N00164.AR.001947
NSA CRANE
5090.3a

FINAL INTERIM MEASURES REPORT FOR SOLID WASTE MANAGEMENT UNIT 5 OLD BURN PIT NSA CRANE IN

3/1/2014

TETRA TECH

Final
Interim Measures Report

for

SWMU 5 - Old Burn Pit

Naval Support Activity Crane
Crane, Indiana

Naval Facilities Engineering Command
Midwest

Contract Number N62470-08-D-1001
Contract Task Order F27H

March 2014

FINAL
INTERIM MEASURES REPORT
for
SWMU 5 – OLD BURN PIT

NAVAL SUPPORT ACTIVITY CRANE
CRANE, INDIANA

COMPREHENSIVE LONG-TERM
ENVIRONMENTAL ACTION NAVY (CLEAN) CONTRACT

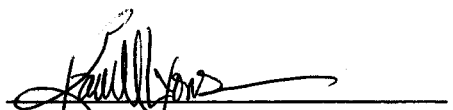
Submitted to:
Naval Facilities Engineering Command Midwest
201 Decatur Avenue
Building IA, Code EV
Great Lakes, Illinois 60088

Submitted by:
Tetra Tech, Inc.
234 Mall Boulevard, Suite 260
King of Prussia, Pennsylvania 19406

CONTRACT NUMBER N62470-08-D-1001
CONTRACT TASK ORDER F27H

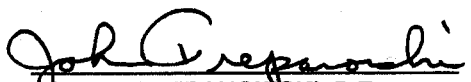
March 2014

PREPARED UNDER THE DIRECTION OF:



KAREN LYONS
PROJECT MANAGER
TETRA TECH
PITTSBURGH, PENNSYLVANIA

APPROVED FOR SUBMISSION BY:



JOHN J. TREPANOWSKI, P.E.
PROGRAM MANAGER
TETRA TECH
KING OF PRUSSIA, PENNSYLVANIA

TABLE OF CONTENTS

SECTION **PAGE NO.**

LIST OF ACRONYMS v

EXECUTIVE SUMMARY ES-1

1.0 INTRODUCTION 1-1
1.1 PURPOSE AND REPORT ORGANIZATION 1-1
1.2 FACILITY DESCRIPTION 1-1
1.3 SITE DESCRIPTION AND HISTORY 1-2
1.4 PREVIOUS SAMPLING AND ANALYSIS 1-2
1.5 INTERIM MEASURES STRATEGY AND OBJECTIVE 1-3
1.5.1 Excavation and Removal of Lead Hot Spot 1-4
1.5.2 Surface Debris Removal and Disposal 1-4
1.6 INTERIM MEASURES IMPLEMENTATION 1-5
1.6.1 Technical Memorandum and UFP-SAP Addendum 1-5
1.6.2 Contractor Scope-of-Work, Work Plan, & HASP 1-5

2.0 INTERIM MEASURE ACTIVITIES 2-1
2.1 IMPLEMENTATION APPROACH 2-1
2.2 INTERIM MEASURES ACTIVITIES 2-1
2.3 SITE PREPARATION 2-2
2.3.1 Soil Hot Spot Survey 2-2
2.3.2 Mobilization 2-4
2.3.3 Erosion and Sediment Controls 2-4
2.4 SOIL EXCAVATION 2-4
2.5 DEBRIS REMOVAL 2-7
2.6 REMOVAL AND DISPOSAL OF SOLID WASTE FROM DECOMPOSED DRUMS 2-8
2.7 OFF-SITE DISPOSAL 2-9
2.8 SITE RESTORATION 2-10

3.0 SUMMARY AND CONCLUSIONS 3-1

REFERENCES R-1

APPPENDICES

A LEE & RYAN PROJECT CLOSE-OUT REPORT
B PROJECT PHOTOGRAPHS
C LABORORATORY ANALYTICAL DATA - LEAD HOT SPOT
D LABORORATORY ANALYTICAL DATA - SOLID WASTE FROM DECOMPOSED DRUMS
E MONTHLY INSPECTION REPORTS

TABLES

NUMBER **PAGE NO.**

2-1 Daily Activity Summary 2-3
2-2 SWMU 5 Lead Data 2-6
2-3 Waste Disposal Summary 2-9

FIGURES

NUMBER

1 Base and Site Location Map
2 Aerial Photograph - 2003
3 Topography of Work Area
4 Lead Hot Spot – Analytical Lab Results
5 Lead Hot Spot – XRF Results
6 Solid Waste from Decomposed Drums – TCLP Analytical Results

LIST OF ACRONYMS

AHA	Activity Hazard Analysis
bgs	below ground surface
CEC	cation exchange capacity
CLEAN	Comprehensive Long-Term Environmental Action Navy
CMIP	Corrective Measures Implementation Plan
CMP	Corrective Measures Proposal
CTO	Contract Task Order
HASP	Health and Safety Plan
IAS	Initial Assessment Study
MCS	Media Cleanup Standard
NAVFAC	Naval Facilities Engineering Command
NSA	Naval Support Activity
OSWER	Office of Solid Waste and Emergency Response
PCBs	Polychlorinated Biphenyls
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
RFP	request-for-proposal
SVOCs	Semivolatile Organic Compounds
SWMU	Solid Waste Management Unit
TCLP	Toxicity Characteristic Leaching Procedure
Tetra Tech	Tetra Tech NUS, Inc.
TOC	Total Organic Carbon
TSS	Total Suspended Solids
UFP-SAP	Uniform Federal Policy-Sampling and Analysis Plan
VOCs	Volatile Organic Compounds
XRF	X-Ray Fluorescence

EXECUTIVE SUMMARY

This Interim Measures Report describes the work performed in March and April 2010 at Solid Waste Management Unit (SWMU) 5 – Old Burn Pit at Naval Support Activity (NSA) Crane, in Crane, Indiana. The interim measures consisted of excavation and disposal of lead contaminated soil, removal and disposal of surface debris, and removal and disposal of solid waste from decomposed drums encountered during the interim measures.

SWMU 5 is located in the northwestern corner of NSA Crane and was an active waste disposal area from 1942 to 1972. Undefined amounts of rubbish including wood, paper, construction material, and industrial wastes were burned at SWMU 5. No explosive materials or explosive wastes were reportedly burned or disposed at SWMU 5. As rubbish was burned, residual ash and metal debris from the burning activities were continually pushed from the burn pit into the gully area of SWMU 5. The gully area of SWMU 5 (site) was the target of the interim measures.

The site was naturally revegetated after 1972 and contained a stand of mixed hardwoods when the interim measures were performed in 2010. Investigations of SWMU 5 from 1981 to 2005 identified one hot spot of elevated lead contamination, surface metal, and other debris across the site. This hot spot and the remainder of the site are located in an area that is well vegetated. The site comprises only a small portion of the overall habitat for ecological receptors in the area. Therefore, the interim measure design was developed to remove surface debris, to excavate the hot spot, and to minimize disturbance of the area. Tetra Tech prepared documents to obtain regulatory approval and define the work. Tetra Tech then procured a subcontractor, Lee & Ryan, to perform the work.

Lee & Ryan mobilized to the site in March 2010. Their initial work included site preparation and installation of erosion and sediment control measures. Their work then included: excavation of lead-contaminated soil from the lead hot spot, removal of surface debris (primarily metal), offsite disposal of the excavated soil and debris, disposal of solid waste encountered in decomposed drums during debris removal, and restoration of the site. Sampling and analysis were also performed to document conditions at the site and to guide the waste disposal practices. The interim measures were completed on April 9, 2010.

After interim measure construction was completed, Tetra Tech and Lee & Ryan performed three monthly inspections of the site. Erosion and sedimentation control devices were repaired and maintenance performed based on the first two inspections. The last monthly inspection was performed on July 7, 2010. During the last inspection, natural vegetation was being re-established and the areas disturbed by the interim measures were stabilized.

1.0 INTRODUCTION

Tetra Tech, Inc. (Tetra Tech) performed interim measures at Solid Waste Management Unit (SWMU) 5 – Old Burn Pit at Naval Support Activity (NSA) Crane, in Crane, Indiana in March and April 2010. This report was prepared for the United States Navy, Naval Facilities Engineering Command (NAVFAC) Midwest by Tetra Tech and their subcontractor, Lee & Ryan, under Contract Task Order (CTO) F27H of the Comprehensive Long-Term Environmental Action Navy (CLEAN) IV Contract Number N62470-08-D-1001.

The interim measures consisted of excavation and disposal of lead contaminated soil, removal and disposal of surface debris, and removal and disposal of solid waste from decomposed drums encountered during the interim measures as described in this report.

1.1 PURPOSE AND REPORT ORGANIZATION

The purpose of this Interim Measures Report is to summarize the interim measures that were performed at SWMU 5 by Tetra Tech and subcontractor Lee & Ryan. This report presents analytical data, figures, photographs, and other documentation to describe the work and is organized as follows:

- Section 1.0 presents background information and the proposed plan
- Section 2.0 describes the interim measures that were performed
- Section 3.0 presents conclusions about the interim measures and describes future activities
- Appendices to this report contain supplemental information about the interim measures.

The plan to perform the work was approved by regulatory agencies and was performed in accordance with approved documents as described in this report.

1.2 FACILITY DESCRIPTION

NSA Crane is located in a rural, sparsely populated area in southern Indiana, approximately 75 miles southwest of Indianapolis and 71 miles northwest of Louisville, Kentucky, immediately east of Crane Village and Burns City as shown on Figure 1. NSA Crane encompasses 62,463 acres (approximately 98 square miles), most of which are located in the northern portion of Martin County. Smaller portions of NSA Crane are located in Greene, Daviess, and Lawrence Counties. Most of NSA Crane is forested, and the surrounding area is wooded or farmed land. NSA Crane provides material, technical, and logistical support to the Navy for equipment, shipboard weapons systems, and nonexpendable ordnance items. In

addition, NSA Crane supports the Crane Army Ammunition Activity with production, renovation, storage, shipment, demilitarization, and disposal of conventional ammunition.

1.3 SITE DESCRIPTION AND HISTORY

SWMU 5 is located in the northwestern corner of NSA Crane as shown on Figure 1 and contains approximately 25 acres. It consists of two areas – the approximate 9-acre burn pit area to the south, and the 16-acre gully area to the north as shown on Figure 2. The burn pit area to the south has been regraded and contains a gravel road and parking lot and a vegetated area; it is currently used as for parking and staging of delivery trailers. The gully area to the north has naturally revegetated; it is currently forested with mixed hardwoods approximately 30 feet high and dense underbrush. Current and likely future land use at SWMU 5 is expected to be limited to industrial uses or remain undeveloped.

SWMU 5 was an active waste disposal area from 1942 to 1972. Undefined amounts of rubbish including wood, paper, construction material, and industrial wastes were burned in the burn pit area. As rubbish was burned, residual ash and metal debris from the burning activities were continually pushed into the gully area to the north. The interim measures were performed in the 16-acre gully area and is also referred to as the site or work area in this report and associated documents

The gully area has been inactive as a disposal area since 1972 and has revegetated. No additional waste disposal activities are proposed for the site. Reportedly, no explosive materials or explosive wastes were burned or disposed at SWMU 5; however as described in this report, a rocket motor casing was encountered and removed during the debris removal phase of the interim measures. The rocket motor casing did not contain propellant and did not have a warhead attached to it.

The physiography, topography, and hydrology of SWMU 5 are described in Section 2.0 of the Technical Memorandum for this site (Tetra Tech, 2010c).

1.4 PREVIOUS SAMPLING AND ANALYSIS

Environmental investigations were performed at SWMU 5 from 1981 to 2005, including an Initial Assessment Study (IAS) and Resource Conservation and Recovery Act of 1976 (RCRA) Facility Investigations (RFI) analyses. Surface soil, subsurface soil, sediment, surface water, and groundwater samples were collected and analyzed for the full list of Appendix IX constituents [volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, polychlorinated biphenyls (PCBs), and metals], and miscellaneous inorganics. Surface water samples also were analyzed for total and dissolved metals, hardness, and total suspended solids (TSS), and sediment samples were analyzed for total organic carbon (TOC) to assist in assessing the potential risks to human health and ecological

receptors. Additionally, soil characteristic parameters [cation exchange capacity (CEC), pH, and TOC] were analyzed to determine the potential fate and transport of contaminants at the Site and the potential for risks outside the Site boundaries. Using the analytical data obtained during the SWMU 5 2005 RFI, Tetra Tech performed human health and ecological risk assessments. A lead concentration that could create an unacceptable ecological risk was identified in one location (05SB06) in the work area (Figure 3), at a concentration of 16,900 mg/kg. No other unacceptable risks to human health or ecological receptors were identified in the risk assessments.

Based on the results of the 2005 RFI, a Corrective Measures Proposal (CMP) Report for SWMU 5 was prepared (Tetra Tech, 2010d). The CMP combined historical site investigations along with current site conditions to expand upon the SWMU 5 risk assessments. The CMP determined that it is possible that some individual plants and/or invertebrates are being impacted at locations where metals concentrations in soil are elevated. However, as discussed in Office of Solid Waste and Emergency Response (OSWER) Directive 9285.7-28P, Issuance of Final Guidance: Ecological Risk Assessment and Risk Management Principles for Superfund Sites, remedial actions generally should not be designed to protect organisms on an individual basis (with the exception of certain protected species) but to protect local populations and communities of biota (1999).

Prior to interim measures, multiple drums (including some that were partially buried, crushed and/or partially decomposed) and other debris (primarily metal) were visible on the ground and hillside surfaces in the gully area. To assess the drums and remnants of material in the drums, an interim measures sampling program was conducted in 1990. The field investigation consisted of the collection of eight soil samples from the surface soil surrounding the drums and two samples from material within the drums. The samples were analyzed to determine whether the soil and material in the drums would be considered RCRA hazardous wastes. Toxicity Characteristic Leaching Procedure (TCLP) results for these samples were less than regulatory limits, indicating that the materials in the drums were not classified as a RCRA hazardous wastes.

1.5 INTERIM MEASURES STRATEGY AND OBJECTIVE

Based on the previous sampling and analysis at the site, and discussions with the regulators, an interim measures strategy was developed that addressed the identified lead contaminated soil hot spot and visible surface debris. The strategy presented in a final Technical Memorandum that was issued on February 3, 2010. The strategy was approved by the Navy and regulatory agencies and included limited excavation of the lead hot spot and removal of surface debris while minimizing disturbance of the established ecological community.

1.5.1 Excavation and Removal of Lead Hot Spot

Lead was the only chemical of concern detected at a concentration that potentially presented an unacceptable risk to ecological receptors. However, because the site comprises only a small portion of the overall habitat for ecological receptors in this area, any localized impacts to ecological receptors (including wildlife) at SWMU 5 will not impact the overall ecology in this area of NSA Crane. Based on observations during site visits and the apparent similarity between the forested areas at and surrounding SWMU 5, the ash and metal contamination (from Old Burn Pit activities) does not appear to have significantly impacted the local populations of plants/invertebrates and/or the ecological community at the site. Therefore, potential risk to ecological receptors was not a basis for the interim measures activities at SWMU 5.

Because the site did not pose an unacceptable ecological risk and was naturally revegetated, the decision was made not to remove the residual ash from previous waste disposal and burning activities. An overall strategy was developed to remove the known lead hot spot and the surface debris while minimizing disruption of the established ecological community at the site. Interim measures were proposed and approved to excavate the known lead contaminated hot spot and to remove surface debris.

The Media Cleanup Standard (MCS) for lead contamination in an industrial/construction site is typically 800 mg/kg. However, because of the location and environmental setting of this site, only limited excavation of the elevated hot spot was proposed. Informational sampling associated with the excavation was proposed to document remaining conditions but those analytical results would not necessarily result in additional excavation. Details regarding the strategy for interim measures at SWMU 5 are provided in the SWMU 5 Addendum to the SWMU 12 Uniform Federal Policy - Sampling and Analysis Plan (UFP-SAP) (Tetra Tech 2010b).

Ash, debris, and other material was left in place to minimize disruption of the established ecological community in the gully area. Because of topography, the area is considered to be a non-constructible area of NSA Crane. Proposed land-use-controls (LUC) for the area will further restrict access and reduce exposure to the remaining contamination.

1.5.2 Surface Debris Removal and Disposal

Debris was located on the ground surface throughout the site. It primarily consisted of metallic debris that was remaining from burning activities but there was also some non-metallic debris such as transite and tires throughout the site. The bulk of the debris was located on the out-slopes of the ash that was pushed into the gully area. The metallic debris appeared to be recyclable. Some of the metallic debris consisted of partially decomposed drums. Historical data from TCLP analysis performed on 1990 samples from

surrounding soil and materials near the decomposed drums showed results less than regulatory limits for hazardous waste. There was no regulatory requirement to remove the non-hazardous debris. The proposed debris removal was for aesthetic purposes.

1.6 INTERIM MEASURES IMPLEMENTATION

Tetra Tech prepared documents to obtain Navy and regulatory approval of the interim measures and then prepared documents to procure a subcontractor to implement the work

1.6.1 Technical Memorandum and UFP-SAP Addendum

The activities associated with this interim action were completed in accordance with the Technical Memorandum and its attachments for SWMU 5 Interim Measures (Tetra Tech, 2010c) and the SWMU 5 UFP - SAP Addendum (Tetra Tech, 2010b).

Tetra Tech prepared a Technical Memorandum that summarized background information about the site and the proposed interim measures. Attachment A presented figures describing the site, and Attachment B contained a subcontractor Statement-of-Work which described implementation of the interim measures. The final version of the Technical Memorandum was issued on February 3, 2010.

Tetra Tech also prepared a UFP-SAP Addendum to describe the proposed sampling and analysis at the lead hot spot. The SWMU 5 SAP Addendum was an addendum to a previously approved UFP-SAP for SWMU 12 – Battery Dump Site (Tetra Tech, 2009a). The SWMU 5 SAP Addendum contained site-specific information about the proposed sampling and analysis for SWMU 5. A UFP-SAP Addendum was prepared for SWMU 5 rather than a complete SAP because of the relatively small size of the SWMU 5 excavation (less than 3 cubic yards) and the similarity with the scope contained in the SWMU 12 SAP.

1.6.2 Contractor Scope-of-Work, Work Plan, & HASP

Tetra Tech procured a subcontractor based on a Scope-of-Work contained in an appendix to the Technical Memorandum. A request-for-proposal (RFP) was issued to three potential contractors and all three submitted detailed technical and price proposals. Lee & Ryan was selected to perform the work based on a best value evaluation.

After selection, Lee & Ryan prepared a detailed work plan that described their approach to performing the work. The Work Plan contained implementation details, and lists of subcontractors, disposal facilities and the source of backfill. The Work Plan was reviewed and approved by Tetra Tech.

Tetra Tech prepared a Health and Safety Plan (HASP) to address all interim measures activities including work by subcontractors. It contained the Activity Hazard Analysis (AHA) prepared by Lee & Ryan. The HASP was reviewed and approved by the Navy and served as a basis for all work at the site.

2.0 INTERIM MEASURE ACTIVITIES

Tetra Tech performed interim measures at SWMU 5 with subcontractor Lee & Ryan. The project closeout report from Lee & Ryan is presented in Appendix A of this report.

