299,EL654.41983,--WALKX
EP,TM09:13:46,LA42.184046274,LN-87.505694456,HT542.170419,RH0.057593,RV0.118081,DH1.
159271,DV2.374326,GM4,CL1
BL,DCROVER,PN262,DX27187.432,DY-16521.739551,DZ-19336.935547,--WALKX,GM4,CL1,HP0.057
593,VP0.118081
CV,DCROVER,SV4,SC0.020064,XX1.823798e-004,XY-6.615691e-005,XZ5.125109e-005,YY1.04454
6e-003,YZ-7.252724e-004,ZZ8.638104e-004
GS,PN262,N 2056382.485071,E 1115213.736715,EL654.393314,--WALKX
EP,TM09:14:06,LA42.184052119,LN-87.505694262,HT542.193411,RH0.054246,RV0.110858,DH1.
159924,DV2.369748,GM4,CL1
BL,DCROVER,PN263,DX27187.429024,DY-16517.770752,DZ-19332.544407,--WALKX,GM4,CL1,HP0.
054246,VP0.110858
CV,DCROVER,SV4,SC0.02151,XX2.097030e-004,XY-7.726930e-005,XZ5.956065e-005,YY1.197957
e-003,YZ-8.287871e-004,ZZ9.862300e-004
GS,PN263,N 2056388.402683,E 1115213.849027,EL654.416421,--WALKX
EP,TM09:16:13,LA42.18430805,LN-87.505729377,HT542.528197,RH0.047398,RV0.091693,DH1.1
07842,DV2.142413,GM4,CL1
BL,DCROVER,PN264,DX27154.526744,DY-16344.722147,DZ-19140.723981,--WALKX,GM4,CL1,HP0.
047398,VP0.091693
CV,DCROVER,SV4,SC0.020198,XX2.031356e-004,XY-9.491868e-005,XZ8.388914e-005,YY1.07866
6e-003,YZ-6.373379e-004,ZZ6.518508e-004
GS,PN264,N 2056647.329364,E 1115185.991981,EL654.755944,--WALKX
EP,TM09:16:37,LA42.184327046,LN-87.505747904,HT542.523964,RH0.049272,RV0.094958,DH1.
109545,DV2.137315,GM4,CL1
BL,DCROVER,PN265,DX27140.129851,DY-16332.30535,DZ-19126.506209,--WALKX,GM4,CL1,HP0.0
49272,VP0.094958

CV,DCROVER,SV4,SC0.019539,XX1.899886e-004,XY-9.009858e-005,XZ7.877249e-005,YY1.00536
4e-003,YZ-5.903367e-004,ZZ6.026234e-004
GS,PN265,N 2056666.47958,E 1115171.962514,EL654.751961,--WALKX
EP,TM09:18:01,LA42.184327371,LN-87.505832244,HT543.685618,RH0.052065,RV0.099034,DH1.
115631,DV2.120987,GM4,CL1
BL,DCROVER,PN266,DX27076.82741,DY-16335.320859,DZ-19125.481304,--WALKX,GM4,CL1,HP0.0
52065,VP0.099034
CV,DCROVER,SV4,SC0.020647,XX2.116722e-004,XY-1.050319e-004,XZ8.874108e-005,YY1.10841
6e-003,YZ-6.377849e-004,ZZ6.469818e-004
GS,PN266,N 2056666.447767,E 1115108.592664,EL655.913085,--WALKX
EP,TM09:18:25,LA42.184327535,LN-87.505869591,HT543.775256,RH0.052128,RV0.098775,DH1.
117475,DV2.116557,GM4,CL1
BL,DCROVER,PN267,DX27048.783831,DY-16336.327921,DZ-19125.297694,--WALKX,GM4,CL1,HP0.
052128,VP0.098775
CV,DCROVER,SV4,SC0.02067,XX2.119988e-004,XY-1.065276e-004,XZ8.912542e-005,YY1.106950
e-003,YZ-6.331513e-004,ZZ6.410852e-004
GS,PN267,N 2056666.454967,E 1115080.531442,EL656.002489,--WALKX
EP,TM09:19:18,LA42.184304806,LN-87.505809726,HT543.51411,RH0.037678,RV0.071005,DH1.1
21222,DV2.108191,GM4,CL1
BL,DCROVER,PN268,DX27094.307472,DY-16349.925806,DZ-19142.489218,--MW-05,GM4,CL1,HP0.
037678,VP0.071005
CV,DCROVER,SV4,SC0.019728,XX1.928123e-004,XY-9.929945e-005,XZ8.146798e-005,YY1.00124
4e-003,YZ-5.658180e-004,ZZ5.707408e-004
GS,PN268,N 2056643.701656,E 1115125.641413,EL655.741283,--MW-05
EP,TM09:20:17,LA42.184345005,LN-87.505874602,HT544.108685,RH0.189142,RV0.407031,DH3.
168465,DV6.818483,GM4,CL1
BL,DCROVER,PN269,DX27044.583857,DY-16324.818939,DZ-19111.995301,--WALKX,GM4,CL1,HP0.
189142,VP0.407031
CV,DCROVER,SV4,SC0.057651,XX4.623851e-004,XY1.829672e-003,XZ-5.920657e-004,YY1.58382
5e-002,YZ-5.774848e-003,ZZ2.414634e-003
GS,PN269,N 2056684.117811,E 1115076.665946,EL656.336225,--WALKX
EP,TM09:25:52,LA42.184344868,LN-87.50597179,HT543.852294,RH0.177724,RV0.381908,DH3.1
9723,DV6.870486,GM4,CL1
BL,DCROVER,PN270,DX26971.606902,DY-16327.462473,DZ-19112.270291,--WALKX,GM4,CL1,HP0.
177724,VP0.381908
CV,DCROVER,SV4,SC0.05417,XX3.160760e-004,XY1.185532e-003,XZ-3.638058e-004,YY1.415828
e-002,YZ-4.995241e-003,ZZ2.010357e-003
GS,PN270,N 2056683.564492,E 1115003.645474,EL656.079216,--WALKX
EP,TM09:26:38,LA42.18432852,LN-87.510050163,HT543.583037,RH0.168786,RV0.362405,DH3.2
04381,DV6.88022,GM4,CL1
BL,DCROVER,PN271,DX26913.171542,DY-16340.60543,DZ-19124.689737,--WALK
PT,GM4,CL1,HP0.168786,VP0.362405
CV,DCROVER,SV4,SC0.051446,XX2.756027e-004,XY1.016985e-003,XZ-3.093537e-004,YY1.27764
5e-002,YZ-4.486685e-003,ZZ1.796332e-003
GS,PN271,N 2056666.681401,E 1114944.854978,EL655.809146,--WALK PT
EP,TM09:27:39,LA42.184324359,LN-87.510139811,HT545.707693,RH0.191282,RV0.410145,DH3.
216028,DV6.895783,GM4,CL1
BL,DCROVER,PN272,DX26846.025316,DY-16347.535853,DZ-19126.374513,--BCX,GM4,CL1,HP0.19
1282,VP0.410145
CV,DCROVER,SV4,SC0.058303,XX3.375534e-004,XY1.211191e-003,XZ-3.635441e-004,YY1.64142
8e-002,YZ-5.725686e-003,ZZ2.275506e-003
GS,PN272,N 2056662.086914,E 1114877.523176,EL657.933154,--BCX
EP,TM09:28:58,LA42.184276851,LN-87.510135928,HT545.599507,RH0.050417,RV0.086954,DH1.
184935,DV2.043541,GM4,CL1
BL,DCROVER,PN273,DX26850.15213,DY-16379.699129,DZ-19162.012584,--BCX,GM4,CL1,HP0.050
417,VP0.086954
CV,DCROVER,SV4,SC0.021483,XX2.209930e-004,XY-1.475881e-004,XZ9.528327e-005,YY1.10483
2e-003,YZ-5.319219e-004,ZZ5.083903e-004
GS,PN273,N 2056614.011544,E 1114880.713419,EL657.824071,--BCX
--program Version: 4.7.1
--Data Collector Serial Number: SS15A09098
--Activating GPS Receiver: Topcon TPS HiPer [HIPER3], COM1, 115200 baud, no parity
--Date: 11-18-2009 Time: 09:39:49

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--Activating GPS Receiver: Topcon TPS HiPer [HIPER2], COM1, 115200 baud, no parity
--Activating GPS Receiver: Topcon TPS HiPer [HIPER3], COM1, 115200 baud, no parity
--Activating GPS Receiver: Topcon TPS HiPer [HIPER1], COM1, 115200 baud, no parity
--Activating GPS Receiver: Topcon TPS HiPer [HIPER2], COM1, 115200 baud, no parity
--Activating GPS Receiver: Topcon TPS HiPer [HIPER3], COM1, 115200 baud, no parity
--10:06:07,Get base reference position at
ROVER:LA42.225813134,LN-87.56506687,HT635.341577,
RX,DCGETBASE,RA0.0,RE0,FI
BP,PNBASE_1,LA42.225813134,LN-87.56506687,HT635.341577,SG0
--10:05:01,Set ROVER receiver with base reference
position:LA42.225813134,LN-87.56506687,HT635.341577
RX,DCROVER,RA6.997768,RE0,FI
EQ,DCROVER,RXHiPer,RS8QQVEFI68SG,AN0,AI0,ATTopcon HiPer,TS,TA0.0,HO0.0,VO0.347768
AH,DCROVER,MA6.65,ME2,RA6.997768
--Activating GPS Receiver: Topcon TPS HiPer [HIPER2], COM1, 115200 baud, no parity
--10:08:04,Get base reference position at
ROVER:LA42.225813134,LN-87.56506687,HT635.341577,
RX,DCGETBASE,RA0.0,RE0,FI
BP,PNBASE_1,LA42.225813134,LN-87.56506687,HT635.341577,SG0
--10:07:18,Set ROVER receiver with base reference
position:LA42.225813134,LN-87.56506687,HT635.341577
RX,DCROVER,RA6.997768,RE0,FI
EQ,DCROVER,RXHiPer,RS8QQVEFI68SG,AN0,AI0,ATTopcon HiPer,TS,TA0.0,HO0.0,VO0.347768
AH,DCROVER,MA6.65,ME2,RA6.997768
--Activating GPS Receiver: Topcon TPS HiPer [HIPER3], COM1, 115200 baud, no parity
--Activating GPS Receiver: Topcon TPS HiPer [HIPER2], COM1, 115200 baud, no parity
--program Version: 4.7.1
--Data Collector Serial Number: SS15A09098
--Activating GPS Receiver: Topcon TPS HiPer [HIPER3], COM1, 115200 baud, no parity
--Date: 11-18-2009  Time: 10:26:13
--Activating GPS Receiver: Topcon TPS HiPer [HIPER2], COM1, 115200 baud, no parity
--Activating GPS Receiver: Topcon TPS HiPer [HIPER3], COM1, 115200 baud, no parity
--Activating GPS Receiver: Topcon TPS HiPer [HIPER2], COM1, 115200 baud, no parity
--Activating GPS Receiver: Topcon TPS HiPer [HIPER3], COM1, 115200 baud, no parity
--Store remote reference position as new point.
EE,GF0,SG0
EP,TM10:34:18,LA41.540133517,LN-87.57552196,HT583.638268,RH0.0,RV0.0,GM1,CL1
SP,PNBASE_3,N 1906499.918832,E 1084431.560683,EL693.20107,--
--10:34:18,Get base reference position at
ROVER:LA41.540133517,LN-87.57552196,HT583.638268,
RX,DCGETBASE,RA0.0,RE0,FI
BP,PNBASE_3,LA41.540133517,LN-87.57552196,HT583.638268,SG0
--10:33:31,Set ROVER receiver with base reference
position:LA41.540133517,LN-87.57552196,HT583.638268
RX,DCROVER,RA6.997768,RE0,FI
EQ,DCROVER,RXHiPer,RS8QQVEFI68SG,AN0,AI0,ATTopcon HiPer,TS,TA0.0,HO0.0,VO0.347768
AH,DCROVER,MA6.65,ME2,RA6.997768
--Detected change of base reference position during RTK survey.
--Store remote reference position as new point.
EE,GF0,SG0
EP,TM10:37:28,LA41.593371309,LN-87.515413942,HT637.071889,RH0.0,RV0.0,GM1,CL1
SP,PNBASE_4,N 1940277.196673,E 1111553.145027,EL747.425281,--
--10:37:28,Get base reference position at
ROVER:LA41.593371309,LN-87.515413942,HT637.071889,
RX,DCGETBASE,RA0.0,RE0,FI
BP,PNBASE_4,LA41.593371309,LN-87.515413942,HT637.071889,SG0
RX,DCROVER,RA6.997768,RE0,FI
EQ,DCROVER,RXHiPer,RS8QQVEFI68SG,AN0,AI0,ATTopcon HiPer,TS,TA0.0,HO0.0,VO0.347768
AH,DCROVER,MA6.65,ME2,RA6.997768
--Detected change of base reference position during RTK survey.
--10:48:44,Get base reference position at
ROVER:LA42.225813134,LN-87.56506687,HT635.341577,
RX,DCGETBASE,RA0.0,RE0,FI
```

BP,PNBASE_1,LA42.225813134,LN-87.56506687,HT635.341577,SG0
RX,DCROVER,RA6.997768,RE0,FI
EQ,DCROVER,RXHiPer,RS8QQVEFI68SG,AN0,AI0,ATTopcon HiPer,TS,TA0.0,HO0.0,VO0.347768
AH,DCROVER,MA6.65,ME2,RA6.997768
EP,TM10:53:37,LA42.184835436,LN-87.50567422,HT541.241615,RH0.084452,RV0.079497,DH2.0
01993,DV1.884534,GM4,CL1
BL,DCROVER,PN274,DX27182.415932,DY-15983.064475,DZ-18746.785198,--BCX,GM4,CL1,HP0.08
4452,VP0.079497
CV,DCROVER,SV4,SC0.034623,XX2.373887e-004,XY-1.976029e-005,XZ3.001941e-004,YY5.18837
5e-004,YZ-8.521055e-005,ZZ1.504797e-003
GS,PN274,N 2057181.433447,E 1115224.395658,EL653.479929,--BCX
EP,TM10:57:34,LA42.184837192,LN-87.505420892,HT541.074245,RH0.110558,RV0.10382,DH2.0
79737,DV1.953002,GM4,CL1
BL,DCROVER,PN275,DX27372.572289,DY-15974.600253,DZ-18745.583597,--BCX,GM4,CL1,HP0.11
0558,VP0.10382
CV,DCROVER,SV4,SC0.033698,XX2.217922e-004,XY-1.518664e-005,XZ3.164485e-004,YY4.45843
2e-004,YZ-7.984423e-005,ZZ1.469309e-003
GS,PN275,N 2057184.294365,E 1115414.716518,EL653.314203,--BCX
--Activating GPS Receiver: Topcon TPS HiPer [HIPER2], COM1, 115200 baud, no parity
--11:01:02,Get base reference position at
ROVER:LA42.225813134,LN-87.56506687,HT635.341577,
RX,DCGETBASE,RA0.0,RE0,FI
BP,PNBASE_1,LA42.225813134,LN-87.56506687,HT635.341577,SG0
--11:00:16,Set ROVER receiver with base reference
position:LA42.225813134,LN-87.56506687,HT635.341577
RX,DCROVER,RA6.997768,RE0,FI
EQ,DCROVER,RXHiPer,RS8QQVEFI68SG,AN0,AI0,ATTopcon HiPer,TS,TA0.0,HO0.0,VO0.347768
AH,DCROVER,MA6.65,ME2,RA6.997768
--Activating GPS Receiver: Topcon TPS HiPer [HIPER3], COM1, 115200 baud, no parity
--11:13:02,Get base reference position at
ROVER:LA42.225813134,LN-87.56506687,HT635.341577,
RX,DCGETBASE,RA0.0,RE0,FI
BP,PNBASE_1,LA42.225813134,LN-87.56506687,HT635.341577,SG0
--11:12:10,Set ROVER receiver with base reference
position:LA42.225813134,LN-87.56506687,HT635.341577
RX,DCROVER,RA6.997768,RE0,FI
EQ,DCROVER,RXHiPer,RS8QQVEFI68SG,AN0,AI0,ATTopcon HiPer,TS,TA0.0,HO0.0,VO0.347768
AH,DCROVER,MA6.65,ME2,RA6.997768
EP,TM11:13:46,LA42.184713939,LN-87.510382793,HT546.392577,RH0.057942,RV0.078067,DH1.
250499,DV1.685478,GM4,CL1
BL,DCROVER,PN276,DX26653.647212,DY-16089.584012,DZ-18834.270384,--WALKX,GM4,CL1,HP0.
057942,VP0.078067
CV,DCROVER,SV4,SC0.022737,XX2.448456e-004,XY2.765435e-005,XZ-5.084464e-005,YY6.10555
8e-004,YZ-3.380931e-004,ZZ6.007087e-004
GS,PN276,N 2057055.42025,E 1114692.726962,EL658.624059,--WALKX
EP,TM11:14:16,LA42.184705013,LN-87.510367066,HT546.346808,RH0.052957,RV0.071606,DH1.
248777,DV1.688787,GM4,CL1
BL,DCROVER,PN277,DX26665.681988,DY-16095.186018,DZ-18840.983465,--WALKX,GM4,CL1,HP0.
052957,VP0.071606
CV,DCROVER,SV4,SC0.022564,XX2.413974e-004,XY2.728583e-005,XZ-4.934498e-005,YY6.03610
3e-004,YZ-3.362517e-004,ZZ5.952190e-004
GS,PN277,N 2057046.451164,E 1114704.593849,EL658.578215,--WALKX
EP,TM11:14:52,LA42.184677571,LN-87.510368368,HT546.665868,RH0.060777,RV0.082471,DH1.
247111,DV1.692163,GM4,CL1
BL,DCROVER,PN278,DX26665.414999,DY-16114.147006,DZ-18861.312195,--WALKX,GM4,CL1,HP0.
060777,VP0.082471
CV,DCROVER,SV4,SC0.022154,XX2.329554e-004,XY2.633960e-005,XZ-4.683858e-005,YY5.84182
1e-004,YZ-3.274140e-004,ZZ5.774245e-004
GS,PN278,N 2057018.665856,E 1114703.773522,EL658.896735,--WALKX
EP,TM11:16:52,LA42.184683792,LN-87.510415874,HT546.757466,RH0.05841,RV0.08013,DH1.24
1983,DV1.703825,GM4,CL1
BL,DCROVER,PN279,DX26629.588918,DY-16111.315971,DZ-18856.592802,--BC,GM4,CL1,HP0.058
41,VP0.08013

CV,DCROVER,SV4,SC0.023161,XX2.553684e-004,XY2.880669e-005,XZ-4.858498e-005,YY6.46572
5e-004,YZ-3.693192e-004,ZZ6.441087e-004
GS,PN279,N 2057024.761983,E 1114668.044818,EL658.988155,--BC
EP,TM11:17:25,LA42.184724853,LN-87.510386782,HT546.502988,RH0.062496,RV0.08601,DH1.2
40554,DV1.707482,GM4,CL1
BL,DCROVER,PN280,DX26650.376453,DY-16082.345585,DZ-18826.025969,--BC
PC,GM4,CL1,HP0.062496,VP0.08601
CV,DCROVER,SV4,SC0.021258,XX2.152871e-004,XY2.424220e-005,XZ-4.022330e-005,YY5.46800
8e-004,YZ-3.141440e-004,ZZ5.460936e-004
GS,PN280,N 2057066.451204,E 1114689.667465,EL658.734656,--BC PC
EP,TM11:17:55,LA42.184704207,LN-87.510356676,HT546.286422,RH0.056482,RV0.077961,DH1.
239372,DV1.710667,GM4,CL1
BL,DCROVER,PN281,DX26673.502625,DY-16095.397809,DZ-18841.627793,--BC
PT,GM4,CL1,HP0.056482,VP0.077961
CV,DCROVER,SV4,SC0.022397,XX2.391073e-004,XY2.687661e-005,XZ-4.401273e-005,YY6.08861
7e-004,YZ-3.514162e-004,ZZ6.093228e-004
GS,PN281,N 2057045.679089,E 1114712.405296,EL658.517879,--BC PT
EP,TM11:18:23,LA42.184681434,LN-87.510349416,HT546.434322,RH0.050744,RV0.070233,DH1.
238229,DV1.713899,GM4,CL1
BL,DCROVER,PN282,DX26679.539618,DY-16110.810854,DZ-18858.575831,--BC
PT,GM4,CL1,HP0.050744,VP0.070233
CV,DCROVER,SV4,SC0.021619,XX2.229159e-004,XY2.500070e-005,XZ-4.037076e-005,YY5.69215
2e-004,YZ-3.301411e-004,ZZ5.709078e-004
GS,PN282,N 2057022.657548,E 1114717.99046,EL658.665383,--BC PT
EP,TM11:18:56,LA42.184654026,LN-87.510387345,HT546.846087,RH0.06233,RV0.086495,DH1.2
37089,DV1.717287,GM4,CL1
BL,DCROVER,PN283,DX26651.772799,DY-16130.848695,DZ-18878.816229,--BC
PC,GM4,CL1,HP0.06233,VP0.086495
CV,DCROVER,SV4,SC0.021199,XX2.144482e-004,XY2.398930e-005,XZ-3.819792e-005,YY5.49143
7e-004,YZ-3.200415e-004,ZZ5.520061e-004
GS,PN283,N 2056994.751377,E 1114689.650386,EL659.076378,--BC PC
EP,TM11:19:24,LA42.184668188,LN-87.510380788,HT546.483874,RH0.052412,RV0.072938,DH1.
236095,DV1.720387,GM4,CL1
BL,DCROVER,PN284,DX26656.324044,DY-16120.751934,DZ-18868.458398,--WALKX,GM4,CL1,HP0.
052412,VP0.072938
CV,DCROVER,SV4,SC0.022331,XX2.380420e-004,XY2.656075e-005,XZ-4.177933e-005,YY6.11085
2e-004,YZ-3.576272e-004,ZZ6.154762e-004
GS,PN284,N 2057009.11527,E 1114694.495561,EL658.714481,--WALKX
--Date: 11-18-2009 Time: 11:26:18
--Activating GPS Receiver: Topcon TPS HiPer [HIPER2], COM1, 115200 baud, no parity
--11:32:42,Get base reference position at
ROVER:LA42.225813134,LN-87.56506687,HT635.341577,
RX,DCGETBASE,RA0.0,RE0,FI
BP,PNBASE_1,LA42.225813134,LN-87.56506687,HT635.341577,SG0
--11:31:51,Set ROVER receiver with base reference
position:LA42.225813134,LN-87.56506687,HT635.341577
RX,DCROVER,RA6.997768,RE0,FI
EQ,DCROVER,RXHiPer,RS8QQVEFI68SG,AN0,AI0,ATTopcon HiPer,TS,TA0.0,HO0.0,VO0.347768
AH,DCROVER,MA6.65,ME2,RA6.997768
EP,TM11:33:12,LA42.184850422,LN-87.510215139,HT544.196815,RH0.065189,RV0.09282,DH1.0
97762,DV1.563601,GM4,CL1
BL,DCROVER,PN285,DX26775.978223,DY-15990.290951,DZ-18733.577353,--WALKX,GM4,CL1,HP0.
065189,VP0.09282
CV,DCROVER,SV4,SC0.019834,XX1.577346e-004,XY-8.858130e-005,XZ7.179366e-005,YY4.54974
2e-004,YZ-2.824417e-004,ZZ5.788745e-004
GS,PN285,N 2057194.294898,E 1114817.90624,EL656.431997,--WALKX
EP,TM11:33:37,LA42.184838682,LN-87.510212624,HT543.97124,RH0.048415,RV0.068724,DH1.1
209,DV1.591339,GM4,CL1
BL,DCROVER,PN286,DX26778.159686,DY-15998.048424,DZ-18742.517646,--WALKX,GM4,CL1,HP0.
048415,VP0.068724
CV,DCROVER,SV4,SC0.020631,XX1.780076e-004,XY-8.128918e-005,XZ5.786735e-005,YY4.81112
6e-004,YZ-3.081417e-004,ZZ6.243715e-004
GS,PN286,N 2057182.421451,E 1114819.862537,EL656.206211,--WALKX

EP,TM11:34:04,LA42.184852822,LN-87.510158294,HT543.699256,RH0.056146,RV0.082969,DH1.
129533,DV1.669152,GM4,CL1
BL,DCROVER,PN287,DX26818.583812,DY-15986.686769,DZ-18732.115521,--WALKX,GM4,CL1,HP0.
056146,VP0.082969
CV,DCROVER,SV4,SC0.020467,XX1.680096e-004,XY-5.957082e-005,XZ5.942540e-005,YY5.56948
6e-004,YZ-3.316742e-004,ZZ6.086598e-004
GS,PN287,N 2057196.966878,E 1114860.601203,EL655.934843,--WALKX
EP,TM11:34:27,LA42.184864626,LN-87.510158326,HT543.835275,RH0.048835,RV0.07231,DH1.1
29764,DV1.672829,GM4,CL1
BL,DCROVER,PN288,DX26818.261724,DY-15978.750039,DZ-18723.188106,--WALKX,GM4,CL1,HP0.
048835,VP0.07231
CV,DCROVER,SV4,SC0.020809,XX1.735655e-004,XY-6.192009e-005,XZ6.170246e-005,YY5.76522
8e-004,YZ-3.447964e-004,ZZ6.323137e-004
GS,PN288,N 2057208.91502,E 1114860.509242,EL656.071091,--WALKX
EP,TM11:35:35,LA42.184792409,LN-87.510220246,HT544.385491,RH0.031194,RV0.046813,DH1.
177563,DV1.770905,GM4,CL1
BL,DCROVER,PN289,DX26773.631171,DY-16030.08176,DZ-18776.878631,--MW-01,GM4,CL1,HP0.0
31194,VP0.046813
CV,DCROVER,SV4,SC0.018854,XX1.377945e-004,XY-2.268247e-005,XZ4.018995e-005,YY5.29540
5e-004,YZ-2.907223e-004,ZZ4.920393e-004
GS,PN289,N 2057135.547307,E 1114814.401744,EL656.619517,--MW-01
EP,TM11:39:19,LA42.184838465,LN-87.510137994,HT543.638047,RH0.058056,RV0.09234,DH1.2
53677,DV1.99579,GM4,CL1
BL,DCROVER,PN290,DX26834.190974,DY-15995.847019,DZ-18742.904644,--BCX,GM4,CL1,HP0.05
8056,VP0.09234
CV,DCROVER,SV4,SC0.02266,XX1.882626e-004,XY2.445253e-005,XZ3.328022e-005,YY9.353894e
-004,YZ-4.796539e-004,ZZ6.916488e-004
GS,PN290,N 2057182.519552,E 1114875.935531,EL655.873484,--BCX
EP,TM11:42:32,LA42.184861228,LN-87.505822735,HT542.269927,RH0.034781,RV0.057214,DH1.
244179,DV2.046926,GM4,CL1
BL,DCROVER,PN291,DX27070.276136,DY-15970.447729,DZ-18726.785592,--MW-02,GM4,CL1,HP0.
034781,VP0.057214
CV,DCROVER,SV4,SC0.02188,XX1.750306e-004,XY1.467068e-005,XZ3.195932e-005,YY9.064007e
-004,YZ-4.887449e-004,ZZ6.935024e-004
GS,PN291,N 2057206.907237,E 1115112.665184,EL654.507798,--MW-02
EP,TM11:43:17,LA42.18484976,LN-87.505735468,HT541.859718,RH0.058048,RV0.096155,DH1.2
4205,DV2.059568,GM4,CL1
BL,DCROVER,PN292,DX27136.080638,DY-15975.493811,DZ-18735.646555,--WALKX,GM4,CL1,HP0.
058048,VP0.096155
CV,DCROVER,SV4,SC0.021475,XX1.684890e-004,XY1.209799e-005,XZ3.105779e-005,YY8.811915
e-004,YZ-4.807973e-004,ZZ6.799359e-004
GS,PN292,N 2057195.671235,E 1115178.29685,EL654.09792,--WALKX
EP,TM11:43:40,LA42.184849688,LN-87.505724903,HT541.789676,RH0.057998,RV0.096548,DH1.
240981,DV2.066115,GM4,CL1
BL,DCROVER,PN293,DX27144.012809,DY-15975.192868,DZ-18735.747256,--WALKX,GM4,CL1,HP0.
057998,VP0.096548
CV,DCROVER,SV4,SC0.022995,XX1.931175e-004,XY1.269372e-005,XZ3.577289e-005,YY1.014921
e-003,YZ-5.569788e-004,ZZ7.864232e-004
GS,PN293,N 2057195.64397,E 1115186.23476,EL654.027944,--WALKX
EP,TM11:44:08,LA42.184824046,LN-87.505725104,HT541.827681,RH0.057942,RV0.096902,DH1.
239775,DV2.073673,GM4,CL1
BL,DCROVER,PN294,DX27144.518581,DY-15992.689087,DZ-18754.917148,--WALKX,GM4,CL1,HP0.
057942,VP0.096902
CV,DCROVER,SV4,SC0.022973,XX1.926617e-004,XY1.123912e-005,XZ3.590601e-005,YY1.018415
e-003,YZ-5.627630e-004,ZZ7.931362e-004
GS,PN294,N 2057169.686041,E 1115186.231209,EL654.065451,--WALKX
EP,TM11:44:29,LA42.184824043,LN-87.505735723,HT541.924774,RH0.055991,RV0.093957,DH1.
238965,DV2.078858,GM4,CL1
BL,DCROVER,PN295,DX27136.548093,DY-15993.062893,DZ-18754.854666,--WALKX,GM4,CL1,HP0.
055991,VP0.093957
CV,DCROVER,SV4,SC0.022201,XX1.798750e-004,XY9.523443e-006,XZ3.367413e-005,YY9.547758
e-004,YZ-5.301992e-004,ZZ7.462948e-004
GS,PN295,N 2057169.636767,E 1115178.25271,EL654.162477,--WALKX

EP,TM11:47:00,LA42.184779098,LN-87.505458574,HT540.823172,RH0.040145,RV0.062835,DH1.
146003,DV1.793718,GM4,CL1
BL,DCROVER,PN296,DX27345.758824,DY-16015.04005,DZ-18789.24141,--MW-03,GM4,CL1,HP0.04
0145,VP0.062835
CV,DCROVER,SV4,SC0.02421,XX2.282292e-004,XY-9.734061e-005,XZ9.132869e-005,YY8.127756
e-004,YZ-5.427154e-004,ZZ9.811108e-004
GS,PN296,N 2057125.325451,E 1115386.740121,EL653.061766,--MW-03
EP,TM11:51:58,LA42.184232184,LN-87.505549377,HT542.176644,RH0.032327,RV0.053491,DH1.
066442,DV1.766571,GM4,CL1
BL,DCROVER,PN297,DX27291.610068,DY-16391.050458,DZ-19197.755469,--MW-06,GM4,CL1,HP0.
032327,VP0.053491
CV,DCROVER,SV4,SC0.018492,XX1.113307e-004,XY-1.160717e-005,XZ3.985405e-005,YY4.72019
4e-004,YZ-3.645527e-004,ZZ6.968995e-004
GS,PN297,N 2056571.300117,E 1115321.670427,EL654.404066,--MW-06
EP,TM11:52:43,LA42.184234549,LN-87.505440552,HT541.038624,RH0.048911,RV0.083206,DH1.
096725,DV1.865731,GM4,CL1
BL,DCROVER,PN298,DX27373.22878,DY-16385.52913,DZ-19196.750827,--BCX,GM4,CL1,HP0.0489
11,VP0.083206
CV,DCROVER,SV4,SC0.019395,XX1.241056e-004,XY1.587343e-005,XZ2.746238e-005,YY5.875023
e-004,YZ-4.283200e-004,ZZ7.533585e-004
GS,PN298,N 2056574.160175,E 1115403.421338,EL653.266786,--BCX
EP,TM11:53:11,LA42.184212765,LN-87.505440928,HT540.980658,RH0.043053,RV0.071813,DH1.
067183,DV1.780223,GM4,CL1
BL,DCROVER,PN299,DX27373.501831,DY-16400.332002,DZ-19213.098187,--BCX,GM4,CL1,HP0.04
3053,VP0.071813
CV,DCROVER,SV4,SC0.019535,XX1.234434e-004,XY-1.398989e-005,XZ4.360410e-005,YY5.30446
3e-004,YZ-4.142372e-004,ZZ7.896226e-004
GS,PN299,N 2056552.106219,E 1115403.2641,EL653.208396,--BCX
EP,TM11:53:59,LA42.184321664,LN-87.505417391,HT539.689919,RH0.049791,RV0.085333,DH1.
096739,DV1.879444,GM4,CL1
BL,DCROVER,PN300,DX27388.352893,DY-16324.554546,DZ-19132.443053,--WALKX,GM4,CL1,HP0.
049791,VP0.085333
CV,DCROVER,SV4,SC0.019744,XX1.276592e-004,XY1.501080e-005,XZ2.774024e-005,YY6.138491
e-004,YZ-4.520633e-004,ZZ7.932579e-004
GS,PN300,N 2056662.445,E 1115420.320722,EL651.919916,--WALKX
EP,TM11:54:34,LA42.184322171,LN-87.505491804,HT543.541062,RH0.055945,RV0.096143,DH1.
096808,DV1.885713,GM4,CL1
BL,DCROVER,PN301,DX27332.574252,DY-16329.154278,DZ-19129.47111,--WALKX,GM4,CL1,HP0.0
55945,VP0.096143
CV,DCROVER,SV4,SC0.019033,XX1.182159e-004,XY1.333187e-005,XZ2.545004e-005,YY5.724189
e-004,YZ-4.234231e-004,ZZ7.423376e-004
GS,PN301,N 2056662.639645,E 1115364.408464,EL655.770594,--WALKX
EP,TM11:55:07,LA42.18434536,LN-87.505434246,HT540.472141,RH0.051839,RV0.087246,DH1.0
68512,DV1.798209,GM4,CL1
BL,DCROVER,PN302,DX27375.112619,DY-16309.471602,DZ-19114.177728,--WALKX,GM4,CL1,HP0.
051839,VP0.087246
CV,DCROVER,SV4,SC0.018897,XX1.144416e-004,XY-1.439359e-005,XZ3.949567e-005,YY5.00521
5e-004,YZ-3.965207e-004,ZZ7.535868e-004
GS,PN302,N 2056686.359537,E 1115407.519988,EL652.702489,--WALKX
EP,TM11:55:34,LA42.184348626,LN-87.505426675,HT540.228672,RH0.054564,RV0.091954,DH1.
068831,DV1.801755,GM4,CL1
BL,DCROVER,PN303,DX27380.706632,DY-16306.853619,DZ-19111.896231,--BC
PC,GM4,CL1,HP0.054564,VP0.091954
CV,DCROVER,SV4,SC0.018563,XX1.102354e-004,XY-1.412849e-005,XZ3.784335e-005,YY4.83711
2e-004,YZ-3.842197e-004,ZZ7.298827e-004
GS,PN303,N 2056689.698653,E 1115413.189235,EL652.459132,--BC PC
EP,TM11:55:58,LA42.184357391,LN-87.505395004,HT540.338741,RH0.054596,RV0.090658,DH1.
069205,DV1.805637,GM4,CL1
BL,DCROVER,PN304,DX27404.26564,DY-16300.072476,DZ-19105.260403,--BC
PC,GM4,CL1,HP0.054596,VP0.090658
CV,DCROVER,SV4,SC0.018919,XX1.142417e-004,XY-1.496983e-005,XZ3.895484e-005,YY5.03239
6e-004,YZ-4.009818e-004,ZZ7.613634e-004
GS,PN304,N 2056698.707153,E 1115436.934533,EL652.569573,--BC PC

EP,TM12:03:29,LA42.184707784,LN-87.505616099,HT541.396358,RH0.054737,RV0.09573,DH1.0
41949,DV1.822827,GM4,CL1
BL,DCROVER,PN305,DX27229.32492,DY-16068.472086,DZ-18842.241368,--BCX,GM4,CL1,HP0.054
737,VP0.09573
CV,DCROVER,SV4,SC0.018703,XX1.260240e-004,XY7.067592e-005,XZ-4.805209e-005,YY7.44316
3e-004,YZ-4.216684e-004,ZZ5.500975e-004
GS,PN305,N 2057052.460916,E 1115268.799244,EL653.632568,--BCX
EP,TM12:04:18,LA42.184708893,LN-87.505771031,HT541.921727,RH0.045978,RV0.080604,DH1.
041125,DV1.825944,GM4,CL1
BL,DCROVER,PN306,DX27112.982977,DY-16072.474543,DZ-18841.058075,--BCX,GM4,CL1,HP0.04
5978,VP0.080604
CV,DCROVER,SV4,SC0.018648,XX1.247578e-004,XY6.868815e-005,XZ-4.820444e-005,YY7.42063
9e-004,YZ-4.216536e-004,ZZ5.506719e-004
GS,PN306,N 2057052.92055,E 1115152.38823,EL654.156974,--BCX
EP,TM12:08:49,LA42.184710968,LN-87.510078833,HT543.631436,RH0.051069,RV0.084176,DH0.
960127,DV1.582566,GM4,CL1
BL,DCROVER,PN307,DX26881.869678,DY-16081.001729,DZ-18838.353499,--BC,GM4,CL1,HP0.051
069,VP0.084176
CV,DCROVER,SV4,SC0.016827,XX1.022021e-004,XY-2.462781e-006,XZ-2.139435e-005,YY4.5918
64e-004,YZ-2.981576e-004,ZZ4.910658e-004
GS,PN307,N 2057053.707563,E 1114921.116848,EL655.864776,--BC
EP,TM12:09:12,LA42.184702109,LN-87.510079321,HT543.725291,RH0.052553,RV0.092952,DH1.
038835,DV1.837571,GM4,CL1
BL,DCROVER,PN308,DX26881.732055,DY-16087.117949,DZ-18844.922237,--BC,GM4,CL1,HP0.052
553,VP0.092952
CV,DCROVER,SV4,SC0.018206,XX1.160086e-004,XY5.629014e-005,XZ-4.775560e-005,YY7.11574
8e-004,YZ-4.095017e-004,ZZ5.410432e-004
GS,PN308,N 2057044.737524,E 1114920.800813,EL655.958456,--BC
EP,TM12:10:24,LA42.18467959,LN-87.510089281,HT543.785634,RH0.052427,RV0.092788,DH1.0
38888,DV1.838702,GM4,CL1
BL,DCROVER,PN309,DX26874.83102,DY-16102.778664,DZ-18861.739166,--WALKX,GM4,CL1,HP0.0
52427,VP0.092788
CV,DCROVER,SV4,SC0.019062,XX1.264536e-004,XY5.931401e-005,XZ-5.267339e-005,YY7.79250
9e-004,YZ-4.492496e-004,ZZ5.958499e-004
GS,PN309,N 2057021.899587,E 1114913.446925,EL656.0183,--WALKX
EP,TM12:11:51,LA42.184863388,LN-87.505997335,HT543.261753,RH0.03632,RV0.066257,DH1.1
48051,DV2.093455,GM4,CL1
BL,DCROVER,PN310,DX26939.153803,DY-15974.631563,DZ-18724.500673,--WALKX,GM4,CL1,HP0.
03632,VP0.066257
CV,DCROVER,SV4,SC0.019779,XX1.161512e-004,XY3.257890e-005,XZ-5.657706e-006,YY7.37031
2e-004,YZ-5.223092e-004,ZZ8.387762e-004
GS,PN310,N 2057208.348786,E 1114981.472048,EL655.498562,--WALKX
EP,TM12:12:15,LA42.184851561,LN-87.505997513,HT543.110395,RH0.046766,RV0.083747,DH1.
079596,DV1.932792,GM4,CL1
BL,DCROVER,PN311,DX26939.318422,DY-15982.579238,DZ-18733.456399,--WALKX,GM4,CL1,HP0.
046766,VP0.083747
CV,DCROVER,SV4,SC0.018941,XX1.166010e-004,XY4.419722e-005,XZ-3.349598e-005,YY7.29121
6e-004,YZ-4.565774e-004,ZZ6.628322e-004
GS,PN311,N 2057196.375427,E 1114981.406386,EL655.346973,--WALKX
EP,TM12:12:40,LA42.184845822,LN-87.510010673,HT543.176402,RH0.059211,RV0.110569,DH1.
29312,DV2.414767,GM4,CL1
BL,DCROVER,PN312,DX26929.586144,DY-15986.907088,DZ-18737.707936,--WALKX,GM4,CL1,HP0.
059211,VP0.110569
CV,DCROVER,SV4,SC0.023479,XX1.748719e-004,XY-3.140563e-005,XZ-3.931041e-005,YY1.0635
85e-003,YZ-7.858680e-004,ZZ1.235120e-003
GS,PN312,N 2057190.510051,E 1114971.552061,EL655.412786,--WALKX
EP,TM12:13:03,LA42.184851647,LN-87.510010543,HT543.434055,RH0.072476,RV0.102651,DH1.
661532,DV2.221637,GM4,CL1
BL,DCROVER,PN313,DX26929.542143,DY-15983.127223,DZ-18733.174254,--WALKX,GM4,CL1,HP0.
072476,VP0.102651
CV,DCROVER,SV4,SC0.029661,XX4.099892e-004,XY-4.102075e-004,XZ-5.082465e-006,YY1.4659
16e-003,YZ-4.966137e-004,ZZ5.767479e-004
GS,PN313,N 2057196.406732,E 1114971.616407,EL655.670553,--WALKX

EP,TM12:14:31,LA42.1848512,LN-87.510379994,HT545.95137,RH0.048976,RV0.086468,DH1.041
031,DV1.837723,GM4,CL1
BL,DCROVER,PN314,DX26652.229144,DY-15995.702843,DZ-18731.813891,--WALKX,GM4,CL1,HP0.
048976,VP0.086468
CV,DCROVER,SV4,SC0.018168,XX1.123803e-004,XY4.525701e-005,XZ-4.867794e-005,YY6.99515
2e-004,YZ-4.044531e-004,ZZ5.467170e-004
GS,PN314,N 2057194.38015,E 1114694.042731,EL658.18553,--WALKX
EP,TM12:14:55,LA42.184827539,LN-87.510364552,HT546.281315,RH0.049003,RV0.086467,DH1.
041396,DV1.837193,GM4,CL1
BL,DCROVER,PN315,DX26664.437025,DY-16011.624851,DZ-18749.304124,--WALKX,GM4,CL1,HP0.
049003,VP0.086467
CV,DCROVER,SV4,SC0.018178,XX1.122747e-004,XY4.447185e-005,XZ-4.879214e-005,YY6.99074
6e-004,YZ-4.041716e-004,ZZ5.475125e-004
GS,PN315,N 2057170.49439,E 1114705.780159,EL658.515113,--WALKX
EP,TM12:15:25,LA42.184839285,LN-87.510346792,HT546.000143,RH0.053272,RV0.099716,DH1.
322355,DV2.446653,GM4,CL1
BL,DCROVER,PN316,DX26677.463402,DY-16002.917536,DZ-18740.700383,--WALKX,GM4,CL1,HP0.
053272,VP0.099716
CV,DCROVER,SV4,SC0.025548,XX2.853785e-004,XY4.784884e-004,XZ-2.572857e-004,YY1.83344
3e-003,YZ-9.473286e-004,ZZ8.202391e-004
GS,PN316,N 2057182.460363,E 1114719.055858,EL658.23428,--WALKX
EP,TM12:16:48,LA42.18491979,LN-87.505969862,HT542.632077,RH0.053815,RV0.096635,DH1.1
37322,DV2.041626,GM4,CL1
BL,DCROVER,PN317,DX26958.321769,DY-15934.981283,DZ-18682.702287,--WALKX,GM4,CL1,HP0.
053815,VP0.096635
CV,DCROVER,SV4,SC0.01996,XX1.464783e-004,XY1.285595e-004,XZ-9.088760e-005,YY9.297737
e-004,YZ-5.126321e-004,ZZ6.059248e-004
GS,PN317,N 2057265.561191,E 1115001.788802,EL654.870152,--WALKX
EP,TM12:17:37,LA42.184993928,LN-87.505968891,HT542.811239,RH0.031362,RV0.056198,DH1.
044614,DV1.831641,GM4,CL1
BL,DCROVER,PN318,DX26957.159977,DY-15884.596689,DZ-18627.082012,--WALKX,GM4,CL1,HP0.
031362,VP0.056198
CV,DCROVER,SV4,SC0.018003,XX1.085689e-004,XY3.805770e-005,XZ-4.816131e-005,YY6.75484
7e-004,YZ-3.897158e-004,ZZ5.364512e-004
GS,PN318,N 2057340.615105,E 1115002.091802,EL655.050757,--WALKX
EP,TM12:18:02,LA42.18499379,LN-87.505957081,HT542.77714,RH0.065649,RV0.115004,DH1.04
52,DV1.830529,GM4,CL1
BL,DCROVER,PN319,DX26966.029968,DY-15884.332869,DZ-18627.208619,--WALKX,GM4,CL1,HP0.
065649,VP0.115004
CV,DCROVER,SV4,SC0.020083,XX1.348260e-004,XY4.632595e-005,XZ-5.998163e-005,YY8.38401
6e-004,YZ-4.834360e-004,ZZ6.672072e-004
GS,PN319,N 2057340.525343,E 1115010.965818,EL655.016729,--WALKX
EP,TM12:18:36,LA42.185045977,LN-87.505950141,HT543.016065,RH0.051269,RV0.089633,DH1.
046133,DV1.828723,GM4,CL1
BL,DCROVER,PN320,DX26969.91317,DY-15848.773603,DZ-18587.981218,--WALKX,GM4,CL1,HP0.0
51269,VP0.089633
CV,DCROVER,SV4,SC0.019008,XX1.204032e-004,XY4.010872e-005,XZ-5.379316e-005,YY7.47964
9e-004,YZ-4.308676e-004,ZZ5.970707e-004
GS,PN320,N 2057393.383111,E 1115015.880057,EL655.256709,--WALKX
EP,TM12:18:59,LA42.18505093,LN-87.505956687,HT543.049802,RH0.057143,RV0.099802,DH1.0
46735,DV1.827538,GM4,CL1
BL,DCROVER,PN321,DX26964.872759,DY-15845.609921,DZ-18584.250694,--WALKX,GM4,CL1,HP0.
057143,VP0.099802
CV,DCROVER,SV4,SC0.018042,XX1.082579e-004,XY3.536589e-005,XZ-4.849069e-005,YY6.72024
7e-004,YZ-3.868614e-004,ZZ5.374561e-004
GS,PN321,N 2057398.369106,E 1115010.933643,EL655.290501,--WALKX
--Date: 11-18-2009 Time: 12:26:18
EP,TM12:27:39,LA42.185156807,LN-87.510365267,HT546.939196,RH0.041065,RV0.068625,DH1.
067546,DV1.783759,GM4,CL1
BL,DCROVER,PN322,DX26655.50402,DY-15787.893162,DZ-18502.373362,--21MW06,GM4,CL1,HP0.
041065,VP0.068625
CV,DCROVER,SV4,SC0.018632,XX1.103892e-004,XY1.897643e-005,XZ-5.224448e-005,YY6.57726
4e-004,YZ-3.660101e-004,ZZ5.480902e-004

GS,PN322,N 2057503.806592,E 1114703.354041,EL659.179372,--21MW06
EP,TM12:29:23,LA42.185529309,LN-87.510377694,HT547.869193,RH0.041068,RV0.067827,DH1.
07361,DV1.770992,GM4,CL1
BL,DCROVER,PN323,DX26636.680357,DY-15535.244828,DZ-18222.899327,--21MW01,GM4,CL1,HP0
.041068,VP0.067827
CV,DCROVER,SV4,SC0.020024,XX1.263200e-004,XY1.759168e-005,XZ-6.046739e-005,YY7.42331
6e-004,YZ-4.081672e-004,ZZ6.233664e-004
GS,PN323,N 2057880.833929,E 1114691.880903,EL660.11651,--21MW01
EP,TM12:29:49,LA42.185524864,LN-87.510389024,HT547.418282,RH0.057917,RV0.09524,DH1.0
75095,DV1.767888,GM4,CL1
BL,DCROVER,PN324,DX26628.274253,DY-15538.257899,DZ-18226.530112,--EPX,GM4,CL1,HP0.05
7917,VP0.09524
CV,DCROVER,SV4,SC0.019087,XX1.145152e-004,XY1.504174e-005,XZ-5.496979e-005,YY6.70546
5e-004,YZ-3.675190e-004,ZZ5.641041e-004
GS,PN324,N 2057876.286315,E 1114683.393635,EL659.665442,--EPX
EP,TM12:30:13,LA42.185495596,LN-87.5103894,HT547.060629,RH0.056751,RV0.094266,DH0.99
1612,DV1.647166,GM4,CL1
BL,DCROVER,PN325,DX26628.729877,DY-15557.93704,DZ-18248.680432,--EPX,GM4,CL1,HP0.056
751,VP0.094266
CV,DCROVER,SV4,SC0.017298,XX1.040664e-004,XY4.642264e-005,XZ-5.899978e-005,YY4.81704
3e-004,YZ-3.239207e-004,ZZ5.389844e-004
GS,PN325,N 2057846.656677,E 1114683.278932,EL659.307219,--EPX
EP,TM12:31:01,LA42.185482974,LN-87.510305707,HT546.016673,RH0.053494,RV0.088686,DH0.
991878,DV1.644427,GM4,CL1
BL,DCROVER,PN326,DX26691.861331,DY-15563.403341,DZ-18258.831406,--EPX,GM4,CL1,HP0.05
3494,VP0.088686
CV,DCROVER,SV4,SC0.017629,XX1.078438e-004,XY4.725313e-005,XZ-6.122825e-005,YY4.98019
4e-004,YZ-3.346956e-004,ZZ5.590992e-004
GS,PN326,N 2057834.236415,E 1114746.230399,EL658.263543,--EPX
EP,TM12:31:26,LA42.185458789,LN-87.510274349,HT545.88306,RH0.056226,RV0.093121,DH0.9
92038,DV1.642873,GM4,CL1
BL,DCROVER,PN327,DX26716.019353,DY-15578.892345,DZ-18277.026151,--EPX,GM4,CL1,HP0.05
6226,VP0.093121
CV,DCROVER,SV4,SC0.017021,XX1.004077e-004,XY4.357629e-005,XZ-5.703920e-005,YY4.63090
3e-004,YZ-3.110889e-004,ZZ5.207331e-004
GS,PN327,N 2057809.887112,E 1114769.928243,EL658.129659,--EPX
EP,TM12:31:58,LA42.185428714,LN-87.510338639,HT546.724394,RH0.040167,RV0.066456,DH0.
992248,DV1.640895,GM4,CL1
BL,DCROVER,PN328,DX26668.54166,DY-15601.80766,DZ-18298.973301,--EPX,GM4,CL1,HP0.0401
67,VP0.066456
CV,DCROVER,SV4,SC0.017009,XX1.001237e-004,XY4.291508e-005,XZ-5.691065e-005,YY4.61006
0e-004,YZ-3.094830e-004,ZZ5.194152e-004
GS,PN328,N 2057779.168556,E 1114721.799515,EL658.970006,--EPX
EP,TM12:32:32,LA42.185325907,LN-87.510339689,HT546.731113,RH0.052575,RV0.08681,DH0.9
9249,DV1.63871,GM4,CL1
BL,DCROVER,PN329,DX26670.38075,DY-15671.856781,DZ-18375.927627,--EPX,GM4,CL1,HP0.052
575,VP0.08681
CV,DCROVER,SV4,SC0.017326,XX1.037226e-004,XY4.384210e-005,XZ-5.898068e-005,YY4.76670
8e-004,YZ-3.197155e-004,ZZ5.381501e-004
GS,PN329,N 2057675.094085,E 1114721.600429,EL658.974726,--EPX
EP,TM12:32:58,LA42.185316118,LN-87.510355718,HT546.907657,RH0.055318,RV0.09123,DH0.9
92688,DV1.636984,GM4,CL1
BL,DCROVER,PN330,DX26658.601108,DY-15679.105712,DZ-18383.13693,--EPX,GM4,CL1,HP0.055
318,VP0.09123
CV,DCROVER,SV4,SC0.018231,XX1.146978e-004,XY4.799144e-005,XZ-6.523257e-005,YY5.26373
4e-004,YZ-3.527934e-004,ZZ5.950690e-004
GS,PN330,N 2057665.116133,E 1114709.613989,EL659.15098,--EPX
EP,TM12:33:20,LA42.185316205,LN-87.510374341,HT546.942075,RH0.059535,RV0.098122,DH0.
992863,DV1.635485,GM4,CL1
BL,DCROVER,PN331,DX26644.61755,DY-15679.596748,DZ-18383.048823,--EPX,GM4,CL1,HP0.059
535,VP0.098122
CV,DCROVER,SV4,SC0.017325,XX1.034744e-004,XY4.288644e-005,XZ-5.885285e-005,YY4.74243
3e-004,YZ-3.176156e-004,ZZ5.367686e-004

GS,PN331,N 2057665.124652,E 1114695.622027,EL659.185284,--EPX
EP,TM12:33:43,LA42.185326174,LN-87.510390131,HT546.976999,RH0.054413,RV0.089541,DH0.
993054,DV1.633882,GM4,CL1
BL,DCROVER,PN332,DX26632.508433,DY-15673.278249,DZ-18375.562741,--EPX,GM4,CL1,HP0.05
4413,VP0.089541
CV,DCROVER,SV4,SC0.018229,XX1.144383e-004,XY4.699550e-005,XZ-6.508670e-005,YY5.23820
0e-004,YZ-3.505433e-004,ZZ5.935162e-004
GS,PN332,N 2057675.148897,E 1114683.701738,EL659.220301,--EPX
EP,TM12:34:19,LA42.185428875,LN-87.510388897,HT546.909907,RH0.053513,RV0.087899,DH0.
993369,DV1.631296,GM4,CL1
BL,DCROVER,PN333,DX26630.808979,DY-15603.250942,DZ-18298.727788,--EPX,GM4,CL1,HP0.05
3513,VP0.087899
CV,DCROVER,SV4,SC0.017937,XX1.106323e-004,XY4.473949e-005,XZ-6.290778e-005,YY5.05309
3e-004,YZ-3.376731e-004,ZZ5.734746e-004
GS,PN333,N 2057779.117687,E 1114684.040141,EL659.155207,--EPX
EP,TM12:35:00,LA42.185428903,LN-87.510372957,HT547.551118,RH0.035433,RV0.057806,DH1.
182277,DV1.927241,GM4,CL1
BL,DCROVER,PN334,DX26642.793515,DY-15603.256315,DZ-18298.274823,--CONCX,GM4,CL1,HP0.
035433,VP0.057806
CV,DCROVER,SV4,SC0.021353,XX1.911406e-004,XY2.091565e-004,XZ-1.330418e-004,YY8.42464
8e-004,YZ-4.801109e-004,ZZ6.339356e-004
GS,PN334,N 2057779.214347,E 1114696.015308,EL659.796519,--CONCX
EP,TM12:36:50,LA42.185533173,LN-87.510236788,HT545.996211,RH0.066365,RV0.107526,DH1.
178398,DV1.909267,GM4,CL1
BL,DCROVER,PN335,DX26742.322528,DY-15527.259391,DZ-18221.267985,--EPX,GM4,CL1,HP0.06
6365,VP0.107526
CV,DCROVER,SV4,SC0.020599,XX1.748601e-004,XY1.878142e-004,XZ-1.201659e-004,YY7.76861
3e-004,YZ-4.380994e-004,ZZ5.863043e-004
GS,PN335,N 2057885.345245,E 1114797.720967,EL658.244487,--EPX
EP,TM12:37:12,LA42.185524436,LN-87.510225264,HT545.895438,RH0.056486,RV0.091403,DH1.
177633,DV1.905249,GM4,CL1
BL,DCROVER,PN336,DX26751.195307,DY-15532.810442,DZ-18227.876138,--EPX,GM4,CL1,HP0.05
6486,VP0.091403
CV,DCROVER,SV4,SC0.020953,XX1.802409e-004,XY1.927794e-004,XZ-1.234945e-004,YY8.02184
0e-004,YZ-4.512059e-004,ZZ6.056281e-004
GS,PN336,N 2057876.549949,E 1114806.429061,EL658.143618,--EPX
EP,TM12:37:31,LA42.185538101,LN-87.510206785,HT545.221812,RH0.064654,RV0.104483,DH1.
177049,DV1.902043,GM4,CL1
BL,DCROVER,PN337,DX26764.701376,DY-15522.485345,DZ-18218.100103,--EPX,GM4,CL1,HP0.06
4654,VP0.104483
CV,DCROVER,SV4,SC0.021307,XX1.858346e-004,XY1.981237e-004,XZ-1.270347e-004,YY8.28190
0e-004,YZ-4.648853e-004,ZZ6.253816e-004
GS,PN337,N 2057890.461988,E 1114820.233743,EL657.470372,--EPX
EP,TM12:39:31,LA42.185543941,LN-87.510283706,HT546.635703,RH0.057219,RV0.090844,DH1.
189257,DV1.887689,GM4,CL1
BL,DCROVER,PN338,DX26706.838598,DY-15521.720146,DZ-18212.776386,--EPX,GM4,CL1,HP0.05
7219,VP0.090844
CV,DCROVER,SV4,SC0.021295,XX1.877806e-004,XY1.772437e-004,XZ-1.178250e-004,YY8.05236
0e-004,YZ-4.433635e-004,ZZ6.030568e-004
GS,PN338,N 2057896.046288,E 1114762.409616,EL658.883893,--EPX
EP,TM12:40:50,LA42.1855416,LN-87.505955672,HT542.366455,RH0.050968,RV0.083298,DH1.17
2658,DV1.871173,GM4,CL1
BL,DCROVER,PN339,DX26953.069603,DY-15510.914882,DZ-18217.402819,--EP,GM4,CL1,HP0.050
968,VP0.083298
CV,DCROVER,SV4,SC0.020208,XX1.622619e-004,XY1.672536e-004,XZ-1.081626e-004,YY7.33198
9e-004,YZ-4.017529e-004,ZZ5.526245e-004
GS,PN339,N 2057895.075311,E 1115008.87428,EL654.616664,--EP
EP,TM12:41:34,LA42.185465479,LN-87.505830095,HT544.058741,RH0.063031,RV0.089662,DH1.
313956,DV1.867709,GM4,CL1
BL,DCROVER,PN340,DX27049.347339,DY-15560.466871,DZ-18273.246365,--EP,GM4,CL1,HP0.063
031,VP0.089662
CV,DCROVER,SV4,SC0.022853,XX1.805671e-004,XY1.875796e-004,XZ-7.422183e-005,YY7.67225
5e-004,YZ-3.630812e-004,ZZ6.296329e-004

GS,PN340,N 2057818.554227,E 1115103.658359,EL656.308269,--EP
SP,PN340,N 2057818.554227,E 1115103.658359,EL656.308269,--EPX
EP,TM12:42:34,LA42.1854677,LN-87.505777693,HT542.852692,RH0.059386,RV0.089583,DH1.23
0508,DV1.855728,GM4,CL1
BL,DCROVER,PN341,DX27088.600364,DY-15556.585555,DZ-18272.395544,--EPX,GM4,CL1,HP0.05
9386,VP0.089583
CV,DCROVER,SV4,SC0.022031,XX1.791605e-004,XY1.830823e-004,XZ-9.866020e-005,YY7.94475
3e-004,YZ-4.040871e-004,ZZ6.153860e-004
GS,PN341,N 2057821.026568,E 1115143.014716,EL655.102594,--EPX
EP,TM12:43:56,LA42.185530408,LN-87.505636072,HT541.291803,RH0.063137,RV0.099336,DH1.
170595,DV1.841878,GM4,CL1
BL,DCROVER,PN342,DX27193.283569,DY-15508.732072,DZ-18226.504357,--EPX,GM4,CL1,HP0.06
3137,VP0.099336
CV,DCROVER,SV4,SC0.019244,XX1.378380e-004,XY1.373202e-004,XZ-8.941913e-005,YY6.31496
8e-004,YZ-3.360302e-004,ZZ4.719324e-004
GS,PN342,N 2057885.11098,E 1115249.053912,EL653.543815,--EPX
EP,TM12:44:37,LA42.185518996,LN-87.505652845,HT541.671177,RH0.037775,RV0.05933,DH1.1
70444,DV1.836432,GM4,CL1
BL,DCROVER,PN343,DX27180.99278,DY-15517.257864,DZ-18234.79221,--21MW02,GM4,CL1,HP0.0
37775,VP0.05933
CV,DCROVER,SV4,SC0.020626,XX1.632693e-004,XY1.615596e-004,XZ-1.053286e-004,YY7.50078
6e-004,YZ-3.965875e-004,ZZ5.591942e-004
GS,PN343,N 2057873.486309,E 1115236.518131,EL653.922862,--21MW02
EP,TM12:45:21,LA42.185509639,LN-87.505545227,HT540.908094,RH0.060206,RV0.091695,DH1.
25903,DV1.916483,GM4,CL1
BL,DCROVER,PN344,DX27262.010681,DY-15520.030898,DZ-18242.309697,--CONCX,GM4,CL1,HP0.
060206,VP0.091695
CV,DCROVER,SV4,SC0.02363,XX1.838600e-004,XY1.786398e-004,XZ-1.176522e-004,YY1.037983
e-003,YZ-4.552726e-004,ZZ6.303578e-004
GS,PN344,N 2057864.475417,E 1115317.424905,EL653.16028,--CONCX
EP,TM12:45:48,LA42.185540413,LN-87.505544461,HT540.262654,RH0.055686,RV0.086899,DH1.
170383,DV1.825208,GM4,CL1
BL,DCROVER,PN345,DX27261.780699,DY-15498.57412,DZ-18219.707567,--CONCX,GM4,CL1,HP0.0
55686,VP0.086899
CV,DCROVER,SV4,SC0.020655,XX1.618563e-004,XY1.579611e-004,XZ-1.032164e-004,YY7.47840
5e-004,YZ-3.900430e-004,ZZ5.543655e-004
GS,PN345,N 2057895.63093,E 1115317.823116,EL652.515441,--CONCX
EP,TM12:46:24,LA42.185509213,LN-87.505497532,HT541.112229,RH0.054762,RV0.085209,DH1.
004158,DV1.562011,GM4,CL1
BL,DCROVER,PN346,DX27297.836973,DY-15519.127141,DZ-18242.491701,--CONCX,GM4,CL1,HP0.
054762,VP0.085209
CV,DCROVER,SV4,SC0.018048,XX1.089013e-004,XY2.931313e-005,XZ-5.900902e-005,YY4.70967
0e-004,YZ-2.937104e-004,ZZ5.338339e-004
GS,PN346,N 2057864.247519,E 1115353.260621,EL653.364709,--CONCX
EP,TM12:49:03,LA42.185380033,LN-87.505447352,HT540.590036,RH0.037154,RV0.056941,DH1.
007713,DV1.544084,GM4,CL1
BL,DCROVER,PN347,DX27338.803549,DY-15605.301543,DZ-18339.544159,--21MW03,GM4,CL1,HP0
.037154,VP0.056941
CV,DCROVER,SV4,SC0.018434,XX1.130308e-004,XY2.705126e-005,XZ-6.008563e-005,YY4.82426
6e-004,YZ-2.934663e-004,ZZ5.422376e-004
GS,PN347,N 2057733.695027,E 1115391.706317,EL652.840335,--21MW03
EP,TM12:51:12,LA42.185169186,LN-87.505785427,HT542.643067,RH0.034407,RV0.052039,DH1.
022875,DV1.544592,GM4,CL1
BL,DCROVER,PN348,DX27090.422752,DY-15759.946022,DZ-18495.999213,--21MW05,GM4,CL1,HP0
.034407,VP0.052039
CV,DCROVER,SV4,SC0.017671,XX1.086714e-004,XY1.442701e-005,XZ-4.520028e-005,YY4.33247
7e-004,YZ-2.603830e-004,ZZ4.823995e-004
GS,PN348,N 2057518.810066,E 1115138.92301,EL654.887139,--21MW05
EP,TM12:51:50,LA42.185147569,LN-87.505736495,HT542.744935,RH0.04728,RV0.071228,DH1.0
12259,DV1.523756,GM4,CL1
BL,DCROVER,PN349,DX27127.716949,DY-15773.36322,DZ-18512.112728,--EPX,GM4,CL1,HP0.047
28,VP0.071228
CV,DCROVER,SV4,SC0.017821,XX1.050310e-004,XY2.164518e-005,XZ-5.450996e-005,YY4.41739

5e-004,YZ-2.602507e-004,ZZ4.903314e-004
GS,PN349,N 2057497.136599,E 1115175.810111,EL654.988899,--EPX
EP,TM12:52:20,LA42.18516456,LN-87.505682009,HT542.446996,RH0.047359,RV0.071087,DH1.0
13264,DV1.519612,GM4,CL1
BL,DCROVER,PN350,DX27168.18301,DY-15760.035563,DZ-18499.594241,--EPX,GM4,CL1,HP0.047
359,VP0.071087
CV,DCROVER,SV4,SC0.017852,XX1.052736e-004,XY2.099529e-005,XZ-5.435810e-005,YY4.41467
8e-004,YZ-2.582866e-004,ZZ4.886166e-004
GS,PN350,N 2057514.569044,E 1115216.648051,EL654.691634,--EPX
EP,TM12:52:57,LA42.185143047,LN-87.505682607,HT542.429985,RH0.049657,RV0.074209,DH1.
014393,DV1.51509,GM4,CL1
BL,DCROVER,PN351,DX27168.283774,DY-15774.690586,DZ-18515.7099,--EPX,GM4,CL1,HP0.0496
57,VP0.074209
CV,DCROVER,SV4,SC0.018499,XX1.128989e-004,XY2.172231e-005,XZ-5.797592e-005,YY4.71988
8e-004,YZ-2.740596e-004,ZZ5.207303e-004
GS,PN351,N 2057492.789282,E 1115216.322645,EL654.674203,--EPX
EP,TM12:54:01,LA42.185130426,LN-87.505649577,HT542.001853,RH0.057999,RV0.086034,DH1.
016374,DV1.507495,GM4,CL1
BL,DCROVER,PN352,DX27193.394248,DY-15782.037595,DZ-18525.445618,--CONCX,GM4,CL1,HP0.
057999,VP0.086034
CV,DCROVER,SV4,SC0.019065,XX1.196594e-004,XY2.157646e-005,XZ-6.085536e-005,YY4.97627
5e-004,YZ-2.850608e-004,ZZ5.458256e-004
GS,PN352,N 2057480.154938,E 1115241.211186,EL654.246036,--CONCX
EP,TM12:54:32,LA42.185129437,LN-87.505593963,HT542.094114,RH0.057298,RV0.084722,DH1.
017441,DV1.503569,GM4,CL1
BL,DCROVER,PN353,DX27235.178563,DY-15781.211324,DZ-18526.12432,--CONCX,GM4,CL1,HP0.0
57298,VP0.084722
CV,DCROVER,SV4,SC0.017948,XX1.059218e-004,XY1.841896e-005,XZ-5.358605e-005,YY4.39277
4e-004,YZ-2.497646e-004,ZZ4.802519e-004
GS,PN353,N 2057479.390972,E 1115283.000776,EL654.338631,--CONCX
EP,TM12:55:10,LA42.185174808,LN-87.505592265,HT541.899217,RH0.050172,RV0.073811,DH1.
018748,DV1.498911,GM4,CL1
BL,DCROVER,PN354,DX27235.286991,DY-15750.120512,DZ-18492.291151,--CONCX,GM4,CL1,HP0.
050172,VP0.073811
CV,DCROVER,SV4,SC0.018289,XX1.098392e-004,XY1.828962e-005,XZ-5.522804e-005,YY4.54083
6e-004,YZ-2.559182e-004,ZZ4.945074e-004
GS,PN354,N 2057525.327168,E 1115284.014632,EL654.144623,--CONCX
EP,TM12:55:47,LA42.185175847,LN-87.505647863,HT541.981081,RH0.040328,RV0.059104,DH1.
020028,DV1.494501,GM4,CL1
BL,DCROVER,PN355,DX27193.519024,DY-15751.041738,DZ-18491.458696,--CONCX,GM4,CL1,HP0.
040328,VP0.059104
CV,DCROVER,SV4,SC0.018298,XX1.098051e-004,XY1.751824e-005,XZ-5.488672e-005,YY4.52597
8e-004,YZ-2.529046e-004,ZZ4.910048e-004
GS,PN355,N 2057526.140607,E 1115242.237533,EL654.226154,--CONCX
EP,TM12:56:29,LA42.185254839,LN-87.505683398,HT543.152488,RH0.061115,RV0.089112,DH1.
021537,DV1.489489,GM4,CL1
BL,DCROVER,PN356,DX27164.851184,DY-15699.113156,DZ-18431.537174,--EPX,GM4,CL1,HP0.06
1115,VP0.089112
CV,DCROVER,SV4,SC0.018628,XX1.136341e-004,XY1.725075e-005,XZ-5.642599e-005,YY4.66855
9e-004,YZ-2.583360e-004,ZZ5.042469e-004
GS,PN356,N 2057605.952492,E 1115215.085155,EL655.398866,--EPX
EP,TM12:56:46,LA42.185257568,LN-87.505674158,HT543.069638,RH0.06014,RV0.087481,DH1.0
22255,DV1.48717,GM4,CL1
BL,DCROVER,PN357,DX27171.716383,DY-15696.933136,DZ-18429.550366,--EPX,GM4,CL1,HP0.06
014,VP0.087481
CV,DCROVER,SV4,SC0.018331,XX1.099554e-004,XY1.626802e-005,XZ-5.441691e-005,YY4.51014
4e-004,YZ-2.483290e-004,ZZ4.860346e-004
GS,PN357,N 2057608.75412,E 1115222.011289,EL655.316127,--EPX
EP,TM12:57:28,LA42.185225771,LN-87.505683787,HT543.143906,RH0.069353,RV0.089298,DH1.
620556,DV2.086415,GM4,CL1
BL,DCROVER,PN358,DX27165.302308,DY-15718.913997,DZ-18453.302934,--EP
PC,GM4,CL1,HP0.069353,VP0.089298
CV,DCROVER,SV4,SC0.029552,XX2.408182e-004,XY9.368856e-005,XZ-4.240477e-004,YY5.13190

2e-004,YZ-4.791877e-004,ZZ1.566837e-003
GS,PN358,N 2057576.525387,E 1115214.960242,EL655.389718,--EP PC
EP,TM12:58:06,LA42.185201555,LN-87.505723343,HT543.298476,RH0.076163,RV0.099333,DH1.
629926,DV2.12447,GM4,CL1
BL,DCROVER,PN359,DX27136.226771,DY-15736.635411,DZ-18471.326694,--EP
PT,GM4,CL1,HP0.076163,VP0.099333
CV,DCROVER,SV4,SC0.028699,XX2.251084e-004,XY7.995347e-005,XZ-3.815545e-004,YY4.90368
4e-004,YZ-4.679722e-004,ZZ1.507183e-003
GS,PN359,N 2057551.842593,E 1115185.380976,EL655.543568,--EP PT
EP,TM12:58:40,LA42.185201746,LN-87.505793508,HT543.500822,RH0.051631,RV0.074166,DH1.
026739,DV1.473589,GM4,CL1
BL,DCROVER,PN360,DX27083.546227,DY-15738.633113,DZ-18471.047349,--EP,GM4,CL1,HP0.051
631,VP0.074166
CV,DCROVER,SV4,SC0.017736,XX1.024969e-004,XY1.298204e-005,XZ-4.977681e-005,YY4.16772
0e-004,YZ-2.229427e-004,ZZ4.432120e-004
GS,PN360,N 2057551.736345,E 1115132.663994,EL655.745474,--EP
EP,TM13:00:04,LA42.185256808,LN-87.505617426,HT542.513882,RH0.059952,RV0.086487,DH1.
175057,DV1.601039,GM4,CL1
BL,DCROVER,PN361,DX27214.315176,DY-15695.440031,DZ-18430.493224,--EPX,GM4,CL1,HP0.05
9952,VP0.086487
CV,DCROVER,SV4,SC0.020903,XX1.330573e-004,XY2.605202e-005,XZ-1.218036e-004,YY4.49045
6e-004,YZ-2.710421e-004,ZZ6.660237e-004
GS,PN361,N 2057608.227603,E 1115264.638446,EL654.760716,--EPX
EP,TM13:00:59,LA42.185311828,LN-87.505481914,HT541.587494,RH0.065286,RV0.088409,DH1.
033086,DV1.456696,GM4,CL1
BL,DCROVER,PN362,DX27314.626205,DY-15653.463739,DZ-18389.930235,--EPX,GM4,CL1,HP0.06
5286,VP0.088409
CV,DCROVER,SV4,SC0.019203,XX1.194588e-004,XY1.191216e-005,XZ-5.659458e-005,YY4.80675
6e-004,YZ-2.470527e-004,ZZ5.017353e-004
GS,PN362,N 2057664.50299,E 1115366.132481,EL653.836253,--EPX
EP,TM13:01:16,LA42.185312615,LN-87.505480914,HT541.495939,RH0.062025,RV0.087271,DH1.
033898,DV1.454707,GM4,CL1
BL,DCROVER,PN363,DX27315.354904,DY-15652.831825,DZ-18389.402666,--EPX,GM4,CL1,HP0.06
2025,VP0.087271
CV,DCROVER,SV4,SC0.018905,XX1.157061e-004,XY1.116816e-005,XZ-5.465272e-005,YY4.65019
2e-004,YZ-2.378103e-004,ZZ4.842542e-004
GS,PN363,N 2057665.304041,E 1115366.879814,EL653.74472,--EPX
EP,TM13:02:03,LA42.185383685,LN-87.505479626,HT540.896148,RH0.052827,RV0.073946,DH1.
036005,DV1.449714,GM4,CL1
BL,DCROVER,PN364,DX27314.486841,DY-15603.950878,DZ-18336.604183,--EP,GM4,CL1,HP0.052
827,VP0.073946
CV,DCROVER,SV4,SC0.017971,XX1.043613e-004,XY9.232466e-006,XZ-4.892141e-005,YY4.18182
6e-004,YZ-2.111166e-004,ZZ4.328559e-004
GS,PN364,N 2057737.253899,E 1115367.437554,EL653.146313,--EP
EP,TM13:06:11,LA42.185094191,LN-87.505416611,HT540.507694,RH0.030866,RV0.041892,DH1.
049596,DV1.422382,GM4,CL1
BL,DCROVER,PN365,DX27369.195451,DY-15799.040336,DZ-18553.577343,--21MW04,GM4,CL1,HP0
.030866,VP0.041892
CV,DCROVER,SV4,SC0.018225,XX1.060661e-004,XY4.584150e-006,XZ-4.759598e-005,YY4.18676
8e-004,YZ-1.951040e-004,ZZ4.174431e-004
GS,PN365,N 2057444.47024,E 1115416.450744,EL652.752655,--21MW04
EP,TM13:08:16,LA42.185289419,LN-87.505353541,HT539.896203,RH0.06298,RV0.07685,DH1.24
7193,DV1.521868,GM4,CL1
BL,DCROVER,PN366,DX27411.536862,DY-15663.853566,DZ-18407.843373,--CONCX/BC,GM4,CL1,H
P0.06298,VP0.07685
CV,DCROVER,SV4,SC0.021329,XX1.334123e-004,XY-2.323155e-005,XZ-6.948284e-005,YY5.1695
78e-004,YZ-1.775843e-004,ZZ4.790729e-004
GS,PN366,N 2057642.368714,E 1115462.709392,EL652.145344,--CONCX/BC
EP,TM13:08:50,LA42.185259946,LN-87.505353606,HT539.779999,RH0.040324,RV0.051601,DH1.
060326,DV1.405542,GM4,CL1
BL,DCROVER,PN367,DX27412.23873,DY-15683.841929,DZ-18429.985094,--CONCX/BC,GM4,CL1,HP
0.040324,VP0.051601
CV,DCROVER,SV4,SC0.018426,XX1.074181e-004,XY1.475748e-006,XZ-4.683228e-005,YY4.20653

7e-004,YZ-1.846482e-004,ZZ4.080509e-004
GS,PN367,N 2057612.532514,E 1115462.830333,EL652.028569,--CONCX/BC
EP,TM13:09:22,LA42.185262847,LN-87.505379671,HT540.463997,RH0.059261,RV0.078259,DH1.
062287,DV1.402825,GM4,CL1
BL,DCROVER,PN368,DX27392.613801,DY-15683.106521,DZ-18427.352467,--CONCX,GM4,CL1,HP0.
059261,VP0.078259
CV,DCROVER,SV4,SC0.020401,XX1.314583e-004,XY1.158126e-006,XZ-5.703777e-005,YY5.14200
9e-004,YZ-2.233197e-004,ZZ4.963920e-004
GS,PN368,N 2057615.358253,E 1115443.231045,EL652.712458,--CONCX
EP,TM13:09:58,LA42.185286545,LN-87.505379544,HT540.53072,RH0.048361,RV0.063518,DH1.0
65089,DV1.399113,GM4,CL1
BL,DCROVER,PN369,DX27392.104585,DY-15667.013215,DZ-18409.567588,--CONCX,GM4,CL1,HP0.
048361,VP0.063518
CV,DCROVER,SV4,SC0.019177,XX1.158606e-004,XY2.089990e-007,XZ-4.992756e-005,YY4.52488
1e-004,YZ-1.934995e-004,ZZ4.337797e-004
GS,PN369,N 2057639.348109,E 1115443.189697,EL652.779641,--CONCX
EP,TM13:11:41,LA42.185208883,LN-87.505697519,HT543.332423,RH0.067655,RV0.086691,DH1.
211849,DV1.552458,GM4,CL1
BL,DCROVER,PN370,DX27155.429172,DY-15730.941671,DZ-18465.818103,--EP
POC,GM4,CL1,HP0.067655,VP0.086691
CV,DCROVER,SV4,SC0.022552,XX1.502953e-004,XY4.982097e-007,XZ-1.021732e-004,YY5.02226
5e-004,YZ-2.523981e-004,ZZ6.907146e-004
GS,PN370,N 2057559.371165,E 1115204.740408,EL655.577821,--EP POC
EP,TM13:12:56,LA42.185182656,LN-87.505933755,HT543.83071,RH0.056431,RV0.072484,DH1.0
78729,DV1.383586,GM4,CL1
BL,DCROVER,PN371,DX26978.744046,DY-15755.831587,DZ-18485.11584,--EPX,GM4,CL1,HP0.056
431,VP0.072484
CV,DCROVER,SV4,SC0.019928,XX1.236594e-004,XY-3.479648e-006,XZ-5.177011e-005,YY4.8042
06e-004,YZ-1.913640e-004,ZZ4.463449e-004
GS,PN371,N 2057531.812765,E 1115027.405164,EL656.074105,--EPX
EP,TM13:13:37,LA42.185149524,LN-87.510005772,HT543.819407,RH0.056506,RV0.071071,DH1.
214191,DV1.52624,GM4,CL1
BL,DCROVER,PN372,DX26925.518798,DY-15780.417209,DZ-18509.925851,--CONCX,GM4,CL1,HP0.
056506,VP0.071071
CV,DCROVER,SV4,SC0.020913,XX1.307080e-004,XY-4.468537e-006,XZ-8.472428e-005,YY4.3339
34e-004,YZ-2.025682e-004,ZZ5.642794e-004
GS,PN372,N 2057497.965918,E 1114973.4881,EL656.061706,--CONCX
EP,TM13:14:04,LA42.185155942,LN-87.51000573,HT543.685977,RH0.041723,RV0.053032,DH1.0
84788,DV1.37785,GM4,CL1
BL,DCROVER,PN373,DX26925.382436,DY-15775.946609,DZ-18505.211232,--CONCX,GM4,CL1,HP0.
041723,VP0.053032
CV,DCROVER,SV4,SC0.019365,XX1.161520e-004,XY-4.681086e-006,XZ-4.807064e-005,YY4.5061
38e-004,YZ-1.739795e-004,ZZ4.130850e-004
GS,PN373,N 2057504.462992,E 1114973.482655,EL655.9284,--CONCX
EP,TM13:14:35,LA42.185183045,LN-87.510015873,HT544.039952,RH0.082888,RV0.095801,DH1.
49879,DV1.732287,GM4,CL1
BL,DCROVER,PN374,DX26917.083894,DY-15758.036284,DZ-18484.68402,--CONCX,GM4,CL1,HP0.0
82888,VP0.095801
CV,DCROVER,SV4,SC0.030215,XX2.401199e-004,XY2.849197e-005,XZ-3.281111e-004,YY5.89450
7e-004,YZ-3.220882e-004,ZZ1.302899e-003
GS,PN374,N 2057531.855789,E 1114965.706428,EL656.282837,--CONCX
EP,TM13:15:08,LA42.185183191,LN-87.510054065,HT544.445086,RH0.063651,RV0.073338,DH1.
494143,DV1.720426,GM4,CL1
BL,DCROVER,PN375,DX26888.416647,DY-15759.312793,DZ-18484.302104,--CONCX,GM4,CL1,HP0.
063651,VP0.073338
CV,DCROVER,SV4,SC0.027108,XX1.930160e-004,XY2.097677e-005,XZ-2.603278e-004,YY4.77874
9e-004,YZ-2.545528e-004,ZZ1.038258e-003
GS,PN375,N 2057531.84051,E 1114937.012009,EL656.687733,--CONCX
EP,TM13:16:08,LA42.185291293,LN-87.510052893,HT544.519127,RH0.063357,RV0.072585,DH1.
487682,DV1.703818,GM4,CL1
BL,DCROVER,PN376,DX26886.534405,DY-15685.714073,DZ-18403.328774,--CONC
PC,GM4,CL1,HP0.063357,VP0.072585
CV,DCROVER,SV4,SC0.02699,XX1.909514e-004,XY1.803708e-005,XZ-2.526854e-004,YY4.786852

e-004,YZ-2.457143e-004,ZZ1.014334e-003
GS,PN376,N 2057641.276144,E 1114937.270697,EL656.763875,--CONC PC
EP,TM13:16:42,LA42.185321418,LN-87.510037193,HT543.758354,RH0.059722,RV0.074835,DH1.
482687,DV1.690833,GM4,CL1
BL,DCROVER,PN377,DX26897.531477,DY-15664.193089,DZ-18381.289601,--CONC
POC,GM4,CL1,HP0.059722,VP0.074835
CV,DCROVER,SV4,SC0.02645,XX1.830800e-004,XY1.516687e-005,XZ-2.384335e-004,YY4.637663
e-004,YZ-2.308078e-004,ZZ9.624356e-004
GS,PN377,N 2057671.838762,E 1114948.893649,EL656.003784,--CONC POC
EP,TM13:17:45,LA42.185335222,LN-87.505996358,HT543.533045,RH0.068542,RV0.077706,DH1.
475152,DV1.670952,GM4,CL1
BL,DCROVER,PN378,DX26927.83164,DY-15653.47487,DZ-18371.108091,--CONC
PT,GM4,CL1,HP0.068542,VP0.077706
CV,DCROVER,SV4,SC0.027003,XX1.902902e-004,XY1.238579e-005,XZ-2.416780e-004,YY4.90003
5e-004,YZ-2.323289e-004,ZZ9.842486e-004
GS,PN378,N 2057685.986325,E 1114979.493759,EL655.779001,--CONC PT
EP,TM13:19:02,LA42.185364764,LN-87.505831193,HT544.24389,RH0.168152,RV0.101772,DH3.1
27351,DV1.892913,GM4,CL1
BL,DCROVER,PN379,DX27051.103484,DY-15629.224874,DZ-18348.514749,--CONCX,GM4,CL1,HP0.
168152,VP0.101772
CV,DCROVER,SV4,SC0.051253,XX5.445670e-004,XY-3.024455e-004,XZ-9.903552e-004,YY6.3730
84e-004,YZ4.548488e-004,ZZ2.407242e-003
GS,PN379,N 2057716.596783,E 1115103.412801,EL656.491461,--CONCX
EP,TM13:19:35,LA42.185333885,LN-87.505779345,HT542.776417,RH0.074283,RV0.083139,DH1.
462763,DV1.637155,GM4,CL1
BL,DCROVER,PN380,DX27090.780152,DY-15647.70828,DZ-18372.618101,--CONCX,GM4,CL1,HP0.0
74283,VP0.083139
CV,DCROVER,SV4,SC0.027078,XX1.903540e-004,XY6.448551e-006,XZ-2.308124e-004,YY5.05192
9e-004,YZ-2.191527e-004,ZZ9.561469e-004
GS,PN380,N 2057685.559707,E 1115142.543786,EL655.023717,--CONCX
EP,TM13:19:57,LA42.185334828,LN-87.505780567,HT542.735502,RH0.074219,RV0.082963,DH1.
460829,DV1.631718,GM4,CL1
BL,DCROVER,PN381,DX27089.837412,DY-15647.070456,DZ-18371.939916,--EPX,GM4,CL1,HP0.07
4219,VP0.082963
CV,DCROVER,SV4,SC0.025698,XX1.712802e-004,XY4.857493e-006,XZ-2.059276e-004,YY4.57088
6e-004,YZ-1.950904e-004,ZZ8.558031e-004
GS,PN381,N 2057686.508829,E 1115141.620263,EL654.982813,--EPX
EP,TM13:23:24,LA42.185068825,LN-87.510434644,HT548.03014,RH0.079547,RV0.079398,DH1.6
52208,DV1.616204,GM4,CL1
BL,DCROVER,PN382,DX26605.693067,DY-15850.572258,DZ-18567.501947,--EP,GM4,CL1,HP0.079
547,VP0.079398
CV,DCROVER,SV4,SC0.02829,XX2.875364e-004,XY-7.536693e-006,XZ-2.835822e-004,YY4.43180
8e-004,YZ-1.560698e-004,ZZ8.354035e-004
GS,PN382,N 2057414.447005,E 1114651.73502,EL660.268175,--EP
EP,TM13:24:02,LA42.185069678,LN-87.51046683,HT548.471476,RH0.070074,RV0.076298,DH1.4
39995,DV1.56756,GM4,CL1
BL,DCROVER,PN383,DX26581.517064,DY-15851.223783,DZ-18566.565834,--EP,GM4,CL1,HP0.070
074,VP0.076298
CV,DCROVER,SV4,SC0.02554,XX1.668416e-004,XY-6.397948e-006,XZ-1.795872e-004,YY4.78191
3e-004,YZ-1.653442e-004,ZZ7.801303e-004
GS,PN383,N 2057415.174136,E 1114627.547858,EL660.709326,--EP
EP,TM13:24:48,LA42.185102145,LN-87.51039374,HT547.412169,RH0.063948,RV0.072765,DH1.4
37211,DV1.557539,GM4,CL1
BL,DCROVER,PN384,DX26635.535618,DY-15826.271107,DZ-18542.974413,--EPX,GM4,CL1,HP0.06
3948,VP0.072765
CV,DCROVER,SV4,SC0.026383,XX1.775324e-004,XY-8.802014e-006,XZ-1.872853e-004,YY5.1542
92e-004,YZ-1.715307e-004,ZZ8.205927e-004
GS,PN384,N 2057448.351368,E 1114682.275197,EL659.651107,--EPX
EP,TM13:25:43,LA42.185100088,LN-87.510169657,HT545.189107,RH0.066139,RV0.074811,DH1.
434142,DV1.545603,GM4,CL1
BL,DCROVER,PN385,DX26803.772442,DY-15819.715534,DZ-18546.011149,--EP,GM4,CL1,HP0.066
139,VP0.074811
CV,DCROVER,SV4,SC0.025542,XX1.657495e-004,XY-1.061635e-005,XZ-1.702595e-004,YY4.8946

39e-004,YZ-1.548472e-004,ZZ7.547163e-004
GS,PN385,N 2057447.223192,E 1114850.643249,EL657.429415,--EP
--Date: 11-18-2009 Time: 13:26:19
EP,TM13:29:48,LA42.184010146,LN-87.510478739,HT551.82141,RH0.04919,RV0.058083,DH1.62
3644,DV1.917154,GM4,CL1
BL,DCROVER,PN386,DX26599.740177,DY-16575.579921,DZ-19357.485686,--EP,GM4,CL1,HP0.049
19,VP0.058083
CV,DCROVER,SV4,SC0.03508,XX2.724489e-004,XY1.474590e-004,XZ-2.517834e-004,YY1.627244
e-003,YZ-3.699548e-004,ZZ1.046656e-003
GS,PN386,N 2056342.567778,E 1114624.674764,EL664.03864,--EP
EP,TM13:30:28,LA42.184010364,LN-87.510446179,HT551.730258,RH0.080375,RV0.094442,DH1.
630094,DV1.912842,GM4,CL1
BL,DCROVER,PN387,DX26624.179839,DY-16574.446662,DZ-19357.383657,--EP,GM4,CL1,HP0.080
375,VP0.094442
CV,DCROVER,SV4,SC0.029066,XX1.835644e-004,XY9.691411e-005,XZ-1.657981e-004,YY1.12460
3e-003,YZ-2.430710e-004,ZZ6.996512e-004
GS,PN387,N 2056342.927265,E 1114649.137299,EL663.947697,--EP
EP,TM13:41:19,LA42.184350155,LN-87.505427227,HT540.340059,RH0.043531,RV0.050462,DH1.
842898,DV2.13258,GM4,CL1
BL,DCROVER,PN388,DX27380.256321,DY-16305.910244,DZ-19110.676608,--T1,GM4,CL1,HP0.043
531,VP0.050462
CV,DCROVER,SV4,SC0.030952,XX1.495320e-004,XY2.953356e-005,XZ-5.939701e-005,YY1.37538
1e-003,YZ-2.115640e-004,ZZ7.156900e-004
GS,PN388,N 2056691.244098,E 1115412.765859,EL652.570545,--T1
--Detected change of base reference position during RTK survey.
--13:59:22,Get base reference position at
ROVER:LA41.593371309,LN-87.515413942,HT637.071889,
RX,DCGETBASE,RA0.0,RE0,FI
BP,PNBASE_4,LA41.593371309,LN-87.515413942,HT637.071889,SG0
RX,DCROVER,RA6.997768,RE0,FI
EQ,DCROVER,RXHiPer,RS8QQVEFI68SG,AN0,AI0,ATTopcon HiPer,TS,TA0.0,HO0.0,VO0.347768
AH,DCROVER,MA6.65,ME2,RA6.997768
--Detected change of base reference position during RTK survey.
--14:01:54,Get base reference position at
ROVER:LA42.225813134,LN-87.56506687,HT635.341577,
RX,DCGETBASE,RA0.0,RE0,FI
BP,PNBASE_1,LA42.225813134,LN-87.56506687,HT635.341577,SG0
RX,DCROVER,RA6.997768,RE0,FI
EQ,DCROVER,RXHiPer,RS8QQVEFI68SG,AN0,AI0,ATTopcon HiPer,TS,TA0.0,HO0.0,VO0.347768
AH,DCROVER,MA6.65,ME2,RA6.997768
--Detected change of base reference position during RTK survey.
--14:15:16,Get base reference position at
ROVER:LA42.032602423,LN-88.015205416,HT631.916059,
RX,DCGETBASE,RA0.0,RE0,FI
BP,PNBASE_2,LA42.032602423,LN-88.015205416,HT631.916059,SG0
RX,DCROVER,RA6.997768,RE0,FI
EQ,DCROVER,RXHiPer,RS8QQVEFI68SG,AN0,AI0,ATTopcon HiPer,TS,TA0.0,HO0.0,VO0.347768
AH,DCROVER,MA6.65,ME2,RA6.997768
--Detected change of base reference position during RTK survey.
--14:17:44,Get base reference position at
ROVER:LA41.593371309,LN-87.515413942,HT637.071889,
RX,DCGETBASE,RA0.0,RE0,FI
BP,PNBASE_4,LA41.593371309,LN-87.515413942,HT637.071889,SG0
RX,DCROVER,RA6.997768,RE0,FI
EQ,DCROVER,RXHiPer,RS8QQVEFI68SG,AN0,AI0,ATTopcon HiPer,TS,TA0.0,HO0.0,VO0.347768
AH,DCROVER,MA6.65,ME2,RA6.997768
--Detected change of base reference position during RTK survey.
--14:19:10,Get base reference position at
ROVER:LA42.225813134,LN-87.56506687,HT635.341577,
RX,DCGETBASE,RA0.0,RE0,FI
BP,PNBASE_1,LA42.225813134,LN-87.56506687,HT635.341577,SG0
RX,DCROVER,RA6.997768,RE0,FI
EQ,DCROVER,RXHiPer,RS8QQVEFI68SG,AN0,AI0,ATTopcon HiPer,TS,TA0.0,HO0.0,VO0.347768

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AH,DCROVER,MA6.65,ME2,RA6.997768
--Date: 11-18-2009  Time: 14:26:19
EP,TM14:36:56,LA42.184311602,LN-87.504961687,HT537.887078,RH0.024971,RV0.043935,DH1.
085975,DV1.913986,GM4,CL1
BL,DCROVER,PN102,DX27730.723089,DY-16317.215835,DZ-19141.189655,--TP,GM4,CL1,HP0.024
971,VP0.043935
CV,DCROVER,SV4,SC0.01836,XX1.595794e-004,XY-6.828654e-005,XZ6.403268e-005,YY8.450963
e-004,YZ-4.105367e-004,ZZ3.797756e-004
GS,PN102,N 2056654.212168,E 1115762.766817,EL650.119799,--TP
EP,TM14:40:49,LA42.184342022,LN-87.50538336,HT540.000913,RH0.019686,RV0.035378,DH1.0
80034,DV1.946005,GM4,CL1
BL,DCROVER,PN103,DX27413.39225,DY-16309.960988,DZ-19116.993743,--TP,GM4,CL1,HP0.0196
86,VP0.035378
CV,DCROVER,SV4,SC0.017511,XX1.477723e-004,XY-7.280045e-005,XZ6.320352e-005,YY7.85638
5e-004,YZ-3.959410e-004,ZZ3.687067e-004
GS,PN103,N 2056683.198464,E 1115445.771687,EL652.231522,--TP
--Activating Total Station: Topcon AP-L1A Remote [ROBOT APL-1A], COM1, 9600 baud, no
parity
--Foresight Target:My Prism, HR:5.4 (5.4 + 0.0 Offset), Prism Const.:0.0mm
--Activating Total Station: Topcon GTS Series Mechanical [TWO-MEN], COM1, 1200 baud,
even parity
OC,OP103,N 2056683.198464,E 1115445.771687,EL652.231522,--TP
--HR:5.4 (5.4 + 0.0 Offset)
LS,HI5.85,HR5.4
BK,OP103,BP102,BS95.132872,BC0.0000
--Fixed HR at Backsight:5.04 (5.04 + 0.0 Offset), Prism Const.:0.0mm
--BS check 103 - 102:ZE90.2120,SD318.305,HD err= -0.018765, VD err= 0.946458
--BS Circle check : angular err= 0.0000
SS,OP103,FP389,AR246.0815,ZE89.3415,SD90.885,--MW-04
SS,OP103,FP390,AR257.5640,ZE89.4855,SD299.235,--WALKX
SS,OP103,FP391,AR256.1805,ZE89.1750,SD305.4,--BLDGX
SS,OP103,FP392,AR255.1210,ZE89.3655,SD269.655,--BLDGX
SS,OP103,FP393,AR240.3305,ZE89.2040,SD110.575,--BLDGX
SS,OP103,FP394,AR225.5015,ZE87.1105,SD72.985,--BLDGX
SS,OP103,FP395,AR218.4505,ZE87.2400,SD81.875,--BLDGX
SS,OP103,FP396,AR195.2120,ZE87.0255,SD63.015,--BLDGX
SS,OP103,FP397,AR183.1910,ZE88.3310,SD149.305,--BLDGX
SS,OP103,FP398,AR131.0435,ZE89.3710,SD204.37,--BLDGX
SS,OP103,FP399,AR126.2655,ZE89.3555,SD189.135,--BLDGX
SS,OP103,FP400,AR132.4520,ZE89.1245,SD167.185,--CHK MW-06
SS,OP103,FP401,AR82.5010,ZE89.1955,SD151.165,--BLDGX
OF,AR296.0600,ZE90.3250,SD13.045
OF,LR-0.15,--Left / Right Offset
SS,OP103,FP402,AR295.262823,ZE90.324987,SD13.045862,--FCX CHN LNK
SS,OP103,FP403,AR188.2210,ZE89.0210,SD34.03,--CHK T1
OC,OP103,N 2056683.198464,E 1115445.771687,EL652.231522,--TP
BK,OP103,BP102,BS95.132872,BC0.0000
--Fixed HR at Backsight:5.04 (5.04 + 0.0 Offset), Prism Const.:0.0mm
--BS check 103 - 102:ZE90.2110,SD318.305,HD err= -0.01867, VD err= 0.961889
--BS Circle check : angular err= 0.0000
```

APPENDIX F

ANALYTICAL RESULTS

F-1 SURFACE SOIL ANALYTICAL RESULTS

F-2 SUBSURFACE SOIL ANALYTICAL RESULTS

F-3 GROUNDWATER ANALYTICAL RESULTS

F-4 QA/QC AND IDW ANALYTICAL RESULTS

F-1 SURFACE SOIL ANALYTICAL RESULTS

SUMMARY OF SURFACE SOIL ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

SAMPLE ID	NTC21SB01-SO-0102	NTC21SB02-SO-0001	NTC21SB03-SO-0001	NTC21SB04-SO-0001	NTC21SB05-SO-0001	NTC21SB06-SO-0001	NTC21SB07-SO-0001
LOCATION ID	NTC21-SB-01	NTC21-SB-02	NTC21-SB-03	NTC21-SB-04	NTC21-SB-05	NTC21-SB-06	NTC21-SB-07
SAMPLE DATE	20090928	20090928	20090928	20090927	20090928	20090927	20090927
SAMPLE TIME	12:00:00	10:20:00	12:20:00	12:50:00	10:00:00	15:10:00	10:40:00
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	1	0	0	0	0	0	0
BOTTODEPTH	2	1	1	1	1	1	1
DEPTH UNIT	FT	FT	FT	FT	FT	FT	FT
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS
Volatile Organics (ug/kg)							
1,1,1-TRICHLOROETHANE	4.3 U	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	6 U
1,1,2,2-TETRACHLOROETHANE	4.3 U	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	6 U
1,1,2-TRICHLOROETHANE	4.3 U	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	6 U
1,1,2-TRICHLOROTRIFLUOROETHANE	4.3 U	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	6 U
1,1-DICHLOROETHANE	4.3 UJ	4.8 UJ	5.3 UJ	5.2 U	7.1 U	4.3 U	6 UJ
1,1-DICHLOROETHENE	4.3 U	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	6 U
1,2,4-TRICHLOROBENZENE	4.3 U	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	6 U
1,2-DIBROMO-3-CHLOROPROPANE	4.3 U	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	6 U
1,2-DIBROMOETHANE	4.3 U	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	6 U
1,2-DICHLOROBENZENE	4.3 U	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	6 U
1,2-DICHLOROETHANE	4.3 U	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	6 U
1,2-DICHLOROPROPANE	4.3 U	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	6 U
1,3-DICHLOROBENZENE	4.3 U	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	6 U
1,4-DICHLOROBENZENE	4.3 U	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	6 U
2-BUTANONE	4.3 U	4.8 U	5.3 U	5.2 UJ	30 J	4.3 UJ	6 U
2-HEXANONE	4.3 U	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	6 U
4-METHYL-2-PENTANONE	4.3 U	4.8 U	5.3 U	5.2 U	7.1 UJ	4.3 U	6 U
ACETONE	4.3 U	130	5.3 U	5.2 U	180 J	14 U	6 U
BENZENE	1.1 J	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	0.82 J
BROMODICHLOROMETHANE	8.6 U	9.7 U	10 U	10 U	14 U	8.6 U	12 U
BROMOFORM	4.3 U	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	6 U
BROMOMETHANE	8.6 U	9.7 U	10 U	10 U	14 U	8.6 U	12 U
CARBON DISULFIDE	2.8 J	4.1 J	1.6 J	6.7	2.3 J	5	2.4 J
CARBON TETRACHLORIDE	4.3 U	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	6 U
CHLOROBENZENE	4.3 U	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	6 U
CHLORODIBROMOMETHANE	4.3 U	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	6 U
CHLOROETHANE	8.6 U	9.7 U	10 U	10 U	14 U	8.6 U	12 U
CHLOROFORM	4.3 U	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	6 U
CHLOROMETHANE	8.6 U	9.7 U	10 U	10 U	14 U	8.6 U	12 U
CIS-1,2-DICHLOROETHENE	8.6 U	9.7 U	10 U	10 U	14 U	8.6 U	12 U
CIS-1,3-DICHLOROPROPENE	4.3 U	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	6 U
CYCLOHEXANE	1.2 J	4.8 U	0.81 J	0.91 J	1.4 J	4.3 U	1.4 J
DICHLORODIFLUOROMETHANE	4.3 U	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	6 U
ETHYLBENZENE	4.3 U	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	6 U
ISOPROPYLBENZENE	4.3 U	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	6 U
METHYL ACETATE	8.6 U	9.7 U	10 U	10 U	14 U	8.6 U	12 U
METHYL CYCLOHEXANE	2.4 J	0.43 J	1.6 J	2.1 J	2.5 J	4.3 U	3.5 J
METHYL TERT-BUTYL ETHER	4.3 U	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	6 U
METHYLENE CHLORIDE	1 U	1.3 U	1.4 U	1.1 U	3.2 U	0.94 U	1.2 U
STYRENE	4.3 U	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	6 U
TETRACHLOROETHENE	4.3 U	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	6 U
TOLUENE	1.4 J	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	6 U
TOTAL XYLENES	4.3 U	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	6 U
TRANS-1,2-DICHLOROETHENE	4.3 U	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	6 U
TRANS-1,3-DICHLOROPROPENE	4.3 U	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	6 U
TRICHLOROETHENE	4.3 U	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	6 U
TRICHLOROFLUOROMETHANE	4.3 U	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	6 U
VINYL CHLORIDE	4.3 U	4.8 U	5.3 U	5.2 U	7.1 U	4.3 U	6 U