2.1 IMPLEMENTATION APPROACH

The purpose of this section is to summarize the interim measures performed at SWMU 5. The SWMU 5 Technical Memorandum (Tetra Tech, 2010c) and other planning documents listed in Section 1.0 of this report presented a regulatory approved approach to perform the work and the work was performed in accordance with those documents. However, as described herein, additional work was performed to address some waste that was encountered in decomposed drums during the interim measures. Additional sampling and analysis was performed by Tetra Tech to assess and classify the waste. Based on the sampling and analysis, additional work was performed by Lee & Ryan to collect, containerize, and dispose of the material. This work was added to Lee & Ryan's scope via change order.

Photographs taken during the interim measures are presented in Appendix B.

Subcontractor Lee & Ryan prepared a work plan to describe the work to be performed at the site; the work plan was reviewed and approved by Tetra Tech. Tetra Tech personnel provided construction oversight throughout the interim measures and performed informational verification sampling activities. Tetra Tech used Empirical Laboratories, Inc. to perform analysis of the samples collected from the lead hot spot. Lee & Ryan also utilized subcontractors on this project including:

- Surveying – Bledsoe, Riggert, and Guerrettaz Inc.
- Disposal of lead contaminated soil and hazardous waste - Heritage Environmental Services, LLC.
- Disposal of non-hazardous debris and material - Veolia ES Sumner Landfill
- Recycling of metallic debris – Mullins Supply
- Waste characterization - Pace Analytical for environmental parameters.
- Supplier of topsoil - JJ's Concrete
- Supplier of common fill - Glen S. Graber Farm
- Geotechnical testing - Patriot Engineering and Environmental, Inc.

2.2 INTERIM MEASURES ACTIVITIES

Interim measures consisted of:

- Site Preparation,
- Soil Excavation,
- Debris removal,
- Removal and disposal of solid waste from decomposed drums,
- Off-site waste disposal, and
- Site restoration.

A summary of the interim measures activities performed by date is presented on Table 2-1. As shown on that table, the majority of the work was performed in March 2010.

Tetra Tech was on-site and monitored Lee & Ryan when interim measures were performed. A representative of the NSA Crane also visited the site on a regular basis during interim measure activities. In addition, a representative on NAVFAC Midwest, Ben Simes, was on site and monitored the work on March 27, 2010. Mr. Simes observed the work and verified that the HASP was in order and being implemented.

2.3 SITE PREPARATION

Site preparation included pre-mobilization meetings, locating the lead contaminated soil hot spot by surveying, mobilization of personnel and equipment to the site, and establishing erosion and sediment controls. A pre-start meeting and a project kickoff meeting were held prior to mobilization; representatives from the Navy, Tetra Tech, and Lee & Ryan attended the meetings. The objectives of these meetings were to review the responsibilities of each party and to establish lines of communication. Prior to mobilization, Tetra Tech worked with both Lee & Ryan and the NSA Crane Public Works Department to determine if any underground utilities were present and to properly mark any that were found.

2.3.1 Soil Hot Spot Survey

The lead contaminated soil hot spot (05SB06) was staked in the field by Lee & Ryan subcontractor, Bledsoe, Riggert and Guerrettaz, Inc., on February 11, 2010. Bledsoe, Riggert and Guerrettaz, Inc. performed the original survey to determine the soil hot spot location. Representatives from both Tetra Tech and Lee & Ryan were present during the survey.

Personnel from Lee & Ryan then staked the limits of the excavation; a 6’ x 6’ square centered on the hot spot, and delineated a buffer zone around the excavation area.

TABLE 2-1 DAILY ACTIVITY SUMMARY

Date	Tetra Tech On-site Personnel	Summary of Activities
Tuesday, Mar 2, 2010	L. Foster, M. Reising	Accident Prevention Plan was approved by Navy. Lee & Ryan was given Notice to Proceed. Plans were made to mobilize personnel, equipment and supplies to the site the following day.
Wednesday, Mar 3, 2010	L. Foster, M. Reising	All on-site workers were briefed on the Health and Safety plan. The gravel construction entrance was constructed. Excavation of the lead contaminated soil hot spot was performed. Waste characterization and informational verification samples were collected. The excavation area was covered with plastic and erosion control logs were placed around the excavation. Collection of surface debris began.
Thursday, Mar 4, 2010	L. Foster, M. Reising	Debris collection continued. Removal of debris on the east-northeast side was suspended when a suspicious object was observed. Other debris removal continued on the slopes and in the valley floor on both sides of the fill. Erosion control logs were placed down gradient of area of the hillsides where there was extensive debris. XRF analysis was performed on the verification samples, and laboratory samples were shipped.
Friday, Mar 5, 2010	L. Foster, M. Reising	Debris collection and removal continued. The Navy EOD Team investigated a suspicious object found on the site. The EOD team determined that the object was a rocket motor casing that did not contain explosives or propellants. The motor casing was removed from the excavation. “Step-out” samples were collected at a distance of 4 feet and 8 feet from the edges of the hot spot excavation. Additional erosion control logs were placed down gradient of areas where significant disturbance occurred because of debris removal activities.
Monday, Mar 8, 2010	L. Foster, M. Reising	Debris removal and collection continued and the hot spot excavation was backfilled. Backfill material was also placed in the area where the rocket motor casing was removed. XRF analysis was performed on "step-out" samples. Samples of waste material from the decomposed drums were collected and sent to an offsite lab for hazardous waste characteristic analysis.
Tuesday, Mar 9, 2010	L. Foster, M. Reising	Debris removal continued.
Wednesday, Mar 10, 2010	L. Foster, M. Reising	Debris removal continued. Erosion control matting was placed in the areas where excavation had taken place and/or where the equipment tracks had disturbed the ground.
Thursday, Mar 25, 2010	T. Klimek	Debris removal continued. Multiple leaf blowers were used to survey the site for remaining surface debris. Some erosion control matting was placed on disturbed areas.
Friday, Mar 26, 2010	T. Klimek	Loose straw mulch was placed in the areas where excavation had taken place or where the equipment tracks had disturbed the ground.
Thursday, Apr 1, 2010	L. Foster	Hazardous waste from the decomposed drums and other similar colored waste on parts of the site were excavated and containerized. Two of the boxes containing soil material from the lead contaminated hot spot and six 5-gallon buckets of containerized hazardous waste were picked up from the site for disposal.
Friday, Apr 2, 2010	T. Klimek	Excavation and containerization of hazardous waste from the decomposed drums was completed and some minor debris collected. The remaining box of contaminated soil was repackaged.
Friday, Apr 9, 2010	M. Reising	The repackaged box of soil from the hot spot excavation and containerized hazardous waste was removed from the site and sent off-site for disposal.

2.3.2 Mobilization

Initial mobilization to the site by Tetra Tech and Lee & Ryan personnel was conducted on March 3, 2010, following Site-Specific Health and Safety Training in the Tetra Tech field trailer on NSA Crane. Upon mobilization, Lee & Ryan received a delivery of construction equipment, gravel, scrap steel dumpsters, and general debris dumpsters.

During mobilization, a gravel construction entrance was constructed to provide access to the site and to prevent soil from being tracked off site via equipment and trucks. The gravel construction entrance was maintained throughout the project and was left in place at the conclusion of the project.

2.3.3 Erosion and Sediment Controls

In addition to the construction entrance, biodegradable coir logs were put in place down gradient of areas expected to be disturbed by interim measures to reduce potential erosion and sedimentation problems. The 10 foot long by 8 inch diameter coir logs are made of non-woven coconut fiber enclosed in polypropylene net. These logs were secured around the perimeter of the lead hot spot excavation area and along the stream bank in downstream of areas expected to be disturbed by debris removal activities. The logs were secured with wooden stakes.

Other erosion controls measures such as straw, straw matting, and other coir logs were installed and maintained for erosion and sediment control as the work was performed. Straw and straw matting were installed in areas disturbed by debris removal and the operation of machinery.

These erosion and sediment controls were inspected, maintained, and repaired as necessary for three months after the interim measures were completed. Monthly inspection reports and documentation is present in Appendix E. On July 7, 2010 the site was determined to be stabilized with vegetation. Biodegradable straw, straw matting, and coir logs were left in place following the final inspection.

2.4 SOIL EXCAVATION

Excavation of the lead contaminated soil (waste) was performed on March 3, 2010. Work associated with the excavation also included containerizing the waste, waste characterization and verification sampling and analysis, and backfilling the excavation. Photographs showing this work are included in Appendix B.

Lee & Ryan utilized a mini-excavator to remove the waste soil. The waste was excavated and placed directly into three heavy-duty, one cubic yard capacity, cardboard boxes near the excavation. Each box was placed on a wooden pallet or wooden platform, and lined with 60 mil plastic sheeting. After the

boxes were filled, they were closed, covered with 40 mill plastic sheeting, and moved to the edge of the parking lot south of the site. The waste material appeared to be primarily ash with metal debris and some soil.

During excavation, Lee & Ryan collected aliquots (grab samples) of the material excavated from the hot spot to characterize the waste material for disposal. These characterization aliquots were composited together to develop the characterization sample. The characterization sample was then split into two separate characterization samples. One sample was sent to the waste disposal facility (Heritage) for approval, and the other sample was submitted to a fixed-base laboratory (Pace) for waste characterization analysis. The sample submitted to Pace was analyzed for Toxicity Characteristic Leaching Procedure (TCLP) volatile organic compounds (VOCs), TCLP semi-volatile organic compounds (SVOCs), TCLP pesticides/herbicides, TCLP metals, polychlorinated biphenyls (PCBs), total petroleum hydrocarbons (total C9-C39 hydrocarbons), ignitability, corrosivity, and reactivity. Results of the analyses are found in the Lee & Ryan Report presented in Appendix A. The analysis indicated that the waste was non-hazardous. Other than indicating the need for material approval, the disposal facility did not communicated to Tetra Tech analyses performed on the sample sent to the disposal facility.

Following completion of the soil hot spot excavation and collection of waste characterization samples by Lee & Ryan, Tetra Tech collected verification samples from the bottom and sides of the excavation.

After the waste characterization and verification samples were collected, and the dimensions of the excavation were verified, Lee & Ryan lined the excavation with 10 mil plastic sheeting.

In accordance with the approved UFP-SAP Addendum, Tetra Tech collected the above mentioned verification samples from the bottom and sides of the excavation. These samples were collected for informational purposes and to document the levels of lead levels at the boundary of the excavation. The location of these samples is shown on Figure 4. As shown on Figure 4, samples were collected from the four sides and the floor of the excavation. Each sidewall sample was a discrete grab sample. The floor sample was a composite of two aliquots collected from the excavation floor (bottom), one from the north area and one from the south area. A portion of each sample was analyzed in the field using X-Ray Fluorescence (XRF) and sent to a fixed-based lab (Empirical) for total lead analysis. The analysis results summarized on top part of Table 2-2. The fixed-base laboratory results along with the data validation report are provided in Appendix C.

As shown on Table 2-2, the lead concentrations on the floor and walls of the excavation were an order of magnitude less than the lead concentration detected in the hot spot location (16,900 mg/kg). The table also shows a consistent correlation between the XRF and lab analysis.

Tetra Tech also collected step out samples beyond the sides of the hot spot excavation. As shown on Figure 5, step out samples were collected 4 feet and 8 feet beyond the edge of each side wall. These samples were collected at a depth of 0 to 2 feet below the ground surface (bgs). These eight samples were analyzed in the field by XRF for lead; the results of this analysis are shown on the lower part of Table 2-2 and Figure 5. As shown on the table, the lead levels are slightly lower but consistent with the lead levels in the material at the edge of the excavation.

TABLE 2-2 SWMU 5 LEAD DATA

Sample ID	Location ID and Description	Fixed-Base Laboratory Analysis (mg/kg)	XRF Field Measurement (mg/kg)	Relative Percent Difference (RPD) Laboratory/XRF(1)
05-SO-CF-01A	01A - Excavation Floor - Composite	4,290	4,239	1.20
05-SO-GW-02A	02A - Excavation Sidewall-North	4,110	4,582	10.86
05-SO-GW-03A	03A - Excavation Sidewall - East	4,440	5,029	12.44
05-FD-030310-01 (Field Duplicate-3A)	03A - Excavation Sidewall - East	4,330	5,205	18.35
05-SO-GW-04A	04A - Excavation Sidewall - South	3,020	3,800	22.87
05-SO-GW-05A	05A - Excavation Sidewall - West	2,460	2,048	18.28
05-SO-GW-02B	02B - 4 ft north of north sidewall	NA	980	NA
05-SO-GW-02C	02C - 8 ft north of north sidewall	NA	1,640	NA
05-SO-GW-03B	03B - 4 ft east of east sidewall	NA	996	NA
05-SO-GW-03C	03C - 8 ft east of east sidewall	NA	1,836	NA
05-SO-GW-04B	04B - 4 ft south of south sidewall	NA	3,927	NA
05-SO-GW-04C	04C - 8 south of south sidewall	NA	2,952	NA
05-SO-GW-05B	05B - 4 ft west of west sidewall	NA	1,475	NA
05-SO-GW-05C	05C - 8 ft west of west sidewall	NA	2,517	NA

Notes

(1) RPD = (Difference between fixed based lab analysis and XRF field measurement) / (Average of fixed based lab analysis and XRF field measurement)

The analysis revealed that the lead levels in the soil beyond the excavation were similar to those on the sidewalls of the excavation. Based on this data, a decision was made not to excavate additional material.

It is possible that some individual plants and/or invertebrates are being impacted at locations where lead concentrations in soil are elevated because lead concentrations exceed plant and invertebrate screening levels. Also, small mammals and birds with small home ranges could be impacted from the lead in the soil. However, as discussed in OSWER Directive 9285.7-28P, Issuance of Final Guidance: Ecological Risk Assessment and Risk Management Principles for Superfund Sites, remedial actions generally should not be designed to protect organisms on an individual basis (with the exception of certain protected species) but to protect local populations and communities of biota (1999).

SWMU 5 comprises a small percentage of the contiguous forested area (less than 5 percent) (see Figure 2). Based on observations during site visits and the apparent similarity between the forested area at and surrounding SWMU 5 (as seen in Figure 2), it does not appear that local populations of plants/invertebrates and/or the plant/invertebrate community are being significantly impacted by metals at SWMU 5. Also, even if there are subtle impacts to ecological receptors from chemicals in surface soil at the site, these impacts would be localized to the areas where lead concentrations are elevated. Although the lead concentrations in the post-excavation samples were still greater than ecological screening levels, because the site comprises only a small portion of the overall habitat for ecological receptors in this area, any localized impacts to ecological receptors (including wildlife) at SWMU 5 will not impact the overall ecology in this area of NSA Crane.

2.5 DEBRIS REMOVAL

Debris removal activities began on March 4, 2010 and continued through April. The objective of the work was to remove surface debris scattered throughout the site. This debris was primarily metallic and was part of the waste that remained from the burning activities that previously occurred at the site. The bulk of the debris was located at the edge of the ash fill.

During the debris removal phase, a suspicious object was observed and a Navy Explosive Ordnance Disposal (EOD) Team was called in to investigate. The Navy EOD team determined it was a rocket motor casing that did not have a warhead attached to it and did not contain propellant. The motor casing was removed from the excavation.

Some non-metallic debris including transite and tires were also collected from the site.

The debris removal process included: a debris identification survey to locate debris below the layer of leaves and vegetation, collection of the debris, removal of debris that was partially buried in the soil,

cutting debris at the ground surface that could not be readily removed, and placement of debris in roll-off boxes. Lee and Ryan initially mobilized two roll-off boxes to the site, one for metallic debris and one for non-metallic debris. They were staged at the edge of the parking lot (burn pit area) south of the work area.

Lee & Ryan performed multiple debris identification surveys using leaf blowers, rakes, and a metal detector. Leaf blowers were effective on the flat areas of the site during dry conditions. After the debris was identified, it was collected by hand and placed in buckets or temporary stockpiles. The buckets of debris and temporary stockpiles were then transferred to the roll-off boxes via the skid steer loader. Large pieces of debris (including partially decomposed drums) were removed using the grapple attachment on the skid steer loader. Some large pieces of embedded debris that were unable to be removed by the grapple attachment and/or were located in an area that may have become unstable by the removal (such as railroad rails embedded on the side of steep ash fill), were cut off at the ground surface with a cutting torch.

One full 50-cubic yard roll-off box of metallic debris and one approximately one-half filled roll–off of non-metallic debris was removed from the site in March. A third roll off box was brought on site and used for both metallic and non metallic debris to complete the project.

2.6 REMOVAL AND DISPOSAL OF SOLID WASTE FROM DECOMPOSED DRUMS

There were numerous drums and partially decomposed drums scattered along the out slope of the ash fill. Some drums were on the surface and some were partially buried, In addition, there were buckets and other metal containers in deteriorated condition on the site. During removal of these containers, some fell apart and collapsed. The former contents of the containers spilled onto the ground. Some of this material appeared to be some type of coating and/or hardened paint. Some of the material was white to light gray in color and granular in appearance, the other materials were dark gray, green, light blue, dark blue, and yellow. Some of the material appeared to be a former liquid that solidified into the shape of the drum or container.

Based on consultations with the Navy, Tetra Tech collected four samples of this waste material (05-WA-01, 05-WA-02, 05-WA-03 and 05-WA-04) and submitted them to Empirical Labs for hazardous waste characteristic analysis. Samples 01, 02, and 03 were discrete grab samples; sample 04 was a composite of two similar waste materials from the west side of the site. The approximate locations of the waste samples are shown on Figure 6. TCLP analysis was performed on the samples. The analytical results indicated sample 04, consisting of yellow and light blue waste material, was hazardous for TCLP chromium. The analytical results are presented in Appendix D.

The non-hazardous waste was managed and disposed with the non-metallic debris. None of the TCLP chromium waste (yellow and light blue color) was disposed as non-hazardous waste

The hazardous TCLP chromium waste (yellow and light blue color) was managed and disposed as hazardous. Approximately 110 gallons (estimated 1500 pounds) of material that was hazardous for TCLP chromium was collected from the site.

2.7 OFF-SITE DISPOSAL

Waste generated from interim measures was disposed in multiple locations. The waste types, approximate quantities, and disposal locations are summarized on Table 2-3. As shown on that table, the following wastes were generated during the interim measure:

- Non-hazardous soil from lead hot spot excavation
- Metallic debris
- Non-metallic debris and non-hazardous waste from decomposed drums
- Hazardous waste from decomposed drums

Waste manifests and disposal certifications are included in the Lee & Ryan Report presented in Appendix A.

TABLE 2-3 WASTE DISPOSAL SUMMARY

Waste Type	Disposal Facility	Approximate Quantity Removed From Site
Non-hazardous soil and ash from lead hot spot	Heritage Subtitle D Landfill; Roachdale, IN	2.67 CY or 3.5 tons
Metallic Debris	Stockpiled on Mullins Supply property for scrap steel recycling; Bicknell, IN	50 tons
Non-metallic debris - Non-hazardous solid waste	Veolia ES Sumner Landfill; Sumner, IL	5 tons
Hazardous (for TCLP chromium) solid waste from decomposed drums	Heritage Environmental LLC, Subtitle C Landfill; Roachdale, IN	110 gallons, 1500 lbs

2.8 SITE RESTORATION

Upon completion of excavation and a determination that no further excavation was appropriate, the hot spot excavation area was backfilled. Soil from a nearby farm (Glen S. Graber farm) was used to backfill the excavation to within 8 inches of the surface. The fill was compacted. Approximately 8 inches of topsoil from a nearby material supplier (JJ's Concrete) was then used to complete backfill of the

excavation. The excavation was graded to match the surrounding area and covered with straw matting material. Analytical data confirming that the material was non-hazardous is present in Attachment F contained in Appendix A of this report.

The areas disturbed by debris removal and the operation of equipment were covered with straw and straw matting. Coir logs were placed and/or maintained parallel to the stream channel down gradient of disturbed areas. Because the area was previously covered with a thick mat of leaves and very little grass vegetation because of the thick tree cover, seeding was not used extensively.

Limited seeding was used in areas where straw and straw matting did not appear likely to be effective. Interim measure construction activities were completed on April 9, 2010. Tetra Tech and Lee & Ryan then performed three monthly Inspections of the site – April 29, 2010, May 25, 2010 and July 7, 2010. Erosion and sedimentation control devices and measures were repaired based on observations during the first two inspections. During the last inspection, the areas disturbed by the interim measures were stabilized and natural vegetation was being established.

3.0 SUMMARY AND CONCLUSIONS

Interim measures were performed at SWMU 5 in accordance with a regulatory approved plan presented in a Technical Memorandum. The approved plan included excavation of lead contaminated soil from a lead hot spot and removal of surface debris from across the site. Interim measures also included removal and disposal of hazardous waste from decomposed drums encountered during the interim measures. The interim measures addressed environmental concerns at the site while minimizing disruption of the ecology.

Excavation of soil from the lead contaminated hot spot removed the soil with the highest known lead concentration at the site. The remaining lead levels in the vicinity are an order of magnitude lower. Removal of the surface debris was performed to improve the aesthetic of the site. Removal of hazardous material from decomposed drums was not included in the original scope of work contained in the final Technical Memorandum; it was added to the scope when it was encountered during the work.

Tetra Tech and Lee & Ryan continued to monitor the site and performed appropriate repair work until the site was stabilized. Tetra Tech and Lee & Ryan performed three monthly Inspections of the site; the last inspection was performed on July 7, 2010. During the last inspection, the areas disturbed by the interim measures were stabilized and natural vegetation was being established; the interim measures were determined to be complete.

A Corrective Measures Implementation Plan (CMIP) will be developed and implemented to address the long term status of the site. This will include a groundwater monitoring program and a final solution for the site.

REFERENCES

Engineering-Science, Inc., 1991. Interim Measure Sampling of the Old Burn Pit, SWMU 05/03. Naval Weapons Support Center, Crane, Indiana. June.

Lee & Ryan, 2010a. Project Close Out Report, SWMU 5—Old Burn Pit/Naval Support Activity, Crane, Ash and Fill Excavation and Debris Removal, Crane, Indiana. May.

Lee & Ryan, 2010b. Work Plan, SWMU 5—Old Burn Pit/Naval Support Activity, Crane, Soil Excavation and Debris Removal. March.

NEESA (Naval Energy and Environmental Support Activity), 1983. Initial Assessment Study (IAS) of Naval Weapons Support Center Crane, Indiana. Port Hueneme, CA, May.

Tetra Tech (Tetra Tech NUS, Inc.), 2000a. Basewide Soil Background Study, Naval Surface Warfare Center Crane, Crane, Indiana. August.

Tetra Tech (Tetra Tech NUS, Inc.), 2000b. Quality Assurance Project Plan for Base-Wide Background Soil Investigation, Naval Surface Warfare Center, Crane, Indiana. April.

Tetra Tech (Tetra Tech NUS, Inc.), 2000c. Work Plan for Risk Assessment at SWMUs 4, 5, 9, and 10 Naval Surface Warfare Center Crane, Crane, Indiana. August.

Tetra Tech (Tetra Tech NUS, Inc.), 2001. Final Basewide Background Soil Investigation Report, Naval Surface Warfare Center, Crane, Indiana. January.

Tetra Tech (Tetra Tech NUS, Inc.), 2005. Resource Conservation and Recovery Act Facility Investigation Report for SWMUs 4 (McComish Gorge), 5 (Old Burn Pit), 9 (Pesticide Control/R-150 Tank Area), and 10 (Rockeye), Naval Surface Warfare Center, Crane, Indiana. July.

Tetra Tech (Tetra Tech NUS, Inc.), 2009a. Sampling and Analysis Plan Field Sampling Plan and Quality Assurance Project Plan, Verification Soil Sampling, SWMU 12 Battery Dump Site, Naval Surface Warfare Center Crane, Crane, Indiana. October.

Tetra Tech (Tetra Tech NUS, Inc.), 2010a. Health and Safety Plan for Oversight Activities at SWMU 5 – Old Burn Pit NSA Crane Crane, Indiana. February.

Tetra Tech (Tetra Tech NUS, Inc.), 2010b. Sampling and Analysis Plan Addendum (SAP Addendum) for Verification Sampling at SWMU 5 - Old Burn Pit Site, Naval Support Activity Crane, Crane, Indiana. January.

Tetra Tech (Tetra Tech NUS, Inc.), 2010c. Technical Memorandum NSA Crane Interim Measures at Solid Waste Management Unit (SWMU) 5. February.

Tetra Tech (Tetra Tech NUS, Inc.), 2010d. Corrective Measures Proposal Report for SWMU 5 - Old Burn Pit, Naval Surface Warfare Center, Crane, Indiana. March.

USEPA (United States Environmental Protection Agency), 1986. RCRA Facility Assessment Guidance, OSWER Directive 9502.00-95.

USEPA (United States Environmental Protection Agency), 1999. Ecological Risk Assessment and Risk Management Principles for Superfund Sites, OSWER Directive 9285.7-28P. October.

Figures

Figure 1 – SWMU 5 – Base and Site Location Map

Figure 2 – SWMU 5 – Aerial Photograph - 2003

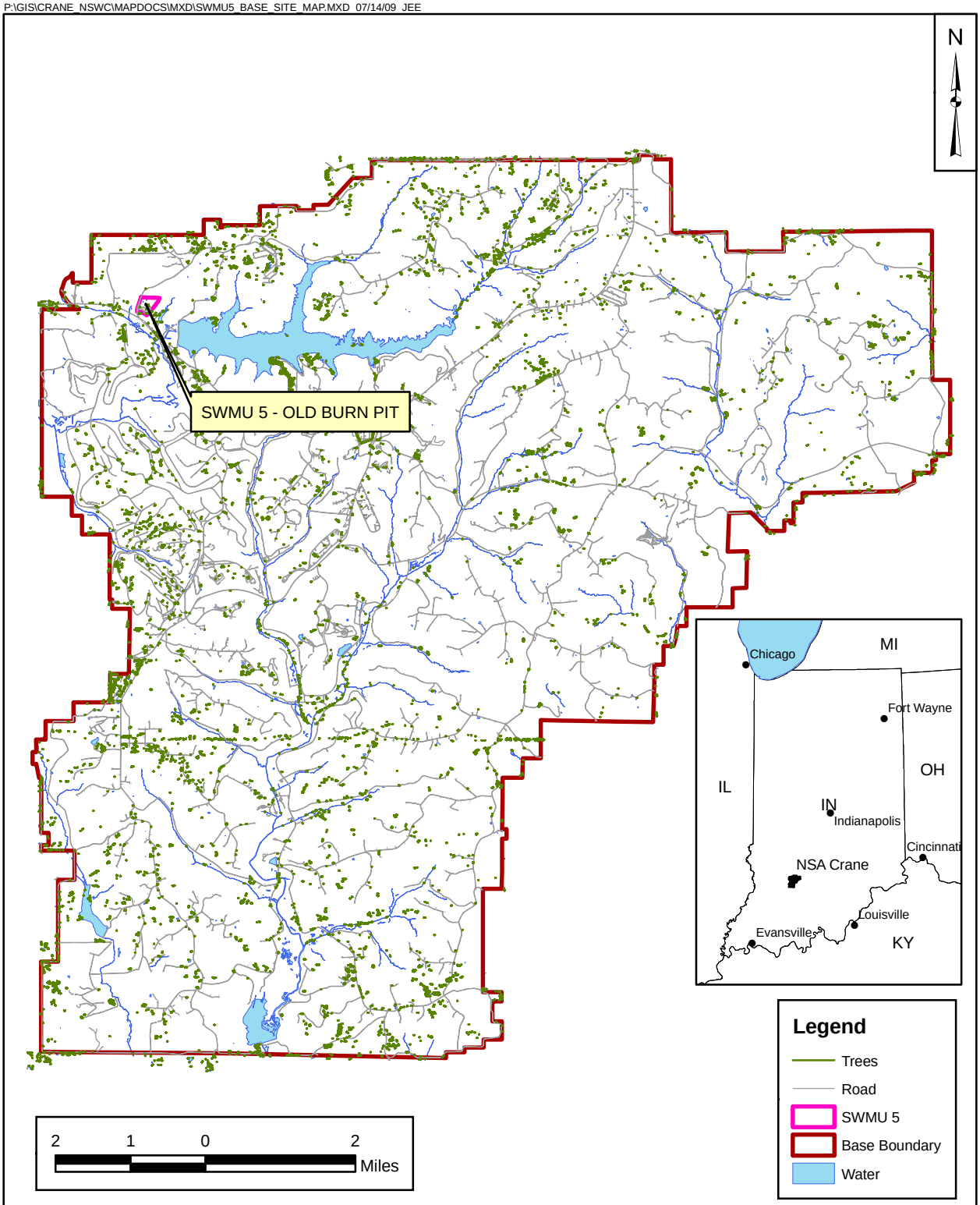
Figure 3 – SWMU 5 – Topography of Work Area

Figure 4 – SWMU 5 – Lead Hot Spot – Analytical Lab Results

Figure 5 – SWMU 5 – Lead Hot Spot – XRF Results

Figure 6 – SWMU 5 – Solid Waste from Decomposed Drums –TCLP Analytical Results

P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU5_BASE_SITE_MAP.MXD 07/14/09 JEE



DRAWN BY J. ENGLISH	DATE 07/09/09	Tetra Tech NUS, Inc.	CONTRACT NUMBER CTO 0271
CHECKED BY L. FOSTER	DATE 07/14/09	BASE AND SITE LOCATION MAP SWMU 5 - OLD BURN PIT NSA CRANE CRANE, INDIANA	APPROVED BY — DATE —
REVISED BY —	DATE —		APPROVED BY — DATE —
SCALE AS NOTED			FIGURE NO. FIGURE 1 REV 0

P:\GIS\NSWC_CRANE\MAPDOCS\APR\SWMU5.APR SWMU 5 FACILITY LAYOUT B PORTRAIT 05/27/10 SS

DRAWN BY J. ENGLISH	DATE 07/09/09	AERIAL PHOTOGRAPH - 2003 SWMU 5 OLD BURN PIT NSA CRANE CRANE, INDIANA	CONTRACT NUMBER — / OWNER NUMBER —
CHECKED BY T. KLIMEK	DATE 05/27/10		APPROVED BY — / DATE —
COST/SCHEDULE-AREA			APPROVED BY — / DATE —
SCALE AS NOTED	NAVFAC		DRAWING NO. FIGURE 2 / REV 0

P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU5_MW_CROSS_SECT_MAP.MXD 05/27/10 SS

N

Work Area

A

A'

05-01
05-02
05-03
05-04
05-05
05-06
05-07
05-08
05-09
05-10
05-11
05-12
05-13
05-14
05-15
05-16
05-17
05-18
05-19
05SB06
05C01
05T01
05T02
05T03

HIGHWAY 331

HIGHWAY H-5

R-192

400 0 400 Feet

Legend

- Monitoring Well
- Soil Boring
- Utility Pole
- SWMU 5 Work Area (Approxmiate Boundary)
- Building
- Cross Section
- Forest Boundary
- Stream
- Water
- Road
- Railroad
- 50-ft Contour
- 10-ft Contour

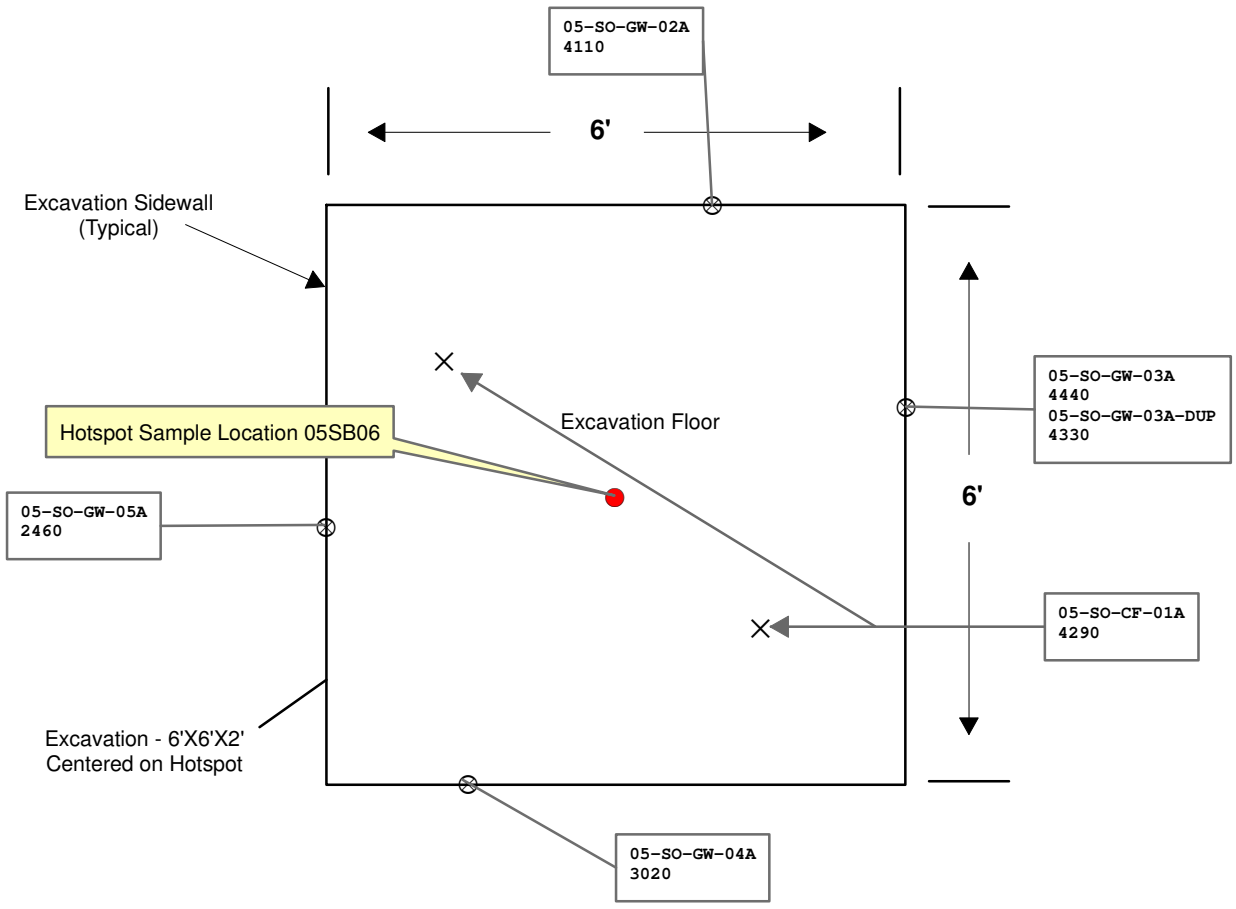
DRAWN BY	S. STROZ
DATE	07/27/09
CHECKED BY	T. KLIMEK
DATE	05/27/10
REVISED BY	___
DATE	___
SCALE	AS NOTED

NAVFAC

TOPOGRAPHY OF WORK AREA
SWMU 5 - OLD BURN PIT
NSA CRANE
CRANE INDIANA

CONTRACT NUMBER	___
APPROVED BY	___
DATE	___
APPROVED BY	___
DATE	___
FIGURE NO.	FIGURE 3
REV	0

P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU05_LEAD_LAB_PORTRAIT.MXD 9/29/10 KM



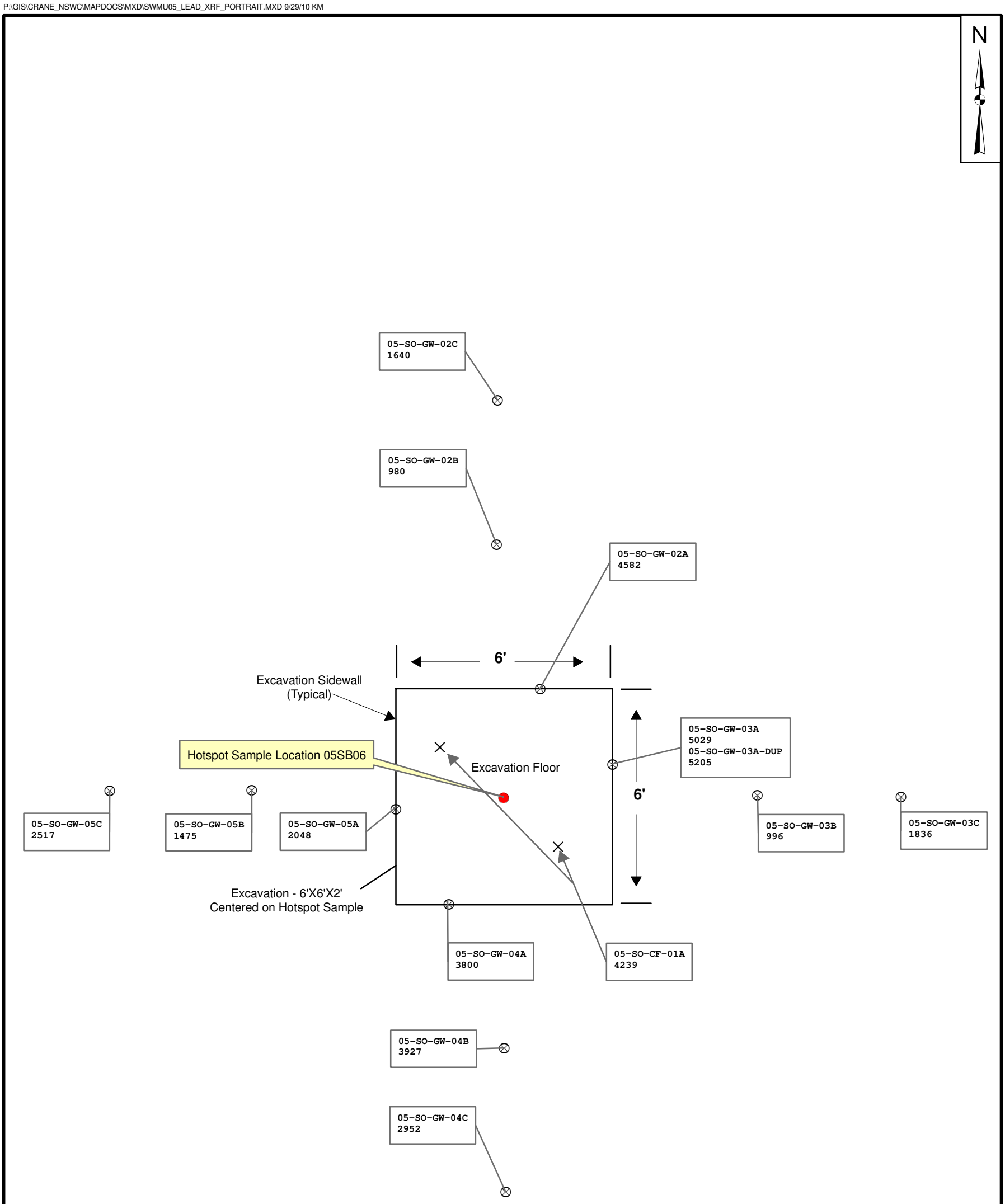
Notes:
1) All detections of total lead in mg/kg.
2) Hot spot sample had lead level of 16,900 mg/kg.
3) Lead concentrations were determinded through fixed-base laboratory analysis.
4) Wall samples were discrete grab samples.
5) Floor sample (05-SO-CF-01A) was a composite sample made of two aliquots.