SUMMARY OF SURFACE SOIL ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

SAMPLE ID	NTC21SB01-SO-0102	NTC21SB02-SO-0001	NTC21SB03-SO-0001	NTC21SB04-SO-0001	NTC21SB05-SO-0001	NTC21SB06-SO-0001	NTC21SB07-SO-0001
LOCATION ID	NTC21-SB-01	NTC21-SB-02	NTC21-SB-03	NTC21-SB-04	NTC21-SB-05	NTC21-SB-06	NTC21-SB-07
SAMPLE DATE	20090928	20090928	20090928	20090927	20090928	20090927	20090927
SAMPLE TIME	12:00:00	10:20:00	12:20:00	12:50:00	10:00:00	15:10:00	10:40:00
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	1	0	0	0	0	0	0
BOTTODEPTH	2	1	1	1	1	1	1
DEPTH UNIT	FT	FT	FT	FT	FT	FT	FT
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS
Semivolatile Organics (ug/kg)							
1,1-BIPHENYL	62 J	370 U	350 U	360 U	360 U	400 U	360 U
2,2'-OXYBIS(1-CHLOROPROPANE)	790 U	740 U	700 U	720 U	710 U	810 U	730 U
2,4,5-TRICHLOROPHENOL	400 U	370 U	350 U	360 U	360 U	400 U	360 U
2,4,6-TRICHLOROPHENOL	400 U	370 U	350 U	360 U	360 U	400 U	360 U
2,4-DICHLOROPHENOL	400 U	370 U	350 U	360 U	360 U	400 U	360 U
2,4-DIMETHYLPHENOL	790 U	740 U	700 U	720 U	710 U	810 U	730 U
2,4-DINITROPHENOL	4000 U	3700 U	3500 U	3600 U	3600 U	4000 U	3600 U
2,4-DINITROTOLUENE	400 U	370 U	350 U	360 U	360 U	400 U	360 U
2,6-DINITROTOLUENE	400 U	370 U	350 U	360 U	360 U	400 U	360 U
2-CHLORONAPHTHALENE	400 U	370 U	350 U	360 U	360 U	400 U	360 U
2-CHLOROPHENOL	400 U	370 U	350 U	360 U	360 U	400 U	360 U
2-METHYLNAPHTHALENE	180	450	330	700	400	640	800
2-METHYLPHENOL	400 U	370 U	350 U	360 U	360 U	400 U	360 U
2-NITROANILINE	1600 U	1500 U	1400 U	1400 U	1400 U	1600 U	1400 U
2-NITROPHENOL	400 U	370 U	350 U	360 U	360 U	400 U	360 U
3,3'-DICHLOROBENZIDINE	400 U	370 U	350 U	360 U	360 U	400 U	360 U
3-NITROANILINE	1600 U	1500 U	1400 U	1400 U	1400 U	1600 U	1400 U
4,6-DINITRO-2-METHYLPHENOL	1600 U	1500 U	1400 U	1400 U	1400 U	1600 U	1400 U
4-BROMOPHENYL PHENYL ETHER	400 U	370 U	350 U	360 U	360 U	400 U	360 U
4-CHLORO-3-METHYLPHENOL	400 U	370 U	350 U	360 U	360 U	400 U	360 U
4-CHLOROANILINE	400 U	370 U	350 U	360 U	360 U	400 U	360 U
4-CHLOROPHENYL PHENYL ETHER	400 U	370 U	350 U	360 U	360 U	400 U	360 U
4-METHYLPHENOL	400 U	370 U	350 U	360 U	360 U	400 U	360 U
4-NITROANILINE	1600 U	1500 U	1400 U	1400 U	1400 U	1600 U	1400 U
4-NITROPHENOL	1600 U	1500 UJ	1400 UJ	1400 U	1400 UJ	1600 U	1400 U
ACENAPHTHENE	880	3.7 U	54	87	81	65	840
ACENAPHTHYLENE	20	56	680	3.6 U	3.6 U	4 U	130
ACETOPHENONE	400 U	370 U	350 U	360 U	360 U	400 U	360 U
ANTHRACENE	1700	59	350	3.6 U	180 J	4 U	1700
ATRAZINE	400 U	370 UJ	350 UJ	360 U	360 UJ	400 U	360 U
BENZALDEHYDE	400 UR	370 U	350 U	360 UR	360 U	400 UR	360 UR
BENZO(A)ANTHRACENE	4800	240	1100 J	380	250 J	4 U	4200
BENZO(A)PYRENE	4200	360	2400 J	3.6 U	390 J	4 U	3200
BENZO(B)FLUORANTHENE	6600	540	3500 J	870	480 J	720	4400
BENZO(G,H,I)PERYLENE	2200	340 J	1300 J	290	260 J	4 U	1400
BENZO(K)FLUORANTHENE	2500	120	2000	820	300 J	690	1700
BIS(2-CHLOROETHOXY)METHANE	400 U	370 U	350 U	360 U	360 U	400 U	360 U
BIS(2-CHLOROETHYL)ETHER	400 U	370 U	350 U	360 U	360 U	400 U	360 U
BIS(2-ETHYLHEXYL)PHTHALATE	400 UJ	200 J	240 J	110 J	240 J	150 J	150 J
BUTYL BENZYL PHTHALATE	400 UJ	370 UJ	350 UJ	360 UJ	360 UJ	400 U	360 U
CAPROLACTAM	400 U	370 U	350 U	360 U	360 U	400 U	360 U
CARBAZOLE	1000	740 U	700 U	720 U	710 U	810 U	880
CHRYSENE	5900	270	1300 J	340	280 J	4 U	4600
DI-N-BUTYL PHTHALATE	400 U	370 UJ	350 UJ	360 U	360 UJ	400 U	360 U
DI-N-OCTYL PHTHALATE	400 UJ	370 UJ	350 UJ	360 UJ	360 UJ	400 UJ	360 UJ
DIBENZO(A,H)ANTHRACENE	1100	89 J	900 J	3.6 U	78 J	4 U	3.6 U
DIBENZOFURAN	540	97 J	110 J	250 J	130 J	200 J	620
DIETHYL PHTHALATE	400 U	370 U	350 U	360 U	360 U	400 U	360 U
DIMETHYL PHTHALATE	400 U	370 U	350 U	360 U	360 U	400 U	360 U
FLUORANTHENE	14000	420	3300	1100	790	1000	12000
FLUORENE	960	3.7 U	55	3.6 U	3.6 U	4 U	890

SUMMARY OF SURFACE SOIL ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

SAMPLE ID	NTC21SB01-SO-0102	NTC21SB02-SO-0001	NTC21SB03-SO-0001	NTC21SB04-SO-0001	NTC21SB05-SO-0001	NTC21SB06-SO-0001	NTC21SB07-SO-0001
LOCATION ID	NTC21-SB-01	NTC21-SB-02	NTC21-SB-03	NTC21-SB-04	NTC21-SB-05	NTC21-SB-06	NTC21-SB-07
SAMPLE DATE	20090928	20090928	20090928	20090927	20090928	20090927	20090927
SAMPLE TIME	12:00:00	10:20:00	12:20:00	12:50:00	10:00:00	15:10:00	10:40:00
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	1	0	0	0	0	0	0
BOTTODEPTH	2	1	1	1	1	1	1
DEPTH UNIT	FT	FT	FT	FT	FT	FT	FT
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS
Semivolatile Organics (ug/kg) (Continued)							
HEXACHLOROBENZENE	400 U	370 U	350 U	360 U	360 U	400 U	360 U
HEXACHLOROBUTADIENE	400 U	370 U	350 U	360 U	360 U	400 U	360 U
HEXACHLOROCYCLOPENTADIENE	400 U	370 U	350 U	360 U	360 U	400 U	360 U
HEXACHLOROETHANE	790 U	740 U	700 U	720 U	710 U	810 U	730 U
INDENO(1,2,3-CD)PYRENE	3300	420 J	3.5 UJ	3.6 U	330 J	4 U	2100
ISOPHORONE	400 U	370 U	350 U	360 U	360 U	400 U	360 U
N-NITROSO-DI-N-PROPYLAMINE	400 U	370 U	350 U	360 U	360 U	400 U	360 U
N-NITROSODIPHENYLAMINE	400 U	370 U	350 U	360 U	360 U	400 U	360 U
NAPHTHALENE	520	210	200	300	140	480	370
NITROBENZENE	400 U	370 U	350 U	360 U	360 U	400 U	360 U
PENTACHLOROPHENOL	1600 U	1500 U	1400 U	1400 U	1400 U	1600 U	1400 U
PHENANTHRENE	9500	620	960	1200	790	810	8400
PHENOL	400 U	370 U	350 U	360 U	360 U	400 U	360 U
PYRENE	11000	420	3000	890	660	870	9400
BAP EQUIVALENT	6800.9	570.47	3781.3	133.54	577.28	78.9	4291.6
BAP EQUIVALENT FULLND	6800.9	570.47	3781.65	141.1	577.28	87.704	4295.2
TOTAL PAHS	69360	4614	21429	6977	5409	5275	56130
TOTAL PAHS FULLND	69360	4621.4	21432.5	6998.6	5416.2	5311	56133.6
Pesticides/PCBS (ug/kg)							
4,4'-DDD	14 J	17 J	20 J	4.7 J	130	290	30
4,4'-DDE	10	5.3	9.4	7.9 J	130	220	16
4,4'-DDT	14 J	20 J	23 J	30 J	160 J	110 J	9.1 J
ALDRIN	0.33 J	0.37 UJ	0.23 J	0.36 UJ	0.35 UJ	0.4 UJ	0.36 UJ
ALPHA-BHC	0.39 U	0.28 J	5.2 J	0.36 U	12 J	0.3 J	0.36 U
ALPHA-CHLORDANE	7.4 J	0.64 J	1.1 J	0.36 UJ	0.35 UJ	5.1 J	1.3 J
AROCLOR-1016	20.2 U	19 U	17.9 U	18.4 U	18.2 U	20.6 U	18.6 U
AROCLOR-1221	20.2 U	19 U	17.9 U	18.4 U	18.2 U	20.6 U	18.6 U
AROCLOR-1232	20.2 U	19 U	17.9 U	18.4 U	18.2 U	20.6 U	18.6 U
AROCLOR-1242	20.2 U	19 U	17.9 U	18.4 U	18.2 U	20.6 U	18.6 U
AROCLOR-1248	20.2 U	19 U	17.9 U	18.4 U	18.2 U	20.6 U	18.6 U
AROCLOR-1254	20.2 U	19 U	17.9 U	18.4 U	18.2 U	20.6 U	18.6 U
AROCLOR-1260	20.2 UJ	190 J	130 J	310 J	210 J	310 J	21 J
BETA-BHC	0.27 J	0.37 U	1 J	0.36 U	0.35 U	0.4 U	0.56 J
DELTA-BHC	0.51 J	0.37 U	0.35 U	0.36 U	0.35 U	1.4	0.36 U
DIELDRIN	0.8 UJ	2 J	1.9 J	13 J	2.8 J	3.5 J	3.7 J
ENDOSULFAN I	0.39 UJ	0.37 UJ	0.2 J	3.2 J	0.35 UJ	2.3 J	0.36 UJ
ENDOSULFAN II	0.8 UJ	1.5 J	1.7 J	0.73 UJ	0.72 UJ	0.81 UJ	0.731 UJ
ENDOSULFAN SULFATE	1.8 J	1.3 J	2.7 J	4.9 J	0.72 UJ	0.81 UJ	0.731 UJ
ENDRIN	0.71 J	0.75 UJ	1.1 J	72	0.72 UJ	6.7 J	0.731 U
ENDRIN ALDEHYDE	0.39 J	0.75 UJ	0.71 UJ	8.6 J	0.72 UJ	0.81 UJ	0.731 UJ
ENDRIN KETONE	0.85 J	0.75 UJ	1.5 J	0.73 UJ	0.72 UJ	0.81 UJ	0.731 UJ
GAMMA-BHC (LINDANE)	0.25 J	0.37 U	0.49 J	0.36 U	0.35 U	0.4 U	0.44 J
GAMMA-CHLORDANE	11 J	1.7 J	3.4 J	71 J	11 J	3.8 J	3.4 J
HEPTACHLOR	0.39 UJ	0.37 UJ	0.35 UJ	0.36 UJ	0.35 UJ	0.4 UJ	0.36 UJ
HEPTACHLOR EPOXIDE	0.24 J	0.37 UJ	2 J	0.36 U	2.3 J	3	0.51 J
METHOXYCHLOR	3.1 J	3.3 J	17 J	37 J	4 J	7.5 J	3.9 J
TOXAPHENE	39 U	37 U	35 U	36 U	35 U	40 U	36 U

SUMMARY OF SURFACE SOIL ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

SAMPLE ID	NTC21SB01-SO-0102	NTC21SB02-SO-0001	NTC21SB03-SO-0001	NTC21SB04-SO-0001	NTC21SB05-SO-0001	NTC21SB06-SO-0001	NTC21SB07-SO-0001
LOCATION ID	NTC21-SB-01	NTC21-SB-02	NTC21-SB-03	NTC21-SB-04	NTC21-SB-05	NTC21-SB-06	NTC21-SB-07
SAMPLE DATE	20090928	20090928	20090928	20090927	20090928	20090927	20090927
SAMPLE TIME	12:00:00	10:20:00	12:20:00	12:50:00	10:00:00	15:10:00	10:40:00
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	1	0	0	0	0	0	0
BOTTODEPTH	2	1	1	1	1	1	1
DEPTH UNIT	FT	FT	FT	FT	FT	FT	FT
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS
Herbicides (ug/kg)							
2,4,5-T	5.94 U	5.58 U	5.27 U	5.43 UJ	5.34 U	6.06 UJ	5.46 UJ
2,4,5-TP (SILVEX)	5.94 U	5.58 U	5.27 U	5.43 U	5.34 U	6.06 U	5.46 U
2,4-D	59.4 U	55.8 U	52.7 U	54.3 UJ	53.4 U	60.6 UJ	54.6 UJ
2,4-DB	59.4 U	55.8 UJ	52.7 UJ	54.3 UJ	53.4 UJ	60.6 UJ	54.6 UJ
DALAPON	148 UJ	139 UJ	132 UJ	136 UJ	133 UJ	152 UJ	136 UJ
DICAMBA	5.94 U	6.91 J	5.41 J	6.77 J	5.34 U	8.07 J	4.86 J
DICHLOROPROP	59.4 U	55.8 U	52.7 U	54.3 U	53.4 U	60.6 U	54.6 U
DINOSEB	29.7 U	27.9 U	26.3 U	27.1 U	26.7 U	30.3 U	27.3 U
MCPA	5940 U	5580 U	5270 U	5430 U	5340 U	6060 U	5460 U
MCPP	5940 U	5580 U	5270 U	5430 U	5340 U	6060 U	5460 U
Dioxins/Furans (ng/kg)							
1,2,3,4,6,7,8,9-OCDD	---	---	---	---	---	---	---
1,2,3,4,6,7,8,9-OCDF	---	---	---	---	---	---	---
1,2,3,4,6,7,8-HPCDD	---	---	---	---	---	---	---
1,2,3,4,6,7,8-HPCDF	---	---	---	---	---	---	---
1,2,3,4,7,8,9-HPCDF	---	---	---	---	---	---	---
1,2,3,4,7,8-HXCDD	---	---	---	---	---	---	---
1,2,3,4,7,8-HXCDF	---	---	---	---	---	---	---
1,2,3,6,7,8-HXCDD	---	---	---	---	---	---	---
1,2,3,6,7,8-HXCDF	---	---	---	---	---	---	---
1,2,3,7,8,9-HXCDD	---	---	---	---	---	---	---
1,2,3,7,8,9-HXCDF	---	---	---	---	---	---	---
1,2,3,7,8-PECDD	---	---	---	---	---	---	---
1,2,3,7,8-PECDF	---	---	---	---	---	---	---
2,3,4,6,7,8-HXCDF	---	---	---	---	---	---	---
2,3,4,7,8-PECDF	---	---	---	---	---	---	---
2,3,7,8-TCDD	---	---	---	---	---	---	---
2,3,7,8-TCDF	---	---	---	---	---	---	---
TOTAL HPCDD	---	---	---	---	---	---	---
TOTAL HPCDF	---	---	---	---	---	---	---
TOTAL HXCDD	---	---	---	---	---	---	---
TOTAL HXCDF	---	---	---	---	---	---	---
TOTAL PECDD	---	---	---	---	---	---	---
TOTAL PECDF	---	---	---	---	---	---	---
TOTAL TCDD	---	---	---	---	---	---	---
TOTAL TCDF	---	---	---	---	---	---	---
TEQ	---	---	---	---	---	---	---
TEQ FULLND	---	---	---	---	---	---	---
Inorganics (mg/kg)							
ALUMINUM	9140	10400	8950	2470	5750	7130	5320
ANTIMONY	0.585 UJ	0.566 UJ	0.627 J	1.38 UJ	0.513 UJ	0.586 UJ	1.36 UJ
ARSENIC	21.1	11.1	9.93	13.4 J	6.05	7.93 J	7.46 J
BARIUM	52.9 J	91.7 J	68.3 J	34.8 J	44.9 J	43.1 J	42.3 J
BERYLLIUM	0.521	0.793	0.846	0.429 J	0.47	0.469 J	0.445 J
CADMIUM	0.554	0.44	0.605	0.338	0.395	0.132	0.644
CALCIUM	54000	56300	57000	89000 J	62700	2240 J	98600 J
CHROMIUM	17.3	15.1	14.1	7.16 J	13.7 J	11.3 J	12.6 J
COBALT	8.64	11	7.43	2.31	6.12	8.67	5.79
COPPER	37.9 J	30.2 J	49.4 J	25.3 J	24.6 J	18.3 J	37.9 J
IRON	48600 J	24100 J	23300 J	26000 J	18200 J	18500 J	18900 J
LEAD	29.6 J	57.3 J	106 J	43 J	42.2 J	25.9 J	81.5 J

SUMMARY OF SURFACE SOIL ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

SAMPLE ID	NTC21SB01-SO-0102	NTC21SB02-SO-0001	NTC21SB03-SO-0001	NTC21SB04-SO-0001	NTC21SB05-SO-0001	NTC21SB06-SO-0001	NTC21SB07-SO-0001
LOCATION ID	NTC21-SB-01	NTC21-SB-02	NTC21-SB-03	NTC21-SB-04	NTC21-SB-05	NTC21-SB-06	NTC21-SB-07
SAMPLE DATE	20090928	20090928	20090928	20090927	20090928	20090927	20090927
SAMPLE TIME	12:00:00	10:20:00	12:20:00	12:50:00	10:00:00	15:10:00	10:40:00
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	ORIG	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	1	0	0	0	0	0	0
BOTTODEPTH	2	1	1	1	1	1	1
DEPTH UNIT	FT	FT	FT	FT	FT	FT	FT
SUBMATRIX	SS	SS	SS	SS	SS	SS	SS
Inorganics (mg/kg) (Continued)							
MAGNESIUM	30600	36300	34500	47600	37900 J	1440	53800
MANGANESE	733	965	652	178 J	503	318 J	597 J
MERCURY	0.0548 J	0.092 J	0.144 J	0.0517	0.0693 J	0.0332	0.0854
NICKEL	25.4	21.1	18.9	7.18 J	17.2 J	13.7 J	15.9 J
POTASSIUM	1180 J	1240 J	1060 J	763	970 J	461	981
SELENIUM	0.877 UJ	0.849 UJ	0.79 UJ	0.83 UJ	0.77 UJ	0.351 UJ	1.36 UJ
SILVER	0.117 U	0.113 U	0.105 U	0.277 U	0.103 U	0.117 U	0.271 U
SODIUM	1010	833	1220	845	798	594	384
THALLIUM	0.351 U	0.34 U	0.527 U	0.83 UJ	0.411 U	0.469 UJ	0.814 UJ
VANADIUM	24.2	19.3	16.8	11.3	12.5	22	14.2
ZINC	114 J	151 J	252 J	53.1 J	87.8 J	80.9 J	119 J

SUMMARY OF SURFACE SOIL ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

SAMPLE ID	NTC21SB08-SO-0001	NTC21SB09-SO-0001	NTC21SB10-SO-0001	NTC21SB11-SO-0001	NTC21SB12-SO-0001	NTC21SB13-SO-0001
LOCATION ID	NTC21-SB-08	NTC21-SB-09	NTC21-SB-10	NTC21-SB-11	NTC21-SB-12	NTC21-SB-13
SAMPLE DATE	20090928	20090926	20090926	20090926	20090926	20090927
SAMPLE TIME	11:55:00	16:20:00	18:36:00	18:10:00	14:00:00	09:00:00
SAMPLE CODE	NORMAL	ORIG	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO
TOP DEPTH	0	0	0	0	0	0
BOTTODEPTH	1	1	1	1	1	1
DEPTH UNIT	FT	FT	FT	FT	FT	FT
SUBMATRIX	SS	SS	SS	SS	SS	SS
Volatile Organics (ug/kg)						
1,1,1-TRICHLOROETHANE	5.4 U	4.4 U	5.3 U	5.2 U	5.6 U	6.5 UJ
1,1,2,2-TETRACHLOROETHANE	5.4 U	4.4 U	5.3 U	5.2 U	5.6 U	6.5 UJ
1,1,2-TRICHLOROETHANE	5.4 U	4.4 U	5.3 U	5.2 U	5.6 U	6.5 UJ
1,1,2-TRICHLOROTRIFLUOROETHANE	5.4 U	4.4 U	5.3 U	5.2 U	5.6 U	6.5 UJ
1,1-DICHLOROETHANE	5.4 U	4.4 U	5.3 U	5.2 U	5.6 U	6.5 UJ
1,1-DICHLOROETHENE	5.4 U	4.4 U	5.3 U	5.2 U	5.6 U	6.5 UJ
1,2,4-TRICHLOROBENZENE	5.4 U	4.4 U	5.3 U	5.2 U	5.6 U	6.5 UJ
1,2-DIBROMO-3-CHLOROPROPANE	5.4 U	4.4 U	5.3 U	5.2 U	5.6 U	6.5 UJ
1,2-DIBROMOETHANE	5.4 U	4.4 U	5.3 U	5.2 U	5.6 U	6.5 UJ
1,2-DICHLOROBENZENE	5.4 U	4.4 U	5.3 U	5.2 U	5.6 U	6.5 UJ
1,2-DICHLOROETHANE	5.4 U	4.4 U	5.3 U	5.2 U	5.6 U	6.5 UJ
1,2-DICHLOROPROPANE	5.4 U	4.4 U	5.3 U	5.2 U	5.6 U	6.5 UJ
1,3-DICHLOROBENZENE	5.4 U	4.4 U	5.3 U	5.2 U	5.6 U	6.5 UJ
1,4-DICHLOROBENZENE	5.4 U	4.4 U	5.3 U	5.2 U	5.6 U	6.5 UJ
2-BUTANONE	5.4 UJ	4.4 UJ	5.3 UJ	5.2 UJ	5.6 UJ	6.5 UJ
2-HEXANONE	5.4 U	4.4 UJ	5.3 UJ	5.2 UJ	5.6 UJ	6.5 UJ
4-METHYL-2-PENTANONE	5.4 UJ	4.4 UJ	5.3 UJ	5.2 UJ	5.6 UJ	6.5 UJ
ACETONE	5.4 U	23 J	5.3 UJ	5.2 UJ	5.6 UJ	54 J
BENZENE	5.4 U	4.4 U	0.56 J	5.2 U	0.63 J	6.5 UJ
BROMODICHLOROMETHANE	11 U	8.9 U	10 U	10 U	11 U	13 UJ
BROMOFORM	5.4 U	4.4 U	5.3 U	5.2 U	5.6 U	6.5 UJ
BROMOMETHANE	11 U	8.9 U	10 U	10 U	11 U	13 UJ
CARBON DISULFIDE	5.4 U	7	5.3 U	5.2 U	2.1 J	6.5 UJ
CARBON TETRACHLORIDE	5.4 U	4.4 U	5.3 U	5.2 U	5.6 U	6.5 UJ
CHLOROBENZENE	5.4 U	4.4 U	5.3 U	5.2 U	5.6 U	6.5 UJ
CHLORODIBROMOMETHANE	5.4 U	4.4 U	5.3 U	5.2 U	5.6 U	6.5 UJ
CHLOROETHANE	11 U	8.9 U	10 U	10 U	11 U	13 UJ
CHLOROFORM	5.4 U	4.4 U	5.3 U	5.2 U	5.6 U	6.5 UJ
CHLOROMETHANE	11 U	8.9 U	10 U	10 U	11 U	13 UJ
CIS-1,2-DICHLOROETHENE	11 U	8.9 U	10 U	10 U	11 U	13 UJ
CIS-1,3-DICHLOROPROPENE	5.4 U	4.4 U	5.3 U	5.2 U	5.6 U	6.5 UJ
CYCLOHEXANE	1.7 J	4.4 U	2.9 J	5.2 U	2.3 J	6.5 UJ
DICHLORODIFLUOROMETHANE	5.4 U	4.4 U	5.3 U	5.2 U	5.6 U	6.5 UJ
ETHYLBENZENE	5.4 U	4.4 U	5.3 U	0.9 J	5.6 U	6.5 UJ
ISOPROPYLBENZENE	5.4 U	4.4 U	5.3 U	5.2 U	5.6 U	6.5 UJ
METHYL ACETATE	11 U	8.9 U	10 U	10 U	11 U	13 UJ
METHYL CYCLOHEXANE	2.6 J	4.4 U	3.2 J	5.2 U	3.7 J	0.88 J
METHYL TERT-BUTYL ETHER	5.4 U	4.4 U	5.3 U	5.2 U	5.6 U	6.5 UJ
METHYLENE CHLORIDE	2 U	1.8 U	2.1 U	14 U	2.3 U	1.5 U
STYRENE	5.4 U	4.4 U	5.3 U	5.2 U	5.6 U	6.5 UJ
TETRACHLOROETHENE	5.4 U	4.4 U	5.3 U	5.2 U	5.6 U	6.5 UJ
TOLUENE	5.4 U	4.4 U	5.3 U	5.2 U	5.6 U	6.5 UJ
TOTAL XYLENES	5.4 U	4.4 U	5.3 U	1.6 J	5.6 U	6.5 UJ
TRANS-1,2-DICHLOROETHENE	5.4 U	4.4 U	5.3 U	5.2 U	5.6 U	6.5 UJ
TRANS-1,3-DICHLOROPROPENE	5.4 U	4.4 U	5.3 U	5.2 U	5.6 U	6.5 UJ
TRICHLOROETHENE	5.4 U	4.4 U	5.3 U	5.2 U	5.6 U	6.5 UJ
TRICHLOROFLUOROMETHANE	5.4 U	4.4 U	5.3 U	5.2 U	5.6 U	6.5 UJ
VINYL CHLORIDE	5.4 U	4.4 U	5.3 U	5.2 U	5.6 U	6.5 UJ

SUMMARY OF SURFACE SOIL ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

SAMPLE ID	NTC21SB08-SO-0001	NTC21SB09-SO-0001	NTC21SB10-SO-0001	NTC21SB11-SO-0001	NTC21SB12-SO-0001	NTC21SB13-SO-0001
LOCATION ID	NTC21-SB-08	NTC21-SB-09	NTC21-SB-10	NTC21-SB-11	NTC21-SB-12	NTC21-SB-13
SAMPLE DATE	20090928	20090926	20090926	20090926	20090926	20090927
SAMPLE TIME	11:55:00	16:20:00	18:36:00	18:10:00	14:00:00	09:00:00
SAMPLE CODE	NORMAL	ORIG	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO
TOP DEPTH	0	0	0	0	0	0
BOTTODEPTH	1	1	1	1	1	1
DEPTH UNIT	FT	FT	FT	FT	FT	FT
SUBMATRIX	SS	SS	SS	SS	SS	SS
Semivolatile Organics (ug/kg)						
1,1-BIPHENYL	360 U	360 U	370 U	360 U	390 U	430 U
2,2'-OXYBIS(1-CHLOROPROPANE)	720 U	730 U	740 U	720 U	780 U	860 U
2,4,5-TRICHLOROPHENOL	360 U	360 U	370 UJ	360 U	390 U	430 U
2,4,6-TRICHLOROPHENOL	360 U	360 U	370 UJ	360 U	390 U	430 U
2,4-DICHLOROPHENOL	360 U	360 U	370 UJ	360 U	390 U	430 U
2,4-DIMETHYLPHENOL	720 U	730 UJ	740 UJ	720 UJ	780 UJ	860 U
2,4-DINITROPHENOL	3600 U	3600 U	3700 UJ	3600 U	3900 U	4300 U
2,4-DINITROTOLUENE	360 U	360 U	370 U	360 U	390 U	430 U
2,6-DINITROTOLUENE	360 U	360 U	370 U	360 U	390 U	430 U
2-CHLORONAPHTHALENE	360 U	360 U	370 U	360 U	390 U	430 U
2-CHLOROPHENOL	360 U	360 UJ	370 UJ	360 UJ	390 UJ	430 U
2-METHYLNAPHTHALENE	230	340	280	320	450	840
2-METHYLPHENOL	360 U	360 U	370 UJ	360 U	390 U	430 U
2-NITROANILINE	1400 U	1500 UJ	1500 UJ	1400 UJ	1600 UJ	1700 U
2-NITROPHENOL	360 U	360 U	370 UJ	360 U	390 U	430 U
3,3'-DICHLOROBENZIDINE	360 U	360 U	370 U	360 U	390 U	430 U
3-NITROANILINE	1400 U	1500 U	1500 U	1400 U	1600 U	1700 U
4,6-DINITRO-2-METHYLPHENOL	1400 U	1500 UJ	1500 UJ	1400 UJ	1600 UJ	1700 U
4-BROMOPHENYL PHENYL ETHER	360 U	360 U	370 U	360 U	390 U	430 U
4-CHLORO-3-METHYLPHENOL	360 U	360 U	370 UJ	360 U	390 U	430 U
4-CHLOROANILINE	360 U	360 U	370 U	360 U	390 U	430 U
4-CHLOROPHENYL PHENYL ETHER	360 U	360 U	370 U	360 U	390 U	430 U
4-METHYLPHENOL	360 U	360 U	370 UJ	360 U	390 U	430 U
4-NITROANILINE	1400 U	1500 U	1500 U	1400 U	1600 U	1700 U
4-NITROPHENOL	1400 UJ	1500 UJ	1500 UJ	1400 UJ	1600 UJ	1700 U
ACENAPHTHENE	42	67	57	290	49	4.3 U
ACENAPHTHYLENE	110	3.6 U	35	25	3.9 U	4.3 U
ACETOPHENONE	48 J	360 U	370 U	360 U	390 U	430 U
ANTHRACENE	150	110	170	590	150	4.3 U
ATRAZINE	360 UJ	360 U	370 U	360 U	390 U	430 U
BENZALDEHYDE	360 U	360 U	370 U	360 U	390 U	430 UR
BENZO(A)ANTHRACENE	520 J	250 J	390	1600 J	400	4.3 U
BENZO(A)PYRENE	830 J	460 J	690	2900 J	430	4.3 U
BENZO(B)FLUORANTHENE	1200 J	670 J	970	4100 J	740	4.3 U
BENZO(G,H,I)PERYLENE	460 J	350 J	480	2000 J	210	410
BENZO(K)FLUORANTHENE	560 J	290 J	260	1600 J	220	4.3 U
BIS(2-CHLOROETHOXY)METHANE	360 U	360 U	370 U	360 U	390 U	430 U
BIS(2-CHLOROETHYL)ETHER	360 U	360 U	370 U	360 U	390 U	430 U
BIS(2-ETHYLHEXYL)PHTHALATE	190 J	130 J	130 J	280 J	390 UJ	78 J
BUTYL BENZYL PHTHALATE	97 J	360 UJ	370 UJ	360 UJ	390 UJ	430 UJ
CAPROLACTAM	360 U	360 U	370 U	360 U	390 U	430 U
CARBAZOLE	720 U	730 U	740 U	720 U	780 U	860 U
CHRYSENE	660 J	320 J	390	1900 J	470	4.3 UJ
DI-N-BUTYL PHTHALATE	360 UJ	37 J	190 J	360 U	390 U	430 U
DI-N-OCTYL PHTHALATE	360 UJ	360 UJ	370 UJ	360 UJ	390 UJ	430 UJ
DIBENZO(A,H)ANTHRACENE	140 J	81 J	150	470 J	66	4.3 U
DIBENZOFURAN	76 J	110 J	90 J	180 J	240 J	320 J
DIETHYL PHTHALATE	360 U	360 U	370 U	360 U	390 U	430 U
DIMETHYL PHTHALATE	360 U	360 U	370 U	360 U	390 U	430 U
FLUORANTHENE	1200	860	1000	5700	1000	2000
FLUORENE	3.6 U	3.6 UJ	50	220	3.9 U	4.3 U

SUMMARY OF SURFACE SOIL ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

SAMPLE ID	NTC21SB08-SO-0001	NTC21SB09-SO-0001	NTC21SB10-SO-0001	NTC21SB11-SO-0001	NTC21SB12-SO-0001	NTC21SB13-SO-0001
LOCATION ID	NTC21-SB-08	NTC21-SB-09	NTC21-SB-10	NTC21-SB-11	NTC21-SB-12	NTC21-SB-13
SAMPLE DATE	20090928	20090926	20090926	20090926	20090926	20090927
SAMPLE TIME	11:55:00	16:20:00	18:36:00	18:10:00	14:00:00	09:00:00
SAMPLE CODE	NORMAL	ORIG	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO
TOP DEPTH	0	0	0	0	0	0
BOTTODEPTH	1	1	1	1	1	1
DEPTH UNIT	FT	FT	FT	FT	FT	FT
SUBMATRIX	SS	SS	SS	SS	SS	SS
Semivolatile Organics (ug/kg) (Continued)						
HEXACHLOROBENZENE	360 U	360 U	370 U	360 U	390 U	430 U
HEXACHLOROBUTADIENE	360 U	360 U	370 U	360 U	390 U	430 U
HEXACHLOROCYCLOPENTADIENE	360 U	360 UJ	370 UJ	360 UJ	390 UJ	430 U
HEXACHLOROETHANE	720 U	730 U	740 U	720 U	780 U	860 U
INDENO(1,2,3-CD)PYRENE	630 J	400 J	630	2700 J	300	4.3 U
ISOPHORONE	360 U	360 U	370 U	360 U	390 U	430 U
N-NITROSO-DI-N-PROPYLAMINE	360 U	360 UJ	370 UJ	360 UJ	390 UJ	430 U
N-NITROSODIPHENYLAMINE	360 U	360 U	370 U	360 U	390 U	430 U
NAPHTHALENE	190	280	210	190	240	350
NITROBENZENE	360 U	360 UJ	370 UJ	360 UJ	390 UJ	430 U
PENTACHLOROPHENOL	1400 U	1500 U	1500 UJ	1400 U	1600 U	1700 U
PHENANTHRENE	560	760	650	3100	890	2900
PHENOL	360 U	360 U	370 UJ	360 U	390 U	430 U
PYRENE	1100	760	920	4800	860	1700
BAP EQUIVALENT	1211.26	676.22	1041.99	4227.9	642.67	0 U
BAP EQUIVALENT FULLND	1211.26	676.22	1041.99	4227.9	642.67	9.9373
TOTAL PAHS	8582	5998	7332	32505	6475	8200
TOTAL PAHS FULLND	8585.6	6005.2	7332	32505	6482.8	8247.3
Pesticides/PCBS (ug/kg)						
4,4'-DDD	51 J	480	520 J	230 J	3.9 J	1.2 J
4,4'-DDE	48	65 J	350 J	53 J	7.2 J	1.4 J
4,4'-DDT	72 J	62 J	740 J	34 J	7.6 J	9.9 J
ALDRIN	0.36 UJ	0.36 UJ	0.37 UJ	0.36 UJ	0.39 UJ	0.43 UJ
ALPHA-BHC	8.9 J	0.36 U	0.37 U	0.36 U	0.39 U	0.43 U
ALPHA-CHLORDANE	3.2 J	7.3 J	7.5 J	4.3 J	0.39 UJ	0.43 UJ
AROCLOR-1016	18.3 U	18.7 U	19 U	18.5 U	20 U	21.9 U
AROCLOR-1221	18.3 U	18.7 U	19 U	18.5 U	20 U	21.9 U
AROCLOR-1232	18.3 U	18.7 U	19 U	18.5 U	20 U	21.9 U
AROCLOR-1242	18.3 U	18.7 U	19 U	18.5 U	20 U	21.9 U
AROCLOR-1248	18.3 U	18.7 U	19 U	18.5 U	20 U	21.9 U
AROCLOR-1254	18.3 U	18.7 U	19 U	18.5 U	20 U	21.9 U
AROCLOR-1260	84 J	130 J	720 J	390 J	20 UJ	120 J
BETA-BHC	0.36 U	0.36 UJ	0.37 UJ	0.36 UJ	0.39 UJ	0.43 U
DELTA-BHC	0.36 U	0.36 UJ	3.5 J	0.36 UJ	0.56 J	0.43 U
DIELDRIN	3.5 J	2.5 J	12 J	6.8 J	0.79 UJ	3.1 J
ENDOSULFAN I	0.36 UJ	0.36 UJ	14 J	4.1 J	0.55 J	0.43 UJ
ENDOSULFAN II	0.72 UJ	4 J	4.6 J	0.73 UJ	0.79 UJ	1.5 J
ENDOSULFAN SULFATE	1.8 J	6.7 J	18 J	13 J	0.79 UJ	2.7 J
ENDRIN	0.72 UJ	7.3 J	224	0.73 U	0.79 UJ	0.86 U
ENDRIN ALDEHYDE	0.72 UJ	6.8 J	28 J	0.73 UJ	1.6 J	0.86 UJ
ENDRIN KETONE	0.72 UJ	0.74 UJ	0.75 UJ	0.73 UJ	0.79 UJ	0.86 UJ
GAMMA-BHC (LINDANE)	0.36 U	0.36 U	0.37 U	4.7 J	0.39 U	0.96
GAMMA-CHLORDANE	7 J	5.7 J	189 J	8.3 J	1.3 J	2.2 J
HEPTACHLOR	0.36 UJ	0.36 UJ	0.37 UJ	0.36 UJ	0.39 UJ	0.43 UJ
HEPTACHLOR EPOXIDE	1 J	0.36 UJ	2.7 J	0.36 UJ	0.69 J	1.1 J
METHOXYCHLOR	9.4 J	0.36 UJ	0.37 UJ	0.36 UJ	6.6 J	17 J
TOXAPHENE	36 U	36 U	37 U	36 U	39 U	43 U

SUMMARY OF SURFACE SOIL ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

SAMPLE ID	NTC21SB08-SO-0001	NTC21SB09-SO-0001	NTC21SB10-SO-0001	NTC21SB11-SO-0001	NTC21SB12-SO-0001	NTC21SB13-SO-0001
LOCATION ID	NTC21-SB-08	NTC21-SB-09	NTC21-SB-10	NTC21-SB-11	NTC21-SB-12	NTC21-SB-13
SAMPLE DATE	20090928	20090926	20090926	20090926	20090926	20090927
SAMPLE TIME	11:55:00	16:20:00	18:36:00	18:10:00	14:00:00	09:00:00
SAMPLE CODE	NORMAL	ORIG	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO
TOP DEPTH	0	0	0	0	0	0
BOTTODEPTH	1	1	1	1	1	1
DEPTH UNIT	FT	FT	FT	FT	FT	FT
SUBMATRIX	SS	SS	SS	SS	SS	SS
Herbicides (ug/kg)						
2,4,5-T	5.39 U	5.49 UJ	5.58 UJ	5.43 UJ	5.89 UJ	6.44 UJ
2,4,5-TP (SILVEX)	5.39 U	5.49 U	5.58 U	5.43 U	5.89 U	6.44 U
2,4-D	53.9 U	54.9 U	55.8 U	54.3 U	58.9 U	217 J
2,4-DB	53.9 UJ	54.9 U	55.8 U	54.3 U	58.9 U	64.4 UJ
DALAPON	135 UJ	137 U	139 U	136 U	147 U	161 UJ
DICAMBA	5.39 U	5.49 U	5.58 U	5.43 U	5.89 U	8.56 J
DICHLOROPROP	53.9 U	54.9 U	55.8 U	54.3 U	58.9 U	64.4 U
DINOSEB	27 U	27.4 U	27.9 U	27.2 U	29.5 U	32.2 U
MCPA	5390 U	5490 UJ	5580 UJ	5430 UJ	5890 UJ	6440 U
MCPP	5390 U	5490 U	5580 U	5430 U	5890 U	6440 U
Dioxins/Furans (ng/kg)						
1,2,3,4,6,7,8,9-OCDD	---	1310	---	---	---	---
1,2,3,4,6,7,8,9-OCDF	---	141	---	---	---	---
1,2,3,4,6,7,8-HPCDD	---	169	---	---	---	---
1,2,3,4,6,7,8-HPCDF	---	82.4	---	---	---	---
1,2,3,4,7,8,9-HPCDF	---	4.08 J	---	---	---	---
1,2,3,4,7,8-HXCDD	---	1.9 J	---	---	---	---
1,2,3,4,7,8-HXCDF	---	5.91	---	---	---	---
1,2,3,6,7,8-HXCDD	---	7.9	---	---	---	---
1,2,3,6,7,8-HXCDF	---	11.6	---	---	---	---
1,2,3,7,8,9-HXCDD	---	5.17	---	---	---	---
1,2,3,7,8,9-HXCDF	---	2.68 J	---	---	---	---
1,2,3,7,8-PECDD	---	5.9 J	---	---	---	---
1,2,3,7,8-PECDF	---	1.92 J	---	---	---	---
2,3,4,6,7,8-HXCDF	---	26.2	---	---	---	---
2,3,4,7,8-PECDF	---	57.5	---	---	---	---
2,3,7,8-TCDD	---	0.816 J	---	---	---	---
2,3,7,8-TCDF	---	3.17	---	---	---	---
TOTAL HPCDD	---	326	---	---	---	---
TOTAL HPCDF	---	202	---	---	---	---
TOTAL HXCDD	---	67	---	---	---	---
TOTAL HXCDF	---	393 J	---	---	---	---
TOTAL PECDD	---	19.4 J	---	---	---	---
TOTAL PECDF	---	712 J	---	---	---	---
TOTAL TCDD	---	10.8	---	---	---	---
TOTAL TCDF	---	215 J	---	---	---	---
TEQ	---	33.4667	---	---	---	---
TEQ FULLND	---	33.4667	---	---	---	---
Inorganics (mg/kg)						
ALUMINUM	5200	4350	6720	2790	3280	6210
ANTIMONY	0.933	2.06	5.22	1.37 U	1.51 U	2.51 J
ARSENIC	9.53	8.14	11.9	5.6	12.9	10.7 J
BARIUM	55.6 J	86.6 J	161 J	82.3 J	49.6 J	69.8 J
BERYLLIUM	0.485	0.929	0.826	0.646	0.508	2.44 J
CADMIUM	1.24	3.81	13	1.94	0.507	8.45
CALCIUM	76300	32000 J	42200	62100	83300	21100 J
CHROMIUM	9.71	163 J	36.9	11.1	12.6	14.8 J
COBALT	6.07	5.19	6.67	2.9	3.27	17.7
COPPER	47	129 J	835	104	31.6	296 J
IRON	18400 J	23400 J	35000 J	15000 J	25800 J	52200 J
LEAD	65.3	167 J	428	118	51.3	407 J

SUMMARY OF SURFACE SOIL ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

SAMPLE ID	NTC21SB08-SO-0001	NTC21SB09-SO-0001	NTC21SB10-SO-0001	NTC21SB11-SO-0001	NTC21SB12-SO-0001	NTC21SB13-SO-0001
LOCATION ID	NTC21-SB-08	NTC21-SB-09	NTC21-SB-10	NTC21-SB-11	NTC21-SB-12	NTC21-SB-13
SAMPLE DATE	20090928	20090926	20090926	20090926	20090926	20090927
SAMPLE TIME	11:55:00	16:20:00	18:36:00	18:10:00	14:00:00	09:00:00
SAMPLE CODE	NORMAL	ORIG	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO
TOP DEPTH	0	0	0	0	0	0
BOTTODEPTH	1	1	1	1	1	1
DEPTH UNIT	FT	FT	FT	FT	FT	FT
SUBMATRIX	SS	SS	SS	SS	SS	SS
Inorganics (mg/kg) (Continued)						
MAGNESIUM	38800	13800 J	13600	29100	39600	8120
MANGANESE	456	173	416	206	226	494 J
MERCURY	0.0612 J	0.495	8.98	0.0648	0.585	0.106
NICKEL	15.9	56.2 J	52.3	10.9	10.4	43.1 J
POTASSIUM	749	642	846	438	428	435
SELENIUM	0.809 UJ	0.827 U	0.764 U	0.823 U	0.906 U	0.924 UJ
SILVER	0.108 U	0.515	1.41	0.274 U	0.302 U	0.308 U
SODIUM	230	868	1000	986	378	588
THALLIUM	0.431 U	0.827 U	0.764 U	0.823 U	0.906 U	0.924 UJ
VANADIUM	12.5 J	25.7	21.2	11.2	13.8	22.3
ZINC	172	190	1230	125	70.9	884 J

SUMMARY OF SURFACE SOIL ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

SAMPLE ID	NTC21SB14-SO-0001	NTC21SB15-SO-0001	NTC21SB16-SO-0001	NTC21SB17-SO-0001	NTC21SB18-SO-0001	NTC21SB19-SO-0001	SAMPLE ID
LOCATION ID	NTC21-SB-14	NTC21-SB-15	NTC21-SB-16	NTC21-SB-17	NTC21-SB-18	NTC21-SB-19	LOCATION ID
SAMPLE DATE	20090927	20090927	20090927	20090926	20090926	20090927	SAMPLE DATE
SAMPLE TIME	09:30:00	10:00:00	17:00:00	13:26:00	12:47:00	17:40:00	SAMPLE TIME
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	SAMPLE CODE
MATRIX	SO	SO	SO	SO	SO	SO	MATRIX
TOP DEPTH	0	0	0	0	0	0	TOP DEPTH
BOTTODEPTH	1	1	1	1	1	1	BOTTODEPTH
DEPTH UNIT	FT	FT	FT	FT	FT	FT	DEPTH UNIT
SUBMATRIX	SS	SS	SS	SS	SS	SS	SUBMATRIX
Volatile Organics (ug/kg)							**Volatile Organics (ug/kg)**
1,1,1-TRICHLOROETHANE	6.8 UJ	5.5 U	5.3 U	7.8 U	5.2 U	4.5 U	1,1,1-TRICHLOROETHANE
1,1,2,2-TETRACHLOROETHANE	6.8 UJ	5.5 U	5.3 U	7.8 U	5.2 U	4.5 U	1,1,2,2-TETRACHLOROETHANE
1,1,2-TRICHLOROETHANE	6.8 UJ	5.5 U	5.3 U	7.8 U	5.2 U	4.5 U	1,1,2-TRICHLOROETHANE
1,1,2-TRICHLOROTRIFLUOROETHANE	6.8 U	5.5 U	5.3 U	7.8 U	5.2 U	4.5 U	1,1,2-TRICHLOROTRIFLUOROETHANE
1,1-DICHLOROETHANE	6.8 UJ	5.5 UJ	5.3 UJ	7.8 U	5.2 U	4.5 UJ	1,1-DICHLOROETHANE
1,1-DICHLOROETHENE	6.8 UJ	5.5 U	5.3 U	7.8 U	5.2 U	4.5 U	1,1-DICHLOROETHENE
1,2,4-TRICHLOROBENZENE	6.8 UJ	5.5 U	5.3 U	7.8 U	5.2 U	4.5 U	1,2,4-TRICHLOROBENZENE
1,2-DIBROMO-3-CHLOROPROPANE	6.8 UJ	5.5 U	5.3 U	7.8 U	5.2 U	4.5 U	1,2-DIBROMO-3-CHLOROPROPANE
1,2-DIBROMOETHANE	6.8 UJ	5.5 U	5.3 U	7.8 U	5.2 U	4.5 U	1,2-DIBROMOETHANE
1,2-DICHLOROBENZENE	6.8 UJ	5.5 U	5.3 U	7.8 U	5.2 U	4.5 U	1,2-DICHLOROBENZENE
1,2-DICHLOROETHANE	6.8 UJ	5.5 U	5.3 U	7.8 U	5.2 U	4.5 U	1,2-DICHLOROETHANE
1,2-DICHLOROPROPANE	6.8 UJ	5.5 U	5.3 U	7.8 U	5.2 U	4.5 U	1,2-DICHLOROPROPANE
1,3-DICHLOROBENZENE	6.8 UJ	5.5 U	5.3 U	7.8 U	5.2 U	4.5 U	1,3-DICHLOROBENZENE
1,4-DICHLOROBENZENE	6.8 UJ	5.5 U	5.3 U	7.8 U	5.2 U	4.5 U	1,4-DICHLOROBENZENE
2-BUTANONE	6.8 UJ	5.5 U	5.3 U	7.8 UJ	5.2 UJ	4.5 U	2-BUTANONE
2-HEXANONE	6.8 UJ	5.5 U	5.3 U	7.8 UJ	5.2 UJ	4.5 U	2-HEXANONE
4-METHYL-2-PENTANONE	6.8 U	5.5 U	5.3 U	7.8 UJ	5.2 UJ	4.5 U	4-METHYL-2-PENTANONE
ACETONE	6.8 U	5.5 U	5.3 U	47 J	5.2 UJ	4.5 U	ACETONE
BENZENE	6.8 UJ	5.5 U	5.3 U	7.8 U	5.2 U	4.5 U	BENZENE
BROMODICHLOROMETHANE	14 UJ	11 U	10 U	16 U	10 U	8.9 U	BROMODICHLOROMETHANE
BROMOFORM	6.8 UJ	5.5 U	5.3 U	7.8 U	5.2 U	4.5 U	BROMOFORM
BROMOMETHANE	14 U	11 U	10 U	16 U	10 U	8.9 U	BROMOMETHANE
CARBON DISULFIDE	6.4 J	5.6	5.3 U	16	5.2 U	2.6 J	CARBON DISULFIDE
CARBON TETRACHLORIDE	6.8 UJ	5.5 U	5.3 U	7.8 U	5.2 U	4.5 U	CARBON TETRACHLORIDE
CHLOROBENZENE	6.8 UJ	5.5 U	5.3 U	7.8 U	5.2 U	4.5 U	CHLOROBENZENE
CHLORODIBROMOMETHANE	6.8 UJ	5.5 U	5.3 U	7.8 U	5.2 U	4.5 U	CHLORODIBROMOMETHANE
CHLOROETHANE	14 U	11 U	10 U	16 U	10 U	8.9 U	CHLOROETHANE
CHLOROFORM	6.8 UJ	5.5 U	5.3 U	7.8 U	5.2 U	4.5 U	CHLOROFORM
CHLOROMETHANE	14 U	11 U	10 U	16 U	10 U	8.9 U	CHLOROMETHANE
CIS-1,2-DICHLOROETHENE	14 UJ	11 U	10 U	16 U	10 U	8.9 U	CIS-1,2-DICHLOROETHENE
CIS-1,3-DICHLOROPROPENE	6.8 UJ	5.5 U	5.3 U	7.8 U	5.2 U	4.5 U	CIS-1,3-DICHLOROPROPENE
CYCLOHEXANE	6.8 U	5.5 U	5.3 U	7.8 U	0.71 J	1.3 J	CYCLOHEXANE
DICHLORODIFLUOROMETHANE	6.8 UJ	5.5 U	5.3 U	7.8 U	5.2 U	4.5 U	DICHLORODIFLUOROMETHANE
ETHYLBENZENE	6.8 UJ	5.5 U	5.3 U	7.8 U	5.2 U	4.5 U	ETHYLBENZENE
ISOPROPYLBENZENE	6.8 UJ	5.5 U	5.3 U	7.8 U	5.2 U	4.5 U	ISOPROPYLBENZENE
METHYL ACETATE	14 U	11 U	10 U	16 U	10 U	8.9 U	METHYL ACETATE
METHYL CYCLOHEXANE	0.56 J	0.86 J	0.72 J	0.78 J	1.2 J	2.6 J	METHYL CYCLOHEXANE
METHYL TERT-BUTYL ETHER	6.8 U	5.5 U	5.3 U	7.8 U	5.2 U	4.5 U	METHYL TERT-BUTYL ETHER
METHYLENE CHLORIDE	1.5 U	1.3 U	1.4 U	3.2 U	2 U	1 U	METHYLENE CHLORIDE
STYRENE	6.8 UJ	5.5 U	5.3 U	7.8 U	5.2 U	4.5 U	STYRENE
TETRACHLOROETHENE	6.8 UJ	5.5 U	5.3 U	7.8 U	5.2 U	1.4 J	TETRACHLOROETHENE
TOLUENE	6.8 UJ	5.5 U	5.3 U	7.8 U	5.2 U	4.5 U	TOLUENE
TOTAL XYLENES	6.8 UJ	5.5 U	5.3 U	7.8 U	5.2 U	4.5 U	TOTAL XYLENES
TRANS-1,2-DICHLOROETHENE	6.8 UJ	5.5 U	5.3 U	7.8 U	5.2 U	4.5 U	TRANS-1,2-DICHLOROETHENE
TRANS-1,3-DICHLOROPROPENE	6.8 UJ	5.5 U	5.3 U	7.8 U	5.2 U	4.5 U	TRANS-1,3-DICHLOROPROPENE
TRICHLOROETHENE	6.8 UJ	5.5 U	5.3 U	7.8 U	5.2 U	4.5 U	TRICHLOROETHENE
TRICHLOROFLUOROMETHANE	6.8 U	5.5 U	5.3 U	7.8 U	5.2 U	4.5 U	TRICHLOROFLUOROMETHANE
VINYL CHLORIDE	6.8 U	5.5 U	5.3 U	7.8 U	5.2 U	4.5 U	VINYL CHLORIDE

SUMMARY OF SURFACE SOIL ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

SAMPLE ID	NTC21SB14-SO-0001	NTC21SB15-SO-0001	NTC21SB16-SO-0001	NTC21SB17-SO-0001	NTC21SB18-SO-0001	NTC21SB19-SO-0001	SAMPLE ID
LOCATION ID	NTC21-SB-14	NTC21-SB-15	NTC21-SB-16	NTC21-SB-17	NTC21-SB-18	NTC21-SB-19	LOCATION ID
SAMPLE DATE	20090927	20090927	20090927	20090926	20090926	20090927	SAMPLE DATE
SAMPLE TIME	09:30:00	10:00:00	17:00:00	13:26:00	12:47:00	17:40:00	SAMPLE TIME
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	SAMPLE CODE
MATRIX	SO	SO	SO	SO	SO	SO	MATRIX
TOP DEPTH	0	0	0	0	0	0	TOP DEPTH
BOTTODEPTH	1	1	1	1	1	1	BOTTODEPTH
DEPTH UNIT	FT	FT	FT	FT	FT	FT	DEPTH UNIT
SUBMATRIX	SS	SS	SS	SS	SS	SS	SUBMATRIX
Semivolatile Organics (ug/kg)							**Semivolatile Organics (ug/kg)**
1,1-BIPHENYL	410 U	400 U	370 U	400 U	390 U	360 U	1,1-BIPHENYL
2,2'-OXYBIS(1-CHLOROPROPANE)	810 U	800 U	750 U	800 U	780 U	720 U	2,2'-OXYBIS(1-CHLOROPROPANE)
2,4,5-TRICHLOROPHENOL	410 UJ	400 U	370 U	400 U	390 U	360 U	2,4,5-TRICHLOROPHENOL
2,4,6-TRICHLOROPHENOL	410 U	400 U	370 U	400 U	390 U	360 U	2,4,6-TRICHLOROPHENOL
2,4-DICHLOROPHENOL	410 U	400 U	370 U	400 U	390 U	360 U	2,4-DICHLOROPHENOL
2,4-DIMETHYLPHENOL	810 U	800 U	750 U	800 UJ	780 UJ	720 U	2,4-DIMETHYLPHENOL
2,4-DINITROPHENOL	4100 UR	4000 U	3700 U	4000 U	3900 U	3600 U	2,4-DINITROPHENOL
2,4-DINITROTOLUENE	410 UJ	400 U	370 U	400 U	390 U	360 U	2,4-DINITROTOLUENE
2,6-DINITROTOLUENE	410 UJ	400 U	370 U	400 U	390 U	360 U	2,6-DINITROTOLUENE
2-CHLORONAPHTHALENE	410 U	400 U	370 U	400 U	390 U	360 U	2-CHLORONAPHTHALENE
2-CHLOROPHENOL	410 U	400 U	370 U	400 UJ	390 UJ	360 U	2-CHLOROPHENOL
2-METHYLNAPHTHALENE	900	540	460	94	100	98	2-METHYLNAPHTHALENE
2-METHYLPHENOL	410 U	400 U	370 U	400 U	390 U	360 U	2-METHYLPHENOL
2-NITROANILINE	1600 U	1600 U	1500 U	1600 UJ	1600 UJ	1400 U	2-NITROANILINE
2-NITROPHENOL	410 UJ	400 U	370 U	400 U	390 U	360 U	2-NITROPHENOL
3,3'-DICHLOROBENZIDINE	410 UR	400 U	370 U	400 U	390 U	360 U	3,3'-DICHLOROBENZIDINE
3-NITROANILINE	1600 UJ	1600 U	1500 U	1600 U	1600 U	1400 U	3-NITROANILINE
4,6-DINITRO-2-METHYLPHENOL	1600 UJ	1600 U	1500 U	1600 UJ	1600 UJ	1400 U	4,6-DINITRO-2-METHYLPHENOL
4-BROMOPHENYL PHENYL ETHER	410 U	400 U	370 U	400 U	390 U	360 U	4-BROMOPHENYL PHENYL ETHER
4-CHLORO-3-METHYLPHENOL	410 U	400 U	370 U	400 U	390 U	360 U	4-CHLORO-3-METHYLPHENOL
4-CHLOROANILINE	410 U	400 U	370 U	400 U	390 U	360 U	4-CHLOROANILINE
4-CHLOROPHENYL PHENYL ETHER	410 U	400 U	370 U	400 U	390 U	360 U	4-CHLOROPHENYL PHENYL ETHER
4-METHYLPHENOL	410 U	400 U	370 U	400 U	390 U	360 U	4-METHYLPHENOL
4-NITROANILINE	1600 UJ	1600 U	1500 U	1600 U	1600 U	1400 U	4-NITROANILINE
4-NITROPHENOL	1600 U	1600 U	1500 U	1600 UJ	1600 UJ	1400 U	4-NITROPHENOL
ACENAPHTHENE	4.1 U	4 U	3.7 U	280	13	24	ACENAPHTHENE
ACENAPHTHYLENE	4.1 U	4 U	3.7 U	70	34	3.6 U	ACENAPHTHYLENE
ACETOPHENONE	410 U	400 U	370 U	400 U	390 U	360 U	ACETOPHENONE
ANTHRACENE	4.1 U	4 U	3.7 U	300	37	3.6 U	ANTHRACENE
ATRAZINE	410 UJ	400 U	370 U	400 U	390 U	360 U	ATRAZINE
BENZALDEHYDE	410 UR	400 UR	370 UR	400 U	390 U	360 UR	BENZALDEHYDE
BENZO(A)ANTHRACENE	280	200 J	110	350	140	150	BENZO(A)ANTHRACENE
BENZO(A)PYRENE	860 J	4 UJ	3.7 U	600	200	250	BENZO(A)PYRENE
BENZO(B)FLUORANTHENE	4.1 UJ	550 J	290	940	310	440	BENZO(B)FLUORANTHENE
BENZO(G,H,I)PERYLENE	180 J	4 UJ	3.7 U	360	150	170	BENZO(G,H,I)PERYLENE
BENZO(K)FLUORANTHENE	4.1 UJ	540 J	270	320	110	430	BENZO(K)FLUORANTHENE
BIS(2-CHLOROETHOXY)METHANE	410 U	400 U	370 U	400 U	390 U	360 U	BIS(2-CHLOROETHOXY)METHANE
BIS(2-CHLOROETHYL)ETHER	410 U	400 U	370 U	400 U	390 U	360 U	BIS(2-CHLOROETHYL)ETHER
BIS(2-ETHYLHEXYL)PHTHALATE	51 J	400 UJ	77 J	400 U	390 U	110 J	BIS(2-ETHYLHEXYL)PHTHALATE
BUTYL BENZYL PHTHALATE	410 U	400 UJ	370 UJ	400 UJ	390 UJ	360 UJ	BUTYL BENZYL PHTHALATE
CAPROLACTAM	410 U	400 U	370 U	400 U	390 U	360 U	CAPROLACTAM
CARBAZOLE	810 U	800 U	750 U	800 U	780 U	720 U	CARBAZOLE
CHRYSENE	410 J	250 J	130 J	480	190	190 J	CHRYSENE
DI-N-BUTYL PHTHALATE	410 UJ	400 U	370 U	400 U	390 U	360 U	DI-N-BUTYL PHTHALATE
DI-N-OCTYL PHTHALATE	410 UJ	400 UJ	370 UJ	400 UJ	390 UJ	360 UJ	DI-N-OCTYL PHTHALATE
DIBENZO(A,H)ANTHRACENE	4.1 UJ	4 UJ	3.7 U	100	44	3.6 U	DIBENZO(A,H)ANTHRACENE
DIBENZOFURAN	320 J	250 J	130 J	210 J	46 J	39 J	DIBENZOFURAN
DIETHYL PHTHALATE	410 U	400 U	370 U	400 U	390 U	360 U	DIETHYL PHTHALATE
DIMETHYL PHTHALATE	410 UJ	400 U	370 U	400 U	390 U	360 U	DIMETHYL PHTHALATE
FLUORANTHENE	810	670	260	1100	340	400	FLUORANTHENE
FLUORENE	4.1 U	4 U	3.7 U	320	11	3.6 U	FLUORENE

SUMMARY OF SURFACE SOIL ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

SAMPLE ID	NTC21SB14-SO-0001	NTC21SB15-SO-0001	NTC21SB16-SO-0001	NTC21SB17-SO-0001	NTC21SB18-SO-0001	NTC21SB19-SO-0001	SAMPLE ID
LOCATION ID	NTC21-SB-14	NTC21-SB-15	NTC21-SB-16	NTC21-SB-17	NTC21-SB-18	NTC21-SB-19	LOCATION ID
SAMPLE DATE	20090927	20090927	20090927	20090926	20090926	20090927	SAMPLE DATE
SAMPLE TIME	09:30:00	10:00:00	17:00:00	13:26:00	12:47:00	17:40:00	SAMPLE TIME
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	SAMPLE CODE
MATRIX	SO	SO	SO	SO	SO	SO	MATRIX
TOP DEPTH	0	0	0	0	0	0	TOP DEPTH
BOTTODEPTH	1	1	1	1	1	1	BOTTODEPTH
DEPTH UNIT	FT	FT	FT	FT	FT	FT	DEPTH UNIT
SUBMATRIX	SS	SS	SS	SS	SS	SS	SUBMATRIX
Semivolatile Organics (ug/kg) (Continued)							**Semivolatile Organics (ug/kg) (Continued)**
HEXACHLOROBENZENE	410 U	400 U	370 U	400 U	390 U	360 U	HEXACHLOROBENZENE
HEXACHLOROBUTADIENE	410 U	400 U	370 U	400 U	390 U	360 U	HEXACHLOROBUTADIENE
HEXACHLOROCYCLOPENTADIENE	410 UJ	400 U	370 U	400 UJ	390 UJ	360 U	HEXACHLOROCYCLOPENTADIENE
HEXACHLOROETHANE	810 U	800 U	750 U	800 U	780 U	720 U	HEXACHLOROETHANE
INDENO(1,2,3-CD)PYRENE	4.1 UJ	4 UJ	150	510	200	250	INDENO(1,2,3-CD)PYRENE
ISOPHORONE	410 U	400 U	370 U	400 U	390 U	360 U	ISOPHORONE
N-NITROSO-DI-N-PROPYLAMINE	410 U	400 U	370 U	400 UJ	390 UJ	360 U	N-NITROSO-DI-N-PROPYLAMINE
N-NITROSODIPHENYLAMINE	410 U	400 U	370 U	400 UJ	390 U	360 U	N-NITROSODIPHENYLAMINE
NAPHTHALENE	350	350	160	53	49	44	NAPHTHALENE
NITROBENZENE	410 U	400 U	370 U	400 U	390 UJ	360 U	NITROBENZENE
PENTACHLOROPHENOL	1600 U	1600 U	1500 U	1600 U	1600 U	1400 U	PENTACHLOROPHENOL
PHENANTHRENE	1300	1100	1300	1100	290	250	PHENANTHRENE
PHENOL	410 U	400 U	370 U	400 U	390 U	360 U	PHENOL
PYRENE	740	570	240	960	290	360	PYRENE
BAP EQUIVALENT	888.41	80.65	57.83	883.68	310.29	338.49	BAP EQUIVALENT
BAP EQUIVALENT FULLND	893.371	89.05	65.23	883.68	310.29	342.09	BAP EQUIVALENT FULLND
TOTAL PAHS	5830	4770	3370	7937	2508	3056	TOTAL PAHS
TOTAL PAHS FULLND	5862.8	4802	3395.9	7937	2508	3070.4	TOTAL PAHS FULLND
Pesticides/PCBS (ug/kg)							**Pesticides/PCBS (ug/kg)**
4,4'-DDD	1.6 J	2.9 J	0.75 J	9.2 J	1.1 J	25	4,4'-DDD
4,4'-DDE	1.9 J	3.5	0.61 J	1.9 J	0.45 J	12	4,4'-DDE
4,4'-DDT	7.1 J	8.5 J	1.7 J	2.6 J	0.77 J	15 J	4,4'-DDT
ALDRIN	0.4 UJ	0.4 UJ	0.37 U	0.4 UJ	0.39 UJ	0.36 UJ	ALDRIN
ALPHA-BHC	0.4 U	0.4 U	0.44	0.4 U	0.39 U	0.36 U	ALPHA-BHC
ALPHA-CHLORDANE	0.4 UJ	0.4 UJ	0.37 U	0.4 UJ	0.39 UJ	0.95 J	ALPHA-CHLORDANE
AROCLOR-1016	20.8 U	20.4 U	19.1 U	20.5 U	19.8 U	18.5 U	AROCLOR-1016
AROCLOR-1221	20.8 U	20.4 U	19.1 U	20.5 U	19.8 U	18.5 U	AROCLOR-1221
AROCLOR-1232	20.8 U	20.4 U	19.1 U	20.5 U	19.8 U	18.5 U	AROCLOR-1232
AROCLOR-1242	20.8 U	20.4 U	19.1 U	20.5 U	19.8 U	18.5 U	AROCLOR-1242
AROCLOR-1248	20.8 U	20.4 U	19.1 U	20.5 U	19.8 U	18.5 U	AROCLOR-1248
AROCLOR-1254	20.8 U	20.4 U	19.1 U	20.5 U	19.8 U	18.5 U	AROCLOR-1254
AROCLOR-1260	20.8 UJ	20.4 UJ	19.1 U	20.5 UJ	19.8 UJ	43 J	AROCLOR-1260
BETA-BHC	0.4 U	0.4 U	0.37 U	0.4 UJ	0.39 UJ	0.36 U	BETA-BHC
DELTA-BHC	0.4 UJ	0.4 U	0.37 U	0.65 J	2.4 J	0.36 U	DELTA-BHC
DIELDRIN	0.82 UJ	0.81 UJ	0.75 U	0.81 UJ	0.78 UJ	0.68 J	DIELDRIN
ENDOSULFAN I	0.4 UJ	0.4 UJ	0.37 U	2.8 J	0.39 UJ	0.36 UJ	ENDOSULFAN I
ENDOSULFAN II	0.82 UJ	0.81 UJ	0.75 U	0.81 UJ	0.78 UJ	0.58 J	ENDOSULFAN II
ENDOSULFAN SULFATE	0.82 UJ	0.81 UJ	0.75 U	0.81 UJ	0.78 UJ	0.96 J	ENDOSULFAN SULFATE
ENDRIN	0.82 U	0.81 U	0.75 UJ	0.81 UJ	0.78 UJ	0.73 U	ENDRIN
ENDRIN ALDEHYDE	0.82 U	0.81 UJ	0.75 UJ	2	0.78 U	0.73 UJ	ENDRIN ALDEHYDE
ENDRIN KETONE	0.82 UJ	0.81 UJ	0.75 U	0.81 UJ	0.78 UJ	0.73 UJ	ENDRIN KETONE
GAMMA-BHC (LINDANE)	0.22 J	0.4 U	0.37 U	0.4 U	0.39 U	0.36 U	GAMMA-BHC (LINDANE)
GAMMA-CHLORDANE	0.4 UJ	0.67 J	0.37 U	1.8 J	0.64 J	4.1 J	GAMMA-CHLORDANE
HEPTACHLOR	0.4 UJ	0.4 UJ	0.37 U	0.4 UJ	0.39 UJ	0.36 UJ	HEPTACHLOR
HEPTACHLOR EPOXIDE	0.4 UJ	0.15 J	0.37 U	0.4 UJ	0.39 UJ	0.74	HEPTACHLOR EPOXIDE
METHOXYCHLOR	0.4 UJ	0.4 UJ	0.35 J	15 J	2 J	0.62 J	METHOXYCHLOR
TOXAPHENE	40 U	40 U	37 U	40 U	39 U	36 U	TOXAPHENE

SUMMARY OF SURFACE SOIL ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

SAMPLE ID	NTC21SB14-SO-0001	NTC21SB15-SO-0001	NTC21SB16-SO-0001	NTC21SB17-SO-0001	NTC21SB18-SO-0001	NTC21SB19-SO-0001	SAMPLE ID
LOCATION ID	NTC21-SB-14	NTC21-SB-15	NTC21-SB-16	NTC21-SB-17	NTC21-SB-18	NTC21-SB-19	LOCATION ID
SAMPLE DATE	20090927	20090927	20090927	20090926	20090926	20090927	SAMPLE DATE
SAMPLE TIME	09:30:00	10:00:00	17:00:00	13:26:00	12:47:00	17:40:00	SAMPLE TIME
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	SAMPLE CODE
MATRIX	SO	SO	SO	SO	SO	SO	MATRIX
TOP DEPTH	0	0	0	0	0	0	TOP DEPTH
BOTTODEPTH	1	1	1	1	1	1	BOTTODEPTH
DEPTH UNIT	FT	FT	FT	FT	FT	FT	DEPTH UNIT
SUBMATRIX	SS	SS	SS	SS	SS	SS	SUBMATRIX
Herbicides (ug/kg)							**Herbicides (ug/kg)**
2,4,5-T	6.11 UJ	6 U	5.61 U	6.04 U	5.83 U	5.43 U	2,4,5-T
2,4,5-TP (SILVEX)	6.11 U	6 U	5.61 U	6.04 U	5.83 U	5.43 U	2,4,5-TP (SILVEX)
2,4-D	61.1 UJ	60 U	56.1 U	60.4 U	58.3 U	54.3 U	2,4-D
2,4-DB	61.1 UJ	60 U	56.1 U	60.4 U	58.3 U	54.3 U	2,4-DB
DALAPON	153 UJ	150 UJ	140 UJ	151 U	146 U	136 UJ	DALAPON
DICAMBA	9.99 J	6 U	5.61 U	6.04 U	5.83 U	5.43 U	DICAMBA
DICHLOROPROP	61.1 U	60 U	56.1 U	60.4 U	58.3 U	54.3 U	DICHLOROPROP
DINOSEB	17.2 J	30 U	28.1 U	30.2 UJ	29.1 UJ	27.1 U	DINOSEB
MCPA	6110 U	6000 U	5610 U	6040 U	5830 U	5430 U	MCPA
MCPP	6110 U	6000 U	5610 U	6040 U	5830 U	5430 U	MCPP
Dioxins/Furans (ng/kg)							**Dioxins/Furans (ng/kg)**
1,2,3,4,6,7,8,9-OCDD	---	---	---	174	---	---	1,2,3,4,6,7,8,9-OCDD
1,2,3,4,6,7,8,9-OCDF	---	---	---	19.8	---	---	1,2,3,4,6,7,8,9-OCDF
1,2,3,4,6,7,8-HPCDD	---	---	---	17.7	---	---	1,2,3,4,6,7,8-HPCDD
1,2,3,4,6,7,8-HPCDF	---	---	---	9.64	---	---	1,2,3,4,6,7,8-HPCDF
1,2,3,4,7,8,9-HPCDF	---	---	---	0.952 J	---	---	1,2,3,4,7,8,9-HPCDF
1,2,3,4,7,8-HXCDD	---	---	---	5 U	---	---	1,2,3,4,7,8-HXCDD
1,2,3,4,7,8-HXCDF	---	---	---	1.31 J	---	---	1,2,3,4,7,8-HXCDF
1,2,3,6,7,8-HXCDD	---	---	---	1.14 J	---	---	1,2,3,6,7,8-HXCDD
1,2,3,6,7,8-HXCDF	---	---	---	1.07 J	---	---	1,2,3,6,7,8-HXCDF
1,2,3,7,8,9-HXCDD	---	---	---	0.81 J	---	---	1,2,3,7,8,9-HXCDD
1,2,3,7,8,9-HXCDF	---	---	---	0.358 J	---	---	1,2,3,7,8,9-HXCDF
1,2,3,7,8-PECDD	---	---	---	0.76 J	---	---	1,2,3,7,8-PECDD
1,2,3,7,8-PECDF	---	---	---	0.462 U	---	---	1,2,3,7,8-PECDF
2,3,4,6,7,8-HXCDF	---	---	---	1.84 J	---	---	2,3,4,6,7,8-HXCDF
2,3,4,7,8-PECDF	---	---	---	3.66 J	---	---	2,3,4,7,8-PECDF
2,3,7,8-TCDD	---	---	---	0.198 J	---	---	2,3,7,8-TCDD
2,3,7,8-TCDF	---	---	---	0.728 U	---	---	2,3,7,8-TCDF
TOTAL HPCDD	---	---	---	33.9	---	---	TOTAL HPCDD
TOTAL HPCDF	---	---	---	25.2	---	---	TOTAL HPCDF
TOTAL HXCDD	---	---	---	10.6	---	---	TOTAL HXCDD
TOTAL HXCDF	---	---	---	29.8 J	---	---	TOTAL HXCDF
TOTAL PECDD	---	---	---	4.01 J	---	---	TOTAL PECDD
TOTAL PECDF	---	---	---	40.9	---	---	TOTAL PECDF
TOTAL TCDD	---	---	---	1.57	---	---	TOTAL TCDD
TOTAL TCDF	---	---	---	16.2	---	---	TOTAL TCDF
TEQ	---	---	---	3.04986	---	---	TEQ
TEQ FULLND	---	---	---	3.63652	---	---	TEQ FULLND
Inorganics (mg/kg)							**Inorganics (mg/kg)**
ALUMINUM	29500	18400	5180	11400	11800	3030	ALUMINUM
ANTIMONY	1.57 UJ	1.49 UJ	1.31 UJ	0.575 U	0.595 U	0.515 UJ	ANTIMONY
ARSENIC	48.4 J	48.3 J	4.86 J	8.23	7.73	5.95 J	ARSENIC
BARIUM	234 J	164 J	55.9 J	71.6 J	97.7 J	29.3 J	BARIUM
BERYLLIUM	4.71 J	3.69 J	1.04 J	0.836	0.774	0.29 J	BERYLLIUM
CADMIUM	2.63	4.18	0.262 U	0.845	0.621	1.25	CADMIUM
CALCIUM	85900 J	114000 J	113000 J	33600	10700	120000	CALCIUM
CHROMIUM	17.7 J	10.8 J	8.17 J	17.4	17.1	5.38 J	CHROMIUM
COBALT	5.29	9.12	5.51	8.5	11.5	3.55	COBALT
COPPER	50.6 J	45.8 J	17 J	26.4	27.8	16.8 J	COPPER
IRON	47000 J	69500 J	17300 J	27200 J	23500 J	18500 J	IRON
LEAD	67.2 J	31.7 J	29.2 J	29.2	27.2	60.3 J	LEAD

APPENDIX F-1

SUMMARY OF SURFACE SOIL ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

SAMPLE ID	NTC21SB14-SO-0001	NTC21SB15-SO-0001	NTC21SB16-SO-0001	NTC21SB17-SO-0001	NTC21SB18-SO-0001	NTC21SB19-SO-0001	SAMPLE ID
LOCATION ID	NTC21-SB-14	NTC21-SB-15	NTC21-SB-16	NTC21-SB-17	NTC21-SB-18	NTC21-SB-19	LOCATION ID
SAMPLE DATE	20090927	20090927	20090927	20090926	20090926	20090927	SAMPLE DATE
SAMPLE TIME	09:30:00	10:00:00	17:00:00	13:26:00	12:47:00	17:40:00	SAMPLE TIME
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	SAMPLE CODE
MATRIX	SO	SO	SO	SO	SO	SO	MATRIX
TOP DEPTH	0	0	0	0	0	0	TOP DEPTH
BOTTODEPTH	1	1	1	1	1	1	BOTTODEPTH
DEPTH UNIT	FT	FT	FT	FT	FT	FT	DEPTH UNIT
SUBMATRIX	SS	SS	SS	SS	SS	SS	SUBMATRIX
Inorganics (mg/kg) (Continued)							**Inorganics (mg/kg) (Continued)**
MAGNESIUM	3940	21500	62900	20400	6180	75800	MAGNESIUM
MANGANESE	2420 J	1250 J	321 J	464	1070	327 J	MANGANESE
MERCURY	0.0618	0.0472	0.0702 J	0.0477	0.0641	0.0374 J	MERCURY
NICKEL	20.1 J	34.6 J	13.2 J	21.7	21.3	9.26 J	NICKEL
POTASSIUM	1930	763	753	1270	1130	571	POTASSIUM
SELENIUM	0.94 UJ	0.892 UJ	1.05 UJ	0.345 U	0.357 U	0.772 UJ	SELENIUM
SILVER	0.313 U	0.297 U	0.262 U	0.115 U	0.119 U	0.103 U	SILVER
SODIUM	1590	1020	1260	2080	1100	1750	SODIUM
THALLIUM	2.82 UJ	0.892 UJ	0.787 UJ	0.345 U	2.08 U	0.309 UJ	THALLIUM
VANADIUM	15.8	15.1	11.5	23.8	21.8	8.94	VANADIUM
ZINC	186 J	352 J	73.6 J	134	111	148 J	ZINC

SUMMARY OF SURFACE SOIL ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

NTC21SB20-SO-0001	NTC21SB21-SO-0001	NTC21SB22-SO-0001
NTC21-SB-20	NTC21-SB-21	NTC21-SB-22
20090926	20090926	20090927
16:57:00	15:10:00	12:00:00
NORMAL	NORMAL	NORMAL
SO	SO	SO
0	0	0
1	1	1
FT	FT	FT
SS	SS	SS
4.4 U	5.2 U	6.6 U
4.4 U	5.2 U	6.6 U
4.4 U	5.2 U	6.6 U
4.4 U	5.2 U	6.6 U
4.4 U	5.2 U	6.6 UJ
4.4 U	5.2 U	6.6 U
4.4 U	5.2 U	6.6 U
4.4 U	5.2 U	6.6 U
4.4 U	5.2 U	6.6 U
4.4 U	5.2 U	6.6 U
4.4 U	5.2 U	6.6 U
4.4 U	5.2 U	6.6 U
4.4 U	5.2 U	6.6 U
4.4 UJ	5.2 UJ	6.6 U
4.4 U	5.2 U	6.6 U
4.4 U	5.2 U	6.6 U
4.4 U	5.2 U	21
0.74 J	5.2 U	6.6 U
8.8 U	10 U	13 U
4.4 U	5.2 U	6.6 U
8.8 U	10 U	13 U
4.4 U	4.2 J	6.6 U
4.4 U	5.2 U	6.6 U
4.4 U	5.2 U	6.6 U
4.4 U	5.2 U	6.6 U
8.8 U	10 U	13 U
4.4 U	5.2 U	6.6 U
8.8 U	10 U	13 U
8.8 U	10 U	13 U
4.4 U	5.2 U	6.6 U
0.75 J	0.94 J	6.6 U
4.4 U	5.2 U	6.6 U
4.4 U	5.2 U	6.6 U
4.4 U	5.2 U	6.6 U
8.8 U	10 U	13 U
1.1 J	1.2 J	6.6 U
4.4 U	5.2 U	6.6 U
0.97 U	1.1 U	1.9 U
4.4 U	5.2 U	6.6 U
4.4 U	5.2 U	6.6 U
1.1 J	5.2 U	6.6 U
4.4 U	5.2 U	6.6 U
4.4 U	5.2 U	6.6 U
4.4 U	5.2 U	6.6 U
4.4 U	5.2 U	6.6 U
4.4 U	5.2 U	6.6 U
4.4 U	5.2 U	6.6 U

SUMMARY OF SURFACE SOIL ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

NTC21SB20-SO-0001	NTC21SB21-SO-0001	NTC21SB22-SO-0001
NTC21-SB-20	NTC21-SB-21	NTC21-SB-22
20090926	20090926	20090927
16:57:00	15:10:00	12:00:00
NORMAL	NORMAL	NORMAL
SO	SO	SO
0	0	0
1	1	1
FT	FT	FT
SS	SS	SS
350 U	360 U	410 U
710 U	720 U	820 U
350 UR	360 U	410 U
350 UR	360 U	410 U
350 UR	360 U	410 U
710 UR	720 UJ	820 U
3500 UR	3600 U	4100 U
350 U	360 U	410 U
350 U	360 U	410 U
350 U	360 U	410 U
350 UR	360 UJ	410 U
27	260	710
350 U	360 U	410 U
1400 UJ	1400 UJ	1600 U
350 UR	360 U	410 U
350 U	360 U	410 U
1400 U	1400 U	1600 U
1400 UR	1400 UJ	1600 U
350 U	360 U	410 U
350 UR	360 U	410 U
350 U	360 U	410 U
350 U	360 U	410 U
350 UR	50 J	410 U
1400 U	1400 U	1600 U
1400 UR	1400 UJ	1600 U
53	2200	92
3.5 U	89	4.1 U
350 U	360 U	410 U
150	7200	4.1 U
350 U	360 U	410 U
350 U	360 U	410 UR
200 J	22000 J	320
560 J	38000 J	340
620 J	59000 J	710
430 J	24000 J	4.1 U
300 J	21000 J	680
350 U	360 U	410 U
350 U	360 U	410 U
140 J	3400 J	410 UJ
350 UJ	360 UJ	410 UJ
350 U	360 U	410 U
66 J	2400	820 U
280 J	31000 J	460
350 U	360 U	410 U
350 UJ	360 UJ	410 UJ
3.5 UJ	690 J	4.1 U
41 J	640	250 J
350 U	360 U	410 U
350 U	360 U	410 U
830	84000	970
52	1600	4.1 U

SUMMARY OF SURFACE SOIL ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

NTC21SB20-SO-0001	NTC21SB21-SO-0001	NTC21SB22-SO-0001
NTC21-SB-20	NTC21-SB-21	NTC21-SB-22
20090926	20090926	20090927
16:57:00	15:10:00	12:00:00
NORMAL	NORMAL	NORMAL
SO	SO	SO
0	0	0
1	1	1
FT	FT	FT
SS	SS	SS

350 U	360 U	410 U
350 U	360 U	410 U
350 UJ	360 UJ	410 U
710 U	720 U	820 U
350 J	36000 J	350
350 U	360 U	410 U
350 UJ	360 UJ	410 U
350 U	360 U	410 U
18	210	300
350 UJ	360 UJ	410 U
1400 UR	1400 U	1600 U
720	30000	1100
350 UR	360 U	410 U
650	70000	890
680.28	50631	485.26
683.78	50631	489.36
5240	427249	6922
5247	427249	6942.5

0.86 J	150 J	230
5.5 J	190	82
1.5 J	390 J	71 J
0.35 UJ	0.35 UJ	0.41 UJ
0.35 U	0.35 U	0.46 J
1.3 J	0.35 UJ	27 J
18.1 U	18.3 U	21 U
18.1 U	18.3 U	21 U
18.1 U	18.3 U	21 U
18.1 U	18.3 U	21 U
18.1 U	18.3 U	21 U
18.1 U	18.3 U	21 U
18.1 UJ	450 J	110 J
0.35 UJ	0.35 UJ	0.41 U
0.35 UJ	0.35 UJ	0.42 J
0.33 J	15 J	1.8 J
0.35 UJ	0.35 UJ	0.41 UJ
0.71 UJ	0.72 UJ	0.83 UJ
0.71 UJ	25 J	3.4 J
1 J	0.72 UJ	2.2 J
0.71 UJ	0.72 UJ	0.83 UJ
3.2 J	44 J	0.83 UJ
0.7 J	20	0.53 J
1.6 J	0.35 UJ	44 J
0.35 UJ	0.35 UJ	0.41 UJ
0.95 J	0.35 UJ	1.5 J
0.35 UJ	0.35 UJ	0.71 J
35 U	35 U	41 U

APPENDIX F-1

SUMMARY OF SURFACE SOIL ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

NTC21SB20-SO-0001	NTC21SB21-SO-0001	NTC21SB22-SO-0001
NTC21-SB-20	NTC21-SB-21	NTC21-SB-22
20090926	20090926	20090927
16:57:00	15:10:00	12:00:00
NORMAL	NORMAL	NORMAL
SO	SO	SO
0	0	0
1	1	1
FT	FT	FT
SS	SS	SS

5.31 U	5.37 U	6.18 U
5.31 U	5.37 U	6.18 U
53.1 U	53.7 U	61.8 U
53.1 U	53.7 U	61.8 U
133 U	134 U	154 UJ
5.31 U	5.37 U	6.18 U
53.1 U	53.7 U	61.8 U
26.6 UJ	26.9 UJ	30.9 U
5310 U	5370 U	6180 U
5310 U	5370 U	6180 U

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3530	2590	4570
0.553 U	1.6	1.63 UJ
3.12	4.87	6.96 J
33 J	50.5 J	61.3 J
0.254	0.332	0.878 J
0.678	5.25	1.13
133000	130000	97300 J
6.46	9.75	13.6 J
2.51	3.4	3.84
12.9	131	64.7 J
6660 J	16400 J	15300 J
16.7	124	215 J

SUMMARY OF SURFACE SOIL ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

NTC21SB20-SO-0001	NTC21SB21-SO-0001	NTC21SB22-SO-0001
NTC21-SB-20	NTC21-SB-21	NTC21-SB-22
20090926	20090926	20090927
16:57:00	15:10:00	12:00:00
NORMAL	NORMAL	NORMAL
SO	SO	SO
0	0	0
1	1	1
FT	FT	FT
SS	SS	SS

70700	75500	43900
332	270	579 J
0.0359	1.07	0.233 J
5.56	32	16.2 J
581	782	493
1.38 U	1.38 U	1.63 UJ
0.111 U	0.233	0.325 U
395	530	933
0.443 U	0.33 U	0.975 UJ
10.8	14.2	18.1
46.5	746	103 J

F-2 SUBSURFACE SOIL ANALYTICAL RESULTS

APPENDIX F-2

SUMMARY OF SUBSURFACE SOIL ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

SAMPLE ID	NTC21SB02-SO-0204	NTC21SB02-SO-0406	NTC21SB03-SO-0204	NTC21SB04-SO-0406	NTC21SB05-SO-0204	NTC21SB06-SO-0204	NTC21SB07-SO-0204
LOCATION ID	NTC21-SB-02	NTC21-SB-02	NTC21-SB-03	NTC21-SB-04	NTC21-SB-05	NTC21-SB-06	NTC21-SB-07
SAMPLE DATE	20090928	20091113	20090928	20090927	20090928	20090927	20090927
SAMPLE TIME	10:30:00	09:12:00	12:30:00	13:00:00	10:10:00	15:20:00	10:50:00
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	2	4	2	4	2	2	2
BOTTOM DEPTH	4	6	4	6	4	4	4
DEPTH UNIT	FT	FT	FT	FT	FT	FT	FT
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB
Volatile Organics (ug/kg)							
1,1,1-TRICHLOROETHANE	5.8 UJ	1.3 U	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U
1,1,2,2-TETRACHLOROETHANE	5.8 UJ	0.62 U	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U
1,1,2-TRICHLOROETHANE	5.8 UJ	0.51 U	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U
1,1,2-TRICHLOROTRIFLUOROETHANE	5.8 U	0.8 U	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U
1,1-DICHLOROETHANE	5.8 UJ	0.78 UJ	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U
1,1-DICHLOROETHENE	5.8 UJ	1.7 U	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U
1,2,4-TRICHLOROBENZENE	5.8 UJ	0.26 U	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U
1,2-DIBROMO-3-CHLOROPROPANE	5.8 UJ	1.7 U	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U
1,2-DIBROMOETHANE	5.8 UJ	0.62 U	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U
1,2-DICHLOROBENZENE	5.8 UJ	0.53 U	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U
1,2-DICHLOROETHANE	5.8 UJ	0.66 U	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U
1,2-DICHLOROPROPANE	5.8 UJ	0.66 U	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U
1,3-DICHLOROBENZENE	5.8 UJ	1.2 U	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U
1,4-DICHLOROBENZENE	5.8 UJ	0.8 U	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U
2-BUTANONE	5.8 U	2 U	5.4 UJ	28 J	4.3 UJ	6.2 UJ	5.1 UJ
2-HEXANONE	5.8 UJ	3.3 U	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U
4-METHYL-2-PENTANONE	5.8 U	0.84 U	5.4 UJ	6.6 U	4.3 UJ	6.2 UJ	5.1 U
ACETONE	5.8 U	35	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U
BENZENE	5.8 UJ	0.68 U	5.4 UJ	1.2 J	0.41 J	6.2 UJ	0.71 J
BROMODICHLOROMETHANE	12 UJ	0.43 U	11 UJ	13 U	8.6 U	12 UJ	10 U
BROMOFORM	5.8 UJ	1.4 U	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U
BROMOMETHANE	12 U	1 U	11 UJ	13 U	8.6 U	12 UJ	10 U
CARBON DISULFIDE	5.8 UJ	1.9 J	5.4 UJ	8.1	4.3 U	6.2 UJ	3.1 J
CARBON TETRACHLORIDE	5.8 UJ	1.3 U	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U
CHLOROBENZENE	5.8 UJ	0.49 U	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U
CHLORODIBROMOMETHANE	5.8 UJ	0.49 U	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U
CHLOROETHANE	12 U	1.6 U	11 UJ	13 U	8.6 U	12 UJ	10 U
CHLOROFORM	5.8 UJ	0.8 U	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U
CHLOROMETHANE	12 U	0.75 U	11 UJ	13 U	8.6 U	12 UJ	10 U
CIS-1,2-DICHLOROETHENE	12 UJ	1.7 U	11 UJ	13 U	8.6 U	12 UJ	10 U
CIS-1,3-DICHLOROPROPENE	5.8 UJ	0.72 U	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U
CYCLOHEXANE	1.1 J	0.78 U	1 J	0.74 J	1.7 J	0.9 J	2.2 J
DICHLORODIFLUOROMETHANE	5.8 U	1.6 U	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U
ETHYLBENZENE	5.8 UJ	1.1 U	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U
ISOPROPYLBENZENE	5.8 UJ	1.3 U	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U
METHYL ACETATE	12 U	2.3 UJ	11 UJ	13 U	8.6 U	12 UJ	10 U
METHYL CYCLOHEXANE	1.8 J	1.3 J	1.6 J	1.4 J	3.1 J	2.2 J	4.5 J
METHYL TERT-BUTYL ETHER	5.8 U	0.46 U	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U
METHYLENE CHLORIDE	1.3 U	2.1 U	1.3 U	1.3 U	1.8 U	1.1 U	1.1 U
STYRENE	5.8 UJ	0.51 U	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U
TETRACHLOROETHENE	5.8 UJ	3.3 J	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U
TOLUENE	5.8 UJ	1.5 J	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U
TOTAL XYLENES	5.8 UJ	1 U	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U
TRANS-1,2-DICHLOROETHENE	5.8 UJ	1.6 U	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U
TRANS-1,3-DICHLOROPROPENE	5.8 UJ	0.46 U	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U
TRICHLOROETHENE	5.8 UJ	1.2 U	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U
TRICHLOROFLUOROMETHANE	2.8 J	1.4 J	2.8 J	6.6 U	4.3 U	6.2 UJ	5.1 U
VINYL CHLORIDE	5.8 UJ	1.6 U	5.4 UJ	6.6 U	4.3 U	6.2 UJ	5.1 U

SUMMARY OF SUBSURFACE SOIL ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

SAMPLE ID	NTC21SB02-SO-0204	NTC21SB02-SO-0406	NTC21SB03-SO-0204	NTC21SB04-SO-0406	NTC21SB05-SO-0204	NTC21SB06-SO-0204	NTC21SB07-SO-0204
LOCATION ID	NTC21-SB-02	NTC21-SB-02	NTC21-SB-03	NTC21-SB-04	NTC21-SB-05	NTC21-SB-06	NTC21-SB-07
SAMPLE DATE	20090928	20091113	20090928	20090927	20090928	20090927	20090927
SAMPLE TIME	10:30:00	09:12:00	12:30:00	13:00:00	10:10:00	15:20:00	10:50:00
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	2	4	2	4	2	2	2
BOTTOM DEPTH	4	6	4	6	4	4	4
DEPTH UNIT	FT	FT	FT	FT	FT	FT	FT
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB
Semivolatile Organics (ug/kg)							
1,1-BIPHENYL	380 U	33 U	360 U	580 U	370 U	440 U	96 J
2,2'-OXYBIS(1-CHLOROPROPANE)	750 U	58 U	720 U	1200 U	740 U	870 U	780 U
2,4,5-TRICHLOROPHENOL	380 UJ	30 U	360 U	580 U	370 U	440 U	390 U
2,4,6-TRICHLOROPHENOL	380 UJ	39 U	360 U	580 U	370 U	440 U	390 U
2,4-DICHLOROPHENOL	380 UJ	21 U	360 U	580 U	370 U	440 U	390 U
2,4-DIMETHYLPHENOL	750 U	24 U	720 U	1200 U	740 U	870 U	780 U
2,4-DINITROPHENOL	3800 UR	150 U	3600 U	5800 U	3700 U	4400 U	3900 U
2,4-DINITROTOLUENE	380 U	27 U	360 U	580 U	370 U	440 U	390 U
2,6-DINITROTOLUENE	380 U	42 U	360 U	580 U	370 U	440 U	390 U
2-CHLORONAPHTHALENE	380 U	36 U	360 U	580 U	370 U	440 U	390 U
2-CHLOROPHENOL	380 U	46 U	360 U	580 U	370 U	440 U	390 U
2-METHYLNAPHTHALENE	1000 J	30	2100	7.5 U	150	500	400
2-METHYLPHENOL	380 U	43 U	360 U	580 U	370 U	440 U	390 U
2-NITROANILINE	1500 UJ	36 U	1400 U	2300 U	1500 U	1700 U	1600 U
2-NITROPHENOL	380 U	25 U	360 U	580 U	370 U	440 U	390 U
3,3'-DICHLOROBENZIDINE	380 UR	35 UJ	360 U	580 U	370 U	440 U	390 U
3-NITROANILINE	1500 UJ	53 U	1400 U	2300 U	1500 U	1700 U	1600 U
4,6-DINITRO-2-METHYLPHENOL	1500 UR	24 U	1400 U	2300 U	1500 U	1700 U	1600 U
4-BROMOPHENYL PHENYL ETHER	380 U	29 U	360 U	580 U	370 U	440 U	390 U
4-CHLORO-3-METHYLPHENOL	380 U	31 U	360 U	580 U	370 U	440 U	390 U
4-CHLOROANILINE	380 U	54 U	360 U	580 U	370 U	440 U	390 U
4-CHLOROPHENYL PHENYL ETHER	380 U	35 U	360 U	580 U	370 U	440 U	390 U
4-METHYLPHENOL	380 U	30 U	360 U	580 U	370 U	440 U	390 U
4-NITROANILINE	1500 UJ	110 UJ	1400 U	2300 U	1500 U	1700 U	1600 U
4-NITROPHENOL	1500 UR	91 U	1400 UJ	2300 U	1500 UJ	1700 U	1600 U
ACENAPHTHENE	110	200	480	5.8 U	33	68	880
ACENAPHTHYLENE	3.8 U	32	2000	25	19	4.4 U	69
ACETOPHENONE	230 J	46 U	360 U	580 U	370 U	440 U	390 U
ANTHRACENE	130	560	5000	8	3.7 U	4.4 U	1400
ATRAZINE	380 UJ	32 U	360 UJ	580 U	370 UJ	440 U	390 U
BENZALDEHYDE	220 J	62 U	360 U	580 UR	370 U	440 UR	390 UR
BENZO(A)ANTHRACENE	280	2000	32000	120	140 J	260	4300
BENZO(A)PYRENE	320	1200	27000	5.8 U	210 J	520	3600
BENZO(B)FLUORANTHENE	450	1600	41000	230	290 J	860	4300
BENZO(G,H,I)PERYLENE	250 J	730	11000	65	130 J	320	1600
BENZO(K)FLUORANTHENE	150	620	14000	220	120 J	840	1700
BIS(2-CHLOROETHOXY)METHANE	380 U	35 U	360 U	580 U	370 U	440 U	390 U
BIS(2-CHLOROETHYL)ETHER	380 U	46 U	360 U	580 U	370 U	440 U	390 U
BIS(2-ETHYLHEXYL)PHTHALATE	230 J	69 J	280 J	580 U	170 J	440 U	390 U
BUTYL BENZYL PHTHALATE	380 UJ	110 J	360 UJ	580 U	370 UJ	440 U	390 U
CAPROLACTAM	380 U	76 U	360 U	580 U	370 U	440 U	390 U
CARBAZOLE	750 U	430 J	720 U	1200 U	740 U	870 U	1000
CHRYSENE	290	2100	34000	100	170 J	360	4900
DI-N-BUTYL PHTHALATE	380 UJ	34 U	360 UJ	580 U	370 UJ	440 U	390 U
DI-N-OCTYL PHTHALATE	380 UJ	30 U	360 UJ	580 U	370 UJ	440 UJ	390 UJ
DIBENZO(A,H)ANTHRACENE	66 J	240	3300	5.8 U	38 J	4.4 U	3.9 U
DIBENZOFURAN	310 J	150 J	490	580 U	66 J	180 J	670
DIETHYL PHTHALATE	380 U	38 U	360 U	580 U	370 U	440 U	390 U
DIMETHYL PHTHALATE	380 U	34 U	360 U	580 U	370 U	440 U	390 U
FLUORANTHENE	650	4700	56000	200	360	930	13000
FLUORENE	3.8 U	180	90 U	5.8 U	3.7 U	4.4 U	1200

SUMMARY OF SUBSURFACE SOIL ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

SAMPLE ID	NTC21SB02-SO-0204	NTC21SB02-SO-0406	NTC21SB03-SO-0204	NTC21SB04-SO-0406	NTC21SB05-SO-0204	NTC21SB06-SO-0204	NTC21SB07-SO-0204
LOCATION ID	NTC21-SB-02	NTC21-SB-02	NTC21-SB-03	NTC21-SB-04	NTC21-SB-05	NTC21-SB-06	NTC21-SB-07
SAMPLE DATE	20090928	20091113	20090928	20090927	20090928	20090927	20090927
SAMPLE TIME	10:30:00	09:12:00	12:30:00	13:00:00	10:10:00	15:20:00	10:50:00
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	2	4	2	4	2	2	2
BOTTOM DEPTH	4	6	4	6	4	4	4
DEPTH UNIT	FT	FT	FT	FT	FT	FT	FT
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB
Semivolatile Organics (ug/kg) (Continued)							
HEXACHLOROBENZENE	380 U	39 U	360 U	580 U	370 U	440 U	390 U
HEXACHLOROBUTADIENE	380 U	37 U	360 U	580 U	370 U	440 U	390 U
HEXACHLOROCYCLOPENTADIENE	380 UJ	69 U	360 U	580 U	370 U	440 U	390 U
HEXACHLOROETHANE	750 U	44 U	720 U	1200 U	740 U	870 U	780 U
INDENO(1,2,3-CD)PYRENE	330 J	890	16000	5.8 U	200 J	420	2500
ISOPHORONE	380 U	32 U	360 U	580 U	370 U	440 U	390 U
N-NITROSO-DI-N-PROPYLAMINE	380 U	62 U	360 U	580 U	370 U	440 U	390 U
N-NITROSODIPHENYLAMINE	380 U	36 U	360 U	580 U	370 U	440 U	390 U
NAPHTHALENE	470	33	1100	10	58	230	550
NITROBENZENE	380 U	39 U	360 U	580 U	370 U	440 U	390 U
PENTACHLOROPHENOL	1500 UJ	38 U	1400 U	2300 U	1500 U	1700 U	1600 U
PHENANTHRENE	1100	2200	11000	34	380	970	11000
PHENOL	380 U	40 U	360 U	580 U	370 U	440 U	390 U
PYRENE	540	3200	52000	200	320	760	10000
BAP EQUIVALENT	493.79	1897.3	39374	37.3	312.37	682.76	4731.9
BAP EQUIVALENT FULLND	493.79	1897.3	39374	49.48	312.37	687.16	4735.8
TOTAL PAHS	6136	20515	307980	1212	2618	7038	61399
TOTAL PAHS FULLND	6143.6	20515	308070	1248.5	2625.4	7055.6	61402.9
Pesticides/PCBS (ug/kg)							
4,4'-DDD	7.9 J	0.19 U	11 J	1.2 U	30 J	480	0.78 U
4,4'-DDE	8.2	17.3 J	15	1.2 U	22	300	0.78 U
4,4'-DDT	8 J	8.53 J	16 J	1.2 UJ	14 J	240 J	0.78 UJ
ALDRIN	0.37 UJ	0.83 J	0.36 UJ	0.571 U	0.36 UJ	0.43 UJ	0.38 U
ALPHA-BHC	2.8 J	0.12 UJ	0.37 J	0.571 U	0.36 U	0.64 J	0.38 U
ALPHA-CHLORDANE	0.37 UJ	0.41 J	0.36 UJ	0.571 U	0.62 J	9.9 J	0.38 U
AROCLOR-1016	19.2 U	4.72 UJ	18.4 U	29.4 U	18.7 U	22.2 U	19.8 U
AROCLOR-1221	19.2 U	4.72 U	18.4 U	29.4 U	18.7 U	22.2 U	19.8 U
AROCLOR-1232	19.2 U	4.72 U	18.4 U	29.4 U	18.7 U	22.2 U	19.8 U
AROCLOR-1242	19.2 U	47 J	18.4 U	29.4 U	18.7 U	22.2 U	19.8 U
AROCLOR-1248	19.2 U	4.72 U	18.4 U	29.4 U	18.7 U	22.2 U	19.8 U
AROCLOR-1254	19.2 U	4.72 U	18.4 U	29.4 U	18.7 U	22.2 U	19.8 U
AROCLOR-1260	69 J	122 J	29 J	29.4 U	130 J	440 J	19.8 U
BETA-BHC	0.37 UJ	0.12 U	0.36 U	0.571 U	0.36 U	0.57 J	0.38 U
DELTA-BHC	0.37 U	1.48 J	0.36 U	0.571 U	0.36 U	3	0.38 U
DIELDRIN	0.87 J	2.89 J	1.1 J	1.2 U	1.6 J	5.6 J	0.78 U
ENDOSULFAN I	0.37 UJ	3.22 J	0.36 UJ	0.571 U	0.36 UJ	0.43 UJ	0.38 U
ENDOSULFAN II	0.59 J	1.26	0.19 J	1.2 U	1.1 J	0.88 UJ	0.78 U
ENDOSULFAN SULFATE	1.3 J	3.91	0.72 J	1.2 U	0.65 J	8.7 J	0.78 U
ENDRIN	0.82 J	1.84 J	0.73 UJ	1.2 UJ	1.5 J	0.88 U	0.78 UJ
ENDRIN ALDEHYDE	0.76 UJ	0.19 U	0.73 UJ	1.2 UJ	0.739 UJ	0.88 UJ	0.78 UJ
ENDRIN KETONE	0.76 UJ	0.19 U	1.5 J	1.2 U	0.739 UJ	0.88 UJ	0.78 U
GAMMA-BHC (LINDANE)	0.37 U	0.46	0.33 J	0.571 U	0.36 U	2.3 J	0.38 U
GAMMA-CHLORDANE	3.5 J	1.07 J	2.4 J	0.571 U	3.9 J	4.5 J	0.38 U
HEPTACHLOR	0.37 UJ	0.12 UJ	0.36 UJ	0.571 U	0.36 UJ	0.43 UJ	0.38 U
HEPTACHLOR EPOXIDE	0.9 J	0.12 U	0.39 J	0.571 U	0.53 J	6.3	0.38 U
METHOXYCHLOR	1.2 J	34.2 J	4.3 J	0.571 UJ	2.8 J	11 J	2.7 J
TOXAPHENE	37 U	12.4 U	36 U	57 U	36 U	43 U	38 U
Herbicides (ug/kg)							
2,4,5-T	5.63 U	2.81 U	5.42 U	8.66 UJ	5.51 U	6.53 UJ	5.81 UJ
2,4,5-TP (SILVEX)	5.63 U	2.81 U	5.42 U	8.66 U	5.51 U	6.53 U	5.81 U
2,4-D	56.3 U	28.1 U	54.2 U	86.6 UJ	55.1 U	54.6 J	58.1 UJ