Legend
- × Composite Aliquot Sample Location
- ⊗ Grab Sample Location
- ● Soil Hotspot Location

0 1 2 4 Feet

DRAWN BY S. STROZ	DATE 05/27/10	LEAD HOT SPOT - ANALYTICAL LAB RESULTS SWMU 5 - OLD BURN PIT NSA CRANE CRANE, INDIANA	CONTRACT NUMBER ___
CHECKED BY T. KLIMEK	DATE 9/29/10		APPROVED BY ___ DATE ___
REVISED BY K. MOORE	DATE 9/24/10		APPROVED BY ___ DATE ___
SCALE AS NOTED			FIGURE NO. 4 REV 0

P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU05_LEAD_XRF_PORTRAIT.MXD 9/29/10 KM



Notes:
1) Lead concentrations based on XRF portable analyzer.
2) Lead concentrations reported in mg/kg.
3) Samples 01A-05A from excavation floor and sidewalls.
4) Samples 02B-05B collected approximately 4 feet from each sidewall.
5) Samples 02C-05C collected approximately 8 feet from each sidewall.
6) "B" and "C" samples collected from 0 to 2' BGS.

Legend

- Composite Sample Location
- Grab Sample Location
- Soil Hotspot Location

Excavation Area Sample - March 5, 2010
0 0.5 ft BGS

Step-out Sample - 4 Feet from Sidewall
March 8, 2010 - 0-2 ft BGS

Step-out Sample - 8 Feet from Sidewall
March 8, 2010 - 0-2 ft BGS

0 1.5 3 6 Feet

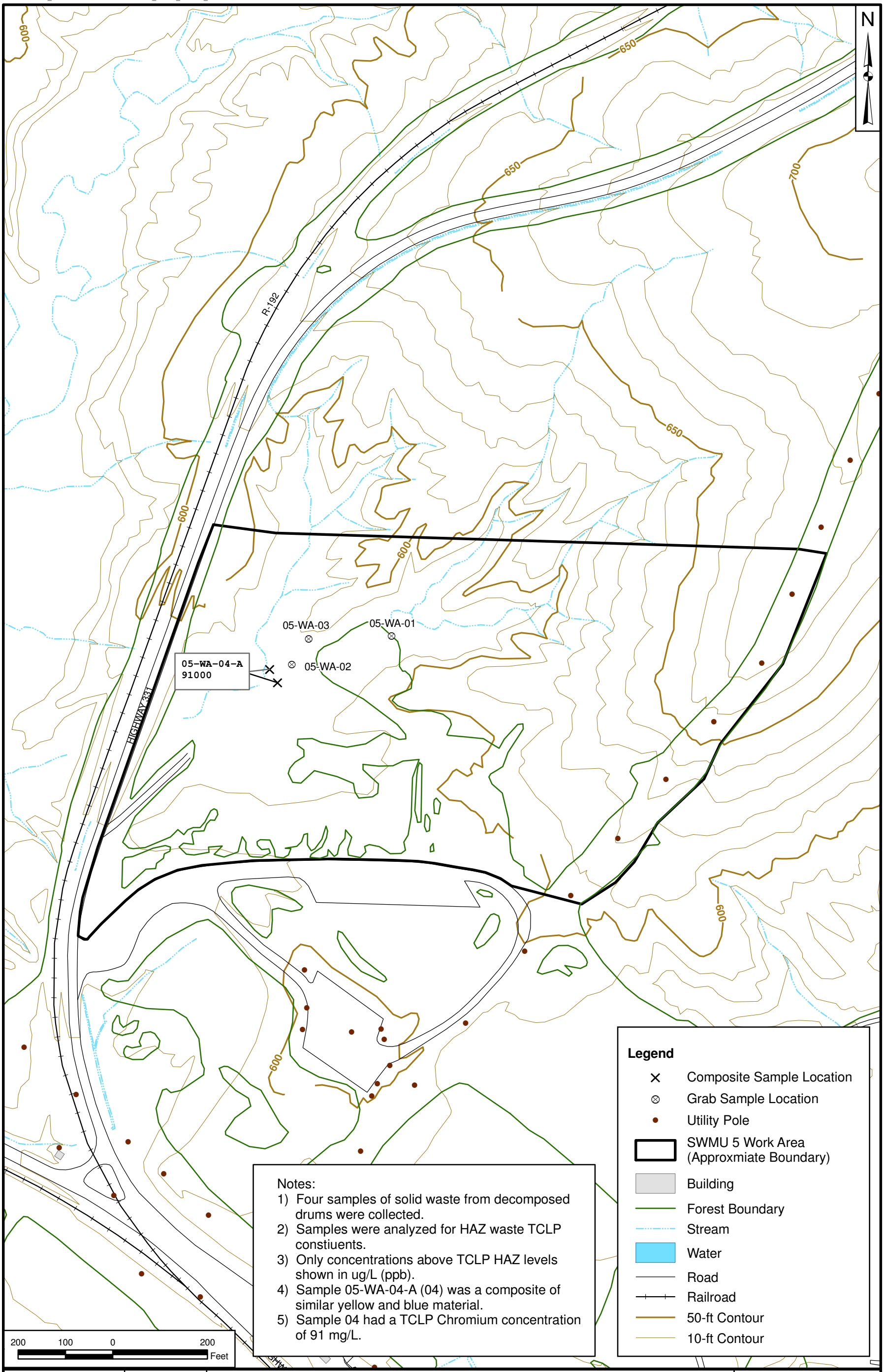
DRAWN BY / DATE	S. STROZ / 05/27/10
CHECKED BY / DATE	T. KLIMEK / 9/29/10
REVISED BY / DATE	K. MOORE / 9/24/10
SCALE	AS NOTED

NAVFAC

LEAD HOT SPOT - XRF RESULTS
SWMU 5 - OLD BURN PIT
NSA CRANE
CRANE, INDIANA

CONTRACT NUMBER	___
APPROVED BY / DATE	___ / ___
APPROVED BY / DATE	___ / ___
FIGURE NO.	5
REV	0

P:\GIS\CRANE_NSWC\MAPDOCS\MXD\SWMU5_DRUM_WASTE_LOCS.MXD 05/28/10 SS



Notes:
1) Four samples of solid waste from decomposed drums were collected.
2) Samples were analyzed for HAZ waste TCLP constiuents.
3) Only concentrations above TCLP HAZ levels shown in ug/L (ppb).
4) Sample 05-WA-04-A (04) was a composite of similar yellow and blue material.
5) Sample 04 had a TCLP Chromium concentration of 91 mg/L.

DRAWN BY / DATE	S. STROZ 05/26/10
CHECKED BY / DATE	T. KLIMEK 05/28/10
REVISED BY / DATE	___ ___
SCALE	AS NOTED

NAVFAC

SOLID WASTE FROM DECOMPOSED DRUMS
TCLP ANALYTICAL RESULTS
SWMU 5 - OLD BURN PIT
NSA CRANE
CRANE, INDIANA

CONTRACT NUMBER	___
APPROVED BY / DATE	___ ___
APPROVED BY / DATE	___ ___
FIGURE NO.	FIGURE 6
REV	0

APPENDIX A

LEE & RYAN PROJECT CLOSE-OUT REPORT

LEE & RYAN

FINAL PROJECT CLOSEOUT REPORT

September 2010

SWMU 5 – OLD BURN PIT/NAVAL SUPPORT ACTIVITY, CRANE
ASH AND FILL EXCAVATION AND DEBRIS REMOVAL
CRANE, INDIANA

Submitted to:

TETRA TECH NUS, INC.
250 West Court Street, Suite 200 West
Cincinnati, OH 45202
Attention: Mr. Tony Klimek, P.E.

Submitted by:

LEE & RYAN ENVIRONMENTAL CONSULTING, INC.
1707 Melody Lane
Greenfield, Indiana 46140

Angelo J. Dattilo, L.P.G.
Director of Environmental Operations

Scott Randall, L.P.G., C.H.M.M.
Senior Project Manager

Service Disabled Veteran Owned Small Business SDVOSB CVE

TABLE OF CONTENTS

Section **Page**

1.0 INTRODUCTION 1

2.0 CONTAMINANTS OF CONCERN 1

3.0 WORK PLAN IMPLEMENTATION 1

3.1 Survey/Access Road Construction/Excavate Lead Impacted Ash and Fill 3
3.2 Collection of Scrap Metal and Debris/Backfill Excavation/Erosion Control 6
3.3 Lead Impacted Ash and Debris and Chromium Impacted Paint Waste Disposal 9

4.0 CONCLUSIONS 10

ATTACHMENT A – Figures
ATTACHMENT B – Photographs
ATTACHMENT C – Daily Activity Summary Reports
ATTACHMENT D – Analytical Laboratory Reports for Ash and Fill Composite Sample
ATTACHMENT E – Subsurface and Topsoil Origin Letter
ATTACHMENT F – Analytical Laboratory Reports for the Subsurface Soil and Topsoil
ATTACHMENT G – Geotechnical Laboratory Reports
ATTACHMENT H – Soil Compaction Test Results
ATTACHMENT I – Waste Disposal Manifests and Documentation

1.0 INTRODUCTION

Lee & Ryan presents this *Final Project Closeout Report* to Tetra Tech NUS, Inc. (Tetra Tech), for environmental services conducted at the 25-acre Solid Waste Management Unit (SWMU) 5 - Old Burn Pit (SWMU 5) located on the Naval Support Activity (NSA) Crane, in Crane, IN (NSA Crane) (CTO C063–Contract N62472-03-D-0057) (see **Figure 1** in **Attachment A**). The 25-acre SWMU 5 is comprised of the Burn Pit Area and 16-acre Gully Area (Work Area) (see **Figures 2 and 3, Attachment A**).

This *Final Project Closeout Report* is being submitted under subcontract number 1056398, *SWMU 5 – Old Burn Pit, Ash and Fill Excavation and Debris Removal Actions, NSA Crane, Crane, IN.* In compliance with the subcontract specifications, Lee & Ryan prepared the *Site Specific Health and Safety Plan* (HASP) and *Activity Hazard Analysis* for this project. These documents were incorporated into Tetra Tech's Health and Safety Plan, which served as the prime document to guide site work.

The three (3) primary tasks completed for this project were conducted in accordance with the *Subcontractor Statement-of-Work (Subcontractor SOW)* dated December 4, 2009, information conveyed during the mandatory on-site meeting on December 15, 2009, the project *Work Plan* submitted to Tetra Tech on March 1, 2010, *Amendment No. 1* to the *Subcontractor SOW* dated December 18, 2009, *Change Order No. 1* dated March 22, 2010, and *Change Order No. 2* dated April 2, 2010.

The three (3) key tasks implemented during this project include the following:

1. Excavated, containerized, transported, and disposed of lead impacted ash and fill.
2. Collected and disposed of surficial metallic debris and general refuse.
3. Removed, containerized, and disposed of solid waste encountered in decomposed drums during debris removal.

Lee & Ryan constructed and maintained erosion control devices and performed monthly inspections and maintenance until the site was stabilized. Photographs of the activities associated with this project are provided as **Attachment B**. Daily activity summary reports for the project are provided as **Attachment C**.

2.0 CONTAMINANTS OF CONCERN

Lead was the contaminant of concern (COC) associated with this project; however, Lee & Ryan encountered hazardous paint waste which was excavated, containerized, and disposed off-site. Concentrations of five (5) constituents were reported from the composite sample collected from the ash and fill while being excavated and are discussed in **Section 3.1** of this report.

3.0 WORK PLAN IMPLEMENTATION

The key field activities and dates necessary to implement the *Work Plan* and scope modifications described in Change Orders 1 and 2 are summarized below. Following the table is a discussion of the key activities and results.

Date (2010)	Key Field Activity
January 13-14	Topsoil identified, sampled, and submitted to the laboratory.
February 11	Surveyed lead impacted ash and fill area and staked.
March 3	• Health and Safety meeting on-site. • Received heavy equipment. • Received gravel. • Constructed entry road. • Assembled three (3) Questar® HazBoxs and lined with 60 mil plastic. • Excavated lead impacted ash and fill into boxes. • Collected composite ash and fill sample. • Staged and weatherized boxes at entry road. • Secured excavation from precipitation.
March 4	Collect steel debris and refuse.
March 5	• Collected steel debris and refuse. • Received subsurface soil and topsoil. • Applied erosion control to excavation.
March 8	• Collected steel debris and refuse. • Placed and compacted subsurface soil and placed topsoil. • Conducted compaction testing on subsurface soil.
March 9	Collected steel debris and refuse.
March 10	Collected steel debris and refuse.
March 25	Change Order No. 1: • Housekeeping cleanup. • Installation of erosion control blankets, etc. of housekeeping areas.
March 26	Installation of erosion control blankets, etc.

Date (2010)	Key Field Activity
April 1	Pick-up and disposal of two (2) boxes of lead impacted ash and fill (non-hazardous), and 6, 5-gallon pails of chromium impacted hazardous paint waste. Change Order No. 2: • Excavated and containerized hazardous chromium paint waste.
April 2	Replaced box – transferred the fill from the damaged box to the new box and sealed.
April 9	Change Order No. 2: • Pick-up and disposal of 3rd and final box of ash and fill. • Pick-up and disposal of two (2), 55-gallon drums and one (1), 35-gallon drum of chromium paint waste.
April 29	Monthly erosion control inspection and associated maintenance work (1 of 3).
May 5	Monthly erosion control inspection and associated maintenance work (1 of 3).
May 25	Monthly erosion control inspection and associated maintenance work (2 of 3).
July 7	Monthly erosion control inspection and associated maintenance work (3 of 3). The site was determined to be stabilized.

3.1 Survey/Access Road Construction/Excavate Lead Impacted Ash and Fill

Lee & Ryan and the subcontractors used on this project pre-registered and acquired security passes from NSA Crane prior to entry on the Crane property. The Site was accessed via Gate House No. 4 (see **Figure 4**).

Survey

The first key task conducted was the professional survey of the lead impacted ash and fill area designated

for excavation on February 11, 2010, by the following firm:

- ✓ Bledsoe Riggert & Guerrettaz Inc.
  1351 West Tapp Road
  Bloomington, IN 47403
  812-336-8277

The survey company brought in horizontal and vertical control in the form of a hub in the vicinity of the excavation and staked the ash and debris area.

Access Road Construction

Lee & Ryan began field activities on March 3, 2010, via the receipt of construction equipment, gravel, and two (2) roll-off boxes. The construction equipment included one (1) mini-excavator with a two (2) foot bucket, grapple, and fork lift attachments, and one (1) multi-terrain loader. The equipment was received in the vicinity of the construction road entrance as shown on **Figure 5, Attachment A**. The equipment was rented from the following company:

- ✓ MacAllister CAT
  2305 Industrial Drive
  Bloomington, IN 47404
  812-349-9220

Lee & Ryan constructed a gravel access road using the mini-excavator and two (2) foot attached bucket based on the design illustrated in the *Work Plan*. The mini-excavator was used to scrape approximately 0.5 feet of sod from the access road footprint and pile it in the staging area adjacent to the access road. After the sod was removed, TenCate Mirafi® 180N geotextile fabric made of nonwoven polypropylene fibers was placed on top of the exposed soil. Subsequently, 1-triaxle load carrying 11.8 tons of coarse aggregate stone (INDOT C4 No. 2) was offloaded on top of the geotextile fabric and spread across the footprint with the multi-terrain loader and bucket. The gravel was purchased from and delivered by the following company:

- ✓ Rogers Group
  1101 North Oard Road
  Bloomington, IN 47404
  812-333-8560

Excavation

Once the gravel access road was built, Lee & Ryan used the mini-excavator with a two (2) foot bucket to excavate the lead impacted ash and fill material from the surveyed area. The area excavated was approximately 6 foot long by 6 foot wide by 2 foot deep (6' x 6' x 2') in size (see **Figures 6 and 7, Attachment A**). The ash and fill was place directly in three (3) Questar® HazBox Hazardous Waste

Boxes lined with 60 mil plastic sheeting. The boxes were staged on wooden pallets and were filled approximately 80% full.

Once the excavation activities were complete, the mini-excavator with a fork lift attachment was used to transport the boxes to the staging area adjacent to the access road. The boxes were subsequently taped shut and protected from moisture with a 40 mil plastic cover. The excavation cavity was covered with 10 mil plastic sheeting to prevent surface water intrusion.

Decontamination

Following completion of the excavation, the mini-excavator bucket was decontaminated by spraying a soapy solution on the bucket and hand wiping clean using paper towels. The paper towels were placed in the boxes for disposal.

Composite Sample of Fill Material/Laboratory Analysis

During the excavation, Lee & Ryan collected two (2) composite ash and fill samples including one (1) submitted to Heritage Environmental Services (Heritage) for determination of proper disposal, and one (1) composite ash and fill sample submitted to Pace Analytical (Pace) for environmental parameters. Lee & Ryan collected the ash and fill by hand directly from each mini-excavator bucket load using disposable nitrile gloves and mixed the material from all bucket loads in a stainless steel bowl. The used nitrile gloves were disposed in one (1) of the adjacent boxes. The ash and fill sample containers were labeled, placed in coolers, and submitted to the laboratories under proper chain-of-custody protocols. Laboratory analytical results are included in **Attachment D**.

The address, contact information, and identification numbers for Heritage and Pace are provided below.

- ✓ Heritage Environmental Services, LLC
  7901 West Morris Street
  Indianapolis Indiana 46231
  Contact name: John Murray, CHMM, 317-402-8700
- ✓ Pace Analytical
  7726 Moller Road
  Indianapolis Indiana 46268
  Telephone number: 317-875-5894

Pace tested for the following environmental parameters:

- Total petroleum hydrocarbons (TPH), diesel range organics (DRO, C8-C28), USEPA Method SW-846 8015 Modified (M).
- Total PCBs USEPA Method SW-846 8082M.
- Arsenic, barium, cadmium, chromium, lead, selenium, and silver, ICP, Toxic Contaminant Leachate Procedure (TCLP), USEPA Method SW-846 6010.

- Mercury, TCLP, USEPA Method SW-846 7470.
- Semivolatile organic compounds (SVOCs), TCLP, USEPA Method SW-846 8270.
- VOCs, TCLP, USEPA Method SW-846 8260.
- Characteristic waste determination: ignitability (USEPA Method SW-846 1030); reactive sulfide (USEPA Method SW-846 7.3.4.2) and cyanide (USEPA Method SW-846 7.3.3.2), and corrosivity (pH) (USEPA Method SW-846 9045).
- Pesticides, TCLP, USEPA Method SW-1311/8081B.
- Herbicides, TCLP, USEPA Method SW-1311/8151A.

A summary of the analytical results detected above reportable limits is provided below.

Parameter	Result
TPH	234 milligrams per kilogram (ppm)
PCB-1254	140 micrograms per kilogram (ppb)
PCB-1260	65.5 micrograms per kilogram (ppb)
Cadmium	0.18 milligrams per liter (ppm)
Lead	3.4 milligrams per liter (ppm)
pH	8.0

Detectable concentrations of six (6) parameters were reported; however, no concentration was reported above hazardous waste limits. The laboratory analytical reports are provided as **Attachment D.**

3.2 Collection of Scrap Metal and Debris/Backfill Excavation/Erosion Control

Collection of Scrap Steel and Debris

Lee & Ryan removed visible scrap metal and general refuse to improve the aesthetics of the Work Area and reduce the potential health and safety risks. Prior to debris removal activities, Lee & Ryan conducted a Metal Identification Survey (MIS) which included multiple traverses across the Work Area relying on visual observations to identify and mark debris. Furthermore, Lee & Ryan used leaf blowers and rakes to uncover materials not observed during the MIS. Approximately 50 tons of scrap steel and debris were collected by hand and hauled to roll-off boxes located adjacent to the access road. The roll-off boxes of scrap metal and general debris were picked up and disposed as non-hazardous waste by the following company:

- ✓ Mullins Supply, Inc.
  7362 Russell Drive
  Bicknell, Indiana 47512

Contact name: Mr. Rod Mullins
Telephone number: 812-881-9169
USDOT number: 842565
EPA/State identification numbers: NA

Identified debris embedded in the fill area which could not be removed by hand was removed using a mini-excavator with a grapple attachment. If the embedded debris could not be removed with the grapple, it was reduced to ground surface with a cutting torch or bolt cutter, or manually pounded into the ground with a sledgehammer or mini-excavator bucket depending on the circumstances.

Some pieces of apparent transite were encountered but were nonfriable (i.e. not easily pulverized or crumbled, or the contents are not likely to become airborne). The material was picked up by hand and disposed in the solid waste roll-off dumpster.

Backfilling the Excavation

The excavation was backfilled with subsurface soil and topsoil imported from two (2) separate off-site locations. Approximately 3.5 cubic yards of subsurface soil and 1.5 cubic yards of topsoil were delivered by JJ's Concrete Construction, LLC to the staging area on-site March 5, 2010.

The subsurface soil came from the following location:

✓ Glen S. Graber Farm
1000 East, 1475 North
Odon, Indiana 47562
Contact name: Mr. Nate Wagler
812-636-0173

The topsoil came from the following location:

✓ JJ's Concrete Construction, LLC
9149 East 800 North
Montgomery, Indiana 47558
Contact name: Mr. Nate Wagler
812-636-0173

Per Lee & Ryan's request, Mr. Nate Wagler confirmed the origin of the subsurface soil and topsoil and that the materials were not impacted by petroleum or any other potentially hazardous material. His signature is on a letter provided as **Attachment E**. To further ensure clean fill was used to backfill the excavation, Lee & Ryan collected soil samples from subsurface soil and topsoil and Pace analyzed both samples for the following parameters:

- Total petroleum hydrocarbons (TPH), diesel range organics (DRO, C8-C28), USEPA Method SW-846 8015.
- Total PCBs USEPA Method SW-846 8082M.
- TPH, gasoline range organics (GRO), USEPA Method SW-846 8015.
- Benzene, toluene, ethylbenzene, and xylenes, USEPA Method SW-846 5030/8021.
- Lead, ICP, USEPA Method SW-846 6010.
- Lead ICP, TCLP, Method SW-846 6010.
- Characteristic waste determination: ignitability (USEPA Method SW-846 1030); reactive sulfide (USEPA Method SW-846 7.3.4.2) and cyanide (USEPA Method SW-846 7.3.3.2), and corrosivity (pH) (USEPA Method SW-846 9045).

Laboratory analytical results are included as **Attachment F**. The concentrations for the parameters tested for both the subsurface soil and topsoil were reported as not detected.

In addition to the analytical parameters, the subsurface soil and topsoil were tested for geotechnical parameters by the following company:

✓ Patriot Engineering and Environmental, Inc.
6330 East 75th Street, Suite 216
Indianapolis, Indiana 46250

The following physical characteristics were tested:

- Material finer than a 75 micrometer sieve [American Society for Testing and Materials (ASTM) D 1140][maximum of 25% passing a No. 200 sieve by weight].
- Liquid limit (ASTM D 4318), 35 maximum.
- Plasticity index (ASTM D 4318), 12 maximum.
- Subsurface soil: Unified Soil Classification System (USCS) (ASTM) D 2487, group symbols GW, GP, GM, SW, SP, or SM.
- Topsoil: United States Department of Agriculture (USDA), medium-textured loam.
- Maximum particle size of one (1) inch.

Subsurface soil results: the material finer than a 75 micrometer sieve for subsurface soil was 56.3%; liquid limit = 25, plasticity index = 8; USCS group was lean clay (CL – red silty clay with a trace of gravel).

Topsoil results: the material finer than a 75 micrometer sieve for subsurface soil was 79.3%; liquid limit = 23, plasticity index = 3; USCS group was silt (ML) and USDA group was a silt loam.

The geotechnical laboratory reports are provided in **Attachment G**.

Once the soil was delivered, it was transferred using the multi-terrain loader with a bucket to the excavation area. Lee & Ryan compacted the soil in 12-inch loose lifts to 90 percent of the maximum dry density by standard Proctor method. The subsurface soil was placed to within approximately four (4)

inches from finish grade, and then topsoil was superimposed on the subsurface soil to finish grade. Excess common fill and topsoil was placed on the northeast slope to fill the hole where the rocket motor casing was removed. The topsoil did not require compaction testing.

On-site compaction testing was conducted by Patriot Engineering and Environmental, Inc. (Patriot) as referenced above. The soil compaction test results are included in **Attachment H**.

Erosion and Sediment Control and Inspections

The mini-excavator and multi-terrain loader were equipped with rubber tracks, but due to soft cover soil because of the time of year and periodic rain, some surface soil disturbance occurred in the form of ruts, soil scarring and tracks from equipment, surface erosion from debris removal, etc. In response, a combination of 10 foot long, eight (8) inch diameter coir logs (non-woven coconut fiber enclosed in a polypropylene net)(see **Figures 7 and 8**), loose straw, and rolls of matting were used to control erosion and sediment runoff (see photos in **Attachment B**).

The coir logs and matting were secured with wooden stakes and placed around the excavation, along the toe and top of the north and east slopes, equipment pathways, and on part of the entrance road. Coir logs were also used where the creek enters the culvert under the road to the west.

Lee & Ryan conducted three (3) monthly erosion control inspections to repair, modify, etc. the erosion control devices. The first inspection commenced on April 29, 2010, with additional work performed on May 5, 2010. The second inspection was conducted on May 25, 2010, and the third inspection on July 7, 2010.

3.3 Lead Impacted Ash and Debris and Chromium Impacted Paint Waste Disposal

Heritage Transport, LLC, picked up two (2) boxes of lead impacted ash and fill, and 6, 5-gallon pails of chromium impacted hazardous paint on April 1, 2010. The ash and fill was and transported and disposed at Heritage's Subtitle D landfill located in Roachdale, Indiana. The chromium waste was transported and disposed at Heritage's Subtitle C landfill located in Roachdale. Waste disposal manifests and related documentation are included as **Attachment I.**

On April 9, Heritage Transport, LLC, picked up one (1) box of lead impacted ash and fill, and two (2), 55-gallon drums, and one (1), 35-gallon drum of hazardous chromium paint waste. The waste was disposed at Heritage's Subtitle D and Subtitle C landfills respectively. Waste disposal manifests and related documentation are included as **Attachment I.**

The required permit information for the hauler and disposal facilities are summarized below.

- ✓ Hauler: Heritage Transport, LLC – Technical Services
  USEPA #IND058484114
  DOT# 314460 ID# 35-2044219

✓ TSD Facility: Heritage Environmental, LLC
USEPA #IND093219012
ID# 35-2044218

4.0 CONCLUSIONS

This *Final Project Closeout Report* was prepared for the purpose of documenting tasks completed at the SWMU 5 located at the NSA Crane facility in Crane, Indiana. Lead impacted ash and fill and chromium impacted hazardous paint waste was excavated, transported, and disposed at approved landfills. Exposed surficial metallic debris and general refuse was collected and properly disposed as non-hazardous waste. At the end of every field day, including the erosion control inspections, Lee & Ryan prepared and submitted daily activity summary reports highlighting the field tasks conducted while on-site.

Lee & Ryan placed erosion control devices, including coir logs, loose straw, and matting, at the ash and fill excavation, on the landfill surfaces where waste materials were exposed, the toe of the landfill, and at the culvert that trends below the road to the west. Subsequently, the erosion control devices were inspected and maintained by Lee & Ryan during monthly inspections conducted in April, May, and July 2010. The Work Area erosion control materials were deemed stable on July 7, 2010, and no further inspections were conducted.

ATTACHMENT A

Figures

Figure 1 – SWMU 5 – Base and Site Location Map

Figure 2 – SWMU 5 – Aerial Photograph (2003)

Figure 3 – SWMU 5 – Site Plan and Work Area

Figure 4 – SWMU 5 – Traffic Plan

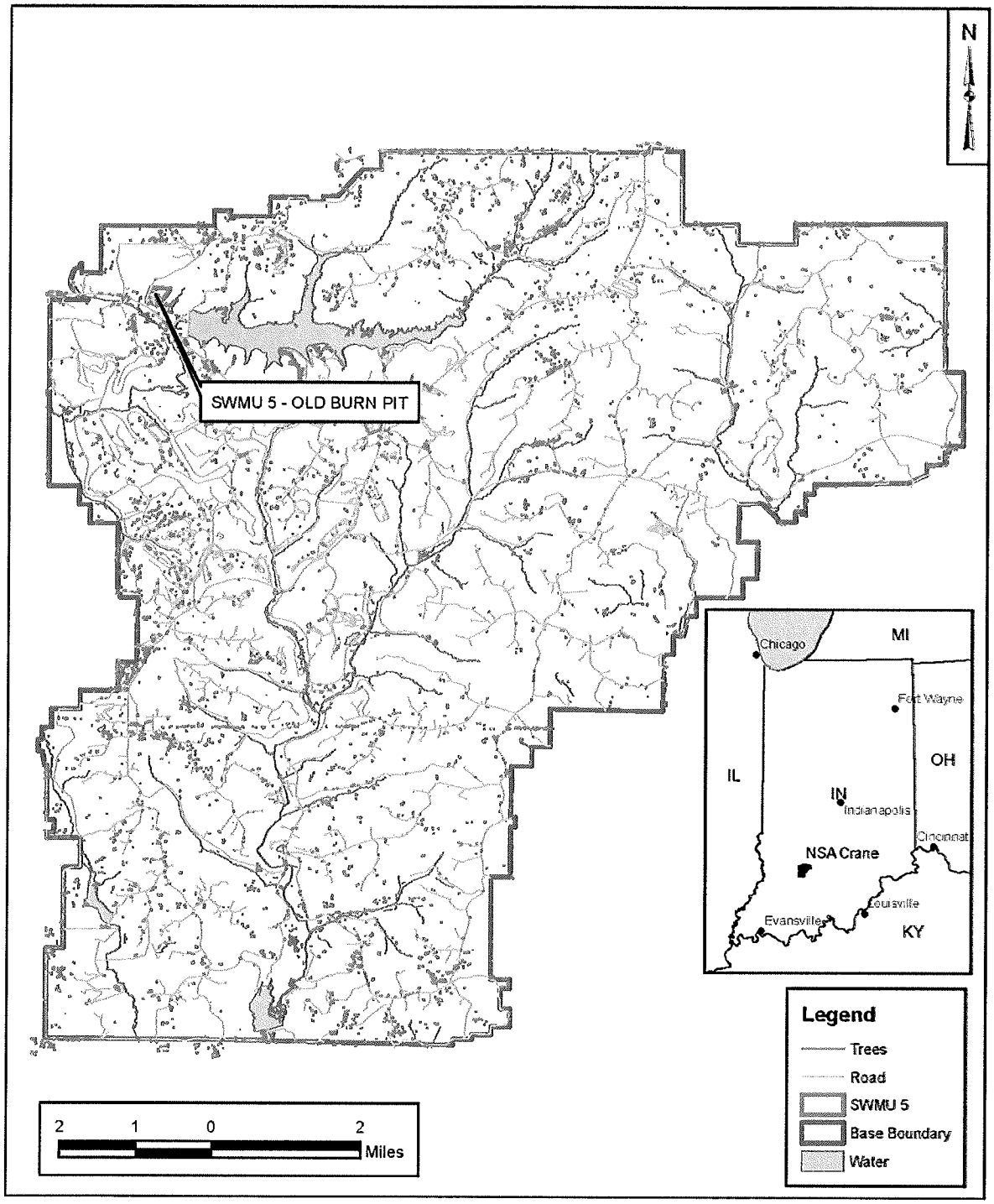
Figure 5 – SWMU 5 – Site Development Plan

Figure 6 – SWMU 5 – Geologic Cross-Section A-A'

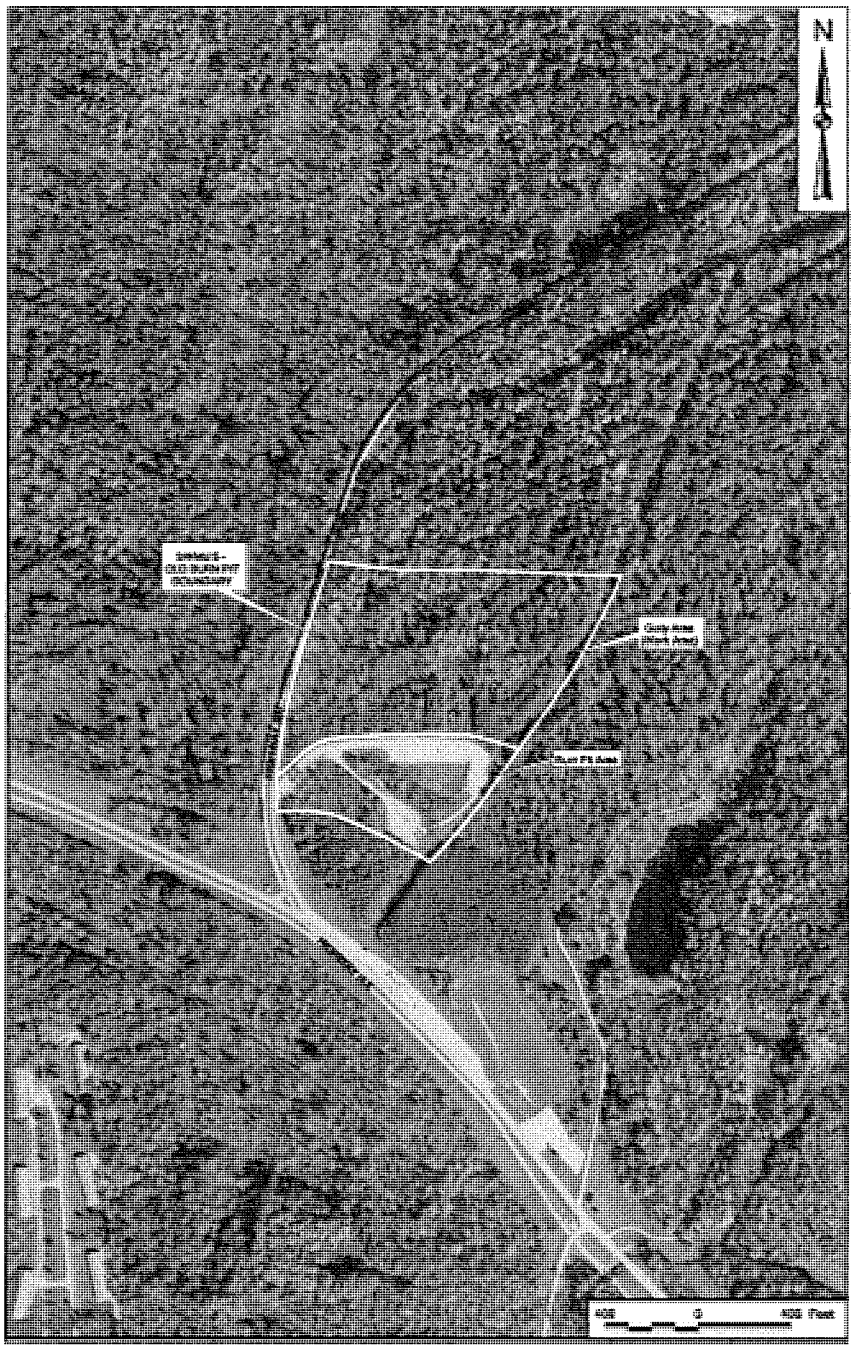
Figure 7 – SWMU 5 – Excavation Plan

Figure 8 – SWMU 5 – Geotextile Specification

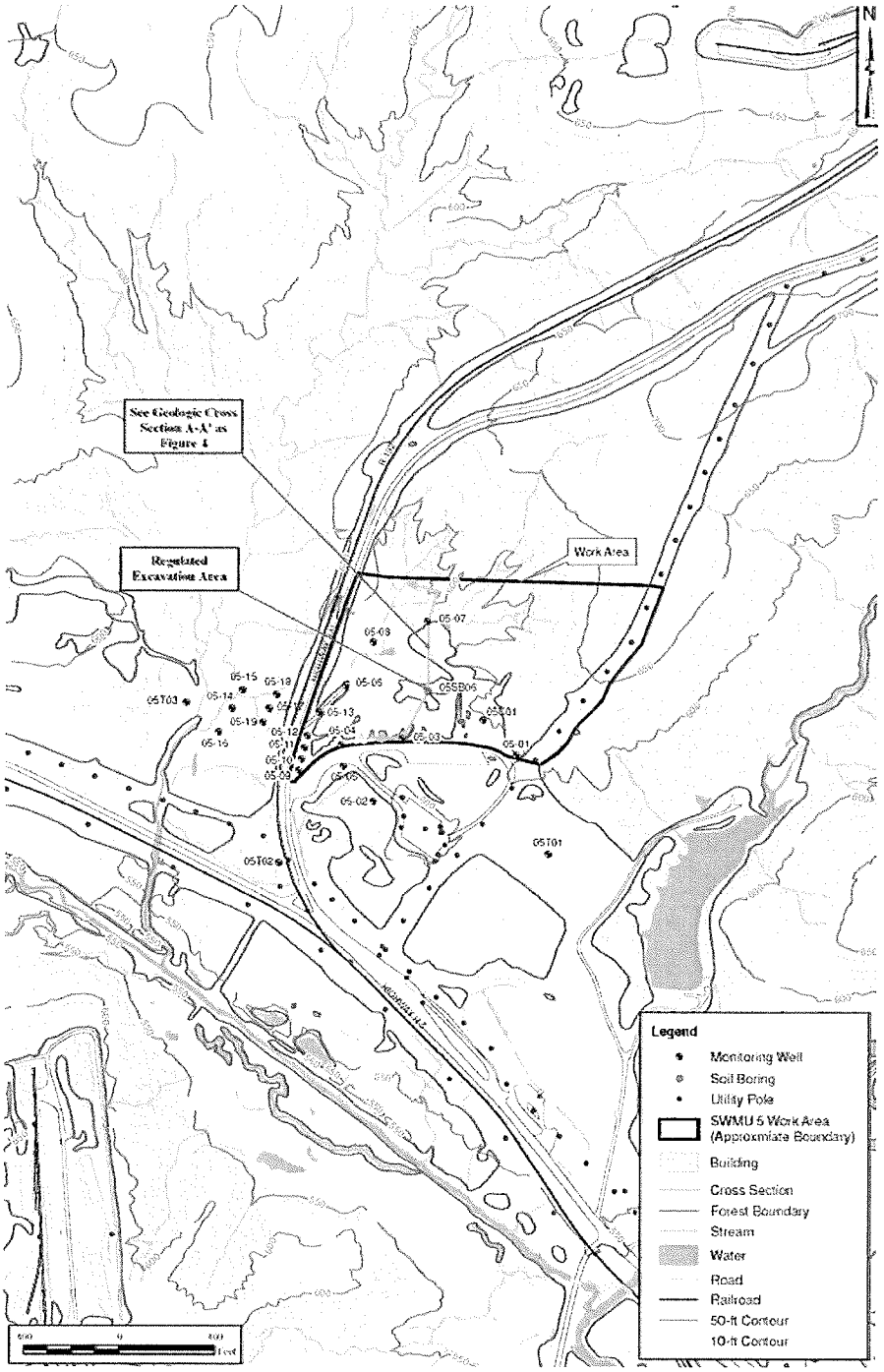
Figure 9 – SWMU 5 – Coir Log Specifications