SUMMARY OF SUBSURFACE SOIL ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

SAMPLE ID	NTC21SB02-SO-0204	NTC21SB02-SO-0406	NTC21SB03-SO-0204	NTC21SB04-SO-0406	NTC21SB05-SO-0204	NTC21SB06-SO-0204	NTC21SB07-SO-0204
LOCATION ID	NTC21-SB-02	NTC21-SB-02	NTC21-SB-03	NTC21-SB-04	NTC21-SB-05	NTC21-SB-06	NTC21-SB-07
SAMPLE DATE	20090928	20091113	20090928	20090927	20090928	20090927	20090927
SAMPLE TIME	10:30:00	09:12:00	12:30:00	13:00:00	10:10:00	15:20:00	10:50:00
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	2	4	2	4	2	2	2
BOTTOM DEPTH	4	6	4	6	4	4	4
DEPTH UNIT	FT	FT	FT	FT	FT	FT	FT
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB
Herbicides (ug/kg) (Continued)							
2,4-DB	56.3 UJ	28.1 U	54.2 UJ	86.6 UJ	55.1 UJ	65.3 UJ	58.1 UJ
DALAPON	141 UJ	70.3 U	136 UJ	216 UJ	138 UJ	163 UJ	145 UJ
DICAMBA	6.89 J	2.81 U	6.81 J	8.66 U	5.51 U	6.13 J	5.81 U
DICHLOROPROP	56.3 U	28.1 U	54.2 U	86.6 U	55.1 U	65.3 U	58.1 U
DINOSEB	28.2 U	14.1 U	27.1 U	43.3 U	27.6 U	32.7 U	29.1 U
MCPA	5630 U	2810 U	5420 U	8660 U	5510 U	6530 U	5810 U
MCPP	5630 U	2810 U	5420 U	8660 U	5510 U	6530 U	5810 U
Dioxins/Furans (ng/kg)							
1,2,3,4,6,7,8,9-OCDD	1950	---	---	---	---	---	---
1,2,3,4,6,7,8,9-OCDF	44.8	---	---	---	---	---	---
1,2,3,4,6,7,8-HPCDD	167	---	---	---	---	---	---
1,2,3,4,6,7,8-HPCDF	18.1	---	---	---	---	---	---
1,2,3,4,7,8,9-HPCDF	1.74 J	---	---	---	---	---	---
1,2,3,4,7,8-HXCDD	1.04 J	---	---	---	---	---	---
1,2,3,4,7,8-HXCDF	2.56 J	---	---	---	---	---	---
1,2,3,6,7,8-HXCDD	3.62 J	---	---	---	---	---	---
1,2,3,6,7,8-HXCDF	1.39 J	---	---	---	---	---	---
1,2,3,7,8,9-HXCDD	2.42 J	---	---	---	---	---	---
1,2,3,7,8,9-HXCDF	0.682 J	---	---	---	---	---	---
1,2,3,7,8-PECDD	0.579 J	---	---	---	---	---	---
1,2,3,7,8-PECDF	0.521 U	---	---	---	---	---	---
2,3,4,6,7,8-HXCDF	2.14 J	---	---	---	---	---	---
2,3,4,7,8-PECDF	2.75 J	---	---	---	---	---	---
2,3,7,8-TCDD	0.279 J	---	---	---	---	---	---
2,3,7,8-TCDF	0.742 U	---	---	---	---	---	---
TOTAL HPCDD	335	---	---	---	---	---	---
TOTAL HPCDF	61.3	---	---	---	---	---	---
TOTAL HXCDD	29.8	---	---	---	---	---	---
TOTAL HXCDF	40.4	---	---	---	---	---	---
TOTAL PECDD	4.76 J	---	---	---	---	---	---
TOTAL PECDF	32.5	---	---	---	---	---	---
TOTAL TCDD	2.93	---	---	---	---	---	---
TOTAL TCDF	12.6	---	---	---	---	---	---
TEQ	5.53504	---	---	---	---	---	---
TEQ FULLND	5.62487	---	---	---	---	---	---
Inorganics (mg/kg)							
ALUMINUM	4590	5090	4830	13200	7820	4450	6830
ANTIMONY	1.42 UJ	0.27 U	1.36 UJ	0.892 UJ	0.54 U	1.62 U	0.556 UJ
ARSENIC	8.57	4.16	10.4	14.6 J	7.32	6.39	8.88 J
BARIUM	42.6 J	48.8	44.6 J	115 J	48 J	55.3 J	44.9 J
BERYLLIUM	0.985	0.28	0.694	1.26 J	0.604	0.603	0.397 J
CADMIUM	0.283 U	0.74 U	0.395	2.49	0.449	1.51	0.606
CALCIUM	86600 J	177000	109000 J	36100 J	50200	133000	24900 J
CHROMIUM	10.1	7.97	10.8	34.3 J	14.2	16.5	10.9 J
COBALT	3.18	2.25	4.52	15.8	8.23	3.59	6.25
COPPER	23.8 J	9.91	34.4 J	72.6 J	31.7	77.1	124 J
IRON	15000 J	6560	18600 J	30500 J	20700 J	15100 J	26600 J
LEAD	35.6 J	10.8	63.2 J	184 J	37 J	100 J	228 J
MAGNESIUM	36700	81500	58300	15800	24100	57900	14600
MANGANESE	294	270	413	267 J	419	354	465 J
MERCURY	0.0963 J	0.03	0.215 J	0.0897	0.0375 J	0.237	0.0778

APPENDIX F-2

SUMMARY OF SUBSURFACE SOIL ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

SAMPLE ID	NTC21SB02-SO-0204	NTC21SB02-SO-0406	NTC21SB03-SO-0204	NTC21SB04-SO-0406	NTC21SB05-SO-0204	NTC21SB06-SO-0204	NTC21SB07-SO-0204
LOCATION ID	NTC21-SB-02	NTC21-SB-02	NTC21-SB-03	NTC21-SB-04	NTC21-SB-05	NTC21-SB-06	NTC21-SB-07
SAMPLE DATE	20090928	20091113	20090928	20090927	20090928	20090927	20090927
SAMPLE TIME	10:30:00	09:12:00	12:30:00	13:00:00	10:10:00	15:20:00	10:50:00
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	2	4	2	4	2	2	2
BOTTOM DEPTH	4	6	4	6	4	4	4
DEPTH UNIT	FT	FT	FT	FT	FT	FT	FT
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB
Inorganics (mg/kg) (Continued)							
NICKEL	10.2	4.42	13.4	34 J	22.5	13.1	14.6 J
POTASSIUM	658 J	603	785 J	1320	956	746	558
SELENIUM	0.849 UJ	1.65 U	0.818 UJ	0.535 UJ	0.54 UJ	1.29 UJ	0.334 UJ
SILVER	0.283 U	0.05 U	0.273 U	0.178 U	0.108 U	0.323 U	0.111 U
SODIUM	817	289	1590	1460	922	792	427
THALLIUM	0.849 U	0.16 U	0.818 U	0.535 UJ	0.432 U	0.97 U	0.445 UJ
VANADIUM	12.8	10.5	15.2	33.5	16.8 J	15.4 J	17.4
ZINC	110 J	38.5	115 J	1010 J	90.6 J	151 J	181 J
Miscellaneous Parameters (%)							
PERCENT CLAY	---	---	---	---	---	---	---
PERCENT GRAVEL	---	---	---	---	---	---	---
PERCENT SAND	---	---	---	---	---	---	---
PERCENT SILT	---	---	---	---	---	---	---
SIEVE 1"	---	---	---	---	---	---	---
SIEVE 1/2"	---	---	---	---	---	---	---
SIEVE 3/4"	---	---	---	---	---	---	---
SIEVE NO. 004	---	---	---	---	---	---	---
SIEVE NO. 010	---	---	---	---	---	---	---
SIEVE NO. 040	---	---	---	---	---	---	---
SIEVE NO. 100	---	---	---	---	---	---	---
SIEVE NO. 200	---	---	---	---	---	---	---

SUMMARY OF SUBSURFACE SOIL ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

SAMPLE ID	NTC21SB08-SO-0204	NTC21SB09-SO-0204	NTC21SB10-SO-0406	NTC21SB11-SO-0204	NTC21SB12-SO-0204	NTC21SB13-SO-0204	NTC21SB14-SO-0204
LOCATION ID	NTC21-SB-08	NTC21-SB-09	NTC21-SB-10	NTC21-SB-11	NTC21-SB-12	NTC21-SB-13	NTC21-SB-14
SAMPLE DATE	20090928	20090926	20090926	20090926	20090926	20090927	20090927
SAMPLE TIME	12:00:00	16:28:00	18:40:00	18:12:00	14:10:00	09:10:00	09:40:00
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	2	2	4	2	2	2	2
BOTTOM DEPTH	4	4	6	4	4	4	4
DEPTH UNIT	FT	FT	FT	FT	FT	FT	FT
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB
Volatile Organics (ug/kg)							
1,1,1-TRICHLOROETHANE	6.8 U	4.7 U	4.9 U	5.6 U	7.7 U	4.2 U	6.7 U
1,1,2,2-TETRACHLOROETHANE	6.8 U	4.7 U	4.9 U	5.6 U	7.7 U	4.2 U	6.7 U
1,1,2-TRICHLOROETHANE	6.8 U	4.7 U	4.9 U	5.6 U	7.7 U	4.2 U	6.7 U
1,1,2-TRICHLOROTRIFLUOROETHANE	6.8 U	4.7 U	4.9 U	5.6 U	7.7 U	4.2 U	6.7 U
1,1-DICHLOROETHANE	6.8 U	4.7 U	4.9 U	5.6 U	7.7 U	4.2 UJ	6.7 UJ
1,1-DICHLOROETHENE	6.8 U	4.7 U	4.9 U	5.6 U	7.7 U	4.2 U	6.7 U
1,2,4-TRICHLOROBENZENE	6.8 U	4.7 U	4.9 U	5.6 U	7.7 U	4.2 U	6.7 U
1,2-DIBROMO-3-CHLOROPROPANE	6.8 U	4.7 U	4.9 U	5.6 U	7.7 U	4.2 U	6.7 U
1,2-DIBROMOETHANE	6.8 U	4.7 U	4.9 U	5.6 U	7.7 U	4.2 U	6.7 U
1,2-DICHLOROBENZENE	6.8 U	4.7 U	4.9 U	5.6 U	7.7 U	4.2 U	6.7 U
1,2-DICHLOROETHANE	6.8 U	4.7 U	4.9 U	5.6 U	7.7 U	4.2 U	6.7 U
1,2-DICHLOROPROPANE	6.8 U	4.7 U	4.9 U	5.6 U	7.7 U	4.2 U	6.7 U
1,3-DICHLOROBENZENE	6.8 U	4.7 U	4.9 U	5.6 U	7.7 U	4.2 U	6.7 U
1,4-DICHLOROBENZENE	6.8 U	4.7 U	4.9 U	5.6 U	7.7 U	4.2 U	6.7 U
2-BUTANONE	6.8 UJ	9 J	4.9 UJ	5.6 UJ	7.7 UJ	4.2 U	11
2-HEXANONE	6.8 U	4.7 UJ	4.9 UJ	5.6 UJ	7.7 UJ	4.2 U	6.7 U
4-METHYL-2-PENTANONE	6.8 UJ	4.7 UJ	4.9 UJ	5.6 UJ	7.7 UJ	4.2 U	6.7 U
ACETONE	6.8 U	4.7 UJ	4.9 UJ	5.6 UJ	7.7 UJ	4.2 U	58
BENZENE	2.6 J	4.7 U	1.2 J	5.6 U	7.7 U	1.6 J	6.7 U
BROMODICHLOROMETHANE	14 U	9.4 U	9.8 U	11 U	15 U	8.4 U	13 U
BROMOFORM	6.8 U	4.7 U	4.9 U	5.6 U	7.7 U	4.2 U	6.7 U
BROMOMETHANE	14 U	9.4 U	9.8 U	11 U	15 U	8.4 U	13 U
CARBON DISULFIDE	6.8 U	4.2 J	1.3 J	4.6 J	2 J	6.3	3.2 J
CARBON TETRACHLORIDE	6.8 U	4.7 U	4.9 U	5.6 U	7.7 U	4.2 U	6.7 U
CHLOROBENZENE	6.8 U	4.7 U	4.9 U	5.6 U	7.7 U	4.2 U	6.7 U
CHLORODIBROMOMETHANE	6.8 U	4.7 U	4.9 U	5.6 U	7.7 U	4.2 U	6.7 U
CHLOROETHANE	14 U	9.4 U	9.8 U	11 U	15 U	8.4 U	13 U
CHLOROFORM	6.8 U	4.7 U	4.9 U	5.6 U	7.7 U	4.2 U	6.7 U
CHLOROMETHANE	14 U	9.4 U	9.8 U	11 U	15 U	8.4 U	13 U
CIS-1,2-DICHLOROETHENE	14 U	9.4 U	1.5 J	11 U	15 U	8.4 U	13 U
CIS-1,3-DICHLOROPROPENE	6.8 U	4.7 U	4.9 U	5.6 U	7.7 U	4.2 U	6.7 U
CYCLOHEXANE	3.8 J	0.62 J	3 J	1 J	2.6 J	2.5 J	6.7 U
DICHLORODIFLUOROMETHANE	6.8 U	4.7 U	4.9 U	5.6 U	7.7 U	4.2 U	6.7 U
ETHYLBENZENE	1.3 J	4.7 U	4.9 U	5.6 U	7.7 U	0.7 J	6.7 U
ISOPROPYLBENZENE	6.8 U	0.97 J	4.9 U	5.6 U	7.7 U	4.2 U	6.7 U
METHYL ACETATE	14 U	9.4 U	9.8 U	11 U	15 U	8.4 U	13 U
METHYL CYCLOHEXANE	7.1	1.2 J	5	1.5 J	4.8 J	4.6	6.7 U
METHYL TERT-BUTYL ETHER	6.8 U	4.7 U	4.9 U	5.6 U	7.7 U	4.2 U	6.7 U
METHYLENE CHLORIDE	3.3 U	1.8 U	1.8 U	1.9 U	2.6 U	0.86 U	1.7 U
STYRENE	6.8 U	4.7 U	4.9 U	5.6 U	7.7 U	4.2 U	6.7 U
TETRACHLOROETHENE	6.8 U	4.7 U	4.9 U	5.6 U	7.7 U	4.2 U	6.7 U
TOLUENE	4.3 J	4.7 U	1.6 J	5.6 U	7.7 U	2.7 J	6.7 U
TOTAL XYLENES	6.8 U	4.7 U	4.9 U	5.6 U	7.7 U	4.2 U	6.7 U
TRANS-1,2-DICHLOROETHENE	6.8 U	4.7 U	4.9 U	5.6 U	7.7 U	4.2 U	6.7 U
TRANS-1,3-DICHLOROPROPENE	6.8 U	4.7 U	4.9 U	5.6 U	7.7 U	4.2 U	6.7 U
TRICHLOROETHENE	6.8 U	4.7 U	4.9 U	5.6 U	7.7 U	4.2 U	6.7 U
TRICHLOROFLUOROMETHANE	6.8 U	4.7 U	4.9 U	5.6 U	7.7 U	4.2 U	6.7 U
VINYL CHLORIDE	6.8 U	4.7 U	4.9 U	5.6 U	7.7 U	4.2 U	6.7 U

SUMMARY OF SUBSURFACE SOIL ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

SAMPLE ID	NTC21SB08-SO-0204	NTC21SB09-SO-0204	NTC21SB10-SO-0406	NTC21SB11-SO-0204	NTC21SB12-SO-0204	NTC21SB13-SO-0204	NTC21SB14-SO-0204
LOCATION ID	NTC21-SB-08	NTC21-SB-09	NTC21-SB-10	NTC21-SB-11	NTC21-SB-12	NTC21-SB-13	NTC21-SB-14
SAMPLE DATE	20090928	20090926	20090926	20090926	20090926	20090927	20090927
SAMPLE TIME	12:00:00	16:28:00	18:40:00	18:12:00	14:10:00	09:10:00	09:40:00
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	2	2	4	2	2	2	2
BOTTOM DEPTH	4	4	6	4	4	4	4
DEPTH UNIT	FT	FT	FT	FT	FT	FT	FT
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB
Semivolatile Organics (ug/kg)							
1,1-BIPHENYL	450 U	420 U	400 U	400 U	430 U	400 U	440 U
2,2'-OXYBIS(1-CHLOROPROPANE)	900 U	840 U	800 U	790 U	860 U	790 U	880 U
2,4,5-TRICHLOROPHENOL	450 U	420 U	400 U	400 U	430 U	400 U	440 U
2,4,6-TRICHLOROPHENOL	450 U	420 U	400 U	400 U	430 U	400 U	440 U
2,4-DICHLOROPHENOL	450 U	420 U	400 U	400 U	430 U	400 U	440 U
2,4-DIMETHYLPHENOL	900 U	840 UJ	800 UJ	790 UJ	860 UJ	790 U	880 U
2,4-DINITROPHENOL	4500 U	4200 U	4000 U	4000 U	4300 U	4000 U	4400 U
2,4-DINITROTOLUENE	450 U	420 U	400 U	400 U	430 U	400 U	440 U
2,6-DINITROTOLUENE	450 U	420 U	400 U	400 U	430 U	400 U	440 U
2-CHLORONAPHTHALENE	450 U	420 U	400 U	400 U	430 U	400 U	440 U
2-CHLOROPHENOL	450 U	420 U	400 U	400 UJ	430 UJ	400 U	440 U
2-METHYLNAPHTHALENE	84	22	8.8	240	480	4 U	4.4 U
2-METHYLPHENOL	450 U	420 U	400 U	400 U	430 U	400 U	440 U
2-NITROANILINE	1800 U	1700 UJ	1600 UJ	1600 UJ	1700 UJ	1600 U	1800 U
2-NITROPHENOL	450 U	420 U	400 U	400 U	430 U	400 U	440 U
3,3'-DICHLOROBENZIDINE	450 U	420 U	400 U	400 U	430 U	400 U	440 U
3-NITROANILINE	1800 U	1700 U	1600 U	1600 U	1700 U	1600 U	1800 U
4,6-DINITRO-2-METHYLPHENOL	1800 U	1700 U	1600 U	1600 UJ	1700 UJ	1600 U	1800 U
4-BROMOPHENYL PHENYL ETHER	450 U	420 U	400 U	400 U	430 U	400 U	440 U
4-CHLORO-3-METHYLPHENOL	450 U	420 U	400 U	400 U	430 U	400 U	440 U
4-CHLOROANILINE	450 U	420 U	400 U	400 U	430 U	400 U	440 U
4-CHLOROPHENYL PHENYL ETHER	450 U	420 U	400 U	400 U	430 U	400 U	440 U
4-METHYLPHENOL	450 U	420 U	400 U	400 U	430 U	400 U	440 U
4-NITROANILINE	1800 U	1700 U	1600 U	1600 U	1700 U	1600 U	1800 U
4-NITROPHENOL	1800 UJ	1700 UJ	1600 UJ	1600 UJ	1700 UJ	1600 U	1800 U
ACENAPHTHENE	38	38	12	57	4.3 U	4 U	4.4 U
ACENAPHTHYLENE	88	16	2.8 J	19	170	4 U	4.4 U
ACETOPHENONE	450 U	420 U	400 U	400 U	430 U	400 U	440 U
ANTHRACENE	150	110	16	76	220	4 U	4.4 U
ATRAZINE	450 UJ	420 UJ	400 UJ	400 U	430 U	400 U	440 U
BENZALDEHYDE	450 U	420 U	400 U	400 U	430 U	400 UR	440 UR
BENZO(A)ANTHRACENE	430 J	81 J	16	150 J	420 J	14	4.4 U
BENZO(A)PYRENE	740 J	170 J	33	220 J	620 J	4 U	4.4 U
BENZO(B)FLUORANTHENE	1200 J	280 J	52	380 J	1200 J	6.4	4.4 U
BENZO(G,H,I)PERYLENE	470 J	100 J	23	120 J	330 J	4 U	4.4 U
BENZO(K)FLUORANTHENE	460 J	92 J	17	88 J	380 J	7.2	4.4 U
BIS(2-CHLOROETHOXY)METHANE	450 U	420 U	400 U	400 U	430 U	400 U	440 U
BIS(2-CHLOROETHYL)ETHER	450 U	420 U	400 U	400 U	430 U	400 U	440 U
BIS(2-ETHYLHEXYL)PHTHALATE	280 J	420 U	400 U	400 U	430 U	400 U	440 U
BUTYL BENZYL PHTHALATE	450 UJ	420 U	400 U	400 UJ	430 UJ	400 U	440 U
CAPROLACTAM	450 U	420 U	400 U	400 U	430 U	400 U	440 U
CARBAZOLE	900 U	840 U	800 U	790 U	860 U	790 U	880 U
CHRYSENE	580 J	120 J	23	160 J	530 J	8	4.4 U
DI-N-BUTYL PHTHALATE	450 UJ	420 U	400 U	400 U	430 U	400 U	440 U
DI-N-OCTYL PHTHALATE	450 UJ	420 U	400 U	400 UJ	430 UJ	400 U	440 U
DIBENZO(A,H)ANTHRACENE	160 J	28 J	4 UJ	34 J	100 J	4 U	4.4 U
DIBENZOFURAN	36 J	420 U	400 U	74 J	330 J	400 U	440 U
DIETHYL PHTHALATE	450 U	420 U	400 U	400 U	430 U	400 U	440 U
DIMETHYL PHTHALATE	450 U	420 U	400 U	400 U	430 U	400 U	440 U
FLUORANTHENE	1100	450	78	520	1400	15	1.9 U
FLUORENE	57	68	16	4 U	4.3 U	4 U	4.4 U

SUMMARY OF SUBSURFACE SOIL ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

SAMPLE ID	NTC21SB08-SO-0204	NTC21SB09-SO-0204	NTC21SB10-SO-0406	NTC21SB11-SO-0204	NTC21SB12-SO-0204	NTC21SB13-SO-0204	NTC21SB14-SO-0204
LOCATION ID	NTC21-SB-08	NTC21-SB-09	NTC21-SB-10	NTC21-SB-11	NTC21-SB-12	NTC21-SB-13	NTC21-SB-14
SAMPLE DATE	20090928	20090926	20090926	20090926	20090926	20090927	20090927
SAMPLE TIME	12:00:00	16:28:00	18:40:00	18:12:00	14:10:00	09:10:00	09:40:00
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	2	2	4	2	2	2	2
BOTTOM DEPTH	4	4	6	4	4	4	4
DEPTH UNIT	FT	FT	FT	FT	FT	FT	FT
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB
Semivolatile Organics (ug/kg) (Continued)							
HEXACHLOROBENZENE	450 U	420 U	400 U	400 U	430 U	400 U	440 U
HEXACHLOROBUTADIENE	450 U	420 U	400 U	400 U	430 U	400 U	440 U
HEXACHLOROCYCLOPENTADIENE	450 U	420 U	400 U	400 UJ	430 UJ	400 U	440 U
HEXACHLOROETHANE	900 U	840 U	800 U	790 U	860 U	790 U	880 U
INDENO(1,2,3-CD)PYRENE	690 J	160 J	28	150 J	470 J	4 U	4.4 U
ISOPHORONE	450 U	420 U	400 U	400 U	430 U	400 U	440 U
N-NITROSO-DI-N-PROPYLAMINE	450 U	420 UJ	400 UJ	400 UJ	430 UJ	400 U	440 U
N-NITROSODIPHENYLAMINE	450 U	420 U	400 U	400 U	430 U	400 U	440 U
NAPHTHALENE	43	180	8.9	1700	440	4 U	4.4 U
NITROBENZENE	450 U	420 UJ	400 UJ	400 UJ	430 UJ	400 U	440 U
PENTACHLOROPHENOL	1800 U	1700 U	1600 U	1600 U	1700 U	1600 U	1800 U
PHENANTHRENE	560	290	67	470	2100	19	4.4 U
PHENOL	450 U	420 U	400 U	400 U	430 U	400 U	440 U
PYRENE	950	340	63	420	1000	14	4.4 U
BAP EQUIVALENT	1137.18	251.14	42.793	323.04	933.33	2.12	0 U
BAP EQUIVALENT FULLND	1137.18	251.14	46.793	323.04	933.33	10.52	10.1684
TOTAL PAHS	7800	2545	464.5	4804	9860	83.6	0 U
TOTAL PAHS FULLND	7800	2545	468.5	4808	9868.6	123.6	72.3
Pesticides/PCBS (ug/kg)							
4,4'-DDD	31 J	0.37 J	1.7 J	190	0.87 U	0.79 U	0.89 U
4,4'-DDE	20	0.84 UJ	0.69 J	35 J	1.7 J	0.79 U	0.89 U
4,4'-DDT	31 J	0.84 UJ	1.9 J	18 J	1.2 J	0.79 UJ	0.89 UJ
ALDRIN	0.45 UJ	0.42 UJ	0.4 UJ	0.39 UJ	0.43 UJ	0.39 U	0.44 U
ALPHA-BHC	0.45 U	0.42 U	0.71 J	0.39 U	0.43 U	0.39 U	0.44 U
ALPHA-CHLORDANE	2 J	0.42 UJ	0.73 J	17 J	0.43 UJ	0.39 U	0.44 U
AROCLOR-1016	23.1 U	21.4 U	20.5 U	20.2 U	22.1 U	20.2 U	22.6 U
AROCLOR-1221	23.1 U	21.4 U	20.5 U	20.2 U	22.1 U	20.2 U	22.6 U
AROCLOR-1232	23.1 U	21.4 U	20.5 U	20.2 U	22.1 U	20.2 U	22.6 U
AROCLOR-1242	23.1 U	21.4 U	20.5 U	20.2 U	22.1 U	20.2 U	22.6 U
AROCLOR-1248	23.1 U	21.4 U	20.5 U	20.2 U	22.1 U	20.2 U	22.6 U
AROCLOR-1254	23.1 U	21.4 U	20.5 U	20.2 U	22.1 U	20.2 U	22.6 U
AROCLOR-1260	120 J	21.4 UJ	20.5 UJ	72 J	22.1 UJ	20.2 U	22.6 U
BETA-BHC	0.45 U	0.42 UJ	1.1 J	0.39 UJ	0.43 UJ	0.39 U	0.44 U
DELTA-BHC	0.45 U	0.42 UJ	0.52 J	0.39 UJ	0.34 J	0.39 U	0.44 U
DIELDRIN	1.1 J	0.84 UJ	0.81 UJ	1.7 J	0.87 UJ	0.79 U	0.89 U
ENDOSULFAN I	0.45 UJ	0.42 UJ	0.96 J	0.39 UJ	1.3 J	0.39 U	0.44 U
ENDOSULFAN II	1.2 J	0.84 UJ	0.81 UJ	0.8 UJ	0.87 UJ	0.79 U	0.89 U
ENDOSULFAN SULFATE	0.73 J	0.84 UJ	0.81 UJ	3.1 J	0.87 UJ	0.79 U	0.89 U
ENDRIN	1.3 J	0.84 U	0.81 U	3.2 J	0.87 UJ	0.79 UJ	0.89 UJ
ENDRIN ALDEHYDE	0.91 UJ	0.84 UJ	4.9 J	0.8 UJ	1.1 J	0.79 UJ	0.89 UJ
ENDRIN KETONE	0.91 UJ	0.84 UJ	0.81 UJ	0.8 UJ	0.87 UJ	0.79 U	0.89 U
GAMMA-BHC (LINDANE)	0.45 U	0.42 U	0.42 J	0.39 U	0.43 U	0.39 U	0.44 U
GAMMA-CHLORDANE	4.2 J	0.15 J	1.7 J	19 J	1.1 J	0.39 U	0.44 U
HEPTACHLOR	0.45 UJ	0.42 UJ	0.4 UJ	0.39 UJ	0.43 UJ	0.39 U	0.44 U
HEPTACHLOR EPOXIDE	1.4 J	0.42 UJ	0.4 UJ	0.39 UJ	0.43 UJ	0.39 U	0.44 U
METHOXYCHLOR	3.7 J	0.8 J	0.4 UJ	0.39 UJ	8.9 J	0.39 UJ	0.44 UJ
TOXAPHENE	45 U	42 U	40 U	39 U	43 U	39 U	44 U
Herbicides (ug/kg)							
2,4,5-T	6.78 U	6.29 UJ	6.04 UJ	5.94 UJ	6.49 U	5.93 UJ	6.64 UJ
2,4,5-TP (SILVEX)	6.78 U	2.63 U	6.04 U	5.94 U	6.49 U	5.93 U	6.64 U
2,4-D	67.8 U	62.9 U	60.4 U	59.4 U	64.9 U	59.3 UJ	66.4 UJ

SUMMARY OF SUBSURFACE SOIL ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

SAMPLE ID	NTC21SB08-SO-0204	NTC21SB09-SO-0204	NTC21SB10-SO-0406	NTC21SB11-SO-0204	NTC21SB12-SO-0204	NTC21SB13-SO-0204	NTC21SB14-SO-0204
LOCATION ID	NTC21-SB-08	NTC21-SB-09	NTC21-SB-10	NTC21-SB-11	NTC21-SB-12	NTC21-SB-13	NTC21-SB-14
SAMPLE DATE	20090928	20090926	20090926	20090926	20090926	20090927	20090927
SAMPLE TIME	12:00:00	16:28:00	18:40:00	18:12:00	14:10:00	09:10:00	09:40:00
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	2	2	4	2	2	2	2
BOTTOM DEPTH	4	4	6	4	4	4	4
DEPTH UNIT	FT	FT	FT	FT	FT	FT	FT
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB
Herbicides (ug/kg) (Continued)							
2,4-DB	67.8 UJ	62.9 U	60.4 U	59.4 U	64.9 U	59.3 UJ	66.4 UJ
DALAPON	170 UJ	157 UJ	151 U	149 U	162 U	148 UJ	166 UJ
DICAMBA	6.78 U	6.29 UJ	6.04 U	5.94 U	6.49 U	5.93 U	8.28 J
DICHLOROPROP	67.8 U	62.9 U	60.4 U	59.4 U	64.9 U	59.3 U	66.4 U
DINOSEB	33.9 U	31.5 UJ	30.2 U	29.7 U	32.5 UJ	29.6 U	33.2 U
MCPA	6780 U	6290 U	6040 UJ	5940 UJ	6490 U	5930 U	6640 U
MCPP	6780 U	6290 U	6040 U	5940 U	6490 U	5930 U	6640 U
Dioxins/Furans (ng/kg)							
1,2,3,4,6,7,8,9-OCDD	---	---	---	---	---	---	---
1,2,3,4,6,7,8,9-OCDF	---	---	---	---	---	---	---
1,2,3,4,6,7,8-HPCDD	---	---	---	---	---	---	---
1,2,3,4,6,7,8-HPCDF	---	---	---	---	---	---	---
1,2,3,4,7,8,9-HPCDF	---	---	---	---	---	---	---
1,2,3,4,7,8-HXCDD	---	---	---	---	---	---	---
1,2,3,4,7,8-HXCDF	---	---	---	---	---	---	---
1,2,3,6,7,8-HXCDD	---	---	---	---	---	---	---
1,2,3,6,7,8-HXCDF	---	---	---	---	---	---	---
1,2,3,7,8,9-HXCDD	---	---	---	---	---	---	---
1,2,3,7,8,9-HXCDF	---	---	---	---	---	---	---
1,2,3,7,8-PECDD	---	---	---	---	---	---	---
1,2,3,7,8-PECDF	---	---	---	---	---	---	---
2,3,4,6,7,8-HXCDF	---	---	---	---	---	---	---
2,3,4,7,8-PECDF	---	---	---	---	---	---	---
2,3,7,8-TCDD	---	---	---	---	---	---	---
2,3,7,8-TCDF	---	---	---	---	---	---	---
TOTAL HPCDD	---	---	---	---	---	---	---
TOTAL HPCDF	---	---	---	---	---	---	---
TOTAL HXCDD	---	---	---	---	---	---	---
TOTAL HXCDF	---	---	---	---	---	---	---
TOTAL PECDD	---	---	---	---	---	---	---
TOTAL PECDF	---	---	---	---	---	---	---
TOTAL TCDD	---	---	---	---	---	---	---
TOTAL TCDF	---	---	---	---	---	---	---
TEQ	---	---	---	---	---	---	---
TEQ FULLND	---	---	---	---	---	---	---
Inorganics (mg/kg)							
ALUMINUM	9510	17400	9450	4900	12300	6440	16400
ANTIMONY	0.671 U	0.645 U	0.643	1.46 U	1.69 U	0.546 UJ	0.645 UJ
ARSENIC	12	7.34	9.71	6	7.09	8.73 J	9.51 J
BARIUM	61.7 J	140 J	60.9 J	81.2 J	103 J	28.1 J	119 J
BERYLLIUM	0.844	1.46	0.506	1.35	4.05	0.425 J	1.16 J
CADMIUM	0.898	0.653	0.414	0.979	4.15	0.909	0.799
CALCIUM	59000	26600	57800	10500	24200	30100 J	6730 J
CHROMIUM	16	19.3	16.2	10.7	12.1	12.7 J	22.3 J
COBALT	10.3	9.54	9.49	6.8	23.8	7.28	9.89
COPPER	46.5	37.8	66.6	69.9	59.8	24.5 J	40.5 J
IRON	27600 J	25800 J	24900 J	40100 J	32900 J	22900 J	34900 J
LEAD	66.5	29.1	38.4	94.3	41.3	18.3 J	21.4 J
MAGNESIUM	38000	5180	29200	3150	10700	18400	4070
MANGANESE	583	1690	650	203	760	744 J	1200 J
MERCURY	0.047 J	0.0822	0.0742	0.0889	0.484	0.0545	0.0835

SUMMARY OF SUBSURFACE SOIL ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

SAMPLE ID	NTC21SB08-SO-0204	NTC21SB09-SO-0204	NTC21SB10-SO-0406	NTC21SB11-SO-0204	NTC21SB12-SO-0204	NTC21SB13-SO-0204	NTC21SB14-SO-0204
LOCATION ID	NTC21-SB-08	NTC21-SB-09	NTC21-SB-10	NTC21-SB-11	NTC21-SB-12	NTC21-SB-13	NTC21-SB-14
SAMPLE DATE	20090928	20090926	20090926	20090926	20090926	20090927	20090927
SAMPLE TIME	12:00:00	16:28:00	18:40:00	18:12:00	14:10:00	09:10:00	09:40:00
SAMPLE CODE	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	2	2	4	2	2	2	2
BOTTOM DEPTH	4	4	6	4	4	4	4
DEPTH UNIT	FT	FT	FT	FT	FT	FT	FT
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB
Inorganics (mg/kg) (Continued)							
NICKEL	28.4	23.2	25.9	19.2	42.7	22.5 J	33 J
POTASSIUM	1110	1780	1570	607	683	953	1430
SELENIUM	1.01 UJ	0.387 U	0.924 U	0.878 U	1.01 U	0.82 U	0.387 UJ
SILVER	0.134 U	0.129 U	0.123 U	0.293 U	0.338 U	0.109 U	0.129 U
SODIUM	210	2920	483	885	601	521	801
THALLIUM	0.537 U	2.26 U	0.493 U	0.878 U	1.01 U	0.437 UJ	1.03 UJ
VANADIUM	20.2 J	28	21.7	15.5	20.5	18.4	28
ZINC	229	156	116	244	358	216 J	130 J
Miscellaneous Parameters (%)							
PERCENT CLAY	11	---	---	---	---	---	---
PERCENT GRAVEL	39	---	---	---	---	---	---
PERCENT SAND	29	---	---	---	---	---	---
PERCENT SILT	21	---	---	---	---	---	---
SIEVE 1"	100	---	---	---	---	---	---
SIEVE 1/2"	81	---	---	---	---	---	---
SIEVE 3/4"	93	---	---	---	---	---	---
SIEVE NO. 004	61	---	---	---	---	---	---
SIEVE NO. 010	51	---	---	---	---	---	---
SIEVE NO. 040	43	---	---	---	---	---	---
SIEVE NO. 100	36	---	---	---	---	---	---
SIEVE NO. 200	32	---	---	---	---	---	---

SUMMARY OF SUBSURFACE SOIL ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

SAMPLE ID	NTC21SB15-SO-0204	NTC21SB16-SO-0204	NTC21SB17-SO-0507	NTC21SB18-SO-0507	NTC21SB19-SO-0204	NTC21SB20-SO-0406	NTC21SB21-SO-0608	NTC21SB22-SO-0204
LOCATION ID	NTC21-SB-15	NTC21-SB-16	NTC21-SB-17	NTC21-SB-18	NTC21-SB-19	NTC21-SB-20	NTC21-SB-21	NTC21-SB-22
SAMPLE DATE	20090927	20090927	20090926	20090926	20090927	20090926	20090926	20090927
SAMPLE TIME	10:10:00	16:50:00	13:32:00	12:59:00	17:50:00	17:02:00	15:20:00	12:10:00
SAMPLE CODE	ORIG	NORMAL	NORMAL	ORIG	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	2	2	5	5	2	4	6	2
BOTTOM DEPTH	4	4	7	7	4	6	8	4
DEPTH UNIT	FT	FT	FT	FT	FT	FT	FT	FT
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
Volatile Organics (ug/kg)								
1,1,1-TRICHLOROETHANE	4.9 U	4.9 U	3.8 U	4.5 U	5 U	4 U	5.1 U	5.5 U
1,1,2,2-TETRACHLOROETHANE	4.9 U	4.9 U	3.8 U	4.5 U	5 U	4 U	5.1 U	5.5 U
1,1,2-TRICHLOROETHANE	4.9 U	4.9 U	3.8 U	4.5 U	5 U	4 U	5.1 U	5.5 U
1,1,2-TRICHLOROTRIFLUOROETHANE	4.9 U	4.9 U	3.8 U	4.5 U	5 U	4 U	5.1 U	5.5 U
1,1-DICHLOROETHANE	4.9 UJ	4.9 UJ	3.8 U	4.5 U	5 UJ	4 U	5.1 U	5.5 UJ
1,1-DICHLOROETHENE	4.9 U	4.9 U	3.8 U	4.5 U	5 U	4 U	5.1 U	5.5 U
1,2,4-TRICHLOROBENZENE	4.9 U	4.9 U	3.8 U	4.5 U	5 U	4 U	5.1 U	5.5 U
1,2-DIBROMO-3-CHLOROPROPANE	4.9 U	4.9 U	3.8 U	4.5 U	5 U	4 U	5.1 U	5.5 U
1,2-DIBROMOETHANE	4.9 U	4.9 U	3.8 U	4.5 U	5 U	4 U	5.1 U	5.5 U
1,2-DICHLOROBENZENE	4.9 U	4.9 U	3.8 U	4.5 U	5 U	4 U	5.1 U	5.5 U
1,2-DICHLOROETHANE	4.9 U	4.9 U	3.8 U	4.5 U	5 U	4 U	5.1 U	5.5 U
1,2-DICHLOROPROPANE	4.9 U	4.9 U	3.8 U	4.5 U	5 U	4 U	5.1 U	5.5 U
1,3-DICHLOROBENZENE	4.9 U	4.9 U	3.8 U	4.5 U	5 U	4 U	5.1 U	5.5 U
1,4-DICHLOROBENZENE	4.9 U	4.9 U	3.8 U	4.5 U	5 U	4 U	5.1 U	5.5 U
2-BUTANONE	4.9 U	14	3.8 UJ	4.5 UJ	9.1	4 UJ	5.1 UJ	5.5 U
2-HEXANONE	4.9 U	4.9 U	3.8 UJ	4.5 UJ	5 U	4 U	5.1 U	5.5 U
4-METHYL-2-PENTANONE	4.9 U	4.9 U	3.8 UJ	4.5 UJ	5 U	4 U	5.1 U	5.5 U
ACETONE	25 J	79	3.8 UJ	4.5 UJ	87	4 U	5.1 U	5.5 U
BENZENE	4.9 U	4.9 U	3 J	4.8	5 U	1.2 J	1.6 J	5.5 U
BROMODICHLOROMETHANE	9.9 U	9.8 U	7.6 U	8.9 U	10 U	8 U	10 U	11 U
BROMOFORM	4.9 U	4.9 U	3.8 U	4.5 U	5 U	4 U	5.1 U	5.5 U
BROMOMETHANE	9.9 U	9.8 U	7.6 U	8.9 U	10 U	8 U	10 U	11 U
CARBON DISULFIDE	1.4 J	4.9 U	3.8 U	1.2 J	5 U	12	5.1 U	9
CARBON TETRACHLORIDE	4.9 U	4.9 U	3.8 U	4.5 U	5 U	4 U	5.1 U	5.5 U
CHLOROBENZENE	4.9 U	4.9 U	3.8 U	4.5 U	5 U	4 U	5.1 U	5.5 U
CHLORODIBROMOMETHANE	4.9 U	4.9 U	3.8 U	4.5 U	5 U	4 U	5.1 U	5.5 U
CHLOROETHANE	9.9 U	9.8 U	7.6 U	8.9 U	10 U	8 U	10 U	11 U
CHLOROFORM	4.9 U	4.9 U	3.8 U	4.5 U	5 U	4 U	5.1 U	5.5 U
CHLOROMETHANE	9.9 U	1 J	7.6 U	8.9 U	2.2 J	8 U	10 U	11 U
CIS-1,2-DICHLOROETHENE	9.9 U	9.8 U	7.6 U	8.9 U	10 U	8 U	10 U	11 U
CIS-1,3-DICHLOROPROPENE	4.9 U	4.9 U	3.8 U	4.5 U	5 U	4 U	5.1 U	5.5 U
CYCLOHEXANE	4.9 U	4.9 U	4.4	9	5 U	2.5 J	3.2 J	0.75 J
DICHLORODIFLUOROMETHANE	4.9 U	4.9 U	3.8 U	4.5 U	5 U	4 U	5.1 U	5.5 U
ETHYLBENZENE	4.9 U	4.9 U	1.9 J	1 J	5 U	4 U	5.1 U	5.5 U
ISOPROPYLBENZENE	4.9 U	4.9 U	3.8 U	4.5 U	5 U	4 U	5.1 U	5.5 U
METHYL ACETATE	9.9 U	9.8 U	7.6 U	8.9 U	10 U	8 U	10 U	11 U
METHYL CYCLOHEXANE	4.9 U	4.9 U	8.7	11	5 U	5.4	4.4 J	1.4 J
METHYL TERT-BUTYL ETHER	4.9 U	4.9 U	3.8 U	4.5 U	5 U	4 U	5.1 U	5.5 U
METHYLENE CHLORIDE	1.3 U	1.1 U	1.4 U	1.8 U	1.4 U	0.72 U	1 U	1.4 U
STYRENE	4.9 U	4.9 U	3.8 U	4.5 U	5 U	4 U	5.1 U	5.5 U
TETRACHLOROETHENE	4.9 U	4.9 U	3.8 U	4.5 U	18	4 U	5.1 U	5.5 U
TOLUENE	4.9 U	4.9 U	5.6	5.4	5 U	1.4 J	1.4 J	5.5 U
TOTAL XYLENES	4.9 U	4.9 U	2.2 J	4.5 U	5 U	4 U	5.1 U	5.5 U
TRANS-1,2-DICHLOROETHENE	4.9 U	4.9 U	3.8 U	4.5 U	5 U	4 U	5.1 U	5.5 U
TRANS-1,3-DICHLOROPROPENE	4.9 U	4.9 U	3.8 U	4.5 U	5 U	4 U	5.1 U	5.5 U
TRICHLOROETHENE	4.9 U	4.9 U	3.8 U	4.5 U	5 U	4 U	5.1 U	5.5 U
TRICHLOROFLUOROMETHANE	4.9 U	4.9 U	3.8 U	4.5 U	5 U	4 U	5.1 U	5.5 U
VINYL CHLORIDE	4.9 U	4.9 U	3.8 U	4.5 U	5 U	4 U	5.1 U	5.5 U

SUMMARY OF SUBSURFACE SOIL ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

SAMPLE ID	NTC21SB15-SO-0204	NTC21SB16-SO-0204	NTC21SB17-SO-0507	NTC21SB18-SO-0507	NTC21SB19-SO-0204	NTC21SB20-SO-0406	NTC21SB21-SO-0608	NTC21SB22-SO-0204
LOCATION ID	NTC21-SB-15	NTC21-SB-16	NTC21-SB-17	NTC21-SB-18	NTC21-SB-19	NTC21-SB-20	NTC21-SB-21	NTC21-SB-22
SAMPLE DATE	20090927	20090927	20090926	20090926	20090927	20090926	20090926	20090927
SAMPLE TIME	10:10:00	16:50:00	13:32:00	12:59:00	17:50:00	17:02:00	15:20:00	12:10:00
SAMPLE CODE	ORIG	NORMAL	NORMAL	ORIG	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	2	2	5	5	2	4	6	2
BOTTOM DEPTH	4	4	7	7	4	6	8	4
DEPTH UNIT	FT	FT	FT	FT	FT	FT	FT	FT
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
Semivolatile Organics (ug/kg)								
1,1-BIPHENYL	430 U	430 U	370 U	370 U	400 U	380 U	370 U	410 U
2,2'-OXYBIS(1-CHLOROPROPANE)	860 U	860 U	740 U	750 U	800 U	770 U	740 U	830 U
2,4,5-TRICHLOROPHENOL	430 U	430 U	370 U	370 U	400 U	380 U	370 U	410 U
2,4,6-TRICHLOROPHENOL	430 U	430 U	370 U	370 U	400 U	380 U	370 U	410 U
2,4-DICHLOROPHENOL	430 U	430 U	370 U	370 U	400 U	380 U	370 U	410 U
2,4-DIMETHYLPHENOL	860 U	860 UJ	740 UJ	750 UJ	800 U	770 UJ	740 UJ	830 U
2,4-DINITROPHENOL	4300 U	4300 UJ	3700 U	3700 U	4000 U	3800 U	3700 U	4100 U
2,4-DINITROTOLUENE	430 U	430 U	370 U	370 U	400 U	380 U	370 U	410 U
2,6-DINITROTOLUENE	430 U	430 U	370 U	370 U	400 U	380 U	370 U	410 U
2-CHLORONAPHTHALENE	430 U	430 U	370 U	370 U	400 U	380 U	370 U	410 U
2-CHLOROPHENOL	430 U	430 U	370 U	370 U	400 U	380 U	370 U	410 U
2-METHYLNAPHTHALENE	99	17	3.7 U	3.7 U	33	2.4 J	3.7 U	410
2-METHYLPHENOL	430 U	430 U	370 U	370 U	400 U	380 U	370 U	410 U
2-NITROANILINE	1700 U	1700 UJ	1500 UJ	1500 UJ	1600 U	1500 UJ	1500 UJ	1600 U
2-NITROPHENOL	430 U	430 U	370 U	370 U	400 U	380 U	370 U	410 U
3,3'-DICHLOROBENZIDINE	430 U	430 U	370 U	370 U	400 U	380 U	370 U	410 U
3-NITROANILINE	1700 U	1700 U	1500 U	1500 U	1600 U	1500 U	1500 U	1600 U
4,6-DINITRO-2-METHYLPHENOL	1700 U	1700 UJ	1500 U	1500 U	1600 U	1500 U	1500 U	1600 U
4-BROMOPHENYL PHENYL ETHER	430 U	430 U	370 U	370 U	400 U	380 U	370 U	410 U
4-CHLORO-3-METHYLPHENOL	430 U	430 U	370 U	370 U	400 U	380 U	370 U	410 U
4-CHLOROANILINE	430 U	430 U	370 U	370 U	400 U	380 U	370 U	410 U
4-CHLOROPHENYL PHENYL ETHER	430 U	430 U	370 U	370 U	400 U	380 U	370 U	410 U
4-METHYLPHENOL	430 U	430 U	370 U	370 U	400 U	380 U	370 U	410 U
4-NITROANILINE	1700 U	1700 U	1500 U	1500 U	1600 U	1500 U	1500 U	1600 U
4-NITROPHENOL	1700 U	1700 U	1500 UJ	1500 UJ	1600 U	1500 UJ	1500 UJ	1600 U
ACENAPHTHENE	4.3 U	4.3 U	3.7 U	3.7 U	12	3.8 U	3.7 U	62
ACENAPHTHYLENE	12	4.3 U	3.7 U	3.7 U	4 U	3.8 U	3.7 U	4.1 U
ACETOPHENONE	430 U	430 U	370 U	370 U	400 U	380 U	370 U	410 U
ANTHRACENE	4.3 U	4.3 U	3.7 U	3.7 U	4 U	2.9 J	3.7 U	4.1 U
ATRAZINE	430 U	430 U	370 UJ	370 UJ	400 U	380 UJ	370 UJ	410 U
BENZALDEHYDE	430 UR	430 UR	370 U	370 U	400 UR	380 U	370 U	410 UR
BENZO(A)ANTHRACENE	47 J	16	3.7 U	3.7 U	150	9.4	2.5 J	230
BENZO(A)PYRENE	4.3 UJ	4.3 U	3.7 U	3.7 U	4 U	12	3.7 U	480
BENZO(B)FLUORANTHENE	4.3 UJ	8.7	3.7 U	3.7 U	260	19	3.7 U	400
BENZO(G,H,I)PERYLENE	4.3 UJ	4.3 U	4.1	3.7 U	50	3.8 U	6.2	370
BENZO(K)FLUORANTHENE	4.3 UJ	7.4	3.7 U	3.7 U	250	8.5	3.7 U	350
BIS(2-CHLOROETHOXY)METHANE	430 U	430 U	370 U	370 U	400 U	380 U	370 U	410 U
BIS(2-CHLOROETHYL)ETHER	430 U	430 U	370 U	370 U	400 U	380 U	370 U	410 U
BIS(2-ETHYLHEXYL)PHTHALATE	430 U	430 U	370 U	370 U	54 J	380 U	370 U	110 J
BUTYL BENZYL PHTHALATE	430 U	430 U	370 U	370 U	400 U	380 U	370 U	410 UJ
CAPROLACTAM	430 U	430 U	370 U	370 U	400 U	380 U	370 U	410 U
CARBAZOLE	860 U	860 U	740 U	750 U	800 U	770 U	740 U	830 U
CHRYSENE	35	7.2	3.4 J	3.4 J	140	14	8.3	360
DI-N-BUTYL PHTHALATE	430 U	430 U	370 U	370 U	400 U	380 U	370 U	410 U
DI-N-OCTYL PHTHALATE	430 U	430 U	370 U	370 U	400 UJ	380 U	370 U	410 UJ
DIBENZO(A,H)ANTHRACENE	4.3 U	4.3 U	3.7 U	3.7 U	4 U	2.4 J	3.7 U	4.1 U
DIBENZOFURAN	55 J	430 U	370 U	370 U	34 J	380 U	370 U	120 J
DIETHYL PHTHALATE	430 U	430 U	370 U	370 U	400 U	380 U	370 U	410 U
DIMETHYL PHTHALATE	430 U	430 U	370 U	370 U	400 U	380 U	370 U	410 U
FLUORANTHENE	80	12	3.7 U	3.7 U	340	33	6.8	830
FLUORENE	4.3 U	4.3 U	3.7 U	3.7 U	4 U	2.5 J	3.7 U	4.1 U

SUMMARY OF SUBSURFACE SOIL ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

SAMPLE ID	NTC21SB15-SO-0204	NTC21SB16-SO-0204	NTC21SB17-SO-0507	NTC21SB18-SO-0507	NTC21SB19-SO-0204	NTC21SB20-SO-0406	NTC21SB21-SO-0608	NTC21SB22-SO-0204
LOCATION ID	NTC21-SB-15	NTC21-SB-16	NTC21-SB-17	NTC21-SB-18	NTC21-SB-19	NTC21-SB-20	NTC21-SB-21	NTC21-SB-22
SAMPLE DATE	20090927	20090927	20090926	20090926	20090927	20090926	20090926	20090927
SAMPLE TIME	10:10:00	16:50:00	13:32:00	12:59:00	17:50:00	17:02:00	15:20:00	12:10:00
SAMPLE CODE	ORIG	NORMAL	NORMAL	ORIG	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	2	2	5	5	2	4	6	2
BOTTOM DEPTH	4	4	7	7	4	6	8	4
DEPTH UNIT	FT	FT	FT	FT	FT	FT	FT	FT
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
Semivolatile Organics (ug/kg) (Continued)								
HEXACHLOROBENZENE	430 U	430 U	370 U	370 U	400 U	380 U	370 U	410 U
HEXACHLOROBUTADIENE	430 U	430 U	370 U	370 U	400 U	380 U	370 U	410 U
HEXACHLOROCYCLOPENTADIENE	430 U	430 U	370 U	370 U	400 U	380 U	370 U	410 U
HEXACHLOROETHANE	860 U	860 U	740 U	750 U	800 U	770 U	740 U	830 U
INDENO(1,2,3-CD)PYRENE	4.3 UJ	4.3 U	3.7 U	3.7 U	4 U	12	3.7 U	340
ISOPHORONE	430 U	430 U	370 U	370 U	400 U	380 U	370 U	410 U
N-NITROSO-DI-N-PROPYLAMINE	430 U	430 UJ	370 UJ	370 UJ	400 U	380 UJ	370 UJ	410 U
N-NITROSODIPHENYLAMINE	430 U	430 U	370 U	370 U	400 U	380 U	370 U	410 U
NAPHTHALENE	44	4.3 U	3.7 U	3.7 U	30	3.8 J	3.7 U	4600
NITROBENZENE	430 U	430 UJ	370 UJ	370 UJ	400 U	380 UJ	370 UJ	410 U
PENTACHLOROPHENOL	1700 U	1700 U	1500 U	1500 U	1600 U	1500 U	1500 U	1600 U
PHENANTHRENE	190	2.2 J	1.8 J	2.3 J	310	24	4.2	740
PHENOL	430 U	430 U	370 U	370 U	400 U	380 U	370 U	410 U
PYRENE	70	12	3.7 U	3.7 U	260	26	6.9	700
BAP EQUIVALENT	4.735	2.5512	0.0034	0.0034	43.64	18.539	0.2583	580.86
BAP EQUIVALENT FULLND	14.238	11.5812	8.5504	8.5504	52.04	18.539	8.4353	584.96
TOTAL PAHS	577	82.5	9.3	5.7	1835	171.9	34.9	9872
TOTAL PAHS FULLND	615.7	121.2	61.1	61.2	1859	183.3	75.6	9888.4
Pesticides/PCBS (ug/kg)								
4,4'-DDD	0.87 U	0.87 U	0.75 U	0.75 U	0.81 U	0.77 U	0.75 U	330
4,4'-DDE	0.87 U	0.87 U	0.75 UJ	0.75 UJ	0.81 U	0.77 UJ	0.75 UJ	150
4,4'-DDT	0.87 UJ	0.87 UJ	0.75 UJ	0.75 UJ	0.81 UJ	0.77 UJ	0.75 UJ	62 J
ALDRIN	0.43 U	0.43 U	0.37 UJ	0.37 UJ	0.4 U	0.38 UJ	0.37 UJ	0.41 UJ
ALPHA-BHC	0.43 U	0.43 U	0.37 U	0.37 U	0.31 J	0.38 U	0.37 U	0.27 J
ALPHA-CHLORDANE	0.43 U	0.43 U	0.37 UJ	0.37 UJ	0.4 U	0.38 UJ	0.37 UJ	26 J
AROCLOR-1016	22 U	22 U	19 U	19 U	20.5 U	19.6 U	19 U	21.1 U
AROCLOR-1221	22 U	22 U	19 U	19 U	20.5 U	19.6 U	19 U	21.1 U
AROCLOR-1232	22 U	22 U	19 U	19 U	20.5 U	19.6 U	19 U	21.1 U
AROCLOR-1242	22 U	22 U	19 U	19 U	20.5 U	19.6 U	19 U	21.1 U
AROCLOR-1248	22 U	22 U	19 U	19 U	20.5 U	19.6 U	19 U	21.1 U
AROCLOR-1254	22 U	22 U	19 U	19 U	20.5 U	19.6 U	19 U	21.1 U
AROCLOR-1260	22 U	22 U	19 UJ	19 UJ	20.5 U	19.6 UJ	19 UJ	270 J
BETA-BHC	0.43 U	0.43 U	0.37 UJ	0.37 UJ	0.4 U	0.38 UJ	0.37 UJ	0.41 U
DELTA-BHC	0.43 U	0.43 U	0.37 UJ	0.37 UJ	0.25 J	0.38 UJ	0.37 UJ	0.41 U
DIELDRIN	0.87 U	0.87 U	0.75 UJ	0.75 UJ	0.81 U	0.77 UJ	0.75 UJ	3.2 J
ENDOSULFAN I	0.43 U	0.43 U	0.37 UJ	0.37 UJ	0.29 J	0.38 UJ	0.37 UJ	0.41 UJ
ENDOSULFAN II	0.87 U	0.87 U	0.75 UJ	0.75 UJ	0.81 U	0.77 UJ	0.75 UJ	0.65 J
ENDOSULFAN SULFATE	0.87 U	0.87 U	0.75 UJ	0.75 UJ	0.81 U	0.77 UJ	0.75 UJ	5.8 J
ENDRIN	0.87 UJ	0.87 UJ	0.75 UJ	0.75 UJ	0.81 UJ	0.77 UJ	0.75 UJ	0.83 UJ
ENDRIN ALDEHYDE	0.87 UJ	0.87 UJ	0.75 U	0.75 U	0.81 UJ	0.77 UJ	0.75 UJ	0.83 UJ
ENDRIN KETONE	0.87 U	0.87 U	0.75 UJ	0.75 UJ	0.81 U	0.77 UJ	0.75 UJ	0.83 UJ
GAMMA-BHC (LINDANE)	0.43 U	0.43 U	0.37 U	0.37 U	0.4 U	0.38 U	0.37 U	0.41 U
GAMMA-CHLORDANE	0.43 U	0.43 U	0.37 UJ	0.37 UJ	0.47 J	0.38 UJ	0.37 UJ	46 J
HEPTACHLOR	0.43 U	0.43 U	0.37 UJ	0.37 UJ	0.4 U	0.38 UJ	0.37 UJ	0.41 UJ
HEPTACHLOR EPOXIDE	0.43 U	0.43 U	0.37 UJ	0.37 UJ	0.26 J	0.38 UJ	0.37 UJ	6.9 J
METHOXYCHLOR	0.43 UJ	0.43 UJ	0.37 UJ	0.37 UJ	0.84 J	0.38 UJ	0.37 UJ	0.41 UJ
TOXAPHENE	43 U	43 U	37 U	37 U	40 U	38 U	37 U	41 U
Herbicides (ug/kg)								
2,4,5-T	6.48 U	6.46 U	5.58 U	5.6 U	6.02 U	5.77 U	5.58 U	6.22 U
2,4,5-TP (SILVEX)	6.48 U	6.46 U	5.58 U	5.6 U	6.02 U	5.77 U	5.58 U	6.22 U
2,4-D	64.8 U	64.6 U	55.8 U	56 U	60.2 U	57.7 U	55.8 U	62.2 U

SUMMARY OF SUBSURFACE SOIL ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

SAMPLE ID	NTC21SB15-SO-0204	NTC21SB16-SO-0204	NTC21SB17-SO-0507	NTC21SB18-SO-0507	NTC21SB19-SO-0204	NTC21SB20-SO-0406	NTC21SB21-SO-0608	NTC21SB22-SO-0204
LOCATION ID	NTC21-SB-15	NTC21-SB-16	NTC21-SB-17	NTC21-SB-18	NTC21-SB-19	NTC21-SB-20	NTC21-SB-21	NTC21-SB-22
SAMPLE DATE	20090927	20090927	20090926	20090926	20090927	20090926	20090926	20090927
SAMPLE TIME	10:10:00	16:50:00	13:32:00	12:59:00	17:50:00	17:02:00	15:20:00	12:10:00
SAMPLE CODE	ORIG	NORMAL	NORMAL	ORIG	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	2	2	5	5	2	4	6	2
BOTTOM DEPTH	4	4	7	7	4	6	8	4
DEPTH UNIT	FT	FT	FT	FT	FT	FT	FT	FT
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
Herbicides (ug/kg) (Continued)								
2,4-DB	64.8 U	64.6 U	55.8 U	56 U	60.2 U	57.7 U	55.8 U	62.2 U
DALAPON	162 UJ	161 UJ	140 U	140 U	150 UJ	144 U	139 U	155 UJ
DICAMBA	6.48 U	29.2 J	5.58 U	5.6 U	6.02 U	5.77 U	5.58 U	6.22 U
DICHLOROPROP	64.8 U	64.6 U	55.8 U	56 U	60.2 U	57.7 U	55.8 U	62.2 U
DINOSEB	32.4 U	32.3 U	27.9 UJ	28 UJ	30.1 U	28.9 UJ	27.9 UJ	31.1 U
MCPA	6480 U	6460 U	5580 U	5600 U	6020 U	5770 U	5580 U	6220 U
MCPP	6480 U	6460 U	5580 U	5600 U	6020 U	5770 U	5580 U	6220 U
Dioxins/Furans (ng/kg)								
1,2,3,4,6,7,8,9-OCDD	---	---	---	---	---	---	---	---
1,2,3,4,6,7,8,9-OCDF	---	---	---	---	---	---	---	---
1,2,3,4,6,7,8-HPCDD	---	---	---	---	---	---	---	---
1,2,3,4,6,7,8-HPCDF	---	---	---	---	---	---	---	---
1,2,3,4,7,8,9-HPCDF	---	---	---	---	---	---	---	---
1,2,3,4,7,8-HXCDD	---	---	---	---	---	---	---	---
1,2,3,4,7,8-HXCDF	---	---	---	---	---	---	---	---
1,2,3,6,7,8-HXCDD	---	---	---	---	---	---	---	---
1,2,3,6,7,8-HXCDF	---	---	---	---	---	---	---	---
1,2,3,7,8,9-HXCDD	---	---	---	---	---	---	---	---
1,2,3,7,8,9-HXCDF	---	---	---	---	---	---	---	---
1,2,3,7,8-PECDD	---	---	---	---	---	---	---	---
1,2,3,7,8-PECDF	---	---	---	---	---	---	---	---
2,3,4,6,7,8-HXCDF	---	---	---	---	---	---	---	---
2,3,4,7,8-PECDF	---	---	---	---	---	---	---	---
2,3,7,8-TCDD	---	---	---	---	---	---	---	---
2,3,7,8-TCDF	---	---	---	---	---	---	---	---
TOTAL HPCDD	---	---	---	---	---	---	---	---
TOTAL HPCDF	---	---	---	---	---	---	---	---
TOTAL HXCDD	---	---	---	---	---	---	---	---
TOTAL HXCDF	---	---	---	---	---	---	---	---
TOTAL PECDD	---	---	---	---	---	---	---	---
TOTAL PECDF	---	---	---	---	---	---	---	---
TOTAL TCDD	---	---	---	---	---	---	---	---
TOTAL TCDF	---	---	---	---	---	---	---	---
TEQ	---	---	---	---	---	---	---	---
TEQ FULLND	---	---	---	---	---	---	---	---
Inorganics (mg/kg)								
ALUMINUM	24300	18200	3720	4230	14500	8380	3770	5240
ANTIMONY	0.671 UJ	0.595 U	0.534 U	0.569 U	0.602 UJ	0.577 U	0.581 U	1.64 UJ
ARSENIC	85 J	9.1 J	12.5	8.65 J	9.59 J	8.39	5.7	5.69 J
BARIUM	157 J	99.5 J	23.4 J	18.6 J	105 J	59.5 J	12.4 J	56.2 J
BERYLLIUM	3.77 J	1.27 J	0.244	0.266	0.818 J	0.479	0.225	1.08 J
CADMIUM	9.62	0.569	0.175	0.153	0.3	0.338	0.124	0.809
CALCIUM	63600 J	4530 J	68400	79300	4280 J	55900	72300	26700 J
CHROMIUM	16.7 J	26.8 J	7.9	8.66	24 J	13.5	8.23	13 J
COBALT	22 J	10.6	5.71	7.93	11.3	9.18	4.85	3.38
COPPER	110 J	39.8 J	29.3	22.4	25.3 J	27.3	16	57.2 J
IRON	65800 J	34800 J	29400 J	21100 J	33200 J	21200 J	14300 J	31300 J
LEAD	19.9 J	21 J	19.6	14.6	16.6 J	28.6	8.86	102 J
MAGNESIUM	3860 J	4640	42600	48800	4910	36600	43300	9310
MANGANESE	1230 J	863 J	438	887	1190 J	803	568	263 J
MERCURY	0.0206	0.0711 J	0.0156	0.0151 U	0.0627 J	0.0499	0.0138	0.251 J

APPENDIX F-2

SUMMARY OF SUBSURFACE SOIL ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

SAMPLE ID	NTC21SB15-SO-0204	NTC21SB16-SO-0204	NTC21SB17-SO-0507	NTC21SB18-SO-0507	NTC21SB19-SO-0204	NTC21SB20-SO-0406	NTC21SB21-SO-0608	NTC21SB22-SO-0204
LOCATION ID	NTC21-SB-15	NTC21-SB-16	NTC21-SB-17	NTC21-SB-18	NTC21-SB-19	NTC21-SB-20	NTC21-SB-21	NTC21-SB-22
SAMPLE DATE	20090927	20090927	20090926	20090926	20090927	20090926	20090926	20090927
SAMPLE TIME	10:10:00	16:50:00	13:32:00	12:59:00	17:50:00	17:02:00	15:20:00	12:10:00
SAMPLE CODE	ORIG	NORMAL	NORMAL	ORIG	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	SO	SO	SO	SO	SO	SO	SO	SO
TOP DEPTH	2	2	5	5	2	4	6	2
BOTTOM DEPTH	4	4	7	7	4	6	8	4
DEPTH UNIT	FT	FT	FT	FT	FT	FT	FT	FT
SUBMATRIX	SB	SB	SB	SB	SB	SB	SB	SB
Inorganics (mg/kg) (Continued)								
NICKEL	44.4 J	39.2 J	16.6	18.6	31.9 J	21.5	13.9	17.9 J
POTASSIUM	1180	1930	864	936	1660	1010	834	600
SELENIUM	1.31 J	0.357 UJ	0.801 U	1.71 U	0.902 UJ	0.866 U	1.16 U	0.982 UJ
SILVER	0.134 U	0.119 U	0.107 U	0.114 U	0.12 U	0.115 U	0.116 U	0.327 U
SODIUM	1310	3370	984	347	1210	1470	241	1300
THALLIUM	1.07 UJ	0.595 UJ	0.32 U	0.569 U	0.842 UJ	0.577 U	0.349 U	0.982 UJ
VANADIUM	21.4	26.9	11.5	12.9	25	19.5	11.2	15.8
ZINC	263 J	186 J	56.8	68	80.4 J	90.1	49.7	119 J
Miscellaneous Parameters (%)								
PERCENT CLAY	---	---	---	---	---	---	---	---
PERCENT GRAVEL	---	---	---	---	---	---	---	---
PERCENT SAND	---	---	---	---	---	---	---	---
PERCENT SILT	---	---	---	---	---	---	---	---
SIEVE 1"	---	---	---	---	---	---	---	---
SIEVE 1/2"	---	---	---	---	---	---	---	---
SIEVE 3/4"	---	---	---	---	---	---	---	---
SIEVE NO. 004	---	---	---	---	---	---	---	---
SIEVE NO. 010	---	---	---	---	---	---	---	---
SIEVE NO. 040	---	---	---	---	---	---	---	---
SIEVE NO. 100	---	---	---	---	---	---	---	---
SIEVE NO. 200	---	---	---	---	---	---	---	---

F-3 GROUNDWATER ANALYTICAL RESULTS

APPENDIX F-3

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
GREAT LAKES NAVAL STATION
GREAT LAKES, ILLINOIS

SAMPLE ID	**NTC21MW0101**	**NTC21MW0201**	**NTC21MW0301**	**NTC21MW0401**	**NTC21MW0501**	**NTC21MW0601**
LOCATION ID	NTC21MW01	NTC21MW02	NTC21MW03	NTC21MW04	NTC21MW05	NTC21MW06
SAMPLE DATE	20091117	20091116	20091116	20091116	20091115	20091117
SAMPLE TIME	11:45:00	12:46:00	10:05:00	13:10:00	16:26:00	14:05:00
SAMPLE CODE	NORMAL	ORIG	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	GW	GW	GW	GW	GW	GW
Volatile Organics (ug/L)						
1,1,1-TRICHLOROETHANE	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
1,1,2,2-TETRACHLOROETHANE	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,1,2-TRICHLOROETHANE	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,1,2-TRICHLOROTRIFLUOROETHANE	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
1,1-DICHLOROETHANE	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
1,1-DICHLOROETHENE	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
1,2,4-TRICHLOROBENZENE	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,2-DIBROMO-3-CHLOROPROPANE	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
1,2-DIBROMOETHANE	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,2-DICHLOROBENZENE	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,2-DICHLOROETHANE	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,2-DICHLOROPROPANE	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
1,3-DICHLOROBENZENE	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
1,4-DICHLOROBENZENE	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
2-BUTANONE	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ	1 UJ
2-HEXANONE	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
4-METHYL-2-PENTANONE	0.29 UJ	0.29 UJ	0.29 UJ	0.29 UJ	0.29 UJ	0.29 UJ
ACETONE	3.6 J	4.6 J	0.84 UJ	2.2 J	3.4 J	1.8 J
BENZENE	0.96 J	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
BROMODICHLOROMETHANE	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
BROMOFORM	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
BROMOMETHANE	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U
CARBON DISULFIDE	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
CARBON TETRACHLORIDE	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
CHLOROBENZENE	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
CHLORODIBROMOMETHANE	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
CHLOROETHANE	0.18 U	0.18 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.18 U
CHLOROFORM	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
CHLOROMETHANE	0.29 UJ	0.29 UJ	0.29 UJ	0.29 UJ	0.29 UJ	0.29 UJ
CIS-1,2-DICHLOROETHENE	0.13 U	0.13 U	0.13 U	0.13 U	0.79 J	0.13 U
CIS-1,3-DICHLOROPROPENE	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
CYCLOHEXANE	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
DICHLORODIFLUOROMETHANE	0.22 U	0.22 UJ	0.22 UJ	0.22 UJ	0.22 UJ	0.22 U
ETHYLBENZENE	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
ISOPROPYLBENZENE	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
METHYL ACETATE	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U
METHYL CYCLOHEXANE	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
METHYL TERT-BUTYL ETHER	1.6	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
METHYLENE CHLORIDE	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U	0.14 U
STYRENE	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
TETRACHLOROETHENE	0.85 J	0.15 U	0.15 U	0.15 U	0.15 U	0.15 U
TOLUENE	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
TOTAL XYLENES	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U
TRANS-1,2-DICHLOROETHENE	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
TRANS-1,3-DICHLOROPROPENE	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
TRICHLOROETHENE	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U	0.13 U
TRICHLOROFLUOROMETHANE	2.5	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
VINYL CHLORIDE	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U
Semivolatile Organics (ug/L)						
1,1-BIPHENYL	0.38 U	0.36 U	0.38 U	0.38 U	0.36 U	0.38 U
2,2'-OXYBIS(1-CHLOROPROPANE)	0.83 UJ	0.79 U	0.82 U	0.83 U	0.79 UJ	0.83 UJ
2,4,5-TRICHLOROPHENOL	0.49 U	0.46 U	0.48 U	0.49 U	0.46 U	0.49 U
2,4,6-TRICHLOROPHENOL	0.72 U	0.68 U	0.7 U	0.72 U	0.68 U	0.72 U
2,4-DICHLOROPHENOL	0.43 U	0.41 U	0.42 U	0.43 U	0.41 U	0.43 U
2,4-DIMETHYLPHENOL	0.7 U	0.66 U	0.68 U	0.7 U	0.66 U	0.7 U
2,4-DINITROPHENOL	0.83 UJ	0.79 U	0.82 U	0.83 U	0.79 U	0.83 UJ
2,4-DINITROTOLUENE	0.48 U	0.45 U	0.47 U	0.48 U	0.45 U	0.48 U
2,6-DINITROTOLUENE	0.65 U	0.61 U	0.63 U	0.65 U	0.61 U	0.65 U
2-CHLORONAPHTHALENE	0.57 U	0.54 U	0.56 U	0.57 U	0.54 U	0.57 U
2-CHLOROPHENOL	0.58 U	0.55 U	0.57 U	0.58 U	0.55 U	0.58 U
2-METHYLNAPHTHALENE	0.03 U	0.01 U	0.01 U	0.02 U	0.02 U	0.02 U
2-METHYLPHENOL	0.81 U	0.77 U	0.8 U	0.81 U	0.77 U	0.81 U
2-NITROANILINE	1.2 U	1.1 U	1.1 U	1.2 U	1.1 U	1.2 U
2-NITROPHENOL	0.72 U	0.68 U	0.71 U	0.72 U	0.68 U	0.72 U
3,3'-DICHLOROBENZIDINE	0.87 UJ	0.82 UJ	0.86 UJ	0.87 UJ	0.82 UJ	0.87 UJ
3-NITROANILINE	1 U	0.97 U	1 U	1 U	0.97 U	1 U
4,6-DINITRO-2-METHYLPHENOL	0.72 U	0.68 U	0.71 U	0.72 U	0.68 U	0.72 U
4-BROMOPHENYL PHENYL ETHER	0.56 U	0.53 U	0.55 U	0.56 U	0.53 U	0.56 U
4-CHLORO-3-METHYLPHENOL	0.57 U	0.54 U	0.56 U	0.57 U	0.54 U	0.57 U
4-CHLOROANILINE	0.93 U	0.88 U	0.91 U	0.93 U	0.88 U	0.93 U
4-CHLOROPHENYL PHENYL ETHER	0.87 U	0.82 U	0.86 U	0.87 U	0.82 U	0.87 U
4-METHYLPHENOL	0.75 UJ	0.71 U	0.74 U	0.75 U	0.71 U	0.75 UJ

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
GREAT LAKES NAVAL STATION
GREAT LAKES, ILLINOIS

SAMPLE ID	**NTC21MW0101**	**NTC21MW0201**	**NTC21MW0301**	**NTC21MW0401**	**NTC21MW0501**	**NTC21MW0601**
LOCATION ID	NTC21MW01	NTC21MW02	NTC21MW03	NTC21MW04	NTC21MW05	NTC21MW06
SAMPLE DATE	20091117	20091116	20091116	20091116	20091115	20091117
SAMPLE TIME	11:45:00	12:46:00	10:05:00	13:10:00	16:26:00	14:05:00
SAMPLE CODE	NORMAL	ORIG	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	GW	GW	GW	GW	GW	GW
Semivolatile Organics (ug/L)						
4-NITROANILINE	2 U	1.9 U	2 U	2 U	1.9 U	2 U
4-NITROPHENOL	0.81 UJ	0.77 UJ	0.8 UJ	0.81 UJ	0.77 UJ	0.81 UJ
ACENAPHTHENE	0.1 U	0.01 U	0.02 J	0.02 U	0.02 J	0.02 U
ACENAPHTHYLENE	0.02 U	0.01 U	0.01 U	0.02 U	0.01 U	0.02 U
ACETOPHENONE	0.74 UJ	0.69 UJ	0.72 UJ	0.74 UJ	0.69 UJ	0.74 UJ
ANTHRACENE	0.02 U	0.01 U	0.04 J	0.02 U	0.03 J	0.03 U
ATRAZINE	0.68 U	0.64 UJ	0.66 UJ	0.68 UJ	0.64 UJ	0.68 U
BENZALDEHYDE	0.56 UJ	0.53 U	0.55 U	0.56 U	0.53 U	0.56 UJ
BENZO(A)ANTHRACENE	0.02 U	0.01 U	0.05 J	0.02 U	0.04 J	0.05 U
BENZO(A)PYRENE	0.02 U	0.01 U	0.03 J	0.02 U	0.03 J	0.03 U
BENZO(B)FLUORANTHENE	0.02 U	0.01 U	0.03 J	0.02 U	0.03 J	0.04 U
BENZO(G,H,I)PERYLENE	0.02 U	0.01 U	0.01 U	0.02 U	0.01 U	0.02 U
BENZO(K)FLUORANTHENE	0.02 U	0.01 U	0.03 J	0.02 U	0.03 J	0.04 U
BIS(2-CHLOROETHOXY)METHANE	0.51 U	0.48 U	0.5 U	0.51 U	0.48 U	0.51 U
BIS(2-CHLOROETHYL)ETHER	0.44 U	0.42 U	0.43 U	0.44 U	0.42 U	0.44 U
BIS(2-ETHYLHEXYL)PHTHALATE	1.2 U	1.2 U	1.8 J	1.2 U	1.2 U	1.2 U
BUTYL BENZYL PHTHALATE	0.8 U	0.76 U	0.79 U	0.8 U	0.76 U	0.8 U
CAPROLACTAM	1.2 U	0.51 U	0.47 U	0.46 U	0.8 U	1.2 U
CARBAZOLE	0.68 U	0.64 U	0.66 U	0.68 U	0.64 U	0.68 U
CHRYSENE	0.02 U	0.01 U	0.05 J	0.02 U	0.04 J	0.06 U
DI-N-BUTYL PHTHALATE	1.3 U	1.2 U	1.2 U	1.3 U	1.2 U	1.3 U
DI-N-OCTYL PHTHALATE	0.32 U	0.3 U	0.32 U	0.32 U	0.3 U	0.32 U
DIBENZO(A,H)ANTHRACENE	0.02 U	0.01 U	0.01 U	0.02 U	0.01 U	0.02 U
DIBENZOFURAN	0.64 U	0.6 U	0.62 U	0.64 U	0.6 U	0.64 U
DIETHYL PHTHALATE	1 U	0.94 U	0.98 U	1 U	0.94 U	1 U
DIMETHYL PHTHALATE	0.72 U	0.68 U	0.71 U	0.72 U	0.68 U	0.72 U
FLUORANTHENE	0.13 U	0.01 U	0.04 J	0.03 J	0.06	0.05 U
FLUORENE	0.04 U	0.01 U	0.03 J	0.02 U	0.02 J	0.02 U
HEXACHLOROBENZENE	0.46 U	0.44 U	0.45 U	0.46 U	0.44 U	0.46 U
HEXACHLOROBUTADIENE	0.91 U	0.86 U	0.89 U	0.91 U	0.86 U	0.91 U
HEXACHLOROCYCLOPENTADIENE	0.87 U	0.82 U	0.86 U	0.87 U	0.82 U	0.87 U
HEXACHLOROETHANE	0.45 U	0.42 U	0.44 U	0.45 U	0.42 U	0.45 U
INDENO(1,2,3-CD)PYRENE	0.02 U	0.01 U	0.01 U	0.02 U	0.01 U	0.02 U
ISOPHORONE	0.54 U	0.51 U	0.53 U	0.54 U	0.51 U	0.54 U
N-NITROSO-DI-N-PROPYLAMINE	0.88 UJ	0.83 U	0.86 U	0.88 U	0.83 UJ	0.88 UJ
N-NITROSODIPHENYLAMINE	0.45 U	0.42 U	0.44 U	0.45 U	0.42 U	0.45 U
NAPHTHALENE	0.11 U	0.01 U	0.01 U	0.02 U	0.03 U	0.02 U
NITROBENZENE	0.61 U	0.57 U	0.6 U	0.61 U	0.57 U	0.61 U
PENTACHLOROPHENOL	7.8 J	0.92 U	0.96 U	0.98 U	0.92 U	0.98 U
PHENANTHRENE	0.16 U	0.02 U	0.04 U	0.02 U	0.05 U	0.04 U
PHENOL	0.45 U	0.42 U	0.44 U	0.45 U	0.42 U	0.45 U
PYRENE	0.12 U	0.01 U	0.05 J	0.03 J	0.05	0.06 U
BAP EQUIVALENT	0 U	0 U	0.03835	0 U	0.03734	0 U
BAP EQUIVALENT FULLND	0.04622	0.02311	0.04935	0.04622	0.04834	0.06146
TOTAL PAHS	0	0	0.37	0.06	0.35	0
TOTAL PAHS FULLND	0.89	0.18	0.47	0.36	0.49	0.56
Pesticides/PCBs (ug/L)						
4,4'-DDD	0.0049 UJ	0.00481 UJ	0.0049 UJ	0.0049 UJ	0.00463 UJ	0.0049 UJ
4,4'-DDE	0.0049 UJ	0.00481 UJ	0.0049 UJ	0.0049 UJ	0.00463 UJ	0.0049 UJ
4,4'-DDT	0.0049 UJ	0.00481 UJ	0.0049 UJ	0.0049 UJ	0.00463 UJ	0.0049 UJ
ALDRIN	0.00324 U	0.00317 U	0.00324 U	0.00324 U	0.00306 U	0.00324 U
ALPHA-BHC	0.00324 U	0.00317 U	0.00324 U	0.00324 U	0.00306 U	0.00324 U
ALPHA-CHLORDANE	0.00324 U	0.00317 U	0.00324 U	0.00324 U	0.00385 J	0.00324 U
AROCLOR-1016	0.11 UJ	0.11 U	0.11 U	0.11 U	0.11 U	0.11 UJ
AROCLOR-1221	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
AROCLOR-1232	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
AROCLOR-1242	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
AROCLOR-1248	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
AROCLOR-1254	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U
AROCLOR-1260	0.11 UJ	0.11 U	0.11 U	0.11 U	0.11 U	0.11 UJ
BETA-BHC	0.00324 U	0.00317 U	0.00324 U	0.00324 U	0.00306 U	0.00324 U
DELTA-BHC	0.00324 U	0.00317 U	0.00324 U	0.00324 U	0.00801 J	0.02
DIELDRIN	0.0049 U	0.00481 U	0.0049 U	0.0049 U	0.00463 U	0.0049 U
ENDOSULFAN I	0.00324 U	0.00317 UJ	0.00324 UJ	0.00324 UJ	0.00306 UJ	0.00324 U
ENDOSULFAN II	0.0049 U	0.00481 U	0.0049 U	0.0049 U	0.00463 U	0.0049 U
ENDOSULFAN SULFATE	0.0049 U	0.00481 U	0.0049 U	0.0049 U	0.00463 U	0.0049 U
ENDRIN	0.0049 UJ	0.00481 U	0.0049 U	0.0049 U	0.00463 U	0.0049 UJ
ENDRIN ALDEHYDE	0.0049 UJ	0.00481 UJ	0.0049 UJ	0.0049 UJ	0.00463 UJ	0.0049 UJ
ENDRIN KETONE	0.0049 U	0.00481 U	0.0049 U	0.0049 U	0.00463 U	0.0049 U
GAMMA-BHC (LINDANE)	0.00324 U	0.00317 U	0.00324 U	0.00324 U	0.00306 U	0.00324 U
GAMMA-CHLORDANE	0.00324 U	0.00317 U	0.00324 U	0.00324 U	0.00311 J	0.00324 U
HEPTACHLOR	0.00324 U	0.00317 U	0.00324 U	0.00324 U	0.00306 U	0.00324 U

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
GREAT LAKES NAVAL STATION
GREAT LAKES, ILLINOIS

SAMPLE ID	**NTC21MW0101**	**NTC21MW0201**	**NTC21MW0301**	**NTC21MW0401**	**NTC21MW0501**	**NTC21MW0601**
LOCATION ID	NTC21MW01	NTC21MW02	NTC21MW03	NTC21MW04	NTC21MW05	NTC21MW06
SAMPLE DATE	20091117	20091116	20091116	20091116	20091115	20091117
SAMPLE TIME	11:45:00	12:46:00	10:05:00	13:10:00	16:26:00	14:05:00
SAMPLE CODE	NORMAL	ORIG	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	GW	GW	GW	GW	GW	GW
Pesticides/PCBs (ug/L) (Continued)						
HEPTACHLOR EPOXIDE	0.00324 U	0.00317 U	0.00324 U	0.00324 U	0.00306 U	0.00324 U
METHOXYCHLOR	0.00324 UJ	0.00317 UJ	0.00324 UJ	0.00324 UJ	0.00306 UJ	0.00324 UJ
TOXAPHENE	0.32 U	0.31 U	0.32 U	0.32 U	0.3 U	0.32 U
Herbicides (ug/L)						
2,4,5-T	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
2,4,5-TP (SILVEX)	0.03 J	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
2,4-D	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
2,4-DB	0.62 J	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
DALAPON	0.75 J	0.61 U	0.61 U	0.61 U	0.61 U	0.61 U
DICAMBA	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
DICHLOROPROP	0.24 U	0.5 J	0.34 J	0.24 U	0.78 J	0.24 U
DINOSEB	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U	0.12 U
MCPA	24 U	24.5 U	24.5 U	24.5 U	24.5 U	24.5 U
MCPP	24 U	24.5 U	24.5 U	24.5 U	24.5 U	24.5 U
Dioxins/Furans (pg/L)						
1,2,3,4,6,7,8,9-OCDD	---	---	---	---	10.7 U	---
1,2,3,4,6,7,8,9-OCDF	---	---	---	---	10.7 U	---
1,2,3,4,6,7,8-HPCDD	---	---	---	---	5.34 U	---
1,2,3,4,6,7,8-HPCDF	---	---	---	---	5.34 U	---
1,2,3,4,7,8,9-HPCDF	---	---	---	---	5.34 U	---
1,2,3,4,7,8-HXCDD	---	---	---	---	5.34 U	---
1,2,3,4,7,8-HXCDF	---	---	---	---	5.34 U	---
1,2,3,6,7,8-HXCDD	---	---	---	---	5.34 U	---
1,2,3,6,7,8-HXCDF	---	---	---	---	5.34 U	---
1,2,3,7,8,9-HXCDD	---	---	---	---	5.34 U	---
1,2,3,7,8,9-HXCDF	---	---	---	---	5.34 U	---
1,2,3,7,8-PECDD	---	---	---	---	5.34 U	---
1,2,3,7,8-PECDF	---	---	---	---	5.34 U	---
2,3,4,6,7,8-HXCDF	---	---	---	---	5.34 U	---
2,3,4,7,8-PECDF	---	---	---	---	5.34 U	---
2,3,7,8-TCDD	---	---	---	---	1.23 U	---
2,3,7,8-TCDF	---	---	---	---	1.07 U	---
TOTAL HPCDD	---	---	---	---	5.34 U	---
TOTAL HPCDF	---	---	---	---	5.34 U	---
TOTAL HXCDD	---	---	---	---	5.34 U	---
TOTAL HXCDF	---	---	---	---	5.34 U	---
TOTAL PECDD	---	---	---	---	5.34 U	---
TOTAL PECDF	---	---	---	---	5.34 U	---
TOTAL TCDD	---	---	---	---	1.23 U	---
TOTAL TCDF	---	---	---	---	1.07 U	---
TEQ	---	---	---	---	0 U	---
TEQ FULLND	---	---	---	---	12.34382	---
Inorganics (ug/L)						
ALUMINUM	252	668 J	303	122	145	25 U
ANTIMONY	1.25 U	1.25 U	1.25 U	1.25 U	1.25 U	1.25 U
ARSENIC	1.88 J	7.26 J	0.88 J	1.6	2.39	0.75 U
BARIUM	123	34.5	33.1	32.3	422	118
BERYLLIUM	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
CADMIUM	0.79	0.86	1.34	0.69	3.45	0.92
CALCIUM	96600	671000	504000	121000	374000	142000
CHROMIUM	4.13	0.75 U	0.5 U	0.5 U	2.5 U	0.5 U
COBALT	1.25 U	15.3	3.55	1.25 U	4.65	1.25 U
COPPER	4.25 J	1.25 U	1.25 U	1.25 U	1.25 U	1.25 U
IRON	22.3	34000	2610	752	173	38.3
LEAD	1.88 U	9.38 UJ	3.75 U	0.75 U	1.88 U	0.83
MAGNESIUM	608	97600	20500	54000	125000	49400
MANGANESE	0.89	3040	2150	168	5400	61.3
MERCURY	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U	0.08 U
NICKEL	0.75	11.3	0.89	1.52	1.84	0.75 U
POTASSIUM	40200 J	13100 J	11100 J	3440	11600	2980
SELENIUM	1.63	6.25 U	7.5 U	1 U	6.25 U	0.75 U
SILVER	0.25 U	0.47 J	0.25 U	0.25 U	1.3	0.25 U
SODIUM	698000	772000	667000	55700	1040000	331000
THALLIUM	0.75 U	2 U	1.5 U	0.75 U	3.75 U	0.75 U
VANADIUM	4.36	1.25 U	1.25 U	1.25 U	1.25 U	1.25 U
ZINC	1.25 U	31.2 U	12.5 U	1.5	6.25 U	2.83
Filtered Inorganics (ug/L)						
ALUMINUM	---	---	---	12.5 U	---	---
ANTIMONY	---	---	---	1.25 U	---	---
ARSENIC	---	---	---	1.16	---	---
BARIUM	---	---	---	32.4	---	---
BERYLLIUM	---	---	---	0.25 U	---	---

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
SITE 21 - BUILDINGS 1517/1506 AREA
GREAT LAKES NAVAL STATION
GREAT LAKES, ILLINOIS

SAMPLE ID	**NTC21MW0101**	**NTC21MW0201**	**NTC21MW0301**	**NTC21MW0401**	**NTC21MW0501**	**NTC21MW0601**
LOCATION ID	NTC21MW01	NTC21MW02	NTC21MW03	NTC21MW04	NTC21MW05	NTC21MW06
SAMPLE DATE	20091117	20091116	20091116	20091116	20091115	20091117
SAMPLE TIME	11:45:00	12:46:00	10:05:00	13:10:00	16:26:00	14:05:00
SAMPLE CODE	NORMAL	ORIG	NORMAL	NORMAL	NORMAL	NORMAL
MATRIX	GW	GW	GW	GW	GW	GW
Filtered Inorganics (ug/L) (Continued)						
CADMIUM	---	---	---	0.68	---	---
CALCIUM	---	---	---	122000	---	---
CHROMIUM	---	---	---	0.5 U	---	---
COBALT	---	---	---	1.25 U	---	---
COPPER	---	---	---	1.25 U	---	---
IRON	---	---	---	478	---	---
LEAD	---	---	---	1.88 U	---	---
MAGNESIUM	---	---	---	54200	---	---
MANGANESE	---	---	---	161	---	---
MERCURY	---	---	---	0.08 U	---	---
NICKEL	---	---	---	1.7	---	---
POTASSIUM	---	---	---	3360	---	---
SELENIUM	---	---	---	0.75 U	---	---
SILVER	---	---	---	0.25 U	---	---
SODIUM	---	---	---	57100	---	---
THALLIUM	---	---	---	0.75 U	---	---
VANADIUM	---	---	---	1.25 U	---	---
ZINC	---	---	---	1.32	---	---

F-4 QA/QC AND IDW ANALYTICAL RESULTS

APPENDIX F-4

SUMMARY OF QA/QC AND IDW ANALYTICAL RESULTS
SITE 21 - BUILDING 1517 LANDFILL
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

TYPE	**QC**		**QC**		**QC**		**QC**		**QC**		**QC**		**QC**		**QC**		**QC**	
SAMPLE	**TB-092609-01**		**TB-092709-01**		**TB-092809-01**		**064_RB-092909-01**		**RB-092909-02**		**SB-092909-01**		**TB-092909-01**		**FB-111709-01**		**NTC01-TB111809-01**	
MATRIX	QC		QC		QC		QC		QC		QC		QC		QC		QC	
SAMPLE DATE	20090926		20090927		20090928		20090929		20090929		20090929		20090929		20091117		20091118	
Volatile Organics																		
1,1,1-TRICHLOROETHANE	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	0.17 U	UG/L	1 U	UG/L
1,1,2,2-TETRACHLOROETHANE	1 U	UG/L	1 UJ	UG/L	1 UJ	UG/L	1 UJ	UG/L	1 UJ	UG/L	1 UJ	UG/L	1 U	UG/L	0.1 U	UG/L	1 U	UG/L
1,1,2-TRICHLOROETHANE	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	0.1 U	UG/L	1 U	UG/L
1,1,2-TRICHLOROTRIFLUOROETHANE	2 U	UG/L	2 U	UG/L	2 U	UG/L	2 U	UG/L	2 U	UG/L	2 U	UG/L	2 U	UG/L	0.18 U	UG/L	2 U	UG/L
1,1-DICHLOROETHANE	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	0.12 U	UG/L	1 U	UG/L
1,1-DICHLOROETHENE	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	0.15 U	UG/L	1 U	UG/L
1,2,4-TRICHLOROBENZENE	0.31 J	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	0.2 J	UG/L	0.12 U	UG/L	1 U	UG/L
1,2-DIBROMO-3-CHLOROPROPANE	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	0.11 U	UG/L	1 U	UG/L
1,2-DIBROMOETHANE	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	0.1 U	UG/L	1 U	UG/L
1,2-DICHLOROBENZENE	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	0.1 U	UG/L	1 U	UG/L
1,2-DICHLOROETHANE	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	0.1 U	UG/L	1 U	UG/L
1,2-DICHLOROPROPANE	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	0.1 U	UG/L	1 U	UG/L
1,3-DICHLOROBENZENE	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	0.13 U	UG/L	1 U	UG/L
1,4-DICHLOROBENZENE	0.13 J	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	0.1 U	UG/L	1 U	UG/L
2-BUTANONE	10 U	UG/L	10 UJ	UG/L	10 UJ	UG/L	10 UJ	UG/L	10 UJ	UG/L	10 UJ	UG/L	10 U	UG/L	1 UJ	UG/L	10 UJ	UG/L
2-HEXANONE	5 U	UG/L	5 UJ	UG/L	5 UJ	UG/L	5 UJ	UG/L	5 UJ	UG/L	5 UJ	UG/L	5 U	UG/L	0.3 U	UG/L	5 U	UG/L
4-METHYL-2-PENTANONE	5 U	UG/L	5 U	UG/L	5 U	UG/L	5 U	UG/L	5 U	UG/L	5 U	UG/L	5 U	UG/L	0.29 UJ	UG/L	5 UJ	UG/L
ACETONE	10 U	UG/L	10 UJ	UG/L	10 UJ	UG/L	5.3 J	UG/L	10 UJ	UG/L	4.8 J	UG/L	10 U	UG/L	0.84 UJ	UG/L	5.6 J	UG/L
BENZENE	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	0.11 U	UG/L	1 U	UG/L
BROMODICHLOROMETHANE	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	0.1 U	UG/L	1 U	UG/L
BROMOFORM	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	0.1 U	UG/L	1 U	UG/L
BROMOMETHANE	2 U	UG/L	2 U	UG/L	2 U	UG/L	2 U	UG/L	2 U	UG/L	2 U	UG/L	2 U	UG/L	0.32 U	UG/L	2 U	UG/L
CARBON DISULFIDE	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	0.13 U	UG/L	1 U	UG/L
CARBON TETRACHLORIDE	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	0.15 U	UG/L	1 U	UG/L
CHLOROBENZENE	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	0.1 U	UG/L	1 U	UG/L
CHLORODIBROMOMETHANE	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	0.1 U	UG/L	1 U	UG/L
CHLOROETHANE	2 U	UG/L	2 UJ	UG/L	2 UJ	UG/L	2 UJ	UG/L	2 UJ	UG/L	2 UJ	UG/L	2 U	UG/L	0.18 U	UG/L	2 U	UG/L
CHLOROFORM	0.12 J	UG/L	0.13 J	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	0.11 U	UG/L	1 U	UG/L
CHLOROMETHANE	2 U	UG/L	2 U	UG/L	2 U	UG/L	1.6 J	UG/L	0.72 J	UG/L	0.61 J	UG/L	2 U	UG/L	0.29 UJ	UG/L	0.45 J	UG/L
CIS-1,2-DICHLOROETHENE	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	0.13 U	UG/L	1 U	UG/L
CIS-1,3-DICHLOROPROPENE	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	0.11 U	UG/L	1 U	UG/L
CYCLOHEXANE	1 U	UG/L	1 UJ	UG/L	1 UJ	UG/L	1 UJ	UG/L	1 UJ	UG/L	1 UJ	UG/L	1 U	UG/L	0.2 U	UG/L	1 U	UG/L
DICHLORODIFLUOROMETHANE	2 U	UG/L	2 U	UG/L	2 U	UG/L	2 U	UG/L	2 U	UG/L	2 U	UG/L	2 U	UG/L	0.22 U	UG/L	2 UJ	UG/L
ETHYLBENZENE	1 U	UG/L	1 U	UG/L	1 U	UG/L	0.17 J	UG/L	1 U	UG/L	0.2 J	UG/L	1 U	UG/L	0.13 U	UG/L	1 U	UG/L
ISOPROPYLBENZENE	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	0.15 U	UG/L	1 U	UG/L
METHYL ACETATE	2 U	UG/L	2 U	UG/L	2 U	UG/L	2 U	UG/L	2 U	UG/L	2 U	UG/L	2 U	UG/L	0.3 U	UG/L	2 U	UG/L
METHYL CYCLOHEXANE	0.21 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	0.17 U	UG/L	1 U	UG/L
METHYL TERT-BUTYL ETHER	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	0.1 U	UG/L	1 U	UG/L
METHYLENE CHLORIDE	0.4 U	UG/L	0.24 U	UG/L	0.46 U	UG/L	2.4 U	UG/L	1.8 U	UG/L	2.4 U	UG/L	0.29 U	UG/L	0.14 U	UG/L	0.75 J	UG/L
STYRENE	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	0.1 U	UG/L	1 U	UG/L
TETRACHLOROETHENE	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	0.15 U	UG/L	1 U	UG/L
TOLUENE	1 U	UG/L	1 U	UG/L	1 U	UG/L	2.1 J	UG/L	13 J	UG/L	2.1 J	UG/L	1 U	UG/L	0.1 U	UG/L	1 U	UG/L
TOTAL XYLENES	1 U	UG/L	1 U	UG/L	1 U	UG/L	0.66 J	UG/L	0.53 J	UG/L	0.65 J	UG/L	1 U	UG/L	0.22 U	UG/L	1 U	UG/L
TRANS-1,2-DICHLOROETHENE	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	0.13 U	UG/L	1 U	UG/L
TRANS-1,3-DICHLOROPROPENE	1 U	UG/L	1 UJ	UG/L	1 UJ	UG/L	1 UJ	UG/L	1 UJ	UG/L	1 UJ	UG/L	1 U	UG/L	0.1 U	UG/L	1 U	UG/L
TRICHLOROETHENE	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	0.13 U	UG/L	1 U	UG/L
TRICHLOROFLUOROMETHANE	2 U	UG/L	2 U	UG/L	2 U	UG/L	2 U	UG/L	2 U	UG/L	2 U	UG/L	2 U	UG/L	0.17 U	UG/L	2 U	UG/L
VINYL CHLORIDE	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	1 U	UG/L	0.18 U	UG/L	1 U	UG/L

APPENDIX F-4

SUMMARY OF QA/QC AND IDW ANALYTICAL RESULTS
SITE 21 - BUILDING 1517 LANDFILL
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

TYPE	**QC**	**QC**	**QC**	**QC**		**QC**		**QC**		**QC**	**QC**	**QC**
SAMPLE	**TB-092609-01**	**TB-092709-01**	**TB-092809-01**	**064_RB-092909-01**		**RB-092909-02**		**SB-092909-01**		**TB-092909-01**	**FB-111709-01**	**NTC01-TB111809-01**
MATRIX	QC	QC	QC	QC		QC		QC		QC	QC	QC
SAMPLE DATE	20090926	20090927	20090928	20090929		20090929		20090929		20090929	20091117	20091118
Semivolatile Organics												
1,1-BIPHENYL	---	---	---	4.8 U	UG/L	4.7 U	UG/L	4.6 U	UG/L	---	---	---
2,2'-OXYBIS(1-CHLOROPROPANE)	---	---	---	4.8 UJ	UG/L	4.7 UJ	UG/L	4.6 UJ	UG/L	---	---	---
2,4,5-TRICHLOROPHENOL	---	---	---	4.8 U	UG/L	4.7 U	UG/L	4.6 U	UG/L	---	---	---
2,4,6-TRICHLOROPHENOL	---	---	---	4.8 U	UG/L	4.7 U	UG/L	4.6 U	UG/L	---	---	---
2,4-DICHLOROPHENOL	---	---	---	4.8 U	UG/L	4.7 U	UG/L	4.6 U	UG/L	---	---	---
2,4-DIMETHYLPHENOL	---	---	---	19 UJ	UG/L	19 UJ	UG/L	18 UJ	UG/L	---	---	---
2,4-DINITROPHENOL	---	---	---	48 U	UG/L	47 U	UG/L	46 U	UG/L	---	---	---
2,4-DINITROTOLUENE	---	---	---	4.8 U	UG/L	4.7 U	UG/L	4.6 U	UG/L	---	---	---
2,6-DINITROTOLUENE	---	---	---	4.8 U	UG/L	4.7 U	UG/L	4.6 U	UG/L	---	---	---
2-CHLORONAPHTHALENE	---	---	---	4.8 U	UG/L	4.7 U	UG/L	4.6 U	UG/L	---	---	---
2-CHLOROPHENOL	---	---	---	4.8 UJ	UG/L	4.7 UJ	UG/L	4.6 UJ	UG/L	---	---	---
2-METHYLNAPHTHALENE	---	---	---	0.068 U	UG/L	0.07 U	UG/L	0.046 U	UG/L	---	---	---
2-METHYLPHENOL	---	---	---	4.8 U	UG/L	4.7 U	UG/L	4.6 U	UG/L	---	---	---
2-NITROANILINE	---	---	---	19 UJ	UG/L	19 UJ	UG/L	18 UJ	UG/L	---	---	---
2-NITROPHENOL	---	---	---	4.8 U	UG/L	4.7 U	UG/L	4.6 U	UG/L	---	---	---
3,3'-DICHLOROBENZIDINE	---	---	---	4.8 U	UG/L	4.7 U	UG/L	4.6 U	UG/L	---	---	---
3-NITROANILINE	---	---	---	19 U	UG/L	19 U	UG/L	18 U	UG/L	---	---	---
4,6-DINITRO-2-METHYLPHENOL	---	---	---	19 U	UG/L	19 U	UG/L	18 U	UG/L	---	---	---
4-BROMOPHENYL PHENYL ETHER	---	---	---	4.8 U	UG/L	4.7 U	UG/L	4.6 U	UG/L	---	---	---
4-CHLORO-3-METHYLPHENOL	---	---	---	4.8 U	UG/L	4.7 U	UG/L	4.6 U	UG/L	---	---	---
4-CHLOROANILINE	---	---	---	4.8 U	UG/L	4.7 U	UG/L	4.6 U	UG/L	---	---	---
4-CHLOROPHENYL PHENYL ETHER	---	---	---	4.8 U	UG/L	4.7 U	UG/L	4.6 U	UG/L	---	---	---
4-METHYLPHENOL	---	---	---	4.8 U	UG/L	4.7 U	UG/L	4.6 U	UG/L	---	---	---
4-NITROANILINE	---	---	---	19 U	UG/L	19 U	UG/L	18 U	UG/L	---	---	---
4-NITROPHENOL	---	---	---	19 UJ	UG/L	19 UJ	UG/L	18 UJ	UG/L	---	---	---
ACENAPHTHENE	---	---	---	0.048 U	UG/L	0.056 U	UG/L	0.046 U	UG/L	---	---	---
ACENAPHTHYLENE	---	---	---	0.048 U	UG/L	0.049 U	UG/L	0.046 U	UG/L	---	---	---
ACETOPHENONE	---	---	---	4.8 U	UG/L	4.7 U	UG/L	4.6 U	UG/L	---	---	---
ANTHRACENE	---	---	---	0.048 U	UG/L	0.07	UG/L	0.046 U	UG/L	---	---	---
ATRAZINE	---	---	---	4.8 U	UG/L	4.7 U	UG/L	4.6 U	UG/L	---	---	---
BENZALDEHYDE	---	---	---	4.8 U	UG/L	4.7 U	UG/L	4.6 U	UG/L	---	---	---
BENZO(A)ANTHRACENE	---	---	---	0.048 UJ	UG/L	0.034 J	UG/L	0.046 UJ	UG/L	---	---	---
BENZO(A)PYRENE	---	---	---	0.048 U	UG/L	0.028 J	UG/L	0.046 U	UG/L	---	---	---
BENZO(B)FLUORANTHENE	---	---	---	0.048 U	UG/L	0.04 J	UG/L	0.046 U	UG/L	---	---	---
BENZO(G,H,I)PERYLENE	---	---	---	0.048 U	UG/L	0.047 U	UG/L	0.046 U	UG/L	---	---	---
BENZO(K)FLUORANTHENE	---	---	---	0.048 UJ	UG/L	0.066 UJ	UG/L	0.046 UJ	UG/L	---	---	---
BIS(2-CHLOROETHOXY)METHANE	---	---	---	4.8 U	UG/L	4.7 U	UG/L	4.6 U	UG/L	---	---	---
BIS(2-CHLOROETHYL)ETHER	---	---	---	4.8 U	UG/L	4.7 U	UG/L	4.6 U	UG/L	---	---	---
BIS(2-ETHYLHEXYL)PHTHALATE	---	---	---	4.8 U	UG/L	4.7 U	UG/L	4.6 U	UG/L	---	---	---
BUTYL BENZYL PHTHALATE	---	---	---	4.8 U	UG/L	4.7 U	UG/L	4.6 U	UG/L	---	---	---
CAPROLACTAM	---	---	---	4.8 UJ	UG/L	4.7 UJ	UG/L	0.6 J	UG/L	---	---	---
CARBAZOLE	---	---	---	4.8 U	UG/L	4.7 U	UG/L	4.6 U	UG/L	---	---	---
CHRYSENE	---	---	---	0.048 U	UG/L	0.058	UG/L	0.046 U	UG/L	---	---	---
DI-N-BUTYL PHTHALATE	---	---	---	4.8 U	UG/L	4.7 U	UG/L	4.6 U	UG/L	---	---	---
DI-N-OCTYL PHTHALATE	---	---	---	4.8 U	UG/L	4.7 U	UG/L	4.6 U	UG/L	---	---	---
DIBENZO(A,H)ANTHRACENE	---	---	---	0.048 U	UG/L	0.036 J	UG/L	0.046 U	UG/L	---	---	---
DIBENZOFURAN	---	---	---	4.8 U	UG/L	4.7 U	UG/L	4.6 U	UG/L	---	---	---
DIETHYL PHTHALATE	---	---	---	4.8 U	UG/L	4.7 U	UG/L	4.6 U	UG/L	---	---	---
DIMETHYL PHTHALATE	---	---	---	4.8 U	UG/L	4.7 U	UG/L	4.6 U	UG/L	---	---	---

APPENDIX F-4

SUMMARY OF QA/QC AND IDW ANALYTICAL RESULTS
SITE 21 - BUILDING 1517 LANDFILL
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

TYPE	**QC**	**QC**	**QC**	**QC**		**QC**		**QC**		**QC**	**QC**	**QC**
SAMPLE	**TB-092609-01**	**TB-092709-01**	**TB-092809-01**	**064_RB-092909-01**		**RB-092909-02**		**SB-092909-01**		**TB-092909-01**	**FB-111709-01**	**NTC01-TB111809-01**
MATRIX	QC	QC	QC	QC		QC		QC		QC	QC	QC
SAMPLE DATE	20090926	20090927	20090928	20090929		20090929		20090929		20090929	20091117	20091118
Semivolatile Organics (Continued)												
FLUORANTHENE	---	---	---	0.048 U	UG/L	0.058	UG/L	0.046 U	UG/L	---	---	---
FLUORENE	---	---	---	0.048 U	UG/L	0.063	UG/L	0.046 U	UG/L	---	---	---
HEXACHLOROBENZENE	---	---	---	4.8 U	UG/L	4.7 U	UG/L	4.6 U	UG/L	---	---	---
HEXACHLOROBUTADIENE	---	---	---	4.8 U	UG/L	4.7 U	UG/L	4.6 U	UG/L	---	---	---
HEXACHLOROCYCLOPENTADIENE	---	---	---	4.8 U	UG/L	4.7 U	UG/L	4.6 U	UG/L	---	---	---
HEXACHLOROETHANE	---	---	---	4.8 U	UG/L	4.7 U	UG/L	4.6 U	UG/L	---	---	---
INDENO(1,2,3-CD)PYRENE	---	---	---	0.048 U	UG/L	0.047 U	UG/L	0.046 UJ	UG/L	---	---	---
ISOPHORONE	---	---	---	4.8 U	UG/L	4.7 U	UG/L	4.6 U	UG/L	---	---	---
N-NITROSO-DI-N-PROPYLAMINE	---	---	---	4.8 UJ	UG/L	4.7 UJ	UG/L	4.6 UJ	UG/L	---	---	---
N-NITROSODIPHENYLAMINE	---	---	---	4.8 U	UG/L	4.7 U	UG/L	4.6 U	UG/L	---	---	---
NAPHTHALENE	---	---	---	0.055 U	UG/L	0.069 U	UG/L	0.046 U	UG/L	---	---	---
NITROBENZENE	---	---	---	4.8 UJ	UG/L	4.7 UJ	UG/L	4.6 UJ	UG/L	---	---	---
PENTACHLOROPHENOL	---	---	---	19 U	UG/L	19 U	UG/L	18 U	UG/L	---	---	---
PHENANTHRENE	---	---	---	0.048 U	UG/L	0.076 U	UG/L	0.046 U	UG/L	---	---	---
PHENOL	---	---	---	4.8 U	UG/L	4.7 U	UG/L	4.6 U	UG/L	---	---	---
PYRENE	---	---	---	0.048 U	UG/L	0.056	UG/L	0.046 U	UG/L	---	---	---
Pesticides/PCBs												
4,4'-DDD	---	---	---	0.02 U	UG/L	0.019 U	UG/L	0.019 U	UG/L	---	---	---
4,4'-DDE	---	---	---	0.02 U	UG/L	0.019 U	UG/L	0.019 U	UG/L	---	---	---
4,4'-DDT	---	---	---	0.02 U	UG/L	0.019 U	UG/L	0.019 U	UG/L	---	---	---
ALDRIN	---	---	---	0.01 U	UG/L	0.009 U	UG/L	0.01 U	UG/L	---	---	---
ALPHA-BHC	---	---	---	0.01 U	UG/L	0.009 U	UG/L	0.01 U	UG/L	---	---	---
ALPHA-CHLORDANE	---	---	---	0.01 U	UG/L	0.009 U	UG/L	0.01 U	UG/L	---	---	---
AROCLOR-1016	---	---	---	0.49 UJ	UG/L	0.472 UJ	UG/L	0.481 UJ	UG/L	---	---	---
AROCLOR-1221	---	---	---	0.49 U	UG/L	0.472 U	UG/L	0.481 U	UG/L	---	---	---
AROCLOR-1232	---	---	---	0.49 U	UG/L	0.472 U	UG/L	0.481 U	UG/L	---	---	---
AROCLOR-1242	---	---	---	0.49 U	UG/L	0.472 U	UG/L	0.481 U	UG/L	---	---	---
AROCLOR-1248	---	---	---	0.49 U	UG/L	0.472 U	UG/L	0.481 U	UG/L	---	---	---
AROCLOR-1254	---	---	---	0.49 U	UG/L	0.472 U	UG/L	0.481 U	UG/L	---	---	---
AROCLOR-1260	---	---	---	0.49 U	UG/L	0.472 U	UG/L	0.481 U	UG/L	---	---	---
BETA-BHC	---	---	---	0.01 U	UG/L	0.009 U	UG/L	0.01 U	UG/L	---	---	---
DELTA-BHC	---	---	---	0.01 U	UG/L	0.009 U	UG/L	0.01 U	UG/L	---	---	---
DIELDRIN	---	---	---	0.02 U	UG/L	0.019 U	UG/L	0.019 U	UG/L	---	---	---
ENDOSULFAN I	---	---	---	0.01 U	UG/L	0.009 U	UG/L	0.01 U	UG/L	---	---	---
ENDOSULFAN II	---	---	---	0.02 U	UG/L	0.019 U	UG/L	0.019 U	UG/L	---	---	---
ENDOSULFAN SULFATE	---	---	---	0.02 U	UG/L	0.019 U	UG/L	0.019 U	UG/L	---	---	---
ENDRIN	---	---	---	0.02 U	UG/L	0.019 U	UG/L	0.019 U	UG/L	---	---	---
ENDRIN ALDEHYDE	---	---	---	0.02 U	UG/L	0.019 U	UG/L	0.019 U	UG/L	---	---	---
ENDRIN KETONE	---	---	---	0.02 U	UG/L	0.019 U	UG/L	0.019 U	UG/L	---	---	---
GAMMA-BHC (LINDANE)	---	---	---	0.01 U	UG/L	0.009 U	UG/L	0.01 U	UG/L	---	---	---
GAMMA-CHLORDANE	---	---	---	0.01	UG/L	0.01 J	UG/L	0.006 J	UG/L	---	---	---
HEPTACHLOR	---	---	---	0.01 U	UG/L	0.009 U	UG/L	0.01 U	UG/L	---	---	---
HEPTACHLOR EPOXIDE	---	---	---	0.01 U	UG/L	0.009 U	UG/L	0.01 U	UG/L	---	---	---
METHOXYCHLOR	---	---	---	0.01 U	UG/L	0.009 U	UG/L	0.01 U	UG/L	---	---	---
TOXAPHENE	---	---	---	0.98 U	UG/L	0.943 U	UG/L	0.962 U	UG/L	---	---	---
Dioxins/Furans												
1,2,3,4,6,7,8,9-OCDD	---	---	---	9.29 J	PG/L	---		101 U	PG/L	---	---	---
1,2,3,4,6,7,8,9-OCDF	---	---	---	103 U	PG/L	---		101 U	PG/L	---	---	---
1,2,3,4,6,7,8-HPCDD	---	---	---	51.5 U	PG/L	---		50.5 U	PG/L	---	---	---

APPENDIX F-4

SUMMARY OF QA/QC AND IDW ANALYTICAL RESULTS
SITE 21 - BUILDING 1517 LANDFILL
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

TYPE	**QC**	**QC**	**QC**	**QC**		**QC**		**QC**		**QC**	**QC**	**QC**
SAMPLE	**TB-092609-01**	**TB-092709-01**	**TB-092809-01**	**064_RB-092909-01**		**RB-092909-02**		**SB-092909-01**		**TB-092909-01**	**FB-111709-01**	**NTC01-TB111809-01**
MATRIX	QC	QC	QC	QC		QC		QC		QC	QC	QC
SAMPLE DATE	20090926	20090927	20090928	20090929		20090929		20090929		20090929	20091117	20091118
Dioxins/Furans (Continued)												
1,2,3,4,6,7,8-HPCDF	---	---	---	51.5 U	PG/L	---		50.5 U	PG/L	---	---	---
1,2,3,4,7,8,9-HPCDF	---	---	---	51.5 U	PG/L	---		50.5 U	PG/L	---	---	---
1,2,3,4,7,8-HXCDD	---	---	---	51.5 U	PG/L	---		50.5 U	PG/L	---	---	---
1,2,3,4,7,8-HXCDF	---	---	---	51.5 U	PG/L	---		50.5 U	PG/L	---	---	---
1,2,3,6,7,8-HXCDD	---	---	---	51.5 U	PG/L	---		50.5 U	PG/L	---	---	---
1,2,3,6,7,8-HXCDF	---	---	---	51.5 U	PG/L	---		50.5 U	PG/L	---	---	---
1,2,3,7,8,9-HXCDD	---	---	---	51.5 U	PG/L	---		50.5 U	PG/L	---	---	---
1,2,3,7,8,9-HXCDF	---	---	---	51.5 U	PG/L	---		50.5 U	PG/L	---	---	---
1,2,3,7,8-PECDD	---	---	---	51.5 U	PG/L	---		50.5 U	PG/L	---	---	---
1,2,3,7,8-PECDF	---	---	---	51.5 U	PG/L	---		50.5 U	PG/L	---	---	---
2,3,4,6,7,8-HXCDF	---	---	---	51.5 U	PG/L	---		50.5 U	PG/L	---	---	---
2,3,4,7,8-PECDF	---	---	---	51.5 U	PG/L	---		50.5 U	PG/L	---	---	---
2,3,7,8-TCDD	---	---	---	10.3 U	PG/L	---		10.1 U	PG/L	---	---	---
2,3,7,8-TCDF	---	---	---	10.3 U	PG/L	---		10.1 U	PG/L	---	---	---
TOTAL HPCDD	---	---	---	51.5 U	PG/L	---		50.5 U	PG/L	---	---	---
TOTAL HPCDF	---	---	---	51.5 U	PG/L	---		50.5 U	PG/L	---	---	---
TOTAL HXCDD	---	---	---	51.5 U	PG/L	---		50.5 U	PG/L	---	---	---
TOTAL HXCDF	---	---	---	51.5 U	PG/L	---		50.5 U	PG/L	---	---	---
TOTAL PECDD	---	---	---	51.5 U	PG/L	---		50.5 U	PG/L	---	---	---
TOTAL PECDF	---	---	---	51.5 U	PG/L	---		50.5 U	PG/L	---	---	---
TOTAL TCDD	---	---	---	10.3 U	PG/L	---		10.1 U	PG/L	---	---	---
TOTAL TCDF	---	---	---	10.3 U	PG/L	---		10.1 U	PG/L	---	---	---
Herbicides												
2,4,5-T	---	---	---	0.05 UJ	UG/L	0.05 UJ	UG/L	0.05 UJ	UG/L	---	---	---
2,4,5-TP (SILVEX)	---	---	---	0.05 U	UG/L	0.05 U	UG/L	0.05 U	UG/L	---	---	---
2,4-D	---	---	---	0.5 UJ	UG/L	0.5 UJ	UG/L	0.5 UJ	UG/L	---	---	---
2,4-DB	---	---	---	0.5 U	UG/L	0.5 U	UG/L	0.5 U	UG/L	---	---	---
DALAPON	---	---	---	1.2 U	UG/L	1.2 U	UG/L	1.2 U	UG/L	---	---	---
DICAMBA	---	---	---	0.05 U	UG/L	0.05 U	UG/L	0.05 U	UG/L	---	---	---
DICHLOROPROP	---	---	---	0.5 U	UG/L	0.5 U	UG/L	0.5 U	UG/L	---	---	---
DINOSEB	---	---	---	0.25 UJ	UG/L	0.25 UJ	UG/L	0.25 UJ	UG/L	---	---	---
MCPA	---	---	---	50 U	UG/L	50 U	UG/L	50 U	UG/L	---	---	---
MCPP	---	---	---	50 U	UG/L	50 U	UG/L	50 U	UG/L	---	---	---
Inorganics												
ALUMINUM	---	---	---	731	UG/L	12.5 U	UG/L	12.5 U	UG/L	---	---	---
ANTIMONY	---	---	---	1.25 U	UG/L	1.25 U	UG/L	1.25 U	UG/L	---	---	---
ARSENIC	---	---	---	0.75 U	UG/L	0.75 U	UG/L	0.75 U	UG/L	---	---	---
BARIUM	---	---	---	3.73	UG/L	1.25 U	UG/L	1.25 U	UG/L	---	---	---
BERYLLIUM	---	---	---	0.25 U	UG/L	0.25 U	UG/L	0.25 U	UG/L	---	---	---
CADMIUM	---	---	---	0.25 U	UG/L	0.25 U	UG/L	0.25 U	UG/L	---	---	---
CALCIUM	---	---	---	5100	UG/L	250 U	UG/L	250 U	UG/L	---	---	---
CHROMIUM	---	---	---	9.77	UG/L	0.5 U	UG/L	0.5 U	UG/L	---	---	---
COBALT	---	---	---	1.25 U	UG/L	1.25 U	UG/L	1.25 U	UG/L	---	---	---
COPPER	---	---	---	2.18	UG/L	1.25 U	UG/L	1.25 U	UG/L	---	---	---
IRON	---	---	---	1980	UG/L	7.5 U	UG/L	7.5 U	UG/L	---	---	---
LEAD	---	---	---	0.375 U	UG/L	0.375 U	UG/L	0.375 U	UG/L	---	---	---
MAGNESIUM	---	---	---	2610	UG/L	250 U	UG/L	250 U	UG/L	---	---	---
MANGANESE	---	---	---	46.4	UG/L	0.75 U	UG/L	0.75 U	UG/L	---	---	---
MERCURY	---	---	---	0.08 U	UG/L	0.08 U	UG/L	0.08 U	UG/L	---	---	---

APPENDIX F-4

SUMMARY OF QA/QC AND IDW ANALYTICAL RESULTS
SITE 21 - BUILDING 1517 LANDFILL
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

TYPE	**QC**	**QC**	**QC**	**QC**		**QC**		**QC**		**QC**	**QC**	**QC**
SAMPLE	**TB-092609-01**	**TB-092709-01**	**TB-092809-01**	**064_RB-092909-01**		**RB-092909-02**		**SB-092909-01**		**TB-092909-01**	**FB-111709-01**	**NTC01-TB111809-01**
MATRIX	QC	QC	QC	QC		QC		QC		QC	QC	QC
SAMPLE DATE	20090926	20090927	20090928	20090929		20090929		20090929		20090929	20091117	20091118
Inorganics (Continued)												
NICKEL	---	---	---	5.35	UG/L	0.75 U	UG/L	0.75 U	UG/L	---	---	---
POTASSIUM	---	---	---	388	UG/L	250 U	UG/L	250 U	UG/L	---	---	---
SELENIUM	---	---	---	0.75 U	UG/L	0.75 U	UG/L	0.75 U	UG/L	---	---	---
SILVER	---	---	---	0.25 U	UG/L	0.25 U	UG/L	0.25 U	UG/L	---	---	---
SODIUM	---	---	---	250 U	UG/L	250 U	UG/L	250 U	UG/L	---	---	---
THALLIUM	---	---	---	0.75 U	UG/L	0.75 U	UG/L	0.75 U	UG/L	---	---	---
VANADIUM	---	---	---	1.93	UG/L	1.25 U	UG/L	1.25 U	UG/L	---	---	---
ZINC	---	---	---	7.5	UG/L	1.25 U	UG/L	1.25 U	UG/L	---	---	---

APPENDIX F-4

SUMMARY OF QA/QC AND IDW ANALYTICAL RESULTS
SITE 21 - BUILDING 1517 LANDFILL
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

TYPE	**IDW**	**IDW**	**IDW**		**IDW**	
SAMPLE	**IDW-AQ-092909-01**	**IDW-SO-092909-01**	**IDW-111709**		**NTC01-COMPOSITE**	
MATRIX	WW	WS	WW		WS	
SAMPLE DATE	20090929	20090929	20091117		20091118	
Volatile Organics						
1,1,1-TRICHLOROETHANE	---	---	---		4.6 U	UG/KG
1,1,2,2-TETRACHLOROETHANE	---	---	---		4.6 U	UG/KG
1,1,2-TRICHLOROETHANE	---	---	---		4.6 U	UG/KG
1,1,2-TRICHLOROTRIFLUOROETHANE	---	---	---		4.6 U	UG/KG
1,1-DICHLOROETHANE	---	---	---		4.6 U	UG/KG
1,1-DICHLOROETHENE	---	---	1 U	UG/L	4.6 U	UG/KG
1,2,4-TRICHLOROBENZENE	---	---	---		4.6 U	UG/KG
1,2-DIBROMO-3-CHLOROPROPANE	---	---	---		4.6 U	UG/KG
1,2-DIBROMOETHANE	---	---	---		4.6 U	UG/KG
1,2-DICHLOROBENZENE	---	---	---		4.6 U	UG/KG
1,2-DICHLOROETHANE	---	---	1 U	UG/L	4.6 U	UG/KG
1,2-DICHLOROPROPANE	---	---	---		4.6 U	UG/KG
1,3-DICHLOROBENZENE	---	---	---		4.6 U	UG/KG
1,4-DICHLOROBENZENE	---	---	---		4.6 U	UG/KG
2-BUTANONE	---	---	10 U	UG/L	12 J	UG/KG
2-HEXANONE	---	---	---		4.6 U	UG/KG
4-METHYL-2-PENTANONE	---	---	---		4.6 U	UG/KG
ACETONE	---	---	---		4.6 U	UG/KG
BENZENE	---	---	0.14 J	UG/L	0.74 J	UG/KG
BROMODICHLOROMETHANE	---	---	---		9.3 U	UG/KG
BROMOFORM	---	---	---		4.6 U	UG/KG
BROMOMETHANE	---	---	---		9.3 U	UG/KG
CARBON DISULFIDE	---	---	---		4.6 U	UG/KG
CARBON TETRACHLORIDE	---	---	1 U	UG/L	4.6 U	UG/KG
CHLOROBENZENE	---	---	1 U	UG/L	4.6 U	UG/KG
CHLORODIBROMOMETHANE	---	---	---		4.6 U	UG/KG
CHLOROETHANE	---	---	---		9.3 U	UG/KG
CHLOROFORM	---	---	1 U	UG/L	4.6 U	UG/KG
CHLOROMETHANE	---	---	---		9.3 U	UG/KG
CIS-1,2-DICHLOROETHENE	---	---	---		9.3 U	UG/KG
CIS-1,3-DICHLOROPROPENE	---	---	---		4.6 U	UG/KG
CYCLOHEXANE	---	---	---		1.4 J	UG/KG
DICHLORODIFLUOROMETHANE	---	---	---		4.6 U	UG/KG
ETHYLBENZENE	---	---	---		4.6 U	UG/KG
ISOPROPYLBENZENE	---	---	---		4.6 U	UG/KG
METHYL ACETATE	---	---	---		9.3 UJ	UG/KG
METHYL CYCLOHEXANE	---	---	---		2.1 J	UG/KG
METHYL TERT-BUTYL ETHER	---	---	---		4.6 U	UG/KG
METHYLENE CHLORIDE	---	---	---		0.62 U	UG/KG
STYRENE	---	---	---		4.6 U	UG/KG
TETRACHLOROETHENE	---	---	1 U	UG/L	4.6 U	UG/KG
TOLUENE	---	---	---		4.6 U	UG/KG
TOTAL XYLENES	---	---	---		4.6 U	UG/KG
TRANS-1,2-DICHLOROETHENE	---	---	---		4.6 U	UG/KG
TRANS-1,3-DICHLOROPROPENE	---	---	---		4.6 U	UG/KG
TRICHLOROETHENE	---	---	1 U	UG/L	4.6 U	UG/KG
TRICHLOROFLUOROMETHANE	---	---	---		4.6 U	UG/KG
VINYL CHLORIDE	---	---	2 U	UG/L	4.6 U	UG/KG

APPENDIX F-4

SUMMARY OF QA/QC AND IDW ANALYTICAL RESULTS
SITE 21 - BUILDING 1517 LANDFILL
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

TYPE	**IDW**	**IDW**	**IDW**	**IDW**	
SAMPLE	**IDW-AQ-092909-01**	**IDW-SO-092909-01**	**IDW-111709**	**NTC01-COMPOSITE**	
MATRIX	WW	WS	WW	WS	
SAMPLE DATE	20090929	20090929	20091117	20091118	
Semivolatile Organics					
1,1-BIPHENYL	---	---	---	400 U	UG/KG
2,2'-OXYBIS(1-CHLOROPROPANE)	---	---	---	800 U	UG/KG
2,4,5-TRICHLOROPHENOL	---	---	---	400 U	UG/KG
2,4,6-TRICHLOROPHENOL	---	---	---	400 U	UG/KG
2,4-DICHLOROPHENOL	---	---	---	400 U	UG/KG
2,4-DIMETHYLPHENOL	---	---	---	800 U	UG/KG
2,4-DINITROPHENOL	---	---	---	4000 U	UG/KG
2,4-DINITROTOLUENE	---	---	---	400 U	UG/KG
2,6-DINITROTOLUENE	---	---	---	400 U	UG/KG
2-CHLORONAPHTHALENE	---	---	---	400 U	UG/KG
2-CHLOROPHENOL	---	---	---	400 U	UG/KG
2-METHYLNAPHTHALENE	---	---	---	56	UG/KG
2-METHYLPHENOL	---	---	---	400 U	UG/KG
2-NITROANILINE	---	---	---	1600 U	UG/KG
2-NITROPHENOL	---	---	---	400 U	UG/KG
3,3'-DICHLOROBENZIDINE	---	---	---	400 UJ	UG/KG
3-NITROANILINE	---	---	---	1600 U	UG/KG
4,6-DINITRO-2-METHYLPHENOL	---	---	---	1600 U	UG/KG
4-BROMOPHENYL PHENYL ETHER	---	---	---	400 U	UG/KG
4-CHLORO-3-METHYLPHENOL	---	---	---	400 U	UG/KG
4-CHLOROANILINE	---	---	---	400 U	UG/KG
4-CHLOROPHENYL PHENYL ETHER	---	---	---	400 U	UG/KG
4-METHYLPHENOL	---	---	---	400 U	UG/KG
4-NITROANILINE	---	---	---	1600 UJ	UG/KG
4-NITROPHENOL	---	---	---	1600 U	UG/KG
ACENAPHTHENE	---	---	---	4.8 U	UG/KG
ACENAPHTHYLENE	---	---	---	4.8 U	UG/KG
ACETOPHENONE	---	---	---	400 U	UG/KG
ANTHRACENE	---	---	---	4.8 U	UG/KG
ATRAZINE	---	---	---	400 U	UG/KG
BENZALDEHYDE	---	---	---	400 U	UG/KG
BENZO(A)ANTHRACENE	---	---	---	4.8 U	UG/KG
BENZO(A)PYRENE	---	---	---	4.8 U	UG/KG
BENZO(B)FLUORANTHENE	---	---	---	4.8 U	UG/KG
BENZO(G,H,I)PERYLENE	---	---	---	26	UG/KG
BENZO(K)FLUORANTHENE	---	---	---	4.8 U	UG/KG
BIS(2-CHLOROETHOXY)METHANE	---	---	---	400 U	UG/KG
BIS(2-CHLOROETHYL)ETHER	---	---	---	400 U	UG/KG

APPENDIX F-4

SUMMARY OF QA/QC AND IDW ANALYTICAL RESULTS
SITE 21 - BUILDING 1517 LANDFILL
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

TYPE	**IDW**		**IDW**		**IDW**		**IDW**	
SAMPLE	**IDW-AQ-092909-01**		**IDW-SO-092909-01**		**IDW-111709**		**NTC01-COMPOSITE**	
MATRIX	WW		WS		WW		WS	
SAMPLE DATE	20090929		20090929		20091117		20091118	
Semivolatile Organics (Continued)								
BIS(2-ETHYLHEXYL)PHTHALATE	---		---		---		400 U	UG/KG
BUTYL BENZYL PHTHALATE	---		---		---		400 U	UG/KG
CAPROLACTAM	---		---		---		400 U	UG/KG
CARBAZOLE	---		---		---		800 U	UG/KG
CHRYSENE	---		---		---		4.8 U	UG/KG
DI-N-BUTYL PHTHALATE	---		---		---		400 U	UG/KG
DI-N-OCTYL PHTHALATE	---		---		---		400 U	UG/KG
DIBENZO(A,H)ANTHRACENE	---		---		---		4.8 U	UG/KG
DIBENZOFURAN	---		---		---		400 U	UG/KG
DIETHYL PHTHALATE	---		---		---		400 U	UG/KG
DIMETHYL PHTHALATE	---		---		---		400 U	UG/KG
FLUORANTHENE	---		---		---		4.8 U	UG/KG
FLUORENE	---		---		---		4.8 U	UG/KG
HEXACHLOROBENZENE	---		---		---		400 U	UG/KG
HEXACHLOROBUTADIENE	---		---		---		400 U	UG/KG
HEXACHLOROCYCLOPENTADIENE	---		---		---		400 U	UG/KG
HEXACHLOROETHANE	---		---		---		800 U	UG/KG
INDENO(1,2,3-CD)PYRENE	---		---		---		4.8 U	UG/KG
ISOPHORONE	---		---		---		400 U	UG/KG
N-NITROSO-DI-N-PROPYLAMINE	---		---		---		400 U	UG/KG
N-NITROSODIPHENYLAMINE	---		---		---		400 U	UG/KG
NAPHTHALENE	---		---		---		16	UG/KG
NITROBENZENE	---		---		---		400 U	UG/KG
PENTACHLOROPHENOL	---		---		---		1600 U	UG/KG
PHENANTHRENE	---		---		---		53	UG/KG
PHENOL	---		---		---		400 U	UG/KG
PYRENE	---		---		---		20	UG/KG
Pesticides/PCBs								
AROCLOR-1016	---		---		0.47 U	UG/L	---	
AROCLOR-1221	---		---		0.47 U	UG/L	---	
AROCLOR-1232	---		---		0.47 U	UG/L	---	
AROCLOR-1242	---		---		0.47 U	UG/L	---	
AROCLOR-1248	---		---		0.47 U	UG/L	---	
AROCLOR-1254	---		---		0.47 U	UG/L	---	
AROCLOR-1260	---		---		0.47 U	UG/L	---	
TCLP Volatiles								
1,1-DICHLOROETHENE	0.01 UD	MG/L	0.01 UD	MG/L	---		---	
1,2-DICHLOROETHANE	0.01 UD	MG/L	0.01 UD	MG/L	---		---	
2-BUTANONE	0.1 UD	MG/L	0.1 UD	MG/L	---		---	
BENZENE	0.01 UD	MG/L	0.01 UD	MG/L	---		---	
CARBON TETRACHLORIDE	0.01 UD	MG/L	0.01 UD	MG/L	---		---	
CHLOROBENZENE	0.01 UD	MG/L	0.01 UD	MG/L	---		---	
CHLOROFORM	0.0037 JD	MG/L	0.01 UD	MG/L	---		---	
TETRACHLOROETHENE	0.01 UD	MG/L	0.01 UD	MG/L	---		---	
TRICHLOROETHENE	0.01 UD	MG/L	0.01 UD	MG/L	---		---	
VINYL CHLORIDE	0.02 UD	MG/L	0.02 UD	MG/L	---		---	

APPENDIX F-4

SUMMARY OF QA/QC AND IDW ANALYTICAL RESULTS
SITE 21 - BUILDING 1517 LANDFILL
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

TYPE	**IDW**		**IDW**		**IDW**		**IDW**	
SAMPLE	**IDW-AQ-092909-01**		**IDW-SO-092909-01**		**IDW-111709**		**NTC01-COMPOSITE**	
MATRIX	WW		WS		WW		WS	
SAMPLE DATE	20090929		20090929		20091117		20091118	
TCLP Semivolatiles								
1,4-DICHLOROBENZENE	0.05 U	MG/L	0.05 U	MG/L	0.05 U	MG/L	---	
2,4,5-TRICHLOROPHENOL	0.05 U	MG/L	0.05 U	MG/L	0.05 U	MG/L	---	
2,4,6-TRICHLOROPHENOL	0.05 U	MG/L	0.05 U	MG/L	0.05 U	MG/L	---	
2,4-DINITROTOLUENE	0.05 U	MG/L	0.05 U	MG/L	0.05 U	MG/L	---	
2-METHYLPHENOL	0.05 U	MG/L	0.05 U	MG/L	0.05 U	MG/L	---	
3-METHYLPHENOL	0.05 U	MG/L	0.05 U	MG/L	0.05 U	MG/L	---	
4-METHYLPHENOL	0.05 U	MG/L	0.05 U	MG/L	0.05 U	MG/L	---	
HEXACHLOROBENZENE	0.05 U	MG/L	0.05 U	MG/L	0.05 U	MG/L	---	
HEXACHLOROBUTADIENE	0.05 U	MG/L	0.05 U	MG/L	0.05 U	MG/L	---	
HEXACHLOROETHANE	0.05 U	MG/L	0.05 U	MG/L	0.05 U	MG/L	---	
NITROBENZENE	0.05 U	MG/L	0.05 U	MG/L	0.05 UY	MG/L	---	
PENTACHLOROPHENOL	0.2 U	MG/L	0.2 U	MG/L	0.2 U	MG/L	---	
PYRIDINE	0.2 U	MG/L	0.2 U	MG/L	0.2 U	MG/L	---	
TCLP Pesticides								
CHLORDANE	0.0005 U	MG/L	0.0005 U	MG/L	---		---	
ENDRIN	0.0001 U	MG/L	0.0001 U	MG/L	0.02 UY	MG/L	---	
GAMMA-BHC (LINDANE)	0.0001 U	MG/L	0.0001 U	MG/L	0.4 U	MG/L	---	
HEPTACHLOR	0.0001 U	MG/L	0.0001 U	MG/L	0.008 U	MG/L	---	
HEPTACHLOR EPOXIDE	0.0001 U	MG/L	0.0001 U	MG/L	0.008 U	MG/L	---	
METHOXYCHLOR	0.0001 U	MG/L	0.0001 U	MG/L	10 U	MG/L	---	
TOXAPHENE	0.01 U	MG/L	0.01 U	MG/L	0.5 U	MG/L	---	
TCLP Metals								
ARSENIC	0.03 U	MG/L	0.03 U	MG/L	0.1 U	MG/L	---	
BARIUM	0.05 U	MG/L	0.629	MG/L	0.11 J	MG/L	---	
CADMIUM	0.0159 J	MG/L	0.0199 J	MG/L	0.01 J	MG/L	---	
CHROMIUM	0.02 U	MG/L	0.02 U	MG/L	0.1 U	MG/L	---	
LEAD	0.0274 J	MG/L	0.015 U	MG/L	0.03 U	MG/L	---	
MERCURY	0.000809 J	MG/L	0.0008 U	MG/L	0.002 U	MG/L	---	
SELENIUM	0.03 U	MG/L	0.03 U	MG/L	0.05 U	MG/L	---	
SILVER	0.01 U	MG/L	0.01 U	MG/L	0.1 U	MG/L	---	
TCLP Herbicides								
2,4,5-TP (SILVEX)	0.0005 U	MG/L	0.0005 U	MG/L	1 U	MG/L	---	
2,4-D	0.005 U	MG/L	0.005 U	MG/L	10 U	MG/L	---	
Inorganics								
ALUMINUM	---		---		---		11100	MG/KG
ANTIMONY	---		---		---		0.859 U	MG/KG
ARSENIC	---		---		---		8.34	MG/KG
BARIUM	---		---		---		68.9	MG/KG
BERYLLIUM	---		---		---		0.617	MG/KG
CADMIUM	---		---		---		0.573 U	MG/KG
CALCIUM	---		---		---		72500	MG/KG
CHROMIUM	---		---		---		17.8 J	MG/KG
COBALT	---		---		---		12.9	MG/KG
COPPER	---		---		---		25	MG/KG
IRON	---		---		---		20900	MG/KG
LEAD	---		---		---		12.7	MG/KG
MAGNESIUM	---		---		---		34500	MG/KG
MANGANESE	---		---		---		462	MG/KG
MERCURY	---		---		---		0.0741	MG/KG

APPENDIX F-4

SUMMARY OF QA/QC AND IDW ANALYTICAL RESULTS
SITE 21 - BUILDING 1517 LANDFILL
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

TYPE	**IDW**		**IDW**		**IDW**		**IDW**	
SAMPLE	**IDW-AQ-092909-01**		**IDW-SO-092909-01**		**IDW-111709**		**NTC01-COMPOSITE**	
MATRIX	WW		WS		WW		WS	
SAMPLE DATE	20090929		20090929		20091117		20091118	
Inorganics (Continued)								
NICKEL	---		---		---		30.4	MG/KG
POTASSIUM	---		---		---		2980	MG/KG
SELENIUM	---		---		---		0.286 U	MG/KG
SILVER	---		---		---		0.286 U	MG/KG
SODIUM	---		---		---		207	MG/KG
THALLIUM	---		---		---		0.458 U	MG/KG
VANADIUM	---		---		---		20.3	MG/KG
ZINC	---		---		---		55	MG/KG
Miscellaneous Parameters								
CORROSIVITY	8.98	S.U.	7.86	S.U.	---		---	
CYANIDE	0.005 U	MG/L	0.144 UN	MG/KG	0.01 U	MG/L	---	
FREE LIQUID	1	S.U.	---		---		---	
IGNITABILITY	158	F	158	F	158 X	F	---	
ODOR	100	S.U.	---		8	UNITLESS	---	
PAINT FILTER	---		---		1 X	UNITLESS	---	
PH	---		---		7.43	S.U.	---	
PHENOLS	0.225	MG/L	0.239 J	MG/KG	0.06 U	MG/L	---	
REACTIVE SULFIDE	50 U	MG/L	50 U	MG/KG	150 U	MG/L	---	
SPECIFIC GRAVITY	0.997	G/ML			1.01	G/ML	---	

Remedial Investigation Report
for
Site 21 – Buildings 1517/1506 Area

Volume II of II

Naval Station Great Lakes
Great Lakes, Illinois

Naval Facilities Engineering Command Midwest

Contract Number N62472-03-0057

Contract Task Order C064

July 2012

APPENDIX G

HUMAN HEALTH RISK ASSESSMENT SUPPORTING DATA

TABLE G-1 UNCERTAINTY ASSESSMENT
COMPARE TABLE 5-11 AND IEPA PROPOSED TOXICITY VALUES - ORAL/DERMAL
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD		IEPA Proposed Subchronic RfD	Difference in Subchronic RfD - RA and IEPA values
		Value	Units		
CHRONIC					
Semivolatile Organic Compounds					
NAPHTHALENE	Chronic	0.02	mg/kg/day	0.6	**RA RfD is more conservative**
TCDD TEQ (use 2,3,7,8-TCDD)	Chronic	1.00E-09	mg/kg/day	2.00E-08	**RA RfD is more conservative**
PENTACHLOROPHENOL	Chronic	5.00E-03	mg/kg/day	0.001	Tier 3 Subchronic value lower than IRIS chronic. Therefore, no change proposed.
Pesticides/PCBs					
AROCLOR 1260	Chronic	2.00E-05	mg/kg/day	3.00E-05	**RA RfD is more conservative**
DELTA-HEXACHLOROCYCLOHEXANE	Chronic	8.00E-03	mg/kg/day	0.00001	Tier 3 Subchronic value lower than IRIS chronic. Therefore, no change proposed.
Volatile Organic Compound					
BENZENE	Chronic	4.00E-03	mg/kg/day	0.01	**RA RfD is more conservative**
TETRACHLOROETHYLENE	Chronic	1.00E-02	mg/kg/day	0.1	**RA RfD is more conservative**
Inorganics					
ALUMINUM	Chronic	1.0E+00	mg/kg/day	see below	
ANTIMONY	Chronic	4.0E-04	mg/kg/day	same	No difference
ARSENIC	Chronic	3.0E-04	mg/kg/day	see below	
BARIUM	Chronic	2.0E-01	mg/kg/day	no comment	No difference
CADMIUM	Chronic	1.0E-03	mg/kg/day	0.0005	Tier 3 Subchronic value lower than IRIS chronic. Therefore, no change proposed.
CHROMIUM VI	Chronic	3.0E-03	mg/kg/day	see below	
COBALT	Chronic	3.0E-04	mg/kg/day	0.003	**RA RfD is more conservative**
COPPER	Chronic	4.0E-02	mg/kg/day	0.01	Tier 3 Subchronic value lower than IRIS chronic. Therefore, no change proposed.
IRON	Chronic	7.0E-01	mg/kg/day	same	No difference
MANGANESE	Chronic	4.7E-02	mg/kg/day	0.023	**RA less conservative**
MERCURY	Chronic	3.0E-04	mg/kg/day	see below	
VANADIUM	Chronic	9.0E-03	mg/kg/day	0.005	**Based on new RSL. RA less conservative.**
SUBCHRONIC					
ALUMINUM	Subchronic	2.0E+00	mg/kg/day	1	**RA less conservative**
ARSENIC	Subchronic	5.0E-03	mg/kg/day	0.003	**RA less conservative**
Chromium VI	Subchronic	2.0E-02	mg/kg/day	0.005	Tier 3 Subchronic value lower than IRIS chronic. Therefore, no change proposed.
MERCURY	Subchronic	3.0E-03	mg/kg/day	no comment	No difference

Bold = Difference in HHRA and IEPA subchronic toxicity values.

TABLE G-2 UNCERTAINTY ASSESSMENT

COMPARE TABLE 5-12 AND IEPA PROPOSED TOXICITY VALUES - INHALATION
SITE 21 - BUILDINGS 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

Chemical of Potential Concern	Chronic/ Subchronic	Inhalation Chronic RfC		IEPA Proposed Subchronic RfC	Difference in Subchronic RfC RA and IEPA values
		Value	Units		
Semivolatile Organic Compounds					
NAPHTHALENE	Chronic	3.0E-03	mg/m^3	3.0E-03	No difference
TCDD TEQs (use 2,3,7,8-TCDD tox valu	Chronic	4.0E-08	mg/m^3	same	No difference
Volatile Organic Compound					
BENZENE	Chronic	3.00E-02	mg/m^3	8.0E-02	**RA RfC is more conservative**
TETRACHLOROETHYLENE	Chronic	2.7E-01	mg/m^3	same	No difference
Inorganics					
ALUMINUM	Chronic	5.0E-03	mg/m^3	same	No difference
ARSENIC	Chronic	1.50E-05	mg/m^3	same	No difference
BARIUM	Chronic	5.0E-04	mg/m^3		
CADMIUM	Chronic	1.0E-05	mg/m^3	same	No difference
CHROMIUM VI	Chronic	1.0E-04	mg/m^3	3.0E-04	**RA RfC is more conservative**
COBALT	Chronic	6.0E-06	mg/m^3	2.0E-05	**RA RfC is more conservative**
IRON	NA	NA	NA		
MANGANESE	Chronic	5.0E-05	mg/m^3	same	No difference
MERCURY	Chronic	3.0E-05	mg/m^3	same	No difference
VANADIUM	Chronic	7.0E-06	mg/m^3	1.0E-04	**RA RfC is more conservative**

TABLE 4.1

VALUES USED FOR DAILY INTAKE CALCULATIONS
EXPOSURE OF CONSTRUCTION WORKERS TO SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface Soil
Exposure Point: Entire Site
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CTE Value	CTE Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Csoil	Chemical Concentration in Soil	mg/kg	95% UCL or Max	USEPA, December 2002	Mean	USEPA, December 1989	Ingestion Intake (mg/kg/day) =
	IR	Ingestion Rate of Soil	mg/day	330	USEPA, December 2002	165	Professional Judgment	Csoil x IR x Fi x EF x ED x CF
	Fi	Fraction Ingested	unitless	1	USEPA, May 1993	1	USEPA, May 1993	BW x AT
	EF	Exposure Frequency	days/year	30	IEPA, April 2004	30	IEPA, April 2004	U.S. EPA, December 1989
	ED	Exposure Duration	years	1	Professional Judgement	1	Professional Judgement	
	CF	Conversion Factor	kg/mg	1.0E-06	USEPA, December 1989	1.0E-06	USEPA, December 1989	
	BW	Body Weight	kg	70	USEPA, May 1993	70	USEPA, May 1993	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, December 1989	25,550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	42	USEPA, December 1989	42	USEPA, December 1989	
Dermal	Csoil	Chemical Concentration in Soil	mg/kg	95% UCL or Max	USEPA, December 2002	Mean	USEPA, December 1989	Dermal Intake (mg/kg/day) =
	CF	Conversion Factor	kg/mg	1.0E-06	USEPA, December 1989	1.0E-06	USEPA, December 1989	Csoil x CF x SA x AF x ABS x EF x ED
	SA	Skin Surface Area	cm^2/day	3,300	USEPA, July 2004	3,300	USEPA, July 2004	BW x AT
	AF	Soil to Skin Adherence Factor	mg/cm^2	0.3	USEPA, July 2004	0.1	USEPA, July 2004	U.S. EPA, December 1989
	ABS	Dermal Absorption Factor (Solid)	unitless	chemical -specific	USEPA, July 2004	chemical -specific	USEPA, July 2004	
	EF	Exposure Frequency	days/year	30	IEPA, April 2004	30	IEPA, April 2004	
	ED	Exposure Duration	years	1	Professional Judgement	1	Professional Judgement	
	BW	Body Weight	kg	70	USEPA, May 1993	70	USEPA, May 1993	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, December 1989	25,550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	42	IEPA, Janaury 2003	42	IEPA, Janaury 2003	

Daily Intake Calculations

Ingestion Intake = (IR x Fi x EF x ED x CF) / (BW x AT)
Dermal Intake = (CF x SA x AF x ABS x EF x ED) / (BW x AT)

Cancer Ingestion Intake - RME = 5.54E-09
Noncancer Ingestion Intake - RME = 3.37E-06

Cancer Ingestion Intake - CTE = 2.77E-09
Noncancer Ingestion Intake - CTE = 1.68E-06

Cancer Dermal Intake - RME = 1.66E-08
Noncancer Dermal Intake - RME = 1.01E-05

Cancer Dermal Intake - CTE = 5.54E-09
Noncancer Dermal Intake - CTE = 3.37E-06

TABLE 7.1 - REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF NON-CANCER HAZARDS FROM EXPOSURE OF CONSTRUCTION WORKERS TO SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface Soil
Exposure Point: Entire Site
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose (Subchronic[2] if available)	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	BAP EQUIVALENT (FULL DLs	5.06E+01	mg/kg	5.06E+01	1.7E-04	mg/kg-day		mg/kg-day	NA	NA	
	AROCLOR 1260	7.20E-01	mg/kg	7.20E-01	2.4E-06	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.2E-01
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	1.1E-10	mg/kg-day	1.0E-09	mg/kg-day	NA	NA	1.1E-01
	ALUMINUM	2.95E+04	mg/kg	2.95E+04	9.9E-02	mg/kg-day	*2.0E+00*	mg/kg-day	NA	NA	5.0E-02
	ANTIMONY	5.22E+00	mg/kg	5.22E+00	1.8E-05	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	4.4E-02
	ARSENIC	4.84E+01	mg/kg	4.84E+01	1.6E-04	mg/kg-day	*5.0E-03*	mg/kg-day	NA	NA	3.3E-02
	BARIUM	2.34E+02	mg/kg	2.34E+02	7.9E-04	mg/kg-day	2.0E-01	mg/kg-day	NA	NA	3.9E-03
	CADMIUM	1.30E+01	mg/kg	1.30E+01	4.4E-05	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	4.4E-02
	CHROMIUM	1.63E+02	mg/kg	1.63E+02	5.5E-04	mg/kg-day	*2.0E-02*	mg/kg-day	NA	NA	2.7E-02
	COBALT	1.77E+01	mg/kg	1.77E+01	6.0E-05	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.0E-01
	COPPER	8.35E+02	mg/kg	8.35E+02	2.8E-03	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	7.0E-02
	IRON	6.95E+04	mg/kg	6.95E+04	2.3E-01	mg/kg-day	7.0E-01	mg/kg-day	NA	NA	3.3E-01
	MANGANESE	2.42E+03	mg/kg	2.42E+03	8.1E-03	mg/kg-day	4.7E-02	mg/kg-day	NA	NA	1.7E-01
	MERCURY	8.98E+00	mg/kg	8.98E+00	3.0E-05	mg/kg-day	*3.0E-03*	mg/kg-day	NA	NA	1.0E-02
	VANADIUM	2.57E+01	mg/kg	2.57E+01	8.7E-05	mg/kg-day	9.0E-03	mg/kg-day	NA	NA	9.6E-03
	(total)										**1.E+00**
Dermal	BAP EQUIVALENT (FULL DLs	5.06E+01	mg/kg	5.06E+01	6.6E-05	mg/kg-day		mg/kg-day	NA	NA	
	AROCLOR 1260	7.20E-01	mg/kg	7.20E-01	1.0E-06	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	5.1E-02
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	1.0E-11	mg/kg-day	1.0E-09	mg/kg-day	NA	NA	1.0E-02
	ALUMINUM	2.95E+04	mg/kg	2.95E+04		mg/kg-day	*2.0E+00*	mg/kg-day	NA	NA	
	ANTIMONY	5.22E+00	mg/kg	5.22E+00		mg/kg-day	4.0E-04	mg/kg-day	NA	NA	
	ARSENIC	4.84E+01	mg/kg	4.84E+01	1.5E-05	mg/kg-day	5.0E-03	mg/kg-day	NA	NA	2.9E-03
	BARIUM	2.34E+02	mg/kg	2.34E+02		mg/kg-day	2.0E-01	mg/kg-day	NA	NA	
	CADMIUM	1.30E+01	mg/kg	1.30E+01	1.3E-07	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	5.3E-03
	CHROMIUM	1.63E+02	mg/kg	1.63E+02		mg/kg-day	*5.0E-04*	mg/kg-day	NA	NA	
	COBALT	1.77E+01	mg/kg	1.77E+01		mg/kg-day	3.0E-04	mg/kg-day	NA	NA	
	COPPER	8.35E+02	mg/kg	8.35E+02		mg/kg-day	4.0E-02	mg/kg-day	NA	NA	
	IRON	6.95E+04	mg/kg	6.95E+04		mg/kg-day	7.0E-01	mg/kg-day	NA	NA	
	MANGANESE	2.42E+03	mg/kg	2.42E+03		mg/kg-day	1.9E-03	mg/kg-day	NA	NA	
	MERCURY	8.98E+00	mg/kg	8.98E+00		mg/kg-day	*3.0E-03*	mg/kg-day	NA	NA	
	VANADIUM	2.57E+01	mg/kg	2.57E+01		mg/kg-day	9.0E-03	mg/kg-day	NA	NA	
	(total)										**6.9E-02**
										Total Hazard Index Across All Exposure Routes/Pathways	**1.E+00**

[1] Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

[2] Subchronic values in *italics*.

Dermal Absorption Fraction from Soil(ABS) (USEPA, July 2004):

Dioxins/furans - 0.03 Arsenic - 0.03 Cadmium - 0.001 Aroclor 1260 - 0.14

PAHs - 0.13 Other Metals and Volatiles - not evaluated for dermal contact with soil.

TABLE 8.1 - REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF CANCER RISKS FROM EXPOSURE OF CONSTRUCTION WORKERS TO SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface Soil
Exposure Point: Entire Site
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	BAP EQUIVALENT (FULL DLs	5.06E+01	mg/kg	5.06E+01	mg/kg	M	2.8E-07	mg/kg-day	7.3E+00	$(mg/kg\text{-}day)^{-1}$	2.0E-06
	AROCLOR 1260	7.20E-01	mg/kg	7.20E-01	mg/kg	M	4.0E-09	mg/kg-day	2.0E+00	$(mg/kg\text{-}day)^{-1}$	8.0E-09
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	mg/kg	M	1.9E-13	mg/kg-day	1.5E+05	$(mg/kg\text{-}day)^{-1}$	2.8E-08
	ALUMINUM	2.95E+04	mg/kg	2.95E+04	mg/kg	M	1.6E-04	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	ANTIMONY	5.22E+00	mg/kg	5.22E+00	mg/kg	M	2.9E-08	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	ARSENIC	4.84E+01	mg/kg	4.84E+01	mg/kg	M	2.7E-07	mg/kg-day	1.5E+00	$(mg/kg\text{-}day)^{-1}$	4.0E-07
	BARIUM	2.34E+02	mg/kg	2.34E+02	mg/kg	M	1.3E-06	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	CADMIUM	1.30E+01	mg/kg	1.30E+01	mg/kg	M	7.2E-08	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	CHROMIUM	1.63E+02	mg/kg	1.63E+02	mg/kg	M	9.0E-07	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	COBALT	1.77E+01	mg/kg	1.77E+01	mg/kg	M	9.8E-08	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	COPPER	8.35E+02	mg/kg	8.35E+02	mg/kg	M	4.6E-06	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	IRON	6.95E+04	mg/kg	6.95E+04	mg/kg	M	3.8E-04	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MANGANESE	2.42E+03	mg/kg	2.42E+03	mg/kg	M	1.3E-05	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MERCURY	8.98E+00	mg/kg	8.98E+00	mg/kg	M	5.0E-08	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	VANADIUM	2.57E+01	mg/kg	2.57E+01	mg/kg	M	1.4E-07	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	(total)										**2.48E-06**
Dermal	BAP EQUIVALENT (FULL DLs	5.06E+01	mg/kg	5.06E+01	mg/kg	M	1.1E-07	mg/kg-day	7.3E+00	$(mg/kg\text{-}day)^{-1}$	8.0E-07
	AROCLOR 1260	7.20E-01	mg/kg	7.20E-01	mg/kg	M	1.7E-09	mg/kg-day	2.0E+00	$(mg/kg\text{-}day)^{-1}$	3.3E-09
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	mg/kg	M	1.7E-14	mg/kg-day	1.5E+05	$(mg/kg\text{-}day)^{-1}$	2.5E-09
	ALUMINUM	2.95E+04	mg/kg	2.95E+04	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	ANTIMONY	5.22E+00	mg/kg	5.22E+00	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	ARSENIC	4.84E+01	mg/kg	4.84E+01	mg/kg	M	2.4E-08	mg/kg-day	1.5E+00	$(mg/kg\text{-}day)^{-1}$	3.6E-08
	BARIUM	2.34E+02	mg/kg	2.34E+02	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	CADMIUM	1.30E+01	mg/kg	1.30E+01	mg/kg	M	2.2E-10	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	CHROMIUM	1.63E+02	mg/kg	1.63E+02	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	COBALT	1.77E+01	mg/kg	1.77E+01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	COPPER	8.35E+02	mg/kg	8.35E+02	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	IRON	6.95E+04	mg/kg	6.95E+04	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MANGANESE	2.42E+03	mg/kg	2.42E+03	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MERCURY	8.98E+00	mg/kg	8.98E+00	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	VANADIUM	2.57E+01	mg/kg	2.57E+01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	(total)										**8.4E-07**
										Total Risk Across All Exposure Routes/Pathways	**3.3E-06**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for risk calculation.

Dermal Absorption Fraction from Soil(ABS) (USEPA, July 2004):
Dioxins/furans - 0.03 Arsenic - 0.03 Aroclor 1260 - 0.14
PAHs - 0.13 Other Metals and Volatiles - not evaluated for dermal contact with soil.

TABLE 4.1a

VALUES USED FOR DAILY INTAKE CALCULATIONS
EXPOSURE OF CONSTRUCTION WORKERS TO SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface Soil
Exposure Point: Entire Site
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CTE Value	CTE Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Csoil	Chemical Concentration in Soil	mg/kg	95% UCL or Max	USEPA, December 2002	Mean	USEPA, December 2002	Ingestion Intake (mg/kg/day) =
	IR	Ingestion Rate of Soil	mg/day	330	USEPA, December 2002	165	Professional Judgment	Csoil x IR x Fi x EF x ED x CF
	Fi	Fraction Ingested	unitless	1	USEPA, May 1993	1	USEPA, May 1993	BW x AT
	EF	Exposure Frequency	days/year	30	IEPA, April 2004	30	IEPA, April 2004	U.S. EPA, December 1989
	ED	Exposure Duration	years	1	Professional Judgement	1	Professional Judgement	
	CF	Conversion Factor	kg/mg	1.0E-06	USEPA, December 1989	1.0E-06	USEPA, December 1989	
	BW	Body Weight	kg	70	USEPA, May 1993	70	USEPA, May 1993	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, December 1989	25,550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	42	USEPA, December 1989	42	USEPA, December 1989	
Dermal	Csoil	Chemical Concentration in Soil	mg/kg	95% UCL or Max	USEPA, December 2002	Mean	USEPA, December 2002	Dermal Intake (mg/kg/day) =
	CF	Conversion Factor	kg/mg	1.0E-06	USEPA, December 1989	1.0E-06	USEPA, December 1989	Csoil x CF x SA x AF x ABS x EF x ED
	SA	Skin Surface Area	cm^2/day	3,300	USEPA, July 2004	3,300	USEPA, July 2004	BW x AT
	AF	Soil to Skin Adherence Factor	mg/cm^2	0.3	USEPA, July 2004	0.1	USEPA, July 2004	U.S. EPA, December 1989
	ABS	Dermal Absorption Factor (Solid)	unitless	chemical -specific	USEPA, July 2004	chemical -specific	USEPA, July 2004	
	EF	Exposure Frequency	days/year	30	IEPA, April 2004	30	IEPA, April 2004	
	ED	Exposure Duration	years	1	Professional Judgement	1	Professional Judgement	
	BW	Body Weight	kg	70	USEPA, May 1993	70	USEPA, May 1993	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, December 1989	25,550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	42	IEPA, Janaury 2003	42	IEPA, Janaury 2003	

Daily Intake Calculations

Ingestion Intake = (IR x Fi x EF x ED x CF) / (BW x AT)
Dermal Intake = (CF x SA x AF x ABS x EF x ED) / (BW x AT)

Cancer Ingestion Intake - RME = 5.54E-09
Noncancer Ingestion Intake - RME = 3.37E-06

Cancer Ingestion Intake - CTE = 2.77E-09
Noncancer Ingestion Intake - CTE = 1.68E-06

Cancer Dermal Intake - RME = 1.66E-08
Noncancer Dermal Intake - RME = 1.01E-05

Cancer Dermal Intake - CTE = 5.54E-09
Noncancer Dermal Intake - CTE = 3.37E-06

TABLE 7.1a - CENTRAL TENDENCY EXPOSURE (CTE)
CALCULATION OF NON-CANCER HAZARDS FROM EXPOSURE OF CONSTRUCTION WORKERS TO SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface Soil
Exposure Point: Entire Site
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose (Subchronic[2] if available)	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	BAP EQUIVALENT (FULL DLs	3.57E+00	mg/kg	3.57E+00	6.0E-06	mg/kg-day		mg/kg-day	NA	NA	
	AROCLOR 1260	1.54E-01	mg/kg	1.54E-01	2.6E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.3E-02
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	5.6E-11	mg/kg-day	1.0E-09	mg/kg-day	NA	NA	5.6E-02
	ALUMINUM	7.62E+03	mg/kg	7.62E+03	1.3E-02	mg/kg-day	*2.0E+00*	mg/kg-day	NA	NA	6.4E-03
	ANTIMONY	1.06E+00	mg/kg	1.06E+00	1.8E-06	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	4.5E-03
	ARSENIC	1.25E+01	mg/kg	1.25E+01	2.1E-05	mg/kg-day	*5.0E-03*	mg/kg-day	NA	NA	4.2E-03
	BARIUM	7.64E+01	mg/kg	7.64E+01	1.3E-04	mg/kg-day	2.0E-01	mg/kg-day	NA	NA	6.4E-04
	CADMIUM	2.30E+00	mg/kg	2.30E+00	3.9E-06	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	3.9E-03
	CHROMIUM	2.03E+01	mg/kg	2.03E+01	3.4E-05	mg/kg-day	*2.0E-02*	mg/kg-day	NA	NA	1.7E-03
	COBALT	6.59E+00	mg/kg	6.59E+00	1.1E-05	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	3.7E-02
	COPPER	9.36E+01	mg/kg	9.36E+01	1.6E-04	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	3.9E-03
	IRON	2.68E+04	mg/kg	2.68E+04	4.5E-02	mg/kg-day	7.0E-01	mg/kg-day	NA	NA	6.4E-02
	MANGANESE	5.89E+02	mg/kg	5.89E+02	9.9E-04	mg/kg-day	4.7E-02	mg/kg-day	NA	NA	2.1E-02
	MERCURY	5.68E-01	mg/kg	5.68E-01	9.6E-07	mg/kg-day	*3.0E-03*	mg/kg-day	NA	NA	3.2E-04
	VANADIUM	1.67E+01	mg/kg	1.67E+01	2.8E-05	mg/kg-day	9.0E-03	mg/kg-day	NA	NA	3.1E-03
	(total)										0.2
Dermal	BAP EQUIVALENT (FULL DLs	3.57E+00	mg/kg	3.57E+00	1.6E-06	mg/kg-day		mg/kg-day	NA	NA	
	AROCLOR 1260	1.54E-01	mg/kg	1.54E-01	7.3E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	3.6E-03
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	3.4E-12	mg/kg-day	1.0E-09	mg/kg-day	NA	NA	3.4E-03
	ALUMINUM	7.62E+03	mg/kg	7.62E+03		mg/kg-day	*2.0E+00*	mg/kg-day	NA	NA	
	ANTIMONY	1.06E+00	mg/kg	1.06E+00		mg/kg-day	4.0E-04	mg/kg-day	NA	NA	
	ARSENIC	1.25E+01	mg/kg	1.25E+01	1.3E-06	mg/kg-day	5.0E-03	mg/kg-day	NA	NA	2.5E-04
	BARIUM	7.64E+01	mg/kg	7.64E+01		mg/kg-day	2.0E-01	mg/kg-day	NA	NA	
	CADMIUM	2.30E+00	mg/kg	2.30E+00	7.7E-09	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	3.1E-04
	CHROMIUM	2.03E+01	mg/kg	2.03E+01		mg/kg-day	*5.0E-04*	mg/kg-day	NA	NA	
	COBALT	6.59E+00	mg/kg	6.59E+00		mg/kg-day	3.0E-04	mg/kg-day	NA	NA	
	COPPER	9.36E+01	mg/kg	9.36E+01		mg/kg-day	4.0E-02	mg/kg-day	NA	NA	
	IRON	2.68E+04	mg/kg	2.68E+04		mg/kg-day	7.0E-01	mg/kg-day	NA	NA	
	MANGANESE	5.89E+02	mg/kg	5.89E+02		mg/kg-day	1.9E-03	mg/kg-day	NA	NA	
	MERCURY	5.68E-01	mg/kg	5.68E-01		mg/kg-day	*3.0E-03*	mg/kg-day	NA	NA	
	VANADIUM	1.67E+01	mg/kg	1.67E+01		mg/kg-day	9.0E-03	mg/kg-day	NA	NA	
	(total)										7.6E-03
										Total Hazard Index Across All Exposure Routes/Pathways	**0.2**

[1] Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

[2] Subchronic values in *italics*.

Dermal Absorption Fraction from Soil(ABS) (USEPA, July 2004):

Dioxins/furans - 0.03 Arsenic - 0.03 Cadmium - 0.001 Aroclor 1260 - 0.14

PAHs - 0.13 Other Metals and Volatiles - not evaluated for dermal contact with soil.

TABLE 8.1a - CENTRAL TENDENCY EXPOSURE (CTE)
CALCULATION OF CANCER RISKS FROM EXPOSURE OF CONSTRUCTION WORKERS TO SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface Soil
Exposure Point: Entire Site
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	BAP EQUIVALENT (FULL DLs	3.57E+00	mg/kg	3.57E+00	mg/kg	M	9.9E-09	mg/kg-day	7.3E+00	$(mg/kg\text{-}day)^{-1}$	7.2E-08
	AROCLOR 1260	1.54E-01	mg/kg	1.54E-01	mg/kg	M	4.3E-10	mg/kg-day	2.0E+00	$(mg/kg\text{-}day)^{-1}$	8.5E-10
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	mg/kg	M	9.3E-14	mg/kg-day	1.5E+05	$(mg/kg\text{-}day)^{-1}$	1.4E-08
	ALUMINUM	7.62E+03	mg/kg	7.62E+03	mg/kg	M	2.1E-05	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	ANTIMONY	1.06E+00	mg/kg	1.06E+00	mg/kg	M	2.9E-09	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	ARSENIC	1.25E+01	mg/kg	1.25E+01	mg/kg	M	3.4E-08	mg/kg-day	1.5E+00	$(mg/kg\text{-}day)^{-1}$	5.2E-08
	BARIUM	7.64E+01	mg/kg	7.64E+01	mg/kg	M	2.1E-07	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	CADMIUM	2.30E+00	mg/kg	2.30E+00	mg/kg	M	6.4E-09	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	CHROMIUM	2.03E+01	mg/kg	2.03E+01	mg/kg	M	5.6E-08	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	COBALT	6.59E+00	mg/kg	6.59E+00	mg/kg	M	1.8E-08	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	COPPER	9.36E+01	mg/kg	9.36E+01	mg/kg	M	2.6E-07	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	IRON	2.68E+04	mg/kg	2.68E+04	mg/kg	M	7.4E-05	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MANGANESE	5.89E+02	mg/kg	5.89E+02	mg/kg	M	1.6E-06	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MERCURY	5.68E-01	mg/kg	5.68E-01	mg/kg	M	1.6E-09	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	VANADIUM	1.67E+01	mg/kg	1.67E+01	mg/kg	M	4.6E-08	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	(total)										**1.39E-07**
Dermal	BAP EQUIVALENT (FULL DLs	3.57E+00	mg/kg	3.57E+00	mg/kg	M	2.6E-09	mg/kg-day	7.3E+00	$(mg/kg\text{-}day)^{-1}$	1.9E-08
	AROCLOR 1260	1.54E-01	mg/kg	1.54E-01	mg/kg	M	1.2E-10	mg/kg-day	2.0E+00	$(mg/kg\text{-}day)^{-1}$	2.4E-10
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	mg/kg	M	5.6E-15	mg/kg-day	1.5E+05	$(mg/kg\text{-}day)^{-1}$	8.3E-10
	ALUMINUM	7.62E+03	mg/kg	7.62E+03	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	ANTIMONY	1.06E+00	mg/kg	1.06E+00	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	ARSENIC	1.25E+01	mg/kg	1.25E+01	mg/kg	M	2.1E-09	mg/kg-day	1.5E+00	$(mg/kg\text{-}day)^{-1}$	3.1E-09
	BARIUM	7.64E+01	mg/kg	7.64E+01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	CADMIUM	2.30E+00	mg/kg	2.30E+00	mg/kg	M	1.3E-11	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	CHROMIUM	2.03E+01	mg/kg	2.03E+01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	COBALT	6.59E+00	mg/kg	6.59E+00	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	COPPER	9.36E+01	mg/kg	9.36E+01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	IRON	2.68E+04	mg/kg	2.68E+04	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MANGANESE	5.89E+02	mg/kg	5.89E+02	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MERCURY	5.68E-01	mg/kg	5.68E-01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	VANADIUM	1.67E+01	mg/kg	1.67E+01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	(total)										**2.3E-08**
										Total Risk Across All Exposure Routes/Pathways	**1.6E-07**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for risk calculation.

Dermal Absorption Fraction from Soil(ABS) (USEPA, July 2004):
Dioxins/furans - 0.03 Arsenic - 0.03 Aroclor 1260 - 0.14
PAHs - 0.13 Other Metals and Volatiles - not evaluated for dermal contact with soil.

TABLE 4.2

VALUES USED FOR DAILY INTAKE CALCULATIONS
EXPOSURE OF CONSTRUCTION WORKERS BY INHALATION FROM SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Inhalation	CS	Chemical concentration in soil	mg/kg	95% UCL or Max	USEPA, May 1993	95% UCL or Max	USEPA, May 1993	Intake (mg/kg/day) =
	VF	Volatilization factor - Chemical Specific	m^3/kg	(1)	USEPA, December 2002	(1)	USEPA, December 2002	
	PEF	Particulate emission factor	m^3/kg	1.27E+06	USEPA, December 2002	1.27E+06	USEPA, December 2002	$\frac{CS \times \left[\frac{1}{VF} + \frac{1}{PEF}\right] \times ET \times EF \times ED}{AT \times 24}$
	ET	Exposure Time	hours/day	8	USEPA, December 2002	4	USEPA, December 2002	
	EF	Exposure Frequency	days/year	30	IEPA, April 2004	30	IEPA, April 2004	
	ED	Exposure Duration	years	1	Professional Judgement	1	Professional Judgement	
	AT-C	Averaging Time (Cancer)	days	25550	USEPA, December 1989	25550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	42	IEPA, Janaury 2003	42	IEPA, Janaury 2003	

Notes:
(1) - Calculated according to USEPA Soil Screening Guidance, December 2002.

Daily Intake Calculations
Inhalation Intake = (ET x EF x ED x (1/PEF)+(1/VF)) / (AT x 24)

Cancer Inhalation Intake(RME) = 3.91E-04
Noncancer Inhalation Intake(RME) = 2.38E-01

Cancer Inhalation Intake(CTE) = 1.96E-04
Noncancer Inhalation Intake(CTE) = 1.19E-01

Cancer risk from ingestion = Air concentration x Cancer Inhalation Intake x Cancer Inhalation Unit Risk (IUR)
Hazard Index from ingestion = Air concentration x Noncancer Inhalation Intake / Reference Air Concentration (RfCi)

CALCULATION OF AMBIENT AIR CONCENTRATION
SOURCE: U.S. EPA SOIL SCREENING GUIDANCE

Scenario Timeframe: Future
Medium: Subsurfce Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Construction Worker
Receptor Age: Adult

Purpose: To calculate ambient air concentrations resulting from fugitive dust and volatilization from soil.

Relevant Equations:

$$Cair = Cs \times (1/PEF + 1/VF)$$

$$VF = \frac{Q/C \times (3.14 \times DA \times T)^{1/2} \times 10^{-4}\ m^2/cm^2}{2 \times pb \times DA}$$

$$DA = \frac{[(\theta a^{10/3} \times Di \times H + \theta w^{10/3} \times Dw)/n^2)]}{pb \times Kd + \theta w + \theta a \times H}$$

$$Csat = S/pb \times (Kd \times pb + \theta w + H \times \theta a)$$

INPUT PARAMTERS			
Parameter	**Value**	**Definition**	
Q/C = :	97.78	Inverse of mean conc. at center of source (g/m^2-s per kg/m^3).	
T = :	7.6E+08	Exposure interval (seconds).	
pb = :	1.5	Dry soil bulk density (g/cm^3).	
ps = :	2.65	soil particle density (g/cm^3).	
n = :	0.434	Total soil porosity (L_{pore}/L_{soil}).	
θw = :	0.15	Water-filled soil porosity (L_{pore}/L_{soil}).	
θa = :	0.284	Air-filled soil porosity (L_{air}/L_{soil}).	
Di = :	Chemical specific	Diffusivity in air (cm^2/sec).	
H' = :	Chemical specific	Dimensionless Henry's Law Constant.	
Dw = :	Chemical specific	Diffusivity in water (cm^2/sec).	
DA = :	Chemical specific	Apparent diffusivity (cm^2/sec).	
Kd = :	Chemical specific	Soil-water partition coefficient (cm^3/g).	
Koc = :	Chemical specific	Soil organic carbon partition coefficient (cm^3/g).	
foc = :	0.006	Fraction organic carbon in soil (g/g).	
F_D = :	1	dispersion correction factor	
V =:	0.5	Fraction of vegatative cover (unitless)	
Um =:	3.44	Mean annual wind speed (m/s)	
Ut =:	11.32	equivalent threshold value of windspeed at 7 m (m/s)	2.92
F(x) =:	0.0086	Function dependent on Um/Ut	0.0085
PEF = :	1.36E+09	Particulate emission factor (m^3/kg)	8.1E+10

Error in Calcs? No = 0, Yes > 0 0

Chemical	Cs (mg/kg)	Volatile	Chemical Properties					Intermediate Calculations				Results		
			Koc (cm^3/g)	Di (cm^2/sec)	Dw (cm^2/sec)	S (mg/L)	H'	Kd (cm^3/g)	Da (cm^2/sec)	VF (m^3/kg)	Csat (mg/kg)	CaV (mg/m^3)	CaP (mg/m^3)	CaTot (mg/m^3)
All Soil														
naphthalene	0.52	Y	2.00E+03	5.90E-02	7.50E-06	3.10E+01	1.98E-02	1.20E+01	5.15E-06	7.00E+04	3.75E+02	7.42E-06	3.82E-10	7.42E-06
tetrachloroethylene		Y	1.55E+02	7.20E-02	8.20E-06	2.00E+02	7.54E-01	9.30E-01	2.47E-03	3.20E+03	2.35E+02	0.00E+00	0.00E+00	0.00E+00

TABLE 7.2. REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF NON-CANCER HAZARDS
EXPOSURE OF CONSTRUCTION WORKERS BY INHALATION FROM SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation [1]	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Concentration (Subchronic [2] if available)	Reference Concentration Units	Hazard Quotient
Inhalation	NAPHTHALENE (partic.)	5.20E-01	mg/kg	4.1E-07	mg/m^3	R	9.7E-08	mg/m^3	3.0E-03	mg/m^3	3.E-05
	ALUMINUM	2.95E+04	mg/kg	2.3E-02	mg/m^3	R	5.5E-03	mg/m^3	5.0E-03	mg/m^3	1.E+00
	ARSENIC	4.84E+01	mg/kg	3.8E-05	mg/m^3	R	9.1E-06	mg/m^3	1.5E-05	mg/m^3	6.E-01
	BARIUM	2.34E+02	mg/kg	1.8E-04	mg/m^3	R	4.4E-05	mg/m^3	*5.0E-03*	mg/m^3	9.E-03
	CADMIUM	1.30E+01	mg/kg	1.0E-05	mg/m^3	R	2.4E-06	mg/m^3	1.0E-05	mg/m^3	2.E-01
	CHROMIUM	1.63E+02	mg/kg	1.3E-04	mg/m^3	R	3.1E-05	mg/m^3	1.0E-04	mg/m^3	3.E-01
	COBALT	1.77E+01	mg/kg	1.4E-05	mg/m^3	R	3.3E-06	mg/m^3	6.0E-06	mg/m^3	6.E-01
	MANGANESE	2.42E+03	mg/kg	1.9E-03	mg/m^3	R	4.5E-04	mg/m^3	5.0E-05	mg/m^3	9.E+00
	MERCURY	8.98E+00	mg/kg	7.1E-06	mg/m^3	R	1.7E-06	mg/m^3	3.0E-05	mg/m^3	6.E-02
	NAPHTHALENE (vol.)	5.20E-01	mg/kg	7.4E-06	mg/m^3	R	1.8E-06	mg/m^3	3.0E-03	mg/m^3	6.E-04
	(total)										12
										Total Hazard Index Across All Exposure Routes/Pathways	**12**

[1] Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

[2] Subchronic values in *italics*.

8.2. REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF CANCER RISKS
EXPOSURE OF CONSTRUCTION WORKERS BY INHALATION FROM SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Unit Risk	Cancer Unit Risk Units	Cancer Risk
Inhalation	ARSENIC	4.84E+01	mg/kg	3.8E-05	mg/m^3	R	1.5E-08	mg/m^3	4.3E+00	$(mg/m^3)^{-1}$	6.4E-08
	CADMIUM	1.30E+01	mg/kg	1.0E-05	mg/m^3	R	4.0E-09	mg/m^3	1.8E+00	$(mg/m^3)^{-1}$	7.2E-09
	CHROMIUM	1.63E+02	mg/kg	1.3E-04	mg/m^3	R	5.0E-08	mg/m^3	1.2E+01	$(mg/m^3)^{-1}$	6.0E-07
	COBALT	1.77E+01	mg/kg	1.4E-05	mg/m^3	R	5.5E-09	mg/m^3	9.0E+00	$(mg/m^3)^{-1}$	4.9E-08
	(total)										7.2E-07
										Total Risk Across All Exposure Routes/Pathways	**7.E-07**

TABLE 4.2a
VALUES USED FOR DAILY INTAKE CALCULATIONS
EXPOSURE OF CONSTRUCTION WORKERS BY INHALATION FROM SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Inhalation	CS	Chemical concentration in soil	mg/kg	95% UCL or Max	USEPA, May 1993	95% UCL or Max	USEPA, May 1993	Intake (mg/kg/day) =
	VF	Volatilization factor - Chemical Specific	m^3/kg	(1)	USEPA, December 2002	(1)	USEPA, December 2002	
	PEF	Particulate emission factor	m^3/kg	1.27E+06	USEPA, December 2002	1.27E+06	USEPA, December 2002	$\frac{CS \times \left[\frac{1}{VF} + \frac{1}{PEF}\right] \times ET \times EF \times ED}{AT \times 24}$
	ET	Exposure Time	hours/day	8	USEPA, December 2002	4	USEPA, December 2002	
	EF	Exposure Frequency	days/year	30	IEPA, April 2004	30	IEPA, April 2004	
	ED	Exposure Duration	years	1	Professional Judgement	1	Professional Judgement	
	AT-C	Averaging Time (Cancer)	days	25550	USEPA, December 1989	25550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	42	IEPA, Janaury 2003	42	IEPA, Janaury 2003	

Notes:
(1) - Calculated according to USEPA Soil Screening Guidance, December 2002.

Daily Intake Calculations
Inhalation Intake = (ET x EF x ED x (1/PEF)+(1/VF)) / (AT x 24)

Cancer Inhalation Intake(RME) = 3.91E-04 Cancer Inhalation Intake(CTE) = 1.96E-04
Noncancer Inhalation Intake(RME) = 2.38E-01 Noncancer Inhalation Intake(CTE) = 1.19E-01

Cancer risk from ingestion = Air concentration x Cancer Inhalation Intake x Cancer Inhalation Unit Risk (IUR)
Hazard Index from ingestion = Air concentration x Noncancer Inhalation Intake / Reference Air Concentration (RfCi)

CALCULATION OF AMBIENT AIR CONCENTRATION
SOURCE: U.S. EPA SOIL SCREENING GUIDANCE

Scenario Timeframe: Future
Medium: Subsurfce Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Construction Worker
Receptor Age: Adult

Purpose: To calculate ambient air concentrations resulting from fugitive dust and volatilization from soil.

Relevant Equations:

$$Cair = Cs \times (1/PEF + 1/VF)$$

$$VF = \frac{Q/C \times (3.14 \times DA \times T)^{1/2} \times 10^{-4}\ m^2/cm^2}{2 \times pb \times DA}$$

$$DA = \frac{[(\theta a^{10/3} \times Di \times H + \theta w^{10/3} \times Dw)/n^2)]}{pb \times Kd + \theta w + \theta a \times H}$$

$$Csat = S/pb \times (Kd \times pb + \theta w + H \times \theta a)$$

INPUT PARAMTERS			
Parameter	**Value**	**Definition**	
Q/C = :	97.78	Inverse of mean conc. at center of source (g/m^2-s per kg/m^3).	
T = :	7.6E+08	Exposure interval (seconds).	
pb = :	1.5	Dry soil bulk density (g/cm^3).	
ps = :	2.65	soil particle density (g/cm^3).	
n = :	0.434	Total soil porosity (L_{pore}/L_{soil}).	
θw = :	0.15	Water-filled soil porosity (L_{pore}/L_{soil}).	
θa = :	0.284	Air-filled soil porosity (L_{air}/L_{soil}).	
Di = :	Chemical specific	Diffusivity in air (cm^2/sec).	
H' = :	Chemical specific	Dimensionless Henry's Law Constant.	
Dw = :	Chemical specific	Diffusivity in water (cm^2/sec).	
DA = :	Chemical specific	Apparent diffusivity (cm^2/sec).	
Kd = :	Chemical specific	Soil-water partition coefficient (cm^3/g).	
Koc = :	Chemical specific	Soil organic carbon partition coefficient (cm^3/g).	
foc = :	0.006	Fraction organic carbon in soil (g/g).	
F_D = :	1	dispersion correction factor	
V =:	0.5	Fraction of vegatative cover (unitless)	
Um =:	3.44	Mean annual wind speed (m/s)	
Ut =:	11.32	equivalent threshold value of windspeed at 7 m (m/s)	2.92
F(x) =:	0.0086	Function dependent on Um/Ut	0.0085
PEF = :	1.36E+09	Particulate emission factor (m^3/kg)	8.1E+10

Error in Calcs? No = 0, Yes > 0 0

Chemical	Cs (mg/kg)	Volatile	Chemical Properties					Intermediate Calculations				Results		
			Koc (cm^3/g)	Di (cm^2/sec)	Dw (cm^2/sec)	S (mg/L)	H'	Kd (cm^3/g)	Da (cm^2/sec)	VF (m^3/kg)	Csat (mg/kg)	CaV (mg/m^3)	CaP (mg/m^3)	CaTot (mg/m^3)
All Soil														
naphthalene	2.29E-01	Y	2.00E+03	5.90E-02	7.50E-06	3.10E+01	1.98E-02	1.20E+01	5.15E-06	7.00E+04	3.75E+02	3.27E-06	1.68E-10	3.27E-06
tetrachloroethylene		Y	1.55E+02	7.20E-02	8.20E-06	2.00E+02	7.54E-01	9.30E-01	2.47E-03	3.20E+03	2.35E+02	0.00E+00	0.00E+00	0.00E+00

TABLE 7.2a. CENTRAL TENDENCY EXPOSURE (CTE)
CALCULATION OF NON-CANCER HAZARDS
EXPOSURE OF CONSTRUCTION WORKERS BY INHALATION FROM SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation [1]	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Concentration (Subchronic [2] if available)	Reference Concentration Units	Hazard Quotient
Inhalation	NAPHTHALENE (particulate)	2.29E-01	mg/kg	1.8E-07	mg/m^3	R	2.1E-08	mg/m^3	3.0E-03	mg/m^3	7.2E-06
	ALUMINUM	7.62E+03	mg/kg	6.0E-03	mg/m^3	R	7.1E-04	mg/m^3	5.0E-03	mg/m^3	1.4E-01
	ARSENIC	1.25E+01	mg/kg	9.8E-06	mg/m^3	R	1.2E-06	mg/m^3	1.5E-05	mg/m^3	7.8E-02
	BARIUM	7.64E+01	mg/kg	6.0E-05	mg/m^3	R	7.2E-06	mg/m^3	*5.0E-03*	mg/m^3	1.4E-03
	CADMIUM	2.30E+00	mg/kg	1.8E-06	mg/m^3	R	2.2E-07	mg/m^3	1.0E-05	mg/m^3	2.2E-02
	CHROMIUM	2.03E+01	mg/kg	1.6E-05	mg/m^3	R	1.9E-06	mg/m^3	1.0E-04	mg/m^3	1.9E-02
	COBALT	6.59E+00	mg/kg	5.2E-06	mg/m^3	R	6.2E-07	mg/m^3	6.0E-06	mg/m^3	1.0E-01
	MANGANESE	5.89E+02	mg/kg	4.6E-04	mg/m^3	R	5.5E-05	mg/m^3	5.0E-05	mg/m^3	1.1E+00
	MERCURY	5.68E-01	mg/kg	4.5E-07	mg/m^3	R	5.3E-08	mg/m^3	3.0E-05	mg/m^3	1.8E-03
	NAPHTHALENE (vol.)	2.29E-01	mg/kg	3.3E-06	mg/m^3	R	3.9E-07	mg/m^3	3.0E-03	mg/m^3	1.3E-04
	(total)										1.47
										Total Hazard Index Across All Exposure Routes/Pathways	**1**

[1] Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

[2] Subchronic values in *italics*.

8.2a. CENTRAL TENDENCY EXPOSURE (CTE)
CALCULATION OF CANCER RISKS
EXPOSURE OF CONSTRUCTION WORKERS BY INHALATION FROM SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Unit Risk	Cancer Unit Risk Units	Cancer Risk
Inhalation	ARSENIC	1.25E+01	mg/kg	9.8E-06	mg/m^3	R	1.9E-09	mg/m^3	4.3E+00	$(mg/m^3)^{-1}$	8.3E-09
	CADMIUM	2.30E+00	mg/kg	1.8E-06	mg/m^3	R	3.5E-10	mg/m^3	1.8E+00	$(mg/m^3)^{-1}$	6.4E-10
	CHROMIUM	2.03E+01	mg/kg	1.6E-05	mg/m^3	R	3.1E-09	mg/m^3	1.2E+01	$(mg/m^3)^{-1}$	3.7E-08
	COBALT	6.59E+00	mg/kg	5.2E-06	mg/m^3	R	1.0E-09	mg/m^3	9.0E+00	$(mg/m^3)^{-1}$	9.1E-09
	(total)										5.5E-08
										Total Risk Across All Exposure Routes/Pathways	**6.E-08**

TABLE 4.3
VALUES USED FOR DAILY INTAKE CALCULATIONS
EXPOSURE OF CONSTRUCTION WORKERS TO SUBSURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Subsurface Soil
Exposure Point: Entire Site
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CTE Value	CTE Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Csoil	Chemical Concentration in Soil	mg/kg	95% UCL or Max	USEPA, December 2002	Mean	USEPA, December 1989	Ingestion Intake (mg/kg/day) = Csoil x IR x Fi x EF x ED x CF / BW x AT U.S. EPA, December 1989
	IR	Ingestion Rate of Soil	mg/day	330	USEPA, December 2002	165	Professional Judgment	
	Fi	Fraction Ingested	unitless	1	USEPA, May 1993	1	USEPA, May 1993	
	EF	Exposure Frequency	days/year	30	IEPA, April 2004	30	IEPA, April 2004	
	ED	Exposure Duration	years	1	Professional Judgement	1	Professional Judgement	
	CF	Conversion Factor	kg/mg	1.0E-06	USEPA, December 1989	1.0E-06	USEPA, December 1989	
	BW	Body Weight	kg	70	USEPA, May 1993	70	USEPA, May 1993	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, December 1989	25,550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	42	USEPA, December 1989	42	USEPA, December 1989	
Dermal	Csoil	Chemical Concentration in Soil	mg/kg	95% UCL or Max	USEPA, December 2002	Mean	USEPA, December 1989	Dermal Intake (mg/kg/day) = Csoil x CF x SA x AF x ABS x EF x ED / BW x AT U.S. EPA, December 1989
	CF	Conversion Factor	kg/mg	1.0E-06	USEPA, December 1989	1.0E-06	USEPA, December 1989	
	SA	Skin Surface Area	cm^2/day	3,300	USEPA, July 2004	3,300	USEPA, July 2004	
	AF	Soil to Skin Adherence Factor	mg/cm^2	0.3	USEPA, July 2004	0.1	USEPA, July 2004	
	ABS	Dermal Absorption Factor (Solid)	unitless	chemical -specific	USEPA, July 2004	chemical -specific	USEPA, July 2004	
	EF	Exposure Frequency	days/year	30	IEPA, April 2004	30	IEPA, April 2004	
	ED	Exposure Duration	years	1	Professional Judgement	1	Professional Judgement	
	BW	Body Weight	kg	70	USEPA, May 1993	70	USEPA, May 1993	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, December 1989	25,550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	42	IEPA, Janaury 2003	42	IEPA, Janaury 2003	

Daily Intake Calculations

Ingestion Intake = (IR x Fi x EF x ED x CF) / (BW x AT)
Dermal Intake = (CF x SA x AF x ABS x EF x ED) / (BW x AT)

Cancer Ingestion Intake - RME = 5.54E-09
Noncancer Ingestion Intake - RME = 3.37E-06

Cancer Ingestion Intake - CTE = 2.77E-09
Noncancer Ingestion Intake - CTE = 1.68E-06

Cancer Dermal Intake - RME = 1.66E-08
Noncancer Dermal Intake - RME = 1.01E-05

Cancer Dermal Intake - CTE = 5.54E-09
Noncancer Dermal Intake - CTE = 3.37E-06

TABLE 7.3 - REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF NON-CANCER HAZARDS FROM EXPOSURE OF CONSTRUCTION WORKERS TO SUBSURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Subsurface Soil
Exposure Point: Entire Site
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose (Subchronic[2] if available)	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	BAP EQUIVALENT (FULL DLs	3.94E+01	mg/kg	3.94E+01	1.3E-04	mg/kg-day		mg/kg-day	NA	NA	
	NAPHTHALENE	4.60E+00	mg/kg	4.60E+00	1.5E-05	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	7.7E-04
	AROCLOR 1260	4.40E-01	mg/kg	4.40E-01	1.5E-06	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	7.4E-02
	TCDD TEQs (FULL DLs)	5.62E-06	mg/kg	5.62E-06	1.9E-11	mg/kg-day	1.0E-09	mg/kg-day	NA	NA	1.9E-02
	ALUMINUM	2.43E+04	mg/kg	2.43E+04	8.2E-02	mg/kg-day	*2.0E+00*	mg/kg-day	NA	NA	4.1E-02
	ARSENIC	8.50E+01	mg/kg	8.50E+01	2.9E-04	mg/kg-day	*5.0E-03*	mg/kg-day	NA	NA	5.7E-02
	CADMIUM	9.62E+00	mg/kg	9.62E+00	3.2E-05	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	3.2E-02
	CHROMIUM	3.43E+01	mg/kg	3.43E+01	1.2E-04	mg/kg-day	*2.0E-02*	mg/kg-day	NA	NA	5.8E-03
	COBALT	2.38E+01	mg/kg	2.38E+01	8.0E-05	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.7E-01
	IRON	6.58E+04	mg/kg	6.58E+04	2.2E-01	mg/kg-day	7.0E-01	mg/kg-day	NA	NA	3.2E-01
	MANGANESE	1.69E+03	mg/kg	1.69E+03	5.7E-03	mg/kg-day	4.7E-02	mg/kg-day	NA	NA	1.2E-01
	MERCURY	4.84E-01	mg/kg	4.84E-01	1.6E-06	mg/kg-day	*3.0E-03*	mg/kg-day	NA	NA	5.4E-04
	VANADIUM	3.35E+01	mg/kg	3.35E+01	1.1E-04	mg/kg-day	9.0E-03	mg/kg-day	NA	NA	1.3E-02
	(total)										**9.E-01**
Dermal	BAP EQUIVALENT (FULL DLs	3.94E+01	mg/kg	3.94E+01	5.2E-05	mg/kg-day		mg/kg-day	NA	NA	
	NAPHTHALENE	4.60E+00	mg/kg	4.60E+00		mg/kg-day	2.0E-02	mg/kg-day	NA	NA	
	AROCLOR 1260	4.40E-01	mg/kg	4.40E-01	6.2E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	3.1E-02
	TCDD TEQs (FULL DLs)	5.62E-06	mg/kg	5.62E-06	1.7E-12	mg/kg-day	1.0E-09	mg/kg-day	NA	NA	1.7E-03
	ALUMINUM	2.43E+04	mg/kg	2.43E+04		mg/kg-day	*2.0E+00*	mg/kg-day	NA	NA	
	ARSENIC	8.50E+01	mg/kg	8.50E+01	2.6E-05	mg/kg-day	5.0E-03	mg/kg-day	NA	NA	5.2E-03
	CADMIUM	9.62E+00	mg/kg	9.62E+00	9.7E-08	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	3.9E-03
	CHROMIUM	3.43E+01	mg/kg	3.43E+01		mg/kg-day	*5.0E-04*	mg/kg-day	NA	NA	
	COBALT	2.38E+01	mg/kg	2.38E+01		mg/kg-day	3.0E-04	mg/kg-day	NA	NA	
	IRON	6.58E+04	mg/kg	6.58E+04		mg/kg-day	7.0E-01	mg/kg-day	NA	NA	
	MANGANESE	1.69E+03	mg/kg	1.69E+03		mg/kg-day	1.9E-03	mg/kg-day	NA	NA	
	MERCURY	4.84E-01	mg/kg	4.84E-01		mg/kg-day	*3.0E-03*	mg/kg-day	NA	NA	
	VANADIUM	3.35E+01	mg/kg	3.35E+01		mg/kg-day	9.0E-03	mg/kg-day	NA	NA	
	(total)										**4.2E-02**
								Total Hazard Index Across All Exposure Routes/Pathways			**9.9E-01**

[1] Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

[2] Subchronic values in *italics*.

Dermal Absorption Fraction from Soil(ABS) (USEPA, July 2004):

Dioxins/furans - 0.03 Arsenic - 0.03 Cadmium - 0.001 Aroclor 1260 - 0.14

PAHs - 0.13 Other Metals and Volatiles - not evaluated for dermal contact with soil.

TABLE 8.3 - REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF CANCER RISKS FROM EXPOSURE OF CONSTRUCTION WORKERS TO SUBSURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Subsurface Soil
Exposure Point: Entire Site
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	BAP EQUIVALENT (FULL DLs	3.94E+01	mg/kg	3.94E+01	mg/kg	M	2.2E-07	mg/kg-day	7.3E+00	$(mg/kg\text{-}day)^{-1}$	1.6E-06
	NAPHTHALENE	4.60E+00	mg/kg	4.60E+00	mg/kg	M	2.5E-08	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	AROCLOR 1260	4.40E-01	mg/kg	4.40E-01	mg/kg	M	2.4E-09	mg/kg-day	2.0E+00	$(mg/kg\text{-}day)^{-1}$	4.9E-09
	TCDD TEQs (FULL DLs)	5.62E-06	mg/kg	5.62E-06	mg/kg	M	3.1E-14	mg/kg-day	1.5E+05	$(mg/kg\text{-}day)^{-1}$	4.7E-09
	ALUMINUM	2.43E+04	mg/kg	2.43E+04	mg/kg	M	1.3E-04	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	ARSENIC	8.50E+01	mg/kg	8.50E+01	mg/kg	M	4.7E-07	mg/kg-day	1.5E+00	$(mg/kg\text{-}day)^{-1}$	7.1E-07
	CADMIUM	9.62E+00	mg/kg	9.62E+00	mg/kg	M	5.3E-08	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	CHROMIUM	3.43E+01	mg/kg	3.43E+01	mg/kg	M	1.9E-07	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	COBALT	2.38E+01	mg/kg	2.38E+01	mg/kg	M	1.3E-07	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	IRON	6.58E+04	mg/kg	6.58E+04	mg/kg	M	3.6E-04	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MANGANESE	1.69E+03	mg/kg	1.69E+03	mg/kg	M	9.4E-06	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MERCURY	4.84E-01	mg/kg	4.84E-01	mg/kg	M	2.7E-09	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	VANADIUM	3.35E+01	mg/kg	3.35E+01	mg/kg	M	1.9E-07	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	(total)										**2.31E-06**
Dermal	BAP EQUIVALENT (FULL DLs	3.94E+01	mg/kg	3.94E+01	mg/kg	M	8.5E-08	mg/kg-day	7.3E+00	$(mg/kg\text{-}day)^{-1}$	6.2E-07
	NAPHTHALENE	4.60E+00	mg/kg	4.60E+00	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	AROCLOR 1260	4.40E-01	mg/kg	4.40E-01	mg/kg	M	1.0E-09	mg/kg-day	2.0E+00	$(mg/kg\text{-}day)^{-1}$	2.0E-09
	TCDD TEQs (FULL DLs)	5.62E-06	mg/kg	5.62E-06	mg/kg	M	2.8E-15	mg/kg-day	1.5E+05	$(mg/kg\text{-}day)^{-1}$	4.2E-10
	ALUMINUM	2.43E+04	mg/kg	2.43E+04	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	ARSENIC	8.50E+01	mg/kg	8.50E+01	mg/kg	M	4.2E-08	mg/kg-day	1.5E+00	$(mg/kg\text{-}day)^{-1}$	6.4E-08
	CADMIUM	9.62E+00	mg/kg	9.62E+00	mg/kg	M	1.6E-10	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	CHROMIUM	3.43E+01	mg/kg	3.43E+01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	COBALT	2.38E+01	mg/kg	2.38E+01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	IRON	6.58E+04	mg/kg	6.58E+04	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MANGANESE	1.69E+03	mg/kg	1.69E+03	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MERCURY	4.84E-01	mg/kg	4.84E-01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	VANADIUM	3.35E+01	mg/kg	3.35E+01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	(total)										**6.9E-07**
										Total Risk Across All Exposure Routes/Pathways	**3.0E-06**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for risk calculation.

Dermal Absorption Fraction from Soil(ABS) (USEPA, July 2004):

Dioxins/furans - 0.03 Arsenic - 0.03 Aroclor 1260 - 0.14
PAHs - 0.13 Other Metals and Volatiles - not evaluated for dermal contact with soil.

TABLE 4.3a
VALUES USED FOR DAILY INTAKE CALCULATIONS
EXPOSURE OF CONSTRUCTION WORKERS TO SUBSURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Subsurface Soil
Exposure Point: Entire Site
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CTE Value	CTE Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Csoil	Chemical Concentration in Soil	mg/kg	95% UCL or Max	USEPA, December 2002	Mean	USEPA, December 1989	Ingestion Intake (mg/kg/day) =
	IR	Ingestion Rate of Soil	mg/day	330	USEPA, December 2002	165	Professional Judgment	Csoil x IR x Fi x EF x ED x CF
	Fi	Fraction Ingested	unitless	1	USEPA, May 1993	1	USEPA, May 1993	BW x AT
	EF	Exposure Frequency	days/year	30	IEPA, April 2004	30	IEPA, April 2004	U.S. EPA, December 1989
	ED	Exposure Duration	years	1	Professional Judgement	1	Professional Judgement	
	CF	Conversion Factor	kg/mg	1.0E-06	USEPA, December 1989	1.0E-06	USEPA, December 1989	
	BW	Body Weight	kg	70	USEPA, May 1993	70	USEPA, May 1993	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, December 1989	25,550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	42	USEPA, December 1989	42	USEPA, December 1989	
Dermal	Csoil	Chemical Concentration in Soil	mg/kg	95% UCL or Max	USEPA, December 2002	Mean	USEPA, December 1989	Dermal Intake (mg/kg/day) =
	CF	Conversion Factor	kg/mg	1.0E-06	USEPA, December 1989	1.0E-06	USEPA, December 1989	Csoil x CF x SA x AF x ABS x EF x ED
	SA	Skin Surface Area	cm^2/day	3,300	USEPA, July 2004	3,300	USEPA, July 2004	BW x AT
	AF	Soil to Skin Adherence Factor	mg/cm^2	0.3	USEPA, July 2004	0.1	USEPA, July 2004	U.S. EPA, December 1989
	ABS	Dermal Absorption Factor (Solid)	unitless	chemical -specific	USEPA, July 2004	chemical -specific	USEPA, July 2004	
	EF	Exposure Frequency	days/year	30	IEPA, April 2004	30	IEPA, April 2004	
	ED	Exposure Duration	years	1	Professional Judgement	1	Professional Judgement	
	BW	Body Weight	kg	70	USEPA, May 1993	70	USEPA, May 1993	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, December 1989	25,550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	42	IEPA, Janaury 2003	42	IEPA, Janaury 2003	

Daily Intake Calculations

Ingestion Intake = (IR x Fi x EF x ED x CF) / (BW x AT)
Dermal Intake = (CF x SA x AF x ABS x EF x ED) / (BW x AT)

Cancer Ingestion Intake - RME = 5.54E-09
Noncancer Ingestion Intake - RME = 3.37E-06

Cancer Ingestion Intake - CTE = 2.77E-09
Noncancer Ingestion Intake - CTE = 1.68E-06

Cancer Dermal Intake - RME = 1.66E-08
Noncancer Dermal Intake - RME = 1.01E-05

Cancer Dermal Intake - CTE = 5.54E-09
Noncancer Dermal Intake - CTE = 3.37E-06

TABLE 7.3a - CENTRAL TENDENCY EXPOSURE (CTE)
CALCULATION OF NON-CANCER HAZARDS FROM EXPOSURE OF CONSTRUCTION WORKERS TO SUBSURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Subsurface Soil
Exposure Point: Entire Site
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose (Subchronic[2] if available)	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	BAP EQUIVALENT (FULL DLs	2.32E+00	mg/kg	2.32E+00	3.9E-06	mg/kg-day		mg/kg-day	NA	NA	
	NAPHTHALENE	4.33E-01	mg/kg	4.33E-01	7.3E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	3.6E-05
	AROCLOR 1260	7.04E-02	mg/kg	7.04E-02	1.2E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	5.9E-03
	TCDD TEQs (FULL DLs)	5.62E-06	mg/kg	5.62E-06	9.5E-12	mg/kg-day	1.0E-09	mg/kg-day	NA	NA	9.5E-03
	ALUMINUM	9.34E+03	mg/kg	9.34E+03	1.6E-02	mg/kg-day	*2.0E+00*	mg/kg-day	NA	NA	7.9E-03
	ARSENIC	1.21E+01	mg/kg	1.21E+01	2.0E-05	mg/kg-day	*5.0E-03*	mg/kg-day	NA	NA	4.1E-03
	CADMIUM	1.24E+00	mg/kg	1.24E+00	2.1E-06	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	2.1E-03
	CHROMIUM	1.51E+01	mg/kg	1.51E+01	2.5E-05	mg/kg-day	*2.0E-02*	mg/kg-day	NA	NA	1.3E-03
	COBALT	8.90E+00	mg/kg	8.90E+00	1.5E-05	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	5.0E-02
	IRON	2.70E+04	mg/kg	2.70E+04	4.5E-02	mg/kg-day	7.0E-01	mg/kg-day	NA	NA	6.5E-02
	MANGANESE	6.62E+02	mg/kg	6.62E+02	1.1E-03	mg/kg-day	4.7E-02	mg/kg-day	NA	NA	2.4E-02
	MERCURY	9.99E-02	mg/kg	9.99E-02	1.7E-07	mg/kg-day	*3.0E-03*	mg/kg-day	NA	NA	5.6E-05
	VANADIUM	1.90E+01	mg/kg	1.90E+01	3.2E-05	mg/kg-day	9.0E-03	mg/kg-day	NA	NA	3.6E-03
	(total)										**2.E-01**
Dermal	BAP EQUIVALENT (FULL DLs	2.32E+00	mg/kg	2.32E+00	1.0E-06	mg/kg-day		mg/kg-day	NA	NA	
	NAPHTHALENE	4.33E-01	mg/kg	4.33E-01		mg/kg-day	2.0E-02	mg/kg-day	NA	NA	
	AROCLOR 1260	7.04E-02	mg/kg	7.04E-02	3.3E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.7E-03
	TCDD TEQs (FULL DLs)	5.62E-06	mg/kg	5.62E-06	5.7E-13	mg/kg-day	1.0E-09	mg/kg-day	NA	NA	5.7E-04
	ALUMINUM	9.34E+03	mg/kg	9.34E+03		mg/kg-day	*2.0E+00*	mg/kg-day	NA	NA	
	ARSENIC	1.21E+01	mg/kg	1.21E+01	1.2E-06	mg/kg-day	5.0E-03	mg/kg-day	NA	NA	2.4E-04
	CADMIUM	1.24E+00	mg/kg	1.24E+00	4.2E-09	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	1.7E-04
	CHROMIUM	1.51E+01	mg/kg	1.51E+01		mg/kg-day	*5.0E-04*	mg/kg-day	NA	NA	
	COBALT	8.90E+00	mg/kg	8.90E+00		mg/kg-day	3.0E-04	mg/kg-day	NA	NA	
	IRON	2.70E+04	mg/kg	2.70E+04		mg/kg-day	7.0E-01	mg/kg-day	NA	NA	
	MANGANESE	6.62E+02	mg/kg	6.62E+02		mg/kg-day	1.9E-03	mg/kg-day	NA	NA	
	MERCURY	9.99E-02	mg/kg	9.99E-02		mg/kg-day	*3.0E-03*	mg/kg-day	NA	NA	
	VANADIUM	1.90E+01	mg/kg	1.90E+01		mg/kg-day	9.0E-03	mg/kg-day	NA	NA	
	(total)										**2.6E-03**
										Total Hazard Index Across All Exposure Routes/Pathways	**0.2**

[1] Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

[2] Subchronic values in *italics*.

Dermal Absorption Fraction from Soil(ABS) (USEPA, July 2004):

Dioxins/furans - 0.03 Arsenic - 0.03 Cadmium - 0.001 Aroclor 1260 - 0.14

PAHs - 0.13 Other Metals and Volatiles - not evaluated for dermal contact with soil.

TABLE 8.3a - CENTRAL TENDENCY EXPOSURE (CTE)
CALCULATION OF CANCER RISKS FROM EXPOSURE OF CONSTRUCTION WORKERS TO SUBSURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Subsurface Soil
Exposure Point: Entire Site
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	BAP EQUIVALENT (FULL DLs	2.32E+00	mg/kg	2.32E+00	mg/kg	M	6.4E-09	mg/kg-day	7.3E+00	$(mg/kg\text{-}day)^{-1}$	4.7E-08
	NAPHTHALENE	4.33E-01	mg/kg	4.33E-01	mg/kg	M	1.2E-09	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	AROCLOR 1260	7.04E-02	mg/kg	7.04E-02	mg/kg	M	1.9E-10	mg/kg-day	2.0E+00	$(mg/kg\text{-}day)^{-1}$	3.9E-10
	TCDD TEQs (FULL DLs)	5.62E-06	mg/kg	5.62E-06	mg/kg	M	1.6E-14	mg/kg-day	1.5E+05	$(mg/kg\text{-}day)^{-1}$	2.3E-09
	ALUMINUM	9.34E+03	mg/kg	9.34E+03	mg/kg	M	2.6E-05	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	ARSENIC	1.21E+01	mg/kg	1.21E+01	mg/kg	M	3.3E-08	mg/kg-day	1.5E+00	$(mg/kg\text{-}day)^{-1}$	5.0E-08
	CADMIUM	1.24E+00	mg/kg	1.24E+00	mg/kg	M	3.4E-09	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	CHROMIUM	1.51E+01	mg/kg	1.51E+01	mg/kg	M	4.2E-08	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	COBALT	8.90E+00	mg/kg	8.90E+00	mg/kg	M	2.5E-08	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	IRON	2.70E+04	mg/kg	2.70E+04	mg/kg	M	7.5E-05	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MANGANESE	6.62E+02	mg/kg	6.62E+02	mg/kg	M	1.8E-06	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MERCURY	9.99E-02	mg/kg	9.99E-02	mg/kg	M	2.8E-10	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	VANADIUM	1.90E+01	mg/kg	1.90E+01	mg/kg	M	5.3E-08	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	(total)										**9.97E-08**
Dermal	BAP EQUIVALENT (FULL DLs	2.32E+00	mg/kg	2.32E+00	mg/kg	M	1.7E-09	mg/kg-day	7.3E+00	$(mg/kg\text{-}day)^{-1}$	1.2E-08
	NAPHTHALENE	4.33E-01	mg/kg	4.33E-01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	AROCLOR 1260	7.04E-02	mg/kg	7.04E-02	mg/kg	M	5.5E-11	mg/kg-day	2.0E+00	$(mg/kg\text{-}day)^{-1}$	1.1E-10
	TCDD TEQs (FULL DLs)	5.62E-06	mg/kg	5.62E-06	mg/kg	M	9.3E-16	mg/kg-day	1.5E+05	$(mg/kg\text{-}day)^{-1}$	1.4E-10
	ALUMINUM	9.34E+03	mg/kg	9.34E+03	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	ARSENIC	1.21E+01	mg/kg	1.21E+01	mg/kg	M	2.0E-09	mg/kg-day	1.5E+00	$(mg/kg\text{-}day)^{-1}$	3.0E-09
	CADMIUM	1.24E+00	mg/kg	1.24E+00	mg/kg	M	6.9E-12	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	CHROMIUM	1.51E+01	mg/kg	1.51E+01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	COBALT	8.90E+00	mg/kg	8.90E+00	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	IRON	2.70E+04	mg/kg	2.70E+04	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MANGANESE	6.62E+02	mg/kg	6.62E+02	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MERCURY	9.99E-02	mg/kg	9.99E-02	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	VANADIUM	1.90E+01	mg/kg	1.90E+01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	(total)										**1.5E-08**
										Total Risk Across All Exposure Routes/Pathways	**1.E-07**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for risk calculation.