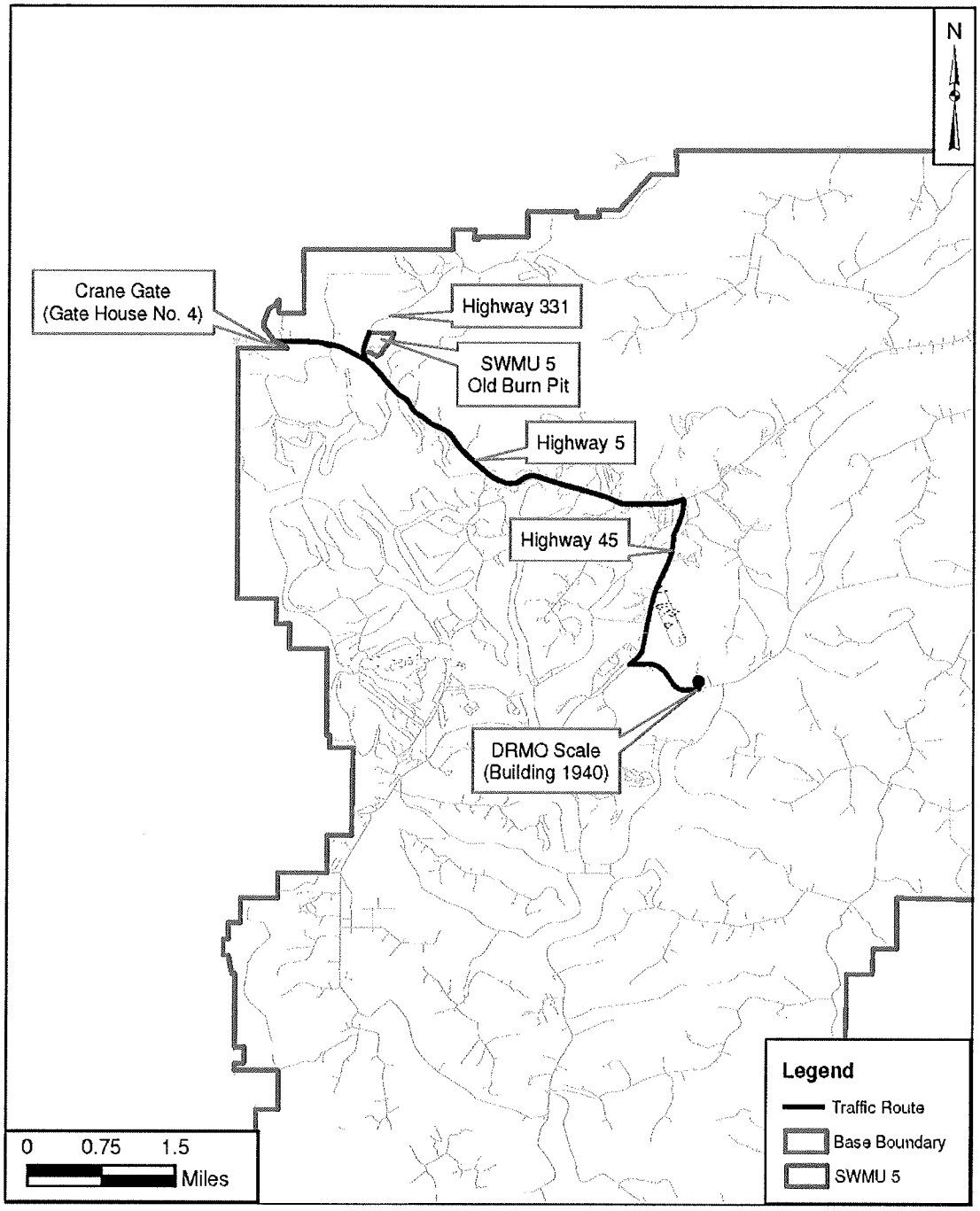
LEE & RYAN ENVIRONMENTAL • CONSTRUCTION • ENGINEERING	*Base and Site Location Map* *SWMU 5 – Old Burn Pit* *NSA Crane* *Crane, IN*	Date: 5/7/10 **Figure 1**
Scale As Noted		Project # 10002



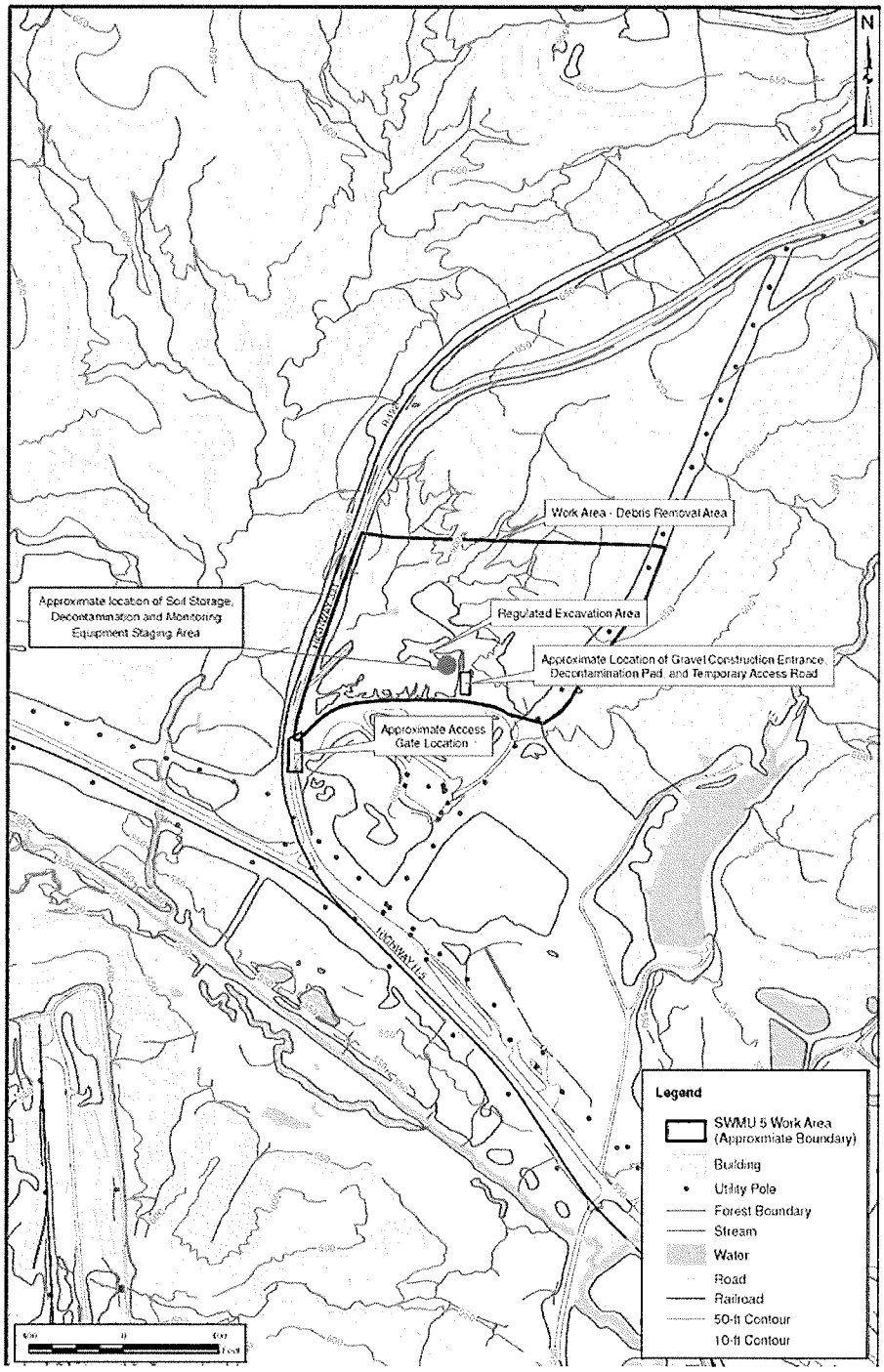
LEE & RYAN ENVIRONMENTAL • CONSTRUCTION • ENGINEERING	*Aerial Photograph (2003)* SWMU and Surrounding Areas NSA Crane Crane, Indiana	Date: 5/7/10 **Figure 2**
Scale As Noted		Project # 10002



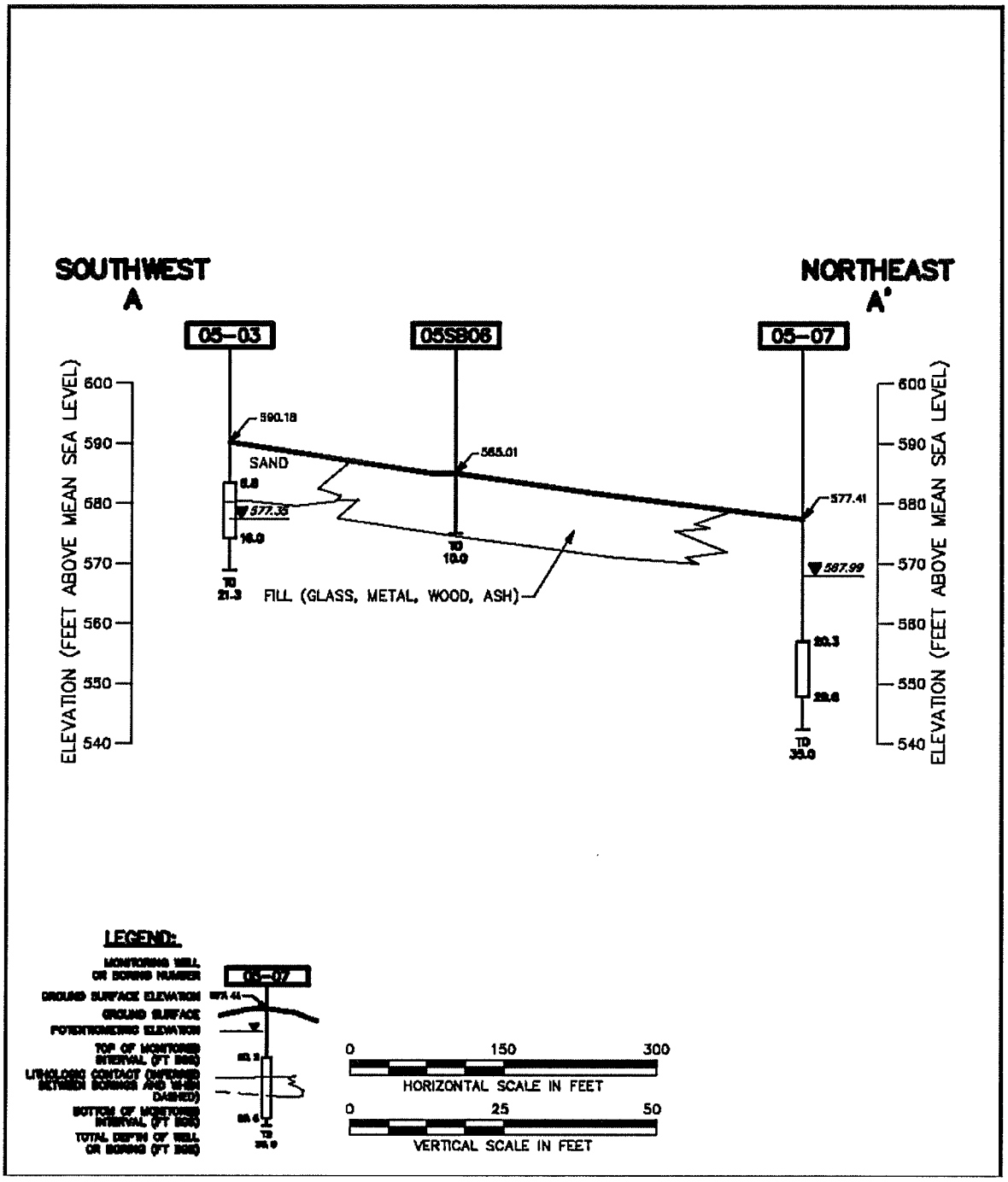
LEE & RYAN ENVIRONMENTAL • CONSTRUCTION • ENGINEERING	***Site Plan*** SWMU 5 – Work Area NSA Crane Crane, Indiana	Date: 5/7/10 **Figure 3**
Scale 1" = As Noted		Project # 10002



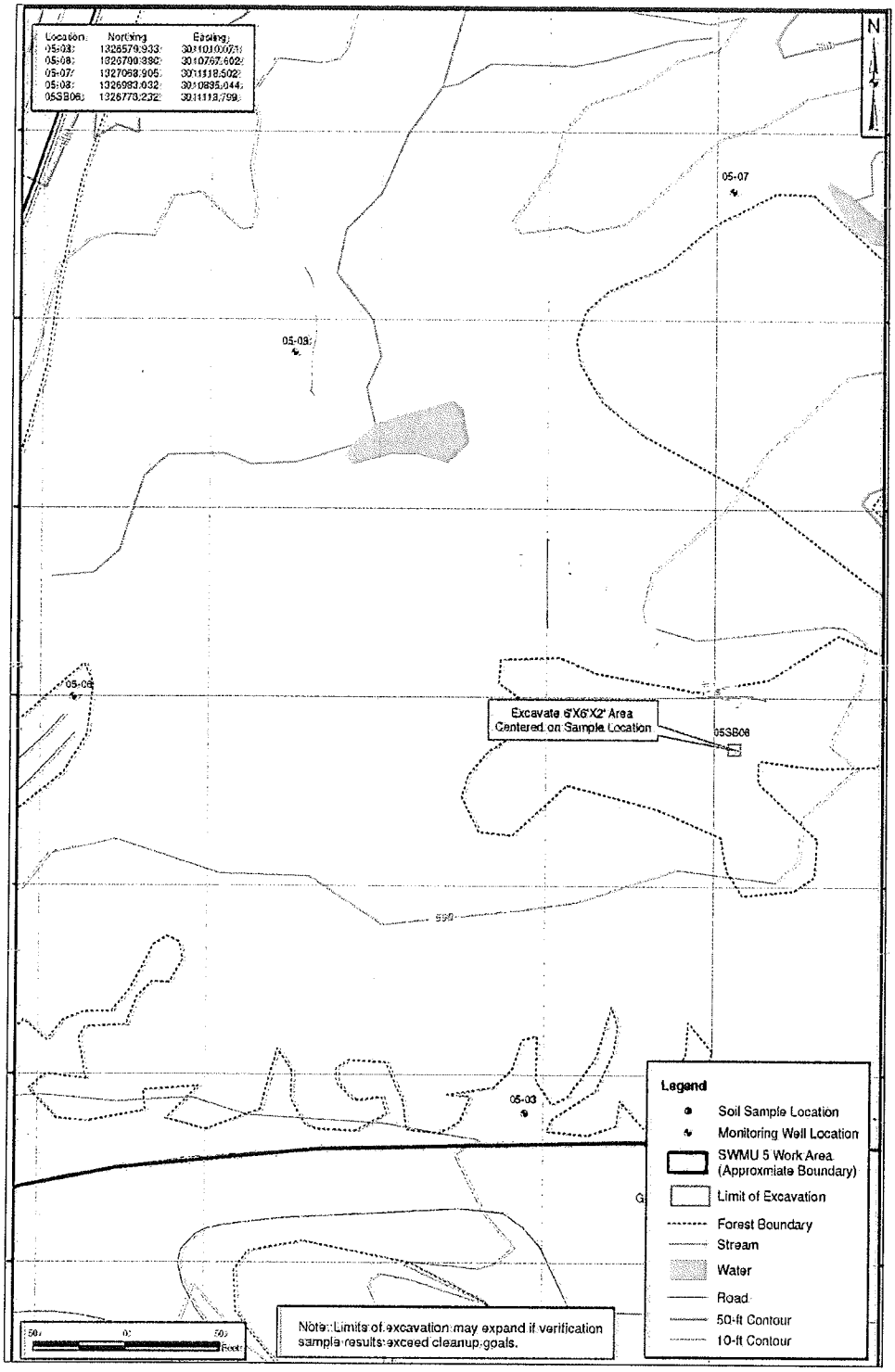
LEE & RYAN ENVIRONMENTAL • CONSTRUCTION • ENGINEERING	***Traffic Plan*** SWMU 5 Work Area NSA Crane Crane, Indiana	Date: 5/7/10 **Figure 4**
Scale As Noted		Project # 10002



LEE & RYAN ENVIRONMENTAL • CONSTRUCTION • ENGINEERING	***Site Development Plan*** SWMU 5 – Work Area NSA Crane Crane, Indiana	Date: 5/7/10 **Figure 5**
Scale As Noted		Project # 10002



LEE & RYAN ENVIRONMENTAL • CONSTRUCTION • ENGINEERING	*Geologic Cross Section A-A'* SWMU 5 Work Area NSA Crane Crane, Indiana	Date: 5/7/10 **Figure 6**
Scale As Noted		Project # 10002



LEE & RYAN ENVIRONMENTAL • CONSTRUCTION • ENGINEERING	***Excavation Plan*** SWMU 5 – Work Area NSA Crane Crane, Indiana	Date: 5/7/10 **Figure 7**
Scale As Noted		Project # 10002

TENCATE
Mirafi

Drainage Separation

Mirafi® 180N

Mirafi® 180N is a nonwoven geotextile composed of polypropylene fibers, which are formed into a stable network such that the fibers retain their relative position. Mirafi® 180N geotextile is inert to biological degradation and resists naturally encountered chemicals, alkalis, and acids.

Mechanical Properties	Test Method	Unit	Minimum Average Roll Value	
			MD	CD
Grab Tensile Strength	ASTM D 4632	N (lbs)	912 (205)	912 (205)
Grab Tensile Elongation	ASTM D 4632	%	50	50
Trapezoid Tear Strength	ASTM D 4533	N (lbs)	356 (80)	356 (80)
Mullen Burst Strength	ASTM D 3786	kPa (psi)	2411 (350)	
Puncture Strength[1]	ASTM D 4833	N (lbs)	490 (110)	
CBR Puncture Strength	ASTM D 6241	N (lbs)	2225 (500)	
Apparent Opening Size (AOS)[2]	ASTM D 4751	mm (U.S. Sieve)	0.18 (80)	
Permittivity	ASTM D 4491	sec^{-1}	1.1	
Flow Rate	ASTM D 4491	$l/min/m^2$ ($gal/min/ft^2$)	3870 (95)	
UV Resistance (at 500 hours)	ASTM D 4355	% strength retained	70	

[1] ASTM D 4833 has been replaced with ASTM D 6241
[2] ASTM D 4751: AOS is a Maximum Opening Diameter Value

Physical Properties	Test Method	Unit	Typical Value	
Weight	ASTM D 5261	g/m^2 (oz/yd^2)	271 (8.0)	
Thickness	ASTM D 5199	mm (mils)	1.8 (72)	
Roll Dimensions (width x length)	--	m (ft)	3.8 x 110 (12.5 x 360)	4.5 x 91 (15 x 300)
Roll Area	--	m^2 (yd^2)	418 (500)	
Estimated Roll Weight	--	kg (lb)	120 (265)	

Disclaimer: TenCate assumes no liability for the accuracy or completeness of this information or for the ultimate use by the purchaser. TenCate disclaims any and all express, implied, or statutory standards, warranties or guarantees, including without limitation any implied warranty as to merchantability or fitness for a particular purpose or arising from a course of dealing or usage of trade as to any equipment, materials, or information furnished herewith. This document should not be construed as engineering advice.