Dermal Absorption Fraction from Soil(ABS) (USEPA, July 2004):

Dioxins/furans - 0.03 Arsenic - 0.03 Aroclor 1260 - 0.14
PAHs - 0.13 Other Metals and Volatiles - not evaluated for dermal contact with soil.

TABLE 4.4
VALUES USED FOR DAILY INTAKE CALCULATIONS
EXPOSURE OF CONSTRUCTION WORKERS BY INHALATION FROM SUBSURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Subsurface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Inhalation	CS	Chemical concentration in soil	mg/kg	95% UCL or Max	USEPA, May 1993	Mean	USEPA, May 1993	Intake (mg/kg/day) =
	VF	Volatilization factor - Chemical Specific	m^3/kg	(1)	USEPA, December 2002	(1)	USEPA, December 2002	
	PEF	Particulate emission factor	m^3/kg	1.27E+06	USEPA, December 2002	1.27E+06	USEPA, December 2002	$\frac{CS \times \left[\frac{1}{VF} + \frac{1}{PEF}\right] \times ET \times EF \times ED}{AT \times 24}$
	ET	Exposure Time	hours/day	8	USEPA, December 2002	4	USEPA, December 2002	
	EF	Exposure Frequency	days/year	30	IEPA, April 2004	30	IEPA, April 2004	
	ED	Exposure Duration	years	1	Professional Judgement	1	Professional Judgement	
	AT-C	Averaging Time (Cancer)	days	25550	USEPA, December 1989	25550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	42	IEPA, Janaury 2003	42	IEPA, Janaury 2003	

Notes:
(1) - Calculated according to USEPA Soil Screening Guidance, December 2002.

Daily Intake Calculations
Inhalation Intake = (ET x EF x ED x (1/PEF)+(1/VF)) / (AT x 24)

Cancer Inhalation Intake(RME) = 3.91E-04
Noncancer Inhalation Intake(RME) = 2.38E-01

Cancer Inhalation Intake(CTE) = 1.96E-04
Noncancer Inhalation Intake(CTE) = 1.19E-01

Cancer risk from ingestion = Air concentration x Cancer Inhalation Intake x Cancer Inhalation Unit Risk (IUR)
Hazard Index from ingestion = Air concentration x Noncancer Inhalation Intake / Reference Air Concentration (RfCi)

CALCULATION OF AMBIENT AIR CONCENTRATION
SOURCE: U.S. EPA SOIL SCREENING GUIDANCE

Scenario Timeframe: Future
Medium: Subsurfce Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Construction Worker
Receptor Age: Adult

Purpose: To calculate ambient air concentrations resulting from fugitive dust and volatilization from soil.

Relevant Equations:

$$Cair = Cs \times (1/PEF + 1/VF)$$

$$VF = \frac{Q/C \times (3.14 \times DA \times T)^{1/2} \times 10^{-4}\ m^2/cm^2}{2 \times pb \times DA}$$

$$DA = \frac{[(\theta a^{10/3} \times Di \times H + \theta w^{10/3} \times Dw)/n^2)]}{pb \times Kd + \theta w + \theta a \times H}$$

$$Csat = S/pb \times (Kd \times pb + \theta w + H \times \theta a)$$

INPUT PARAMTERS			
Parameter	**Value**	**Definition**	
Q/C = :	97.78	Inverse of mean conc. at center of source (g/m^2-s per kg/m^3).	
T = :	7.6E+08	Exposure interval (seconds).	
pb = :	1.5	Dry soil bulk density (g/cm^3).	
ps = :	2.65	soil particle density (g/cm^3).	
n = :	0.434	Total soil porosity (L_{pore}/L_{soil}).	
θw = :	0.15	Water-filled soil porosity (L_{pore}/L_{soil}).	
θa = :	0.284	Air-filled soil porosity (L_{air}/L_{soil}).	
Di = :	Chemical specific	Diffusivity in air (cm^2/sec).	
H' = :	Chemical specific	Dimensionless Henry's Law Constant.	
Dw = :	Chemical specific	Diffusivity in water (cm^2/sec).	
DA = :	Chemical specific	Apparent diffusivity (cm^2/sec).	
Kd = :	Chemical specific	Soil-water partition coefficient (cm^3/g).	
Koc = :	Chemical specific	Soil organic carbon partition coefficient (cm^3/g).	
foc = :	0.006	Fraction organic carbon in soil (g/g).	
F_D = :	1	dispersion correction factor	
V =:	0.5	Fraction of vegatative cover (unitless)	
Um =:	3.44	Mean annual wind speed (m/s)	
Ut =:	11.32	equivalent threshold value of windspeed at 7 m (m/s)	2.92
F(x) =:	0.0086	Function dependent on Um/Ut	0.0085
PEF = :	1.36E+09	Particulate emission factor (m^3/kg)	8.1E+10

Error in Calcs? No = 0, Yes > 0 0

Chemical	Cs (mg/kg)	Volatile	Chemical Properties					Intermediate Calculations				Results		
			Koc (cm^3/g)	Di (cm^2/sec)	Dw (cm^2/sec)	S (mg/L)	H'	Kd (cm^3/g)	Da (cm^2/sec)	VF (m^3/kg)	Csat (mg/kg)	CaV (mg/m^3)	CaP (mg/m^3)	CaTot (mg/m^3)
All Soil														
naphthalene	4.60E+00	Y	2.00E+03	5.90E-02	7.50E-06	3.10E+01	1.98E-02	1.20E+01	5.15E-06	7.00E+04	3.75E+02	6.57E-05	3.38E-09	6.57E-05

TABLE 7.4. REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF NON-CANCER HAZARDS
EXPOSURE OF CONSTRUCTION WORKERS BY INHALATION FROM SUBSURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Subsurface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation [1]	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Concentration (Subchronic [2] if available)	Reference Concentration Units	Hazard Quotient
	NAPHTHALENE (partic.)	4.60E+00	mg/kg	3.6E-06	mg/m^3	R	8.6E-07	mg/m^3	3.0E-03	mg/m^3	2.9E-04
	ALUMINUM	2.43E+04	mg/kg	1.9E-02	mg/m^3	R	4.6E-03	mg/m^3	5.0E-03	mg/m^3	9.1E-01
	ARSENIC	8.50E+01	mg/kg	6.7E-05	mg/m^3	R	1.6E-05	mg/m^3	1.5E-05	mg/m^3	1.1E+00
	CADMIUM	9.62E+00	mg/kg	7.6E-06	mg/m^3	R	1.8E-06	mg/m^3	1.0E-05	mg/m^3	1.8E-01
	CHROMIUM	3.43E+01	mg/kg	2.7E-05	mg/m^3	R	6.4E-06	mg/m^3	1.0E-04	mg/m^3	6.4E-02
	COBALT	2.38E+01	mg/kg	1.9E-05	mg/m^3	R	4.5E-06	mg/m^3	6.0E-06	mg/m^3	7.4E-01
	MANGANESE	1.69E+03	mg/kg	1.3E-03	mg/m^3	R	3.2E-04	mg/m^3	5.0E-05	mg/m^3	6.3E+00
	MERCURY	4.84E-01	mg/kg	3.8E-07	mg/m^3	R	9.1E-08	mg/m^3	3.0E-05	mg/m^3	3.0E-03
	NAPHTHALENE (vol.)	4.60E+00	mg/kg	6.6E-05	mg/m^3	R	1.6E-05	mg/m^3	3.0E-03	mg/m^3	5.2E-03
	(total)										9.3E+00
										Total Hazard Index Across All Exposure Routes/Pathways	**9**

[1] Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

[2] Subchronic values in *italics*.

8.4. REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF CANCER RISKS
EXPOSURE OF CONSTRUCTION WORKERS BY INHALATION FROM SUBSURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Subsurface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Unit Risk	Cancer Unit Risk Units	Cancer Risk
	ARSENIC	8.50E+01	mg/kg	6.7E-05	mg/m^3	R	2.6E-08	mg/m^3	4.3E+00	$(mg/m^3)^{-1}$	1.1E-07
	CADMIUM	9.62E+00	mg/kg	7.6E-06	mg/m^3	R	3.0E-09	mg/m^3	1.8E+00	$(mg/m^3)^{-1}$	5.3E-09
	CHROMIUM	3.43E+01	mg/kg	2.7E-05	mg/m^3	R	1.1E-08	mg/m^3	1.2E+01	$(mg/m^3)^{-1}$	1.3E-07
	COBALT	2.38E+01	mg/kg	1.9E-05	mg/m^3	R	7.3E-09	mg/m^3	9.0E+00	$(mg/m^3)^{-1}$	6.6E-08
	(total)										3.1E-07
										Total Risk Across All Exposure Routes/Pathways	**3.1E-07**

TABLE 4.4a
VALUES USED FOR DAILY INTAKE CALCULATIONS
EXPOSURE OF CONSTRUCTION WORKERS BY INHALATION FROM SUBSURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Subsurface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Inhalation	CS	Chemical concentration in soil	mg/kg	95% UCL or Max	USEPA, May 1993	95% UCL or Max	USEPA, May 1993	Intake (mg/kg/day) = $\frac{CS \times \left[\frac{1}{VF} + \frac{1}{PEF}\right] \times ET \times EF \times ED}{AT \times 24}$
	VF	Volatilization factor - Chemical Specific	m^3/kg	(1)	USEPA, December 2002	(1)	USEPA, December 2002	
	PEF	Particulate emission factor	m^3/kg	1.27E+06	USEPA, December 2002	1.27E+06	USEPA, December 2002	
	ET	Exposure Time	hours/day	8	USEPA, December 2002	4	USEPA, December 2002	
	EF	Exposure Frequency	days/year	30	IEPA, April 2004	30	IEPA, April 2004	
	ED	Exposure Duration	years	1	Professional Judgement	1	Professional Judgement	
	AT-C	Averaging Time (Cancer)	days	25550	USEPA, December 1989	25550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	42	IEPA, Janaury 2003	42	IEPA, Janaury 2003	

Notes:
(1) - Calculated according to USEPA Soil Screening Guidance, December 2002.

Daily Intake Calculations
Inhalation Intake = (ET x EF x ED x (1/PEF)+(1/VF)) / (AT x 24)

Cancer Inhalation Intake(RME) = 3.91E-04
Noncancer Inhalation Intake(RME) = 2.38E-01

Cancer Inhalation Intake(CTE) = 1.96E-04
Noncancer Inhalation Intake(CTE) = 1.19E-01

Cancer risk from ingestion = Air concentration x Cancer Inhalation Intake x Cancer Inhalation Unit Risk (IUR)
Hazard Index from ingestion = Air concentration x Noncancer Inhalation Intake / Reference Air Concentration (RfCi)

CALCULATION OF AMBIENT AIR CONCENTRATION
SOURCE: U.S. EPA SOIL SCREENING GUIDANCE

Scenario Timeframe: Future
Medium: Subsurfce Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Construction Worker
Receptor Age: Adult

Purpose: To calculate ambient air concentrations resulting from fugitive dust and volatilization from soil.

Relevant Equations:

$$Cair = Cs \times (1/PEF + 1/VF)$$

$$VF = \frac{Q/C \times (3.14 \times DA \times T)^{1/2} \times 10^{-4}\ m^2/cm^2}{2 \times pb \times DA}$$

$$DA = \frac{[(\theta a^{10/3} \times Di \times H + \theta w^{10/3} \times Dw)/n^2)]}{pb \times Kd + \theta w + \theta a \times H}$$

$$Csat = S/pb \times (Kd \times pb + \theta w + H \times \theta a)$$

INPUT PARAMTERS			
Parameter	**Value**	**Definition**	
Q/C = :	97.78	Inverse of mean conc. at center of source (g/m^2-s per kg/m^3).	
T = :	7.6E+08	Exposure interval (seconds).	
pb = :	1.5	Dry soil bulk density (g/cm^3).	
ps = :	2.65	soil particle density (g/cm^3).	
n = :	0.434	Total soil porosity (L_{pore}/L_{soil}).	
θw = :	0.15	Water-filled soil porosity (L_{pore}/L_{soil}).	
θa = :	0.284	Air-filled soil porosity (L_{air}/L_{soil}).	
Di = :	Chemical specific	Diffusivity in air (cm^2/sec).	
H' = :	Chemical specific	Dimensionless Henry's Law Constant.	
Dw = :	Chemical specific	Diffusivity in water (cm^2/sec).	
DA = :	Chemical specific	Apparent diffusivity (cm^2/sec).	
Kd = :	Chemical specific	Soil-water partition coefficient (cm^3/g).	
Koc = :	Chemical specific	Soil organic carbon partition coefficient (cm^3/g).	
foc = :	0.006	Fraction organic carbon in soil (g/g).	
F_D = :	1	dispersion correction factor	
V =:	0.5	Fraction of vegatative cover (unitless)	
Um =:	3.44	Mean annual wind speed (m/s)	
Ut =:	11.32	equivalent threshold value of windspeed at 7 m (m/s)	2.92
F(x) =:	0.0086	Function dependent on Um/Ut	0.0085
PEF = :	1.36E+09	Particulate emission factor (m^3/kg)	8.1E+10

Error in Calcs? No = 0, Yes > 0 0

Chemical	Cs (mg/kg)	Volatile	Chemical Properties					Intermediate Calculations				Results		
			Koc (cm^3/g)	Di (cm^2/sec)	Dw (cm^2/sec)	S (mg/L)	H'	Kd (cm^3/g)	Da (cm^2/sec)	VF (m^3/kg)	Csat (mg/kg)	CaV (mg/m^3)	CaP (mg/m^3)	CaTot (mg/m^3)
All Soil														
naphthalene	4.33E-01	Y	2.00E+03	5.90E-02	7.50E-06	3.10E+01	1.98E-02	1.20E+01	5.15E-06	7.00E+04	3.75E+02	6.18E-06	3.18E-10	6.18E-06

TABLE 7.4a. CENTRAL TENDENCY EXPOSURE (CTE)
CALCULATION OF NON-CANCER HAZARDS
EXPOSURE OF CONSTRUCTION WORKERS BY INHALATION FROM SUBSURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Subsurface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation [1]	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Concentration (Subchronic [2] if available)	Reference Concentration Units	Hazard Quotient
Inhalation	NAPHTHALENE (partic.)	4.33E-01	mg/kg	3.4E-07	mg/m^3	R	4.1E-08	mg/m^3	3.0E-03	mg/m^3	1.4E-05
	AROCLOR 1260	7.04E-02	mg/kg	5.5E-08	mg/m^3	R	6.6E-09	mg/m^3		mg/m^3	
	TCDD TEQs (FULL DLs)	5.62E-06	mg/kg	4.4E-12	mg/m^3	R	5.3E-13	mg/m^3	4.00E-08	mg/m^3	
	ALUMINUM	9.34E+03	mg/kg	7.4E-03	mg/m^3	R	8.8E-04	mg/m^3	5.0E-03	mg/m^3	1.8E-01
	ANTIMONY		mg/kg		mg/m^3	R		mg/m^3	2.0E-04	mg/m^3	
	ARSENIC	1.21E+01	mg/kg	9.5E-06	mg/m^3	R	1.1E-06	mg/m^3	1.5E-05	mg/m^3	7.5E-02
	BARIUM		mg/kg		mg/m^3	R		mg/m^3	*5.0E-03*	mg/m^3	
	CADMIUM	1.24E+00	mg/kg	9.8E-07	mg/m^3	R	1.2E-07	mg/m^3	1.0E-05	mg/m^3	1.2E-02
	CHROMIUM	1.51E+01	mg/kg	1.2E-05	mg/m^3	R	1.4E-06	mg/m^3	1.0E-04	mg/m^3	1.4E-02
	COBALT	8.90E+00	mg/kg	7.0E-06	mg/m^3	R	8.3E-07	mg/m^3	6.0E-06	mg/m^3	1.4E-01
	COPPER		mg/kg		mg/m^3	R		mg/m^3		mg/m^3	
	IRON	2.70E+04	mg/kg	2.1E-02	mg/m^3	R	2.5E-03	mg/m^3		mg/m^3	
	MANGANESE	6.62E+02	mg/kg	5.2E-04	mg/m^3	R	6.2E-05	mg/m^3	5.0E-05	mg/m^3	1.2E+00
	MERCURY	9.99E-02	mg/kg	7.9E-08	mg/m^3	R	9.4E-09	mg/m^3	3.0E-05	mg/m^3	3.1E-04
	NAPHTHALENE (vol.)	4.33E-01	mg/kg	6.2E-06	mg/m^3	R	7.4E-07	mg/m^3	3.0E-03	mg/m^3	2.5E-04
	(total)										1.7E+00
										Total Hazard Index Across All Exposure Routes/Pathways	**2**

[1] Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.
[2] Subchronic values in *italics*.

8.4a. CENTRAL TENDENCY EXPOSURE (CTE)
CALCULATION OF CANCER RISKS
EXPOSURE OF CONSTRUCTION WORKERS BY INHALATION FROM SUBSURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Subsurface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Unit Risk	Cancer Unit Risk Units	Cancer Risk
Inhalation	ARSENIC	1.21E+01	mg/kg	9.5E-06	mg/m^3	R	1.9E-09	mg/m^3	4.3E+00	$(mg/m^3)^{-1}$	8.0E-09
	CADMIUM	1.24E+00	mg/kg	9.8E-07	mg/m^3	R	1.9E-10	mg/m^3	1.8E+00	$(mg/m^3)^{-1}$	3.4E-10
	CHROMIUM	1.51E+01	mg/kg	1.2E-05	mg/m^3	R	2.3E-09	mg/m^3	1.2E+01	$(mg/m^3)^{-1}$	2.8E-08
	COBALT	8.90E+00	mg/kg	7.0E-06	mg/m^3	R	1.4E-09	mg/m^3	9.0E+00	$(mg/m^3)^{-1}$	1.2E-08
	(total)										4.9E-08
										Total Risk Across All Exposure Routes/Pathways	**4.9E-08**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

TABLE 4.5
VALUES OF DAILY INTAKE CALCULATIONS FOR EXPOSURE OF FUTURE CONSTRUCTION WORKERS TO GROUNDWATER
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Entire Site
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CTE Value	CTE Rationale/ Reference	Intake Equation/ Model Name
Dermal	Cgw	Chemical Concentration in Groundwater	mg/L	Maximum	U.S. EPA, December 2002	Maximum	U.S. EPA, December 2002	The equations and parameters for for estimating DAevent and the chemical-specific dermally absorbed dose from water (DAD) are provided in Section 6.2.4.4 of the text.
	A	Skin Surface Area	cm^2	3,300	U.S. EPA, July 2004	3,300	U.S. EPA, July 2004	
	DAevent	Absorbed Dose per Event	mg/cm^2-event	chemical-specific	U.S. EPA, July 2004	chemical-specific	U.S. EPA, July 2004	
	EV	Event Frequency	event/day	1	Professional Judgement	1	Professional Judgement	
	ED	Exposure Duration	years	1	Professional Judgement	1	U.S. EPA, May 1993	
	EF	Exposure Frequency	days/year	30	IEPA, April 2004	30	U.S. EPA, May 1993	
	t_{event}	Duration of Event	hour/event	4.0	Professional Judgement	2	Professional Judgement	USEPA, July 2004
	t*	Time to reach steady state	hour/event	chemical-specific	U.S. EPA, July 2004	chemical-specific	U.S. EPA, July 2004	
	T	Lag Time	hour/event	chemical-specific	U.S. EPA, July 2004	chemical-specific	U.S. EPA, July 2004	
	B	Bunge Model Constant	dimensionless	chemical-specific	U.S. EPA, July 2004	chemical-specific	U.S. EPA, July 2004	
	Kp	Permeability Coefficient from Water	cm/hour	chemical-specific	U.S. EPA, July 2004	chemical-specific	U.S. EPA, July 2004	
	BW	Body Weight	kg	70	USEPA, May 1993	70	U.S. EPA, May 1993	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, December 1989	25,550	U.S. EPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	42	IEPA, Janaury 2003	42	U.S. EPA, December 1989	

Daily Intake Calculations

Dermal Intake = (A x EV x ED x EF) / (BW x AT)

Cancer Dermal Intake(RME) = 5.54E-02
Noncancer Dermal Intake(RME) = 3.37E+01

Cancer Dermal Intake(CTE) = 5.54E-02
Noncancer Dermal Intake(CTE) = 3.37E+01

CALCULATION OF DAevent - EXPOSURES THROUGH DERMAL CONTACT WITH GROUNDWATER
REASONABLE MAXIMUM EXPOSURE (RME) --- FUTURE CONSTRUCTION WORKERS TO GROUNDWATER

SITE NAME: SITE 21 - BUILDING 1517
LOCATION: NAVAL STATION GREAT LAKES, ILLINOIS
DATE: 02/01/11

REFERENCES: U.S. EPA, July 2004

DERMAL CONTACT:

DAD = (DAevent x EV x ED x EF x A)/(BW x AT)

WHERE: DAD = DERMALLY ABSORBED DOSE (MG/KG/DAY)
DAevent = ABSORBED DOSE PER EVENT (MG/CM^2/EVENT)
A = SKIN SURFACE AREA AVAILABLE FOR CONTACT(CM^2)
EV = EVENT FREQUENCY (EVENTS/DAY)
ED = EXPOSURE DURATION (YEARS)
EF = EXPOSURE FREQUENCY (DAYS/YEAR)
BW = BODY WEIGHT(KG)
AT = AVERAGING TIME (DAYS)

FOR INORGANICS: DAevent = Kp x C x tevent x CF

FOR ORGANICS:
IF tevent < t*, DAevent = 2FA x Kp x C x CF x (6T x tevent/3.1416)$^{0.5}$
IF tevent > t*, DAevent = FA x Kp x C x CF x ((tevent/(1 + B)) + (2T x ((1+3B+3B^2)/(1 + B)^2)))

WHERE:
FA = FRACTION ABSORBED (DIMENSIONLESS)
Kp = PERMEABILITY COEFFICIENT FROM WATER (CM/HR)
C = CONCENTRATION OF CHEMICAL IN WATER (MG/L)
tevent = DURATION OF EVENT (HR/EVENT)
CF = CONVERSION FACTOR (1L/1000 CM^3)
t* = TIME IT TAKES TO REACH STEADY-STATE (HOUR/EVENT)
T = LAG TIME (HOUR/EVENT)
B = BUNGE MODEL CONSTANT (DIMENSIONLESS)

CHEMICAL	GW CONC. (mg/L)	ORGANIC OR INORGANIC?	t* (HR)	tevent	T (HR)	Kp (CM/HR)	B	DAevent	FA	DAevent
BAP EQUIVALENT (FULL DL)	0.00006146	o	1.17E+01	4.00E+00	2.69E+00	7.01E-01	4.27E+00	3.91E-07	1	3.91E-07
TCDD TEQs (FULL DLs)	1.23E-08	o	3.01E+01	4.00E+00	6.82E+00	8.10E-01	5.60E+00	1.44E-10	0.5	7.19E-11
PENTACHLOROPHENOL	0.0078	o	1.38E+01	4.00E+00	3.30E+00	3.90E-01	2.50E+00	3.05E-05	0.9	2.75E-05
BENZENE	0.00096	o	7.00E-01	4.00E+00	2.90E-01	1.50E-02	1.00E-01	6.15E-08	1	6.15E-08
TETRACHLOROETHYLENE	0.00085	o	2.18E+00	4.00E+00	9.10E-01	3.30E-02	2.00E-01	1.54E-07	1	1.54E-07
DELTA-BHC (ALPHA-BHC SURROGATE	0.00002	o	1.10E+01	4.00E+00	4.57E+00	1.10E-02	1.00E-01	2.60E-09	0.9	2.34E-09
ARSENIC	0.00726	i		4.00E+00		1.00E-03		2.90E-08	1	2.90E-08
CADMIUM	0.00345	i		4.00E+00		1.00E-03		1.38E-08	1	1.38E-08
COBALT	0.0153	i		4.00E+00		1.00E-03		6.12E-08	1	6.12E-08
IRON	34	i		4.00E+00		1.00E-03		1.36E-04	1	1.36E-04
MANGANESE	5.4	i		4.00E+00		1.00E-03		2.16E-05	1	2.16E-05

TABLE 7.5 - REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF NON-CANCER HAZARDS FROM EXPOSURE OF CONSTRUCTION WORKERS TO GROUNDWATER
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Entire Site
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose (Subchronic (2) if available)	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
	(total)												
Dermal	BAP EQUIVALENT (FULL DL)	6.1E-05	mg/L	6.15E-05	mg/L	M	(3)	mg/kg-day		mg/kg-day	NA	NA	NA
	TCDD TEQs (FULL DLs)	1.2E-08	mg/L	1.23E-08	mg/L	M	(3)	mg/kg-day	1.00E-09	mg/kg-day	NA	NA	NA
	PENTACHLOROPHENOL	7.8E-03	mg/L	7.80E-03	mg/L	M	(3)	mg/kg-day	5.00E-03	mg/kg-day	NA	NA	NA
	BENZENE	9.6E-04	mg/L	9.60E-04	mg/L	M	2.1E-06	mg/kg-day	4.00E-03	mg/kg-day	NA	NA	5.2E-04
	TETRACHLOROETHYLENE	8.5E-04	mg/L	8.50E-04	mg/L	M	5.2E-06	mg/kg-day	1.00E-02	mg/kg-day	NA	NA	5.2E-04
	DELTA-BHC (ALPHA-BHC SURROGATE)	2.0E-05	mg/L	2.00E-05	mg/L	M	7.9E-08	mg/kg-day	3.00E-04	mg/kg-day	NA	NA	2.6E-04
	ARSENIC	7.3E-03	mg/L	7.26E-03	mg/L	M	9.8E-07	mg/kg-day	5.00E-03	mg/kg-day	NA	NA	2.0E-04
	CADMIUM	3.5E-03	mg/L	3.45E-03	mg/L	M	4.6E-07	mg/kg-day	2.50E-05	mg/kg-day	NA	NA	1.9E-02
	COBALT	1.5E-02	mg/L	1.53E-02	mg/L	M	2.1E-06	mg/kg-day	3.00E-04	mg/kg-day	NA	NA	6.9E-03
	IRON	3.4E+01	mg/L	3.40E+01	mg/L	M	4.6E-03	mg/kg-day	7.00E-01	mg/kg-day	NA	NA	6.5E-03
	MANGANESE	5.4E+00	mg/L	5.40E+00	mg/L	M	7.3E-04	mg/kg-day	1.88E-03	mg/kg-day	NA	NA	3.9E-01
			mg/L										
	(total)												4.2E-01
												Total Hazard Index Across All Exposure Routes/Pathways	**0.4**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

(2) Subchronic values in *italics*.

TABLE 8.5 - REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF CANCER RISKS FROM EXPOSURE OF CONSTRUCTION WORKERS TO GROUNDWATER
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Entire Site
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Dermal	BAP EQUIVALENT (FULL I	6.1E-05	mg/L	6.15E-05	mg/L	M	(2)	mg/kg-day	7.30E+00	$(mg/kg\text{-}day)^{-1}$	NA
	TCDD TEQs (FULL DLs)	1.2E-08	mg/L	1.23E-08	mg/L	M	(2)	mg/kg-day	1.50E+05	$(mg/kg\text{-}day)^{-1}$	NA
	PENTACHLOROPHENOL	7.8E-03	mg/L	7.80E-03	mg/L	M	(2)	mg/kg-day	4.00E-01	$(mg/kg\text{-}day)^{-1}$	NA
	BENZENE	9.6E-04	mg/L	9.60E-04	mg/L	M	3.4E-09	mg/kg-day	5.50E-02	$(mg/kg\text{-}day)^{-1}$	1.9E-10
	TETRACHLOROETHYLEN	8.5E-04	mg/L	8.50E-04	mg/L	M	8.6E-09	mg/kg-day	5.40E-01	$(mg/kg\text{-}day)^{-1}$	4.6E-09
	DELTA-BHC (ALPHA-BHC SURROGATE)	2.0E-05	mg/L	2.00E-05	mg/L	M	1.3E-10	mg/kg-day	6.30E+00	$(mg/kg\text{-}day)^{-1}$	8.2E-10
	ARSENIC	7.3E-03	mg/L	7.26E-03	mg/L	M	1.6E-09	mg/kg-day	1.50E+00	$(mg/kg\text{-}day)^{-1}$	2.4E-09
	(total)										**8.0E-09**
										Total Risk Across All Exposure Routes/Pathways	**8.0E-09**

Scenario Timefram
Medium: Groundw
Exposure Medium:
Exposure Point: E
Receptor Populatio
Receptor Age: Adu

Exposure Route	Parameter Code		Intake Equation/ Model Name
Dermal	Cgw	Chemica	equations and parameters for
	A	Skin Su	stimating DAevent and the chemical-
	DAevent	Absorbe	ific dermally absorbed dose from
	EV	Event F	r (DAD) are provided in Section 6.2.4.4
	ED	Exposu	e text.
	EF	Exposu	
	t_{event}	Duratio	PA, July 2004
	t*	Time to	
	T	Lag Tim	
	B	Bunge	
	Kp	Permea	
	BW	Body W	
	AT-C	Averagi	
	AT-N	Averagi	

TABLE 4.5a
VALUES OF DAILY INTAKE CALCULATIONS FOR EXPOSURE OF FUTURE CONSTRUCTION WORKERS TO GROUNDWATER
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Entire Site
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CTE Value	CTE Rationale/ Reference	Intake Equation/ Model Name
Dermal	Cgw	Chemical Concentration in Groundwater	mg/L	Maximum	U.S. EPA, December 2002	Maximum	U.S. EPA, December 2002	The equations and parameters for for estimating DAevent and the chemical-specific dermally absorbed dose from water (DAD) are provided in Section 6.2.4.4 of the text.
	A	Skin Surface Area	cm^2	3,300	U.S. EPA, July 2004	3,300	U.S. EPA, July 2004	
	DAevent	Absorbed Dose per Event	mg/cm^2-event	chemical-specific	U.S. EPA, July 2004	chemical-specific	U.S. EPA, July 2004	
	EV	Event Frequency	event/day	1	Professional Judgement	1	Professional Judgement	
	ED	Exposure Duration	years	1	Professional Judgement	1	U.S. EPA, May 1993	
	EF	Exposure Frequency	days/year	30	IEPA, April 2004	30	U.S. EPA, May 1993	
	t_{event}	Duration of Event	hour/event	4.0	Professional Judgement	2	Professional Judgement	USEPA, July 2004
	t*	Time to reach steady state	hour/event	chemical-specific	U.S. EPA, July 2004	chemical-specific	U.S. EPA, July 2004	
	T	Lag Time	hour/event	chemical-specific	U.S. EPA, July 2004	chemical-specific	U.S. EPA, July 2004	
	B	Bunge Model Constant	dimensionless	chemical-specific	U.S. EPA, July 2004	chemical-specific	U.S. EPA, July 2004	
	Kp	Permeability Coefficient from Water	cm/hour	chemical-specific	U.S. EPA, July 2004	chemical-specific	U.S. EPA, July 2004	
	BW	Body Weight	kg	70	USEPA, May 1993	70	U.S. EPA, May 1993	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, December 1989	25,550	U.S. EPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	42	IEPA, Janaury 2003	42	U.S. EPA, December 1989	

Daily Intake Calculations

Dermal Intake = (A x EV x ED x EF) / (BW x AT)

Cancer Dermal Intake(RME) = 5.54E-02
Noncancer Dermal Intake(RME) = 3.37E+01

Cancer Dermal Intake(CTE) = 5.54E-02
Noncancer Dermal Intake(CTE) = 3.37E+01

CALCULATION OF DAevent - EXPOSURES THROUGH DERMAL CONTACT WITH GROUNDWATER
REASONABLE MAXIMUM EXPOSURE (RME) --- FUTURE CONSTRUCTION WORKERS TO GROUNDWATER

SITE NAME: SITE 21 - BUILDING 1517
LOCATION: NAVAL STATION GREAT LAKES, ILLINOIS
DATE: 02/01/11

REFERENCES: U.S. EPA, July 2004

DERMAL CONTACT:

DAD = (DAevent x EV x ED x EF x A)/(BW x AT)

WHERE: DAD = DERMALLY ABSORBED DOSE (MG/KG/DAY)
DAevent = ABSORBED DOSE PER EVENT (MG/CM^2/EVENT)
A = SKIN SURFACE AREA AVAILABLE FOR CONTACT(CM^2)
EV = EVENT FREQUENCY (EVENTS/DAY)
ED = EXPOSURE DURATION (YEARS)
EF = EXPOSURE FREQUENCY (DAYS/YEAR)
BW = BODY WEIGHT(KG)
AT = AVERAGING TIME (DAYS)

FOR INORGANICS: DAevent = Kp x C x tevent x CF

FOR ORGANICS:
IF tevent < t*, DAevent = 2FA x Kp x C x CF x (6T x tevent/3.1416)$^{0.5}$
IF tevent > t*, DAevent = FA x Kp x C x CF x ((tevent/(1 + B)) + (2T x ((1+3B+3B^2)/(1 + B)^2)))

WHERE:
FA = FRACTION ABSORBED (DIMENSIONLESS)
Kp = PERMEABILITY COEFFICIENT FROM WATER (CM/HR)
C = CONCENTRATION OF CHEMICAL IN WATER (MG/L)
tevent = DURATION OF EVENT (HR/EVENT)
CF = CONVERSION FACTOR (1L/1000 CM^3)
t* = TIME IT TAKES TO REACH STEADY-STATE (HOUR/EVENT)
T = LAG TIME (HOUR/EVENT)
B = BUNGE MODEL CONSTANT (DIMENSIONLESS)

CHEMICAL	GW CONC. (mg/L)	ORGANIC OR INORGANIC?	t* (HR)	tevent	T (HR)	Kp (CM/HR)	B	DAevent	FA	DAevent
BAP EQUIVALENT (1/2 DL)	0.00006146	o	1.17E+01	2.00E+00	2.69E+00	7.01E-01	4.27E+00	2.76E-07	1	2.76E-07
TCDD TEQs (FULL DLs)	1.23E-08	o	3.01E+01	2.00E+00	6.82E+00	8.10E-01	5.60E+00	1.02E-10	0.5	5.09E-11
PENTACHLOROPHENOL	0.0078	o	1.38E+01	2.00E+00	3.30E+00	3.90E-01	2.50E+00	2.16E-05	0.9	1.94E-05
BENZENE	0.00096	o	7.00E-01	2.00E+00	2.90E-01	1.50E-02	1.00E-01	3.54E-08	1	3.54E-08
TETRACHLOROETHYLENE	0.00085	o	2.18E+00	2.00E+00	9.10E-01	3.30E-02	2.00E-01	1.05E-07	1	1.05E-07
DELTA-BHC (ALPHA-BHC SURROGATE	0.00002	o	1.10E+01	2.00E+00	4.57E+00	1.10E-02	1.00E-01	1.84E-09	0.9	1.65E-09
ARSENIC	0.00726	i		2.00E+00		1.00E-03		1.45E-08	1	1.45E-08
CADMIUM	0.00345	i		2.00E+00		1.00E-03		6.90E-09	1	6.90E-09
COBALT	0.0153	i		2.00E+00		1.00E-03		3.06E-08	1	3.06E-08
IRON	34	i		2.00E+00		1.00E-03		6.80E-05	1	6.80E-05
MANGANESE	5.4	i		2.00E+00		1.00E-03		1.08E-05	1	1.08E-05

TABLE 7.5a - CENTRAL TENDENCY EXPOSURE (CTE)
CALCULATION OF NON-CANCER HAZARDS FROM EXPOSURE OF CONSTRUCTION WORKERS TO GROUNDWATER
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Entire Site
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose (Subchronic (2) if available)	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Dermal	BAP EQUIVALENT (1/2 DL)	6.1E-05	mg/L	6.15E-05	mg/L	M	(3)	mg/kg-day		mg/kg-day	NA	NA	NA
	TCDD TEQs (FULL DLs)	1.2E-08	mg/L	1.23E-08	mg/L	M	(3)	mg/kg-day	1.00E-09	mg/kg-day	NA	NA	NA
	PENTACHLOROPHENOL	7.8E-03	mg/L	7.80E-03	mg/L	M	(3)	mg/kg-day	5.00E-03	mg/kg-day	NA	NA	NA
	BENZENE	9.6E-04	mg/L	9.60E-04	mg/L	M	1.2E-06	mg/kg-day	4.00E-03	mg/kg-day	NA	NA	3.0E-04
	TETRACHLOROETHYLENE	8.5E-04	mg/L	8.50E-04	mg/L	M	3.5E-06	mg/kg-day	1.00E-02	mg/kg-day	NA	NA	3.5E-04
	DELTA-BHC (ALPHA-BHC SURROGATE)	2.0E-05	mg/L	2.00E-05	mg/L	M	5.6E-08	mg/kg-day	3.00E-04	mg/kg-day	NA	NA	1.9E-04
	ARSENIC	7.3E-03	mg/L	7.26E-03	mg/L	M	4.9E-07	mg/kg-day	5.00E-03	mg/kg-day	NA	NA	9.8E-05
	CADMIUM	3.5E-03	mg/L	3.45E-03	mg/L	M	2.3E-07	mg/kg-day	2.50E-05	mg/kg-day	NA	NA	9.3E-03
	COBALT	1.5E-02	mg/L	1.53E-02	mg/L	M	1.0E-06	mg/kg-day	3.00E-04	mg/kg-day	NA	NA	3.4E-03
	IRON	3.4E+01	mg/L	3.40E+01	mg/L	M	2.3E-03	mg/kg-day	7.00E-01	mg/kg-day	NA	NA	3.3E-03
	MANGANESE	5.4E+00	mg/L	5.40E+00	mg/L	M	3.6E-04	mg/kg-day	9.60E-04	mg/kg-day	NA	NA	3.8E-01
			mg/L										
	(total)												4.0E-01
												Total Hazard Index Across All Exposure Routes/Pathways	**0.4**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

(2) Subchronic values in *italics.*

TABLE 8.5a - CENTRAL TENDENCY EXPOSURE (CTE)
CALCULATION OF CANCER RISKS FROM EXPOSURE OF CONSTRUCTION WORKERS TO GROUNDWATER
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Entire Site
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Dermal	BAP EQUIVALENT (1/2 DL	6.1E-05	mg/L	6.15E-05	mg/L	M	(2)	mg/kg-day	7.30E+00	$(mg/kg\text{-}day)^{-1}$	NA
	TCDD TEQs (FULL DLs)	1.2E-08	mg/L	1.23E-08	mg/L	M	(2)	mg/kg-day	1.50E+05	$(mg/kg\text{-}day)^{-1}$	NA
	PENTACHLOROPHENOL	7.8E-03	mg/L	7.80E-03	mg/L	M	(2)	mg/kg-day	4.00E-01	$(mg/kg\text{-}day)^{-1}$	NA
	BENZENE	9.6E-04	mg/L	9.60E-04	mg/L	M	2.0E-09	mg/kg-day	5.50E-02	$(mg/kg\text{-}day)^{-1}$	1.1E-10
	TETRACHLOROETHYLEN	8.5E-04	mg/L	8.50E-04	mg/L	M	5.8E-09	mg/kg-day	5.40E-01	$(mg/kg\text{-}day)^{-1}$	3.1E-09
	DELTA-BHC (ALPHA-BHC SURROGATE)	2.0E-05	mg/L	2.00E-05	mg/L	M	9.2E-11	mg/kg-day	6.30E+00	$(mg/kg\text{-}day)^{-1}$	5.8E-10
	ARSENIC	7.3E-03	mg/L	7.26E-03	mg/L	M	8.0E-10	mg/kg-day	1.50E+00	$(mg/kg\text{-}day)^{-1}$	1.2E-09
	(total)										**5.0E-09**
										Total Risk Across All Exposure Routes/Pathways	**5.0E-09**

TABLE 4.6
VALUES USED FOR DAILY INTAKE CALCULATIONS
EXPOSURE OF CONSTRUCTION WORKERS BY INHALATION FROM GW IN TRENCH
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Inhalation	CS	Chemical concentration in soil	mg/kg	95% UCL or Max	USEPA, May 1993	Mean	USEPA, May 1993	Intake (mg/kg/day) = $\frac{CS \times \left[\frac{1}{VF} + \frac{1}{PEF}\right] \times ET \times EF \times ED}{AT \times 24}$
	ET	Exposure Time	hours/day	4	USEPA, December 2002	2	USEPA, December 2002	
	EF	Exposure Frequency	days/year	30	IEPA, April 2004	30	IEPA, April 2004	
	ED	Exposure Duration	years	1	Professional Judgement	1	Professional Judgement	
	AT-C	Averaging Time (Cancer)	days	25550	USEPA, December 1989	25550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	42	IEPA, Janaury 2003	42	IEPA, Janaury 2003	

Notes:
(1) - Calculated according to USEPA Soil Screening Guidance, December 2002.

Daily Intake Calculations
Inhalation Intake = (ET x EF x ED x (1/PEF)+(1/VF)) / (AT x 24)

Cancer Inhalation Intake(RME) = 1.96E-04 Cancer Inhalation Intake(CTE) = 9.78E-05
Noncancer Inhalation Intake(RME) = 1.19E-01 Noncancer Inhalation Intake(CTE) = 5.95E-02

Cancer risk from ingestion = Air concentration x Cancer Inhalation Intake x Cancer Inhalation Unit Risk (IUR)
Hazard Index from ingestion = Air concentration x Noncancer Inhalation Intake / Reference Air Concentration (RfCi)

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Site 21
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure point concentrations
(inhalation) for construction/utility workers
in a trench
Groundwater less than 15 feet deep

For Mass Transfer Coefficients

Kg,H2O	0.833	cm/s
MWH2O	18	
Kg,O2	0.002	cm/s
MWO2	32	
T	77	F
T	298	K
R	8.20E-05	atm-m3/mol-K

For Emission Flux and Concentration in Tren Trench dimensions

CF1	1.00E-03	L/cm3
CF2	1.00E+04	cm2/m2
CF3	3600	s/hr
F	1	
ACH	360	hr-1

Length	8	ft
	2.44	m
Width	11	ft
	3.35	m
Depth	10	ft
	3.05	m
Width/Depth	1.10	

Error in Calcs? No = 0, Yes >

Chemical	Concentration of Contaminant in Groundwater Cgw ug/L	Is Chemical a VOC ?	Molecular Weight MWi g/mol	Henry's Law Constant Hi atm-m3/mol	Gas-Phase Mass Transfer Coefficient KiG cm/s	Liquid-Phase Mass Transfer Coefficient KiL cm/s	Overall Mass Transfer Coefficient Ki cm/s	Volatilization Factor VF L/m3	Concentration of Contaminant in Trench Ctrench mg/m3	Concentration of Contaminant in Trench Ctrench mg/m3
BENZENE	9.60E-01	Y	7.81E+01	5.56E-03	5.09E-01	1.28E-03	1.27E-03	4.15E-02	3.99E-05	3.99E-05
TETRACHLOROETHYL	8.50E-01	Y	165.83	1.84E-02	3.96E-01	8.79E-04	8.76E-04	2.87E-02	2.44E-05	2.44E-05

CALCULATION OF AMBIENT AIR CONCENTRATION
SOURCE: U.S. EPA SOIL SCREENING GUIDANCE

Scenario Timeframe: Future
Medium: Subsurfce Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Construction Worker
Receptor Age: Adult

Purpose: To calculate ambient air concentrations resulting from fugitive dust and volatilization from soil.

Relevant Equations:

$$Cair = Cs \times (1/PEF + 1/VF)$$

$$VF = \frac{Q/C \times (3.14 \times DA \times T)^{1/2} \times 10^{-4}\ m^2/cm^2}{2 \times pb \times DA}$$

$$DA = \frac{[(\theta a^{10/3} \times Di \times H + \theta w^{10/3} \times Dw)/n^2)]}{pb \times Kd + \theta w + \theta a \times H}$$

$$Csat = S/pb \times (Kd \times pb + \theta w + H \times \theta a)$$

INPUT PARAMTERS			
Parameter	**Value**	**Definition**	
Q/C = :	97.78	Inverse of mean conc. at center of source (g/m^2-s per kg/m^3).	
T = :	7.6E+08	Exposure interval (seconds).	
pb = :	1.5	Dry soil bulk density (g/cm^3).	
ps = :	2.65	soil particle density (g/cm^3).	
n = :	0.434	Total soil porosity (L_{pore}/L_{soil}).	
θw = :	0.15	Water-filled soil porosity (L_{pore}/L_{soil}).	
θa = :	0.284	Air-filled soil porosity (L_{air}/L_{soil}).	
Di = :	Chemical specific	Diffusivity in air (cm^2/sec).	
H' = :	Chemical specific	Dimensionless Henry's Law Constant.	
Dw = :	Chemical specific	Diffusivity in water (cm^2/sec).	
DA = :	Chemical specific	Apparent diffusivity (cm^2/sec).	
Kd = :	Chemical specific	Soil-water partition coefficient (cm^3/g).	
Koc = :	Chemical specific	Soil organic carbon partition coefficient (cm^3/g).	
foc = :	0.006	Fraction organic carbon in soil (g/g).	
F_D = :	1	dispersion correction factor	
V =:	0.5	Fraction of vegatative cover (unitless)	
Um =:	3.44	Mean annual wind speed (m/s)	
Ut =:	11.32	equivalent threshold value of windspeed at 7 m (m/s)	2.92
F(x) =:	0.0086	Function dependent on Um/Ut	0.0085
PEF = :	1.36E+09	Particulate emission factor (m^3/kg)	8.1E+10

Error in Calcs? No = 0, Yes > 0 0

Chemical	Cs (mg/kg)	Volatile	Chemical Properties					Intermediate Calculations				Results		
			Koc (cm^3/g)	Di (cm^2/sec)	Dw (cm^2/sec)	S (mg/L)	H'	Kd (cm^3/g)	Da (cm^2/sec)	VF (m^3/kg)	Csat (mg/kg)	CaV (mg/m^3)	CaP (mg/m^3)	CaTot (mg/m^3)
All Soil														
naphthalene	0.52	Y	2.00E+03	5.90E-02	7.50E-06	3.10E+01	1.98E-02	1.20E+01	5.15E-06	7.00E+04	3.75E+02	7.42E-06	3.82E-10	7.42E-06
tetrachloroethylene		Y	1.55E+02	7.20E-02	8.20E-06	2.00E+02	7.54E-01	9.30E-01	2.47E-03	3.20E+03	2.35E+02	0.00E+00	0.00E+00	0.00E+00

TABLE 7.6. REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF NON-CANCER HAZARDS
EXPOSURE OF CONSTRUCTION WORKERS BY INHALATION FROM GW IN TRENCH
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation [1]	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Concentration (Subchronic [2] if available)	Reference Concentration Units	Hazard Quotient
Inhalation	BENZENE	9.60E-01	ug/L	4.0E-05	mg/m^3	R	4.7E-06	mg/m^3	3.0E-02	mg/m3	1.6E-04
	TETRACHLOROETHYLENE	7.20E-01	ug/L	2.4E-05	mg/m^3	R	2.9E-06	mg/m^3	2.7E-01	mg/m3	1.1E-05
	(total)										1.69E-04
										Total Hazard Index Across All Exposure Routes/Pathways	**0.0002**

1 Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

2 Subchronic values in *italics.*

8.6. REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF CANCER RISKS
EXPOSURE OF CONSTRUCTION WORKERS BY INHALATION FROM GW IN TRENCH
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Unit Risk	Cancer Unit Risk Units	Cancer Risk
Inhalation	BENZENE	9.60E-01	mg/kg	4.0E-05	mg/m^3	R	7.8E-09	mg/m^3	7.8E-03	$(mg/m^3)^{-1}$	6.1E-11
	TETRACHLOROETHYLENE	7.20E-01	mg/kg	2.4E-05	mg/m^3	R	4.8E-09	mg/m^3	5.9E-03	$(mg/m^3)^{-1}$	2.8E-11
	(total)										8.9E-11
										Total Risk Across All Exposure Routes/Pathways	**9.E-11**

TABLE 4.7
VALUES USED FOR DAILY INTAKE CALCULATIONS
EXPOSURE OF OCCUPATIONAL/MAINTENANCE WORKERS TO SOIL (POSSIBLE FUTURE SURFACE SOIL)
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface Soil
Exposure Point: Entire Site
Receptor Population: Occupational Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CTE Value	CTE Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Csoil	Chemical Concentration in Soil	mg/kg	95% UCL or Max	USEPA, December 2002	Mean	USEPA, December 2002	Ingestion Intake (mg/kg/day) = Csoil x IR x Fi x EF x ED x CF / BW x AT U.S. EPA, December 1989
	IR	Ingestion Rate of Soil	mg/day	100	USEPA, May 1993	50	USEPA, May 1993	
	Fi	Fraction Ingested	unitless	1	USEPA, May 1993	1	USEPA, May 1993	
	EF	Exposure Frequency	days/year	250	USEPA, May 1993	219	USEPA, May 1993	
	ED	Exposure Duration	years	25	USEPA, May 1993	9	USEPA, May 1993	
	CF	Conversion Factor	kg/mg	1.0E-06	USEPA, December 1989	1.0E-06	USEPA, December 1989	
	BW	Body Weight	kg	70	USEPA, May 1993	70	USEPA, May 1993	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, December 1989	25,550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	9,125	USEPA, December 1989	3,285	USEPA, December 1989	
Dermal	Csoil	Chemical Concentration in Soil	mg/kg	95% UCL or Max	USEPA, December 2002	Mean	USEPA, December 2002	Dermal Intake (mg/kg/day) = Csoil x CF x SA x AF x ABS x EF x ED / BW x AT U.S. EPA, December 1989
	CF	Conversion Factor	kg/mg	1.0E-06	USEPA, December 1989	1.0E-06	USEPA, December 1989	
	SA	Skin Surface Area	cm^2/day	3,300	USEPA, July 2004	3,300	USEPA, July 2004	
	AF	Soil to Skin Adherence Factor	mg/cm^2	0.2	USEPA, July 2004	0.02	USEPA, July 2004	
	ABS	Dermal Absorption Factor (Solid)	unitless	chemical specific	USEPA, July 2004	chemical specific	USEPA, July 2004	
	EF	Exposure Frequency	days/year	250	USEPA, May 1993	219	USEPA, May 1993	
	ED	Exposure Duration	years	25	USEPA, May 1993	9	USEPA, May 1993	
	BW	Body Weight	kg	70	USEPA, May 1993	70	USEPA, May 1993	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, December 1989	25,550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	9,125	USEPA, December 1989	3,285	USEPA, December 1989	

Daily Intake Calculations

Ingestion Intake = (IR x Fi x EF x ED x CF) / (BW x AT)
Dermal Intake = (CF x SA x AF x ABS x EF x ED) / (BW x AT)

Cancer Ingestion Intake - RME = 3.49E-07
Noncancer Ingestion Intake - RME = 9.78E-07

Cancer Ingestion Intake - CTE = 5.51E-08
Noncancer Ingestion Intake - CTE = 4.29E-07

Cancer Dermal Intake - RME = 2.31E-06
Noncancer Dermal Intake - RME = 6.46E-06

Cancer Dermal Intake - CTE = 7.27E-08
Noncancer Dermal Intake - CTE = 5.66E-07

TABLE 7.7 - REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF NON-CANCER HAZARDS FROM EXPOSURE OF OCCUPATIONAL/MAINTENANCE WORKERS TO SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface Soil
Exposure Point: Entire Site
Receptor Population: Occupational Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	BAP EQUIVALENT (FULL DLs)	1.35E+01	mg/kg	1.35E+01	1.3E-05	mg/kg-day		mg/kg-day	NA	NA	
	AROCLOR 1260	2.23E-01	mg/kg	2.23E-01	2.2E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.1E-02
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	3.3E-11	mg/kg-day	1.0E-09	mg/kg-day	NA	NA	3.3E-02
	ALUMINUM	9.89E+03	mg/kg	9.89E+03	9.7E-03	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	9.7E-03
	ANTIMONY	2.03E+00	mg/kg	2.03E+00	2.0E-06	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	5.0E-03
	ARSENIC	2.38E+01	mg/kg	2.38E+01	2.3E-05	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	7.8E-02
	BARIUM	9.47E+01	mg/kg	9.47E+01	9.3E-05	mg/kg-day	2.0E-01	mg/kg-day	NA	NA	4.6E-04
	CADMIUM	6.44E+00	mg/kg	6.44E+00	6.3E-06	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	6.3E-03
	CHROMIUM	5.05E+01	mg/kg	5.05E+01	4.9E-05	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	1.6E-02
	COBALT	8.07E+00	mg/kg	8.07E+00	7.9E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.6E-02
	COPPER	2.58E+02	mg/kg	2.58E+02	2.5E-04	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	6.3E-03
	IRON	3.36E+04	mg/kg	3.36E+04	3.3E-02	mg/kg-day	7.0E-01	mg/kg-day	NA	NA	4.7E-02
	MANGANESE	7.69E+02	mg/kg	7.69E+02	7.5E-04	mg/kg-day	4.7E-02	mg/kg-day	NA	NA	1.6E-02
	MERCURY	2.33E+00	mg/kg	2.33E+00	2.3E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	7.6E-03
	VANADIUM	1.86E+01	mg/kg	1.86E+01	1.8E-05	mg/kg-day	9.0E-03	mg/kg-day	NA	NA	2.0E-03
	(total)										**2.6E-01**
Dermal	BAP EQUIVALENT (FULL DLs)	1.35E+01	mg/kg	1.35E+01	1.1E-05	mg/kg-day		mg/kg-day	NA	NA	
	AROCLOR 1260	2.23E-01	mg/kg	2.23E-01	2.0E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.0E-02
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	6.5E-12	mg/kg-day	1.0E-09	mg/kg-day	NA	NA	6.5E-03
	ALUMINUM	9.89E+03	mg/kg	9.89E+03		mg/kg-day		mg/kg-day	NA	NA	
	ANTIMONY	2.03E+00	mg/kg	2.03E+00		mg/kg-day		mg/kg-day	NA	NA	
	ARSENIC	2.38E+01	mg/kg	2.38E+01	4.6E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.5E-02
	BARIUM	9.47E+01	mg/kg	9.47E+01		mg/kg-day		mg/kg-day	NA	NA	
	CADMIUM	6.44E+00	mg/kg	6.44E+00	4.2E-08	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	1.7E-03
	CHROMIUM	5.05E+01	mg/kg	5.05E+01		mg/kg-day		mg/kg-day	NA	NA	
	COBALT	8.07E+00	mg/kg	8.07E+00		mg/kg-day		mg/kg-day	NA	NA	
	COPPER	2.58E+02	mg/kg	2.58E+02		mg/kg-day		mg/kg-day	NA	NA	
	IRON	3.36E+04	mg/kg	3.36E+04		mg/kg-day		mg/kg-day	NA	NA	
	MANGANESE	7.69E+02	mg/kg	7.69E+02		mg/kg-day		mg/kg-day	NA	NA	
	MERCURY	2.33E+00	mg/kg	2.33E+00		mg/kg-day		mg/kg-day	NA	NA	
	VANADIUM	1.86E+01	mg/kg	1.86E+01		mg/kg-day		mg/kg-day	NA	NA	
	(total)										**3.4E-02**
										Total Hazard Index Across All Exposure Routes/Pathways	**3.0E-01**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

Dermal Absorption Fraction from Soil(ABS) (USEPA, July 2004):

Dioxins/furans - 0.03 Arsenic - 0.03 Aroclor 1260 - 0.14
PAHs - 0.13 Other Metals and Volatiles - not evaluated for dermal contact with soil.

TABLE 8.7- REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF CANCER RISKS FROM EXPOSURE OF OCCUPATIONAL/MAINTENANCE WORKERS TO SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface Soil
Exposure Point: Entire Site
Receptor Population: Occupational Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	BAP EQUIVALENT (FULL DLs	1.35E+01	mg/kg	1.35E+01	mg/kg	M	4.7E-06	mg/kg-day	7.3E+00	$(mg/kg\text{-}day)^{-1}$	3.4E-05
	AROCLOR 1260	2.23E-01	mg/kg	2.23E-01	mg/kg	M	7.8E-08	mg/kg-day	2.0E+00	$(mg/kg\text{-}day)^{-1}$	1.6E-07
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	mg/kg	M	1.2E-11	mg/kg-day	1.5E+05	$(mg/kg\text{-}day)^{-1}$	1.8E-06
	ALUMINUM	9.89E+03	mg/kg	9.89E+03	mg/kg	M	3.5E-03	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	ANTIMONY	2.03E+00	mg/kg	2.03E+00	mg/kg	M	7.1E-07	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	ARSENIC	2.38E+01	mg/kg	2.38E+01	mg/kg	M	8.3E-06	mg/kg-day	1.5E+00	$(mg/kg\text{-}day)^{-1}$	1.2E-05
	BARIUM	9.47E+01	mg/kg	9.47E+01	mg/kg	M	3.3E-05	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	CADMIUM	6.44E+00	mg/kg	6.44E+00	mg/kg	M	2.2E-06	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	CHROMIUM	5.05E+01	mg/kg	5.05E+01	mg/kg	M	1.8E-05	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	COBALT	8.07E+00	mg/kg	8.07E+00	mg/kg	M	2.8E-06	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	COPPER	2.58E+02	mg/kg	2.58E+02	mg/kg	M	9.0E-05	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	IRON	3.36E+04	mg/kg	3.36E+04	mg/kg	M	1.2E-02	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MANGANESE	7.69E+02	mg/kg	7.69E+02	mg/kg	M	2.7E-04	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MERCURY	2.33E+00	mg/kg	2.33E+00	mg/kg	M	8.1E-07	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	VANADIUM	1.86E+01	mg/kg	1.86E+01	mg/kg	M	6.5E-06	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	(total)										**4.9E-05**
Dermal	BAP EQUIVALENT (FULL DLs	1.35E+01	mg/kg	1.35E+01	mg/kg	M	4.0E-06	mg/kg-day	7.3E+00	$(mg/kg\text{-}day)^{-1}$	2.9E-05
	AROCLOR 1260	2.23E-01	mg/kg	2.23E-01	mg/kg	M	7.2E-08	mg/kg-day	2.0E+00	$(mg/kg\text{-}day)^{-1}$	1.4E-07
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	mg/kg	M	2.3E-12	mg/kg-day	1.5E+05	$(mg/kg\text{-}day)^{-1}$	3.5E-07
	ALUMINUM	9.89E+03	mg/kg	9.89E+03	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	ANTIMONY	2.03E+00	mg/kg	2.03E+00	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	ARSENIC	2.38E+01	mg/kg	2.38E+01	mg/kg	M	1.6E-06	mg/kg-day	1.5E+00	$(mg/kg\text{-}day)^{-1}$	2.5E-06
	BARIUM	9.47E+01	mg/kg	9.47E+01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	CADMIUM	6.44E+00	mg/kg	6.44E+00	mg/kg	M	1.5E-08	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	CHROMIUM	5.05E+01	mg/kg	5.05E+01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	COBALT	8.07E+00	mg/kg	8.07E+00	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	COPPER	2.58E+02	mg/kg	2.58E+02	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	IRON	3.36E+04	mg/kg	3.36E+04	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MANGANESE	7.69E+02	mg/kg	7.69E+02	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MERCURY	2.33E+00	mg/kg	2.33E+00	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	VANADIUM	1.86E+01	mg/kg	1.86E+01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	(total)										**3.2E-05**
										Total Risk Across All Exposure Routes/Pathways	**8.1E-05**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for risk calculation.

Dermal Absorption Fraction from Soil(ABS) (USEPA, July 2004):

Dioxins/furans - 0.03 Arsenic - 0.03 Aroclor 1260 - 0.14
PAHs - 0.13 Other Metals and Volatiles - not evaluated for dermal contact with soil.

TABLE 4.7a
VALUES USED FOR DAILY INTAKE CALCULATIONS
EXPOSURE OF OCCUPATIONAL WORKERS TO SOIL (POSSIBLE FUTURE SURFACE SOIL)
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface Soil
Exposure Point: Entire Site
Receptor Population: Occupational Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CTE Value	CTE Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Csoil	Chemical Concentration in Soil	mg/kg	95% UCL or Max	USEPA, December 2002	95% UCL or Max	USEPA, December 2002	Ingestion Intake (mg/kg/day) = Csoil x IR x Fi x EF x ED x CF / BW x AT U.S. EPA, December 1989
	IR	Ingestion Rate of Soil	mg/day	100	USEPA, May 1993	50	USEPA, May 1993	
	Fi	Fraction Ingested	unitless	1	USEPA, May 1993	1	USEPA, May 1993	
	EF	Exposure Frequency	days/year	250	USEPA, May 1993	219	USEPA, May 1993	
	ED	Exposure Duration	years	25	USEPA, May 1993	9	USEPA, May 1993	
	CF	Conversion Factor	kg/mg	1.0E-06	USEPA, December 1989	1.0E-06	USEPA, December 1989	
	BW	Body Weight	kg	70	USEPA, May 1993	70	USEPA, May 1993	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, December 1989	25,550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	9,125	USEPA, December 1989	3,285	USEPA, December 1989	
Dermal	Csoil	Chemical Concentration in Soil	mg/kg	95% UCL or Max	USEPA, December 2002	95% UCL or Max	USEPA, December 2002	Dermal Intake (mg/kg/day) = Csoil x CF x SA x AF x ABS x EF x ED / BW x AT U.S. EPA, December 1989
	CF	Conversion Factor	kg/mg	1.0E-06	USEPA, December 1989	1.0E-06	USEPA, December 1989	
	SA	Skin Surface Area	cm^2/day	3,300	USEPA, July 2004	3,300	USEPA, July 2004	
	AF	Soil to Skin Adherence Factor	mg/cm^2	0.2	USEPA, July 2004	0.02	USEPA, July 2004	
	ABS	Dermal Absorption Factor (Solid)	unitless	chemical specific	USEPA, July 2004	chemical specific	USEPA, July 2004	
	EF	Exposure Frequency	days/year	250	USEPA, May 1993	219	USEPA, May 1993	
	ED	Exposure Duration	years	25	USEPA, May 1993	9	USEPA, May 1993	
	BW	Body Weight	kg	70	USEPA, May 1993	70	USEPA, May 1993	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, December 1989	25,550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	9,125	USEPA, December 1989	3,285	USEPA, December 1989	

Daily Intake Calculations

Ingestion Intake = (IR x Fi x EF x ED x CF) / (BW x AT)
Dermal Intake = (CF x SA x AF x ABS x EF x ED) / (BW x AT)

Cancer Ingestion Intake - RME = 3.49E-07
Noncancer Ingestion Intake - RME = 9.78E-07

Cancer Ingestion Intake - CTE = 5.51E-08
Noncancer Ingestion Intake - CTE = 4.29E-07

Cancer Dermal Intake - RME = 2.31E-06
Noncancer Dermal Intake - RME = 6.46E-06

Cancer Dermal Intake - CTE = 7.27E-08
Noncancer Dermal Intake - CTE = 5.66E-07

TABLE 7.7a - CENTRAL TENDENCY EXPOSURE (CTE)
CALCULATION OF NON-CANCER HAZARDS FROM EXPOSURE OF OCCUPATIONAL WORKERS TO SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface Soil
Exposure Point: Entire Site
Receptor Population: Occupational Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	BAP EQUIVALENT (FULL DLs)	3.57E+00	mg/kg	3.57E+00	1.5E-06	mg/kg-day		mg/kg-day	NA	NA	
	NAPHTHALENE		mg/kg			mg/kg-day	2.0E-02	mg/kg-day	NA	NA	
	AROCLOR 1260	1.54E-01	mg/kg	1.54E-01	6.6E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	3.3E-03
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	1.4E-11	mg/kg-day	1.0E-09	mg/kg-day	NA	NA	1.4E-02
	ALUMINUM	7.62E+03	mg/kg	7.62E+03	3.3E-03	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	3.3E-03
	ANTIMONY	1.06E+00	mg/kg	1.06E+00	4.5E-07	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	1.1E-03
	ARSENIC	1.25E+01	mg/kg	1.25E+01	5.3E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.8E-02
	BARIUM	7.64E+01	mg/kg	7.64E+01	3.3E-05	mg/kg-day	2.0E-01	mg/kg-day	NA	NA	1.6E-04
	CADMIUM	2.30E+00	mg/kg	2.30E+00	9.9E-07	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	9.9E-04
	CHROMIUM	2.03E+01	mg/kg	2.03E+01	8.7E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	2.9E-03
	COBALT	6.59E+00	mg/kg	6.59E+00	2.8E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	9.4E-03
	COPPER	9.36E+01	mg/kg	9.36E+01	4.0E-05	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	1.0E-03
	IRON	2.68E+04	mg/kg	2.68E+04	1.1E-02	mg/kg-day	7.0E-01	mg/kg-day	NA	NA	1.6E-02
	MANGANESE	5.89E+02	mg/kg	5.89E+02	2.5E-04	mg/kg-day	4.7E-02	mg/kg-day	NA	NA	5.4E-03
	MERCURY	5.68E-01	mg/kg	5.68E-01	2.4E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	8.1E-04
	VANADIUM	1.67E+01	mg/kg	1.67E+01	7.1E-06	mg/kg-day	9.0E-03	mg/kg-day	NA	NA	7.9E-04
	(total)										**7.8E-02**
Dermal	BAP EQUIVALENT (FULL DLs)	3.57E+00	mg/kg	3.57E+00	2.6E-07	mg/kg-day		mg/kg-day	NA	NA	
	AROCLOR 1260	1.54E-01	mg/kg	1.54E-01	1.2E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	6.1E-04
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	5.7E-13	mg/kg-day	1.0E-09	mg/kg-day	NA	NA	5.7E-04
	ALUMINUM	7.62E+03	mg/kg	7.62E+03		mg/kg-day		mg/kg-day	NA	NA	
	ANTIMONY	1.06E+00	mg/kg	1.06E+00		mg/kg-day		mg/kg-day	NA	NA	
	ARSENIC	1.25E+01	mg/kg	1.25E+01	2.1E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	7.0E-04
	BARIUM	7.64E+01	mg/kg	7.64E+01		mg/kg-day		mg/kg-day	NA	NA	
	CADMIUM	2.30E+00	mg/kg	2.30E+00	1.3E-09	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	5.2E-05
	CHROMIUM	2.03E+01	mg/kg	2.03E+01		mg/kg-day		mg/kg-day	NA	NA	
	COBALT	6.59E+00	mg/kg	6.59E+00		mg/kg-day		mg/kg-day	NA	NA	
	COPPER	9.36E+01	mg/kg	9.36E+01		mg/kg-day		mg/kg-day	NA	NA	
	IRON	2.68E+04	mg/kg	2.68E+04		mg/kg-day		mg/kg-day	NA	NA	
	MANGANESE	5.89E+02	mg/kg	5.89E+02		mg/kg-day		mg/kg-day	NA	NA	
	MERCURY	5.68E-01	mg/kg	5.68E-01		mg/kg-day		mg/kg-day	NA	NA	
	VANADIUM	1.67E+01	mg/kg	1.67E+01		mg/kg-day		mg/kg-day	NA	NA	
	(total)										**1.9E-03**
										Total Hazard Index Across All Exposure Routes/Pathways	**8.0E-02**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

Dermal Absorption Fraction from Soil(ABS) (USEPA, July 2004):

Dioxins/furans - 0.03 Arsenic - 0.03 Aroclor 1260 - 0.14
PAHs - 0.13 Other Metals and Volatiles - not evaluated for dermal contact with soil.

TABLE 8.7a - CENTRAL TENDENCY EXPOSURE (CTE)
CALCULATION OF CANCER RISKS FROM EXPOSURE OF OCCUPATIONAL WORKERS TO SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface Soil
Exposure Point: Entire Site
Receptor Population: Occupational Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	BAP EQUIVALENT (FULL DLs	3.57E+00	mg/kg	3.57E+00	mg/kg	M	2.0E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.4E-06
	AROCLOR 1260	1.54E-01	mg/kg	1.54E-01	mg/kg	M	8.5E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.7E-08
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	mg/kg	M	1.8E-12	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	2.8E-07
	ALUMINUM	7.62E+03	mg/kg	7.62E+03	mg/kg	M	4.2E-04	mg/kg-day		(mg/kg-day)$^{-1}$	
	ANTIMONY	1.06E+00	mg/kg	1.06E+00	mg/kg	M	5.8E-08	mg/kg-day		(mg/kg-day)$^{-1}$	
	ARSENIC	1.25E+01	mg/kg	1.25E+01	mg/kg	M	6.9E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	1.0E-06
	BARIUM	7.64E+01	mg/kg	7.64E+01	mg/kg	M	4.2E-06	mg/kg-day		(mg/kg-day)$^{-1}$	
	CADMIUM	2.30E+00	mg/kg	2.30E+00	mg/kg	M	1.3E-07	mg/kg-day		(mg/kg-day)$^{-1}$	
	CHROMIUM	2.03E+01	mg/kg	2.03E+01	mg/kg	M	1.1E-06	mg/kg-day		(mg/kg-day)$^{-1}$	
	COBALT	6.59E+00	mg/kg	6.59E+00	mg/kg	M	3.6E-07	mg/kg-day		(mg/kg-day)$^{-1}$	
	COPPER	9.36E+01	mg/kg	9.36E+01	mg/kg	M	5.2E-06	mg/kg-day		(mg/kg-day)$^{-1}$	
	IRON	2.68E+04	mg/kg	2.68E+04	mg/kg	M	1.5E-03	mg/kg-day		(mg/kg-day)$^{-1}$	
	MANGANESE	5.89E+02	mg/kg	5.89E+02	mg/kg	M	3.2E-05	mg/kg-day		(mg/kg-day)$^{-1}$	
	MERCURY	5.68E-01	mg/kg	5.68E-01	mg/kg	M	3.1E-08	mg/kg-day		(mg/kg-day)$^{-1}$	
	VANADIUM	1.67E+01	mg/kg	1.67E+01	mg/kg	M	9.2E-07	mg/kg-day		(mg/kg-day)$^{-1}$	
	(total)										**2.8E-06**
Dermal	BAP EQUIVALENT (FULL DLs	3.57E+00	mg/kg	3.57E+00	mg/kg	M	3.4E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	2.5E-07
	AROCLOR 1260	1.54E-01	mg/kg	1.54E-01	mg/kg	M	1.6E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	3.1E-09
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	mg/kg	M	7.3E-14	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	1.1E-08
	ALUMINUM	7.62E+03	mg/kg	7.62E+03	mg/kg	M		mg/kg-day		(mg/kg-day)$^{-1}$	
	ANTIMONY	1.06E+00	mg/kg	1.06E+00	mg/kg	M		mg/kg-day		(mg/kg-day)$^{-1}$	
	ARSENIC	1.25E+01	mg/kg	1.25E+01	mg/kg	M	2.7E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	4.1E-08
	BARIUM	7.64E+01	mg/kg	7.64E+01	mg/kg	M		mg/kg-day		(mg/kg-day)$^{-1}$	
	CADMIUM	2.30E+00	mg/kg	2.30E+00	mg/kg	M		mg/kg-day		(mg/kg-day)$^{-1}$	
	CHROMIUM	2.03E+01	mg/kg	2.03E+01	mg/kg	M		mg/kg-day		(mg/kg-day)$^{-1}$	
	COBALT	6.59E+00	mg/kg	6.59E+00	mg/kg	M		mg/kg-day		(mg/kg-day)$^{-1}$	
	COPPER	9.36E+01	mg/kg	9.36E+01	mg/kg	M		mg/kg-day		(mg/kg-day)$^{-1}$	
	IRON	2.68E+04	mg/kg	2.68E+04	mg/kg	M		mg/kg-day		(mg/kg-day)$^{-1}$	
	MANGANESE	5.89E+02	mg/kg	5.89E+02	mg/kg	M		mg/kg-day		(mg/kg-day)$^{-1}$	
	MERCURY	5.68E-01	mg/kg	5.68E-01	mg/kg	M		mg/kg-day		(mg/kg-day)$^{-1}$	
	VANADIUM	1.67E+01	mg/kg	1.67E+01	mg/kg	M		mg/kg-day		(mg/kg-day)$^{-1}$	
	(total)										**3.0E-07**
										Total Risk Across All Exposure Routes/Pathways	**3.1E-06**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for risk calculation.

Dermal Absorption Fraction from Soil(ABS) (USEPA, July 2004):

Dioxins/furans - 0.03 Arsenic - 0.03 Aroclor 1260 - 0.14
PAHs - 0.13 Other Metals and Volatiles - not evaluated for dermal contact with soil.

TABLE 4.8
VALUES USED FOR DAILY INTAKE CALCULATIONS
EXPOSURE OF OCCUPATIONAL/MAINTENANCE WORKERS BY INHALATION FROM SOIL (POTENTIAL FUTURE SURFACE SOIL)
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Occupational Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Inhalation	CS	Chemical concentration in soil	mg/kg	95% UCL or Max	USEPA, May 1993	95% UCL or Max	USEPA, May 1993	Intake (mg/kg/day) =
	VF	Volatilization factor - Chemical Specific	m^3/kg	(1)	USEPA, December 2002	(1)	USEPA, December 2002	$\frac{CS \times \left[\frac{1}{VF} + \frac{1}{PEF}\right] \times ET \times EF \times ED}{AT \times 24}$
	PEF	Particulate emission factor	m^3/kg	1.36E+09	USEPA, December 2002	1.36E+09	USEPA, December 2002	
	ET	Exposure Time	hours/day	8	USEPA, December 2002	4	USEPA, December 2002	
	EF	Exposure Frequency	days/year	250	IEPA, April 2004	120	??	
	ED	Exposure Duration	years	25	Professional Judgement	9	USEPA 1997??	
	AT-C	Averaging Time (Cancer)	days	25550	USEPA, December 1989	25550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	9125	IEPA, Janaury 2003	3285	IEPA, Janaury 2003	

Notes:
(1) - Calculated according to USEPA Soil Screening Guidance, December 2002.

Daily Intake Calculations
Inhalation Intake = (ET x EF x ED x (1/PEF)+(1/VF)) / (AT x 24)

Cancer Inhalation Intake(RME) = 8.15E-02
Noncancer Inhalation Intake(RME) = 2.28E-01

Cancer Inhalation Intake(CTE) = 7.05E-03
Noncancer Inhalation Intake(CTE) = 5.48E-02

Cancer risk from ingestion = Air concentration x Cancer Inhalation Intake x Cancer Inhalation Unit Risk (IUR)
Hazard Index from ingestion = Air concentration x Noncancer Inhalation Intake / Reference Air Concentration (RfCi)

TABLE 7.8 REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF NON-CANCER HAZARDS
EXPOSURE OF OCCUPATIONAL/MAINTENANCE WORKERS BY INHALATION FROM SOIL (POTENTIAL FUTURE SURFACE SOIL)
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Occupational Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Inhalation	MERCURY	2.33E+00	mg/kg	1.7E-09	mg/m^3	R	3.9E-10	mg/m^3	3.0E-05	mg/m^3	1.3E-05
											1.3E-05
	(total)										
										Total Hazard Index Across All Exposure Routes/Pathways	**0.000013**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

8.8 REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF CANCER RISKS
EXPOSURE OF OCCUPATIONAL/MAINTENANCE WORKERS BY INHALATION FROM SOIL (POTENTIAL FUTURE SURFACE SOIL)
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Occupational Worker
Receptor Age: Adult

Exposure Route Inhalation	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Unit Risk	Cancer Unit Risk Units	Cancer Risk
	No carcinogenic COPCs for inhalation pathway										
	(total)										0.0E+00
										Total Risk Across All Exposure Routes/Pathways	**0.0E+00**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

TABLE 4.8a
VALUES USED FOR DAILY INTAKE CALCULATIONS
EXPOSURE OF OCCUPATIONAL WORKERS BY INHALATION FROM SOIL (POTENTIAL FUTURE SURFACE SOIL)
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Occupational Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Inhalation	CS	Chemical concentration in soil	mg/kg	95% UCL or Max	USEPA, May 1993	95% UCL or Max	USEPA, May 1993	Intake (mg/kg/day) = $\frac{CS \times \left[\frac{1}{VF} + \frac{1}{PEF}\right] \times ET \times EF \times ED}{AT \times 24}$
	VF	Volatilization factor - Chemical Specific	m^3/kg	(1)	USEPA, December 2002	(1)	USEPA, December 2002	
	PEF	Particulate emission factor	m^3/kg	1.36E+09	USEPA, December 2002	1.36E+09	USEPA, December 2002	
	ET	Exposure Time	hours/day	8	USEPA, December 2002	4	USEPA, December 2002	
	EF	Exposure Frequency	days/year	250	IEPA, April 2004	120	??	
	ED	Exposure Duration	years	25	Professional Judgement	9	USEPA 1997??	
	AT-C	Averaging Time (Cancer)	days	25550	USEPA, December 1989	25550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	9125	IEPA, Janaury 2003	3285	IEPA, Janaury 2003	

Notes:
(1) - Calculated according to USEPA Soil Screening Guidance, December 2002.

Daily Intake Calculations
Inhalation Intake = (ET x EF x ED x (1/PEF)+(1/VF)) / (AT x 24)

Cancer Inhalation Intake(RME) = 8.15E-02
Noncancer Inhalation Intake(RME) = 2.28E-01

Cancer Inhalation Intake(CTE) = 7.05E-03
Noncancer Inhalation Intake(CTE) = 5.48E-02

Cancer risk from ingestion = Air concentration x Cancer Inhalation Intake x Cancer Inhalation Unit Risk (IUR)
Hazard Index from ingestion = Air concentration x Noncancer Inhalation Intake / Reference Air Concentration (RfCi)

TABLE 7.8a CENTRAL TENDENCY EXPOSURE (CTE)
CALCULATION OF NON-CANCER HAZARDS
EXPOSURE OF OCCUPATIONAL WORKERS BY INHALATION FROM SOIL (POTENTIAL FUTURE SURFACE SOIL)
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Occupational Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Inhalation	MERCURY	5.68E-01	mg/kg	4.2E-10	mg/m^3	R	2.3E-11	mg/m^3	3.0E-05	mg/m^3	7.6E-07
	(total)										7.6E-07
										Total Hazard Index Across All Exposure Routes/Pathways	**0.0000008**

8.8a CENTRAL TENDENCY EXPOSURE (CTE)
CALCULATION OF CANCER RISKS
EXPOSURE OF OCCUPATIONAL WORKERS BY INHALATION FROM SOIL (POTENTIAL FUTURE SURFACE SOIL)
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Occupational Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Unit Risk	Cancer Unit Risk Units	Cancer Risk
	No carcinogenic COPCs for inhalation pathway										
	(total)										0.0E+00
										Total Risk Across All Exposure Routes/Pathways	**0.E+00**

TABLE 4.9
VALUES USED FOR DAILY INTAKE CALCULATIONS
EXPOSURE OF ADOLESCENT TRESPASSERS TO SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface Soil
Exposure Point: Entire Site
Receptor Population: Trespasser
Receptor Age: Adolescent (7 - 16 years)

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CTE Value	CTE Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Csoil	Chemical Concentration in Soil	mg/kg	95% UCL or Max	USEPA, December 2002	Mean	USEPA, May 1993	Ingestion Intake (mg/kg/day) = Csoil x IR x Fi x EF x ED x CF / BW x AT U.S. EPA, December 1989
	IR	Ingestion Rate of Soil	mg/day	100	USEPA, May 1993	50	Professional Judgement	
	Fi	Fraction Ingested	unitless	1	USEPA, May 1993	1	USEPA, May 1993	
	EF	Exposure Frequency	days/year	26	Professional Judgement	13	Professional Judgement	
	ED	Exposure Duration	years	10	Adolescent, Age 7 - 16	10	Adolescent, Age 7 - 16	
	CF	Conversion Factor	kg/mg	1.0E-06	USEPA, December 1989	1.0E-06	USEPA, December 1989	
	BW	Body Weight	kg	42	USEPA, August 1997	42	USEPA, August 1997	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, December 1989	25,550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	3,650	USEPA, December 1989	3,650	USEPA, December 1989	
Dermal	Csoil	Chemical Concentration in Soil	mg/kg	95% UCL or Max	USEPA, December 2002	Mean	USEPA, May 1993	Dermal Intake (mg/kg/day) = Csoil x CF x SA x AF x ABS x EF x ED / BW x AT U.S. EPA, December 1989
	CF	Conversion Factor	kg/mg	1.0E-06	USEPA, December 1989	1.0E-06	USEPA, December 1989	
	SA	Skin Surface Area	cm^2/day	3,280	USEPA, August 1997	3,100	USEPA, August 1997	
	AF	Soil to Skin Adherence Factor	mg/cm^2	0.2	USEPA, July 2004	0.04	USEPA, July 2004	
	ABS	Dermal Absorption Factor (Solid)	unitless	chemical specific	USEPA, July 2004	chemical specific	USEPA, July 2004	
	EF	Exposure Frequency	days/year	26	Professional Judgement	13	Professional Judgement	
	ED	Exposure Duration	years	10	Adolescent, Age 7 - 16	10	Adolescent, Age 7 - 16	
	BW	Body Weight	kg	42	USEPA, August 1997	42	USEPA, August 1997	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, December 1989	25,550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	3,650	USEPA, December 1989	3,650	USEPA, December 1989	

Daily Intake Calculations

Ingestion Intake = (IR x Fi x EF x ED x CF) / (BW x AT)
Dermal Intake = (CF x SA x AF x ABS x EF x ED) / (BW x AT)

Cancer Ingestion Intake - RME = 2.42E-08
Noncancer Ingestion Intake - RME = 1.70E-07

Cancer Dermal Intake - RME = 1.59E-07
Noncancer Dermal Intake - RME = 1.11E-06

Cancer Ingestion Intake - CTE = 6.06E-09
Noncancer Ingestion Intake - CTE = 4.24E-08

Cancer Dermal Intake - CTE = 1.50E-08
Noncancer Dermal Intake - CTE = 1.05E-07

TABLE 7.9 - REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF NON-CANCER HAZARDS FROM EXPOSURE OF ADOLESCENT TRESPASSERS TO SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface Soil
Exposure Point: Entire Site
Receptor Population: Trespasser
Receptor Age: Adolescent (7 - 16 years)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	BAP EQUIVALENT (FULL DLs	1.347E+01	mg/kg	1.35E+01	mg/kg	M	2.3E-06	mg/kg-day		mg/kg-day	NA	NA	
	AROCLOR 1260	2.23E-01	mg/kg	2.23E-01	mg/kg	M	3.8E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.9E-03
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	mg/kg	M	5.7E-12	mg/kg-day	1.0E-09	mg/kg-day	NA	NA	5.7E-03
	ALUMINUM	9.89E+03	mg/kg	9.89E+03	mg/kg	M	1.7E-03	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	1.7E-03
	ANTIMONY	2.03E+00	mg/kg	2.03E+00	mg/kg	M	3.4E-07	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	8.6E-04
	ARSENIC	2.38E+01	mg/kg	2.38E+01	mg/kg	M	4.0E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.3E-02
	BARIUM	9.47E+01	mg/kg	9.47E+01	mg/kg	M	1.6E-05	mg/kg-day	2.0E-01	mg/kg-day	NA	NA	8.0E-05
	CADMIUM	6.44E+00	mg/kg	6.44E+00	mg/kg	M	1.1E-06	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	1.1E-03
	CHROMIUM	5.05E+01	mg/kg	5.05E+01	mg/kg	M	8.6E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	2.9E-03
	COBALT	8.07E+00	mg/kg	8.07E+00	mg/kg	M	1.4E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	4.6E-03
	COPPER	2.58E+02	mg/kg	2.58E+02	mg/kg	M	4.4E-05	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	1.1E-03
	IRON	3.36E+04	mg/kg	3.36E+04	mg/kg	M	5.7E-03	mg/kg-day	7.0E-01	mg/kg-day	NA	NA	8.1E-03
	MANGANESE	7.69E+02	mg/kg	7.69E+02	mg/kg	M	1.3E-04	mg/kg-day	4.7E-02	mg/kg-day	NA	NA	2.8E-03
	MERCURY	2.33E+00	mg/kg	2.33E+00	mg/kg	M	4.0E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.3E-03
	VANADIUM	1.86E+01	mg/kg	1.86E+01	mg/kg	M	3.1E-06	mg/kg-day	9.0E-03	mg/kg-day	NA	NA	3.5E-04
	(total)												4.6E-02
Dermal	BAP EQUIVALENT (FULL DLs	1.347E+01	mg/kg	1.35E+01	mg/kg	M	1.9E-06	mg/kg-day		mg/kg-day	NA	NA	
	AROCLOR 1260	2.23E-01	mg/kg	2.23E-01	mg/kg	M	3.5E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.7E-03
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg		mg/kg	M	1.1E-12	mg/kg-day	1.0E-09	mg/kg-day	NA	NA	1.1E-03
	ALUMINUM	9.89E+03	mg/kg	9.89E+03	mg/kg	M		mg/kg-day	1.0E+00	mg/kg-day	NA	NA	
	ANTIMONY	2.03E+00	mg/kg	2.03E+00	mg/kg	M		mg/kg-day	4.0E-04	mg/kg-day	NA	NA	
	ARSENIC	2.38E+01	mg/kg	2.38E+01	mg/kg	M	8.0E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.7E-03
	BARIUM	9.47E+01	mg/kg		mg/kg	M		mg/kg-day		mg/kg-day	NA	NA	
	CADMIUM	6.44E+00	mg/kg		mg/kg	M	7.2E-09	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	2.9E-04
	CHROMIUM	5.05E+01	mg/kg		mg/kg	M		mg/kg-day		mg/kg-day	NA	NA	
	COBALT	8.07E+00	mg/kg		mg/kg	M		mg/kg-day		mg/kg-day	NA	NA	
	COPPER	2.58E+02	mg/kg		mg/kg	M		mg/kg-day		mg/kg-day	NA	NA	
	IRON	3.36E+04	mg/kg		mg/kg	M		mg/kg-day		mg/kg-day	NA	NA	
	MANGANESE	7.69E+02	mg/kg		mg/kg	M		mg/kg-day		mg/kg-day	NA	NA	
	MERCURY	2.33E+00	mg/kg		mg/kg	M		mg/kg-day		mg/kg-day	NA	NA	
	VANADIUM	1.86E+01	mg/kg		mg/kg	M		mg/kg-day		mg/kg-day	NA	NA	
	(total)												5.8E-03
												Total Hazard Index Across All Exposure Routes/Pathways	0.05

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

Dermal Absorption Fraction from Soil(ABS) (USEPA, July 2004):

Dioxins/furans - 0.03 Arsenic - 0.03 Aroclor 1260 - 0.14

PAHs - 0.13 Other Metals and Volatiles - not evaluated for dermal contact with soil.

TABLE 8.9 - REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF CANCER RISKS FROM EXPOSURE OF ADOLESCENT TRESPASSERS TO SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface Soil
Exposure Point: Entire Site
Receptor Population: Trespasser
Receptor Age: Adolescent (7 - 16 years)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	BAP EQUIVALENT (FULL DLs	1.35E+01	mg/kg	1.35E+01	mg/kg	M	9.8E-07	mg/kg-day	7.3E+00	$(mg/kg\text{-}day)^{-1}$	7.1E-06
	AROCLOR 1260	2.23E-01	mg/kg	2.23E-01	mg/kg	M	5.4E-09	mg/kg-day	2.0E+00	$(mg/kg\text{-}day)^{-1}$	1.1E-08
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	mg/kg	M	8.1E-13	mg/kg-day	1.5E+05	$(mg/kg\text{-}day)^{-1}$	1.2E-07
	ALUMINUM	9.89E+03	mg/kg	9.89E+03	mg/kg	M	2.4E-04	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	ANTIMONY	2.03E+00	mg/kg	2.03E+00	mg/kg	M	4.9E-08	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	ARSENIC	2.38E+01	mg/kg	2.38E+01	mg/kg	M	5.8E-07	mg/kg-day	1.5E+00	$(mg/kg\text{-}day)^{-1}$	8.7E-07
	BARIUM	9.47E+01	mg/kg	9.47E+01	mg/kg	M	2.3E-06	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	CADMIUM	6.44E+00	mg/kg	6.44E+00	mg/kg	M	1.6E-07	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	CHROMIUM	5.05E+01	mg/kg	5.05E+01	mg/kg	M	1.2E-06	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	COBALT	8.07E+00	mg/kg	8.07E+00	mg/kg	M	2.0E-07	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	COPPER	2.58E+02	mg/kg	2.58E+02	mg/kg	M	6.3E-06	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	IRON	3.36E+04	mg/kg	3.36E+04	mg/kg	M	8.1E-04	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MANGANESE	7.69E+02	mg/kg	7.69E+02	mg/kg	M	1.9E-05	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MERCURY	2.33E+00	mg/kg	2.33E+00	mg/kg	M	5.6E-08	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	VANADIUM	1.86E+01	mg/kg	1.86E+01	mg/kg	M	4.5E-07	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	(total)										**8.1E-06**
Dermal	BAP EQUIVALENT (FULL DLs	1.35E+01	mg/kg	1.35E+01	mg/kg	M	8.3E-07	mg/kg-day	7.3E+00	$(mg/kg\text{-}day)^{-1}$	6.1E-06
	AROCLOR 1260	2.23E-01	mg/kg	2.23E-01	mg/kg	M	5.0E-09	mg/kg-day	2.0E+00	$(mg/kg\text{-}day)^{-1}$	9.9E-09
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	mg/kg	M	1.6E-13	mg/kg-day	1.5E+05	$(mg/kg\text{-}day)^{-1}$	2.4E-08
	ALUMINUM	9.89E+03	mg/kg	9.89E+03	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	ANTIMONY	2.03E+00	mg/kg	2.03E+00	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	ARSENIC	2.38E+01	mg/kg	2.38E+01	mg/kg	M	1.1E-07	mg/kg-day	1.5E+00	$(mg/kg\text{-}day)^{-1}$	1.7E-07
	BARIUM	9.47E+01	mg/kg	9.47E+01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	CADMIUM	6.44E+00	mg/kg	6.44E+00	mg/kg	M	1.0E-09	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	CHROMIUM	5.05E+01	mg/kg	5.05E+01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	COBALT	8.07E+00	mg/kg	8.07E+00	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	COPPER	2.58E+02	mg/kg	2.58E+02	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	IRON	3.36E+04	mg/kg	3.36E+04	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MANGANESE	7.69E+02	mg/kg	7.69E+02	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MERCURY	2.33E+00	mg/kg	2.33E+00	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	VANADIUM	1.86E+01	mg/kg	1.86E+01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	(total)										**6.3E-06**
										Total Risk Across All Exposure Routes/Pathways	**1.4E-05**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for risk calculation.

Dermal Absorption Fraction from Soil(ABS) (USEPA, July 2004):

Dioxins/furans - 0.03 Arsenic - 0.03 Aroclor 1260 - 0.14
PAHs - 0.13 Other Metals and Volatiles - not evaluated for dermal contact with soil.

TABLE 4.9a
VALUES USED FOR DAILY INTAKE CALCULATIONS
EXPOSURE OF ADOLESCENT TRESPASSERS TO SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface Soil
Exposure Point: Entire Site
Receptor Population: Trespasser
Receptor Age: Adolescent (7 - 16 years)

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CTE Value	CTE Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Csoil	Chemical Concentration in Soil	mg/kg	95% UCL or Max	USEPA, December 2002	Mean	USEPA, December 1989	Ingestion Intake (mg/kg/day) =
	IR	Ingestion Rate of Soil	mg/day	100	USEPA, May 1993	50	Professional Judgement	Csoil x IR x Fi x EF x ED x CF
	Fi	Fraction Ingested	unitless	1	USEPA, May 1993	1	USEPA, May 1993	BW x AT
	EF	Exposure Frequency	days/year	26	Professional Judgement	13	Professional Judgement	U.S. EPA, December 1989
	ED	Exposure Duration	years	10	Adolescent, Age 7 - 16	10	Adolescent, Age 7 - 16	
	CF	Conversion Factor	kg/mg	1.0E-06	USEPA, December 1989	1.0E-06	USEPA, December 1989	
	BW	Body Weight	kg	42	USEPA, August 1997	42	USEPA, August 1997	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, December 1989	25,550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	3,650	USEPA, December 1989	3,650	USEPA, December 1989	
Dermal	Csoil	Chemical Concentration in Soil	mg/kg	95% UCL or Max	USEPA, December 2002	Mean	USEPA, December 1989	Dermal Intake (mg/kg/day) =
	CF	Conversion Factor	kg/mg	1.0E-06	USEPA, December 1989	1.0E-06	USEPA, December 1989	Csoil x CF x SA x AF x ABS x EF x ED
	SA	Skin Surface Area	cm^2/day	3,280	USEPA, August 1997	3,100	USEPA, August 1997	BW x AT
	AF	Soil to Skin Adherence Factor	mg/cm^2	0.2	USEPA, July 2004	0.04	USEPA, July 2004	U.S. EPA, December 1989
	ABS	Dermal Absorption Factor (Solid)	unitless	chemical specific	USEPA, July 2004	chemical specific	USEPA, July 2004	
	EF	Exposure Frequency	days/year	26	Professional Judgement	13	Professional Judgement	
	ED	Exposure Duration	years	10	Adolescent, Age 7 - 16	10	Adolescent, Age 7 - 16	
	BW	Body Weight	kg	42	USEPA, August 1997	42	USEPA, August 1997	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, December 1989	25,550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	3,650	USEPA, December 1989	3,650	USEPA, December 1989	

Daily Intake Calculations

Ingestion Intake = (IR x Fi x EF x ED x CF) / (BW x AT)
Dermal Intake = (CF x SA x AF x ABS x EF x ED) / (BW x AT)

Cancer Ingestion Intake - RME = 2.42E-08
Noncancer Ingestion Intake - RME = 1.70E-07

Cancer Dermal Intake - RME = 1.59E-07
Noncancer Dermal Intake - RME = 1.11E-06

Cancer Ingestion Intake - CTE = 6.06E-09
Noncancer Ingestion Intake - CTE = 4.24E-08

Cancer Dermal Intake - CTE = 1.50E-08
Noncancer Dermal Intake - CTE = 1.05E-07

TABLE 7.9a - CENTRAL TENDENCY EXPOSURE (CTE)
CALCULATION OF NON-CANCER HAZARDS FROM EXPOSURE OF ADOLESCENT TRESPASSERS TO SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface Soil
Exposure Point: Entire Site
Receptor Population: Trespasser
Receptor Age: Adolescent (7 - 16 years)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	BAP EQUIVALENT (FULL DLs	3.57E+00	mg/kg	3.57E+00	mg/kg	M	1.5E-07	mg/kg-day		mg/kg-day	NA	NA	
	AROCLOR 1260	1.54E-01	mg/kg	1.54E-01	mg/kg	M	6.5E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	3.3E-04
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	mg/kg	M	1.4E-12	mg/kg-day	1.0E-09	mg/kg-day	NA	NA	1.4E-03
	ALUMINUM	7.62E+03	mg/kg	7.62E+03	mg/kg	M	3.2E-04	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	3.2E-04
	ANTIMONY	1.06E+00	mg/kg	1.06E+00	mg/kg	M	4.5E-08	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	1.1E-04
	ARSENIC	1.25E+01	mg/kg	1.25E+01	mg/kg	M	5.3E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.8E-03
	BARIUM	7.64E+01	mg/kg	7.64E+01	mg/kg	M	3.2E-06	mg/kg-day	2.0E-01	mg/kg-day	NA	NA	1.6E-05
	CADMIUM	2.30E+00	mg/kg	2.30E+00	mg/kg	M	9.8E-08	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	9.8E-05
	CHROMIUM	2.03E+01	mg/kg	2.03E+01	mg/kg	M	8.6E-07	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	2.9E-04
	COBALT	6.59E+00	mg/kg	6.59E+00	mg/kg	M	2.8E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	9.3E-04
	COPPER	9.36E+01	mg/kg	9.36E+01	mg/kg	M	4.0E-06	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	9.9E-05
	IRON	2.68E+04	mg/kg	2.68E+04	mg/kg	M	1.1E-03	mg/kg-day	7.0E-01	mg/kg-day	NA	NA	1.6E-03
	MANGANESE	5.89E+02	mg/kg	5.89E+02	mg/kg	M	2.5E-05	mg/kg-day	4.7E-02	mg/kg-day	NA	NA	5.3E-04
	MERCURY	5.68E-01	mg/kg	5.68E-01	mg/kg	M	2.4E-08	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	8.0E-05
	VANADIUM	1.67E+01	mg/kg	1.67E+01	mg/kg	M	7.1E-07	mg/kg-day	9.0E-03	mg/kg-day	NA	NA	7.9E-05
	(total)												7.7E-03
Dermal	BAP EQUIVALENT (FULL DLs	3.566E+00	mg/kg	3.57E+00	mg/kg	M	4.9E-08	mg/kg-day		mg/kg-day	NA	NA	
	AROCLOR 1260	1.54E-01	mg/kg	1.54E-01	mg/kg	M	2.3E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.1E-04
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	mg/kg	M	1.1E-13	mg/kg-day	1.0E-09	mg/kg-day	NA	NA	1.1E-04
	ALUMINUM	7.62E+03	mg/kg	7.62E+03	mg/kg	M		mg/kg-day	1.0E+00	mg/kg-day	NA	NA	
	ANTIMONY	1.06E+00	mg/kg	1.06E+00	mg/kg	M		mg/kg-day	4.0E-04	mg/kg-day	NA	NA	
	ARSENIC	1.25E+01	mg/kg	1.25E+01	mg/kg	M	3.9E-08	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.3E-04
	BARIUM	7.64E+01	mg/kg	7.64E+01	mg/kg	M		mg/kg-day		mg/kg-day	NA	NA	
	CADMIUM	2.30E+00	mg/kg	2.30E+00	mg/kg	M	2.4E-10	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	9.7E-06
	CHROMIUM	2.03E+01	mg/kg	2.03E+01	mg/kg	M		mg/kg-day		mg/kg-day	NA	NA	
	COBALT	6.59E+00	mg/kg	6.59E+00	mg/kg	M		mg/kg-day		mg/kg-day	NA	NA	
	COPPER	9.36E+01	mg/kg	9.36E+01	mg/kg	M		mg/kg-day		mg/kg-day	NA	NA	
	IRON	2.68E+04	mg/kg	2.68E+04	mg/kg	M		mg/kg-day		mg/kg-day	NA	NA	
	MANGANESE	5.89E+02	mg/kg	5.89E+02	mg/kg	M		mg/kg-day		mg/kg-day	NA	NA	
	MERCURY	5.68E-01	mg/kg	5.68E-01	mg/kg	M		mg/kg-day		mg/kg-day	NA	NA	
	VANADIUM	1.67E+01	mg/kg	1.67E+01	mg/kg	M		mg/kg-day		mg/kg-day	NA	NA	
	(total)												3.6E-04
												Total Hazard Index Across All Exposure Routes/Pathways	0.008

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

Dermal Absorption Fraction from Soil(ABS) (USEPA, July 2004):

Dioxins/furans - 0.03 Arsenic - 0.03 Aroclor 1260 - 0.14

PAHs - 0.13 Other Metals and Volatiles - not evaluated for dermal contact with soil.

TABLE 8.9a - CENTRAL TENDENCY EXPOSURE (CTE)
CALCULATION OF CANCER RISKS FROM EXPOSURE OF ADOLESCENT TRESPASSERS TO SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface Soil
Exposure Point: Entire Site
Receptor Population: Trespasser
Receptor Age: Adolescent (7 - 16 years)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	BAP EQUIVALENT (FULL DLs	3.57E+00	mg/kg	3.57E+00	mg/kg	M	6.5E-08	mg/kg-day	7.3E+00	$(mg/kg\text{-}day)^{-1}$	4.7E-07
	AROCLOR 1260	1.54E-01	mg/kg	1.54E-01	mg/kg	M	9.3E-10	mg/kg-day	2.0E+00	$(mg/kg\text{-}day)^{-1}$	1.9E-09
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	mg/kg	M	2.0E-13	mg/kg-day	1.5E+05	$(mg/kg\text{-}day)^{-1}$	3.0E-08
	ALUMINUM	7.62E+03	mg/kg	7.62E+03	mg/kg	M	4.6E-05	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	ANTIMONY	1.06E+00	mg/kg	1.06E+00	mg/kg	M	6.4E-09	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	ARSENIC	1.25E+01	mg/kg	1.25E+01	mg/kg	M	7.5E-08	mg/kg-day	1.5E+00	$(mg/kg\text{-}day)^{-1}$	1.1E-07
	BARIUM	7.64E+01	mg/kg	7.64E+01	mg/kg	M	4.6E-07	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	CADMIUM	2.30E+00	mg/kg	2.30E+00	mg/kg	M	1.4E-08	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	CHROMIUM	2.03E+01	mg/kg	2.03E+01	mg/kg	M	1.2E-07	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	COBALT	6.59E+00	mg/kg	6.59E+00	mg/kg	M	4.0E-08	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	COPPER	9.36E+01	mg/kg	9.36E+01	mg/kg	M	5.7E-07	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	IRON	2.68E+04	mg/kg	2.68E+04	mg/kg	M	1.6E-04	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MANGANESE	5.89E+02	mg/kg	5.89E+02	mg/kg	M	3.6E-06	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MERCURY	5.68E-01	mg/kg	5.68E-01	mg/kg	M	3.4E-09	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	VANADIUM	1.67E+01	mg/kg	1.67E+01	mg/kg	M	1.0E-07	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	(total)										6.2E-07
Dermal	BAP EQUIVALENT (FULL DLs	3.57E+00	mg/kg	3.57E+00	mg/kg	M	2.1E-08	mg/kg-day	7.3E+00	$(mg/kg\text{-}day)^{-1}$	1.5E-07
	AROCLOR 1260	1.54E-01	mg/kg	1.54E-01	mg/kg	M	3.2E-10	mg/kg-day	2.0E+00	$(mg/kg\text{-}day)^{-1}$	6.5E-10
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	mg/kg	M	1.5E-14	mg/kg-day	1.5E+05	$(mg/kg\text{-}day)^{-1}$	2.3E-09
	ALUMINUM	7.62E+03	mg/kg	7.62E+03	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	ANTIMONY	1.06E+00	mg/kg	1.06E+00	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	ARSENIC	1.25E+01	mg/kg	1.25E+01	mg/kg	M	5.6E-09	mg/kg-day	1.5E+00	$(mg/kg\text{-}day)^{-1}$	8.4E-09
	BARIUM	7.64E+01	mg/kg	7.64E+01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	CADMIUM	2.30E+00	mg/kg	2.30E+00	mg/kg	M	3.5E-11	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	CHROMIUM	2.03E+01	mg/kg	2.03E+01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	COBALT	6.59E+00	mg/kg	6.59E+00	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	COPPER	9.36E+01	mg/kg	9.36E+01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	IRON	2.68E+04	mg/kg	2.68E+04	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MANGANESE	5.89E+02	mg/kg	5.89E+02	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MERCURY	5.68E-01	mg/kg	5.68E-01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	VANADIUM	1.67E+01	mg/kg	1.67E+01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	(total)										1.6E-07
										Total Risk Across All Exposure Routes/Pathways	7.8E-07

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for risk calculation.

Dermal Absorption Fraction from Soil(ABS) (USEPA, July 2004):

Dioxins/furans - 0.03 Arsenic - 0.03 Aroclor 1260 - 0.14
PAHs - 0.13 Other Metals and Volatiles - not evaluated for dermal contact with soil.

TABLE 4.10
VALUES USED FOR DAILY INTAKE CALCULATIONS
EXPOSURE OF ADOLESCENT TRESPASSERS BY INHALATION FROM SOIL (POTENTIAL FUTURE SURFACE SOIL)
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Trespasser
Receptor Age: Adolescent (7 - 16 years)

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Inhalation	CS	Chemical concentration in soil	mg/kg	95% UCL or Max	USEPA, May 1993	Mean	USEPA, December 1989	Intake (mg/kg/day) = $\frac{CS \times \left[\frac{1}{VF} + \frac{1}{PEF}\right] \times ET \times EF \times ED}{AT \times 24}$
	VF	Volatilization factor - Chemical Specific	m^3/kg	(1)	USEPA, December 2002	(1)	USEPA, December 2002	
	PEF	Particulate emission factor	m^3/kg	1.36E+09	USEPA, December 2002	1.36E+09	USEPA, December 2002	
	ET	Exposure Time	hours/day	2	Professional Judgment	1	Professional Judgment	
	EF	Exposure Frequency	days/year	26	Professional Judgment	13	Professional Judgment	
	ED	Exposure Duration	years	10	Professional Judgement	10	Professional Judgment	
	AT-C	Averaging Time (Cancer)	days	25550	USEPA, December 1989	25550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	3650	IEPA, Janaury 2003	3650	IEPA, Janaury 2003	

Notes:
(1) - Calculated according to USEPA Soil Screening Guidance, December 2002.

Daily Intake Calculations
Inhalation Intake = (ET x EF x ED x (1/PEF)+(1/VF)) / (AT x 24)

Cancer Inhalation Intake(RME) = 8.48E-04
Noncancer Inhalation Intake(RME) = 5.94E-03

Cancer Inhalation Intake(CTE) = 2.12E-04
Noncancer Inhalation Intake(CTE) = 1.48E-03

Cancer risk from inhalation = Air concentration x Cancer Inhalation Intake x Cancer Inhalation Unit Risk (IUR)
Hazard Index from inhalation = Air concentration x Noncancer Inhalation Intake / Reference Air Concentration (RfCi)

TABLE 7.10 REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF NON-CANCER HAZARDS
EXPOSURE OF ADOLESCENT TRESPASSERS BY INHALATION FROM SOIL (POTENTIAL FUTURE SURFACE SOIL)
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Trespasser
Receptor Age: Adolescent (7 - 16 years)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Inhalation	MERCURY	2.33E+00	mg/kg	1.7E-09	mg/m^3	R	1.0E-11	mg/m^3	3.0E-05	mg/m^3	3.4E-07
	(total)										3.4E-07
										Total Hazard Index Across All Exposure Routes/Pathways	**0.0000003**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

8.10 REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF CANCER RISKS
EXPOSURE OF ADOLESCENT TRESPASSERS BY INHALATION FROM SOIL (POTENTIAL FUTURE SURFACE SOIL)
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Trespasser
Receptor Age: Adolescent (7 - 16 years)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Unit Risk	Cancer Unit Risk Units	Cancer Risk
	No carcinogenic COPCs for inhalation pathway										
	(total)										0.0E+00
										Total Risk Across All Exposure Routes/Pathways	**0.0E+00**

TABLE 4.10a
VALUES USED FOR DAILY INTAKE CALCULATIONS
EXPOSURE OF ADOLESCENT TRESPASSERS BY INHALATION FROM SOIL (POTENTIAL FUTURE SURFACE SOIL)
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Trespasser
Receptor Age: Adolescent (7 - 16 years)

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Inhalation	CS	Chemical concentration in soil	mg/kg	95% UCL or Max	USEPA, May 1993	Mean	USEPA, December 1989	Intake (mg/kg/day) =
	VF	Volatilization factor - Chemical Specific	m^3/kg	(1)	USEPA, December 2002	(1)	USEPA, December 2002	$CS \times \left[\frac{1}{VF} + \frac{1}{PEF}\right] \times ET \times EF \times ED$
	PEF	Particulate emission factor	m^3/kg	1.36E+09	USEPA, December 2002	1.36E+09	USEPA, December 2002	
	ET	Exposure Time	hours/day	2	Professional Judgment	1	Professional Judgment	
	EF	Exposure Frequency	days/year	26	Professional Judgment	13	Professional Judgment	$AT \times 24$
	ED	Exposure Duration	years	10	Professional Judgement	10	Professional Judgment	
	AT-C	Averaging Time (Cancer)	days	25550	USEPA, December 1989	25550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	3650	IEPA, Janaury 2003	3650	IEPA, Janaury 2003	

Notes:
(1) - Calculated according to USEPA Soil Screening Guidance, December 2002.

Daily Intake Calculations
Inhalation Intake = (ET x EF x ED x (1/PEF)+(1/VF)) / (AT x 24)

Cancer Inhalation Intake(RME) = 8.48E-04 Cancer Inhalation Intake(CTE) = 2.12E-04
Noncancer Inhalation Intake(RME) = 5.94E-03 Noncancer Inhalation Intake(CTE) = 1.48E-03

Cancer risk from inhalation = Air concentration x Cancer Inhalation Intake x Cancer Inhalation Unit Risk (IUR)
Hazard Index from inhalation = Air concentration x Noncancer Inhalation Intake / Reference Air Concentration (RfCi)

TABLE 7.10a CENTRAL TENDENCY EXPOSURE (CTE)
CALCULATION OF NON-CANCER HAZARDS
EXPOSURE OF ADOLESCENT TRESPASSERS BY INHALATION FROM SOIL (POTENTIAL FUTURE SURFACE SOIL)
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Trespasser
Receptor Age: Adolescent (7 - 16 years)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Inhalation	MERCURY	5.68E-01	mg/kg	4.2E-10	mg/m^3	R	6.2E-13	mg/m^3	3.0E-05	mg/m^3	2.1E-08
	(total)										2.1E-08
										Total Hazard Index Across All Exposure Routes/Pathways	**0.00000002**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

8.10a CENTRAL TENDENCY EXPOSURE (CTE)
CALCULATION OF CANCER RISKS
EXPOSURE OF ADOLESCENT TRESPASSERS BY INHALATION FROM SOIL (POTENTIAL FUTURE SURFACE SOIL)
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Trespasser
Receptor Age: Adolescent (7 - 16 years)

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Unit Risk	Cancer Unit Risk Units	Cancer Risk
	No carcinogenic COPCs for inhalation pathway										
	(total)										0.0E+00
										Total Risk Across All Exposure Routes/Pathways	**0.0E+00**

TABLE 4.11
VALUES USED FOR DAILY INTAKE CALCULATIONS
EXPOSURE OF FUTURE ADULT RESIDENTS TO SURFACE SOIL (HYPOTHETICAL FUTURE)
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface Soil
Exposure Point: Entire Site
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CTE Value	CTE Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Csoil	Chemical Concentration in Soil	mg/kg	95% UCL or Max	USEPA, December 2002	Mean	USEPA, May 1993	Ingestion Intake (mg/kg/day) = Csoil x IR x Fi x EF x ED x CF / BW x AT; U.S. EPA, December 1989
	IR	Ingestion Rate of Soil	mg/day	100	USEPA, May 1993	50	USEPA, May 1993	
	Fi	Fraction Ingested	unitless	1	USEPA, May 1993	1	USEPA, May 1993	
	EF	Exposure Frequency	days/year	350	USEPA, May 1993	234	USEPA, May 1993	
	ED	Exposure Duration (Age 6-16) - RME	years	10	USEPA, May 1993, 2005	7	USEPA, May 1993	
	ED	Exposure Duration (Age 17-30) - RME	years	14	USEPA, May 1993, 2005	NA	NA	
	CF	Conversion Factor	kg/mg	1.0E-06	USEPA, December 1989	1.0E-06	USEPA, December 1989	
	BW	Body Weight	kg	70	USEPA, May 1993	70	USEPA, May 1993	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, December 1989	25,550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	8,760	USEPA, December 1989	2,555	USEPA, December 1989	
Dermal	Csoil	Chemical Concentration in Soil	mg/kg	95% UCL or Max	USEPA, December 2002	Mean	USEPA, May 1993	Dermal Intake (mg/kg/day) = Csoil x CF x SA x AF x ABS x EF x ED / BW x AT; U.S. EPA, December 1989
	CF	Conversion Factor	kg/mg	1.0E-06	USEPA, December 1989	1.0E-06	USEPA, December 1989	
	SA	Skin Surface Area	cm^2/day	5,700	USEPA, July 2004	5,700	USEPA, July 2004	
	AF	Soil to Skin Adherence Factor	mg/cm^2	0.07	USEPA, July 2004	0.01	USEPA, July 2004	
	ABS	Dermal Absorption Factor (Solid)	unitless	chemical specific	USEPA, July 2004	chemical specific	USEPA, July 2004	
	EF	Exposure Frequency	days/year	350	USEPA, May 1993	234	USEPA, May 1993	
	ED	Exposure Duration (Age 6-16) - RME	years	10	USEPA, May 1993, 2005	7	USEPA, May 1993	
	ED	Exposure Duration (Age 17-30) - RME	years	14	USEPA, May 1993, 2005	NA	NA	
	BW	Body Weight	kg	70	USEPA, May 1993	70	USEPA, May 1993	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, December 1989	25,550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	8,760	USEPA, December 1989	2,555	USEPA, December 1989	

Unit Intake Calculations

Ingestion Intake = (IR x Fi x EF x ED x CF) / (BW x AT)
Dermal Intake = (CF x SA x AF x ABS x EF x ED) / (BW x AT)

Non-Mutagenic Chemicals

Cancer Ingestion Intake (Ages 6-30) - RME = 4.70E-07
Cancer Dermal Intake (Ages 6-30) - RME = 1.87E-06

Cancer Ingestion Intake - CTE = 4.58E-08
Cancer Dermal Intake - CTE = 5.22E-08

Mutagenic Chemicals

Cancer Ingestion Intake (Ages 6-16) - RME = 1.96E-07
Cancer Ingestion Intake (Ages 17-30) - RME = 2.74E-07
Cancer Dermal Intake (Ages 6-16) - RME = 7.81E-07
Cancer Dermal Intake (Ages 17-30) - RME = 1.09E-06

Non-carcinogenic Chemicals

Noncancer Ingestion Intake - RME = 1.37E-06
Noncancer Dermal Intake - RME = 5.47E-06

Noncancer Ingestion Intake - CTE = 4.58E-07
Noncancer Dermal Intake - CTE = 5.22E-07

TABLE 7.11 - REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF NON-CANCER HAZARDS FROM EXPOSURE OF HYPOTHETICAL FUTURE ADULT RESIDENTS TO SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface Soil
Exposure Point: Entire Site
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	BAP EQUIVALENT (FULL DLs	5.06E+01	mg/kg	5.06E+01	6.9E-05	mg/kg-day		mg/kg-day	NA	NA	
	AROCLOR 1260	7.20E-01	mg/kg	7.20E-01	9.9E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	4.9E-02
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	4.6E-11	mg/kg-day	1.0E-09	mg/kg-day	NA	NA	4.6E-02
	ALUMINUM	2.95E+04	mg/kg	2.95E+04	4.0E-02	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	4.0E-02
	ANTIMONY	5.22E+00	mg/kg	5.22E+00	7.2E-06	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	1.8E-02
	ARSENIC	4.84E+01	mg/kg	4.84E+01	6.6E-05	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.2E-01
	BARIUM	2.34E+02	mg/kg	2.34E+02	3.2E-04	mg/kg-day	2.0E-01	mg/kg-day	NA	NA	1.6E-03
	CADMIUM	1.30E+01	mg/kg	1.30E+01	1.8E-05	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	1.8E-02
	CHROMIUM	1.63E+02	mg/kg	1.63E+02	2.2E-04	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	7.4E-02
	COBALT	1.77E+01	mg/kg	1.77E+01	2.4E-05	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	8.1E-02
	COPPER	8.35E+02	mg/kg	8.35E+02	1.1E-03	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	2.9E-02
	IRON	6.95E+04	mg/kg	6.95E+04	9.5E-02	mg/kg-day	7.0E-01	mg/kg-day	NA	NA	1.4E-01
	MANGANESE	2.42E+03	mg/kg	2.42E+03	3.3E-03	mg/kg-day	4.7E-02	mg/kg-day	NA	NA	7.1E-02
	MERCURY	8.98E+00	mg/kg	8.98E+00	1.2E-05	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	4.1E-02
	VANADIUM	2.57E+01	mg/kg	2.57E+01	3.5E-05	mg/kg-day	9.0E-03	mg/kg-day	NA	NA	3.9E-03
	(total)										**8.3E-01**
Dermal	BAP EQUIVALENT (FULL DLs	5.06E+01	mg/kg	5.06E+01	3.6E-05	mg/kg-day		mg/kg-day	NA	NA	
	AROCLOR 1260	7.20E-01	mg/kg	7.20E-01	5.5E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	2.8E-02
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	5.5E-12	mg/kg-day	1.0E-09	mg/kg-day	NA	NA	5.5E-03
	ALUMINUM	2.95E+04	mg/kg	2.95E+04		mg/kg-day		mg/kg-day	NA	NA	
	ANTIMONY	5.22E+00	mg/kg	5.22E+00		mg/kg-day		mg/kg-day	NA	NA	
	ARSENIC	4.84E+01	mg/kg	4.84E+01	7.9E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.6E-02
	BARIUM	2.34E+02	mg/kg	2.34E+02		mg/kg-day		mg/kg-day	NA	NA	
	CADMIUM	1.30E+01	mg/kg	1.30E+01	7.1E-08	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	2.8E-03
	CHROMIUM	1.63E+02	mg/kg	1.63E+02		mg/kg-day		mg/kg-day	NA	NA	
	COBALT	1.77E+01	mg/kg	1.77E+01		mg/kg-day		mg/kg-day	NA	NA	
	COPPER	8.35E+02	mg/kg	8.35E+02		mg/kg-day		mg/kg-day			
	IRON	6.95E+04	mg/kg	6.95E+04		mg/kg-day		mg/kg-day	NA	NA	
	MANGANESE	2.42E+03	mg/kg	2.42E+03		mg/kg-day		mg/kg-day	NA	NA	
	MERCURY	8.98E+00	mg/kg	8.98E+00		mg/kg-day		mg/kg-day	NA	NA	
	VANADIUM	2.57E+01	mg/kg	2.57E+01		mg/kg-day		mg/kg-day	NA	NA	
	(total)										6.2E-02
										Total Hazard Index Across All Exposure Routes/Pathways	**0.9**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

Dermal Absorption Fraction from Soil(ABS) (USEPA, July 2004):

Dioxins/furans - 0.03 Arsenic - 0.03 Aroclor 1260 - 0.14

PAHs - 0.13 Other Metals and Volatiles - not evaluated for dermal contact with soil.

TABLE 8.11 - REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF CANCER RISKS FROM EXPOSURE OF HYPOTHETICAL FUTURE ADULT RESIDENTS TO SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface Soil
Exposure Point: Entire Site
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	BAP EQUIVALENT (FULL DLs	5.06E+01	mg/kg	5.06E+01	mg/kg	M	4.4E-05	mg/kg-day	7.3E+00	$(mg/kg\text{-}day)^{-1}$	3.2E-04
	AROCLOR 1260	7.20E-01	mg/kg	7.20E-01	mg/kg	M	3.4E-07	mg/kg-day	2.0E+00	$(mg/kg\text{-}day)^{-1}$	6.8E-07
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	mg/kg	M	1.6E-11	mg/kg-day	1.5E+05	$(mg/kg\text{-}day)^{-1}$	2.4E-06
	ALUMINUM	2.95E+04	mg/kg	2.95E+04	mg/kg	M	1.4E-02	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	ANTIMONY	5.22E+00	mg/kg	5.22E+00	mg/kg	M	2.5E-06	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	ARSENIC	4.84E+01	mg/kg	4.84E+01	mg/kg	M	2.3E-05	mg/kg-day	1.5E+00	$(mg/kg\text{-}day)^{-1}$	3.4E-05
	BARIUM	2.34E+02	mg/kg	2.34E+02	mg/kg	M	1.1E-04	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	CADMIUM	1.30E+01	mg/kg	1.30E+01	mg/kg	M	6.1E-06	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	CHROMIUM	1.63E+02	mg/kg	1.63E+02	mg/kg	M	7.7E-05	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	COBALT	1.77E+01	mg/kg	1.77E+01	mg/kg	M	8.3E-06	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	COPPER	8.35E+02	mg/kg	8.35E+02	mg/kg	M	3.9E-04	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	IRON	6.95E+04	mg/kg	6.95E+04	mg/kg	M	3.3E-02	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MANGANESE	2.42E+03	mg/kg	2.42E+03	mg/kg	M	1.1E-03	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MERCURY	8.98E+00	mg/kg	8.98E+00	mg/kg	M	4.2E-06	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	VANADIUM	2.57E+01	mg/kg	2.57E+01	mg/kg	M	1.2E-05	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	(total)										3.6E-04
Dermal	BAP EQUIVALENT (FULL DLs	5.06E+01	mg/kg	5.06E+01	mg/kg	M	2.3E-05	mg/kg-day	7.3E+00	$(mg/kg\text{-}day)^{-1}$	1.6E-04
	AROCLOR 1260	7.20E-01	mg/kg	7.20E-01	mg/kg	M	1.9E-07	mg/kg-day	2.0E+00	$(mg/kg\text{-}day)^{-1}$	3.8E-07
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	mg/kg	M	1.9E-12	mg/kg-day	1.5E+05	$(mg/kg\text{-}day)^{-1}$	2.8E-07
	ALUMINUM	2.95E+04	mg/kg	2.95E+04	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	ANTIMONY	5.22E+00	mg/kg	5.22E+00	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	ARSENIC	4.84E+01	mg/kg	4.84E+01	mg/kg	M	2.7E-06	mg/kg-day	1.5E+00	$(mg/kg\text{-}day)^{-1}$	4.1E-06
	BARIUM	2.34E+02	mg/kg	2.34E+02	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	CADMIUM	1.30E+01	mg/kg	1.30E+01	mg/kg	M	2.4E-08	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	CHROMIUM	1.63E+02	mg/kg	1.63E+02	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	COBALT	1.77E+01	mg/kg	1.77E+01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	COPPER	8.35E+02	mg/kg	8.35E+02	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	IRON	6.95E+04	mg/kg	6.95E+04	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MANGANESE	2.42E+03	mg/kg	2.42E+03	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MERCURY	8.98E+00	mg/kg	8.98E+00	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	VANADIUM	2.57E+01	mg/kg	2.57E+01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	(total)										1.7E-04
										Total Risk Across All Exposure Routes/Pathways	**5.E-04**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for risk calculation.

Dermal Absorption Fraction from Soil(ABS) (USEPA, July 2004):

Dioxins/furans - 0.03 Arsenic - 0.03 Aroclor 1260 - 0.14
PAHs - 0.13 Other Metals and Volatiles - not evaluated for dermal contact with soil.

TABLE 4.11a
VALUES USED FOR DAILY INTAKE CALCULATIONS
EXPOSURE OF FUTURE ADULT RESIDENTS TO SOIL (HYPOTHETICAL FUTURE - SURFACE SOIL)
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface Soil
Exposure Point: Entire Site
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CTE Value	CTE Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Csoil	Chemical Concentration in Soil	mg/kg	95% UCL or Max	USEPA, December 2002	Mean	USEPA, May 1993	Ingestion Intake (mg/kg/day) = Csoil x IR x Fi x EF x ED x CF / BW x AT U.S. EPA, December 1989
	IR	Ingestion Rate of Soil	mg/day	100	USEPA, May 1993	50	USEPA, May 1993	
	Fi	Fraction Ingested	unitless	1	USEPA, May 1993	1	USEPA, May 1993	
	EF	Exposure Frequency	days/year	350	USEPA, May 1993	234	USEPA, May 1993	
	ED	Exposure Duration (Age 6-16) - RME	years	10	USEPA, May 1993, 2005	7	USEPA, May 1993	
	ED	Exposure Duration (Age 17-30) - RME	years	14	USEPA, May 1993, 2005	NA	NA	
	CF	Conversion Factor	kg/mg	1.0E-06	USEPA, December 1989	1.0E-06	USEPA, December 1989	
	BW	Body Weight	kg	70	USEPA, May 1993	70	USEPA, May 1993	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, December 1989	25,550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	8,760	USEPA, December 1989	2,555	USEPA, December 1989	
Dermal	Csoil	Chemical Concentration in Soil	mg/kg	95% UCL or Max	USEPA, December 2002	Mean	USEPA, May 1993	Dermal Intake (mg/kg/day) = Csoil x CF x SA x AF x ABS x EF x ED / BW x AT U.S. EPA, December 1989
	CF	Conversion Factor	kg/mg	1.0E-06	USEPA, December 1989	1.0E-06	USEPA, December 1989	
	SA	Skin Surface Area	cm^2/day	5,700	USEPA, July 2004	5,700	USEPA, July 2004	
	AF	Soil to Skin Adherence Factor	mg/cm^2	0.07	USEPA, July 2004	0.01	USEPA, July 2004	
	ABS	Dermal Absorption Factor (Solid)	unitless	chemical specific	USEPA, July 2004	chemical specific	USEPA, July 2004	
	EF	Exposure Frequency	days/year	350	USEPA, May 1993	234	USEPA, May 1993	
	ED	Exposure Duration (Age 6-16) - RME	years	10	USEPA, May 1993, 2005	7	USEPA, May 1993	
	ED	Exposure Duration (Age 17-30) - RME	years	14	USEPA, May 1993, 2005	NA	NA	
	BW	Body Weight	kg	70	USEPA, May 1993	70	USEPA, May 1993	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, December 1989	25,550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	8,760	USEPA, December 1989	2,555	USEPA, December 1989	

Unit Intake Calculations

Ingestion Intake = (IR x Fi x EF x ED x CF) / (BW x AT)
Dermal Intake = (CF x SA x AF x ABS x EF x ED) / (BW x AT)

Non-Mutagenic Chemicals

Cancer Ingestion Intake (Ages 6-30) - RME = 4.70E-07
Cancer Dermal Intake (Ages 6-30) - RME = 1.87E-06

Cancer Ingestion Intake - CTE = 4.58E-08
Cancer Dermal Intake - CTE = 5.22E-08

Mutagenic Chemicals

Cancer Ingestion Intake (Ages 6-16) - RME = 1.96E-07
Cancer Ingestion Intake (Ages 17-30) - RME = 2.74E-07
Cancer Dermal Intake (Ages 6-16) - RME = 7.81E-07
Cancer Dermal Intake (Ages 17-30) - RME = 1.09E-06

Non-carcinogenic Chemicals

Noncancer Ingestion Intake - RME = 1.37E-06
Noncancer Dermal Intake - RME = 5.47E-06

Noncancer Ingestion Intake - CTE = 4.58E-07
Noncancer Dermal Intake - CTE = 5.22E-07

TABLE 7.11a - CENTRAL TENDENCY EXPOSURE (CTE)
CALCULATION OF NON-CANCER HAZARDS FROM EXPOSURE OF HYPOTHETICAL FUTURE ADULT RESIDENTS TO SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface Soil
Exposure Point: Entire Site
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	BAP EQUIVALENT (FULL DLs	3.57E+00	mg/kg	3.57E+00	1.6E-06	mg/kg-day		mg/kg-day	NA	NA	
	AROCLOR 1260	1.54E-01	mg/kg	1.54E-01	7.1E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	3.5E-03
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	1.5E-11	mg/kg-day	1.0E-09	mg/kg-day	NA	NA	1.5E-02
	ALUMINUM	7.62E+03	mg/kg	7.62E+03	3.5E-03	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	3.5E-03
	ANTIMONY	1.06E+00	mg/kg	1.06E+00	4.9E-07	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	1.2E-03
	ARSENIC	1.25E+01	mg/kg	1.25E+01	5.7E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.9E-02
	BARIUM	7.64E+01	mg/kg	7.64E+01	3.5E-05	mg/kg-day	2.0E-01	mg/kg-day	NA	NA	1.7E-04
	CADMIUM	2.30E+00	mg/kg	2.30E+00	1.1E-06	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	1.1E-03
	CHROMIUM	2.03E+01	mg/kg	2.03E+01	9.3E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	3.1E-03
	COBALT	6.59E+00	mg/kg	6.59E+00	3.0E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.0E-02
	COPPER	9.36E+01	mg/kg	9.36E+01	4.3E-05	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	1.1E-03
	IRON	2.68E+04	mg/kg	2.68E+04	1.2E-02	mg/kg-day	7.0E-01	mg/kg-day	NA	NA	1.8E-02
	MANGANESE	5.89E+02	mg/kg	5.89E+02	2.7E-04	mg/kg-day	4.7E-02	mg/kg-day	NA	NA	5.7E-03
	MERCURY	5.68E-01	mg/kg	5.68E-01	2.6E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	8.7E-04
	VANADIUM	1.67E+01	mg/kg	1.67E+01	7.6E-06	mg/kg-day	9.0E-03	mg/kg-day	NA	NA	8.5E-04
	(total)										**8.3E-02**
Dermal	BAP EQUIVALENT (FULL DLs	3.57E+00	mg/kg	3.57E+00	2.4E-07	mg/kg-day		mg/kg-day	NA	NA	
	AROCLOR 1260	1.54E-01	mg/kg	1.54E-01	1.1E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	5.6E-04
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	5.2E-13	mg/kg-day	1.0E-09	mg/kg-day	NA	NA	5.2E-04
	ALUMINUM	7.62E+03	mg/kg	7.62E+03		mg/kg-day		mg/kg-day	NA	NA	
	ANTIMONY	1.06E+00	mg/kg	1.06E+00		mg/kg-day		mg/kg-day	NA	NA	
	ARSENIC	1.25E+01	mg/kg	1.25E+01	2.0E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	6.5E-04
	BARIUM	7.64E+01	mg/kg	7.64E+01		mg/kg-day		mg/kg-day	NA	NA	
	CADMIUM	2.30E+00	mg/kg	2.30E+00	1.2E-09	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	4.8E-05
	CHROMIUM	2.03E+01	mg/kg	2.03E+01		mg/kg-day		mg/kg-day	NA	NA	
	COBALT	6.59E+00	mg/kg	6.59E+00		mg/kg-day		mg/kg-day	NA	NA	
	COPPER	9.36E+01	mg/kg	9.36E+01		mg/kg-day		mg/kg-day			
	IRON	2.68E+04	mg/kg	2.68E+04		mg/kg-day		mg/kg-day	NA	NA	
	MANGANESE	5.89E+02	mg/kg	5.89E+02		mg/kg-day		mg/kg-day	NA	NA	
	MERCURY	5.68E-01	mg/kg	5.68E-01		mg/kg-day		mg/kg-day	NA	NA	
	VANADIUM	1.67E+01	mg/kg	1.67E+01		mg/kg-day		mg/kg-day	NA	NA	
	(total)										**1.8E-03**
										Total Hazard Index Across All Exposure Routes/Pathways	**0.08**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

Dermal Absorption Fraction from Soil(ABS) (USEPA, July 2004):

Dioxins/furans - 0.03 Arsenic - 0.03 Aroclor 1260 - 0.14
PAHs - 0.13 Other Metals and Volatiles - not evaluated for dermal contact with soil.

TABLE 8.11a - CENTRAL TENDENCY EXPOSURE (CTE)
CALCULATION OF CANCER RISKS FROM EXPOSURE OF HYPOTHETICAL FUTURE ADULT RESIDENTS TO SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface Soil
Exposure Point: Entire Site
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	BAP EQUIVALENT (FULL DLs	3.57E+00	mg/kg	3.57E+00	mg/kg	M	1.6E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.2E-06
	AROCLOR 1260	1.54E-01	mg/kg	1.54E-01	mg/kg	M	7.1E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.4E-08
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	mg/kg	M	1.5E-12	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	2.3E-07
	ALUMINUM	7.62E+03	mg/kg	7.62E+03	mg/kg	M	3.5E-04	mg/kg-day		(mg/kg-day)$^{-1}$	
	ANTIMONY	1.06E+00	mg/kg	1.06E+00	mg/kg	M	4.9E-08	mg/kg-day		(mg/kg-day)$^{-1}$	
	ARSENIC	1.25E+01	mg/kg	1.25E+01	mg/kg	M	5.7E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	8.6E-07
	BARIUM	7.64E+01	mg/kg	7.64E+01	mg/kg	M	3.5E-06	mg/kg-day		(mg/kg-day)$^{-1}$	
	CADMIUM	2.30E+00	mg/kg	2.30E+00	mg/kg	M	1.1E-07	mg/kg-day		(mg/kg-day)$^{-1}$	
	CHROMIUM	2.03E+01	mg/kg	2.03E+01	mg/kg	M	9.3E-07	mg/kg-day		(mg/kg-day)$^{-1}$	
	COBALT	6.59E+00	mg/kg	6.59E+00	mg/kg	M	3.0E-07	mg/kg-day		(mg/kg-day)$^{-1}$	
	COPPER	9.36E+01	mg/kg	9.36E+01	mg/kg	M	4.3E-06	mg/kg-day		(mg/kg-day)$^{-1}$	
	IRON	2.68E+04	mg/kg	2.68E+04	mg/kg	M	1.2E-03	mg/kg-day		(mg/kg-day)$^{-1}$	
	MANGANESE	5.89E+02	mg/kg	5.89E+02	mg/kg	M	2.7E-05	mg/kg-day		(mg/kg-day)$^{-1}$	
	MERCURY	5.68E-01	mg/kg	5.68E-01	mg/kg	M	2.6E-08	mg/kg-day		(mg/kg-day)$^{-1}$	
	VANADIUM	1.67E+01	mg/kg	1.67E+01	mg/kg	M	7.6E-07	mg/kg-day		(mg/kg-day)$^{-1}$	
	(total)										2.3E-06
Dermal	BAP EQUIVALENT (FULL DLs	3.57E+00	mg/kg	3.57E+00	mg/kg	M	2.4E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.8E-07
	AROCLOR 1260	1.54E-01	mg/kg	1.54E-01	mg/kg	M	1.1E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	2.3E-09
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	mg/kg	M	5.2E-14	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	7.9E-09
	ALUMINUM	7.62E+03	mg/kg	7.62E+03	mg/kg	M		mg/kg-day		(mg/kg-day)$^{-1}$	
	ANTIMONY	1.06E+00	mg/kg	1.06E+00	mg/kg	M		mg/kg-day		(mg/kg-day)$^{-1}$	
	ARSENIC	1.25E+01	mg/kg	1.25E+01	mg/kg	M	2.0E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	2.9E-08
	BARIUM	7.64E+01	mg/kg	7.64E+01	mg/kg	M		mg/kg-day		(mg/kg-day)$^{-1}$	
	CADMIUM	2.30E+00	mg/kg	2.30E+00	mg/kg	M	1.2E-10	mg/kg-day		(mg/kg-day)$^{-1}$	
	CHROMIUM	2.03E+01	mg/kg	2.03E+01	mg/kg	M		mg/kg-day		(mg/kg-day)$^{-1}$	
	COBALT	6.59E+00	mg/kg	6.59E+00	mg/kg	M		mg/kg-day		(mg/kg-day)$^{-1}$	
	COPPER	9.36E+01	mg/kg	9.36E+01	mg/kg	M		mg/kg-day		(mg/kg-day)$^{-1}$	
	IRON	2.68E+04	mg/kg	2.68E+04	mg/kg	M		mg/kg-day		(mg/kg-day)$^{-1}$	
	MANGANESE	5.89E+02	mg/kg	5.89E+02	mg/kg	M		mg/kg-day		(mg/kg-day)$^{-1}$	
	MERCURY	5.68E-01	mg/kg	5.68E-01	mg/kg	M		mg/kg-day		(mg/kg-day)$^{-1}$	
	VANADIUM	1.67E+01	mg/kg	1.67E+01	mg/kg	M		mg/kg-day		(mg/kg-day)$^{-1}$	
	(total)										2.2E-07
										Total Risk Across All Exposure Routes/Pathways	**3.E-06**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for risk calculation.

Dermal Absorption Fraction from Soil(ABS) (USEPA, July 2004):

Dioxins/furans - 0.03 Arsenic - 0.03 Aroclor 1260 - 0.14
PAHs - 0.13 Other Metals and Volatiles - not evaluated for dermal contact with soil.

TABLE 4.12
VALUES USED FOR DAILY INTAKE CALCULATIONS
EXPOSURE OF ADULT RESIDENTS BY INHALATION FROM SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Adult Resident
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Inhalation	CS	Chemical concentration in soil	mg/kg	95% UCL or Max	USEPA, May 1993	Mean	USEPA, May 1993	Intake (mg/kg/day) = $\frac{CS \times \left[\frac{1}{VF} + \frac{1}{PEF}\right] \times ET \times EF \times ED}{AT \times 24}$
	VF	Volatilization factor - Chemical Specific	m^3/kg	(1)	USEPA, December 2002	(1)	USEPA, December 2002	
	PEF	Particulate emission factor	m^3/kg	1.36E+09	USEPA, December 2002	1.36E+09	USEPA, December 2002	
	ET	Exposure Time	hours/day	24	USEPA, December 2002	24	USEPA, December 2002	
	EF	Exposure Frequency	days/year	350	IEPA, April 2004	234	USEPA, May 1993	
	ED	Exposure Duration	years	24	Professional Judgement	7	USEPA, May 1993	
	AT-C	Averaging Time (Cancer)	days	25550	USEPA, December 1989	25550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	8760	IEPA, Janaury 2003	2555	USEPA, December 1989	

Notes:
(1) - Calculated according to USEPA Soil Screening Guidance, December 2002.

Daily Intake Calculations
Inhalation Intake = (ET x EF x ED x (1/PEF)+(1/VF)) / (AT x 24)

Cancer Inhalation Intake(RME) = 3.29E-01
Noncancer Inhalation Intake(RME) = 9.59E-01

Cancer Inhalation Intake(CTE) = 6.41E-02
Noncancer Inhalation Intake(CTE) = 6.41E-01

Cancer risk from inhalation = Air concentration x Cancer Inhalation Intake x Cancer Inhalation Unit Risk (IUR)
Hazard Index from innhalation = Air concentration x Noncancer Inhalation Intake / Reference Air Concentration (RfCi)

CALCULATION OF AMBIENT AIR CONCENTRATION
SOURCE: U.S. EPA SOIL SCREENING GUIDANCE

Scenario Timeframe:	Future
Medium:	Surface/Subsurface Soil
Exposure Medium:	Air
Exposure Point:	Site 9
Receptor Population:	Resident
Receptor Age: Adult	Adult

Purpose: To calculate ambient air concentrations resulting from fugitive dust and volatilization from soil.

Relevant Equations:

$$Cair = Cs \times (1/PEF + 1/VF)$$

$$VF = \frac{Q/C \times (3.14 \times DA \times T)^{1/2} \times 10^{-4}\ m^2/cm^2}{2 \times pb \times DA}$$

$$DA = \frac{[(\theta a^{10/3} \times Di \times H + \theta w^{10/3} \times Dw)/n^2)]}{pb \times Kd + \theta w + \theta a \times H}$$

$$Csat = S/pb \times (Kd \times pb + \theta w + H \times \theta a)$$

INPUT PARAMTERS

Parameter	Value	Definition	
Q/C = :	97.78	Inverse of mean conc. at center of source (g/m^2-s per kg/m^3).	
T = :	7.6E+08	Exposure interval (seconds).	
pb = :	1.5	Dry soil bulk density (g/cm^3).	
ps = :	2.65	soil particle density (g/cm^3).	
n = :	0.434	Total soil porosity (L_{pore}/L_{soil}).	
θw = :	0.15	Water-filled soil porosity (L_{pore}/L_{soil}).	
θa = :	0.284	Air-filled soil porosity (L_{air}/L_{soil}).	
Di = :	Chemical specific	Diffusivity in air (cm^2/sec).	
H' = :	Chemical specific	Dimensionless Henry's Law Constant.	
Dw = :	Chemical specific	Diffusivity in water (cm^2/sec).	
DA = :	Chemical specific	Apparent diffusivity (cm^2/sec).	
Kd = :	Chemical specific	Soil-water partition coefficient (cm^3/g).	
Koc = :	Chemical specific	Soil organic carbon partition coefficient (cm^3/g).	
foc = :	0.006	Fraction organic carbon in soil (g/g).	
F_D = :	1	dispersion correction factor	
V =:	0.5	Fraction of vegatative cover (unitless)	
Um =:	3.44	Mean annual wind speed (m/s)	
Ut =:	11.32	equivalent threshold value of windspeed at 7 m (m/s)	2.92
F(x) =:	0.0086	Function dependent on Um/Ut	0.0085
PEF = :	1.36E+09	Particulate emission factor (m^3/kg)	8.1E+10

Error in Calcs? No = 0, Yes > 0 0

Chemical	Cs (mg/kg)	Volatile	Chemical Properties					Intermediate Calculations				Results		
			Koc (cm^3/g)	Di (cm^2/sec)	Dw (cm^2/sec)	S (mg/L)	H'	Kd (cm^3/g)	Da (cm^2/sec)	VF (m^3/kg)	Csat (mg/kg)	CaV (mg/m^3)	CaP (mg/m^3)	CaTot (mg/m^3)
All Soil														
naphthalene		Y	2.00E+03	5.90E-02	7.50E-06	3.10E+01	1.98E-02	1.20E+01	5.15E-06	7.00E+04	3.75E+02	0.00E+00	0.00E+00	0.00E+00
tetrachloroethylene		Y	1.55E+02	7.20E-02	8.20E-06	2.00E+02	7.54E-01	9.30E-01	2.47E-03	3.20E+03	2.35E+02	0.00E+00	0.00E+00	0.00E+00

TABLE 7.12. REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF NON-CANCER HAZARDS
EXPOSURE OF ADULT RESIDENTS BY INHALATION FROM SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Adult Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Inhalation	MERCURY	8.98E+00	mg/kg	6.6E-09	mg/m^3	R	6.3E-09	mg/m^3	3.0E-05	mg/m^3	2.1E-04
	(total)										2.11E-04
										Total Hazard Index Across All Exposure Routes/Pathways	**0.0002**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

8.12. REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF CANCER RISKS
EXPOSURE OF ADULT RESIDENTS BY INHALATION FROM SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Adult Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Unit Risk	Cancer Unit Risk Units	Cancer Risk
Inhalation	No carcinogenic COPCs for inhalation pathways										
	(total)										0.0E+00
										Total Risk Across All Exposure Routes/Pathways	**0.0E+00**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

TABLE 4.12a
VALUES USED FOR DAILY INTAKE CALCULATIONS
EXPOSURE OF ADULT RESIDENTS BY INHALATION FROM SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Adult Resident
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Inhalation	CS	Chemical concentration in soil	mg/kg	95% UCL or Max	USEPA, May 1993	Mean	USEPA, May 1993	Intake (mg/kg/day) =
	VF	Volatilization factor - Chemical Specific	m^3/kg	(1)	USEPA, December 2002	(1)	USEPA, December 2002	$CS \times \left[\frac{1}{VF} + \frac{1}{PEF}\right] \times ET \times EF \times ED$
	PEF	Particulate emission factor	m^3/kg	1.36E+09	USEPA, December 2002	1.36E+09	USEPA, December 2002	
	ET	Exposure Time	hours/day	24	USEPA, December 2002	24	USEPA, December 2002	$AT \times 24$
	EF	Exposure Frequency	days/year	350	IEPA, April 2004	234	USEPA, May 1993	
	ED	Exposure Duration	years	24	Professional Judgement	7	USEPA, May 1993	
	AT-C	Averaging Time (Cancer)	days	25550	USEPA, December 1989	25550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	8760	IEPA, Janaury 2003	2555	USEPA, December 1989	

Notes:
(1) - Calculated according to USEPA Soil Screening Guidance, December 2002.

Daily Intake Calculations
Inhalation Intake = (ET x EF x ED x (1/PEF)+(1/VF)) / (AT x 24)

Cancer Inhalation Intake(RME) = 3.29E-01
Noncancer Inhalation Intake(RME) = 9.59E-01

Cancer Inhalation Intake(CTE) = 6.41E-02
Noncancer Inhalation Intake(CTE) = 6.41E-01

Cancer risk from ingestion = Air concentration x Cancer Inhalation Intake x Cancer Inhalation Unit Risk (IUR)
Hazard Index from ingestion = Air concentration x Noncancer Inhalation Intake / Reference Air Concentration (RfCi)

CALCULATION OF AMBIENT AIR CONCENTRATION
SOURCE: U.S. EPA SOIL SCREENING GUIDANCE

Scenario Timeframe: Future	
Medium: Surface/Subsurface Soil	
Exposure Medium: Air	
Exposure Point:	Site 9
Receptor Population:	Resident
Receptor Age: Adult	Adult

Purpose: To calculate ambient air concentrations resulting from fugitive dust and volatilization from soil.

Relevant Equations:

$$Cair = Cs \times (1/PEF + 1/VF)$$

$$VF = \frac{Q/C \times (3.14 \times DA \times T)^{1/2} \times 10^{-4}\ m^2/cm^2}{2 \times pb \times DA}$$

$$DA = \frac{[(\theta a^{10/3} \times Di \times H + \theta w^{10/3} \times Dw)/n^2)]}{pb \times Kd + \theta w + \theta a \times H}$$

$$Csat = S/pb \times (Kd \times pb + \theta w + H \times \theta a)$$

INPUT PARAMTERS

Parameter	Value	Definition	
Q/C = :	97.78	Inverse of mean conc. at center of source (g/m^2-s per kg/m^3).	
T = :	7.6E+08	Exposure interval (seconds).	
pb = :	1.5	Dry soil bulk density (g/cm^3).	
ps = :	2.65	soil particle density (g/cm^3).	
n = :	0.434	Total soil porosity (L_{pore}/L_{soil}).	
θw = :	0.15	Water-filled soil porosity (L_{pore}/L_{soil}).	
θa = :	0.284	Air-filled soil porosity (L_{air}/L_{soil}).	
Di = :	Chemical specific	Diffusivity in air (cm^2/sec).	
H' = :	Chemical specific	Dimensionless Henry's Law Constant.	
Dw = :	Chemical specific	Diffusivity in water (cm^2/sec).	
DA = :	Chemical specific	Apparent diffusivity (cm^2/sec).	
Kd = :	Chemical specific	Soil-water partition coefficient (cm^3/g).	
Koc = :	Chemical specific	Soil organic carbon partition coefficient (cm^3/g).	
foc = :	0.006	Fraction organic carbon in soil (g/g).	
F_D = :	1	dispersion correction factor	
V =:	0.5	Fraction of vegatative cover (unitless)	
Um =:	3.44	Mean annual wind speed (m/s)	
Ut =:	11.32	equivalent threshold value of windspeed at 7 m (m/s)	2.92
F(x) =:	0.0086	Function dependent on Um/Ut	0.0085
PEF = :	1.36E+09	Particulate emission factor (m^3/kg)	8.1E+10

Error in Calcs? No = 0, Yes > 0 0

Chemical	Cs (mg/kg)	Volatile	Chemical Properties					Intermediate Calculations				Results		
			Koc (cm^3/g)	Di (cm^2/sec)	Dw (cm^2/sec)	S (mg/L)	H'	Kd (cm^3/g)	Da (cm^2/sec)	VF (m^3/kg)	Csat (mg/kg)	CaV (mg/m^3)	CaP (mg/m^3)	CaTot (mg/m^3)
All Soil														
naphthalene		Y	2.00E+03	5.90E-02	7.50E-06	3.10E+01	1.98E-02	1.20E+01	5.15E-06	7.00E+04	3.75E+02	0.00E+00	0.00E+00	0.00E+00
tetrachloroethylene		Y	1.55E+02	7.20E-02	8.20E-06	2.00E+02	7.54E-01	9.30E-01	2.47E-03	3.20E+03	2.35E+02	0.00E+00	0.00E+00	0.00E+00

TABLE 7.12a. CENTRAL TENDENCY EXPOSURE (CTE)
CALCULATION OF NON-CANCER HAZARDS
EXPOSURE OF ADULT RESIDENTS BY INHALATION FROM SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Adult Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Inhalation	MERCURY	5.70E-01	mg/kg	4.2E-10	mg/m^3	R	2.7E-10	mg/m^3	3.0E-05	mg/m^3	9.0E-06
	(total)										8.96E-06
										Total Hazard Index Across All Exposure Routes/Pathways	**0.000009**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

8.12a. CENTRAL TENDENCY EXPOSURE (CTE)
CALCULATION OF CANCER RISKS
EXPOSURE OF ADULT RESIDENTS BY INHALATION FROM SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Adult Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Unit Risk	Cancer Unit Risk Units	Cancer Risk
Inhalation	No carcinogenic COPCs for inhalation pathways										
	(total)										0.0E+00
										Total Risk Across All Exposure Routes/Pathways	**0.0E+00**

TABLE 4.13
VALUES USED FOR DAILY INTAKE CALCULATIONS
EXPOSURE OF FUTURE ADULT RESIDENTS TO SUBSURFACE SOIL (HYPOTHETICAL FUTURE)
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Subsurface Soil
Exposure Point: Entire Site
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CTE Value	CTE Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Csoil	Chemical Concentration in Soil	mg/kg	95% UCL or Max	USEPA, December 2002	Mean	USEPA, May 1993	Ingestion Intake (mg/kg/day) =
	IR	Ingestion Rate of Soil	mg/day	100	USEPA, May 1993	50	USEPA, May 1993	Csoil x IR x Fi x EF x ED x CF
	Fi	Fraction Ingested	unitless	1	USEPA, May 1993	1	USEPA, May 1993	BW x AT
	EF	Exposure Frequency	days/year	350	USEPA, May 1993	234	USEPA, May 1993	U.S. EPA, December 1989
	ED	Exposure Duration (Age 6-16) - RME	years	10	USEPA, May 1993, 2005	7	USEPA, May 1993	
	ED	Exposure Duration (Age 17-30) - RME	years	14	USEPA, May 1993, 2005	NA	NA	
	CF	Conversion Factor	kg/mg	1.0E-06	USEPA, December 1989	1.0E-06	USEPA, December 1989	
	BW	Body Weight	kg	70	USEPA, May 1993	70	USEPA, May 1993	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, December 1989	25,550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	8,760	USEPA, December 1989	2,555	USEPA, December 1989	
Dermal	Csoil	Chemical Concentration in Soil	mg/kg	95% UCL or Max	USEPA, December 2002	Mean	USEPA, May 1993	Dermal Intake (mg/kg/day) =
	CF	Conversion Factor	kg/mg	1.0E-06	USEPA, December 1989	1.0E-06	USEPA, December 1989	Csoil x CF x SA x AF x ABS x EF x ED
	SA	Skin Surface Area	cm^2/day	5,700	USEPA, July 2004	5,700	USEPA, July 2004	BW x AT
	AF	Soil to Skin Adherence Factor	mg/cm^2	0.07	USEPA, July 2004	0.01	USEPA, July 2004	U.S. EPA, December 1989
	ABS	Dermal Absorption Factor (Solid)	unitless	chemical specific	USEPA, July 2004	chemical specific	USEPA, July 2004	
	EF	Exposure Frequency	days/year	350	USEPA, May 1993	234	USEPA, May 1993	
	ED	Exposure Duration (Age 6-16) - RME	years	10	USEPA, May 1993, 2005	7	USEPA, May 1993	
	ED	Exposure Duration (Age 17-30) - RME	years	14	USEPA, May 1993, 2005	NA	NA	
	BW	Body Weight	kg	70	USEPA, May 1993	70	USEPA, May 1993	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, December 1989	25,550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	8,760	USEPA, December 1989	2,555	USEPA, December 1989	

Unit Intake Calculations

Ingestion Intake = (IR x Fi x EF x ED x CF) / (BW x AT)
Dermal Intake = (CF x SA x AF x ABS x EF x ED) / (BW x AT)

Non-Mutagenic Chemicals

Cancer Ingestion Intake (Ages 6-30) - RME = 4.70E-07
Cancer Dermal Intake (Ages 6-30) - RME = 1.87E-06

Cancer Ingestion Intake - CTE = 4.58E-08
Cancer Dermal Intake - CTE = 5.22E-08

Mutagenic Chemicals

Cancer Ingestion Intake (Ages 6-16) - RME = 1.96E-07
Cancer Ingestion Intake (Ages 17-30) - RME = 2.74E-07
Cancer Dermal Intake (Ages 6-16) - RME = 7.81E-07
Cancer Dermal Intake (Ages 17-30) - RME = 1.09E-06

Non-carcinogenic Chemicals

Noncancer Ingestion Intake - RME = 1.37E-06
Noncancer Dermal Intake - RME = 5.47E-06

Noncancer Ingestion Intake - CTE = 4.58E-07
Noncancer Dermal Intake - CTE = 5.22E-07

TABLE 7.13 - REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF NON-CANCER HAZARDS FROM EXPOSURE OF HYPOTHETICAL FUTURE ADULT RESIDENTS TO SUBSURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Subsurface Soil
Exposure Point: Entire Site
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	BAP EQUIVALENT (FULL DLs	3.94E+01	mg/kg	3.94E+01	5.4E-05	mg/kg-day		mg/kg-day	NA	NA	
	NAPHTHALENE	4.60E+00	mg/kg	4.60E+00	6.3E-06	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	3.2E-04
	AROCLOR 1260	4.40E-01	mg/kg	4.40E-01	6.0E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	3.0E-02
	TCDD TEQs (FULL DLs)	5.62E-06	mg/kg	5.62E-06	7.7E-12	mg/kg-day	1.0E-09	mg/kg-day	NA	NA	7.7E-03
	ALUMINUM	2.43E+04	mg/kg	2.43E+04	3.3E-02	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	3.3E-02
	ARSENIC	8.50E+01	mg/kg	8.50E+01	1.2E-04	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	3.9E-01
	CADMIUM	9.62E+00	mg/kg	9.62E+00	1.3E-05	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	1.3E-02
	CHROMIUM	3.43E+01	mg/kg	3.43E+01	4.7E-05	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	1.6E-02
	COBALT	2.38E+01	mg/kg	2.38E+01	3.3E-05	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.1E-01
	IRON	6.58E+04	mg/kg	6.58E+04	9.0E-02	mg/kg-day	7.0E-01	mg/kg-day	NA	NA	1.3E-01
	MANGANESE	1.69E+03	mg/kg	1.69E+03	2.3E-03	mg/kg-day	4.7E-02	mg/kg-day	NA	NA	4.9E-02
	MERCURY	4.84E-01	mg/kg	4.84E-01	6.6E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.2E-03
	VANADIUM	3.35E+01	mg/kg	3.35E+01	4.6E-05	mg/kg-day	9.0E-03	mg/kg-day	NA	NA	5.1E-03
	(total)										**7.8E-01**
Dermal	BAP EQUIVALENT (FULL DLs	3.94E+01	mg/kg	3.94E+01	2.8E-05	mg/kg-day		mg/kg-day	NA	NA	
	NAPHTHALENE	4.60E+00	mg/kg	4.60E+00		mg/kg-day		mg/kg-day	NA	NA	
	AROCLOR 1260	4.40E-01	mg/kg	4.40E-01	3.4E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.7E-02
	TCDD TEQs (FULL DLs)	5.62E-06	mg/kg	5.62E-06	9.2E-13	mg/kg-day	1.0E-09	mg/kg-day	NA	NA	9.2E-04
	ALUMINUM	2.43E+04	mg/kg	2.43E+04		mg/kg-day		mg/kg-day	NA	NA	
	ARSENIC	8.50E+01	mg/kg	8.50E+01	1.4E-05	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	4.6E-02
	CADMIUM	9.62E+00	mg/kg	9.62E+00	5.3E-08	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	2.1E-03
	CHROMIUM	3.43E+01	mg/kg	3.43E+01		mg/kg-day		mg/kg-day	NA	NA	
	COBALT	2.38E+01	mg/kg	2.38E+01		mg/kg-day		mg/kg-day	NA	NA	
	IRON	6.58E+04	mg/kg	6.58E+04		mg/kg-day		mg/kg-day	NA	NA	
	MANGANESE	1.69E+03	mg/kg	1.69E+03		mg/kg-day		mg/kg-day	NA	NA	
	MERCURY	4.84E-01	mg/kg	4.84E-01		mg/kg-day		mg/kg-day	NA	NA	
	VANADIUM	3.35E+01	mg/kg	3.35E+01		mg/kg-day		mg/kg-day	NA	NA	
	(total)										**6.6E-02**
										Total Hazard Index Across All Exposure Routes/Pathways	**0.8**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

Dermal Absorption Fraction from Soil(ABS) (USEPA, July 2004):

Dioxins/furans - 0.03 Arsenic - 0.03 Aroclor 1260 - 0.14
PAHs - 0.13 Other Metals and Volatiles - not evaluated for dermal contact with soil.

TABLE 8.13 - REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF CANCER RISKS FROM EXPOSURE OF HYPOTHETICAL FUTURE ADULT RESIDENTS TO SUBSURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Subsurface Soil
Exposure Point: Entire Site
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	BAP EQUIVALENT (FULL DLs)	3.94E+01	mg/kg	3.94E+01	mg/kg	M	3.4E-05	mg/kg-day	7.3E+00	$(mg/kg\text{-}day)^{-1}$	2.5E-04
	AROCLOR 1260	4.40E-01	mg/kg	4.40E-01	mg/kg	M	2.1E-07	mg/kg-day	2.0E+00	$(mg/kg\text{-}day)^{-1}$	4.1E-07
	TCDD TEQs (FULL DLs)	5.62E-06	mg/kg	5.62E-06	mg/kg	M	2.6E-12	mg/kg-day	1.5E+05	$(mg/kg\text{-}day)^{-1}$	4.0E-07
	ALUMINUM	2.43E+04	mg/kg	2.43E+04	mg/kg	M	1.1E-02	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	ARSENIC	8.50E+01	mg/kg	8.50E+01	mg/kg	M	4.0E-05	mg/kg-day	1.5E+00	$(mg/kg\text{-}day)^{-1}$	6.0E-05
	CADMIUM	9.62E+00	mg/kg	9.62E+00	mg/kg	M	4.5E-06	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	CHROMIUM	3.43E+01	mg/kg	3.43E+01	mg/kg	M	1.6E-05	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	COBALT	2.38E+01	mg/kg	2.38E+01	mg/kg	M	1.1E-05	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	IRON	6.58E+04	mg/kg	6.58E+04	mg/kg	M	3.1E-02	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MANGANESE	1.69E+03	mg/kg	1.69E+03	mg/kg	M	7.9E-04	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MERCURY	4.84E-01	mg/kg	4.84E-01	mg/kg	M	2.3E-07	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	VANADIUM	3.35E+01	mg/kg	3.35E+01	mg/kg	M	1.6E-05	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	(total)										**3.1E-04**
Dermal	BAP EQUIVALENT (FULL DLs)	3.94E+01	mg/kg	3.94E+01	mg/kg	M	1.8E-05	mg/kg-day	7.3E+00	$(mg/kg\text{-}day)^{-1}$	1.3E-04
	AROCLOR 1260	4.40E-01	mg/kg	4.40E-01	mg/kg	M	1.2E-07	mg/kg-day	2.0E+00	$(mg/kg\text{-}day)^{-1}$	2.3E-07
	TCDD TEQs (FULL DLs)	5.62E-06	mg/kg	5.62E-06	mg/kg	M	3.2E-13	mg/kg-day	1.5E+05	$(mg/kg\text{-}day)^{-1}$	4.7E-08
	ALUMINUM	2.43E+04	mg/kg	2.43E+04	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	ARSENIC	8.50E+01	mg/kg	8.50E+01	mg/kg	M	4.8E-06	mg/kg-day	1.5E+00	$(mg/kg\text{-}day)^{-1}$	7.2E-06
	CADMIUM	9.62E+00	mg/kg	9.62E+00	mg/kg	M	1.8E-08	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	CHROMIUM	3.43E+01	mg/kg	3.43E+01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	COBALT	2.38E+01	mg/kg	2.38E+01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	IRON	6.58E+04	mg/kg	6.58E+04	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MANGANESE	1.69E+03	mg/kg	1.69E+03	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MERCURY	4.84E-01	mg/kg	4.84E-01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	VANADIUM	3.35E+01	mg/kg	3.35E+01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	(total)										**1.4E-04**
										Total Risk Across All Exposure Routes/Pathways	**4.E-04**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for risk calculation.

Dermal Absorption Fraction from Soil(ABS) (USEPA, July 2004):

Dioxins/furans - 0.03 Arsenic - 0.03 Aroclor 1260 - 0.14
PAHs - 0.13 Other Metals and Volatiles - not evaluated for dermal contact with soil.

TABLE 4.13a
VALUES USED FOR DAILY INTAKE CALCULATIONS
EXPOSURE OF FUTURE ADULT RESIDENTS TO SUBSURFACE SOIL (HYPOTHETICAL FUTURE)
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Subsurface Soil
Exposure Point: Entire Site
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CTE Value	CTE Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Csoil	Chemical Concentration in Soil	mg/kg	95% UCL or Max	USEPA, December 2002	Mean	USEPA, May 1993	Ingestion Intake (mg/kg/day) = Csoil x IR x Fi x EF x ED x CF / BW x AT U.S. EPA, December 1989
	IR	Ingestion Rate of Soil	mg/day	100	USEPA, May 1993	50	USEPA, May 1993	
	Fi	Fraction Ingested	unitless	1	USEPA, May 1993	1	USEPA, May 1993	
	EF	Exposure Frequency	days/year	350	USEPA, May 1993	234	USEPA, May 1993	
	ED	Exposure Duration (Age 6-16) - RME	years	10	USEPA, May 1993, 2005	7	USEPA, May 1993	
	ED	Exposure Duration (Age 17-30) - RME	years	14	USEPA, May 1993, 2005	NA	NA	
	CF	Conversion Factor	kg/mg	1.0E-06	USEPA, December 1989	1.0E-06	USEPA, December 1989	
	BW	Body Weight	kg	70	USEPA, May 1993	70	USEPA, May 1993	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, December 1989	25,550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	8,760	USEPA, December 1989	2,555	USEPA, December 1989	
Dermal	Csoil	Chemical Concentration in Soil	mg/kg	95% UCL or Max	USEPA, December 2002	Mean	USEPA, May 1993	Dermal Intake (mg/kg/day) = Csoil x CF x SA x AF x ABS x EF x ED / BW x AT U.S. EPA, December 1989
	CF	Conversion Factor	kg/mg	1.0E-06	USEPA, December 1989	1.0E-06	USEPA, December 1989	
	SA	Skin Surface Area	cm^2/day	5,700	USEPA, July 2004	5,700	USEPA, July 2004	
	AF	Soil to Skin Adherence Factor	mg/cm^2	0.07	USEPA, July 2004	0.01	USEPA, July 2004	
	ABS	Dermal Absorption Factor (Solid)	unitless	chemical specific	USEPA, July 2004	chemical specific	USEPA, July 2004	
	EF	Exposure Frequency	days/year	350	USEPA, May 1993	234	USEPA, May 1993	
	ED	Exposure Duration (Age 6-16) - RME	years	10	USEPA, May 1993, 2005	7	USEPA, May 1993	
	ED	Exposure Duration (Age 17-30) - RME	years	14	USEPA, May 1993, 2005	NA	NA	
	BW	Body Weight	kg	70	USEPA, May 1993	70	USEPA, May 1993	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, December 1989	25,550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	8,760	USEPA, December 1989	2,555	USEPA, December 1989	

Unit Intake Calculations

Ingestion Intake = (IR x Fi x EF x ED x CF) / (BW x AT)
Dermal Intake = (CF x SA x AF x ABS x EF x ED) / (BW x AT)

Non-Mutagenic Chemicals

Cancer Ingestion Intake (Ages 6-30) - RME = 4.70E-07
Cancer Dermal Intake (Ages 6-30) - RME = 1.87E-06

Cancer Ingestion Intake - CTE = 4.58E-08
Cancer Dermal Intake - CTE = 5.22E-08

Mutagenic Chemicals

Cancer Ingestion Intake (Ages 6-16) - RME = 1.96E-07
Cancer Ingestion Intake (Ages 17-30) - RME = 2.74E-07
Cancer Dermal Intake (Ages 6-16) - RME = 7.81E-07
Cancer Dermal Intake (Ages 17-30) - RME = 1.09E-06

Non-carcinogenic Chemicals

Noncancer Ingestion Intake - RME = 1.37E-06
Noncancer Dermal Intake - RME = 5.47E-06

Noncancer Ingestion Intake - CTE = 4.58E-07
Noncancer Dermal Intake - CTE = 5.22E-07

TABLE 7.13a - CENTRAL TENDENCY EXPOSURE (CTE)
CALCULATION OF NON-CANCER HAZARDS FROM EXPOSURE OF HYPOTHETICAL FUTURE ADULT RESIDENTS TO SUBSURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Subsurface Soil
Exposure Point: Entire Site
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	BAP EQUIVALENT (FULL DLs	2.32E+00	mg/kg	2.32E+00	1.1E-06	mg/kg-day		mg/kg-day	NA	NA	
	NAPHTHALENE	4.33E-01	mg/kg	4.33E-01	2.0E-07	mg/kg-day	2.0E-02	mg/kg-day	NA	NA	9.9E-06
	AROCLOR 1260	7.04E-02	mg/kg	7.04E-02	3.2E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.6E-03
	TCDD TEQs (FULL DLs)	5.62E-06	mg/kg	5.62E-06	2.6E-12	mg/kg-day	1.0E-09	mg/kg-day	NA	NA	2.6E-03
	ALUMINUM	9.34E+03	mg/kg	9.34E+03	4.3E-03	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	4.3E-03
	ARSENIC	1.21E+01	mg/kg	1.21E+01	5.5E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.8E-02
	CADMIUM	1.24E+00	mg/kg	1.24E+00	5.7E-07	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	5.7E-04
	CHROMIUM	1.51E+01	mg/kg	1.51E+01	6.9E-06	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	2.3E-03
	COBALT	8.90E+00	mg/kg	8.90E+00	4.1E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.4E-02
	IRON	2.70E+04	mg/kg	2.70E+04	1.2E-02	mg/kg-day	7.0E-01	mg/kg-day	NA	NA	1.8E-02
	MANGANESE	6.62E+02	mg/kg	6.62E+02	3.0E-04	mg/kg-day	4.7E-02	mg/kg-day	NA	NA	6.4E-03
	MERCURY	9.99E-02	mg/kg	9.99E-02	4.6E-08	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.5E-04
	VANADIUM	1.90E+01	mg/kg	1.90E+01	8.7E-06	mg/kg-day	9.0E-03	mg/kg-day	NA	NA	9.7E-04
	(total)										**6.9E-02**
Dermal	BAP EQUIVALENT (FULL DLs	2.32E+00	mg/kg	2.32E+00	1.6E-07	mg/kg-day		mg/kg-day	NA	NA	
	NAPHTHALENE	4.33E-01		4.33E-01		mg/kg-day		mg/kg-day	NA	NA	
	AROCLOR 1260	7.04E-02	mg/kg	7.04E-02	5.1E-09	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	2.6E-04
	TCDD TEQs (FULL DLs)	5.62E-06	mg/kg	5.62E-06	8.8E-14	mg/kg-day	1.0E-09	mg/kg-day	NA	NA	8.8E-05
	ALUMINUM	9.34E+03	mg/kg	9.34E+03		mg/kg-day		mg/kg-day	NA	NA	
	ARSENIC	1.21E+01	mg/kg	1.21E+01	1.9E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	6.3E-04
	CADMIUM	1.24E+00	mg/kg	1.24E+00	6.5E-10	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	2.6E-05
	CHROMIUM	1.51E+01	mg/kg	1.51E+01		mg/kg-day		mg/kg-day	NA	NA	
	COBALT	8.90E+00	mg/kg	8.90E+00		mg/kg-day		mg/kg-day	NA	NA	
	IRON	2.70E+04	mg/kg	2.70E+04		mg/kg-day		mg/kg-day	NA	NA	
	MANGANESE	6.62E+02	mg/kg	6.62E+02		mg/kg-day		mg/kg-day	NA	NA	
	MERCURY	9.99E-02	mg/kg	9.99E-02		mg/kg-day		mg/kg-day	NA	NA	
	VANADIUM	1.90E+01	mg/kg	1.90E+01		mg/kg-day		mg/kg-day	NA	NA	
	(total)										**1.0E-03**
										Total Hazard Index Across All Exposure Routes/Pathways	**0.07**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

Dermal Absorption Fraction from Soil(ABS) (USEPA, July 2004):

Dioxins/furans - 0.03 Arsenic - 0.03 Aroclor 1260 - 0.14
PAHs - 0.13 Other Metals and Volatiles - not evaluated for dermal contact with soil.

TABLE 8.13a - CENTRAL TENDENCY EXPOSURE (CTE)
CALCULATION OF CANCER RISKS FROM EXPOSURE OF HYPOTHETICAL FUTURE ADULT RESIDENTS TO SUBSURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Subsurface Soil
Exposure Point: Entire Site
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	BAP EQUIVALENT (FULL DLs	2.32E+00	mg/kg	2.32E+00	mg/kg	M	1.1E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	7.8E-07
	AROCLOR 1260	7.04E-02	mg/kg	7.04E-02	mg/kg	M	3.2E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	6.4E-09
	TCDD TEQs (FULL DLs)	5.62E-06	mg/kg	5.62E-06	mg/kg	M	2.6E-13	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	3.9E-08
	ALUMINUM	9.34E+03	mg/kg	9.34E+03	mg/kg	M	4.3E-04	mg/kg-day		(mg/kg-day)$^{-1}$	
	ARSENIC	1.21E+01	mg/kg	1.21E+01	mg/kg	M	5.5E-07	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	8.3E-07
	CADMIUM	1.24E+00	mg/kg	1.24E+00	mg/kg	M	5.7E-08	mg/kg-day		(mg/kg-day)$^{-1}$	
	CHROMIUM	1.51E+01	mg/kg	1.51E+01	mg/kg	M	6.9E-07	mg/kg-day		(mg/kg-day)$^{-1}$	
	COBALT	8.90E+00	mg/kg	8.90E+00	mg/kg	M	4.1E-07	mg/kg-day		(mg/kg-day)$^{-1}$	
	IRON	2.70E+04	mg/kg	2.70E+04	mg/kg	M	1.2E-03	mg/kg-day		(mg/kg-day)$^{-1}$	
	MANGANESE	6.62E+02	mg/kg	6.62E+02	mg/kg	M	3.0E-05	mg/kg-day		(mg/kg-day)$^{-1}$	
	MERCURY	9.99E-02	mg/kg	9.99E-02	mg/kg	M	4.6E-09	mg/kg-day		(mg/kg-day)$^{-1}$	
	VANADIUM	1.90E+01	mg/kg	1.90E+01	mg/kg	M	8.7E-07	mg/kg-day		(mg/kg-day)$^{-1}$	
	(total)										**1.6E-06**
Dermal	BAP EQUIVALENT (FULL DLs	2.32E+00	mg/kg	2.32E+00	mg/kg	M	1.6E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	1.1E-07
	AROCLOR 1260	7.04E-02	mg/kg	7.04E-02	mg/kg	M	5.1E-10	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	1.0E-09
	TCDD TEQs (FULL DLs)	5.62E-06	mg/kg	5.62E-06	mg/kg	M	8.8E-15	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	1.3E-09
	ALUMINUM	9.34E+03	mg/kg	9.34E+03	mg/kg	M		mg/kg-day		(mg/kg-day)$^{-1}$	
	ARSENIC	1.21E+01	mg/kg	1.21E+01	mg/kg	M	1.9E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	2.8E-08
	CADMIUM	1.24E+00	mg/kg	1.24E+00	mg/kg	M	6.5E-11	mg/kg-day		(mg/kg-day)$^{-1}$	
	CHROMIUM	1.51E+01	mg/kg	1.51E+01	mg/kg	M		mg/kg-day		(mg/kg-day)$^{-1}$	
	COBALT	8.90E+00	mg/kg	8.90E+00	mg/kg	M		mg/kg-day		(mg/kg-day)$^{-1}$	
	IRON	2.70E+04	mg/kg	2.70E+04	mg/kg	M		mg/kg-day		(mg/kg-day)$^{-1}$	
	MANGANESE	6.62E+02	mg/kg	6.62E+02	mg/kg	M		mg/kg-day		(mg/kg-day)$^{-1}$	
	MERCURY	9.99E-02	mg/kg	9.99E-02	mg/kg	M		mg/kg-day		(mg/kg-day)$^{-1}$	
	VANADIUM	1.90E+01	mg/kg	1.90E+01	mg/kg	M		mg/kg-day		(mg/kg-day)$^{-1}$	
	(total)										**1.5E-07**
										Total Risk Across All Exposure Routes/Pathways	**2.E-06**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for risk calculation.

Dermal Absorption Fraction from Soil(ABS) (USEPA, July 2004):

Dioxins/furans - 0.03 Arsenic - 0.03 Aroclor 1260 - 0.14
PAHs - 0.13 Other Metals and Volatiles - not evaluated for dermal contact with soil.

TABLE 4.14
VALUES OF DAILY INTAKE CALCULATIONS FOR EXPOSURE OF
FUTURE ADULT RESIDENTS TO GROUNDWATER
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Entire Site
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CTE Value	CTE Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Cgw	Chemical Concentration in Groundwater	mg/L	Maximum	U.S. EPA, December 2002	Maximum	U.S. EPA, December 2002	Ingestion CDI (mg/kg/day) =
	IRgw	Water Ingestion Rate	L/day	2	U.S. EPA, May 1993	1.4	U.S. EPA, May 1993	Cgw x IRgw x EF x ED
	EF	Exposure Frequency	days/year	350	U.S. EPA, May 1993	234	U.S. EPA, May 1993	BW x AT
	ED	Exposure Duration (Age 6-16) - RME	years	10	USEPA, May 1993, 2005	7	U.S. EPA, May 1993	CDI = Chronic Daily Intake
	ED	Exposure Duration (Age 17-30) - RME	years	14	USEPA, May 1993, 2005	NA	NA	
	BW	Body Weight	kg	70	U.S. EPA, May 1993	70	U.S. EPA, May 1993	USEPA, December 1989
	AT-C	Averaging Time (Cancer)	days	25,550	U.S. EPA, December 1989	25,550	U.S. EPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	8,760	U.S. EPA, December 1989	2,555	U.S. EPA, December 1989	
Dermal	Cgw	Chemical Concentration in Groundwater	mg/L	Maximum	U.S. EPA, December 2002	Maximum	U.S. EPA, December 2002	The equations and parameters for
	A	Skin Surface Area	cm^2	18,000	U.S. EPA, July 2004	18,000	U.S. EPA, July 2004	for estimating DAevent and the chemical-
	DAevent	Absorbed Dose per Event	mg/cm^2-event	chemical-specific	U.S. EPA, July 2004	chemical-specific	U.S. EPA, July 2004	specific dermally absorbed dose from
	EV	Event Frequency	event/day	1	Professional Judgement	1	Professional Judgement	water (DAD) are provided in Section 6.2.4.4
	ED	Exposure Duration (Age 6-16) - RME	years	10	USEPA, May 1993, 2005	7	U.S. EPA, May 1993	of the text.
	ED	Exposure Duration (Age 17-30) - RME	years	14	USEPA, May 1993, 2005	NA	NA	
	EF	Exposure Frequency	days/year	350	U.S. EPA, May 1993	234	U.S. EPA, May 1993	
	t_{event}	Duration of Event	hour/event	0.33	Professional Judgement	0.25	Professional Judgement	USEPA, July 2004
	t*	Time to reach steady state	hour/event	chemical-specific	U.S. EPA, July 2004	chemical-specific	U.S. EPA, July 2004	
	T	Lag Time	hour/event	chemical-specific	U.S. EPA, July 2004	chemical-specific	U.S. EPA, July 2004	
	B	Bunge Model Constant	dimensionless	chemical-specific	U.S. EPA, July 2004	chemical-specific	U.S. EPA, July 2004	
	Kp	Permeability Coefficient from Water	cm/hour	chemical-specific	U.S. EPA, July 2004	chemical-specific	U.S. EPA, July 2004	
	BW	Body Weight	kg	70	U.S. EPA, May 1993	70	U.S. EPA, May 1993	
	AT-C	Averaging Time (Cancer)	days	25,550	U.S. EPA, December 1989	25,550	U.S. EPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	8,760	U.S. EPA, December 1989	2,555	U.S. EPA, December 1989	

Daily Intake Calculations

Ingestion Intake = (IRgw x EF x ED) / (BW x AT)
Dermal Intake = (A x EV x ED x EF) / (BW x AT)

Non-Mutagenic Chemicals

Cancer Ingestion Intake(RME) = 9.39E-03
Cancer Dermal Intake(RME) = 8.45E+01

Cancer Ingestion Intake(CTE) = 1.28E-03
Cancer Dermal Intake(CTE) = 1.65E+01

Mutagenic Chemicals

Cancer Ingestion Intake (Ages 6-16) - RME = 3.91E-03
Cancer Ingestion Intake (Ages 17-30) - RME = 5.48E-03
Cancer Dermal Intake (Ages 6-16) - RME = 3.52E+01
Cancer Dermal Intake (Ages 17-30) - RME = 4.93E+01

Non-carcinogenic Chemicals

Noncancer Ingestion Intake(RME) = 2.74E-02
Noncancer Dermal Intake(RME) = 2.47E+02

Noncancer Ingestion Intake(CTE) = 1.28E-02
Noncancer Dermal Intake(CTE) = 1.65E+02

CALCULATION OF DAevent - EXPOSURES THROUGH DERMAL CONTACT WITH GROUNDWATER
REASONABLE MAXIMUM EXPOSURE (RME --- FUTURE ADULT RESIDENTS TO GROUNDWATER

SITE NAME: SITE 21 - BUILDING 1517
LOCATION: NAVAL STATION GREAT LAKES, ILLINOIS
DATE: 02/02/11

REFERENCES: U.S. EPA, July 2004

DERMAL CONTACT:

DAD = (DAevent x EV x ED x EF x A)/(BW x AT)

WHERE: DAD = DERMALLY ABSORBED DOSE (MG/KG/DAY)
DAevent = ABSORBED DOSE PER EVENT (MG/CM^2/EVENT)
A = SKIN SURFACE AREA AVAILABLE FOR CONTACT(CM^2)
EV = EVENT FREQUENCY (EVENTS/DAY)
ED = EXPOSURE DURATION (YEARS)
EF = EXPOSURE FREQUENCY (DAYS/YEAR)
BW = BODY WEIGHT(KG)
AT = AVERAGING TIME (DAYS)

FOR INORGANICS: DAevent = Kp x C x tevent x CF

FOR ORGANICS:
IF tevent < t*, DAevent = 2FA x Kp x C x CF x (6T x tevent/3.1416)$^{0.5}$
IF tevent > t*, DAevent = FA x Kp x C x CF x ((tevent/(1 + B)) + (2T x ((1+3B+3B^2)/(1 + B)^2)))

WHERE:
FA = FRACTION ABSORBED (DIMENSIONLESS)
Kp = PERMEABILITY COEFFICIENT FROM WATER (CM/HR)
C = CONCENTRATION OF CHEMICAL IN WATER (MG/L)
tevent = DURATION OF EVENT (HR/EVENT)
CF = CONVERSION FACTOR (1L/1000 CM^3)
t* = TIME IT TAKES TO REACH STEADY-STATE (HOUR/EVENT)
T = LAG TIME (HOUR/EVENT)
B = BUNGE MODEL CONSTANT (DIMENSIONLESS)

CHEMICAL	GW CONC. (mg/L)	ORGANIC OR INORGANIC?	t* (HR)	tevent	T (HR)	Kp (CM/HR)	B	FA	DAevent
BAP EQUIVALENT (FULL DL)	0.00006146	o	1.17E+01	3.30E-01	2.69E+00	7.01E-01	4.27E+00	1	1.12E-07
TCDD TEQs (FULL DLs)	1.23E-08	o	3.01E+01	3.30E-01	6.82E+00	8.10E-01	5.60E+00	0.5	2.07E-11
PENTACHLOROPHENOL	0.0078	o	1.38E+01	3.30E-01	3.30E+00	3.90E-01	2.50E+00	0.9	7.90E-06
BENZENE	0.00096	o	7.00E-01	3.30E-01	2.90E-01	1.50E-02	1.00E-01	1	1.23E-08
TETRACHLOROETHYLENE	0.00085	o	2.18E+00	3.30E-01	9.10E-01	3.30E-02	2.00E-01	1	4.25E-08
DELTA-BHC (ALPHA-BHC SURROGATE	0.00002	o	1.10E+01	3.30E-01	4.57E+00	1.10E-02	1.00E-01	0.9	6.72E-10
ARSENIC	0.00726	i		3.30E-01		1.00E-03		1	2.40E-09
CADMIUM	0.00345	i		3.30E-01		1.00E-03		1	1.14E-09
COBALT	0.0153	i		3.30E-01		1.00E-03		1	5.05E-09
IRON	34	i		3.30E-01		1.00E-03		1	1.12E-05
MANGANESE	5.4	i		3.30E-01		1.00E-03		1	1.78E-06

TABLE 7.14 - REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF NON-CANCER HAZARDS FROM EXPOSURE OF ADULT RESIDENTS TO GROUNDWATER
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Entire Site
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	BAP EQUIVALENT (FULL DL	6.1E-05	mg/L	6.15E-05	mg/L	M	1.7E-06	mg/kg-day		mg/kg-day	NA	NA	NA
	TCDD TEQs (FULL DLs)	1.2E-08	mg/L	1.23E-08	mg/L	M	3.4E-10	mg/kg-day	1.00E-09	1.00E-09	NA	NA	3.4E-01
	PENTACHLOROPHENOL	7.8E-03	mg/L	7.80E-03	mg/L	M	2.1E-04	mg/kg-day	5.00E-03	5.00E-03	NA	NA	4.3E-02
	BENZENE	9.6E-04	mg/L	9.60E-04	mg/L	M	2.6E-05	mg/kg-day	4.00E-03	4.00E-03	NA	NA	6.6E-03
	TETRACHLOROETHYLENE	8.5E-04	mg/L	8.50E-04	mg/L	M	2.3E-05	mg/kg-day	1.00E-02	1.00E-02	NA	NA	2.3E-03
	DELTA-BHC (ALPHA-BHC St	2.0E-05	mg/L	2.00E-05	mg/L	M	5.5E-07	mg/kg-day	8.00E-03	3.00E-04	NA	NA	6.8E-05
	ARSENIC	7.3E-03	mg/L	7.26E-03	mg/L	M	2.0E-04	mg/kg-day	3.00E-04	5.00E-03	NA	NA	6.6E-01
	CADMIUM	3.5E-03	mg/L	3.45E-03	mg/L	M	9.5E-05	mg/kg-day	1.00E-03	5.00E-04	NA	NA	9.5E-02
	COBALT	1.5E-02	mg/L	1.53E-02	mg/L	M	4.2E-04	mg/kg-day	3.0E-04	3.0E-04	NA	NA	1.4E+00
	IRON	3.4E+01	mg/L	3.40E+01	mg/L	M	9.3E-01	mg/kg-day	7.0E-01	7.0E-01	NA	NA	1.3E+00
	MANGANESE	5.4E+00	mg/L	5.40E+00	mg/L	M	1.5E-01	mg/kg-day	4.70E-02	4.70E-02	NA	NA	3.1E+00
	(total)												**7.0E+00**
Dermal	BAP EQUIVALENT (FULL DL	6.1E-05	mg/L	6.15E-05	mg/L	M	(2)	mg/kg-day			NA	NA	NA
	TCDD TEQs (FULL DLs)	1.2E-08	mg/L	1.23E-08	mg/L	M	(2)	mg/kg-day	1.00E-09	1.00E-09	NA	NA	NA
	PENTACHLOROPHENOL	7.8E-03	mg/L	7.80E-03	mg/L	M	(2)	mg/kg-day	5.00E-03	5.00E-03	NA	NA	NA
	BENZENE	9.6E-04	mg/L	9.60E-04	mg/L	M	3.0E-06	mg/kg-day	4.00E-03	4.00E-03	NA	NA	7.6E-04
	TETRACHLOROETHYLENE	8.5E-04	mg/L	8.50E-04	mg/L	M	1.0E-05	mg/kg-day	1.00E-02	1.00E-02	NA	NA	1.0E-03
	DELTA-BHC (ALPHA-BHC St	2.0E-05	mg/L	2.00E-05	mg/L	M	1.7E-07	mg/kg-day	8.00E-03	3.00E-04	NA	NA	2.1E-05
	ARSENIC	7.3E-03	mg/L	7.26E-03	mg/L	M	5.9E-07	mg/kg-day	3.00E-04	5.00E-03	NA	NA	2.0E-03
	CADMIUM	3.5E-03	mg/L	3.45E-03	mg/L	M	2.8E-07	mg/kg-day	2.50E-05	2.50E-05	NA	NA	1.1E-02
	COBALT	1.5E-02	mg/L	1.53E-02	mg/L	M	1.2E-06	mg/kg-day	3.00E-04	3.00E-04	NA	NA	4.1E-03
	IRON	3.4E+01	mg/L	3.40E+01	mg/L	M	2.8E-03	mg/kg-day	7.00E-01	7.00E-01	NA	NA	4.0E-03
	MANGANESE	5.4E+00	mg/L	5.40E+00	mg/L	M	4.4E-04	mg/kg-day	1.88E-03	1.88E-03	NA	NA	2.3E-01
	(total)												**2.6E-01**
												Total Hazard Index Across All Exposure Routes/Pathways	**7**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

(2) Chemical with very high log Kow and therefore outside of the predictive range of the EPA dermal uptake model from water.

NA = Not assessed for this pathway.

TABLE 8.14 - REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF CANCER RISKS FROM EXPOSURE OF ADULT RESIDENTS TO GROUNDWATER
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Entire Site
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	BAP EQUIVALENT (FULL	6.1E-05	mg/L	6.15E-05	mg/L	M	1.1E-06	mg/kg-day	7.30E+00	$(mg/kg\text{-}day)^{-1}$	7.7E-06
	TCDD TEQs (FULL DLs)	1.2E-08	mg/L	1.23E-08	mg/L	M	1.2E-10	mg/kg-day	1.50E+05	$(mg/kg\text{-}day)^{-1}$	1.7E-05
	PENTACHLOROPHENOL	7.8E-03	mg/L	7.80E-03	mg/L	M	7.3E-05	mg/kg-day	4.00E-01	$(mg/kg\text{-}day)^{-1}$	2.9E-05
	BENZENE	9.6E-04	mg/L	9.60E-04	mg/L	M	9.0E-06	mg/kg-day	5.50E-02	$(mg/kg\text{-}day)^{-1}$	5.0E-07
	TETRACHLOROETHYLEN	8.5E-04	mg/L	8.50E-04	mg/L	M	8.0E-06	mg/kg-day	5.40E-01	$(mg/kg\text{-}day)^{-1}$	4.3E-06
	DELTA-BHC (ALPHA-BHC SURROGATE)	2.0E-05	mg/L	2.00E-05	mg/L	M	1.9E-07	mg/kg-day	6.30E+00	$(mg/kg\text{-}day)^{-1}$	1.2E-06
	ARSENIC	7.3E-03	mg/L	7.26E-03	mg/L	M	6.8E-05	mg/kg-day	1.50E+00	$(mg/kg\text{-}day)^{-1}$	1.0E-04
	(total)										**1.6E-04**
Dermal	BAP EQUIVALENT (FULL	6.1E-05	mg/L	6.15E-05	mg/L	M	(2)	mg/kg-day	7.30E+00	$(mg/kg\text{-}day)^{-1}$	NA
	TCDD TEQs (FULL DLs)	1.2E-08	mg/L	1.23E-08	mg/L	M	(2)	mg/kg-day	1.50E+05	$(mg/kg\text{-}day)^{-1}$	NA
	PENTACHLOROPHENOL	7.8E-03	mg/L	7.80E-03	mg/L	M	(2)	mg/kg-day	4.00E-01	$(mg/kg\text{-}day)^{-1}$	NA
	BENZENE	9.6E-04	mg/L	9.60E-04	mg/L	M	1.0E-06	mg/kg-day	5.50E-02	$(mg/kg\text{-}day)^{-1}$	5.7E-08
	TETRACHLOROETHYLEN	8.5E-04	mg/L	8.50E-04	mg/L	M	3.6E-06	mg/kg-day	5.40E-01	$(mg/kg\text{-}day)^{-1}$	1.9E-06
	DELTA-BHC (ALPHA-BHC SURROGATE)	2.0E-05	mg/L	2.00E-05	mg/L	M	5.7E-08	mg/kg-day	6.30E+00	$(mg/kg\text{-}day)^{-1}$	3.6E-07
	ARSENIC	7.3E-03	mg/L	7.26E-03	mg/L	M	2.0E-07	mg/kg-day	1.50E+00	$(mg/kg\text{-}day)^{-1}$	3.0E-07
	(total)										**2.7E-06**
										Total Risk Across All Exposure Routes/Pathways	**1.7E-04**

TABLE 4.14a
VALUES OF DAILY INTAKE CALCULATIONS FOR EXPOSURE OF
FUTURE ADULT RESIDENTS TO GROUNDWATER
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Entire Site
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CTE Value	CTE Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Cgw	Chemical Concentration in Groundwater	mg/L	Maximum	U.S. EPA, December 2002	Maximum	U.S. EPA, December 2002	Ingestion CDI (mg/kg/day) =
	IRgw	Water Ingestion Rate	L/day	2	U.S. EPA, May 1993	1.4	U.S. EPA, May 1993	Cgw x IRgw x EF x ED
	EF	Exposure Frequency	days/year	350	U.S. EPA, May 1993	234	U.S. EPA, May 1993	BW x AT
	ED	Exposure Duration (Age 6-16) - RME	years	10	USEPA, May 1993, 2005	7	U.S. EPA, May 1993	CDI = Chronic Daily Intake
	ED	Exposure Duration (Age 17-30) - RME	years	14	USEPA, May 1993, 2005	NA	NA	
	BW	Body Weight	kg	70	U.S. EPA, May 1993	70	U.S. EPA, May 1993	USEPA, December 1989
	AT-C	Averaging Time (Cancer)	days	25,550	U.S. EPA, December 1989	25,550	U.S. EPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	8,760	U.S. EPA, December 1989	2,555	U.S. EPA, December 1989	
Dermal	Cgw	Chemical Concentration in Groundwater	mg/L	Maximum	U.S. EPA, December 2002	Maximum	U.S. EPA, December 2002	The equations and parameters for
	A	Skin Surface Area	cm^2	18,000	U.S. EPA, July 2004	18,000	U.S. EPA, July 2004	for estimating DAevent and the chemical-
	DAevent	Absorbed Dose per Event	mg/cm^2-event	chemical-specific	U.S. EPA, July 2004	chemical-specific	U.S. EPA, July 2004	specific dermally absorbed dose from
	EV	Event Frequency	event/day	1	Professional Judgement	1	Professional Judgement	water (DAD) are provided in Section 6.2.4.4
	ED	Exposure Duration (Age 6-16) - RME	years	10	USEPA, May 1993, 2005	7	U.S. EPA, May 1993	of the text.
	ED	Exposure Duration (Age 17-30) - RME	years	14	USEPA, May 1993, 2005	NA	NA	
	EF	Exposure Frequency	days/year	350	U.S. EPA, May 1993	234	U.S. EPA, May 1993	
	t_{event}	Duration of Event	hour/event	0.33	Professional Judgement	0.25	Professional Judgement	USEPA, July 2004
	t*	Time to reach steady state	hour/event	chemical-specific	U.S. EPA, July 2004	chemical-specific	U.S. EPA, July 2004	
	T	Lag Time	hour/event	chemical-specific	U.S. EPA, July 2004	chemical-specific	U.S. EPA, July 2004	
	B	Bunge Model Constant	dimensionless	chemical-specific	U.S. EPA, July 2004	chemical-specific	U.S. EPA, July 2004	
	Kp	Permeability Coefficient from Water	cm/hour	chemical-specific	U.S. EPA, July 2004	chemical-specific	U.S. EPA, July 2004	
	BW	Body Weight	kg	70	U.S. EPA, May 1993	70	U.S. EPA, May 1993	
	AT-C	Averaging Time (Cancer)	days	25,550	U.S. EPA, December 1989	25,550	U.S. EPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	8,760	U.S. EPA, December 1989	2,555	U.S. EPA, December 1989	

Daily Intake Calculations

Ingestion Intake = (IRgw x EF x ED) / (BW x AT)
Dermal Intake = (A x EV x ED x EF) / (BW x AT)

Non-Mutagenic Chemicals

Cancer Ingestion Intake(RME) = 9.39E-03
Cancer Dermal Intake(RME) = 8.45E+01

Cancer Ingestion Intake(CTE) = 1.28E-03
Cancer Dermal Intake(CTE) = 1.65E+01

Mutagenic Chemicals

Cancer Ingestion Intake (Ages 6-16) - RME = 3.91E-03
Cancer Ingestion Intake (Ages 17-30) - RME = 5.48E-03
Cancer Dermal Intake (Ages 6-16) - RME = 3.52E+01
Cancer Dermal Intake (Ages 17-30) - RME = 4.93E+01

Non-carcinogenic Chemicals

Noncancer Ingestion Intake(RME) = 2.74E-02
Noncancer Dermal Intake(RME) = 2.47E+02

Noncancer Ingestion Intake(CTE) = 1.28E-02
Noncancer Dermal Intake(CTE) = 1.65E+02

CALCULATION OF DAevent - EXPOSURES THROUGH DERMAL CONTACT WITH GROUNDWATER
CENTRAL TENDENCY EXPOSURE (CTE) --- FUTURE ADULT RESIDENTS TO GROUNDWATER

SITE NAME: SITE 21 - BUILDING 1517
LOCATION: NAVAL STATION GREAT LAKES, ILLINOIS
DATE: 02/02/11

REFERENCES: U.S. EPA, July 2004

DERMAL CONTACT:

DAD = (DAevent x EV x ED x EF x A)/(BW x AT)

WHERE: DAD = DERMALLY ABSORBED DOSE (MG/KG/DAY)
DAevent = ABSORBED DOSE PER EVENT (MG/CM^2/EVENT)
A = SKIN SURFACE AREA AVAILABLE FOR CONTACT(CM^2)
EV = EVENT FREQUENCY (EVENTS/DAY)
ED = EXPOSURE DURATION (YEARS)
EF = EXPOSURE FREQUENCY (DAYS/YEAR)
BW = BODY WEIGHT(KG)
AT = AVERAGING TIME (DAYS)

FOR INORGANICS: DAevent = Kp x C x tevent x CF

FOR ORGANICS:
IF tevent < t*, DAevent = 2FA x Kp x C x CF x (6T x tevent/3.1416)$^{0.5}$
IF tevent > t*, DAevent = FA x Kp x C x CF x ((tevent/(1 + B)) + (2T x ((1+3B+3B^2)/(1 + B)^2)))

WHERE:
FA = FRACTION ABSORBED (DIMENSIONLESS)
Kp = PERMEABILITY COEFFICIENT FROM WATER (CM/HR)
C = CONCENTRATION OF CHEMICAL IN WATER (MG/L)
tevent = DURATION OF EVENT (HR/EVENT)
CF = CONVERSION FACTOR (1L/1000 CM^3)
t* = TIME IT TAKES TO REACH STEADY-STATE (HOUR/EVENT)
T = LAG TIME (HOUR/EVENT)
B = BUNGE MODEL CONSTANT (DIMENSIONLESS)

CHEMICAL	GW CONC. (mg/L)	ORGANIC OR INORGANIC?	t* (HR)	tevent	T (HR)	Kp (CM/HR)	B	FA	DAevent
BAP EQUIVALENT (FULL DL)	0.06146	o	1.17E+01	2.50E-01	2.69E+00	7.01E-01	4.27E+00	1	9.77E-05
TCDD TEQs (FULL DLs)	1.23E-08	o	3.01E+01	2.50E-01	6.82E+00	8.10E-01	5.60E+00	0.5	1.80E-11
PENTACHLOROPHENOL	0.0078	o	1.38E+01	2.50E-01	3.30E+00	3.90E-01	2.50E+00	0.9	6.87E-06
BENZENE	0.00096	o	7.00E-01	2.50E-01	2.90E-01	1.50E-02	1.00E-01	1	1.07E-08
TETRACHLOROETHYLENE	0.00085	o	2.18E+00	2.50E-01	9.10E-01	3.30E-02	2.00E-01	1	3.70E-08
DELTA-BHC (ALPHA-BHC SURROGATE	0.00002	o	1.10E+01	2.50E-01	4.57E+00	1.10E-02	1.00E-01	0.9	5.85E-10
ARSENIC	0.00726	i		2.50E-01		1.00E-03		1	1.82E-09
CADMIUM	0.00345	i		2.50E-01		1.00E-03		1	8.63E-10
COBALT	0.0153	i		2.50E-01		1.00E-03		1	3.83E-09
IRON	34	i		2.50E-01		1.00E-03		1	8.50E-06
MANGANESE	5.4	i		2.50E-01		1.00E-03		1	1.35E-06

TABLE 7.14a - CENTRAL TENDENCY EXPOSURE (CTE)
CALCULATION OF NON-CANCER HAZARDS FROM EXPOSURE OF ADULT RESIDENTS TO GROUNDWATER
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Entire Site
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	BAP EQUIVALENT (FULL DL	6.1E-05	mg/L	6.15E-05	mg/L	M	7.9E-07	mg/kg-day		mg/kg-day	NA	NA	NA
	TCDD TEQs (FULL DLs)	1.2E-08	mg/L	1.23E-08	mg/L	M	1.6E-10	mg/kg-day	1.00E-09	mg/kg-day	NA	NA	1.6E-01
	PENTACHLOROPHENOL	7.8E-03	mg/L	7.80E-03	mg/L	M	1.0E-04	mg/kg-day	5.00E-03	mg/kg-day	NA	NA	2.0E-02
	BENZENE	9.6E-04	mg/L	9.60E-04	mg/L	M	1.2E-05	mg/kg-day	4.00E-03	mg/kg-day	NA	NA	3.1E-03
	TETRACHLOROETHYLENE	8.5E-04	mg/L	8.50E-04	mg/L	M	1.1E-05	mg/kg-day	1.00E-02	mg/kg-day	NA	NA	1.1E-03
	DELTA-BHC (ALPHA-BHC SURROGATE)	2.0E-05	mg/L	2.00E-05	mg/L	M	2.6E-07	mg/kg-day	8.00E-03	mg/kg-day	NA	NA	3.2E-05
	ARSENIC	7.3E-03	mg/L	7.26E-03	mg/L	M	9.3E-05	mg/kg-day	3.00E-04	mg/kg-day	NA	NA	3.1E-01
	CADMIUM	3.5E-03	mg/L	3.45E-03	mg/L	M	4.4E-05	mg/kg-day	1.00E-03	mg/kg-day	NA	NA	4.4E-02
	COBALT	1.5E-02	mg/L	1.53E-02	mg/L	M	2.0E-04	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	6.5E-01
	IRON	3.4E+01	mg/L	3.40E+01	mg/L	M	4.4E-01	mg/kg-day	7.0E-01	mg/kg-day	NA	NA	6.2E-01
	MANGANESE	5.4E+00	mg/L	5.40E+00	mg/L	M	6.9E-02	mg/kg-day	4.70E-02	mg/kg-day	NA	NA	1.5E+00
	(total)												**3.E+00**
Dermal	BAP EQUIVALENT (FULL DL	6.1E-05	mg/L	6.15E-05	mg/L	M	(2)	mg/kg-day		mg/kg-day	NA	NA	NA
	TCDD TEQs (FULL DLs)	1.2E-08	mg/L	1.23E-08	mg/L	M	(2)	mg/kg-day	1.00E-09	mg/kg-day	NA	NA	NA
	PENTACHLOROPHENOL	7.8E-03	mg/L	7.80E-03	mg/L	M	(2)	mg/kg-day	5.00E-03	mg/kg-day	NA	NA	NA
	BENZENE	9.6E-04	mg/L	9.60E-04	mg/L	M	1.8E-06	mg/kg-day	4.00E-03	mg/kg-day	NA	NA	4.4E-04
	TETRACHLOROETHYLENE	8.5E-04	mg/L	8.50E-04	mg/L	M	6.1E-06	mg/kg-day	1.00E-02	mg/kg-day	NA	NA	6.1E-04
	DELTA-BHC (ALPHA-BHC SURROGATE)	2.0E-05	mg/L	2.00E-05	mg/L	M	9.6E-08	mg/kg-day	8.00E-03	mg/kg-day	NA	NA	1.2E-05
	ARSENIC	7.3E-03	mg/L	7.26E-03	mg/L	M	3.0E-07	mg/kg-day	3.00E-04	mg/kg-day	NA	NA	1.0E-03
	CADMIUM	3.5E-03	mg/L	3.45E-03	mg/L	M	1.4E-07	mg/kg-day	2.50E-05	mg/kg-day	NA	NA	5.7E-03
	COBALT	1.5E-02	mg/L	1.53E-02	mg/L	M	6.3E-07	mg/kg-day	3.00E-04	mg/kg-day	NA	NA	2.1E-03
	IRON	3.4E+01	mg/L	3.40E+01	mg/L	M	1.4E-03	mg/kg-day	7.00E-01	mg/kg-day	NA	NA	2.0E-03
	MANGANESE	5.4E+00	mg/L	5.40E+00	mg/L	M	2.2E-04	mg/kg-day	1.88E-03	mg/kg-day	NA	NA	1.2E-01
	(total)												**1.3E-01**
											Total Hazard Index Across All Exposure Routes/Pathways		**3**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

(2) Chemical with very high log Kow and therefore outside of the predictive range of the EPA dermal uptake model from water.

NA = Not assessed for this pathway.

TABLE 8.14a - CENTRAL TENDENCY EXPOSURE (CTE)
CALCULATION OF CANCER RISKS FROM EXPOSURE OF ADULT RESIDENTS TO GROUNDWATER
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Entire Site
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	BAP EQUIVALENT (FULL I	6.1E-05	mg/L	6.15E-05	mg/L	M	7.9E-08	mg/kg-day	7.30E+00	$(mg/kg\text{-}day)^{-1}$	5.8E-07
	TCDD TEQs (FULL DLs)	1.2E-08	mg/L	1.23E-08	mg/L	M	1.6E-11	mg/kg-day	1.50E+05	$(mg/kg\text{-}day)^{-1}$	2.4E-06
	PENTACHLOROPHENOL	7.8E-03	mg/L	7.80E-03	mg/L	M	1.0E-05	mg/kg-day	4.00E-01	$(mg/kg\text{-}day)^{-1}$	4.0E-06
	BENZENE	9.6E-04	mg/L	9.60E-04	mg/L	M	1.2E-06	mg/kg-day	5.50E-02	$(mg/kg\text{-}day)^{-1}$	6.8E-08
	TETRACHLOROETHYLEN	8.5E-04	mg/L	8.50E-04	mg/L	M	1.1E-06	mg/kg-day	5.40E-01	$(mg/kg\text{-}day)^{-1}$	5.9E-07
	DELTA-BHC (ALPHA-BHC SURROGATE)	2.0E-05	mg/L	2.00E-05	mg/L	M	2.6E-08	mg/kg-day	6.30E+00	$(mg/kg\text{-}day)^{-1}$	1.6E-07
	ARSENIC	7.3E-03	mg/L	7.26E-03	mg/L	M	9.3E-06	mg/kg-day	1.50E+00	$(mg/kg\text{-}day)^{-1}$	1.4E-05
	(total)										**2.2E-05**
Dermal	BAP EQUIVALENT (FULL I	6.1E-05	mg/L	6.15E-05	mg/L	M	(2)	mg/kg-day	7.30E+00	$(mg/kg\text{-}day)^{-1}$	NA
	TCDD TEQs (FULL DLs)	1.2E-08	mg/L	1.23E-08	mg/L	M	(2)	mg/kg-day	1.50E+05	$(mg/kg\text{-}day)^{-1}$	NA
	PENTACHLOROPHENOL	7.8E-03	mg/L	7.80E-03	mg/L	M	1.1E-04	mg/kg-day	4.00E-01	$(mg/kg\text{-}day)^{-1}$	NA
	BENZENE	9.6E-04	mg/L	9.60E-04	mg/L	M	1.8E-07	mg/kg-day	5.50E-02	$(mg/kg\text{-}day)^{-1}$	9.7E-09
	TETRACHLOROETHYLEN	8.5E-04	mg/L	8.50E-04	mg/L	M	6.1E-07	mg/kg-day	5.40E-01	$(mg/kg\text{-}day)^{-1}$	3.3E-07
	DELTA-BHC (ALPHA-BHC SURROGATE)	2.0E-05	mg/L	2.00E-05	mg/L	M	9.6E-09	mg/kg-day	6.30E+00	$(mg/kg\text{-}day)^{-1}$	6.1E-08
	ARSENIC	7.3E-03	mg/L	7.26E-03	mg/L	M	3.0E-08	mg/kg-day	1.50E+00	$(mg/kg\text{-}day)^{-1}$	4.5E-08
	(total)										**4.4E-07**
										Total Risk Across All Exposure Routes/Pathways	**2.2E-05**

TABLE 4-15
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURES
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Residents	Adult	Site 21 GW	S	Volatile Chemical Generation Rate	Derived	mg/m3-min shower	Foster&Chrostowski 1987	Chronic Daily Intake (CDI) (mg/kg-day)=
				IRsh	Inhalation Rate of volatiles in shower	0.6	m3/hr	U.S. EPA, 1991	
				EF	Exposure Frequency	350	days/year	U.S. EPA, 1991	S x IRsh x K x EF x ED / BW x AT x Ra x CF
				K	Mass Transfer Coefficient	Derived	min	Foster&Chrostowski 1987	
				ED	Exposure Duration	24	years	U.S. EPA, 1991	
				BW	Body Weight	70	kg	U.S. EPA, 1991	K = Ds + exp(-Ra x Dt)/Ra - [exp(Ra) x (Ds-Dt)]/Ra
				Ra	Air Exchange Rate	0.017	min-1	Foster&Chrostowski 1987	
				CF	Conversion Factor	60	min/hr		
				Ds	Shower Duration	15	min	U.S. EPA, 2004	
				Dt	Total Time in Bathroom	20	min	Professional judgement	
				AT-C	Averaging Time (Cancer)	25550	days	U.S. EPA, 1989	
				AT-N	Averaging Time (Noncancer)	8760	days	U.S. EPA ,1989	

Sources

U.S. EPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A. EPA/540/1-86/060.

U.S. EPA, 1991: Risk Assessment Guidance for Superfund - Supplemental Guidance- Standard Default Exposure Factors Interim Final.

U.S. EPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005.

Foster, S.A. and P.C. Chrostowski, 1987. Inhalation Exposure to Volatile Organic Contaminants in the Shower.

0

Unit Intake Calculations (calculates a dose of mg/kg-day that is more consistent with Foster/Chrostowski model)

Inhalation Intake = (IRsh x EF x ED)/(BW x AT x Ra x CF)

Cancer Inhalation Intake = 2.82E-03 Noncancer Inhalation Intake = 8.22E-03

Volatilization From Showering
Source: Foster & Chrostowski, 1987.