TENCATE
materials that make a difference

FGS000351
ETQR26

LEE & RYAN ENVIRONMENTAL • CONSTRUCTION • ENGINEERING	*Mirafi 180N Nonwoven Geotextile NSA Crane Crane, IN*	Date: 5/7/10
		Figure 8
Scale No Scale		Project # 10002

D2 Land & Water Resource

Providers of quality products, service, competitive pricing, site assessments, and installation assistance.

D2 Sediment Control Coir Log Specification

D2 5PN 5CN Coir Log for Sediment Control Specification 09-19-08

Material.....100% Coir Fiber

Interior Structure.....Uniformly Machine Compressed Non-Woven Coir Fiber

Diameter.....8", 12", 16", and 20"

Coir Fiber Density.....5lbs. per cu. ft.

Allowable Foreign Matter.....3% Maximum

Exterior Net Structure.....5PN Polypropylene Net 5CN Coir Net

Permeability D2434.....>16.3cm/sec

General Information

Can be Moved and Used Up to Six Times.

Quickly & Effectively Filter Sediment Laden Water

High Visibility Orange or Yellow Exterior Net Available

Cost Less than Silt Fence & Filter Socks to Use & Maintain

Durable Enough to Survive the Impact of Trucks and Equipment

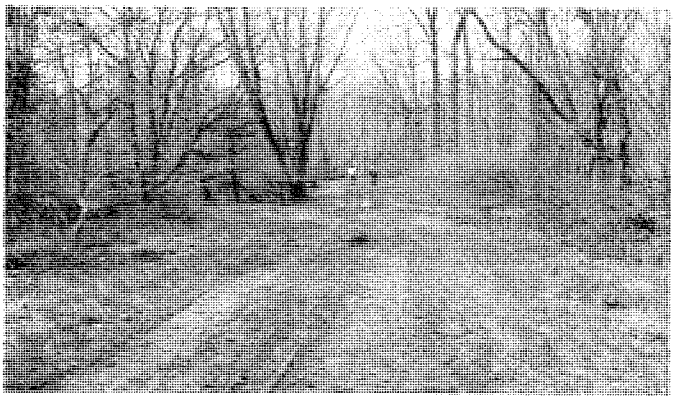
Useful for De-Watering, Storm Inlet, & Back of Curb Applications

LEE & RYAN ENVIRONMENTAL • CONSTRUCTION • ENGINEERING	*Spec Sheet for Coir Log 10 February 2010 SWMU 5 – Old Burn Pit NSA Crane Crane, IN*	Date: 5/7/10
		Figure 9
Scale No Scale		Project # 10002

ATTACHMENT B

Photographs

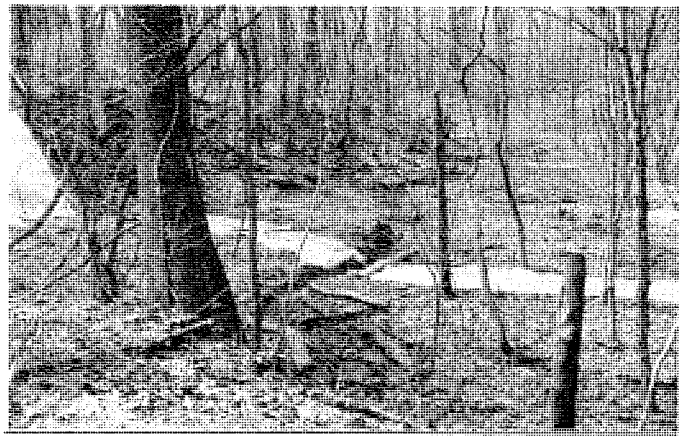
SWMU 5 – Old Burn Pit/Naval Support Activity, Crane, Indiana, Lead Impacted Ash and Fill Excavation and Debris Removal Photos, May 7, 2010



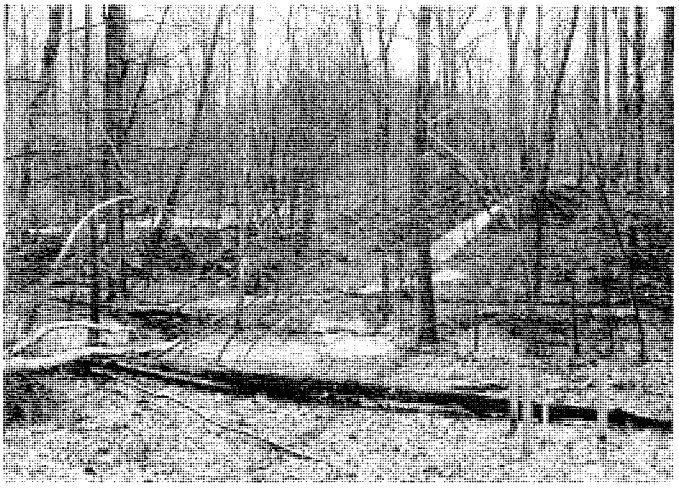
Entrance road to Work Area.

Erosion control along access routes and slope of fill.

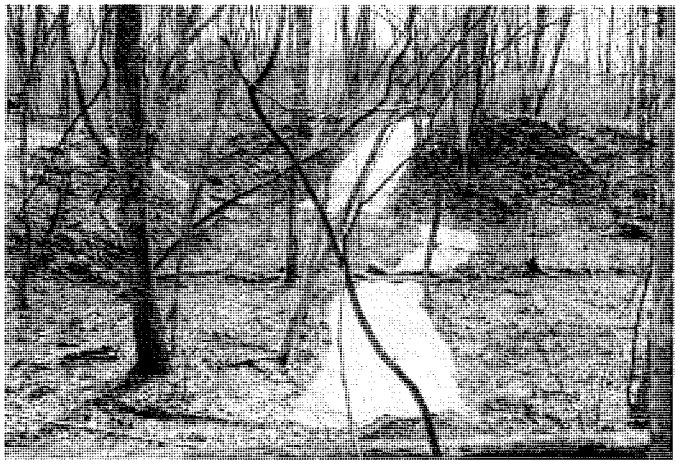
Lead impacted ash and fill excavation area.



Erosion control along stream at toe of slope.

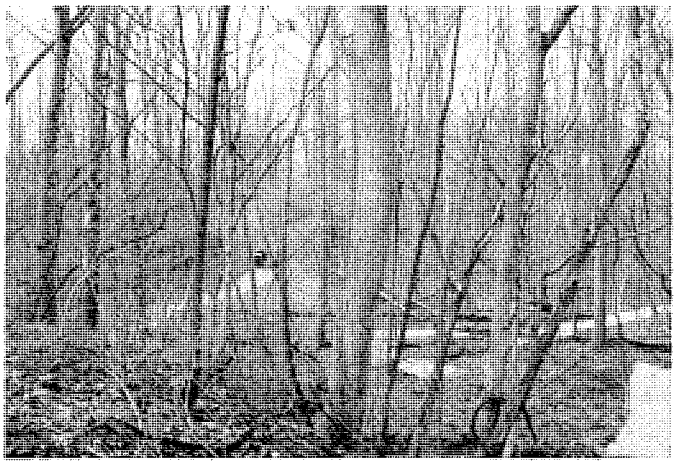


Erosion control matting.



Erosion control matting and coir logs along stream.

Erosion control matting and coir logs on slope.



Wooded creek bottom.

Coir logs placed along toe of slope.

Repackaged box of ash and fill adjacent to access road.

ATTACHMENT C

Daily Activity Summary Reports

LEE & RYAN

Daily Summary Report

General Information

Date:	3-3-10
Project Name:	Crane Soil excavation / Debris removal
Project Number:	100002
L&R Personell:	Chad McKnight, Angelo Dattilo, Jeff Eads
Arrival Time:	10:00 Am
Departure Time:	6:30 Pm
Subcontractors:	—
Client:	Tetra tech
Equipment:	Skid steer, mini excavator
Weather:	35° Cloudy

Key Observations/Activities

Daily Activities Checklist

	Yes	No	Comments
Equipment inspected?	X		
Tailgate H&S meeting held prior to beginning field activities?	X		
Monitoring equipment calibrated?	X		
Calibration results?	X		
Have site conditions changed from the previous day? How?		X	

Summary of Work Performed - Soil

	Yes	No	Comments
Was soil excavated today? If yes, how much?	X		3 cubic yards
Were soil samples collected today?	X		
Was soil transported offsite? If yes, by whom?		X	
What is the manifest number(s) for soil removal?			
What disposal facility will the soil be disposed?			Heritage
What lead dust readings were collected? Time(s)?	X		4:00 Pm
Were erosion control methods implemented? Which ones?	X		Soil logs

Summary of Work Performed - Metallic Debris and General Refuse

	Yes	No	Comments
Was metallic debris and general refuse removed today?		X	
How much debris and refuse was removed?			N/A
What types of debris was removed?			N/A
What types of refuse was removed?			
Was debris transported offsite? If yes, by whom?			
What is the manifest number(s) for debris removal?			
Was refuse transported offsite? If yes, by whom?			
What is the manifest number(s) for refuse removal?			
Were erosion control methods implemented? Which ones?			
Was a cutting torch used? How many times?			
Did Lee & Ryan secure a fire permit for the cutting torch?			

General Comments

Chad McKnight

Lee & Ryan Representative

3-3-10

Date

LEE & RYAN

Daily Summary Report

General Information

Date:	3-4-10
Project Name:	Coarse Soil excavation / Debris Removal
Project Number:	100207
L&R Personell:	Chad McKnight, Rene Zamudio, Jeff Eads, Kyle
Arrival Time:	8:00 Am
Departure Time:	5:30 PM
Subcontractors:	
Client:	Tetra Tech.
Equipment:	Skid Steer, mini excavator
Weather:	Sunny 42°

Key Observations/Activities

Daily Activities Checklist

	Yes	No	Comments
Equipment inspected?	X		
Tailgate H&S meeting held prior to beginning field activities?	X		
Monitoring equipment calibrated?			NA
Calibration results?			NA
Have site conditions changed from the previous day? How?		X	

Summary of Work Performed - Soil

	Yes	No	Comments
Was soil excavated today? If yes, how much?		X	
Were soil samples collected today?		X	
Was soil transported offsite? If yes, by whom?		X	
What is the manifest number(s) for soil removal?			
What disposal facility will the soil be disposed?			Her Hage.
What lead dust readings were collected? Time(s)?			NA
Were erosion control methods implemented? Which ones?	X		Soil logs

Summary of Work Performed - Metallic Debris and General Refuse

	Yes	No	Comments
Was metallic debris and general refuse removed today?	X	X	
How much debris and refuse was removed?			~~Asst~~ 8 yards
What types of debris was removed?			metal
What types of refuse was removed?			tree, trash, plastic
Was debris transported offsite? If yes, by whom?		X	
What is the manifest number(s) for debris removal?			
Was refuse transported offsite? If yes, by whom?		X	
What is the manifest number(s) for refuse removal?			
Were erosion control methods implemented? Which ones?		X	
Was a cutting torch used? How many times?		X	
Did Lee & Ryan secure a fire permit for the cutting torch?	X		

Comments

Chad McKnight — Lee & Ryan Representative

3-4-10 — Date

LEE & RYAN

Daily Summary Report

General Information

Date:	3-5-10
Project Name:	Crane Soil excavation/Debris removal
Project Number:	100002
L&R Personell:	Chad McKnight, Rene Zamudio, Jeff Eads
Arrival Time:	8:00 Am
Departure Time:	5:30 pm
Subcontractors:	
Client:	Tetra Tech
Equipment:	Skid steer, mini excavator
Weather:	45° sunny

Key Observations/Activities

Daily Activities Checklist

	Yes	No	Comments
Equipment inspected?	X		
Tailgate H&S meeting held prior to beginning field activities?	X		
Monitoring equipment calibrated?			NA
Calibration results?			NA
Have site conditions changed from the previous day? How?		X	

Summary of Work Performed: Soil

	Yes	No	Comments
Was soil excavated today? If yes, how much?		X	
Were soil samples collected today?		X	
Was soil transported offsite? If yes, by whom?		X	
What is the manifest number(s) for soil removal?			
What disposal facility will the soil be disposed?			Heritage
What lead dust readings were collected? Time(s)?			NA
Were erosion control methods implemented? Which ones?	X		Soil logs

Summary of Work Performed: Metallic Debris and General Refuse

	Yes	No	Comments
Was metallic debris and general refuse removed today?	X		
How much debris and refuse was removed?			10 yards
What types of debris was removed?			metal
What types of refuse was removed?			plastic, rubber
Was debris transported offsite? If yes, by whom?		X	
What is the manifest number(s) for debris removal?			
Was refuse transported offsite? If yes, by whom?		X	
What is the manifest number(s) for refuse removal?			
Were erosion control methods implemented? Which ones?	X		soil logs
Was a cutting torch used? How many times?		X	
Did Lee & Ryan secure a fire permit for the cutting torch?	X		

Additional Comments

Chad McKnight — Lee & Ryan Representative

3-5-10 — Date

LEE & RYAN

Daily Summary Report

General Information

Date:	3-8-10
Project Name:	Crane soil excavation/debris removal
Project Number:	100002
L&R Personell:	Chad McKnight, Jeff Eads, Rene Zamudio
Arrival Time:	7:30 Am
Departure Time:	6:30
Subcontractors:	
Client:	tetra tech
Equipment:	Skid Steer, mini excavator.
Weather:	Sunny 58°

Key Observations/Activities

Daily Activities/Checklist

	Yes	No	Comments
Equipment inspected?	X		
Tailgate H&S meeting held prior to beginning field activities?	X		
Monitoring equipment calibrated?			NA
Calibration results?			NA
Have site conditions changed from the previous day? How?		X	

Summary of Work Performed - Soil

	Yes	No	Comments
Was soil excavated today? If yes, how much?		X	
Were soil samples collected today?		X	
Was soil transported offsite? If yes, by whom?		X	
What is the manifest number(s) for soil removal?			NA
What disposal facility will the soil be disposed?			Heritage
What lead dust readings were collected? Time(s)?			NA
Were erosion control methods implemented? Which ones?			Soil logs

Summary of Work Performed - Metallic Debris and General Refuse

	Yes	No	Comments
Was metallic debris and general refuse removed today?	X		
How much debris and refuse was removed?			8 Yards
What types of debris was removed?			Steel
What types of refuse was removed?			Plastic, Rubber
Was debris transported offsite? If yes, by whom?		X	
What is the manifest number(s) for debris removal?			NA
Was refuse transported offsite? If yes, by whom?		X	
What is the manifest number(s) for refuse removal?			NA
Were erosion control methods implemented? Which ones?	X		erosion logs
Was a cutting torch used? How many times?	X		18
Did Lee & Ryan secure a fire permit for the cutting torch?	X		

General Comments

Chad McKnight — 3-8-10

Lee & Ryan Representative — Date

LEE & RYAN

Daily Summary Report

General Information

Date:	03-09-2010
Project Name:	Crane Tetra Tech NSA
Project Number:	10093.
L&R Personell:	Rene Zamudio / Jeff Eads
Arrival Time:	8:00am
Departure Time:	5:00 pm
Subcontractors:	-
Client:	Tetra Tech
Equipment:	-
Weather:	Sunny 60°F

Key Observations/Activities

Pick up Debri
Remove Paint
Blowing leafs

Daily Activities Checklist

	Yes	No	Comments
Equipment inspected?	✓		
Tailgate H&S meeting held prior to beginning field activities?	✓		
Monitoring equipment calibrated?			
Calibration results?			
Have site conditions changed from the previous day? How?			

Summary of Work Performed - Soil

	Yes	No	Comments
Was soil excavated today? If yes, how much?		✓	
Were soil samples collected today?		✓	
Was soil transported offsite? If yes, by whom?		✓	
What is the manifest number(s) for soil removal?			
What disposal facility will the soil be disposed?			
What lead dust readings were collected? Time(s)?			
Were erosion control methods implemented? Which ones?			

Summary of Work Performed - Metallic Debris and General Refuse

	Yes	No	Comments
Was metallic debris and general refuse removed today?	✓		
How much debris and refuse was removed?			4 yards
What types of debris was removed?			Metal / Paint (no lead)
What types of refuse was removed?			
Was debris transported offsite? If yes, by whom?			
What is the manifest number(s) for debris removal?			
Was refuse transported offsite? If yes, by whom?			
What is the manifest number(s) for refuse removal?			
Were erosion control methods implemented? Which ones?		✓	
Was a cutting torch used? How many times?		✓	
Did Lee & Ryan secure a fire permit for the cutting torch?			

General Comments

Met with Mark and Lauren Foster Tetra Tech - Removing Debri around the creek also from the hills with the mini excavator, blowing leafs.

Rene Zamudio

Lee & Ryan Representative

3-9-10

Date

LEE & RYAN

Daily Summary Report

General Information

Date:	3-10-2010
Project Name:	Tetra Tech NASA Crane
Project Number:	20002
L&R Personell:	Rene Tom / Chad Mc
Arrival Time:	8:00 am
Departure Time:	5:00 pm.
Subcontractors:	-
Client:	Tetra Tech
Equipment:	-
Weather:	Sunny 63°F

Key Observations/Activities

Straw blankets
Debri Removed.

Daily Activities Checklist

	Yes	No	Comments
Equipment inspected?	✓		
Tailgate H&S meeting held prior to beginning field activities?	✓		
Monitoring equipment calibrated?			
Calibration results?			
Have site conditions changed from the previous day? How?			

Summary of Work Performed - Soil

	Yes	No	Comments
Was soil excavated today? If yes, how much?		✓	
Were soil samples collected today?		✓	
Was soil transported offsite? If yes, by whom?		✓	
What is the manifest number(s) for soil removal?			
What disposal facility will the soil be disposed?			
What lead dust readings were collected? Time(s)?			
Were erosion control methods implemented? Which ones?			

Summary of Work Performed - Metallic Debris and General Refuse

	Yes	No	Comments
Was metallic debris and general refuse removed today?	✓		
How much debris and refuse was removed?			1 yard Metal.
What types of debris was removed?			
What types of refuse was removed?			
Was debris transported offsite? If yes, by whom?			
What is the manifest number(s) for debris removal?			
Was refuse transported offsite? If yes, by whom?			
What is the manifest number(s) for refuse removal?			
Were erosion control methods implemented? Which ones?		✓	
Was a cutting torch used? How many times?		✓	
Did Lee & Ryan secure a fire permit for the cutting torch?			

General Comments

met with Mark Tetra Tech - put down 850 feet of straw blankets for erosion control, pick up small pieces of Debri.
We used skid steer for those tasks.