Scenario Timeframe: Future	
Medium: Groundwater	
Exposure Medium: Air	
Exposure Point:	SWMU 3 - Old Jeep Trail
Receptor Population:	Residents
Receptor Age: Adult	Adult

Parameter	Value	Definition
Ra	0.0167	air exchange rate, (min^{-1})
Ds	15	shower duration, (min)
Dt	20	total time in bathroom, (min)
Fr	10	shower water flow rate, (L/min)
Sv	12	shower room air volume, (m^3)
ts	2	shower dropler drop time, (sec)
d	1	shower droplet diameter, (mm)
T1	293	calibration water temperature, (K)
Ts	320	shower water temperature, (K)
m1	0.982	water viscosity at T1, (cp)
ms	0.616	water viscosity at Ts, (cp)
K	2.79	mass transfer coefficient, (min)

Error in Calcs? No = 0, Yes > 0 0

Chemical	Cw (ug/L)	Volatile	MW (g/mole)	H (atm-m^3/mol	Kl (cm/hr)	Kg (cm/hr)	KL (cm/hr)	Kal (cm/hr)	Cwd mg/L	S	S x K	S x K
BENZENE	0.960	Y	7.81E+01	5.56E-03	15.01	1440.23	1.44E+01	1.90E+01	4.50E-04	3.75E-04	1.05E-03	1.05E-03
TETRACHLOROETHYLE	0.85	Y	1.66E+02	1.84E-02	10.30	988.38	1.02E+01	1.34E+01	3.06E-04	2.55E-04	7.12E-04	7.12E-04

TABLE 7.15. REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF NON-CANCER HAZARDS
EXPOSURE OF ADULT RESIDENTS BY INHALATION OF VOLATILES RELEASED FROM GROUNDWATER THROUGH SHOWERING
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Adult Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC (SxK)[1]	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Inhalation Reference Dose	Reference Dose Units	Hazard Quotient
Inhalation	BENZENE	9.60E-01	mg/L	1.0E-03	mg/m^3	R	8.6E-06	mg/kg-day	0.0086	mg/kg-day	1.0E-03
	TETRACHLOROETHYLENE	8.50E-01	mg/L	7.1E-04	mg/m^3	R	5.9E-06	mg/kg-day	0.077	mg/kg-day	7.6E-05
	(total)										1.08E-03
										Total Hazard Index Across All Exposure Routes/Pathways	**0.001**

[1] S = Volatile Chemical Generation Rate. K = Mass Transfer Coefficient

TABLE 8.15. REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF CANCER RISK
EXPOSURE OF ADULT RESIDENTS BY INHALATION OF VOLATILES RELEASED FROM GROUNDWATER THROUGH SHOWERING
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Adult Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC (SxK)[1]	Route EPC Units	EPC Selected for Risk Calculation[2]	Intake (Cancer)	Intake (Cancer) Units	Inhalation Cancer Slope Factor	CSFi Units	Cancer Risk
Inhalation	BENZENE	9.60E-01	mg/L	1.05E-03	mg/m^3	R	2.9E-06	mg/kg-day	2.7E-02	$(mg/kg\text{-}day)^{-1}$	8.0E-08
	TETRACHLOROETHYLENE	8.50E-01	mg/L	7.12E-04	mg/m^3	R	2.0E-06	mg/kg-day	2.1E-02	$(mg/kg\text{-}day)^{-1}$	4.1E-08
	(total)										1.2E-07
										Total Risk Across All Exposure Routes/Pathways	**1.2E-07**

[1] S = Volatile Chemical Generation Rate. K = Mass Transfer Coefficient
[2] Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

TABLE 4.15a
VALUES USED FOR DAILY INTAKE CALCULATIONS
CENTRAL TENDENCY EXPOSURES
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Residents	Adult	Site 21 GW	S	Volatile Chemical Generation Rate	Derived	mg/m3-min shower	Foster&Chrostowski 1987	Chronic Daily Intake (CDI) (mg/kg-day)=
				IRsh	Inhalation Rate of volatiles in shower	0.6	m3/hr	U.S. EPA, 1991	
				EF	Exposure Frequency	234	days/year	U.S. EPA, 1991	S x IRsh x K x EF x ED
				K	Mass Transfer Coefficient	Derived	min	Foster&Chrostowski 1987	BW x AT x Ra x CF
				ED	Exposure Duration	7	years	U.S. EPA, 1991	
				BW	Body Weight	70	kg	U.S. EPA, 1991	K = Ds + exp(-Ra x Dt)/Ra - [exp(Ra) x (Ds-Dt)]/Ra
				Ra	Air Exchange Rate	0.016666667	min-1	Foster&Chrostowski 1987	
				CF	Conversion Factor	60	min/hr		
				Ds	Shower Duration	10	min	U.S. EPA, 2004	
				Dt	Total Time in Bathroom	15	min	Professional judgement	
				AT-C	Averaging Time (Cancer)	25550	days	U.S. EPA, 1989	
				AT-N	Averaging Time (Noncancer)	2555	days	U.S. EPA ,1989	

Sources

U.S. EPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A. EPA/540/1-86/060.

U.S. EPA, 1991: Risk Assessment Guidance for Superfund - Supplemental Guidance- Standard Default Exposure Factors Interim Final.

U.S. EPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005.

Foster, S.A. and P.C. Chrostowski, 1987. Inhalation Exposure to Volatile Organic Contaminants in the Shower.

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Volatilization From Showering
Source: Foster & Chrostowski, 1987.

Scenario Timeframe: Future	
Medium: Groundwater	
Exposure Medium: Air	
Exposure Point: Site 21 GW	
Receptor Population:	Residents
Receptor Age: Adult	Adult

Parameter	Value	Definition
Ra	0.0167	air exchange rate, (min^{-1})
Ds	10	shower duration, (min)
Dt	15	total time in bathroom, (min)
Fr	10	shower water flow rate, (L/min)
Sv	12	shower room air volume, (m^3)
ts	2	shower dropler drop time, (sec)
d	1	shower droplet diameter, (mm)
T1	293	calibration water temperature, (K)
Ts	320	shower water temperature, (K)
m1	0.982	water viscosity at T1, (cp)
ms	0.616	water viscosity at Ts, (cp)
K	1.53	mass transfer coefficient, (min)

Error in Calcs? No = 0, Yes > 0 0

Chemical	Cw (ug/L)	Volatile	MW (g/mole)	H (atm-m^3/mol	Kl (cm/hr)	Kg (cm/hr)	KL (cm/hr)	Kal (cm/hr)	Cwd mg/L	S	S x K	S x K
BENZENE	0.960	Y	7.81E+01	5.56E-03	15.01	1440.23	1.44E+01	1.90E+01	4.50E-04	3.75E-04	5.72E-04	5.72E-04
TETRACHLOROETHYLE	0.85	Y	1.66E+02	1.84E-02	10.30	988.38	1.02E+01	1.34E+01	3.06E-04	2.55E-04	3.89E-04	3.89E-04

TABLE 7.15a. CENTRAL TENDENCY EXPOSURE (CTE)
CALCULATION OF NON-CANCER HAZARDS
EXPOSURE OF ADULT RESIDENTS BY INHALATION OF VOLATILES RELEASED FROM GROUNDWATER THROUGH SHOWERING
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Air
Exposure Point: Site 21 GW
Receptor Population:
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC (SxK)[1]	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Inhalation Reference Dose	Reference Dose Units	Hazard Quotient
Inhalation	BENZENE	9.60E-01	mg/L	5.7E-04	mg/m^3	R	3.1E-06	mg/kg-day	0.0086	mg/kg-day	3.7E-04
	TETRACHLOROETHYLENE	8.50E-01	mg/L	3.9E-04	mg/m^3	R	2.1E-06	mg/kg-day	0.077	mg/kg-day	2.8E-05
	(total)										3.94E-04
										Total Hazard Index Across All Exposure Routes/Pathways	**0.0004**

[1] S = Volatile Chemical Generation Rate. K = Mass Transfer Coefficient

TABLE 8.15a. CENTRAL TENDENCY EXPOSURE (CTE)
CALCULATION OF CANCER RISK
EXPOSURE OF ADULT RESIDENTS BY INHALATION OF VOLATILES RELEASED FROM GROUNDWATER THROUGH SHOWERING
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Adult Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC (SxK)[1]	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Inhalation Cancer Slope Factor	CSFi Units	Cancer Risk
Inhalation	BENZENE	9.60E-01	mg/L	5.72E-04	mg/m^3		3.1E-07	mg/kg-day	2.7E-02	$(mg/kg\text{-}day)^{-1}$	8.6E-09
	TETRACHLOROETHYLENE	8.50E-01	mg/L	3.89E-04	mg/m^3		2.1E-07	mg/kg-day	2.1E-02	$(mg/kg\text{-}day)^{-1}$	4.4E-09
	(total)										1.3E-08
										Total Risk Across All Exposure Routes/Pathways	**1.3E-08**

[1] S = Volatile Chemical Generation Rate. K = Mass Transfer Coefficient

TABLE 4.16
VALUES USED FOR DAILY INTAKE CALCULATIONS
EXPOSURE OF FUTURE CHILD RESIDENTS TO SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface Soil
Exposure Point: Entire Site
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CTE Value	CTE Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Csoil	Chemical Concentration in Soil	mg/kg	95% UCL or Max	USEPA, December 2002	Mean	USEPA, May 1993	Ingestion Intake (mg/kg/day) =
	IR	Ingestion Rate of Soil	mg/day	200	USEPA, May 1993	100	USEPA, May 1993	Csoil x IR x Fi x EF x ED x CF
	Fi	Fraction Ingested	unitless	1	USEPA, May 1993	1	USEPA, May 1993	BW x AT
	EF	Exposure Frequency	days/year	350	USEPA, May 1993	234	USEPA, May 1993	U.S. EPA, December 1989
	ED	Exposure Duration (Age 0-2) - RME	years	2	USEPA, May 1993, 2005)	2	USEPA, May 1993	
	ED	Exposure Duration (Age 3-6) - RME	years	4	USEPA, May 1993, 2005)	NA	NA	
	CF	Conversion Factor	kg/mg	1.0E-06	USEPA, December 1989	1.0E-06	USEPA, December 1989	
	BW	Body Weight	kg	15	USEPA, May 1993	15	USEPA, May 1993	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, December 1989	25,550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	2,190	USEPA, December 1989	730	USEPA, December 1989	
Dermal	Csoil	Chemical Concentration in Soil	mg/kg	95% UCL or Max	USEPA, December 2002	Mean	USEPA, May 1993	Dermal Intake (mg/kg/day) =
	CF	Conversion Factor	kg/mg	1.0E-06	USEPA, December 1989	1.0E-06	USEPA, December 1989	Csoil x CF x SA x AF x ABS x EF x ED
	SA	Skin Surface Area	cm^2/day	2,800	USEPA, July 2004	2,800	USEPA, July 2004	BW x AT
	AF	Soil to Skin Adherence Factor	mg/cm^2	0.2	USEPA, July 2004	0.04	USEPA, July 2004	U.S. EPA, December 1989
	ABS	Dermal Absorption Factor (Solid)	unitless	chemical specific	USEPA, July 2004	chemical specific	USEPA, July 2004	
	EF	Exposure Frequency	days/year	350	USEPA, May 1993	234	USEPA, May 1993	
	ED	Exposure Duration (Age 0-2) - RME	years	2	USEPA, May 1993, 2005)	2	USEPA, May 1993	
	ED	Exposure Duration (Age 3-6) - RME	years	4	USEPA, May 1993, 2005)	NA	NA	
	BW	Body Weight	kg	15	USEPA, May 1993	15	USEPA, May 1993	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, December 1989	25,550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	2,190	USEPA, December 1989	730	USEPA, December 1989	

Unit Intake Calculations
Ingestion Intake = (IR x Fi x EF x ED x CF) / (BW x AT)
Dermal Intake = (CF x SA x AF x ABS x EF x ED) / (BW x AT)

Non-Mutagenic Chemicals
Cancer Ingestion Intake (Ages 6-30) - RME = 1.10E-06
Cancer Dermal Intake (Ages 6-30) - RME = 3.07E-06
Cancer Ingestion Intake - CTE = 1.22E-07
Cancer Dermal Intake - CTE = 1.37E-07

Mutagenic Chemicals
Cancer Ingestion Intake (Ages 0-2) - RME = 3.65E-07
Cancer Ingestion Intake (Ages 3-6) - RME = 7.31E-07
Cancer Dermal Intake (Ages 0-2) - RME = 1.02E-06
Cancer Dermal Intake (Ages 3-6) - RME = 2.05E-06

Non-carcinogenic Chemicals
Noncancer Ingestion Intake - RME = 1.28E-05
Noncancer Dermal Intake - RME = 3.58E-05
Noncancer Ingestion Intake - CTE = 4.27E-06
Noncancer Dermal Intake - CTE = 4.79E-06

TABLE 7.16 - REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF NON-CANCER HAZARDS FROM EXPOSURE OF HYPOTHETICAL FUTURE CHILD RESIDENTS TO SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface Soil
Exposure Point: Entire Site
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	BAP EQUIVALENT (FULL DLs	5.06E+01	mg/kg	5.06E+01	6.5E-04	mg/kg-day		mg/kg-day	NA	NA	
	AROCLOR 1260	7.20E-01	mg/kg	7.20E-01	9.2E-06	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	4.6E-01
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	4.3E-10	mg/kg-day	1.0E-09	mg/kg-day	NA	NA	4.3E-01
	ALUMINUM	2.95E+04	mg/kg	2.95E+04	3.8E-01	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	3.8E-01
	ANTIMONY	5.22E+00	mg/kg	5.22E+00	6.7E-05	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	1.7E-01
	ARSENIC	4.84E+01	mg/kg	4.84E+01	6.2E-04	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	2.1E+00
	BARIUM	2.34E+02	mg/kg	2.34E+02	3.0E-03	mg/kg-day	2.0E-01	mg/kg-day	NA	NA	1.5E-02
	CADMIUM	1.30E+01	mg/kg	1.30E+01	1.7E-04	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	1.7E-01
	CHROMIUM	1.63E+02	mg/kg	1.63E+02	2.1E-03	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	6.9E-01
	COBALT	1.77E+01	mg/kg	1.77E+01	2.3E-04	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	7.5E-01
	COPPER	8.35E+02	mg/kg	8.35E+02	1.1E-02	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	2.7E-01
	IRON	6.95E+04	mg/kg	6.95E+04	8.9E-01	mg/kg-day	7.0E-01	mg/kg-day	NA	NA	1.3E+00
	MANGANESE	2.42E+03	mg/kg	2.42E+03	3.1E-02	mg/kg-day	4.7E-02	mg/kg-day	NA	NA	6.6E-01
	MERCURY	8.98E+00	mg/kg	8.98E+00	1.1E-04	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	3.8E-01
	VANADIUM	2.57E+01	mg/kg	2.57E+01	3.3E-04	mg/kg-day	9.0E-03	mg/kg-day	NA	NA	3.7E-02
	(total)										**7.7E+00**
Dermal	BAP EQUIVALENT (FULL DLs	5.06E+01	mg/kg	5.06E+01	2.4E-04	mg/kg-day		mg/kg-day	NA	NA	
	AROCLOR 1260	7.20E-01	mg/kg	7.20E-01	3.6E-06	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.8E-01
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	3.6E-11	mg/kg-day	1.0E-09	mg/kg-day	NA	NA	3.6E-02
	ALUMINUM	2.95E+04	mg/kg	2.95E+04		mg/kg-day	1.0E+00	mg/kg-day	NA	NA	
	ANTIMONY	5.22E+00	mg/kg	5.22E+00		mg/kg-day	4.0E-04	mg/kg-day	NA	NA	
	ARSENIC	4.84E+01	mg/kg	4.84E+01	5.2E-05	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.7E-01
	BARIUM	2.34E+02	mg/kg	2.34E+02		mg/kg-day	2.0E-01	mg/kg-day	NA	NA	
	CADMIUM	1.30E+01	mg/kg	1.30E+01	4.7E-07	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	1.9E-02
	CHROMIUM	1.63E+02	mg/kg	1.63E+02		mg/kg-day	7.5E-05	mg/kg-day	NA	NA	
	COBALT	1.77E+01	mg/kg	1.77E+01		mg/kg-day	3.0E-04	mg/kg-day	NA	NA	
	COPPER	8.35E+02	mg/kg	8.35E+02		mg/kg-day	4.0E-02	mg/kg-day	NA	NA	
	IRON	6.95E+04	mg/kg	6.95E+04		mg/kg-day	7.0E-01	mg/kg-day	NA	NA	
	MANGANESE	2.42E+03	mg/kg	2.42E+03		mg/kg-day	1.9E-03	mg/kg-day	NA	NA	
	MERCURY	8.98E+00	mg/kg	8.98E+00		mg/kg-day	3.0E-04	mg/kg-day	NA	NA	
	VANADIUM	2.57E+01	mg/kg	2.57E+01		mg/kg-day	9.0E-03	mg/kg-day	NA	NA	
	(total)										**4.1E-01**
										Total Hazard Index Across All Exposure Routes/Pathways	**8**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

Dermal Absorption Fraction from Soil(ABS) (USEPA, July 2004):

Dioxins/furans - 0.03 Arsenic - 0.03 Aroclor 1260 - 0.14 Cadmium - 0.001
PAHs - 0.13 Other Metals and Volatiles - not evaluated for dermal contact with soil.

TABLE 8.16 - REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF CANCER RISKS FROM EXPOSURE OF HYPOTHETICAL FUTURE CHILD RESIDENTS TO SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface Soil
Exposure Point: Entire Site
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	BAP EQUIVALENT (FULL DLs	5.06E+01	mg/kg	5.06E+01	mg/kg	M	3.0E-04	mg/kg-day	7.3E+00	$(mg/kg\text{-}day)^{-1}$	2.2E-03
	AROCLOR 1260	7.20E-01	mg/kg	7.20E-01	mg/kg	M	7.9E-07	mg/kg-day	2.0E+00	$(mg/kg\text{-}day)^{-1}$	1.6E-06
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	mg/kg	M	3.7E-11	mg/kg-day	1.5E+05	$(mg/kg\text{-}day)^{-1}$	5.5E-06
	ALUMINUM	2.95E+04	mg/kg	2.95E+04	mg/kg	M	3.2E-02	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	ANTIMONY	5.22E+00	mg/kg	5.22E+00	mg/kg	M	5.7E-06	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	ARSENIC	4.84E+01	mg/kg	4.84E+01	mg/kg	M	5.3E-05	mg/kg-day	1.5E+00	$(mg/kg\text{-}day)^{-1}$	8.0E-05
	BARIUM	2.34E+02	mg/kg	2.34E+02	mg/kg	M	2.6E-04	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	CADMIUM	1.30E+01	mg/kg	1.30E+01	mg/kg	M	1.4E-05	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	CHROMIUM	1.63E+02	mg/kg	1.63E+02	mg/kg	M	1.8E-04	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	COBALT	1.77E+01	mg/kg	1.77E+01	mg/kg	M	1.9E-05	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	COPPER	8.35E+02	mg/kg	8.35E+02	mg/kg	M	9.2E-04	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	IRON	6.95E+04	mg/kg	6.95E+04	mg/kg	M	7.6E-02	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MANGANESE	2.42E+03	mg/kg	2.42E+03	mg/kg	M	2.7E-03	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MERCURY	8.98E+00	mg/kg	8.98E+00	mg/kg	M	9.8E-06	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	VANADIUM	2.57E+01	mg/kg	2.57E+01	mg/kg	M	2.8E-05	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	(total)										2.2E-03
Dermal	BAP EQUIVALENT (FULL DLs	5.06E+01	mg/kg	5.06E+01	mg/kg	M	1.1E-04	mg/kg-day	7.3E+00	$(mg/kg\text{-}day)^{-1}$	7.9E-04
	AROCLOR 1260	7.20E-01	mg/kg	7.20E-01	mg/kg	M	3.1E-07	mg/kg-day	2.0E+00	$(mg/kg\text{-}day)^{-1}$	6.2E-07
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	mg/kg	M	3.1E-12	mg/kg-day	1.5E+05	$(mg/kg\text{-}day)^{-1}$	4.6E-07
	ALUMINUM	2.95E+04	mg/kg	2.95E+04	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	ANTIMONY	5.22E+00	mg/kg	5.22E+00	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	ARSENIC	4.84E+01	mg/kg	4.84E+01	mg/kg	M	4.5E-06	mg/kg-day	1.5E+00	$(mg/kg\text{-}day)^{-1}$	6.7E-06
	BARIUM	2.34E+02	mg/kg	2.34E+02	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	CADMIUM	1.30E+01	mg/kg	1.30E+01	mg/kg	M	4.0E-08	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	CHROMIUM	1.63E+02	mg/kg	1.63E+02	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	COBALT	1.77E+01	mg/kg	1.77E+01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	COPPER	8.35E+02	mg/kg	8.35E+02	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	IRON	6.95E+04	mg/kg	6.95E+04	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MANGANESE	2.42E+03	mg/kg	2.42E+03	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MERCURY	8.98E+00	mg/kg	8.98E+00	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	VANADIUM	2.57E+01	mg/kg	2.57E+01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	(total)										7.9E-04
										Total Risk Across All Exposure Routes/Pathways	3.0E-03

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for risk calculation.

Dermal Absorption Fraction from Soil(ABS) (USEPA, July 2004):

Dioxins/furans - 0.03 Arsenic - 0.03 Aroclor 1260 - 0.14
PAHs - 0.13 Other Metals and Volatiles - not evaluated for dermal contact with soil.

TABLE 4.16a
VALUES USED FOR DAILY INTAKE CALCULATIONS
EXPOSURE OF FUTURE CHILD RESIDENTS TO SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface Soil
Exposure Point: Entire Site
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CTE Value	CTE Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Csoil	Chemical Concentration in Soil	mg/kg	95% UCL or Max	USEPA, December 2002	Mean	USEPA, May 1993	Ingestion Intake (mg/kg/day) =
	IR	Ingestion Rate of Soil	mg/day	200	USEPA, May 1993	100	USEPA, May 1993	Csoil x IR x Fi x EF x ED x CF
	Fi	Fraction Ingested	unitless	1	USEPA, May 1993	1	USEPA, May 1993	BW x AT
	EF	Exposure Frequency	days/year	350	USEPA, May 1993	234	USEPA, May 1993	U.S. EPA, December 1989
	ED	Exposure Duration (Age 0-2) - RME	years	2	USEPA, May 1993, 2005)	2	USEPA, May 1993	
	ED	Exposure Duration (Age 3-6) - RME	years	4	USEPA, May 1993, 2005)	NA	NA	
	CF	Conversion Factor	kg/mg	1.0E-06	USEPA, December 1989	1.0E-06	USEPA, December 1989	
	BW	Body Weight	kg	15	USEPA, May 1993	15	USEPA, May 1993	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, December 1989	25,550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	2,190	USEPA, December 1989	730	USEPA, December 1989	
Dermal	Csoil	Chemical Concentration in Soil	mg/kg	95% UCL or Max	USEPA, December 2002	Mean	USEPA, May 1993	Dermal Intake (mg/kg/day) =
	CF	Conversion Factor	kg/mg	1.0E-06	USEPA, December 1989	1.0E-06	USEPA, December 1989	Csoil x CF x SA x AF x ABS x EF x ED
	SA	Skin Surface Area	cm^2/day	2,800	USEPA, July 2004	2,800	USEPA, July 2004	BW x AT
	AF	Soil to Skin Adherence Factor	mg/cm^2	0.2	USEPA, July 2004	0.04	USEPA, July 2004	U.S. EPA, December 1989
	ABS	Dermal Absorption Factor (Solid)	unitless	chemical specific	USEPA, July 2004	chemical specific	USEPA, July 2004	
	EF	Exposure Frequency	days/year	350	USEPA, May 1993	234	USEPA, May 1993	
	ED	Exposure Duration (Age 0-2) - RME	years	2	USEPA, May 1993, 2005)	2	USEPA, May 1993	
	ED	Exposure Duration (Age 3-6) - RME	years	4	USEPA, May 1993, 2005)	NA	NA	
	BW	Body Weight	kg	15	USEPA, May 1993	15	USEPA, May 1993	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, December 1989	25,550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	2,190	USEPA, December 1989	730	USEPA, December 1989	

Unit Intake Calculations

Ingestion Intake = (IR x Fi x EF x ED x CF) / (BW x AT)
Dermal Intake = (CF x SA x AF x ABS x EF x ED) / (BW x AT)

Non-Mutagenic Chemicals

Cancer Ingestion Intake (Ages 6-30) - RME = 1.10E-06
Cancer Dermal Intake (Ages 6-30) - RME = 3.07E-06

Cancer Ingestion Intake - CTE = 1.22E-07
Cancer Dermal Intake - CTE = 1.37E-07

Mutagenic Chemicals

Cancer Ingestion Intake (Ages 0-2) - RME = 3.65E-07
Cancer Ingestion Intake (Ages 3-6) - RME = 7.31E-07
Cancer Dermal Intake (Ages 0-2) - RME = 1.02E-06
Cancer Dermal Intake (Ages 3-6) - RME = 2.05E-06

Non-carcinogenic Chemicals

Noncancer Ingestion Intake - RME = 1.28E-05
Noncancer Dermal Intake - RME = 3.58E-05

Noncancer Ingestion Intake - CTE = 4.27E-06
Noncancer Dermal Intake - CTE = 4.79E-06

TABLE 7.16a - CENTRAL TENDENCY EXPOSURE (CTE)
CALCULATION OF NON-CANCER HAZARDS FROM EXPOSURE OF HYPOTHETICAL FUTURE CHILD RESIDENTS TO SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface Soil
Exposure Point: Entire Site
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	BAP EQUIVALENT (FULL DLs	3.57E+00	mg/kg	3.57E+00	1.5E-05	mg/kg-day		mg/kg-day	NA	NA	
	AROCLOR 1260	1.54E-01	mg/kg	1.54E-01	6.6E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	3.3E-02
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	1.4E-10	mg/kg-day	1.0E-09	mg/kg-day	NA	NA	1.4E-01
	ALUMINUM	7.62E+03	mg/kg	7.62E+03	3.3E-02	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	3.3E-02
	ANTIMONY	1.06E+00	mg/kg	1.06E+00	4.5E-06	mg/kg-day	4.0E-04	mg/kg-day	NA	NA	1.1E-02
	ARSENIC	1.25E+01	mg/kg	1.25E+01	5.3E-05	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.8E-01
	BARIUM	7.64E+01	mg/kg	7.64E+01	3.3E-04	mg/kg-day	2.0E-01	mg/kg-day	NA	NA	1.6E-03
	CADMIUM	2.30E+00	mg/kg	2.30E+00	9.8E-06	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	9.8E-03
	CHROMIUM	2.03E+01	mg/kg	2.03E+01	8.7E-05	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	2.9E-02
	COBALT	6.59E+00	mg/kg	6.59E+00	2.8E-05	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	9.4E-02
	COPPER	9.36E+01	mg/kg	9.36E+01	4.0E-04	mg/kg-day	4.0E-02	mg/kg-day	NA	NA	1.0E-02
	IRON	2.68E+04	mg/kg	2.68E+04	1.1E-01	mg/kg-day	7.0E-01	mg/kg-day	NA	NA	1.6E-01
	MANGANESE	5.89E+02	mg/kg	5.89E+02	2.5E-03	mg/kg-day	4.7E-02	mg/kg-day	NA	NA	5.4E-02
	MERCURY	5.68E-01	mg/kg	5.68E-01	2.4E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	8.1E-03
	VANADIUM	1.67E+01	mg/kg	1.67E+01	7.1E-05	mg/kg-day	9.0E-03	mg/kg-day	NA	NA	7.9E-03
	(total)										7.7E-01
Dermal	BAP EQUIVALENT (FULL DLs	3.57E+00	mg/kg	3.57E+00	2.2E-06	mg/kg-day		mg/kg-day	NA	NA	
	AROCLOR 1260	1.54E-01	mg/kg	1.54E-01	1.0E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	5.2E-03
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	4.8E-12	mg/kg-day	1.0E-09	mg/kg-day	NA	NA	4.8E-03
	ALUMINUM	7.62E+03	mg/kg	7.62E+03		mg/kg-day	1.0E+00	mg/kg-day	NA	NA	
	ANTIMONY	1.06E+00	mg/kg	1.06E+00		mg/kg-day	4.0E-04	mg/kg-day	NA	NA	
	ARSENIC	1.25E+01	mg/kg	1.25E+01	1.8E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	6.0E-03
	BARIUM	7.64E+01	mg/kg	7.64E+01		mg/kg-day	2.0E-01	mg/kg-day	NA	NA	
	CADMIUM	2.30E+00	mg/kg	2.30E+00	1.1E-08	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	4.4E-04
	CHROMIUM	2.03E+01	mg/kg	2.03E+01		mg/kg-day	7.5E-05	mg/kg-day	NA	NA	
	COBALT	6.59E+00	mg/kg	6.59E+00		mg/kg-day	3.0E-04	mg/kg-day	NA	NA	
	COPPER	9.36E+01	mg/kg	9.36E+01		mg/kg-day	4.0E-02	mg/kg-day	NA	NA	
	IRON	2.68E+04	mg/kg	2.68E+04		mg/kg-day	7.0E-01	mg/kg-day	NA	NA	
	MANGANESE	5.89E+02	mg/kg	5.89E+02		mg/kg-day	1.9E-03	mg/kg-day	NA	NA	
	MERCURY	5.68E-01	mg/kg	5.68E-01		mg/kg-day	3.0E-04	mg/kg-day	NA	NA	
	VANADIUM	1.67E+01	mg/kg	1.67E+01		mg/kg-day	9.0E-03	mg/kg-day	NA	NA	
	(total)										1.6E-02
										Total Hazard Index Across All Exposure Routes/Pathways	**0.8**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

Dermal Absorption Fraction from Soil(ABS) (USEPA, July 2004):

Dioxins/furans - 0.03 Arsenic - 0.03 Aroclor 1260 - 0.14 Cadmium - 0.001
PAHs - 0.13 Other Metals and Volatiles - not evaluated for dermal contact with soil.

TABLE 8.16a - CENTRAL TENDENCY EXPOSURE (CTE)
CALCULATION OF CANCER RISKS FROM EXPOSURE OF HYPOTHETICAL FUTURE CHILD RESIDENTS TO SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Surface Soil
Exposure Point: Entire Site
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	BAP EQUIVALENT (FULL DLs	3.57E+00	mg/kg	3.57E+00	mg/kg	M	4.4E-07	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	3.2E-06
	AROCLOR 1260	1.54E-01	mg/kg	1.54E-01	mg/kg	M	1.9E-08	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	3.8E-08
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	mg/kg	M	4.1E-12	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	6.1E-07
	ALUMINUM	7.62E+03	mg/kg	7.62E+03	mg/kg	M	9.3E-04	mg/kg-day		(mg/kg-day)$^{-1}$	
	ANTIMONY	1.06E+00	mg/kg	1.06E+00	mg/kg	M	1.3E-07	mg/kg-day		(mg/kg-day)$^{-1}$	
	ARSENIC	1.25E+01	mg/kg	1.25E+01	mg/kg	M	1.5E-06	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	2.3E-06
	BARIUM	7.64E+01	mg/kg	7.64E+01	mg/kg	M	9.3E-06	mg/kg-day		(mg/kg-day)$^{-1}$	
	CADMIUM	2.30E+00	mg/kg	2.30E+00	mg/kg	M	2.8E-07	mg/kg-day		(mg/kg-day)$^{-1}$	
	CHROMIUM	2.03E+01	mg/kg	2.03E+01	mg/kg	M	2.5E-06	mg/kg-day		(mg/kg-day)$^{-1}$	
	COBALT	6.59E+00	mg/kg	6.59E+00	mg/kg	M	8.0E-07	mg/kg-day		(mg/kg-day)$^{-1}$	
	COPPER	9.36E+01	mg/kg	9.36E+01	mg/kg	M	1.1E-05	mg/kg-day		(mg/kg-day)$^{-1}$	
	IRON	2.68E+04	mg/kg	2.68E+04	mg/kg	M	3.3E-03	mg/kg-day		(mg/kg-day)$^{-1}$	
	MANGANESE	5.89E+02	mg/kg	5.89E+02	mg/kg	M	7.2E-05	mg/kg-day		(mg/kg-day)$^{-1}$	
	MERCURY	5.68E-01	mg/kg	5.68E-01	mg/kg	M	6.9E-08	mg/kg-day		(mg/kg-day)$^{-1}$	
	VANADIUM	1.67E+01	mg/kg	1.67E+01	mg/kg	M	2.0E-06	mg/kg-day		(mg/kg-day)$^{-1}$	
	(total)										6.1E-06
Dermal	BAP EQUIVALENT (FULL DLs	3.57E+00	mg/kg	3.57E+00	mg/kg	M	6.3E-08	mg/kg-day	7.3E+00	(mg/kg-day)$^{-1}$	4.6E-07
	AROCLOR 1260	1.54E-01	mg/kg	1.54E-01	mg/kg	M	2.9E-09	mg/kg-day	2.0E+00	(mg/kg-day)$^{-1}$	5.9E-09
	TCDD TEQs (FULL DLs)	3.35E-05	mg/kg	3.35E-05	mg/kg	M	1.4E-13	mg/kg-day	1.5E+05	(mg/kg-day)$^{-1}$	2.1E-08
	ALUMINUM	7.62E+03	mg/kg	7.62E+03	mg/kg	M		mg/kg-day		(mg/kg-day)$^{-1}$	
	ANTIMONY	1.06E+00	mg/kg	1.06E+00	mg/kg	M		mg/kg-day		(mg/kg-day)$^{-1}$	
	ARSENIC	1.25E+01	mg/kg	1.25E+01	mg/kg	M	5.1E-08	mg/kg-day	1.5E+00	(mg/kg-day)$^{-1}$	7.7E-08
	BARIUM	7.64E+01	mg/kg	7.64E+01	mg/kg	M		mg/kg-day		(mg/kg-day)$^{-1}$	
	CADMIUM	2.30E+00	mg/kg	2.30E+00	mg/kg	M	3.1E-10	mg/kg-day		(mg/kg-day)$^{-1}$	
	CHROMIUM	2.03E+01	mg/kg	2.03E+01	mg/kg	M		mg/kg-day		(mg/kg-day)$^{-1}$	
	COBALT	6.59E+00	mg/kg	6.59E+00	mg/kg	M		mg/kg-day		(mg/kg-day)$^{-1}$	
	COPPER	9.36E+01	mg/kg	9.36E+01	mg/kg	M		mg/kg-day		(mg/kg-day)$^{-1}$	
	IRON	2.68E+04	mg/kg	2.68E+04	mg/kg	M		mg/kg-day		(mg/kg-day)$^{-1}$	
	MANGANESE	5.89E+02	mg/kg	5.89E+02	mg/kg	M		mg/kg-day		(mg/kg-day)$^{-1}$	
	MERCURY	5.68E-01	mg/kg	5.68E-01	mg/kg	M		mg/kg-day		(mg/kg-day)$^{-1}$	
	VANADIUM	1.67E+01	mg/kg	1.67E+01	mg/kg	M		mg/kg-day		(mg/kg-day)$^{-1}$	
	(total)										5.7E-07
										Total Risk Across All Exposure Routes/Pathways	7.E-06

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for risk calculation.

Dermal Absorption Fraction from Soil(ABS) (USEPA, July 2004):

Dioxins/furans - 0.03 Arsenic - 0.03 Aroclor 1260 - 0.14
PAHs - 0.13 Other Metals and Volatiles - not evaluated for dermal contact with soil.

TABLE 4.17
VALUES USED FOR DAILY INTAKE CALCULATIONS
EXPOSURE OF CHILD RESIDENTS BY INHALATION FROM SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Child Resident
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Inhalation	CS	Chemical concentration in soil	mg/kg	95% UCL or Max	USEPA, May 1993	mean	USEPA, May 1993	Intake (mg/kg/day) = $\frac{CS \times \left[\frac{1}{VF} + \frac{1}{PEF}\right] \times ET \times EF \times ED}{AT \times 24}$
	VF	Volatilization factor - Chemical Specific	m^3/kg	(1)	USEPA, December 2002	(1)	USEPA, December 2002	
	PEF	Particulate emission factor	m^3/kg	1.36E+09	USEPA, December 2002	1.36E+09	USEPA, December 2002	
	BW	Body Weight	kg	15	USEPA, December 1989	15	USEPA, December 1989	
	IR	Inhalation Rate (2)	m3/hr	3.46E-01		3.46E-01		
	ET	Exposure Time	hours/day	24	USEPA, December 2002	24	USEPA, December 2002	
	EF	Exposure Frequency	days/year	350	IEPA, April 2004	234	USEPA, May 1993	
	ED	Exposure Duration	years	6	Professional Judgement	2	USEPA, May 1993	
	AT-C	Averaging Time (Cancer)	days	25550	USEPA, December 1989	25550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	2190	IEPA, Janaury 2003	730	USEPA, December 1989	

Notes:
(1) - Calculated according to USEPA Soil Screening Guidance, December 2002.

Daily Intake Calculations
Inhalation Intake = (ET x EF x ED x (1/PEF)+(1/VF)) / (AT x 24)

Cancer Inhalation Intake(RME) = 8.22E-02
Noncancer Inhalation Intake(RME) = 9.59E-01

Cancer Inhalation Intake(CTE) = 1.83E-02
Noncancer Inhalation Intake(CTE) = 6.41E-01

Cancer risk from ingestion = Air concentration x Cancer Inhalation Intake x Cancer Inhalation Unit Risk (IUR)
Hazard Index from ingestion = Air concentration x Noncancer Inhalation Intake / Reference Air Concentration (RfCi)

TABLE 7.17. REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF NON-CANCER HAZARDS
EXPOSURE OF CHILD RESIDENTS BY INHALATION FROM SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Child Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Concentration Units	Hazard Quotient
Inhalation	MERCURY	8.98E+00	mg/kg	6.6E-09	mg/m^3	R	6.3E-09	mg/m^3	3.0E-05	mg/m^3	2.1E-04
	(total)										0.0002
										Total Hazard Index Across All Exposure Routes/Pathways	**0.0002**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

8.17. REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF CANCER RISKS
EXPOSURE OF CHILD RESIDENTS BY INHALATION FROM SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Child Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor Inh.	Units	Cancer Risk
	No Carcinogenic COPCs for inhalation pathway										
	(total)										0.0E+00
										Total Risk Across All Exposure Routes/Pathways	**0.0E+00**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

TABLE 4.17a
VALUES USED FOR DAILY INTAKE CALCULATIONS
EXPOSURE OF CHILD RESIDENTS BY INHALATION FROM SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Child Resident
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Inhalation	CS	Chemical concentration in soil	mg/kg	95% UCL or Max	USEPA, May 1993	mean	USEPA, May 1993	Intake (mg/kg/day) =
	VF	Volatilization factor - Chemical Specific	m^3/kg	(1)	USEPA, December 2002	(1)	USEPA, December 2002	
	PEF	Particulate emission factor	m^3/kg	1.36E+09	USEPA, December 2002	1.36E+09	USEPA, December 2002	$\frac{CS \times \left[\frac{1}{VF} + \frac{1}{PEF}\right] \times ET \times EF \times ED}{AT \times 24}$
	BW	Body Weight	kg	15	USEPA, December 1989	15	USEPA, December 1989	
	IR	Inhalation Rate (2)	m3/hr	3.46E-01		3.46E-01		
	ET	Exposure Time	hours/day	24	USEPA, December 2002	24	USEPA, December 2002	
	EF	Exposure Frequency	days/year	350	IEPA, April 2004	234	USEPA, May 1993	
	ED	Exposure Duration	years	6	Professional Judgement	2	USEPA, May 1993	
	AT-C	Averaging Time (Cancer)	days	25550	USEPA, December 1989	25550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	2190	IEPA, Janaury 2003	730	USEPA, December 1989	

Notes:
(1) - Calculated according to USEPA Soil Screening Guidance, December 2002.

Daily Intake Calculations
Inhalation Intake = (ET x EF x ED x (1/PEF)+(1/VF)) / (AT x 24)

Cancer Inhalation Intake(RME) = 8.22E-02 Cancer Inhalation Intake(CTE) = 1.83E-02
Noncancer Inhalation Intake(RME) = 9.59E-01 Noncancer Inhalation Intake(CTE) = 6.41E-01

Cancer risk from ingestion = Air concentration x Cancer Inhalation Intake x Cancer Inhalation Unit Risk (IUR)
Hazard Index from ingestion = Air concentration x Noncancer Inhalation Intake / Reference Air Concentration (RfCi)

CALCULATION OF AMBIENT AIR CONCENTRATION
SOURCE: U.S. EPA SOIL SCREENING GUIDANCE

Scenario Timeframe: Future	
Medium: Surface/Subsurface Soil	
Exposure Medium: Air	
Exposure Point:	
Receptor Population:	Resident
Receptor Age: Adult	Adult

Purpose: To calculate ambient air concentrations resulting from fugitive dust and volatilization from soil.

Relevant Equations:

$$Cair = Cs \times (1/PEF + 1/VF)$$

$$VF = \frac{Q/C \times (3.14 \times DA \times T)^{1/2} \times 10^{-4}\ m^2/cm^2}{2 \times pb \times DA}$$

$$DA = \frac{[(\theta a^{10/3} \times Di \times H + \theta w^{10/3} \times Dw)/n^2)]}{pb \times Kd + \theta w + \theta a \times H}$$

$$Csat = S/pb \times (Kd \times pb + \theta w + H \times \theta a)$$

INPUT PARAMTERS			
Parameter	**Value**	**Definition**	
Q/C = :	97.78	Inverse of mean conc. at center of source (g/m^2-s per kg/m^3).	
T = :	7.6E+08	Exposure interval (seconds).	
pb = :	1.5	Dry soil bulk density (g/cm^3).	
ps = :	2.65	soil particle density (g/cm^3).	
n = :	0.434	Total soil porosity (L_{pore}/L_{soil}).	
θw = :	0.15	Water-filled soil porosity (L_{pore}/L_{soil}).	
θa = :	0.284	Air-filled soil porosity (L_{air}/L_{soil}).	
Di = :	Chemical specific	Diffusivity in air (cm^2/sec).	
H' = :	Chemical specific	Dimensionless Henry's Law Constant.	
Dw = :	Chemical specific	Diffusivity in water (cm^2/sec).	
DA = :	Chemical specific	Apparent diffusivity (cm^2/sec).	
Kd = :	Chemical specific	Soil-water partition coefficient (cm^3/g).	
Koc = :	Chemical specific	Soil organic carbon partition coefficient (cm^3/g).	
foc = :	0.006	Fraction organic carbon in soil (g/g).	
F_D = :	1	dispersion correction factor	
V =:	0.5	Fraction of vegatative cover (unitless)	
Um =:	3.44	Mean annual wind speed (m/s)	
Ut =:	11.32	equivalent threshold value of windspeed at 7 m (m/s)	2.92
F(x) =:	0.0086	Function dependent on Um/Ut	0.0085
PEF = :	1.36E+09	Particulate emission factor (m^3/kg)	8.1E+10

Error in Calcs? No = 0, Yes > 0 0

Chemical	Cs (mg/kg)	Volatile	Chemical Properties					Intermediate Calculations				Results		
			Koc (cm^3/g)	Di (cm^2/sec)	Dw (cm^2/sec)	S (mg/L)	H'	Kd (cm^3/g)	Da (cm^2/sec)	VF (m^3/kg)	Csat (mg/kg)	CaV (mg/m^3)	CaP (mg/m^3)	CaTot (mg/m^3)
All Soil														
naphthalene		Y	2.00E+03	5.90E-02	7.50E-06	3.10E+01	1.98E-02	1.20E+01	5.15E-06	7.00E+04	3.75E+02	0.00E+00	0.00E+00	0.00E+00
tetrachloroethylene		Y	1.55E+02	7.20E-02	8.20E-06	2.00E+02	7.54E-01	9.30E-01	2.47E-03	3.20E+03	2.35E+02	0.00E+00	0.00E+00	0.00E+00

TABLE 7.17a. CENTRAL TENDENCY EXPOSURE (CTE)
CALCULATION OF NON-CANCER HAZARDS
EXPOSURE OF CHILD RESIDENTS BY INHALATION FROM SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Child Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Concentration Units	Hazard Quotient
Inhalation	MERCURY	5.70E-01	mg/kg	4.2E-10	mg/m^3	R	2.7E-10	mg/m^3	3.0E-05	mg/m^3	9.0E-06
	(total)										0.000009
										Total Hazard Index Across All Exposure Routes/Pathways	**0.000009**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

8.17a. CENTRAL TENDENCY EXPOSURE (CTE)
CALCULATION OF CANCER RISKS
EXPOSURE OF CHILD RESIDENTS BY INHALATION FROM SURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Child Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor Inh.	Units	Cancer Risk
	No Carcinogenic COPCs for inhalation pathway										
	(total)										0.0E+00
										Total Risk Across All Exposure Routes/Pathways	**0.0E+00**

TABLE 8.18. REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF CANCER RISKS FROM EXPOSURE OF HYPOTHETICAL FUTURE CHILD RESIDENTS TO SUBSURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Subsurface Soil
Exposure Point: Entire Site
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	BAP EQUIVALENT (FULL DLs)	3.94E+01	mg/kg	3.94E+01	mg/kg	M	2.3E-04	mg/kg-day	7.3E+00	$(mg/kg\text{-}day)^{-1}$	1.7E-03
	AROCLOR 1260	4.40E-01	mg/kg	4.40E-01	mg/kg	M	4.8E-07	mg/kg-day	2.0E+00	$(mg/kg\text{-}day)^{-1}$	9.6E-07
	TCDD TEQs (FULL DLs)	5.62E-06	mg/kg	5.62E-06	mg/kg	M	6.2E-12	mg/kg-day	1.5E+05	$(mg/kg\text{-}day)^{-1}$	9.2E-07
	ALUMINUM	2.43E+04	mg/kg	2.43E+04	mg/kg	M	2.7E-02	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	ARSENIC	8.50E+01	mg/kg	8.50E+01	mg/kg	M	9.3E-05	mg/kg-day	1.5E+00	$(mg/kg\text{-}day)^{-1}$	1.4E-04
	CADMIUM	9.62E+00	mg/kg	9.62E+00	mg/kg	M	1.1E-05	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	CHROMIUM	3.43E+01	mg/kg	3.43E+01	mg/kg	M	3.8E-05	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	COBALT	2.38E+01	mg/kg	2.38E+01	mg/kg	M	2.6E-05	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	IRON	6.58E+04	mg/kg	6.58E+04	mg/kg	M	7.2E-02	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MANGANESE	1.69E+03	mg/kg	1.69E+03	mg/kg	M	1.9E-03	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MERCURY	4.84E-01	mg/kg	4.84E-01	mg/kg	M	5.3E-07	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	VANADIUM	3.35E+01	mg/kg	3.35E+01	mg/kg	M	3.7E-05	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	(total)										**1.8E-03**
Dermal	BAP EQUIVALENT (FULL DLs)	3.94E+01	mg/kg	3.94E+01	mg/kg	M	8.4E-05	mg/kg-day	7.3E+00	$(mg/kg\text{-}day)^{-1}$	6.1E-04
	AROCLOR 1260	4.40E-01	mg/kg	4.40E-01	mg/kg	M	1.9E-07	mg/kg-day	2.0E+00	$(mg/kg\text{-}day)^{-1}$	3.8E-07
	TCDD TEQs (FULL DLs)	5.62E-06	mg/kg	5.62E-06	mg/kg	M	5.2E-13	mg/kg-day	1.5E+05	$(mg/kg\text{-}day)^{-1}$	7.8E-08
	ALUMINUM	2.43E+04	mg/kg	2.43E+04	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	ARSENIC	8.50E+01	mg/kg	8.50E+01	mg/kg	M	7.8E-06	mg/kg-day	1.5E+00	$(mg/kg\text{-}day)^{-1}$	1.2E-05
	CADMIUM	9.62E+00	mg/kg	9.62E+00	mg/kg	M	3.0E-08	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	CHROMIUM	3.43E+01	mg/kg	3.43E+01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	COBALT	2.38E+01	mg/kg	2.38E+01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	IRON	6.58E+04	mg/kg	6.58E+04	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MANGANESE	1.69E+03	mg/kg	1.69E+03	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MERCURY	4.84E-01	mg/kg	4.84E-01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	VANADIUM	3.35E+01	mg/kg	3.35E+01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	(total)										**6.2E-04**
										Total Risk Across All Exposure Routes/Pathways	**2.4E-03**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for risk calculation.

Dermal Absorption Fraction from Soil(ABS) (USEPA, July 2004):

Dioxins/furans - 0.03 Arsenic - 0.03 Aroclor 1260 - 0.14
PAHs - 0.13 Other Metals and Volatiles - not evaluated for dermal contact with soil.

TABLE 4.18a
VALUES USED FOR DAILY INTAKE CALCULATIONS
EXPOSURE OF FUTURE CHILD RESIDENTS TO SUBSURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Subsurface Soil
Exposure Point: Entire Site
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CTE Value	CTE Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Csoil	Chemical Concentration in Soil	mg/kg	95% UCL or Max	USEPA, December 2002	Mean	USEPA, May 1993	Ingestion Intake (mg/kg/day) =
	IR	Ingestion Rate of Soil	mg/day	200	USEPA, May 1993	100	USEPA, May 1993	Csoil x IR x Fi x EF x ED x CF
	Fi	Fraction Ingested	unitless	1	USEPA, May 1993	1	USEPA, May 1993	BW x AT
	EF	Exposure Frequency	days/year	350	USEPA, May 1993	234	USEPA, May 1993	U.S. EPA, December 1989
	ED	Exposure Duration (Age 0-2) - RME	years	2	USEPA, May 1993, 2005)	2	USEPA, May 1993	
	ED	Exposure Duration (Age 3-6) - RME	years	4	USEPA, May 1993, 2005)	NA	NA	
	CF	Conversion Factor	kg/mg	1.0E-06	USEPA, December 1989	1.0E-06	USEPA, December 1989	
	BW	Body Weight	kg	15	USEPA, May 1993	15	USEPA, May 1993	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, December 1989	25,550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	2,190	USEPA, December 1989	730	USEPA, December 1989	
Dermal	Csoil	Chemical Concentration in Soil	mg/kg	95% UCL or Max	USEPA, December 2002	Mean	USEPA, May 1993	Dermal Intake (mg/kg/day) =
	CF	Conversion Factor	kg/mg	1.0E-06	USEPA, December 1989	1.0E-06	USEPA, December 1989	Csoil x CF x SA x AF x ABS x EF x ED
	SA	Skin Surface Area	cm^2/day	2,800	USEPA, July 2004	2,800	USEPA, July 2004	BW x AT
	AF	Soil to Skin Adherence Factor	mg/cm^2	0.2	USEPA, July 2004	0.04	USEPA, July 2004	U.S. EPA, December 1989
	ABS	Dermal Absorption Factor (Solid)	unitless	chemical specific	USEPA, July 2004	chemical specific	USEPA, July 2004	
	EF	Exposure Frequency	days/year	350	USEPA, May 1993	234	USEPA, May 1993	
	ED	Exposure Duration (Age 0-2) - RME	years	2	USEPA, May 1993, 2005)	2	USEPA, May 1993	
	ED	Exposure Duration (Age 3-6) - RME	years	4	USEPA, May 1993, 2005)	NA	NA	
	BW	Body Weight	kg	15	USEPA, May 1993	15	USEPA, May 1993	
	AT-C	Averaging Time (Cancer)	days	25,550	USEPA, December 1989	25,550	USEPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	2,190	USEPA, December 1989	730	USEPA, December 1989	

Unit Intake Calculations

Ingestion Intake = (IR x Fi x EF x ED x CF) / (BW x AT)
Dermal Intake = (CF x SA x AF x ABS x EF x ED) / (BW x AT)

Non-Mutagenic Chemicals

Cancer Ingestion Intake (Ages 6-30) - RME = 1.10E-06
Cancer Dermal Intake (Ages 6-30) - RME = 3.07E-06

Cancer Ingestion Intake - CTE = 1.22E-07
Cancer Dermal Intake - CTE = 1.37E-07

Mutagenic Chemicals

Cancer Ingestion Intake (Ages 0-2) - RME = 3.65E-07
Cancer Ingestion Intake (Ages 3-6) - RME = 7.31E-07
Cancer Dermal Intake (Ages 0-2) - RME = 1.02E-06
Cancer Dermal Intake (Ages 3-6) - RME = 2.05E-06

Non-carcinogenic Chemicals

Noncancer Ingestion Intake - RME = 1.28E-05
Noncancer Dermal Intake - RME = 3.58E-05

Noncancer Ingestion Intake - CTE = 4.27E-06
Noncancer Dermal Intake - CTE = 4.79E-06

TABLE 7.18a - CENTRAL TENDENCY EXPOSURE (CTE)
CALCULATION OF NON-CANCER HAZARDS FROM EXPOSURE OF HYPOTHETICAL FUTURE CHILD RESIDENTS TO SUBSURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Subsurface Soil
Exposure Point: Entire Site
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	BAP EQUIVALENT (FULL DLs	2.32E+00	mg/kg	2.32E+00	9.9E-06	mg/kg-day		mg/kg-day	NA	NA	
	AROCLOR 1260	7.04E-02	mg/kg	7.04E-02	3.0E-07	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	1.5E-02
	TCDD TEQs (FULL DLs)	5.62E-06	mg/kg	5.62E-06	2.4E-11	mg/kg-day	1.0E-09	mg/kg-day	NA	NA	2.4E-02
	ALUMINUM	9.34E+03	mg/kg	9.34E+03	4.0E-02	mg/kg-day	1.0E+00	mg/kg-day	NA	NA	4.0E-02
	ARSENIC	1.21E+01	mg/kg	1.21E+01	5.2E-05	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.7E-01
	CADMIUM	1.24E+00	mg/kg	1.24E+00	5.3E-06	mg/kg-day	1.0E-03	mg/kg-day	NA	NA	5.3E-03
	CHROMIUM	1.51E+01	mg/kg	1.51E+01	6.5E-05	mg/kg-day	3.0E-03	mg/kg-day	NA	NA	2.2E-02
	COBALT	8.90E+00	mg/kg	8.90E+00	3.8E-05	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.3E-01
	IRON	2.70E+04	mg/kg	2.70E+04	1.2E-01	mg/kg-day	7.0E-01	mg/kg-day	NA	NA	1.6E-01
	MANGANESE	6.62E+02	mg/kg	6.62E+02	2.8E-03	mg/kg-day	4.7E-02	mg/kg-day	NA	NA	6.0E-02
	MERCURY	9.99E-02	mg/kg	9.99E-02	4.3E-07	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.4E-03
	VANADIUM	1.90E+01	mg/kg	1.90E+01	8.1E-05	mg/kg-day	9.0E-03	mg/kg-day	NA	NA	9.0E-03
	(total)										**6.4E-01**
Dermal	BAP EQUIVALENT (FULL DLs	2.32E+00	mg/kg	2.32E+00	1.4E-06	mg/kg-day		mg/kg-day	NA	NA	
	AROCLOR 1260	7.04E-02	mg/kg	7.04E-02	4.7E-08	mg/kg-day	2.0E-05	mg/kg-day	NA	NA	2.4E-03
	TCDD TEQs (FULL DLs)	5.62E-06	mg/kg	5.62E-06	8.1E-13	mg/kg-day	1.0E-09	mg/kg-day	NA	NA	8.1E-04
	ALUMINUM	9.34E+03	mg/kg	9.34E+03		mg/kg-day	1.0E+00	mg/kg-day	NA	NA	
	ARSENIC	1.21E+01	mg/kg	1.21E+01	1.7E-06	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	5.8E-03
	CADMIUM	1.24E+00	mg/kg	1.24E+00	5.9E-09	mg/kg-day	2.5E-05	mg/kg-day	NA	NA	2.4E-04
	CHROMIUM	1.51E+01	mg/kg	1.51E+01		mg/kg-day	7.5E-05	mg/kg-day	NA	NA	
	COBALT	8.90E+00	mg/kg	8.90E+00		mg/kg-day	3.0E-04	mg/kg-day	NA	NA	
	IRON	2.70E+04	mg/kg	2.70E+04		mg/kg-day	7.0E-01	mg/kg-day	NA	NA	
	MANGANESE	6.62E+02	mg/kg	6.62E+02		mg/kg-day	1.9E-03	mg/kg-day	NA	NA	
	MERCURY	9.99E-02	mg/kg	9.99E-02		mg/kg-day	3.0E-04	mg/kg-day	NA	NA	
	VANADIUM	1.90E+01	mg/kg	1.90E+01		mg/kg-day	9.0E-03	mg/kg-day	NA	NA	
	(total)										**9.2E-03**
										Total Hazard Index Across All Exposure Routes/Pathways	**1**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

Dermal Absorption Fraction from Soil(ABS) (USEPA, July 2004):

Dioxins/furans - 0.03 Arsenic - 0.03 Aroclor 1260 - 0.14 Cadmium - 0.001
PAHs - 0.13 Other Metals and Volatiles - not evaluated for dermal contact with soil.

TABLE 8.18a - CENTRAL TENDENCY EXPOSURE (CTE)
CALCULATION OF CANCER RISKS FROM EXPOSURE OF HYPOTHETICAL FUTURE CHILD RESIDENTS TO SUBSURFACE SOIL
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Soil
Exposure Medium: Subsurface Soil
Exposure Point: Entire Site
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	BAP EQUIVALENT (FULL DLs)	2.32E+00	mg/kg	2.32E+00	mg/kg	M	2.8E-07	mg/kg-day	7.3E+00	$(mg/kg\text{-}day)^{-1}$	2.1E-06
	AROCLOR 1260	7.04E-02	mg/kg	7.04E-02	mg/kg	M	8.6E-09	mg/kg-day	2.0E+00	$(mg/kg\text{-}day)^{-1}$	1.7E-08
	TCDD TEQs (FULL DLs)	5.62E-06	mg/kg	5.62E-06	mg/kg	M	6.9E-13	mg/kg-day	1.5E+05	$(mg/kg\text{-}day)^{-1}$	1.0E-07
	ALUMINUM	9.34E+03	mg/kg	9.34E+03	mg/kg	M	1.1E-03	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	ARSENIC	1.21E+01	mg/kg	1.21E+01	mg/kg	M	1.5E-06	mg/kg-day	1.5E+00	$(mg/kg\text{-}day)^{-1}$	2.2E-06
	CADMIUM	1.24E+00	mg/kg	1.24E+00	mg/kg	M	1.5E-07	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	CHROMIUM	1.51E+01	mg/kg	1.51E+01	mg/kg	M	1.8E-06	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	COBALT	8.90E+00	mg/kg	8.90E+00	mg/kg	M	1.1E-06	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	IRON	2.70E+04	mg/kg	2.70E+04	mg/kg	M	3.3E-03	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MANGANESE	6.62E+02	mg/kg	6.62E+02	mg/kg	M	8.1E-05	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MERCURY	9.99E-02	mg/kg	9.99E-02	mg/kg	M	1.2E-08	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	VANADIUM	1.90E+01	mg/kg	1.90E+01	mg/kg	M	2.3E-06	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	(total)										4.4E-06
Dermal	BAP EQUIVALENT (FULL DLs)	2.32E+00	mg/kg	2.32E+00	mg/kg	M	4.1E-08	mg/kg-day	7.3E+00	$(mg/kg\text{-}day)^{-1}$	3.0E-07
	AROCLOR 1260	7.04E-02	mg/kg	7.04E-02	mg/kg	M	1.3E-09	mg/kg-day	2.0E+00	$(mg/kg\text{-}day)^{-1}$	2.7E-09
	TCDD TEQs (FULL DLs)	5.62E-06	mg/kg	5.62E-06	mg/kg	M	2.3E-14	mg/kg-day	1.5E+05	$(mg/kg\text{-}day)^{-1}$	3.5E-09
	ALUMINUM	9.34E+03	mg/kg	9.34E+03	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	ARSENIC	1.21E+01	mg/kg	1.21E+01	mg/kg	M	4.9E-08	mg/kg-day	1.5E+00	$(mg/kg\text{-}day)^{-1}$	7.4E-08
	CADMIUM	1.24E+00	mg/kg	1.24E+00	mg/kg	M	1.7E-10	mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	CHROMIUM	1.51E+01	mg/kg	1.51E+01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	COBALT	8.90E+00	mg/kg	8.90E+00	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	IRON	2.70E+04	mg/kg	2.70E+04	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MANGANESE	6.62E+02	mg/kg	6.62E+02	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	MERCURY	9.99E-02	mg/kg	9.99E-02	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	VANADIUM	1.90E+01	mg/kg	1.90E+01	mg/kg	M		mg/kg-day		$(mg/kg\text{-}day)^{-1}$	
	(total)										3.8E-07
										Total Risk Across All Exposure Routes/Pathways	**4.8E-06**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for risk calculation.

Dermal Absorption Fraction from Soil(ABS) (USEPA, July 2004):

Dioxins/furans - 0.03 Arsenic - 0.03 Aroclor 1260 - 0.14
PAHs - 0.13 Other Metals and Volatiles - not evaluated for dermal contact with soil.

TABLE 4.19
VALUES OF DAILY INTAKE CALCULATIONS FOR EXPOSURE OF
FUTURE CHILD RESIDENTS TO GROUNDWATER
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Entire Site
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CTE Value	CTE Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Cgw	Chemical Concentration in Groundwater	mg/L	Maximum	U.S. EPA, December 2002	Maximum	U.S. EPA, December 2002	Ingestion CDI (mg/kg/day) =
	IRgw	Water Ingestion Rate	L/day	1.5	USEPA, August 1997	0.66	U.S. EPA, May 1993	Cgw x IRgw x EF x ED / BW x AT
	EF	Exposure Frequency	days/year	350	USEPA, May 1993	234	U.S. EPA, May 1993	
	ED	Exposure Duration (Age 6-16) - RME	years	2	USEPA, May 1993, 2005	2	U.S. EPA, May 1993	CDI = Chronic Daily Intake
	ED	Exposure Duration (Age 17-30) - RME	years	4	USEPA, May 1993, 2005	NA	NA	
	BW	Body Weight	kg	15	U.S. EPA, May 1993	15	U.S. EPA, May 1993	USEPA, December 1989
	AT-C	Averaging Time (Cancer)	days	25,550	U.S. EPA, December 1989	25,550	U.S. EPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	2,190	U.S. EPA, December 1989	2,555	U.S. EPA, December 1989	
Dermal	Cgw	Chemical Concentration in Groundwater	mg/L	Maximum	U.S. EPA, December 2002	Maximum	U.S. EPA, December 2002	The equations and parameters for
	A	Skin Surface Area	cm^2	6,600	U.S. EPA, July 2004	6,600	U.S. EPA, July 2004	for estimating DAevent and the chemical-
	DAevent	Absorbed Dose per Event	mg/cm^2-event	chemical-specific	U.S. EPA, July 2004	chemical-specific	U.S. EPA, July 2004	specific dermally absorbed dose from
	EV	Event Frequency	event/day	1	Professional Judgement	1	Professional Judgement	water (DAD) are provided in Section 6.2.4.4
	ED	Exposure Duration (Age 6-16) - RME	years	2	USEPA, May 1993, 2005	2	U.S. EPA, May 1993	of the text.
	ED	Exposure Duration (Age 17-30) - RME	years	4	USEPA, May 1993, 2005	NA	NA	
	EF	Exposure Frequency	days/year	350	U.S. EPA, May 1993	234	U.S. EPA, May 1993	
	t_{event}	Duration of Event	hour/event	0.33	Professional Judgement	0.25	Professional Judgement	USEPA, July 2004
	t*	Time to reach steady state	hour/event	chemical-specific	U.S. EPA, July 2004	chemical-specific	U.S. EPA, July 2004	
	T	Lag Time	hour/event	chemical-specific	U.S. EPA, July 2004	chemical-specific	U.S. EPA, July 2004	
	B	Bunge Model Constant	dimensionless	chemical-specific	U.S. EPA, July 2004	chemical-specific	U.S. EPA, July 2004	
	Kp	Permeability Coefficient from Water	cm/hour	chemical-specific	U.S. EPA, July 2004	chemical-specific	U.S. EPA, July 2004	
	BW	Body Weight	kg	15	U.S. EPA, May 1993	15	U.S. EPA, May 1993	
	AT-C	Averaging Time (Cancer)	days	25,550	U.S. EPA, December 1989	25,550	U.S. EPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	2,190	U.S. EPA, December 1989	2,555	U.S. EPA, December 1989	

Daily Intake Calculations

Ingestion Intake = (IRgw x EF x ED) / (BW x AT)
Dermal Intake = (A x EV x ED x EF) / (BW x AT)

Non-Mutagenic Chemicals

Cancer Ingestion Intake(RME) = 8.22E-03
Cancer Dermal Intake(RME) = 3.62E+01

Cancer Ingestion Intake(CTE) = 8.06E-04
Cancer Dermal Intake(CTE) = 8.06E+00

Mutagenic Chemicals

Cancer Ingestion Intake (Ages 6-16) - RME = 2.74E-03
Cancer Ingestion Intake (Ages 17-30) - RME = 5.48E-03
Cancer Dermal Intake (Ages 6-16) - RME = 1.21E+01
Cancer Dermal Intake (Ages 17-30) - RME = 2.41E+01

Non-carcinogenic Chemicals

Noncancer Ingestion Intake(RME) = 9.59E-02
Noncancer Dermal Intake(RME) = 4.22E+02

Noncancer Ingestion Intake(CTE) = 8.06E-03
Noncancer Dermal Intake(CTE) = 8.06E+01

CALCULATION OF DAevent - EXPOSURES THROUGH DERMAL CONTACT WITH GROUNDWATER
REASONABLE MAXIMUM EXPOSURE (RME --- FUTURE CHILD RESIDENTS TO GROUNDWATER

SITE NAME: SITE 21 - BUILDING 1517
LOCATION: NAVAL STATION GREAT LAKES, ILLINOIS
DATE: 02/02/11

REFERENCES: U.S. EPA, July 2004

DERMAL CONTACT:

DAD = (DAevent x EV x ED x EF x A)/(BW x AT)

WHERE: DAD = DERMALLY ABSORBED DOSE (MG/KG/DAY)
DAevent = ABSORBED DOSE PER EVENT (MG/CM^2/EVENT)
A = SKIN SURFACE AREA AVAILABLE FOR CONTACT(CM^2)
EV = EVENT FREQUENCY (EVENTS/DAY)
ED = EXPOSURE DURATION (YEARS)
EF = EXPOSURE FREQUENCY (DAYS/YEAR)
BW = BODY WEIGHT(KG)
AT = AVERAGING TIME (DAYS)

FOR INORGANICS: DAevent = Kp x C x tevent x CF

FOR ORGANICS: IF tevent < t*, DAevent = 2FA x Kp x C x CF x (6T x tevent/3.1416)$^{0.5}$

IF tevent > t*, DAevent = FA x Kp x C x CF x ((tevent/(1 + B)) + (2T x ((1+3B+3B^2)/(1 + B)^2)))

WHERE:
FA = FRACTION ABSORBED (DIMENSIONLESS)
Kp = PERMEABILITY COEFFICIENT FROM WATER (CM/HR)
C = CONCENTRATION OF CHEMICAL IN WATER (MG/L)
tevent = DURATION OF EVENT (HR/EVENT)
CF = CONVERSION FACTOR (1L/1000 CM^3)
t* = TIME IT TAKES TO REACH STEADY-STATE (HOUR/EVENT)
T = LAG TIME (HOUR/EVENT)
B = BUNGE MODEL CONSTANT (DIMENSIONLESS)

CHEMICAL	GW CONC. (mg/L)	ORGANIC OR INORGANIC?	t* (HR)	tevent	T (HR)	Kp (CM/HR)	B	FA	DAevent
BAP EQUIVALENT (FULL DL)	0.00006146	o	1.17E+01	3.30E-01	2.69E+00	7.01E-01	4.27E+00	1	1.12E-07
TCDD TEQs (FULL DLs)	1.23E-08	o	3.01E+01	3.30E-01	6.82E+00	8.10E-01	5.60E+00	0.5	2.07E-11
PENTACHLOROPHENOL	0.0078	o	1.38E+01	3.30E-01	3.30E+00	3.90E-01	2.50E+00	0.9	7.90E-06
BENZENE	0.00096	o	7.00E-01	3.30E-01	2.90E-01	1.50E-02	1.00E-01	1	1.23E-08
TETRACHLOROETHYLENE	0.00085	o	2.18E+00	3.30E-01	9.10E-01	3.30E-02	2.00E-01	1	4.25E-08
DELTA-BHC (ALPHA-BHC SURROGATE	0.00002	o	1.10E+01	3.30E-01	4.57E+00	1.10E-02	1.00E-01	0.9	6.72E-10
ARSENIC	0.00726	i		3.30E-01		1.00E-03		1	2.40E-09
CADMIUM	0.00345	i		3.30E-01		1.00E-03		1	1.14E-09
COBALT	0.0153	i		3.30E-01		1.00E-03		1	5.05E-09
IRON	34	i		3.30E-01		1.00E-03		1	1.12E-05
MANGANESE	5.4	i		3.30E-01		1.00E-03		1	1.78E-06

TABLE 7.19 - REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF NON-CANCER HAZARDS FROM EXPOSURE OF CHILD RESIDENTS TO GROUNDWATER
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Entire Site
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	BAP EQUIVALENT (FULL	6.1E-05	mg/L	6.15E-05	mg/L	M	5.9E-06	mg/kg-day		mg/kg-day	NA	NA	NA
	TCDD TEQs (FULL DLs)	1.2E-08	mg/L	1.23E-08	mg/L	M	1.2E-09	mg/kg-day	1.00E-09	mg/kg-day	NA	NA	1
	PENTACHLOROPHENOL	7.8E-03	mg/L	7.80E-03	mg/L	M	7.5E-04	mg/kg-day	5.00E-03	mg/kg-day	NA	NA	0.1
	BENZENE	9.6E-04	mg/L	9.60E-04	mg/L	M	9.2E-05	mg/kg-day	4.00E-03	mg/kg-day	NA	NA	0.023
	TETRACHLOROETHYLEN	8.5E-04	mg/L	8.50E-04	mg/L	M	8.2E-05	mg/kg-day	1.00E-02	mg/kg-day	NA	NA	0.008
	DELTA-BHC (ALPHA-BHC SURROGATE)	2.0E-05	mg/L	2.00E-05	mg/L	M	1.9E-06	mg/kg-day	8.00E-03	mg/kg-day	NA	NA	0.0002
	ARSENIC	7.3E-03	mg/L	7.26E-03	mg/L	M	7.0E-04	mg/kg-day	3.00E-04	mg/kg-day	NA	NA	2.3
	CADMIUM	3.5E-03	mg/L	3.45E-03	mg/L	M	3.3E-04	mg/kg-day	1.00E-03	mg/kg-day	NA	NA	0.3
	COBALT	1.5E-02	mg/L	1.53E-02	mg/L	M	1.5E-03	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	4.9
	IRON	3.4E+01	mg/L	3.40E+01	mg/L	M	3.3E+00	mg/kg-day	7.0E-01	mg/kg-day	NA	NA	4.7
	MANGANESE	5.4E+00	mg/L	5.40E+00	mg/L	M	5.2E-01	mg/kg-day	0.047	mg/kg-day	NA	NA	11.1
	(total)												**25**
Dermal	BAP EQUIVALENT (FULL	6.1E-05	mg/L	6.15E-05	mg/L	M	(2)	mg/kg-day		mg/kg-day	NA	NA	NA
	TCDD TEQs (FULL DLs)	1.2E-08	mg/L	1.23E-08	mg/L	M	(2)	mg/kg-day	1.00E-09	mg/kg-day	NA	NA	NA
	PENTACHLOROPHENOL	7.8E-03	mg/L	7.80E-03	mg/L	M	(2)	mg/kg-day	5.00E-03	mg/kg-day	NA	NA	NA
	BENZENE	9.6E-04	mg/L	9.60E-04	mg/L	M	5.2E-06	mg/kg-day	4.00E-03	mg/kg-day	NA	NA	0.0013
	TETRACHLOROETHYLEN	8.5E-04	mg/L	8.50E-04	mg/L	M	1.8E-05	mg/kg-day	1.00E-02	mg/kg-day	NA	NA	0.0018
	DELTA-BHC (ALPHA-BHC SURROGATE)	2.0E-05	mg/L	2.00E-05	mg/L	M	2.8E-07	mg/kg-day	8.00E-03	mg/kg-day	NA	NA	0.0000
	ARSENIC	7.3E-03	mg/L	7.26E-03	mg/L	M	1.0E-06	mg/kg-day	*3.00E-04*	mg/kg-day	NA	NA	0.0034
	CADMIUM	3.5E-03	mg/L	3.45E-03	mg/L	M	4.8E-07	mg/kg-day	2.50E-05	mg/kg-day	NA	NA	0.0192
	COBALT	1.5E-02	mg/L	1.53E-02	mg/L	M	2.1E-06	mg/kg-day	3.00E-04	mg/kg-day	NA	NA	0.0071
	IRON	3.4E+01	mg/L	3.40E+01	mg/L	M	4.7E-03	mg/kg-day	7.00E-01	mg/kg-day	NA	NA	0.0068
	MANGANESE	5.4E+00	mg/L	5.40E+00	mg/L	M	7.5E-04	mg/kg-day	1.87E-03	mg/kg-day	NA	NA	0.4
	(total)												0.4
												Total Hazard Index Across All Exposure Routes/Pathways	**25**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

(2) Chemical with very high log Kow and therefore outside of the predictive range of the EPA dermal uptake model from water.

NA = Not assessed for this pathway.

TABLE 8.19 - REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF CANCER RISKS FROM EXPOSURE OF CHILD RESIDENTS TO GROUNDWATER
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Entire Site
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	BAP EQUIVALENT (FULL I	6.1E-05	mg/L	6.15E-05	mg/L	M	8.4E-07	mg/kg-day	7.30E+00	$(mg/kg\text{-}day)^{-1}$	6.1E-06
	TCDD TEQs (FULL DLs)	1.2E-08	mg/L	1.23E-08	mg/L	M	1.0E-10	mg/kg-day	1.50E+05	$(mg/kg\text{-}day)^{-1}$	1.5E-05
	PENTACHLOROPHENOL	7.8E-03	mg/L	7.80E-03	mg/L	M	6.4E-05	mg/kg-day	4.00E-01	$(mg/kg\text{-}day)^{-1}$	2.6E-05
	BENZENE	9.6E-04	mg/L	9.60E-04	mg/L	M	7.9E-06	mg/kg-day	5.50E-02	$(mg/kg\text{-}day)^{-1}$	4.3E-07
	TETRACHLOROETHYLEN	8.5E-04	mg/L	8.50E-04	mg/L	M	7.0E-06	mg/kg-day	5.40E-01	$(mg/kg\text{-}day)^{-1}$	3.8E-06
	DELTA-BHC (ALPHA-BHC SURROGATE)	2.0E-05	mg/L	2.00E-05	mg/L	M	1.6E-07	mg/kg-day	6.30E+00	$(mg/kg\text{-}day)^{-1}$	1.0E-06
	ARSENIC	7.3E-03	0E+00	7.26E-03	0E+00	M	6.0E-05	mg/kg-day	1.50E+00	$(mg/kg\text{-}day)^{-1}$	9.0E-05
	(total)										**1.4E-04**
Dermal	BAP EQUIVALENT (FULL I	6.1E-05	mg/L	6.15E-05	mg/L	M	(2)	mg/kg-day	7.30E+00	$(mg/kg\text{-}day)^{-1}$	NA
	TCDD TEQs (FULL DLs)	1.2E-08	mg/L	1.23E-08	mg/L	M	(2)	mg/kg-day	1.50E+05	$(mg/kg\text{-}day)^{-1}$	NA
	PENTACHLOROPHENOL	7.8E-03	mg/L	7.80E-03	mg/L	M	(2)	mg/kg-day	4.00E-01	$(mg/kg\text{-}day)^{-1}$	NA
	BENZENE	9.6E-04	mg/L	9.60E-04	mg/L	M	4.5E-07	mg/kg-day	5.50E-02	$(mg/kg\text{-}day)^{-1}$	2.4E-08
	TETRACHLOROETHYLEN	8.5E-04	mg/L	8.50E-04	mg/L	M	1.5E-06	mg/kg-day	5.40E-01	$(mg/kg\text{-}day)^{-1}$	8.3E-07
	DELTA-BHC (ALPHA-BHC SURROGATE)	2.0E-05	mg/L	2.00E-05	mg/L	M	2.4E-08	mg/kg-day	6.30E+00	$(mg/kg\text{-}day)^{-1}$	1.5E-07
	ARSENIC	7.3E-03	mg/L	7.26E-03	mg/L	M	8.7E-08	mg/kg-day	1.50E+00	$(mg/kg\text{-}day)^{-1}$	1.3E-07
	(total)										**1.1E-06**
										Total Risk Across All Exposure Routes/Pathways	**1.4E-04**

TABLE 4.19a
VALUES OF DAILY INTAKE CALCULATIONS FOR EXPOSURE OF
FUTURE CHILD RESIDENTS TO GROUNDWATER
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Entire Site
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CTE Value	CTE Rationale/ Reference	Intake Equation/ Model Name
Ingestion	Cgw	Chemical Concentration in Groundwater	mg/L	Maximum	U.S. EPA, December 2002	Maximum	U.S. EPA, December 2002	Ingestion CDI (mg/kg/day) =
	IRgw	Water Ingestion Rate	L/day	1.5	USEPA, August 1997	0.66	U.S. EPA, May 1993	Cgw x IRgw x EF x ED
	EF	Exposure Frequency	days/year	350	USEPA, May 1993	234	U.S. EPA, May 1993	BW x AT
	ED	Exposure Duration (Age 6-16) - RME	years	2	USEPA, May 1993, 2005	2	U.S. EPA, May 1993	CDI = Chronic Daily Intake
	ED	Exposure Duration (Age 17-30) - RME	years	4	USEPA, May 1993, 2005	NA	NA	
	BW	Body Weight	kg	15	U.S. EPA, May 1993	15	U.S. EPA, May 1993	USEPA, December 1989
	AT-C	Averaging Time (Cancer)	days	25,550	U.S. EPA, December 1989	25,550	U.S. EPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	2,190	U.S. EPA, December 1989	730	U.S. EPA, December 1989	
Dermal	Cgw	Chemical Concentration in Groundwater	mg/L	Maximum	U.S. EPA, December 2002	Maximum	U.S. EPA, December 2002	The equations and parameters for
	A	Skin Surface Area	cm^2	6,600	U.S. EPA, July 2004	6,600	U.S. EPA, July 2004	for estimating DAevent and the chemical-
	DAevent	Absorbed Dose per Event	mg/cm^2-event	chemical-specific	U.S. EPA, July 2004	chemical-specific	U.S. EPA, July 2004	specific dermally absorbed dose from
	EV	Event Frequency	event/day	1	Professional Judgement	1	Professional Judgement	water (DAD) are provided in Section 6.2.4.4
	ED	Exposure Duration (Age 6-16) - RME	years	2	USEPA, May 1993, 2005	2	U.S. EPA, May 1993	of the text.
	ED	Exposure Duration (Age 17-30) - RME	years	4	USEPA, May 1993, 2005	NA	NA	
	EF	Exposure Frequency	days/year	350	U.S. EPA, May 1993	234	U.S. EPA, May 1993	
	t_{event}	Duration of Event	hour/event	0.33	Professional Judgement	0.25	Professional Judgement	USEPA, July 2004
	t*	Time to reach steady state	hour/event	chemical-specific	U.S. EPA, July 2004	chemical-specific	U.S. EPA, July 2004	
	T	Lag Time	hour/event	chemical-specific	U.S. EPA, July 2004	chemical-specific	U.S. EPA, July 2004	
	B	Bunge Model Constant	dimensionless	chemical-specific	U.S. EPA, July 2004	chemical-specific	U.S. EPA, July 2004	
	Kp	Permeability Coefficient from Water	cm/hour	chemical-specific	U.S. EPA, July 2004	chemical-specific	U.S. EPA, July 2004	
	BW	Body Weight	kg	15	U.S. EPA, May 1993	15	U.S. EPA, May 1993	
	AT-C	Averaging Time (Cancer)	days	25,550	U.S. EPA, December 1989	25,550	U.S. EPA, December 1989	
	AT-N	Averaging Time (Non-Cancer)	days	2,190	U.S. EPA, December 1989	730	U.S. EPA, December 1989	

Daily Intake Calculations
Ingestion Intake = (IRgw x EF x ED) / (BW x AT)
Dermal Intake = (A x EV x ED x EF) / (BW x AT)

Non-Mutagenic Chemicals
Cancer Ingestion Intake(RME) = 8.22E-03
Cancer Dermal Intake(RME) = 3.62E+01
Cancer Ingestion Intake(CTE) = 8.06E-04
Cancer Dermal Intake(CTE) = 8.06E+00

Mutagenic Chemicals
Cancer Ingestion Intake (Ages 6-16) - RME = 2.74E-03
Cancer Ingestion Intake (Ages 17-30) - RME = 5.48E-03
Cancer Dermal Intake (Ages 6-16) - RME = 1.21E+01
Cancer Dermal Intake (Ages 17-30) - RME = 2.41E+01

Non-carcinogenic Chemicals
Noncancer Ingestion Intake(RME) = 9.59E-02
Noncancer Dermal Intake(RME) = 4.22E+02
Noncancer Ingestion Intake(CTE) = 2.82E-02
Noncancer Dermal Intake(CTE) = 2.82E+02

CALCULATION OF DAevent - EXPOSURES THROUGH DERMAL CONTACT WITH GROUNDWATER
CENTRAL TENDENCY EXPOSURE (CTE) --- FUTURE CHILD RESIDENTS TO GROUNDWATER

SITE NAME: SITE 21 - BUILDING 1517
LOCATION: NAVAL STATION GREAT LAKES, ILLINOIS
DATE: 02/02/11

REFERENCES: U.S. EPA, July 2004

DERMAL CONTACT:

DAD = (DAevent x EV x ED x EF x A)/(BW x AT)

WHERE: DAD = DERMALLY ABSORBED DOSE (MG/KG/DAY)
DAevent = ABSORBED DOSE PER EVENT (MG/CM^2/EVENT)
A = SKIN SURFACE AREA AVAILABLE FOR CONTACT(CM^2)
EV = EVENT FREQUENCY (EVENTS/DAY)
ED = EXPOSURE DURATION (YEARS)
EF = EXPOSURE FREQUENCY (DAYS/YEAR)
BW = BODY WEIGHT(KG)
AT = AVERAGING TIME (DAYS)

FOR INORGANICS: DAevent = Kp x C x tevent x CF

FOR ORGANICS: IF tevent < t*, DAevent = 2FA x Kp x C x CF x (6T x tevent/3.1416)$^{0.5}$

IF tevent > t*, DAevent = FA x Kp x C x CF x ((tevent/(1 + B)) + (2T x ((1+3B+3B^2)/(1 + B)^2)))

WHERE:
FA = FRACTION ABSORBED (DIMENSIONLESS)
Kp = PERMEABILITY COEFFICIENT FROM WATER (CM/HR)
C = CONCENTRATION OF CHEMICAL IN WATER (MG/L)
tevent = DURATION OF EVENT (HR/EVENT)
CF = CONVERSION FACTOR (1L/1000 CM^3)
t* = TIME IT TAKES TO REACH STEADY-STATE (HOUR/EVENT)
T = LAG TIME (HOUR/EVENT)
B = BUNGE MODEL CONSTANT (DIMENSIONLESS)

CHEMICAL	GW CONC. (mg/L)	ORGANIC OR INORGANIC?	t* (HR)	tevent	T (HR)	Kp (CM/HR)	B	FA	DAevent
BAP EQUIVALENT (FULL DL)	0.00006146	o	1.17E+01	2.50E-01	2.69E+00	7.01E-01	4.27E+00	1	9.77E-08
TCDD TEQs (FULL DLs)	1.23E-08	o	3.01E+01	2.50E-01	6.82E+00	8.10E-01	5.60E+00	0.5	1.80E-11
PENTACHLOROPHENOL	0.0078	o	1.38E+01	2.50E-01	3.30E+00	3.90E-01	2.50E+00	0.9	6.87E-06
BENZENE	0.00096	o	7.00E-01	2.50E-01	2.90E-01	1.50E-02	1.00E-01	1	1.07E-08

TABLE 7.19a - CENTRAL TENDENCY EXPOSURE (CTE)
CALCULATION OF NON-CANCER HAZARDS FROM EXPOSURE OF CHILD RESIDENTS TO GROUNDWATER
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Entire Site
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	BAP EQUIVALENT (FULL DL	6.1E-05	mg/L	6.15E-05	mg/L	M	1.7E-06	mg/kg-day		mg/kg-day	NA	NA	NA
	TCDD TEQs (FULL DLs)	1.2E-08	mg/L	1.23E-08	mg/L	M	3.5E-10	mg/kg-day	1.00E-09	mg/kg-day	NA	NA	3.5E-01
	PENTACHLOROPHENOL	7.8E-03	mg/L	7.80E-03	mg/L	M	2.2E-04	mg/kg-day	5.00E-03	mg/kg-day	NA	NA	4.4E-02
	BENZENE	9.6E-04	mg/L	9.60E-04	mg/L	M	2.7E-05	mg/kg-day	4.00E-03	mg/kg-day	NA	NA	6.8E-03
	TETRACHLOROETHYLENE	8.5E-04	mg/L	8.50E-04	mg/L	M	2.4E-05	mg/kg-day	1.00E-02	mg/kg-day	NA	NA	2.4E-03
	DELTA-BHC (ALPHA-BHC SURROGATE)	2.0E-05	mg/L	2.00E-05	mg/L	M	5.6E-07	mg/kg-day	8.00E-03	mg/kg-day	NA	NA	7.1E-05
	ARSENIC	7.3E-03	mg/L	7.26E-03	mg/L	M	2.0E-04	mg/kg-day	3.00E-04	mg/kg-day	NA	NA	6.8E-01
	CADMIUM	3.5E-03	mg/L	3.45E-03	mg/L	M	9.7E-05	mg/kg-day	1.00E-03	mg/kg-day	NA	NA	9.7E-02
	COBALT	1.5E-02	mg/L	1.53E-02	mg/L	M	4.3E-04	mg/kg-day	3.0E-04	mg/kg-day	NA	NA	1.4E+00
	IRON	3.4E+01	mg/L	3.40E+01	mg/L	M	9.6E-01	mg/kg-day	7.0E-01	mg/kg-day	NA	NA	1.4E+00
	MANGANESE	5.4E+00	mg/L	5.40E+00	mg/L	M	1.5E-01	mg/kg-day	4.70E-02	mg/kg-day	NA	NA	3.2E+00
	(total)												**7.2E+00**
Dermal	BAP EQUIVALENT (FULL DL	6.1E-05	mg/L	6.15E-05	mg/L	M	(2)	mg/kg-day		mg/kg-day	NA	NA	NA
	TCDD TEQs (FULL DLs)	1.2E-08	mg/L	1.23E-08	mg/L	M	(2)	mg/kg-day	1.00E-09	mg/kg-day	NA	NA	NA
	PENTACHLOROPHENOL	7.8E-03	mg/L	7.80E-03	mg/L	M	(2)	mg/kg-day	5.00E-03	mg/kg-day	NA	NA	NA
	BENZENE	9.6E-04	mg/L	9.60E-04	mg/L	M	3.0E-06	mg/kg-day	4.00E-03	mg/kg-day	NA	NA	7.6E-04
	TETRACHLOROETHYLENE	8.5E-04	mg/L	8.50E-04	mg/L	M	1.0E-05	mg/kg-day	1.00E-02	mg/kg-day	NA	NA	1.0E-03
	DELTA-BHC (ALPHA-BHC SURROGATE)	2.0E-05	mg/L	2.00E-05	mg/L	M	1.7E-07	mg/kg-day	8.00E-03	mg/kg-day	NA	NA	2.1E-05
	ARSENIC	7.3E-03	mg/L	7.26E-03	mg/L	M	5.1E-07	mg/kg-day	*3.00E-04*	mg/kg-day	NA	NA	1.7E-03
	CADMIUM	3.5E-03	mg/L	3.45E-03	mg/L	M	2.4E-07	mg/kg-day	2.50E-05	mg/kg-day	NA	NA	9.7E-03
	COBALT	1.5E-02	mg/L	1.53E-02	mg/L	M	1.1E-06	mg/kg-day	3.00E-04	mg/kg-day	NA	NA	3.6E-03
	IRON	3.4E+01	mg/L	3.40E+01	mg/L	M	2.4E-03	mg/kg-day	7.00E-01	mg/kg-day	NA	NA	3.4E-03
	MANGANESE	5.4E+00	mg/L	5.40E+00	mg/L	M	3.8E-04	mg/kg-day	1.88E-03	mg/kg-day	NA	NA	2.0E-01
	(total)												**2.2E-01**
												Total Hazard Index Across All Exposure Routes/Pathways	**7**

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

(2) Chemical with very high log Kow and therefore outside of the predictive range of the EPA dermal uptake model from water.

NA = Not assessed for this pathway.

TABLE 8.19a - CENTRAL TENDENCY EXPOSURE (CTE)
CALCULATION OF CANCER RISKS FROM EXPOSURE OF CHILD RESIDENTS TO GROUNDWATER
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Entire Site
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	BAP EQUIVALENT (FULL	6.1E-05	mg/L	6.15E-05	mg/L	M	5.0E-08	mg/kg-day	7.30E+00	$(mg/kg\text{-}day)^{-1}$	3.6E-07
	TCDD TEQs (FULL DLs)	1.2E-08	mg/L	1.23E-08	mg/L	M	9.9E-12	mg/kg-day	1.50E+05	$(mg/kg\text{-}day)^{-1}$	1.5E-06
	PENTACHLOROPHENOL	7.8E-03	mg/L	7.80E-03	mg/L	M	6.3E-06	mg/kg-day	4.00E-01	$(mg/kg\text{-}day)^{-1}$	2.5E-06
	BENZENE	9.6E-04	mg/L	9.60E-04	mg/L	M	7.7E-07	mg/kg-day	5.50E-02	$(mg/kg\text{-}day)^{-1}$	4.3E-08
	TETRACHLOROETHYLEN	8.5E-04	mg/L	8.50E-04	mg/L	M	6.9E-07	mg/kg-day	5.40E-01	$(mg/kg\text{-}day)^{-1}$	3.7E-07
	DELTA-BHC (ALPHA-BHC SURROGATE)	2.0E-05	mg/L	2.00E-05	mg/L	M	1.6E-08	mg/kg-day	6.30E+00	$(mg/kg\text{-}day)^{-1}$	1.0E-07
	ARSENIC	7.3E-03	0E+00	7.26E-03	0E+00	M	5.9E-06	mg/kg-day	1.50E+00	$(mg/kg\text{-}day)^{-1}$	8.8E-06
	(total)										**1.4E-05**
Dermal	BAP EQUIVALENT (FULL	6.1E-05	mg/L	6.15E-05	mg/L	M	(2)	mg/kg-day	7.30E+00	$(mg/kg\text{-}day)^{-1}$	NA
	TCDD TEQs (FULL DLs)	1.2E-08	mg/L	1.23E-08	mg/L	M	(2)	mg/kg-day	1.50E+05	$(mg/kg\text{-}day)^{-1}$	NA
	PENTACHLOROPHENOL	7.8E-03	mg/L	7.80E-03	mg/L	M	(2)	mg/kg-day	4.00E-01	$(mg/kg\text{-}day)^{-1}$	NA
	BENZENE	9.6E-04	mg/L	9.60E-04	mg/L	M	8.6E-08	mg/kg-day	5.50E-02	$(mg/kg\text{-}day)^{-1}$	4.8E-09
	TETRACHLOROETHYLEN	8.5E-04	mg/L	8.50E-04	mg/L	M	3.0E-07	mg/kg-day	5.40E-01	$(mg/kg\text{-}day)^{-1}$	1.6E-07
	DELTA-BHC (ALPHA-BHC SURROGATE)	2.0E-05	mg/L	2.00E-05	mg/L	M	4.7E-09	mg/kg-day	6.30E+00	$(mg/kg\text{-}day)^{-1}$	3.0E-08
	ARSENIC	7.3E-03	mg/L	7.26E-03	mg/L	M	1.5E-08	mg/kg-day	1.50E+00	$(mg/kg\text{-}day)^{-1}$	2.2E-08
	(total)										**2.2E-07**
										Total Risk Across All Exposure Routes/Pathways	**1.4E-05**

TABLE 4-20
VALUES USED FOR DAILY INTAKE CALCULATIONS
REASONABLE MAXIMUM EXPOSURES
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Residents	Child	Site 21 GW	S	Volatile Chemical Generation Rate	Derived	mg/m3-min shower	Foster&Chrostowski 1987	Chronic Daily Intake (CDI) (mg/kg-day)=
				IRsh	Inhalation Rate of volatiles in shower	0.6	m3/hr	U.S. EPA, 1991	
				EF	Exposure Frequency	350	days/year	U.S. EPA, 1991	S x IRsh x K x EF x ED
				K	Mass Transfer Coefficient	Derived	min	Foster&Chrostowski 1987	BW x AT x Ra x CF
				ED	Exposure Duration	6	years	U.S. EPA, 1991	
				BW	Body Weight	15	kg	U.S. EPA, 1991	K = Ds + exp(-Ra x Dt)/Ra - [exp(Ra) x (Ds-Dt)]/Ra
				Ra	Air Exchange Rate	0.017	min-1	Foster&Chrostowski 1987	
				CF	Conversion Factor	60	min/hr		
				Ds	Shower Duration	15	min	U.S. EPA, 2004	
				Dt	Total Time in Bathroom	20	min	Professional judgement	
				AT-C	Averaging Time (Cancer)	25550	days	U.S. EPA, 1989	
				AT-N	Averaging Time (Noncancer)	2190	days	U.S. EPA ,1989	

Sources

U.S. EPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A. EPA/540/1-86/060.

U.S. EPA, 1991: Risk Assessment Guidance for Superfund - Supplemental Guidance- Standard Default Exposure Factors Interim Final.

U.S. EPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005.

Foster, S.A. and P.C. Chrostowski, 1987. Inhalation Exposure to Volatile Organic Contaminants in the Shower.

Unit Intake Calculations (calculates a dose of mg/kg-day that is more consistent with Foster/Chrostowski model)

Inhalation Intake = (IRsh x EF x ED)/(BW x AT x Ra x CF)

Cancer Inhalation Intake = 3.29E-03 Noncancer Inhalation Intake = 3.84E-02

Volatilization From Showering
Source: Foster & Chrostowski, 1987.

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Air
Exposure Point:
Receptor Population:
Receptor Age: Child

Parameter	Value	Definition
Ra	0.0167	air exchange rate, (min^{-1})
Ds	15	shower duration, (min)
Dt	20	total time in bathroom, (min)
Fr	10	shower water flow rate, (L/min)
Sv	12	shower room air volume, (m^3)
ts	2	shower dropler drop time, (sec)
d	1	shower droplet diameter, (mm)
T1	293	calibration water temperature, (K)
Ts	320	shower water temperature, (K)
m1	0.982	water viscosity at T1, (cp)
ms	0.616	water viscosity at Ts, (cp)
K	2.79	mass transfer coefficient, (min)

Error in Calcs? No = 0, Yes > 0 0

Chemical	Cw (ug/L)	Volatile	MW (g/mole)	H (atm-m^3/mol	Kl (cm/hr)	Kg (cm/hr)	KL (cm/hr)	Kal (cm/hr)	Cwd mg/L	S	S x K	S x K
BENZENE	0.960	Y	7.81E+01	5.56E-03	15.01	1440.23	1.44E+01	1.90E+01	4.50E-04	3.75E-04	1.05E-03	1.05E-03
TETRACHLOROETHYLE	0.85	Y	1.66E+02	1.84E-02	10.30	988.38	1.02E+01	1.34E+01	3.06E-04	2.55E-04	7.12E-04	7.12E-04

TABLE 7.20. REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF NON-CANCER HAZARDS
EXPOSURE OF ADULT RESIDENTS BY INHALATION OF VOLATILES RELEASED FROM GROUNDWATER THROUGH SHOWERING
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC (SxK)[1]	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Inhalation Reference Dose	Reference Dose Units	Hazard Quotient
Inhalation	BENZENE	9.60E-01	mg/L	1.0E-03	mg/m^3	R	4.0E-05	mg/kg-day	0.0086	mg/kg-day	4.7E-03
	TETRACHLOROETHYLENE	8.50E-01	mg/L	7.1E-04	mg/m^3	R	2.7E-05	mg/kg-day	0.077	mg/kg-day	3.5E-04
	(total)										5.03E-03
										Total Hazard Index Across All Exposure Routes/Pathways	**0.005**

[1] S = Volatile Chemical Generation Rate. K = Mass Transfer Coefficient

TABLE 8.20. REASONABLE MAXIMUM EXPOSURE (RME)
CALCULATION OF CANCER RISK
EXPOSURE OF ADULT RESIDENTS BY INHALATION OF VOLATILES RELEASED FROM GROUNDWATER THROUGH SHOWERING
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC (SxK)[1]	Route EPC Units	EPC Selected for Risk Calculation [2]	Intake (Cancer)	Intake (Cancer) Units	Inhalation Cancer Slope Factor	CSFi Units	Cancer Risk
Inhalation	BENZENE	9.60E-01	mg/L	1.05E-03	mg/m^3	R	3.4E-06	mg/kg-day	2.7E-02	$(mg/kg\text{-}day)^{-1}$	9.4E-08
	TETRACHLOROETHYLENE	8.50E-01	mg/L	7.12E-04	mg/m^3	R	2.3E-06	mg/kg-day	2.1E-02	$(mg/kg\text{-}day)^{-1}$	4.8E-08
	(total)										1.4E-07
										Total Risk Across All Exposure Routes/Pathways	**1.4E-07**

[1] S = Volatile Chemical Generation Rate. K = Mass Transfer Coefficient
[2] Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

TABLE 4-20a
VALUES USED FOR DAILY INTAKE CALCULATIONS
CENTRAL TENDENCY EXPOSURES
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Air

Exposure Route	Receptor Population	Receptor Age	Exposure Point	Parameter Code	Parameter Definition	Value	Units	Rationale/ Reference	Intake Equation/ Model Name
Inhalation	Residents	Child	Site 21 GW	S	Volatile Chemical Generation Rate	Derived	mg/m3-min shower	Foster&Chrostowski , 1987	Chronic Daily Intake (CDI) (mg/kg-day)=
				IRsh	Inhalation Rate of volatiles in shower	0.6	m3/hr	USEPA, December 1989	
				EF	Exposure Frequency	350	days/year	USEPA, May 1993	S x IRsh x K x EF x ED / BW x AT x Ra x CF
				K	Mass Transfer Coefficient	Derived	min	Foster&Chrostowski , 1987	
				ED	Exposure Duration	2	years	USEPA, May 1993	
				BW	Body Weight	15	kg	USEPA, May 1993	K = Ds + exp(-Ra x Dt)/Ra - [exp(Ra) x (Ds-Dt)]/Ra
				Ra	Air Exchange Rate	0.017	min-1	Foster&Chrostowski , 1987	
				CF	Conversion Factor	60	min/hr		
				Ds	Shower Duration	10	min	Professional Judgement	
				Dt	Total Time in Bathroom	15	min	Professional Judgement	
				AT-C	Averaging Time (Cancer)	25550	days	USEPA, December 1989	
				AT-N	Averaging Time (Noncancer)	730	days	USEPA, December 1989	

Sources

U.S. EPA, 1989: Risk Assessment Guidance for Superfund. Vol 1: Human Health Evaluation Manual, Part A. EPA/540/1-86/060.

U.S. EPA, 1991: Risk Assessment Guidance for Superfund - Supplemental Guidance- Standard Default Exposure Factors Interim Final.

U.S. EPA, 2004: Risk Assessment Guidance for Superfund (Part E, Supplemental Guidance for Dermal Risk Assessment) Final. EPA/540/R/99/005.

Foster, S.A. and P.C. Chrostowski, 1987. Inhalation Exposure to Volatile Organic Contaminants in the Shower.

Unit Intake Calculations (calculates a dose of mg/kg-day that is more consistent with Foster/Chrostowski model)

Inhalation Intake = (IRsh x EF x ED)/(BW x AT x Ra x CF)

Cancer Inhalation Intake = 1.10E-03

Noncancer Inhalation Intake = 3.84E-02

Volatilization From Showering
Source: Foster & Chrostowski, 1987.

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Air
Exposure Point:
Receptor Population:
Receptor Age: Child

Parameter	Value	Definition
Ra	0.0167	air exchange rate, (min^{-1})
Ds	10	shower duration, (min)
Dt	15	total time in bathroom, (min)
Fr	10	shower water flow rate, (L/min)
Sv	12	shower room air volume, (m^3)
ts	2	shower dropler drop time, (sec)
d	1	shower droplet diameter, (mm)
T1	293	calibration water temperature, (K)
Ts	320	shower water temperature, (K)
m1	0.982	water viscosity at T1, (cp)
ms	0.616	water viscosity at Ts, (cp)
K	1.53	mass transfer coefficient, (min)

Error in Calcs? No = 0, Yes > 0 0

Chemical	Cw (ug/L)	Volatile	MW (g/mole)	H (atm-m^3/mol	Kl (cm/hr)	Kg (cm/hr)	KL (cm/hr)	Kal (cm/hr)	Cwd mg/L	S	S x K	S x K	
BENZENE	0.960	Y	7.81E+01	5.56E-03	15.01	1440.23	1.44E+01	1.90E+01	4.50E-04	3.75E-04	5.72E-04	5.72E-04	
TETRACHLOROETHYLE	0.85	Y	1.66E+02	1.84E-02	10.30	988.38	1.02E+01	1.34E+01	3.06E-04	2.55E-04	3.89E-04	3.89E-04	0

TABLE 7.20a. CENTRAL TENDENCY EXPOSURE (CTE)
CALCULATION OF NON-CANCER HAZARDS
EXPOSURE OF CHILD RESIDENTS BY INHALATION OF VOLATILES RELEASED FROM GROUNDWATER THROUGH SHOWERING
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC (SxK)[1]	Route EPC Units	EPC Selected for Hazard Calculation	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Inhalation Reference Dose	Reference Dose Units	Hazard Quotient
Inhalation	BENZENE	9.60E-01	mg/L	5.7E-04	mg/m^3	R	2.2E-05	mg/kg-day	0.0086	mg/kg-day	2.6E-03
	TETRACHLOROETHYLENE	8.50E-01	mg/L	3.9E-04	mg/m^3	R	1.5E-05	mg/kg-day	0.077	mg/kg-day	1.9E-04
	(total)										2.75E-03
										Total Hazard Index Across All Exposure Routes/Pathways	**0.003**

[1] S = Volatile Chemical Generation Rate. K = Mass Transfer Coefficient

TABLE 8.20a. CENTRAL TENDENCY EXPOSURE (CTE)
CALCULATION OF CANCER RISK
EXPOSURE OF CHILD RESIDENTS BY INHALATION OF VOLATILES RELEASED FROM GROUNDWATER THROUGH SHOWERING
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Air
Exposure Point: Entire Site
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC (SxK)[1]	Route EPC Units	EPC Selected for Risk Calculation [2]	Intake (Cancer)	Intake (Cancer) Units	Inhalation Cancer Slope Factor	CSFi Units	Cancer Risk
Inhalation	BENZENE	9.60E-01	mg/L	5.72E-04	mg/m^3	R	6.3E-07	mg/kg-day	2.7E-02	$(mg/kg\text{-}day)^{-1}$	1.7E-08
	TETRACHLOROETHYLENE	8.50E-01	mg/L	3.89E-04	mg/m^3	R	4.3E-07	mg/kg-day	2.1E-02	$(mg/kg\text{-}day)^{-1}$	8.8E-09
	(total)										2.6E-08
										Total Risk Across All Exposure Routes/Pathways	**2.6E-08**

[1] S = Volatile Chemical Generation Rate. K = Mass Transfer Coefficient
[2] Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

TABLE 9.1. REASONABLE MAXIMUM EXPOSURE (RME)
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CONSTRUCTION WORKER
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Surface Soil	Entire Site	BAP EQUIVALENT (FULL DLs)	2.04E-06		8.0E-07	2.8E-06	BAP EQUIVALENT (FULL DLs)	NA				
			NAPHTHALENE (partic.)					NAPHTHALENE (partic.)	Body Weight (general)		3.2E-05		3.2E-05
			AROCLOR 1260	7.97E-09		3.3E-09	1.1E-08	AROCLOR 1260	Eye, immunological	1.2E-01		5.1E-02	1.7E-01
			TCDD TEQs	2.78E-08		2.5E-09	3.0E-08	TCDD TEQs	Developmental	1.1E-01		1.0E-02	1.2E-01
			ALUMINUM					ALUMINUM	CNS	5.0E-02	1.1E+00		1.2E+00
			ANTIMONY					ANTIMONY	Longevity (general)	4.4E-02			4.4E-02
			ARSENIC	4.02E-07	6.4E-08	3.6E-08	5.0E-07	ARSENIC	Skin, CVS	3.3E-02	6.0E-01	2.9E-03	6.4E-01
			BARIUM					BARIUM	Kidney	3.9E-03	8.8E-03		1.3E-02
			CADMIUM		7.2E-09		7.2E-09	CADMIUM	Kidney	4.4E-02	2.4E-01	5.3E-03	2.9E-01
			CHROMIUM		6.0E-07		6.0E-07	CHROMIUM	Fetotoxicity/GS/Bone	2.7E-02	3.1E-01		3.3E-01
			COBALT		4.9E-08		4.9E-08	COBALT	Blood	2.0E-01	5.5E-01		7.5E-01
			COPPER					COPPER	Gastrointestinal System	7.0E-02			7.0E-02
			IRON					IRON	Gastrointestinal System	3.3E-01			3.3E-01
			MANGANESE					MANGANESE	CNS	1.7E-01	9.1E+00		9.2E+00
			MERCURY					MERCURY	CNS	1.0E-02	5.6E-02		6.6E-02
			VANADIUM					VANADIUM	Kidney	9.6E-03			9.6E-03
			NAPHTHALENE (volatile)					NAPHTHALENE (volatile)	Body Weight (general)		5.9E-04		5.9E-04
Soil	Subsurface Soil	Entire Site	BAP EQUIVALENT (FULL DLs)	1.59E-06		6.2E-07	2.2E-06	BAP EQUIVALENT (FULL DLs)	NA				
			NAPHTHALENE (partic.)					NAPHTHALENE (partic.)	Body Weight (general)	7.7E-04	2.9E-04		1.1E-03
			AROCLOR 1260	4.87E-09		2.0E-09	6.9E-09	AROCLOR 1260	Eye, immunological	7.4E-02		3.1E-02	1.1E-01
			TCDD TEQs (FULL DLs)	4.67E-09		4.2E-10	5.1E-09	TCDD TEQs (FULL DLs)	Developmental	1.9E-02		1.7E-03	2.1E-02
			ALUMINUM					ALUMINUM	CNS	4.1E-02	9.1E-01		9.5E-01
			ARSENIC	7.06E-07	1.1E-07	6.4E-08	8.8E-07	ARSENIC	Skin, CVS	5.7E-02	1.1E+00	5.2E-03	1.1E+00
			CADMIUM		5.3E-09		5.3E-09	CADMIUM	Kidney	3.2E-02	1.8E-01	3.9E-03	2.2E-01
			CHROMIUM					CHROMIUM	Fetotoxicity/GS/Bone	5.8E-03			5.8E-03
			COBALT		6.6E-08		6.6E-08	COBALT	Blood	2.7E-01	7.4E-01		1.0E+00
			IRON					IRON	Gastrointestinal System	3.2E-01			3.2E-01
			MANGANESE					MANGANESE	CNS	1.2E-01	6.3E+00		6.5E+00
			MERCURY					MERCURY	CNS	5.4E-04	3.0E-03		3.6E-03
			VANADIUM					VANADIUM	Kidney	1.3E-02			1.3E-02
			NAPHTHALENE (volatile)					NAPHTHALENE (volatile)	Body Weight (general)		5.2E-03		5.2E-03
Groundwater	Groundwater	Entire Site	BAP EQUIVALENT (FULL DL)			NA		BAP EQUIVALENT (FULL DL)	NA			NA	
			TCDD TEQs (FULL DLs)			NA		TCDD TEQs (FULL DLs)	Developmental			NA	
			PENTACHLOROPHENOL			NA		PENTACHLOROPHENOL	Liver			NA	
			BENZENE		6.1E-11	1.9E-10	2.5E-10	BENZENE	Hematological		1.6E-04	5.2E-04	6.8E-04
			TETRACHLOROETHYLENE		2.8E-11	4.6E-09	4.6E-09	TETRACHLOROETHYLENE	Liver		1.1E-05	5.2E-04	5.3E-04
			DELTA-BHC (ALPHA-BHC)			8.2E-10	8.2E-10	DELTA-BHC (ALPHA-BHC)	Liver			2.6E-04	2.6E-04
			ARSENIC			2.4E-09	2.4E-09	ARSENIC	Skin, CVS			2.0E-04	2.0E-04
			CADMIUM					CADMIUM	Kidney			1.9E-02	1.9E-02
			COBALT					COBALT	Blood			6.9E-03	6.9E-03
			IRON					IRON	Gastrointestinal System			6.5E-03	6.5E-03
			MANGANESE					MANGANESE	CNS			3.9E-01	3.9E-01

Total Risk for Surface Soil	4.0E-06
Total Risk for Subsurface Soil	3.2E-06
Total Risk for Groundwater	8.1E-09
Total Risk Across All Media and All Exposure Routes	4.E-06

Total HI for Surface Soil	13.3
Total HI for Subsurface Soil	10.2
Total HI for Groundwater	0.4
Total HI Across All Media and All Exposure Routes	12

Total Immune System HI =	0.28	Total Gastrointestinal HI =	0.73
Total Blood HI =	1.8	Total Kidney HI =	0.56
Total CVS HI =	1.8	Total Fetotoxicity & Devel HI =	0.48
Total Neurological (inc. CNS) HI =	18.3	Liver HI =	0.0008
Body Weight & Longevity (General)=	0.05		

TABLE 9.2. REASONABLE MAXIMUM EXPOSURE (RME)
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - OCCUPATIONAL/MAINTENANCE WORKER
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Current/Future
Receptor Population: Occupational Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Surface Soil	Entire Site	BAP EQUIVALENT (FULL DLs)	3.44E-05		2.9E-05	6.4E-05	BAP EQUIVALENT (FULL DLs)	NA				
			AROCLOR 1260	1.56E-07		1.4E-07	3.0E-07	AROCLOR 1260	Eye, immunological	1.1E-02		1.0E-02	2.1E-02
			TCDD TEQs	1.76E-06		3.5E-07	2.1E-06	TCDD TEQs	Developmental	3.3E-02		6.5E-03	3.9E-02
			ALUMINUM					ALUMINUM	CNS	9.7E-03			9.7E-03
			ANTIMONY					ANTIMONY	Longevity (general)	5.0E-03			5.0E-03
			ARSENIC	1.25E-05		2.5E-06	1.5E-05	ARSENIC	Skin, CVS	7.8E-02		1.5E-02	9.3E-02
			BARIUM					BARIUM	Kidney	4.6E-04			4.6E-04
			CADMIUM					CADMIUM	Kidney	6.3E-03		1.7E-03	8.0E-03
			CHROMIUM					CHROMIUM	Fetotoxicity/GS/Bone	1.6E-02			1.6E-02
			COBALT					COBALT	Blood	2.6E-02			2.6E-02
			COPPER					COPPER	Gastrointestinal System	6.3E-03			6.3E-03
			IRON					IRON	Gastrointestinal System	4.7E-02			4.7E-02
			MANGANESE					MANGANESE	CNS	1.6E-02			1.6E-02
			MERCURY					MERCURY	CNS	7.6E-03	1.3E-05		7.6E-03
			VANADIUM					VANADIUM	Kidney	2.0E-03			2.0E-03
						Total Risk for Surface Soil	8.1E-05					Total HI for Surface Soil	0.3

Total Risk Across All Media and All Exposure Routes: 8.E-05

Total HI Across All Media and All Exposure Routes: 0.3

Total Immune System HI =	0.02	Total Gastrointestinal HI =	0.05
Total Blood HI =	0.03	Total Kidney HI =	0.01
Total CVS HI =	0.09	Total Fetotoxicity & Devel HI =	0.06
Total Neurological (inc. CNS) HI =	0.03	Liver HI =	
Body Weight & Longevity (General)=	0.005		

TABLE 9.3. REASONABLE MAXIMUM EXPOSURE (RME)
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - YOUTH TRESPASSER
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Current/Future
Receptor Population: Trespasser
Receptor Age: Youth

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Surface Soil	Entire Site	BAP EQUIVALENT (FULL DLs)	7.15E-06		6.1E-06	1.3E-05	BAP EQUIVALENT (FULL DLs)	NA				
			NAPHTHALENE (partic.)					NAPHTHALENE (partic.)	Body Weight (general)				
			AROCLOR 1260	1.08E-08		9.9E-09	2.1E-08	AROCLOR 1260	Eye, immunological	1.9E-03		1.7E-03	3.6E-03
			TCDD TEQs	1.22E-07		2.4E-08	1.5E-07	TCDD TEQs	Developmental	5.7E-03		1.1E-03	6.8E-03
			ALUMINUM					ALUMINUM	CNS	1.7E-03			1.7E-03
			ANTIMONY					ANTIMONY	Longevity (general)	8.6E-04			8.6E-04
			ARSENIC	8.66E-07		1.7E-07	1.0E-06	ARSENIC	Skin, CVS	1.3E-02		2.7E-03	1.6E-02
			BARIUM					BARIUM	Kidney	8.0E-05			8.0E-05
			CADMIUM					CADMIUM	Kidney	1.1E-03		2.9E-04	1.4E-03
			CHROMIUM					CHROMIUM	Fetotoxicity/GS/Bone	2.9E-03			2.9E-03
			COBALT					COBALT	Blood	4.6E-03			4.6E-03
			COPPER					COPPER	Gastrointestinal System	1.1E-03			1.1E-03
			IRON					IRON	Gastrointestinal System	8.1E-03			8.1E-03
			MANGANESE					MANGANESE	CNS	2.8E-03			2.8E-03
			MERCURY					MERCURY	CNS	1.3E-03	3.4E-07		1.3E-03
			VANADIUM					VANADIUM	Kidney	3.5E-04			3.5E-04
			NAPHTHALENE (volatile)					NAPHTHALENE (volatile)	Body Weight (general)				
							Total Risk for Surface Soil 1.4E-05						Total HI for Surface Soil 0.05

Total Risk Across All Media and All Exposure Routes: 1.E-05

Total HI Across All Media and All Exposure Routes: 0.05

Total Immune System HI =	0.004	Total Gastrointestinal HI =	0.009
Total Blood HI =	0.005	Total Kidney HI =	0.002
Total CVS HI =	0.02	Total Fetotoxicity & Devel HI =	0.0097
Total Neurological (inc. CNS) HI =	0.006	Liver HI =	
Body Weight & Longevity (General)=	0.0009		

TABLE 9.4. REASONABLE MAXIMUM EXPOSURE (RME)
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - FUTURE ADULT RESIDENT
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Current/Future
Receptor Population: Adult Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Surface Soil	Entire Site	BAP EQUIVALENT (FULL DLs)	3.18E-04		1.6E-04	4.8E-04	BAP EQUIVALENT (FULL DLs)	NA				
			AROCLOR 1260	6.76E-07		3.8E-07	1.1E-06	AROCLOR 1260	Eye, immunological	4.9E-02		2.8E-02	7.7E-02
			TCDD TEQs	2.36E-06		2.8E-07	2.6E-06	TCDD TEQs	Developmental	4.6E-02		5.5E-03	5.1E-02
			ALUMINUM					ALUMINUM	CNS	4.0E-02			4.0E-02
			ANTIMONY					ANTIMONY	Longevity (general)	1.8E-02			1.8E-02
			ARSENIC	3.41E-05		4.1E-06	3.8E-05	ARSENIC	Skin, CVS	2.2E-01		2.6E-02	2.5E-01
			BARIUM					BARIUM	Kidney	1.6E-03			1.6E-03
			CADMIUM					CADMIUM	Kidney	1.8E-02		2.8E-03	2.1E-02
			CHROMIUM					CHROMIUM	Fetotoxicity/GS/Bone	7.4E-02			7.4E-02
			COBALT					COBALT	Blood	8.1E-02			8.1E-02
			COPPER					COPPER	Gastrointestinal System	2.9E-02			2.9E-02
			IRON					IRON	Gastrointestinal System	1.4E-01			1.4E-01
			MANGANESE					MANGANESE	CNS	7.1E-02			7.1E-02
			MERCURY					MERCURY	CNS	4.1E-02	2.1E-04		4.1E-02
			VANADIUM					VANADIUM	Kidney	3.9E-03			3.9E-03
			NAPHTHALENE (volatile)					NAPHTHALENE (volatile)	Body Weight (general)				
Soil	Subsurface Soil	Entire Site	BAP EQUIVALENT (FULL DLs)	2.48E-04		1.3E-04	3.8E-04	BAP EQUIVALENT (FULL DLs)	NA				
			NAPHTHALENE					NAPHTHALENE	Body Weight (general)	3.2E-04			3.2E-04
			AROCLOR 1260	4.13E-07		2.3E-07	6.4E-07	AROCLOR 1260	Eye, immunological	3.0E-02		1.7E-02	4.7E-02
			TCDD TEQs (FULL DLs)	3.96E-07		4.7E-08	4.4E-07	TCDD TEQs (FULL DLs)	Developmental	7.7E-03		9.2E-04	8.6E-03
			ALUMINUM					ALUMINUM	CNS	3.3E-02			3.3E-02
			ARSENIC	5.99E-05		7.2E-06	6.7E-05	ARSENIC	Skin, CVS	3.9E-01		4.6E-02	4.3E-01
			CADMIUM					CADMIUM	Kidney	1.3E-02		2.1E-03	1.5E-02
			CHROMIUM					CHROMIUM	Fetotoxicity/GS/Bone	1.6E-02			1.6E-02
			COBALT					COBALT	Blood	1.1E-01			1.1E-01
			IRON					IRON	Gastrointestinal System	1.3E-01			1.3E-01
			MANGANESE					MANGANESE	CNS	4.9E-02			4.9E-02
			MERCURY					MERCURY	CNS	2.2E-03			2.2E-03
			VANADIUM					VANADIUM	Kidney	5.1E-03			5.1E-03
Groundwater	Groundwater	Entire Site	BAP EQUIVALENT (FULL DL)	7.7E-06		NA	7.7E-06	BAP EQUIVALENT (FULL DL)	NA	NA		NA	
			TCDD TEQs (FULL DLs)	1.7E-05		NA	1.7E-05	TCDD TEQs (FULL DLs)	Developmental	3.4E-01		NA	3.4E-01
			PENTACHLOROPHENOL	2.9E-05		NA	2.9E-05	PENTACHLOROPHENOL	Liver	4.3E-02		NA	4.3E-02
			BENZENE	5.0E-07	8.0E-08	5.7E-08	6.3E-07	BENZENE	Hematological	6.6E-03	1.0E-03	7.6E-04	8.3E-03
			TETRACHLOROETHYLENE	4.3E-06	4.1E-08	1.9E-06	6.3E-06	TETRACHLOROETHYLENE	Liver	2.3E-03	7.6E-05	1.0E-03	3.5E-03
			DELTA-BHC (ALPHA-BHC)	1.2E-06		3.6E-07	1.5E-06	DELTA-BHC (ALPHA-BHC)	Liver	1.8E-03		5.5E-04	2.4E-03
			ARSENIC	1.0E-04		3.0E-07	1.0E-04	ARSENIC	Skin, CVS	4.0E-02		1.2E-04	4.0E-02
			CADMIUM					CADMIUM	Kidney	1.9E-01		1.1E-02	2.0E-01
			COBALT					COBALT	Blood	1.4E+00		4.1E-03	1.4E+00
			IRON					IRON	Gastrointestinal System	1.3E+00		4.0E-03	1.3E+00
			MANGANESE					MANGANESE	CNS	3.1E+00		2.3E-01	3.4E+00

Total Risk for Surface Soil	5.2E-04
Total Risk for Subsurface Soil	4.4E-04
Total Risk for Groundwater	1.7E-04
Total Risk Across All Media and All Exposure Routes	7.E-04

Total HI for Surface Soil	0.9
Total HI for Subsurface Soil	0.8
Total HI for Groundwater	6.8
Total HI Across All Media and All Exposure Routes	8

Total Immune System HI =	0.12	Total Gastrointestinal HI =	1.63
Total Blood HI =	1.6	Total Kidney HI =	0.247
Total CVS HI =	0.7	Total Fetotoxicity & Devel HI =	0.49
Total Neurological (inc. CNS) HI =	3.6	Liver HI =	0.0486
Body Weight & Longevity (General)=	0.02		

TABLE 9.5. REASONABLE MAXIMUM EXPOSURE (RME)
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - FUTURE CHILD RESIDENT
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Current/Future
Receptor Population: Child Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Surface Soil	Entire Site	BAP EQUIVALENT (FULL DLs)	2.16E-03		7.9E-04	2.9E-03	BAP EQUIVALENT (FULL DLs)	NA				
			AROCLOR 1260	1.58E-06		6.2E-07		AROCLOR 1260	Eye, immunological	4.6E-01		1.8E-01	6.4E-01
			TCDD TEQs	5.51E-06		4.6E-07	6.0E-06	TCDD TEQs	Developmental	4.3E-01		3.6E-02	4.6E-01
			ALUMINUM					ALUMINUM	CNS	3.8E-01			3.8E-01
			ANTIMONY					ANTIMONY	Longevity (general)	1.7E-01			1.7E-01
			ARSENIC	7.96E-05		6.7E-06	8.6E-05	ARSENIC	Skin, CVS	2.1E+00		1.7E-01	2.2E+00
			BARIUM					BARIUM	Kidney	1.5E-02			1.5E-02
			CADMIUM					CADMIUM	Kidney	1.7E-01		1.9E-02	1.8E-01
			CHROMIUM					CHROMIUM	Fetotoxicity/GS/Bone	6.9E-01			6.9E-01
			COBALT					COBALT	Blood	7.5E-01			7.5E-01
			COPPER					COPPER	Gastrointestinal System	2.7E-01			2.7E-01
			IRON					IRON	Gastrointestinal System	1.3E+00			1.3E+00
			MANGANESE					MANGANESE	CNS	6.6E-01			6.6E-01
			MERCURY					MERCURY	CNS	3.8E-01	2.1E-04		3.8E-01
			VANADIUM					VANADIUM	Kidney	3.7E-02			3.7E-02
Soil	Subsurface Soil	Entire Site	BAP EQUIVALENT (FULL DLs)	1.68E-03		6.1E-04	2.3E-03	BAP EQUIVALENT (FULL DLs)	NA				
			NAPHTHALENE (partic.)					NAPHTHALENE (partic.)	Body Weight (general)	2.9E-03			2.9E-03
			AROCLOR 1260	9.64E-07		3.8E-07	1.3E-06	AROCLOR 1260	Eye, immunological	2.8E-01		1.1E-01	3.9E-01
			TCDD TEQs (FULL DLs)	9.24E-07		7.8E-08	1.0E-06	TCDD TEQs (FULL DLs)	Developmental	7.2E-02		6.0E-03	7.8E-02
			ALUMINUM					ALUMINUM	CNS	3.1E-01			3.1E-01
			ARSENIC	1.40E-04		1.2E-05	1.5E-04	ARSENIC	Skin, CVS			3.0E-01	3.0E-01
			CADMIUM					CADMIUM	Kidney	3.6E+00		1.4E-02	3.6E+00
			CHROMIUM					CHROMIUM	Fetotoxicity/GS/Bone				
			COBALT					COBALT	Blood	1.2E-01			1.2E-01
			IRON					IRON	Gastrointestinal System	1.5E-01			1.5E-01
			MANGANESE					MANGANESE	CNS	1.0E+00			1.0E+00
			MERCURY					MERCURY	CNS				
			VANADIUM					VANADIUM	Kidney	1.2E+00			1.2E+00
			NAPHTHALENE (volatile)					NAPHTHALENE (volatile)	Body Weight (general)	4.6E-01			4.6E-01
Groundwater	Groundwater	Entire Site	BAP EQUIVALENT (FULL DL)	6.1E-06		NA		BAP EQUIVALENT (FULL DL)	NA	NA		NA	
			TCDD TEQs (FULL DLs)	1.5E-05		NA		TCDD TEQs (FULL DLs)	Developmental	1.2E+00		NA	1.2E+00
			PENTACHLOROPHENOL	2.6E-05		NA		PENTACHLOROPHENOL	Liver	1.5E-01		NA	1.5E-01
			BENZENE	4.3E-07	9.4E-08	2.4E-08	5.5E-07	BENZENE	Hematological	2.3E-02	4.7E-03	1.3E-03	2.9E-02
			TETRACHLOROETHYLENE	3.8E-06	4.8E-08	8.3E-07	4.7E-06	TETRACHLOROETHYLENE	Liver	8.2E-03	3.5E-04	1.8E-03	1.0E-02
			DELTA-BHC (ALPHA-BHC)	1.0E-06		1.5E-07	1.2E-06	DELTA-BHC (ALPHA-BHC)	Liver	6.4E-03		9.5E-04	7.3E-03
			ARSENIC	9.0E-05		1.3E-07	9.0E-05	ARSENIC	Skin, CVS	1.4E-01		2.0E-04	1.4E-01
			CADMIUM					CADMIUM	Kidney	6.6E-01		1.9E-02	6.8E-01
			COBALT					COBALT	Blood	4.9E+00		7.1E-03	4.9E+00
			IRON					IRON	Gastrointestinal System	4.7E+00		6.8E-03	4.7E+00
			MANGANESE					MANGANESE	CNS	1.1E+01		4.0E-01	1.1E+01
			Total Risk for Surface Soil				3.0E-03		Total HI for Surface Soil				8.1
			Total Risk for Subsurface Soil				2.4E-03		Total HI for Subsurface Soil				7.7
			Total Risk for Groundwater				9.6E-05		Total HI for Groundwater				23.3

Total Risk Across All Media and All Exposure Routes: 3.E-03

Total HI Across All Media and All Exposure Routes: 31

Total Immune System HI =	1.0	Total Gastrointestinal HI =	6.35
Total Blood HI =	5.8	Total Kidney HI =	5.76
Total CVS HI =	2.7	Total Fetotoxicity & Devel HI =	2.42
Total Neurological (inc. CNS) HI =	14.2	Liver HI =	0.17
Body Weight & Longevity (General)=	0.63		

TABLE 9.6 REASONABLE MAXIMUM EXPOSURE (RME)
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - TOTAL RESIDENTIAL ILCRS
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child + Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Surface Soil	Entire Site	BAP EQUIVALENT (FULL DLs)	3.4E-03		9.5E-04	4.4E-03
			NAPHTHALENE (partic.)				
			AROCLOR 1260	1.1E-06		1.0E-06	2.1E-06
			TCDD TEQs	8.6E-06		7.5E-07	9.4E-06
			ALUMINUM				
			ANTIMONY				
			ARSENIC	1.2E-04		1.1E-05	1.4E-04
			BARIUM				
			CADMIUM				
			CHROMIUM				
			COBALT				
			COPPER				
			IRON				
			MANGANESE				
			MERCURY				
			VANADIUM				
			NAPHTHALENE (volatile)				
Soil	Subsurface Soil	Entire Site	BAP EQUIVALENT (FULL DLs)	1.9E-03		7.4E-04	2.7E-03
			NAPHTHALENE				
			AROCLOR 1260	1.4E-06		6.1E-07	2.0E-06
			TCDD TEQs (FULL DLs)	1.3E-06		1.2E-07	1.4E-06
			ALUMINUM				
			ARSENIC	2.0E-04		1.9E-05	2.2E-04
			CADMIUM				
			CHROMIUM				
			COBALT				
			IRON				
			MANGANESE				
			MERCURY				
			VANADIUM				
Groundwater	Groundwater	Entire Site	BAP EQUIVALENT (FULL DL)	1.4E-05			1.4E-05
			TCDD TEQs (FULL DLs)	3.2E-05			3.2E-05
			PENTACHLOROPHENOL	5.5E-05			5.5E-05
			BENZENE	9.3E-07	1.7E-07	8.2E-08	1.2E-06
			TETRACHLOROETHYLENE	8.1E-06	9.0E-08	2.8E-06	1.1E-05
			DELTA-BHC (ALPHA-BHC)	2.2E-06		5.1E-07	2.7E-06
			ARSENIC	1.9E-04		4.3E-07	1.9E-04
			CADMIUM				
			COBALT				
			IRON				
			MANGANESE				
			Total Risk for Surface Soil				4.5E-03
			Total Risk for Subsurface Soil				2.9E-03
			Total Risk for Groundwater				3.1E-04

Total Risk Across All Media and All Exposure Routes: 4.0E-03

TABLE 9.1a. CENTRAL TENDENCY EXPOSURE (CTE)
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CONSTRUCTION WORKER
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Surface Soil	Entire Site	BAP EQUIVALENT (FULL DLs)	7.20E-08		1.9E-08	9.1E-08	BAP EQUIVALENT (FULL DLs)	NA				
			NAPHTHALENE (partic.)					NAPHTHALENE (partic.)	Body Weight (general)		7.2E-06		7.2E-06
			AROCLOR 1260	8.52E-10		2.4E-10	1.1E-09	AROCLOR 1260	Eye, immunological	1.3E-02		3.6E-03	1.7E-02
			TCDD TEQs	1.39E-08		8.3E-10	1.5E-08	TCDD TEQs	Developmental	5.6E-02		3.4E-03	6.0E-02
			ALUMINUM					ALUMINUM	CNS	6.4E-03	1.4E-01		1.5E-01
			ANTIMONY					ANTIMONY	Longevity (general)	4.5E-03			4.5E-03
			ARSENIC	5.17E-08	8.3E-09	3.1E-09	6.3E-08	ARSENIC	Skin, CVS	4.2E-03	7.8E-02	2.5E-04	8.2E-02
			BARIUM					BARIUM	Kidney	6.4E-04	1.4E-03		2.1E-03
			CADMIUM		6.4E-10		6.4E-10	CADMIUM	Kidney	3.9E-03	2.2E-02	3.1E-04	2.6E-02
			CHROMIUM		3.7E-08		3.7E-08	CHROMIUM	Fetotoxicity/GS/Bone	1.7E-03	1.9E-02		2.1E-02
			COBALT		9.1E-09		9.1E-09	COBALT	Blood	3.7E-02	1.0E-01		1.4E-01
			COPPER					COPPER	Gastrointestinal System	3.9E-03			3.9E-03
			IRON					IRON	Gastrointestinal System	6.4E-02			6.4E-02
			MANGANESE					MANGANESE	CNS	2.1E-02	1.1E+00		1.1E+00
			MERCURY					MERCURY	CNS	3.2E-04	1.8E-03		2.1E-03
			VANADIUM					VANADIUM	Kidney	3.1E-03			3.1E-03
			NAPHTHALENE (volatile)					NAPHTHALENE (volatile)	Body Weight (general)		1.3E-04		1.3E-04
Soil	Subsurface Soil	Entire Site	BAP EQUIVALENT (FULL DLs)	4.69E-08		1.2E-08	5.9E-08	BAP EQUIVALENT (FULL DLs)	NA				
			NAPHTHALENE (partic.)					NAPHTHALENE (partic.)	Body Weight (general)	3.6E-05	1.4E-05		5.0E-05
			AROCLOR 1260	3.90E-10		1.1E-10	5.0E-10	AROCLOR 1260	Eye, immunological	5.9E-03		1.7E-03	7.6E-03
			TCDD TEQs (FULL DLs)	2.33E-09		1.4E-10	2.5E-09	TCDD TEQs (FULL DLs)	Developmental	9.5E-03		5.7E-04	1.0E-02
			ALUMINUM					ALUMINUM	CNS	7.9E-03	1.8E-01		1.8E-01
			ARSENIC	5.01E-08	8.0E-09	3.0E-09	6.1E-08	ARSENIC	Skin, CVS	4.1E-03	7.5E-02	2.4E-04	8.0E-02
			CADMIUM		3.4E-10		3.4E-10	CADMIUM	Kidney	2.1E-03	1.2E-02	1.7E-04	1.4E-02
			CHROMIUM		2.8E-08		2.8E-08	CHROMIUM	Fetotoxicity/GS/Bone	1.3E-03	1.4E-02		1.5E-02
			COBALT		1.2E-08		1.2E-08	COBALT	Blood	5.0E-02	1.4E-01		1.9E-01
			IRON					IRON	Gastrointestinal System	6.5E-02			6.5E-02
			MANGANESE					MANGANESE	CNS	2.4E-02	1.2E+00		1.3E+00
			MERCURY					MERCURY	CNS	5.6E-05	3.1E-04		3.7E-04
			VANADIUM					VANADIUM	Kidney	3.6E-03			3.6E-03
			NAPHTHALENE (volatile)					NAPHTHALENE (volatile)	Body Weight (general)		2.5E-04		2.5E-04
Groundwater	Groundwater	Entire Site	BAP EQUIVALENT (FULL DL)			NA		BAP EQUIVALENT (FULL DL)	NA			NA	
			TCDD TEQs (FULL DLs)			NA		TCDD TEQs (FULL DLs)	Developmental			NA	
			PENTACHLOROPHENOL			NA		PENTACHLOROPHENOL	Liver			NA	
			BENZENE			1.1E-10	1.1E-10	BENZENE	Hematological			3.0E-04	3.0E-04
			TETRACHLOROETHYLENE			3.1E-09	3.1E-09	TETRACHLOROETHYLENE	Liver			3.5E-04	3.5E-04
			DELTA-BHC (ALPHA-BHC)			5.8E-10	5.8E-10	DELTA-BHC (ALPHA-BHC)	Liver			1.9E-04	1.9E-04
			ARSENIC			1.2E-09	1.2E-09	ARSENIC	Skin, CVS			9.8E-05	9.8E-05
			CADMIUM					CADMIUM	Kidney			9.3E-03	9.3E-03
			COBALT					COBALT	Blood			3.4E-03	3.4E-03
			IRON					IRON	Gastrointestinal System			3.3E-03	3.3E-03
			MANGANESE					MANGANESE	CNS			3.8E-01	3.8E-01

Total Risk for Surface Soil	2.2E-07
Total Risk for Subsurface Soil	1.6E-07
Total Risk for Groundwater	5.0E-09

Total HI for Surface Soil	1.7
Total HI for Subsurface Soil	1.8
Total HI for Groundwater	0.4

Total Risk Across All Media and All Exposure Routes: 2.E-07

Total HI Across All Media and All Exposure Routes: 2

Total Immune System HI =	0.02	Total Gastrointestinal HI =	0.14
Total Blood HI =	0.3	Total Kidney HI =	0.06
Total CVS HI =	0.2	Total Fetotoxicity & Devel HI =	0.11
Total Neurological (inc. CNS) HI =	3.1	Liver HI =	0.0005
Body Weight & Longevity (General)=	0.005		

TABLE 9.2a. CENTRAL TENDENCY EXPOSURE (CTE)
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - OCCUPATIONAL/MAINTENANCE WORKER
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Current/Future
Receptor Population: Occupational Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Surface Soil	Entire Site	BAP EQUIVALENT (FULL DLs)	1.43E-06		2.5E-07	1.7E-06	BAP EQUIVALENT (FULL DLs)	NA				
			AROCLOR 1260	1.70E-08		3.1E-09	2.0E-08	AROCLOR 1260	Eye, immunological	3.3E-03		6.1E-04	3.9E-03
			TCDD TEQs	2.77E-07		1.1E-08	2.9E-07	TCDD TEQs	Developmental	1.4E-02		5.7E-04	1.5E-02
			ALUMINUM					ALUMINUM	CNS	3.3E-03			3.3E-03
			ANTIMONY					ANTIMONY	Longevity (general)	1.1E-03			1.1E-03
			ARSENIC	1.03E-06		4.1E-08	1.1E-06	ARSENIC	Skin, CVS	1.8E-02		7.0E-04	1.9E-02
			BARIUM					BARIUM	Kidney	1.6E-04			1.6E-04
			CADMIUM					CADMIUM	Kidney	9.9E-04		5.2E-05	1.0E-03
			CHROMIUM					CHROMIUM	Fetotoxicity/GS/Bone	2.9E-03			2.9E-03
			COBALT					COBALT	Blood	9.4E-03			9.4E-03
			COPPER					COPPER	Gastrointestinal System	1.0E-03			1.0E-03
			IRON					IRON	Gastrointestinal System	1.6E-02			1.6E-02
			MANGANESE					MANGANESE	CNS	5.4E-03			5.4E-03
			MERCURY					MERCURY	CNS	8.1E-04	7.6E-07		8.1E-04
			VANADIUM					VANADIUM	Kidney	7.9E-04			7.9E-04
							Total Risk for Surface Soil 3.1E-06						Total HI for Surface Soil 0.08

Total Risk Across All Media and All Exposure Routes: 3.E-06

Total HI Across All Media and All Exposure Routes: 0.08

Total Immune System HI =	0.004	Total Gastrointestinal HI =	0.02
Total Blood HI =	0.009	Total Kidney HI =	0.002
Total CVS HI =	0.02	Total Fetotoxicity & Devel HI =	0.02
Total Neurological (inc. CNS) HI =	0.009	Liver HI =	
Body Weight & Longevity (General)=	0.001		

TABLE 9.3a. CENTRAL TENDENCY EXPOSURE (CTE)
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - YOUTH TRESPASSER
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Current/Future
Receptor Population: Trespasser
Receptor Age: Youth

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Surface	Entire Site	BAP EQUIVALENT (FULL DLs)	4.73E-07		1.5E-07	6.3E-07	BAP EQUIVALENT (FULL DLs)	NA				
			AROCLOR 1260	1.87E-09		6.5E-10	2.5E-09	AROCLOR 1260	Eye, immunological	3.3E-04		1.1E-04	4.4E-04
			TCDD TEQs	3.04E-08		2.3E-09	3.3E-08	TCDD TEQs	Developmental	1.4E-03		1.1E-04	1.5E-03
			ALUMINUM					ALUMINUM	CNS	3.2E-04			3.2E-04
			ANTIMONY					ANTIMONY	Longevity (general)	1.1E-04			1.1E-04
			ARSENIC	1.13E-07		8.4E-09	1.2E-07	ARSENIC	Skin, CVS	1.8E-03		1.3E-04	1.9E-03
			BARIUM					BARIUM	Kidney	1.6E-05			1.6E-05
			CADMIUM					CADMIUM	Kidney	9.8E-05		9.7E-06	1.1E-04
			CHROMIUM					CHROMIUM	Fetotoxicity/GS/Bone	2.9E-04			2.9E-04
			COBALT					COBALT	Blood	9.3E-04			9.3E-04
			COPPER					COPPER	Gastrointestinal System	9.9E-05			9.9E-05
			IRON					IRON	Gastrointestinal System	1.6E-03			1.6E-03
			MANGANESE					MANGANESE	CNS	5.3E-04			5.3E-04
			MERCURY					MERCURY	CNS	8.0E-05	2.1E-08		8.0E-05
			VANADIUM					VANADIUM	Kidney	7.9E-05			7.9E-05
						Total Risk for Surface Soil	7.8E-07					Total HI for Surface Soil	0.008

Total Risk Across All Media and All Exposure Routes: 8.E-07

Total HI Across All Media and All Exposure Routes: 0.008

Total Immune System HI =	0.0004	Total Gastrointestinal HI =	0.002
Total Blood HI =	0.0009	Total Kidney HI =	0.0002
Total CVS HI =	0.0019	Total Fetotoxicity & Devel HI =	0.0018
Total Neurological (inc. CNS) HI =	0.0009	Liver HI =	
Body Weight & Longevity (General)=	0.0001		

TABLE 9.4a. CENTRAL TENDENCY EXPOSURE (CTE)
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - FUTURE ADULT RESIDENT
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Current/Future
Receptor Population: Adult Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Surface Soil	Entire Site	BAP EQUIVALENT (FULL DLs)	1.19E-06		1.8E-07	1.4E-06	BAP EQUIVALENT (FULL DLs)	NA				
			AROCLOR 1260	1.41E-08		2.3E-09	1.6E-08	AROCLOR 1260	Eye, immunological	3.5E-03		5.6E-04	4.1E-03
			TCDD TEQs	2.30E-07		7.9E-09	2.4E-07	TCDD TEQs	Developmental	1.5E-02		5.2E-04	1.6E-02
			ALUMINUM					ALUMINUM	CNS	3.5E-03			3.5E-03
			ANTIMONY					ANTIMONY	Longevity (general)	1.2E-03			1.2E-03
			ARSENIC	8.56E-07		2.9E-08	8.9E-07	ARSENIC	Skin, CVS	1.9E-02		6.5E-04	2.0E-02
			BARIUM					BARIUM	Kidney	1.7E-04			1.7E-04
			CADMIUM					CADMIUM	Kidney	1.1E-03		4.8E-05	1.1E-03
			CHROMIUM					CHROMIUM	Fetotoxicity/GS/Bone	3.1E-03			3.1E-03
			COBALT					COBALT	Blood	1.0E-02			1.0E-02
			COPPER					COPPER	Gastrointestinal System	1.1E-03			1.1E-03
			IRON					IRON	Gastrointestinal System	1.8E-02			1.8E-02
			MANGANESE					MANGANESE	CNS	5.7E-03			5.7E-03
			MERCURY					MERCURY	CNS	8.7E-04	9.0E-06		8.8E-04
			VANADIUM					VANADIUM	Kidney	8.5E-04			8.5E-04
Soil	Subsurface Soil	Entire Site	BAP EQUIVALENT (FULL DLs)	7.76E-07		1.1E-07	8.9E-07	BAP EQUIVALENT (FULL DLs)	NA				
			NAPHTHALENE					NAPHTHALENE	Body Weight (general)	9.9E-06			9.9E-06
			AROCLOR 1260	6.45E-09		1.0E-09	7.5E-09	AROCLOR 1260	Eye, immunological	1.6E-03		2.6E-04	1.9E-03
			TCDD TEQs (FULL DLs)	3.86E-08		1.3E-09	4.0E-08	TCDD TEQs (FULL DLs)	Developmental	2.6E-03		8.8E-05	2.7E-03
			ALUMINUM					ALUMINUM	CNS	4.3E-03			4.3E-03
			ARSENIC	8.28E-07		2.8E-08	8.6E-07	ARSENIC	Skin, CVS	1.8E-02		6.3E-04	1.9E-02
			CADMIUM					CADMIUM	Kidney	5.7E-04		2.6E-05	5.9E-04
			CHROMIUM					CHROMIUM	Fetotoxicity/GS/Bone	2.3E-03			2.3E-03
			COBALT					COBALT	Blood	1.4E-02			1.4E-02
			IRON					IRON	Gastrointestinal System	1.8E-02			1.8E-02
			MANGANESE					MANGANESE	CNS	6.4E-03			6.4E-03
			MERCURY					MERCURY	CNS	1.5E-04			1.5E-04
			VANADIUM					VANADIUM	Kidney	9.7E-04			9.7E-04
Groundwater	Groundwater	Entire Site	BAP EQUIVALENT (FULL DL)	5.8E-07		NA	5.8E-07	BAP EQUIVALENT (FULL DL)	NA	NA		NA	
			TCDD TEQs (FULL DLs)	2.4E-06		NA	2.4E-06	TCDD TEQs (FULL DLs)	Developmental	1.6E-01		NA	1.6E-01
			PENTACHLOROPHENOL	4.0E-06		NA	4.0E-06	PENTACHLOROPHENOL	Liver	2.0E-02		NA	2.0E-02
			BENZENE	6.8E-08	8.6E-09	9.7E-09	8.6E-08	BENZENE	Hematological	3.1E-03	3.7E-04	4.4E-04	3.9E-03
			TETRACHLOROETHYLENE	5.9E-07	4.4E-09	3.3E-07	9.2E-07	TETRACHLOROETHYLENE	Liver	1.1E-03	2.8E-05	6.1E-04	1.7E-03
			DELTA-BHC (ALPHA-BHC)	1.6E-07		6.1E-08	2.2E-07	DELTA-BHC (ALPHA-BHC)	Liver	8.5E-04		3.2E-04	1.2E-03
			ARSENIC	1.4E-05		4.5E-08	1.4E-05	ARSENIC	Skin, CVS	1.9E-02		6.0E-05	1.9E-02
			CADMIUM					CADMIUM	Kidney	8.8E-02		5.7E-03	9.4E-02
			COBALT					COBALT	Blood	6.5E-01		2.1E-03	6.6E-01
			IRON					IRON	Gastrointestinal System	6.2E-01		2.0E-03	6.2E-01
			MANGANESE					MANGANESE	CNS	2.9E+00		2.3E-01	3.1E+00
						Total Risk for Surface Soil	2.5E-06					Total HI for Surface Soil	0.08
						Total Risk for Subsurface Soil	1.8E-06					Total HI for Subsurface Soil	0.08
						Total Risk for Groundwater	2.2E-05					Total HI for Groundwater	4.7

Total Risk Across All Media and All Exposure Routes: 2.E-05

Total HI Across All Media and All Exposure Routes: 5

Total Immune System HI =	0.006	Total Gastrointestinal HI =	0.66
Total Blood HI =	0.7	Total Kidney HI =	0.098
Total CVS HI =	0.06	Total Fetotoxicity & Devel HI =	0.18
Total Neurological (inc. CNS) HI =	3.1	Liver HI =	0.023
Body Weight & Longevity (General)=	0.008		

TABLE 9.5a. CENTRAL TENDENCY EXPOSURE (CTE)
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - FUTURE CHILD RESIDENT
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Current/Future
Receptor Population: Child Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Surface Soil	Entire Site	BAP EQUIVALENT (FULL DLs)	3.18E-06		4.6E-07	3.6E-06	BAP EQUIVALENT (FULL DLs)	NA				
			AROCLOR 1260	3.76E-08		5.9E-09	4.4E-08	AROCLOR 1260	Eye, immunological	3.3E-02		5.2E-03	3.8E-02
			TCDD TEQs	6.14E-07		2.1E-08	6.3E-07	TCDD TEQs	Developmental	1.4E-01		4.8E-03	1.5E-01
			ALUMINUM					ALUMINUM	CNS	3.3E-02			3.3E-02
			ANTIMONY					ANTIMONY	Longevity (general)	1.1E-02			1.1E-02
			ARSENIC	2.28E-06		7.7E-08	2.4E-06	ARSENIC	Skin, CVS	1.8E-01		6.0E-03	1.8E-01
			BARIUM					BARIUM	Kidney	1.6E-03			1.6E-03
			CADMIUM					CADMIUM	Kidney	9.8E-03		4.4E-04	1.0E-02
			CHROMIUM					CHROMIUM	Fetotoxicity/GS/Bone	2.9E-02			2.9E-02
			COBALT					COBALT	Blood	9.4E-02			9.4E-02
			COPPER					COPPER	Gastrointestinal System	1.0E-02			1.0E-02
			IRON					IRON	Gastrointestinal System	1.6E-01			1.6E-01
			MANGANESE					MANGANESE	CNS	5.4E-02			5.4E-02
			MERCURY					MERCURY	CNS	8.1E-03	9.0E-06		8.1E-03
			VANADIUM					VANADIUM	Kidney	7.9E-03			7.9E-03
Soil	Subsurface Soil	Entire Site	BAP EQUIVALENT (FULL DLs)	2.07E-06		3.0E-07	2.4E-06	BAP EQUIVALENT (FULL DLs)	NA				
			AROCLOR 1260	1.72E-08		2.7E-09	2.0E-08	AROCLOR 1260	Eye, immunological	1.5E-02		2.4E-03	1.7E-02
			TCDD TEQs (FULL DLs)	1.03E-07		3.5E-09	1.1E-07	TCDD TEQs (FULL DLs)	Developmental	2.4E-02		8.1E-04	2.5E-02
			ALUMINUM					ALUMINUM	CNS	4.0E-02			4.0E-02
			ARSENIC	2.21E-06		7.4E-08	2.3E-06	ARSENIC	Skin, CVS	1.7E-01		5.8E-03	1.8E-01
			CADMIUM					CADMIUM	Kidney	5.3E-03		2.4E-04	5.5E-03
			CHROMIUM					CHROMIUM	Fetotoxicity/GS/Bone	2.2E-02			2.2E-02
			COBALT					COBALT	Blood	1.3E-01			1.3E-01
			IRON					IRON	Gastrointestinal System	1.6E-01			1.6E-01
			MANGANESE					MANGANESE	CNS	6.0E-02			6.0E-02
			MERCURY					MERCURY	CNS	1.4E-03			1.4E-03
			VANADIUM					VANADIUM	Kidney	9.0E-03			9.0E-03
Groundwater	Groundwater	Entire Site	BAP EQUIVALENT (FULL DL)	3.6E-07		NA		BAP EQUIVALENT (FULL DL)	NA	NA		NA	
			TCDD TEQs (FULL DLs)	1.5E-06		NA		TCDD TEQs (FULL DLs)	Developmental	3.5E-01		NA	3.5E-01
			PENTACHLOROPHENOL	2.5E-06		NA		PENTACHLOROPHENOL	Liver	4.4E-02		NA	4.4E-02
			BENZENE	4.3E-08	1.7E-08	4.8E-09	6.4E-08	BENZENE	Hematological	6.8E-03	2.6E-03	7.6E-04	1.0E-02
			TETRACHLOROETHYLENE	3.7E-07	8.8E-09	1.6E-07	5.4E-07	TETRACHLOROETHYLENE	Liver	2.4E-03	1.9E-04	1.0E-03	3.6E-03
			DELTA-BHC (ALPHA-BHC)	1.0E-07		3.0E-08	1.3E-07	DELTA-BHC (ALPHA-BHC)	Liver	1.9E-03		5.5E-04	2.4E-03
			ARSENIC	8.8E-06		2.2E-08	8.8E-06	ARSENIC	Skin, CVS	4.1E-02		1.0E-04	4.1E-02
			CADMIUM					CADMIUM	Kidney	1.9E-01		9.7E-03	2.0E-01
			COBALT					COBALT	Blood	1.4E+00		3.6E-03	1.4E+00
			IRON					IRON	Gastrointestinal System	1.4E+00		3.4E-03	1.4E+00
			MANGANESE					MANGANESE	CNS	6.3E+00		4.0E-01	6.7E+00
						Total Risk for Surface Soil	6.7E-06					Total HI for Surface Soil	0.8
						Total Risk for Subsurface Soil	4.8E-06					Total HI for Subsurface Soil	0.6
						Total Risk for Groundwater	9.5E-06					Total HI for Groundwater	10.2

Total Risk Across All Media and All Exposure Routes: 2.E-05

Total HI Across All Media and All Exposure Routes: 11

Total Immune System HI =	0.06	Total Gastrointestinal HI =	1.71
Total Blood HI =	1.7	Total Kidney HI =	0.24
Total CVS HI =	0.4	Total Fetotoxicity & Devel HI =	0.57
Total Neurological (inc. CNS) HI =	6.9	Liver HI =	0.05
Body Weight & Longevity (General)=	0.01		

TABLE 9.6a. CENTRAL TENDENCY EXPOSURE (CTE)
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - TOTAL RESIDENTIAL ILCRS
SITE 21 - BUILDING 1517
NAVAL STATION GREAT LAKES, ILLINOIS

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child + Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil	Surface Soil	Entire Site	BAP EQUIVALENT (FULL DLs)	4.4E-06		6.4E-07	5.0E-06
			NAPHTHALENE (partic.)				
			AROCLOR 1260	5.2E-08		8.1E-09	6.0E-08
			TCDD TEQs	8.4E-07		2.8E-08	8.7E-07
			ALUMINUM				
			ANTIMONY				
			ARSENIC	3.1E-06		1.1E-07	3.2E-06
			BARIUM				
			CADMIUM				
			CHROMIUM				
			COBALT				
			COPPER				
			IRON				
			MANGANESE				
			MERCURY				
			VANADIUM				
			NAPHTHALENE (volatile)				
Soil	Subsurface Soil	Entire Site	BAP EQUIVALENT (FULL DLs)	2.8E-06		4.2E-07	3.3E-06
			NAPHTHALENE				
			AROCLOR 1260	2.4E-08		3.7E-09	2.7E-08
			TCDD TEQs (FULL DLs)	1.4E-07		4.8E-09	1.5E-07
			ALUMINUM				
			ARSENIC	3.0E-06		1.0E-07	3.1E-06
			CADMIUM				
			CHROMIUM				
			COBALT				
			IRON				
			MANGANESE				
			MERCURY				
			VANADIUM				
Groundwater	Groundwater	Entire Site	BAP EQUIVALENT (FULL DL)	9.4E-07			9.4E-07
			TCDD TEQs (FULL DLs)	3.9E-06			3.9E-06
			PENTACHLOROPHENOL	6.5E-06			6.5E-06
			BENZENE	1.1E-07	2.6E-08	1.4E-08	1.5E-07
			TETRACHLOROETHYLENE	9.6E-07	1.3E-08	4.9E-07	1.5E-06
			DELTA-BHC (ALPHA-BHC)	2.6E-07		9.0E-08	3.5E-07
			ARSENIC	2.3E-05		6.7E-08	2.3E-05
			CADMIUM				
			COBALT				
			IRON				
			MANGANESE				
			Total Risk for Surface Soil				9.2E-06
			Total Risk for Subsurface Soil				6.6E-06
			Total Risk for Groundwater				3.6E-05

Total Risk Across All Media and All Exposure Routes: 4.4E-05

DERMAL INORGANIC SAMPLE CALCULATIONS
EXAMPLE CALCULATIONS

CLIENT: NAVAL STATION GREAT LAKES, ILLINOIS	**JOB NUMBER:** 0148
SUBJECT: CALCULATION OF INTAKE/RISK FROM DERMAL CONTACT WITH GROUNDWATER ADULT RESIDENT	
BASED ON: USEPA, DEC. 1989, 2001	

PURPOSE: To estimate intake, carcinogenic and noncarcinogenic risks from dermal contact with groundwater by an adult resident.

EQUATION:

$$DAD = \frac{DAevent \times EV \times ED \times EF \times A}{BW \times AT}$$

Where:

DAD	=	dermally absorbed dose (mg/kg/day)
DAevent	=	absorbed does per event (mg/cm^2/event)
EV	=	event frequency (events/day)
EF	=	exposure frequency (days/year)
ED	=	exposure duration (years)
A	=	skin surface available for contact (cm^2)
BW	=	body weight (kg)
AT	=	averaging time (days)
CSFd	=	dermal carcinogenic slope factor ((mg/kg/day)$^{-1}$)
RfDd	=	dermal noncarcinogenic reference dose (mg/kg/day)

RISKS:

ICLR (Carcinogens) = DAD (mg/kg/day) x CSFd (mg/kg/day)$^{-1}$
HQ (Noncarcinogens) = DAD (mg/kg/day) / RFDd (mg/kg/day)

EQUATIONS for DAevent:

For Inorganics:

DAevent = Kp x Cw x CF x tevent

For Organics:

$$\text{If } tevent \le t^*, \text{ then: } DAevent = 2 \times FA \times Kp \times Cw \times CF \times \sqrt{\frac{6 \times tau \times tevent}{\pi}}$$

$$\text{If } tevent > t^*, \text{ then: } DAevent = FA \times Kp \times Cw \times CF \times \left[\frac{tevent}{1+B} + 2 \times tau \times \left(\frac{1+3B+3B^2}{(1+B)^2}\right)\right]$$

CLIENT: NAVAL STATION GREAT LAKES, ILLINOIS	JOB NUMBER: 0148
SUBJECT: CALCULATION OF INTAKE/RISK FROM DERMAL CONTACT WITH GROUNDWATER ADULT RESIDENT	
BASED ON: USEPA, DEC. 1989, 2001	

Where:

Kp	=	permeability coefficient from water (cm/hr)
Cgw	=	concentration of chemical in groundwater (mg/L)
tevent	=	duration of event (hr/event)
CF	=	conversion factor (0.001 L/cm^3)

EXAMPLE CALCULATION OF DAevent

ASSUMPTIONS:

Cgw	=	0.0033	mg/L	Chemical: Arsenic
Kp	=	1.00E-03	cm/hr	
tevent	=	0.33	hr/event	
CF	=	0.001	L/cm^3	

DAevent = 0.001 cm/hr x 0.0033 mg/L x 0.001 L/cm3

DAevent = 1.09E-09 mg/cm2-event

RISK CALCULATIONS

ASSUMPTIONS:

A	=	18000	cm^2/day
EV	=	1	event/day
ED	=	24	years
EF	=	350	days/year
BW	=	70	kg
ATc	=	25550	days
ATnc	=	8760	days
CSFd	=	1.5E+00	$(mg/kg/day)^{-1}$
RfDd	=	3.0E-04	(mg/kg/day)

CLIENT: NAVAL STATION GREAT LAKES, ILLINOIS	JOB NUMBER: 0148
SUBJECT: CALCULATION OF INTAKE/RISK FROM DERMAL CONTACT WITH GROUNDWATER ADULT RESIDENT	
BASED ON: USEPA, DEC. 1989, 2001	

EXAMPLE CARCINOGENIC CALCULATION

$$DADc = \frac{1.09E\text{-}09 mg/cm2\text{-}event \times 1\ event/day \times 24\ years \times 350\ days/year \times 18000\ cm2/day}{70\ kg \times 25550\ days}$$

DADc = 9.21E-08 mg/kg/day

ICLR = Not applicable, No CSF available.

EXAMPLE NONCARCINOGENIC CALCULATION

$$DADnc = \frac{1.09E\text{-}09 mg/cm2\text{-}event \times 1\ event/day \times 24\ years \times 350\ days/year \times 18000\ cm2/day}{70\ kg \times 8760\ days}$$

DADnc = 2.69E-07 mg/kg/day

HQ = 2.69E-07 mg/kg/day / 3.00E-04 (mg/kg/day) = Hazard Quotient

HQ = 0.0009

Methods for Air Modeling: PEF for On-Site Air Concentrations

The PEF for estimating on-Site air concentrations from wind-generation of particulates was adopted from the U.S. EPA's *Soil Screening Guidance: Technical Background Document* (U.S. EPA, 1996). The particulate emission factor relates the concentration of contaminant in soil with the concentration of fugitive dust particles in the air due to wind erosion. This factor is conservative as it is based on an "unlimited reservoir" model and does not assume any depletion of constituents in the soil.

The PEF is calculated according to the following equation:

$$\text{PEF } (m^3/kg) = Q/C \times \frac{3600 \text{ s/h}}{(0.036 \times (1-V) \times (U_m/U_t)^3 \times F(x))}$$

Where:

Q/C	=	inverse of the mean concentration at center of square source (g/m^2-s per kg/m^3)
V	=	fraction of vegetative cover (unitless) (conservatively assumed: 0.5)
Um	=	mean annual windspeed (default U.S. EPA, 1996 – 4.69 m/s)
Ut	=	equivalent threshold value of windspeed at 7 m (default U.S. EPA, 1996 –11.32 m/s)
F(x)	=	function dependent on Um/Ut derived using Cowherd et al. (default U.S. EPA, 1996 – 0.194)

The Q/C term represents the dispersion of the particulates into the atmosphere. In U.S. EPA validation of the model, calculated Q/C values have been found to approximate closely true conditions for both on-Site and near-field receptors. This term is dependent on the site's size and meteorological conditions. However, for the purposes of this BHHRA, the Q/C value of 90.5 g/m^2-s per kg/m^3, which is based on Zone VII – average of Q/C for Chicago and Cleveland assuming ½ acre exposed area, was selected because these were the closest cities listed (Part 2, Table 3 of Technical Guidance Manual – U.S. EPA, 1996).

An on-Site wind-generated PEF of 1.36×10^9 m^3/kg was obtained using the default values of many of the criteria (as specified in the guidance and noted above) and including the conservative assumption of fraction vegetative cover of 0.5. The PEF was used to calculate air concentrations by dividing surface soil EPCs by the PEF. Resulting air concentrations are presented in the Risk Characterization tables found in Appendix D.

CLIENT:	JOB NUMBER:
NAVSTA, GREAT LAKES, ILLINOIS	0148

SUBJECT:
CALCULATION OF PARTICUALATE EMISSION FACTOR FOR CONSTRUCTION WORKERS

BASED ON:
Supplemental Guidance for Developing Soil Screening Levels for Superfund Sites (USEPA, Dec. 2002)

Equation 5-5
Derivation of the Particulate Emission Factor
Construction Scenario - Construction Worker

$$PEF_{sc} = Q/C_{sr} \times \frac{1}{F_D} \times \left[\frac{T \times A_R}{556 \times \left(\frac{W}{3}\right)^{0.4} \times \frac{(365d/yr - p)}{365d/yr} \times VKT} \right]$$

Parameter/Definition (units)	Default
PEF_{sc}/subchronic road particulate emission factor (m^3/kg)	site-specific
Q/C_{sr}/ inverse of 1-h average air concentration along a straight road segment bisecting a 0.5-acre square site (g/m^2-s per kg/m^3)	23.02
F_D/dispersion correction factor (unitless)	0.185 (Appendix E)
T/total time over which construction occurs (s)	site-specific
A_R/surface area of contaminated road segment (m^2) L_R/length of road segment (ft) W_R/width of road segment (ft)	274.213 ($A_R = L_R \times W_R \times 0.092903 m^2/ft^2$)
W/mean vehicle weight (tons)	site-specific
p/number of days with at least 0.01 inches of precipitation (days/year) (see Figure 5-2)	site-specific
• VKT/sum of fleet vehicle kilometers traveled during the exposure duration (km)	site-specific

Calculation of PEF for Construction Workers

Q/C	23.02	(g/m2-s per kg/m3)	
Fd	0.185	dispersion correction factor (unitless)	
T	8.64E+05	sec	3600 sec/hr x 8hr/day x 30days/yr
Area (A)	274.213	m^2	
W	8	tons	
p	110	day/year	
VKT	40.5	km	

PEF = 1.27E+06 m^3/kg

	A	B	C	D	E	F	G	H	I	J	K	L
1	Example ProUCL output											
2				General UCL Statistics for Full Data Sets								
3			User Selected Options									
4			From File	WorkSheet.wst								
5			Full Precision	OFF								
6			Confidence Coefficient	95%								
7			Number of Bootstrap Operations	2000								
8												
9												
10	Mn SS Site 21											
11												
12	General Statistics											
13			Number of Valid Observations	22			Number of Distinct Observations	22				
14												
15	Raw Statistics						Log-transformed Statistics					
16			Minimum	173			Minimum of Log Data	5.153				
17			Maximum	2420			Maximum of Log Data	7.792				
18			Mean	588.6			Mean of log Data	6.142				
19			Median	460			SD of log Data	0.665				
20			SD	500.9								
21			Coefficient of Variation	0.851								
22			Skewness	2.6								
23												
24	Relevant UCL Statistics											
25	Normal Distribution Test						Lognormal Distribution Test					
26			Shapiro Wilk Test Statistic	0.719			Shapiro Wilk Test Statistic	0.965				
27			Shapiro Wilk Critical Value	0.911			Shapiro Wilk Critical Value	0.911				
28	Data not Normal at 5% Significance Level						Data appear Lognormal at 5% Significance Level					
29												
30	Assuming Normal Distribution						Assuming Lognormal Distribution					
31			95% Student's-t UCL	772.4			95% H-UCL	793.9				
32	95% UCLs (Adjusted for Skewness)						95% Chebyshev (MVUE) UCL	950.1				
33			95% Adjusted-CLT UCL (Chen-1995)	827.5			97.5% Chebyshev (MVUE) UCL	1113				
34			95% Modified-t UCL (Johnson-1978)	782.3			99% Chebyshev (MVUE) UCL	1434				
35												
36	Gamma Distribution Test						Data Distribution					
37			k star (bias corrected)	1.994			Data appear Gamma Distributed at 5% Significance Level					
38			Theta Star	295.1								
39			MLE of Mean	588.6								
40			MLE of Standard Deviation	416.8								
41			nu star	87.76								
42			Approximate Chi Square Value (.05)	67.16			Nonparametric Statistics					
43			Adjusted Level of Significance	0.0386			95% CLT UCL	764.3				
44			Adjusted Chi Square Value	65.82			95% Jackknife UCL	772.4				
45							95% Standard Bootstrap UCL	763.1				
46			Anderson-Darling Test Statistic	0.567			95% Bootstrap-t UCL	909.6				
47			Anderson-Darling 5% Critical Value	0.754			95% Hall's Bootstrap UCL	1511				
48			Kolmogorov-Smirnov Test Statistic	0.139			95% Percentile Bootstrap UCL	768.8				
49			Kolmogorov-Smirnov 5% Critical Value	0.188			95% BCA Bootstrap UCL	842				
50	Data appear Gamma Distributed at 5% Significance Level						95% Chebyshev(Mean, Sd) UCL	1054				

	A–E	F	G–K	L
51			97.5% Chebyshev(Mean, Sd) UCL	1256
52	Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	1651
53	95% Approximate Gamma UCL	769.2		
54	95% Adjusted Gamma UCL	784.9		
55				
56	Potential UCL to Use		Use 95% Approximate Gamma UCL	769.2
57				
58	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.			
59	These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)			
60	and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.			
61				
62				
63	Mn SS Site 21 wo max			
64				
65	General Statistics			
66	Number of Valid Observations	21	Number of Distinct Observations	21
67				
68	Raw Statistics		Log-transformed Statistics	
69	Minimum	173	Minimum of Log Data	5.153
70	Maximum	1250	Maximum of Log Data	7.131
71	Mean	501.4	Mean of log Data	6.064
72	Median	456	SD of log Data	0.567
73	SD	296.3		
74	Coefficient of Variation	0.591		
75	Skewness	1.209		
76				
77	Relevant UCL Statistics			
78	Normal Distribution Test		Lognormal Distribution Test	
79	Shapiro Wilk Test Statistic	0.883	Shapiro Wilk Test Statistic	0.973
80	Shapiro Wilk Critical Value	0.908	Shapiro Wilk Critical Value	0.908
81	Data not Normal at 5% Significance Level		Data appear Lognormal at 5% Significance Level	
82				
83	Assuming Normal Distribution		Assuming Lognormal Distribution	
84	95% Student's-t UCL	612.9	95% H-UCL	654.9
85	95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	783.2
86	95% Adjusted-CLT UCL (Chen-1995)	626	97.5% Chebyshev (MVUE) UCL	905.6
87	95% Modified-t UCL (Johnson-1978)	615.8	99% Chebyshev (MVUE) UCL	1146
88				
89	Gamma Distribution Test		Data Distribution	
90	k star (bias corrected)	2.952	Data appear Gamma Distributed at 5% Significance Level	
91	Theta Star	169.8		
92	MLE of Mean	501.4		
93	MLE of Standard Deviation	291.8		
94	nu star	124		
95	Approximate Chi Square Value (.05)	99.28	Nonparametric Statistics	
96	Adjusted Level of Significance	0.0383	95% CLT UCL	607.8
97	Adjusted Chi Square Value	97.58	95% Jackknife UCL	612.9
98			95% Standard Bootstrap UCL	604.4
99	Anderson-Darling Test Statistic	0.287	95% Bootstrap-t UCL	635.9
100	Anderson-Darling 5% Critical Value	0.749	95% Hall's Bootstrap UCL	635.1

	A	B	C	D	E	F	G	H	I	J	K	L
101				Kolmogorov-Smirnov Test Statistic		0.129				95% Percentile Bootstrap UCL		610
102				Kolmogorov-Smirnov 5% Critical Value		0.191				95% BCA Bootstrap UCL		619
103				**Data appear Gamma Distributed at 5% Significance Level**						95% Chebyshev(Mean, Sd) UCL		783.2
104										97.5% Chebyshev(Mean, Sd) UCL		905.2
105				**Assuming Gamma Distribution**						99% Chebyshev(Mean, Sd) UCL		1145
106				95% Approximate Gamma UCL		626.3						
107				95% Adjusted Gamma UCL		637.2						
108												
109				**Potential UCL to Use**						Use 95% Approximate Gamma UCL		626.3
110												
111				**Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.**								
112				**These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)**								
113				**and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.**								

APPENDIX H

STATISTICAL SUPPORTING DOCUMENTATION

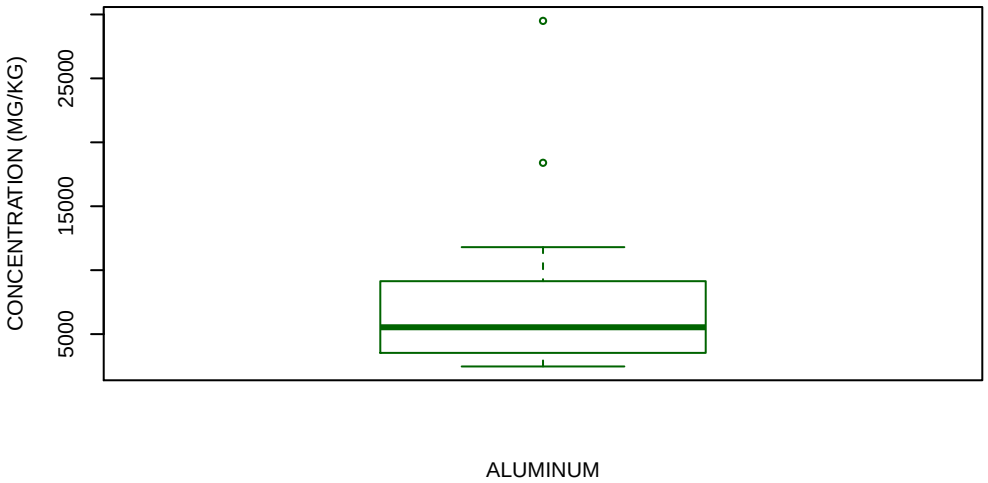
For inorganic chemical with average concentrations less than the Illinois background values a statistical evaluation was conducted to determine if on average the site concentrations were within background. The statistical evaluation consisted of a graphical component (boxplots, normal probability plots, and histograms) and a one sample hypothesis test comparing the mean/median concentration at Site 21 to the background concentration. For the one sample hypothesis test the Wilcoxon Signed Rank test was used because the Shapiro Wilks Normality Test determined that none of the data follow a normal distribution. A five percent significance level was used for all statistical tests. The null hypothesis for the Wilcoxon Signed Rank test assumed that the median site concentration was within background (less than or equal to background) while the alternative hypothesis assumed that site concentrations were greater than background. Based on the Wilcoxon Signed Rank Test only the median concentration of iron is statistically greater than background.

PARAMETER	SHAPIRO WILK P-VALUE	SHAPIRO WILKS CONCLUSION
ALUMINUM	2.32E-22	Not Normal
ANTIMONY	2.32E-22	Not Normal
ARSENIC	2.32E-22	Not Normal
BARIUM	2.32E-22	Not Normal
COBALT	2.32E-22	Not Normal
IRON	2.32E-22	Not Normal
MANGANESE	2.32E-22	Not Normal
VANADIUM	2.32E-22	Not Normal

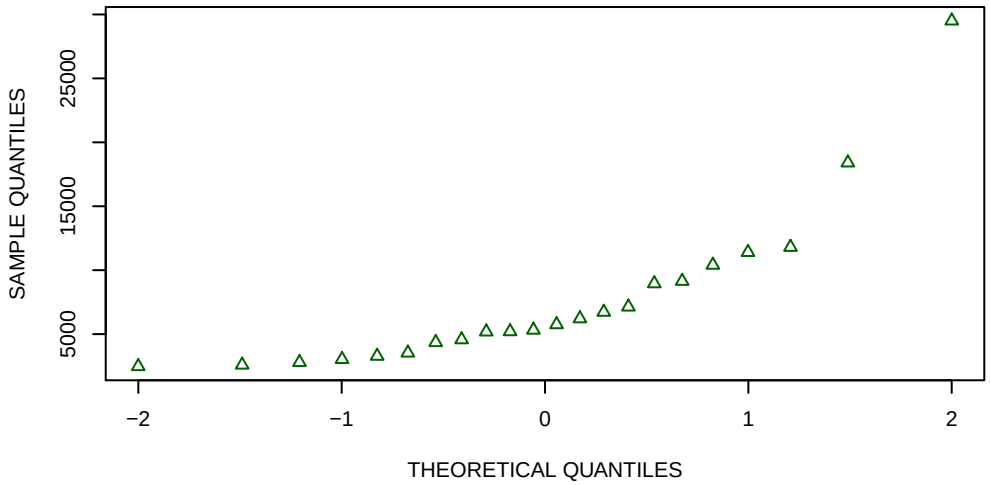
WILCOXON SIGN RANK TEST	WILCOXON SIGN RANK CONCLUSION
0.9914	Within Background
1	Within Background
0.9836	Within Background
0.9982	Within Background
0.9989	Within Background
0.0002563	Not within Background
0.9356	Within Background
1	Within Background

ALUMINUM SURFACESOIL GRAPHICAL DISPLAYS
SITE 21 − BUILDING 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

BOXPLOT



NORMAL PROBABILITY PLOT



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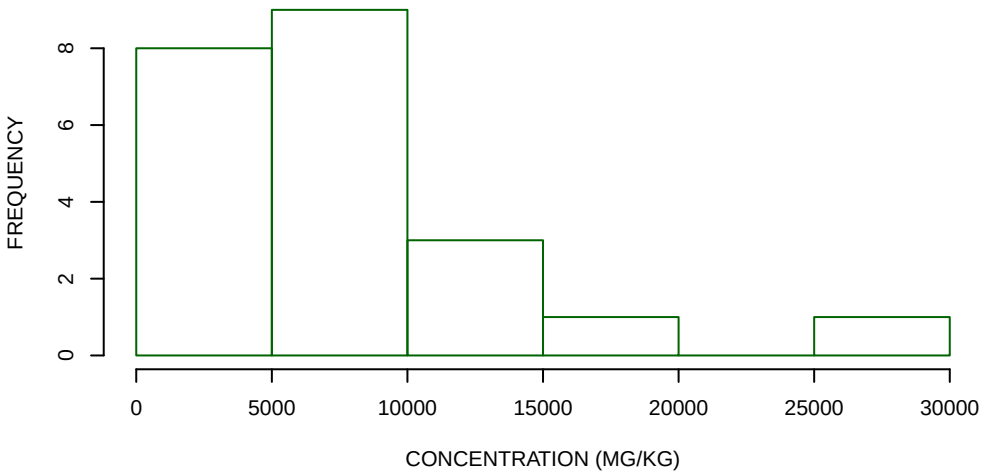
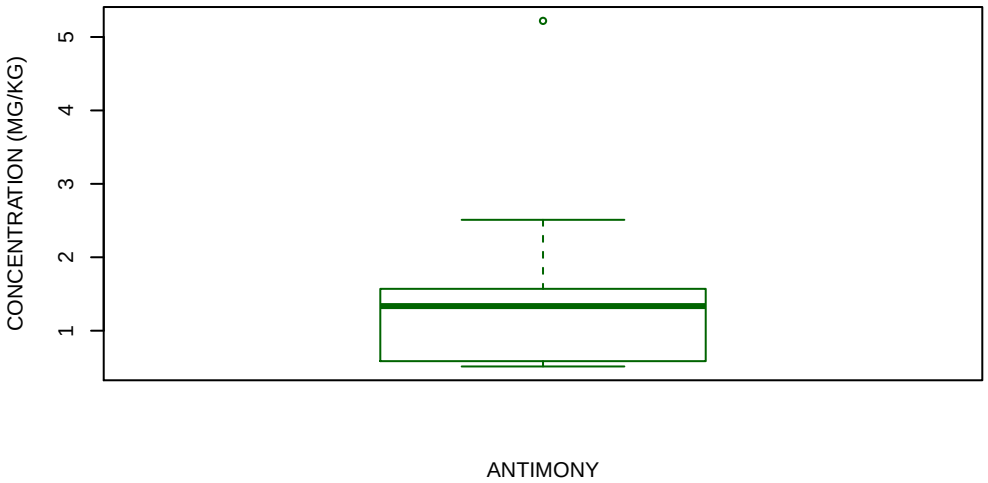


ANTIMONY SURFACESOIL GRAPHICAL DISPLAYS
SITE 21 − BUILDING 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

BOXPLOT



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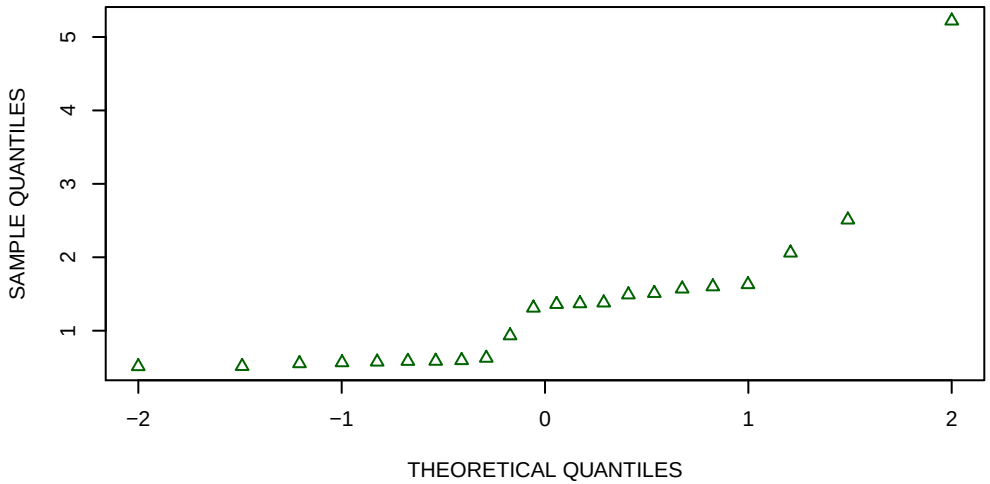

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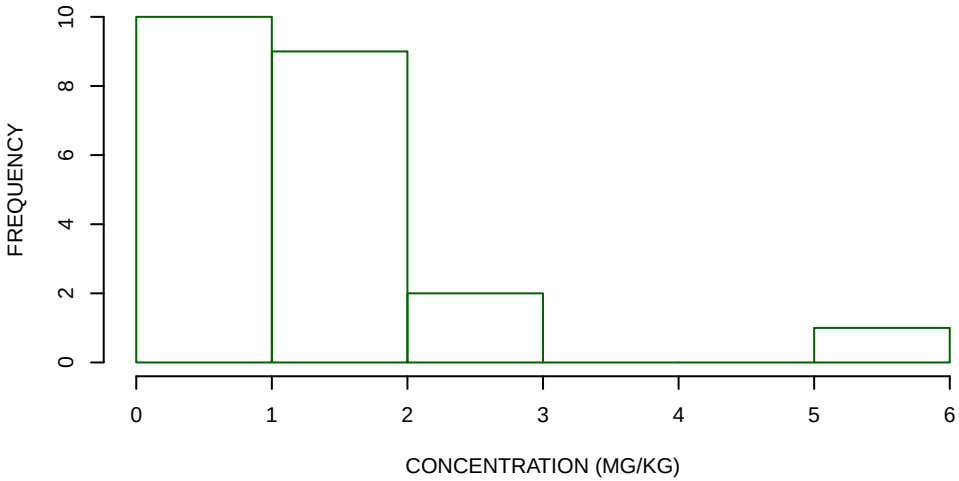
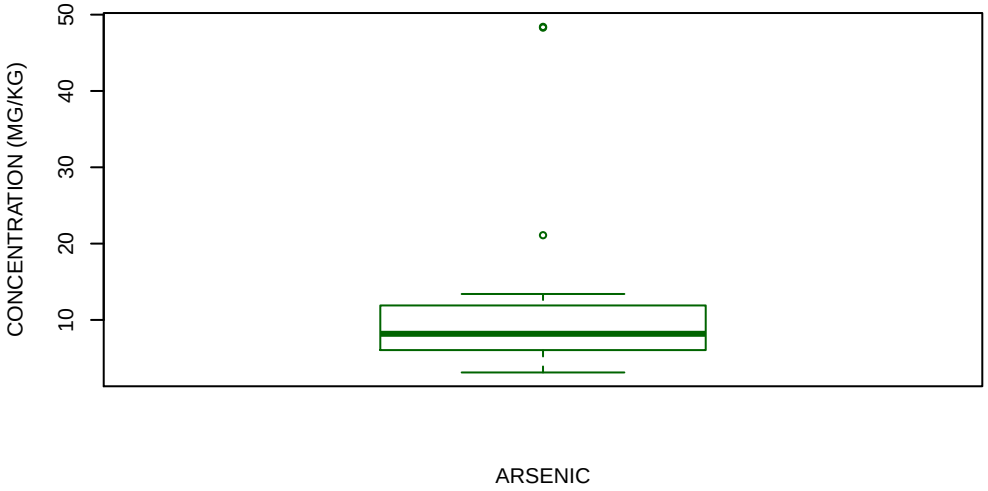


ARSENIC SURFACESOIL GRAPHICAL DISPLAYS
SITE 21 − BUILDING 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

BOXPLOT



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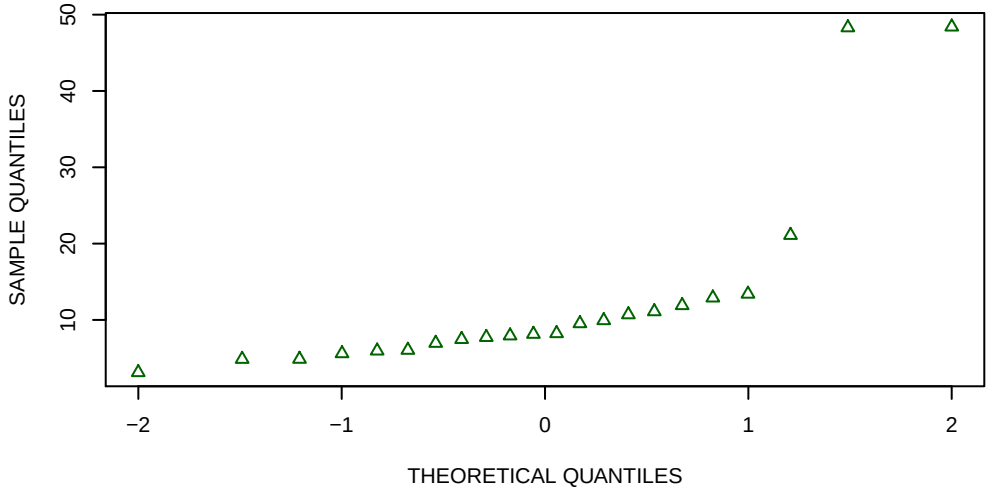

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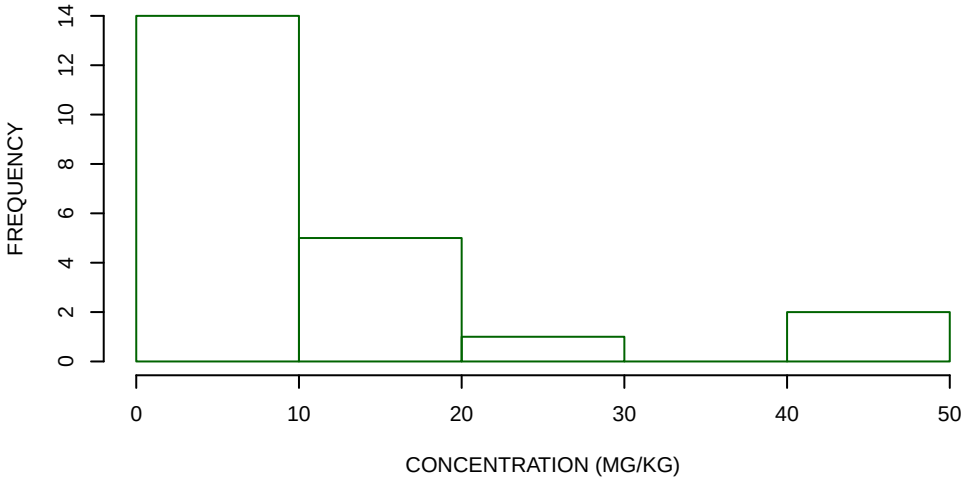
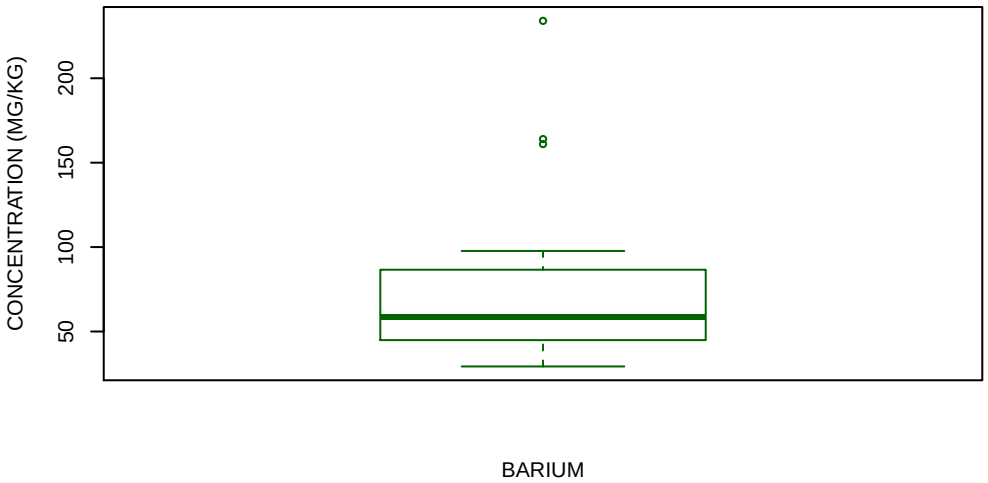


BARIUM SURFACESOIL GRAPHICAL DISPLAYS
SITE 21 − BUILDING 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

BOXPLOT



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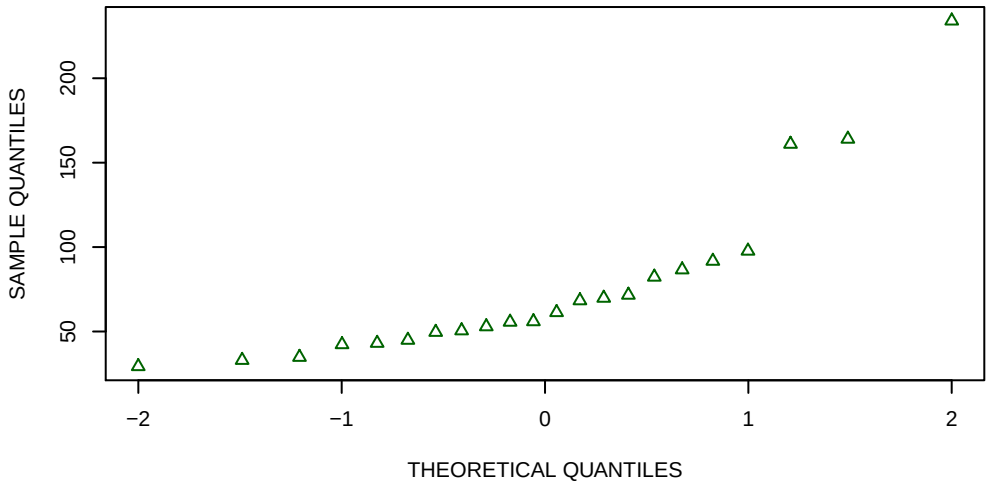

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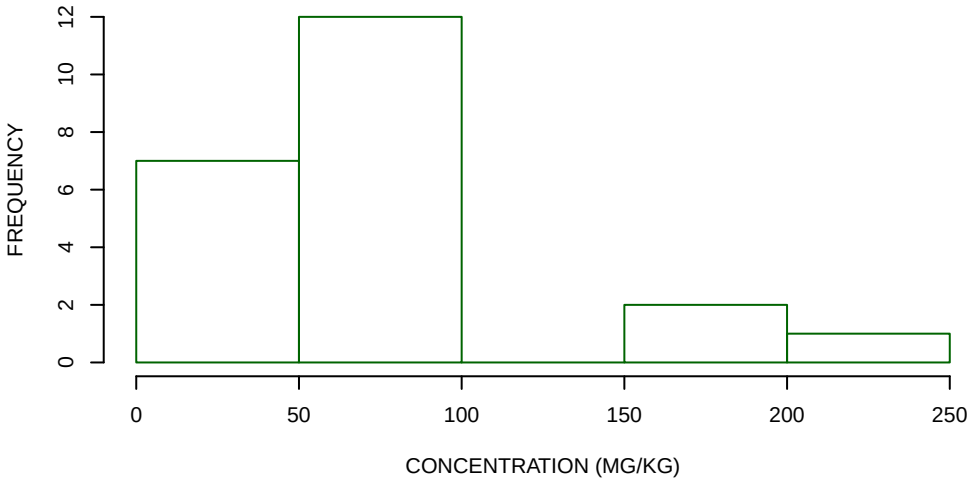
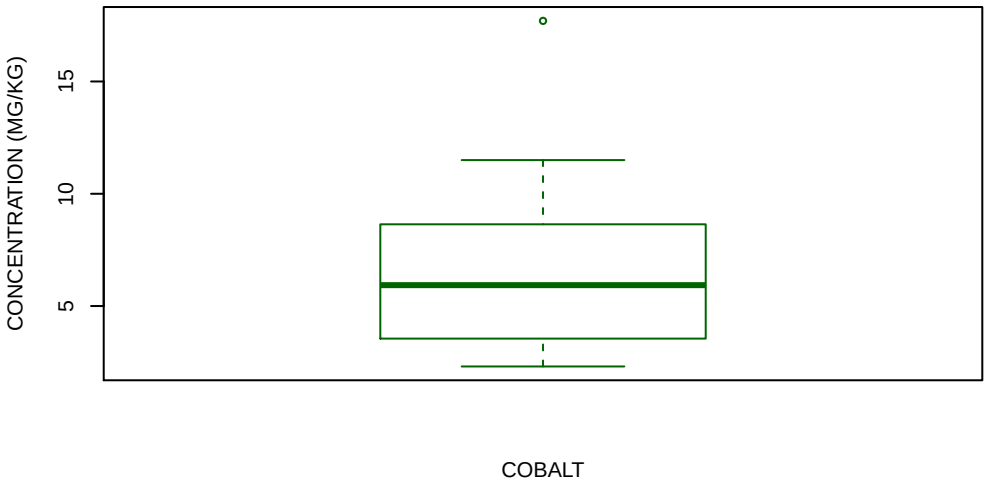


COBALT SURFACESOIL GRAPHICAL DISPLAYS
SITE 21 − BUILDING 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

BOXPLOT



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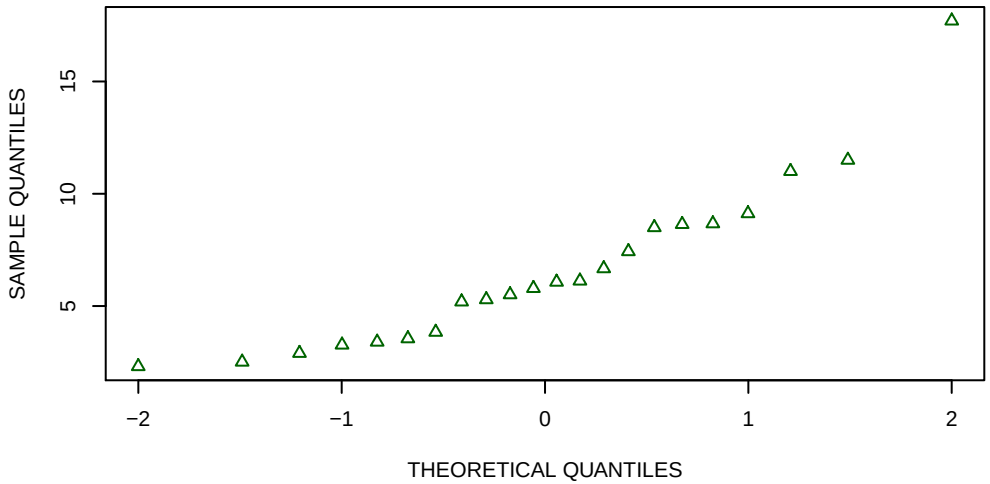

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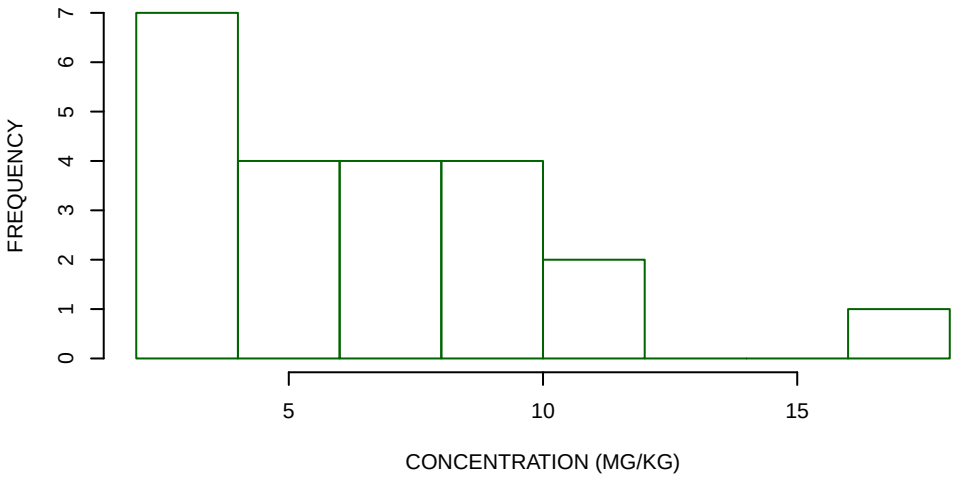
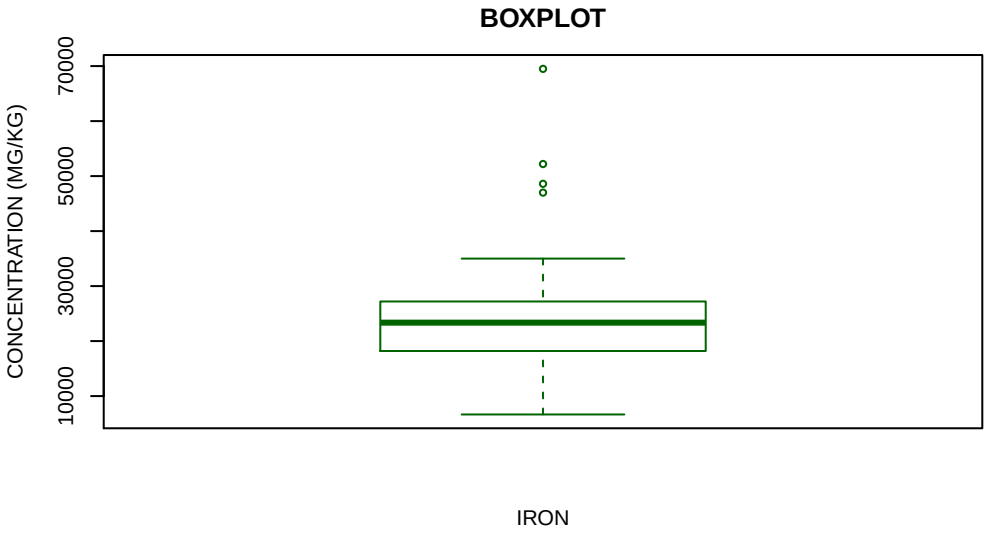
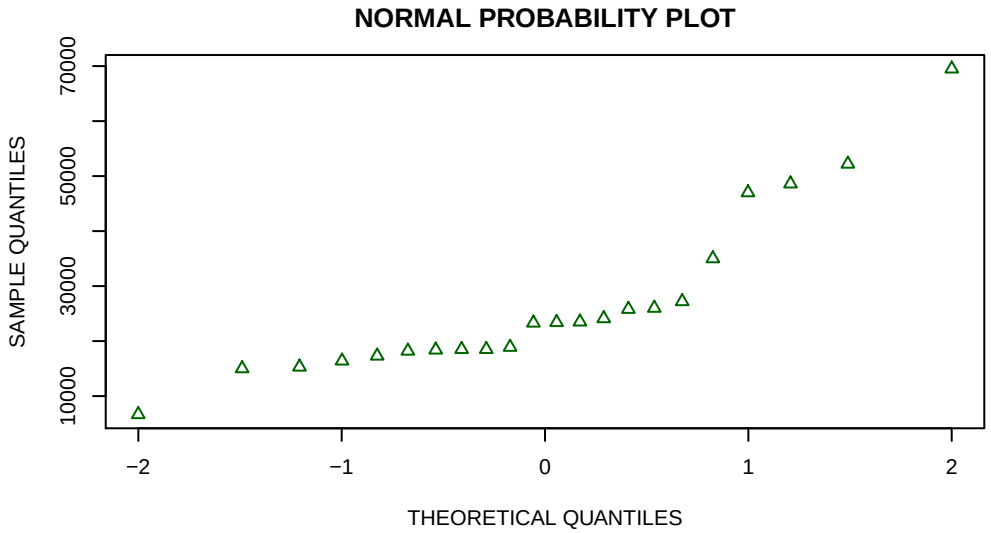
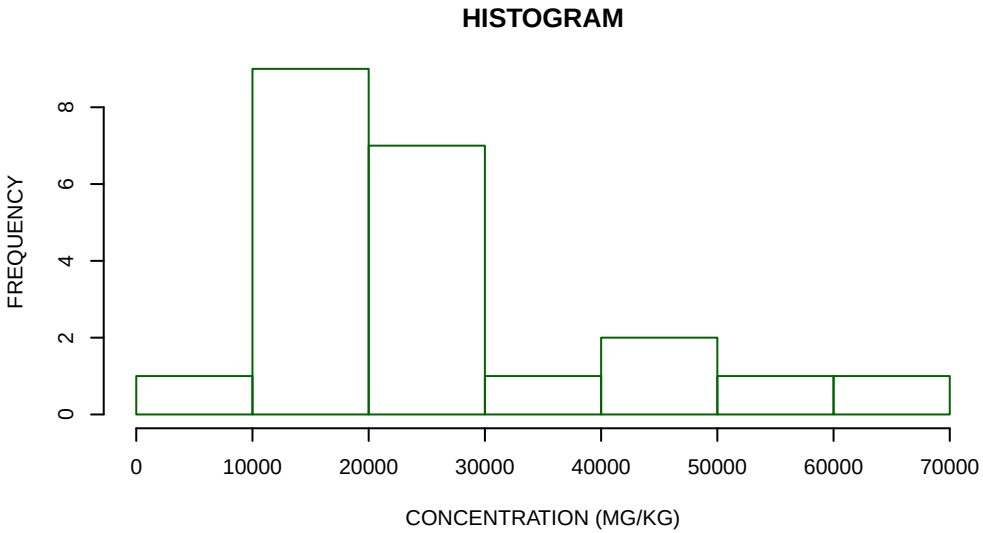


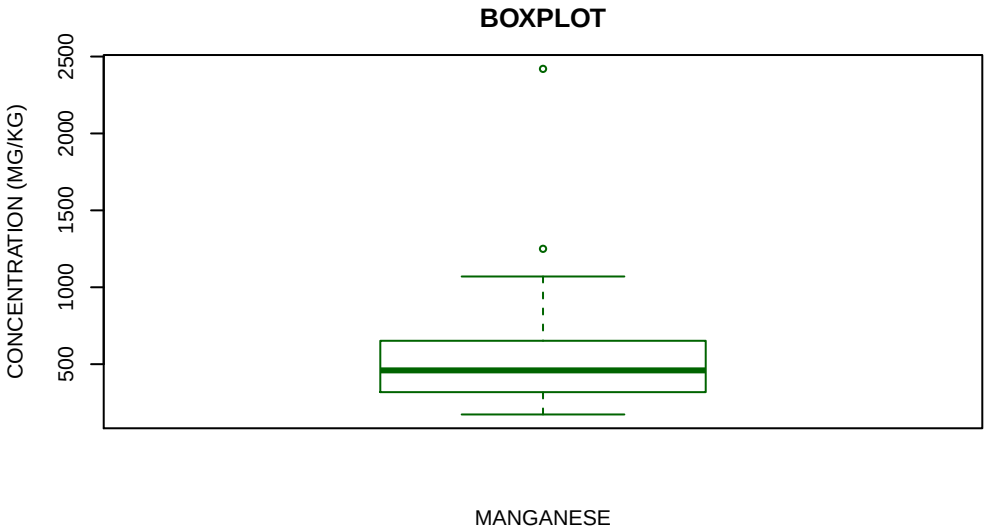
IRON SURFACESOIL GRAPHICAL DISPLAYS
SITE 21 − BUILDING 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

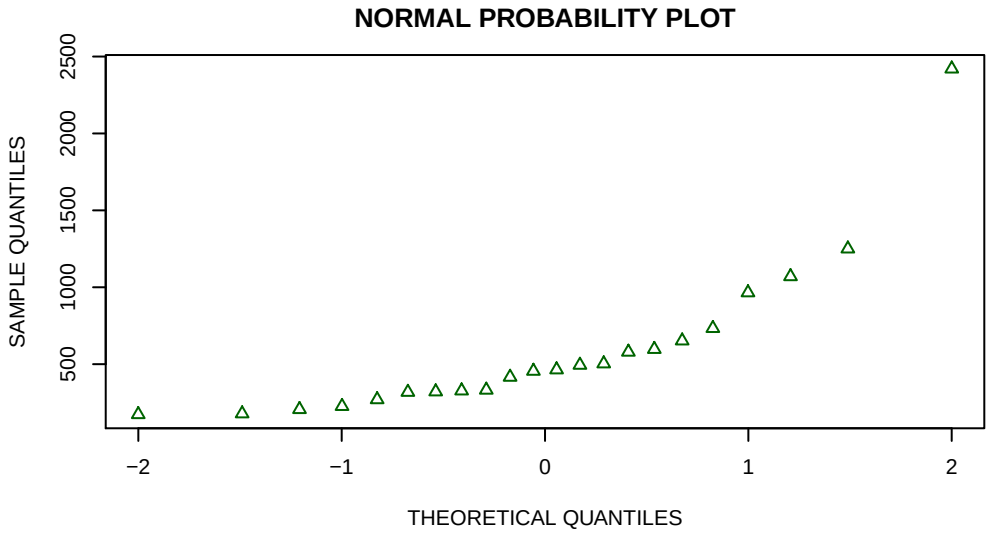


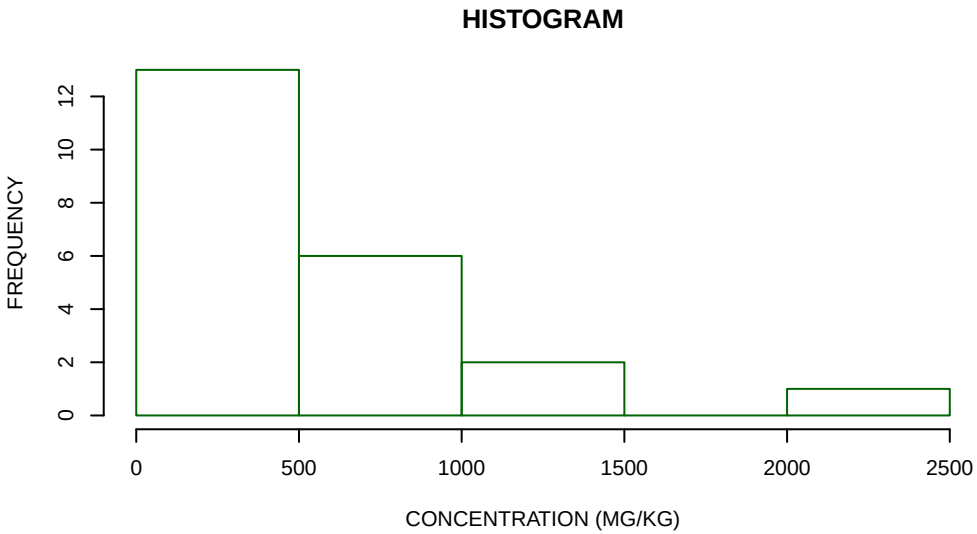




MANGANESE SURFACESOIL GRAPHICAL DISPLAYS
SITE 21 − BUILDING 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

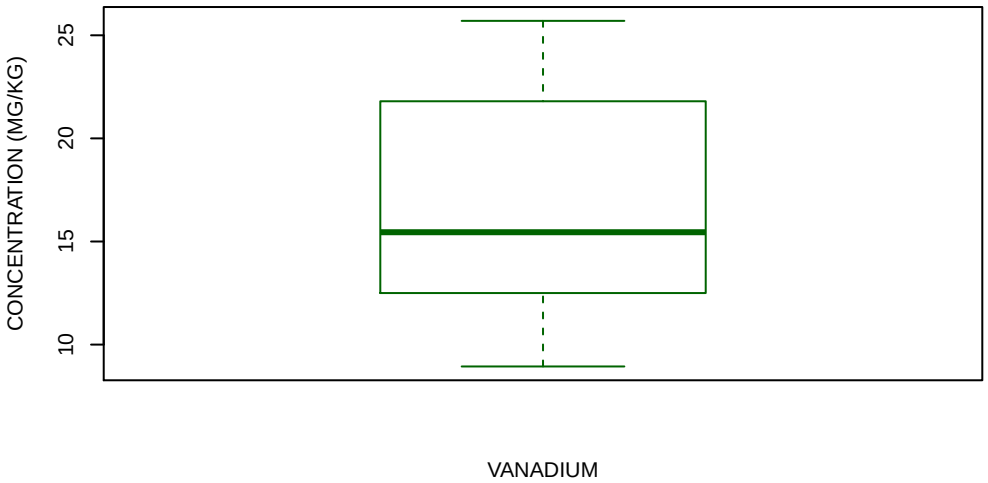




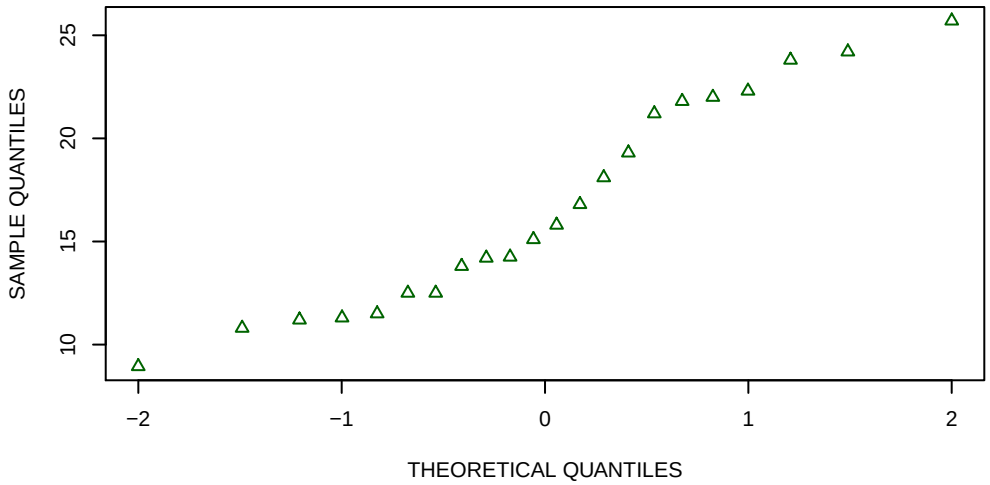
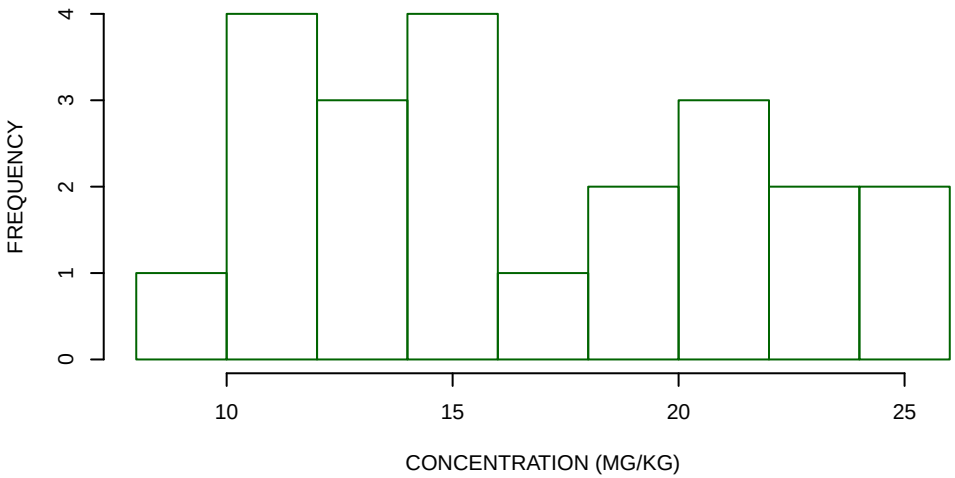


VANADIUM SURFACESOIL GRAPHICAL DISPLAYS
SITE 21 − BUILDING 1517/1506 AREA
NAVAL STATION GREAT LAKES
GREAT LAKES, ILLINOIS

BOXPLOT



NORMAL PROBABILITY PLOT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