Lee & Ryan Representative

3-10-10
Date

LEE & RYAN

Daily Summary Report

General Information

Date:	3-25-10
Project Name:	Crane Soil Debree removel
Project Number:	10002
L&R Personell:	M. Tuttle / R. Zamudio / J. Eads / A. Dattilo
Arrival Time:	9:00
Departure Time:	6:00
Subcontractors:	—
Client:	Tetra Tech
Equipment:	Skid steer
Weather:	cloudy than can

Key Observations/Activities

Daily Activities Checklist

	Yes	No	Comments
Equipment inspected?	✓		
Tailgate H&S meeting held prior to beginning field activities?	✓		
Monitoring equipment calibrated?			N/A
Calibration results?			
Have site conditions changed from the previous day? How?			N/A

Summary of Work Performed - Soil

	Yes	No	Comments
Was soil excavated today? If yes, how much?		✓	
Were soil samples collected today?		✓	
Was soil transported offsite? If yes, by whom?		✓	
What is the manifest number(s) for soil removal?			
What disposal facility will the soil be disposed?			
What lead dust readings were collected? Time(s)?		✓	
Were erosion control methods implemented? Which ones?			N/A

Summary of Work Performed - Metallic Debris and General Refuse

	Yes	No	Comments
Was metallic debris and general refuse removed today?	✓		metel & debree
How much debris and refuse was removed?			
What types of debris was removed?			metel dryed paint
What types of refuse was removed?			
Was debris transported offsite? If yes, by whom?		✓	
What is the manifest number(s) for debris removal?			
Was refuse transported offsite? If yes, by whom?			
What is the manifest number(s) for refuse removal?			
Were erosion control methods implemented? Which ones?			
Was a cutting torch used? How many times?		✓	
Did Lee & Ryan secure a fire permit for the cutting torch?			

General Comments

~~Lauren Foster~~ with Tetra Tech on site
Tony Kilmek
Tom Brent with NAVY on site

M. Tuttle — 3-25-10

Lee & Ryan Representative — Date

LEE & RYAN

Daily Summary Report

General Information

Date:	03-26-10
Project Name:	Tetra Tech NSA Crane
Project Number:	10002
L&R Personell:	Rene Zamudio
Arrival Time:	9:30 am.
Departure Time:	2:30pm
Subcontractors:	N/A
Client:	Tetra Tech.
Equipment:	Skid steer.
Weather:	Sunny 57°F

Key Observations/Activities

straw blanket
straw baiks

Daily Activities Checklist

	Yes	No	Comments
Equipment inspected?	✓		
Tailgate H&S meeting held prior to beginning field activities?	✓		
Monitoring equipment calibrated?			
Calibration results?			
Have site conditions changed from the previous day? How?			

Summary of Work Performed - Soil

	Yes	No	Comments
Was soil excavated today? If yes, how much?		✓	
Were soil samples collected today?		✓	
Was soil transported offsite? If yes, by whom?		✓	
What is the manifest number(s) for soil removal?			
What disposal facility will the soil be disposed?			
What lead dust readings were collected? Time(s)?			
Were erosion control methods implemented? Which ones?			

Summary of Work Performed - Metallic Debris and General Refuse

	Yes	No	Comments
Was metallic debris and general refuse removed today?	✓		
How much debris and refuse was removed?			1 ½ yards.
What types of debris was removed?			Metal
What types of refuse was removed?			
Was debris transported offsite? If yes, by whom?			
What is the manifest number(s) for debris removal?			
Was refuse transported offsite? If yes, by whom?			
What is the manifest number(s) for refuse removal?			
Were erosion control methods implemented? Which ones?	✓		black blade (skid steer)
Was a cutting torch used? How many times?		✓	
Did Lee & Ryan secure a fire permit for the cutting torch?			

General Comments

Met Tom Burke on site I put down 20 straw baiks and pick up some debri, Removed some paint (blue, yellow, white) in the other side of the logs to don't brog contamination to the creek

Lee & Ryan Representative

03-26-10

Date

LEE & RYAN

Daily Summary Report

General Information

Date:	4.1.10
Project Name:	Crane Soil deboer remove)
Project Number:	10002
L&R Personell:	Mike Tuttle
Arrival Time:	9:00
Departure Time:	7:00
Subcontractors:	Heritage envisromental
Client:	Tetra Tech
Equipment:	Skid Steer
Weather:	Sunny warm

Key Observations/Activities

Daily Activities Checklist

	Yes	No	Comments
Equipment inspected?	✓		
Tailgate H&S meeting held prior to beginning field activities?	✓		
Monitoring equipment calibrated?			N/A
Calibration results?			N/A
Have site conditions changed from the previous day? How?			

Summary of Work Performed - Soil

	Yes	No	Comments
Was soil excavated today? If yes, how much?		✓	
Were soil samples collected today?		✓	
Was soil transported offsite? If yes, by whom?	✓		Heritage
What is the manifest number(s) for soil removal?			
What disposal facility will the soil be disposed?			
What lead dust readings were collected? Time(s)?			
Were erosion control methods implemented? Which ones?		✓	

Summary of Work Performed - Metallic Debris and General Refuse

	Yes	No	Comments
Was metallic debris and general refuse removed today?	✓		small of metal
How much debris and refuse was removed?			
What types of debris was removed?	✓		dryed toxic paint
What types of refuse was removed?			
Was debris transported offsite? If yes, by whom?		✓	
What is the manifest number(s) for debris removal?			
Was refuse transported offsite? If yes, by whom?			
What is the manifest number(s) for refuse removal?			
Were erosion control methods implemented? Which ones?			
Was a cutting torch used? How many times?		✓	
Did Lee & Ryan secure a fire permit for the cutting torch?			

General Comments

Lauren Fosler on site with TetraTech

Tony Tom Brent with NAVY on site

Lee & Ryan Representative

4.1.10

Date

LEE & RYAN

Daily Summary Report

General Information

Date:	4.2.10
Project Name:	Crane Soil debree removel
Project Number:	10002
L&R Personell:	Michael Tuttle
Arrival Time:	9:20
Departure Time:	4:00
Subcontractors:	-
Client:	Tetra Tech
Equipment:	-
Weather:	Sonny warm

Key Observations/Activities

Daily Activities Checklist

	Yes	No	Comments
Equipment inspected?	/		
Tailgate H&S meeting held prior to beginning field activities?	/		
Monitoring equipment calibrated?			
Calibration results?			
Have site conditions changed from the previous day? How?			

Summary of Work Performed - Soil

	Yes	No	Comments
Was soil excavated today? If yes, how much?			
Were soil samples collected today?			
Was soil transported offsite? If yes, by whom?			
What is the manifest number(s) for soil removal?			
What disposal facility will the soil be disposed?			
What lead dust readings were collected? Time(s)?			
Were erosion control methods implemented? Which ones?			

Summary of Work Performed - Metallic Debris and General Refuse

	Yes	No	Comments
Was metallic debris and general refuse removed today?			
How much debris and refuse was removed?			
What types of debris was removed?	/		dryed paint
What types of refuse was removed?			
Was debris transported offsite? If yes, by whom?			
What is the manifest number(s) for debris removal?			
Was refuse transported offsite? If yes, by whom?			
What is the manifest number(s) for refuse removal?			
Were erosion control methods implemented? Which ones?			
Was a cutting torch used? How many times?			
Did Lee & Ryan secure a fire permit for the cutting torch?			

General Comments

Tony Klimek on site from Tetra Tech

Lee & Ryan Representative

4.2.10

Date

LEE & RYAN

Daily Summary Report

General Information

Date:	4.9.10
Project Name:	Crane Soil debree removel
Project Number:	10002
L&R Personell:	M. Tuttle
Arrival Time:	9:20
Departure Time:	1:00
Subcontractors:	Heritage environmental
Client:	Tetra Tech
Equipment:	Skid steer
Weather:	Sunny cool

Key Observations/Activities

Spread out tarp over hole where dryed paint was removed

Daily Activities Checklist

	Yes	No	Comments
Equipment inspected?	✓		
Tailgate H&S meeting held prior to beginning field activities?	✓		
Monitoring equipment calibrated?			
Calibration results?			
Have site conditions changed from the previous day? How?			

Summary of Work Performed - Soil

	Yes	No	Comments
Was soil excavated today? If yes, how much?		✓	
Were soil samples collected today?			
Was soil transported offsite? If yes, by whom?	✓		Heritage
What is the manifest number(s) for soil removal?			
What disposal facility will the soil be disposed?			
What lead dust readings were collected? Time(s)?			
Were erosion control methods implemented? Which ones?			

Summary of Work Performed - Metallic Debris and General Refuse

	Yes	No	Comments
Was metallic debris and general refuse removed today?		✓	
How much debris and refuse was removed?			
What types of debris was removed?			
What types of refuse was removed?			
Was debris transported offsite? If yes, by whom?		✓	com. dirt
What is the manifest number(s) for debris removal?			
Was refuse transported offsite? If yes, by whom?			
What is the manifest number(s) for refuse removal?			
Were erosion control methods implemented? Which ones?			
Was a cutting torch used? How many times?		✓	
Did Lee & Ryan secure a fire permit for the cutting torch?			

General Comments

Mark Reising with Tetra Tech on site

Lee & Ryan Representative

4.9.10

Date

LEE & RYAN

Daily Summary Report

General Information

Date:	4.29.10
Project Name:	Crane
Project Number:	10002
L&R Personell:	Mike Talle
Arrival Time:	9:00
Departure Time:	1:15
Subcontractors:	-
Client:	Tetra Tech
Equipment:	-
Weather:	Sunny cool

Key Observations/Activities

Looked over site after rain fall.

Daily Activities Checklist

	Yes	No	Comments
Equipment inspected?			N/A
Tailgate H&S meeting held prior to beginning field activities?	✓		
Monitoring equipment calibrated?			N/A
Calibration results?			↓
Have site conditions changed from the previous day? How?			

Summary of Work Performed - Soil

	Yes	No	Comments
Was soil excavated today? If yes, how much?		✓	
Were soil samples collected today?			N/A
Was soil transported offsite? If yes, by whom?			↓
What is the manifest number(s) for soil removal?			
What disposal facility will the soil be disposed?			
What lead dust readings were collected? Time(s)?			↓
Were erosion control methods implemented? Which ones?	←	—	

Summary of Work Performed - Metallic Debris and General Refuse

	Yes	No	Comments
Was metallic debris and general refuse removed today?		✓	
How much debris and refuse was removed?			N/A
What types of debris was removed?			↓
What types of refuse was removed?			
Was debris transported offsite? If yes, by whom?			
What is the manifest number(s) for debris removal?			
Was refuse transported offsite? If yes, by whom?			
What is the manifest number(s) for refuse removal?			
Were erosion control methods implemented? Which ones?	✓		re-staked all the logs (staked) AJD 5/13/10
Was a cutting torch used? How many times?			
Did Lee & Ryan secure a fire permit for the cutting torch?			

General Comments

Walked property with Lauren Foster & Jessica Caylor from Tetra Tech. - They want more straw blankets put down in many areas. Maybe 3 logs added in couple areas - also while on site I re-staked all the logs

Lee & Ryan Representative

4.29.10

Date

LEE & RYAN

Daily Summary Report

General Information

Date:	5-5-10
Project Name:	Coeur
Project Number:	10009
L&R Personell:	Mike Tuttle Rene Zamudio
Arrival Time:	9:00
Departure Time:	1:00
Subcontractors:	-
Client:	Tetra Tech. Lauren Foster
Equipment:	-
Weather:	Sunny Warm

Key Observations/Activities

put appox. 250 ft. of straw blankets down. Seeded & put straw down added 1 log

Daily Activities Checklist

	Yes	No	Comments
Equipment inspected?	✓		
Tailgate H&S meeting held prior to beginning field activities?	✓		
Monitoring equipment calibrated?	N/A		
Calibration results?			
Have site conditions changed from the previous day? How?	↓		

Summary of Work Performed - Soil

	Yes	No	Comments
Was soil excavated today? If yes, how much?		✓	
Were soil samples collected today?		✓	
Was soil transported offsite? If yes, by whom?		✓	
What is the manifest number(s) for soil removal?	N/A		
What disposal facility will the soil be disposed?	↓		
What lead dust readings were collected? Time(s)?		✓	
Were erosion control methods implemented? Which ones?		✓	

Summary of Work Performed - Metallic Debris and General Refuse

	Yes	No	Comments
Was metallic debris and general refuse removed today?		✓	
How much debris and refuse was removed?	N/A		
What types of debris was removed?			
What types of refuse was removed?			
Was debris transported offsite? If yes, by whom?			
What is the manifest number(s) for debris removal?			
Was refuse transported offsite? If yes, by whom?			
What is the manifest number(s) for refuse removal?	↓		
Were erosion control methods implemented? Which ones?	✓		Straw blankets + 1 log
Was a cutting torch used? How many times?	N/A		seeding + straw
Did Lee & Ryan secure a fire permit for the cutting torch?	↓		

General Comments

Met with Lauren Foster with Tetra Tech - put down appox. 250 ft. of straw blankets down. Added 1 log near area #11 - put down 30-35 pounds of low light seed there all areas.

Lee & Ryan Representative

5-5-10

Date

LEE & RYAN

Daily Summary Report

General Information

Date:	5-25-10
Project Name:	Crane
Project Number:	10002
L&R Personell:	Mike Tuttle
Arrival Time:	10:40
Departure Time:	1:45
Subcontractors:	—
Client:	Tetra Tech
Equipment:	—
Weather:	partly sunny & muggy warm

Key Observations/Activities: Added 2 logs & 1 roll of straw blankets

Daily Activities Checklist

	Yes	No	Comments
Equipment inspected?			N/A
Tailgate H&S meeting held prior to beginning field activities?	x		
Monitoring equipment calibrated?			N/A
Calibration results?			N/A
Have site conditions changed from the previous ~~day~~ month? How?	x		In New areas

Summary of Work Performed - Soil

	Yes	No	Comments
Was soil excavated today? If yes, how much?		x	
Were soil samples collected today?		x	
Was soil transported offsite? If yes, by whom?			N/A
What is the manifest number(s) for soil removal?			↓
What disposal facility will the soil be disposed?			↓
What lead dust readings were collected? Time(s)?		x	
Were erosion control methods implemented? Which ones?	x		2 logs & 1 roll of straw blankets 2 areas

Summary of Work Performed - Metallic Debris and General Refuse

	Yes	No	Comments
Was metallic debris and general refuse removed today?		x	
How much debris and refuse was removed?			N/A
What types of debris was removed?			↓
What types of refuse was removed?			↓
Was debris transported offsite? If yes, by whom?			↓
What is the manifest number(s) for debris removal?			↓
Was refuse transported offsite? If yes, by whom?			↓
What is the manifest number(s) for refuse removal?			↓
Were erosion control methods implemented? Which ones?	x		
Was a cutting torch used? How many times?		x	
Did Lee & Ryan secure a fire permit for the cutting torch?			

General Comments

Met with Jessica Caylor - added log to culvert - added 20 ft. of blanket near culvert - added log for erosion control in same area - added 70 ft. of blanket on N-W road where drums were picked up for erosion control - fixed couple spots up on top - seeded all repaired areas

Lee & Ryan Representative

5-25-10

Date

LEE & RYAN

Daily Summary Report

General Information

Date:	7·7·10
Project Name:	Crane
Project Number:	10002
L&R Personell:	M. Tuttle
Arrival Time:	11:00
Departure Time:	2:30
Subcontractors:	-
Client:	Tetra Tech.
Equipment:	-
Weather:	Hot Sunny

Key Observations/Activities: Look over site & remove 3 logs from in front of culvert

Daily Activities Checklist

	Yes	No	Comments
Equipment inspected?			N/A
Tailgate H&S meeting held prior to beginning field activities?			↓
Monitoring equipment calibrated?			
Calibration results?			
Have site conditions changed from the previous day? How?			

Summary of Work Performed - Soil

	Yes	No	Comments
Was soil excavated today? If yes, how much?		/	
Were soil samples collected today?		/	
Was soil transported offsite? If yes, by whom?			N/A
What is the manifest number(s) for soil removal?			↓
What disposal facility will the soil be disposed?			
What lead dust readings were collected? Time(s)?			
Were erosion control methods implemented? Which ones?		/	

Summary of Work Performed - Metallic Debris and General Refuse

	Yes	No	Comments
Was metallic debris and general refuse removed today?		/	
How much debris and refuse was removed?			N/A
What types of debris was removed?			↓
What types of refuse was removed?			
Was debris transported offsite? If yes, by whom?		/	
What is the manifest number(s) for debris removal?			N/A
Was refuse transported offsite? If yes, by whom?			↓
What is the manifest number(s) for refuse removal?			
Were erosion control methods implemented? Which ones?		/	
Was a cutting torch used? How many times?		/	
Did Lee & Ryan secure a fire permit for the cutting torch?			N/A

General Comments

Met with Jessica Taylor to look over site & take Pictures
Jessica very happy with site - I removed the three logs from in front of culvert & removed off of property.

Lee & Ryan Representative

7·7·10
Date

7/14/10

ATTACHMENT D

Analytical Laboratory Reports for Ash and Fill Composite Sample

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

March 17, 2010

Mr. Angelo Dattilo
Lee & Ryan Environmental Consultants
1707 Melody Lane
Greenfield, IN 46140

RE: Project: Tetra Tech NUS / 10002
Pace Project No.: 5035158

Dear Mr. Dattilo:
Enclosed are the analytical results for sample(s) received by the laboratory on March 04, 2010. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kelly M Jones

Kelly Jones

kelly.jones@pacelabs.com
Project Manager

7726 Moller Road Indianapolis, IN 46268
Illinois/NELAC Certification #: 100418
Indiana Certification #: C-49-06
Kansas Certification #: E-10247
Kentucky Certification #: 0042
Ohio VAP: CL0065
Pennsylvania: 68-00791
West Virginia Certification #: 330

Enclosures

cc: Julie Janes, Lee & Ryan Environmental Consultants

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ACCREDITED IN ACCORDANCE WITH nelac

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

AES

March 15, 2010

Kelly Jones
Pace Analytical
7726 Moller Rd.
Indianapolis IN 46268

TEL: (317) 875-5894
FAX: (317) 872-6189

RE: 5035158

Dear Kelly Jones: Order No: 1003537

Analytical Environmental Services, Inc. received 1 samples on 3/5/2010 10:55:00 AM for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.
AES' certifications are as follows:
-NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/09-06/30/10.
-AIHA Certification ID #100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) effective until 09/01/11.

These results relate only to the items tested. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Janice Winn-Shilling
Project Manager

Analytical Environmental Services, Inc.

Date: *16-Mar-10*

CLIENT: Pace Analytical
Project:
Lab ID: 1003C56-001

Client Sample ID: EXCAVATION
Collection Date: 3/3/2010 4:36:00 PM
Matrix: SOLID

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed
CYANIDE, REACTIVE **SW7.3.3.2**					**(SW7.3.3.2)**		Analyst: **CG**
Cyanide, Reactive	BRL	0.990		mg/Kg	126572	1	3/16/2010 12:15 PM
SULFIDE, REACTIVE **SW7.3.4.2**					**(SW7.3.4.2)**		Analyst: **AZS**
Sulfide, Reactive	BRL	100		mg/Kg	126575	1	3/16/2010 1:35 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	E	Estimated (Value above quantitation range)
BRL	Below Reporting Limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See Case Narrative
N	Analyte not NELAC certified	NC	Not Confirmed
B	Analyte detected in the associated Method Blank	<	Less than Result value
>	Greater than Result value		

1003537

Chain of Custody

Pace Analytical®
www.pacelabs.com

Workorder: 5035158 **Workorder Name:** Tetra Tech NVS / 10002 **Results Requested** 3/11/2010

Report / Invoice To	Subcontract To
Kelly Jones Pace Analytical Indianapolis 7726 Moller Road Indianapolis, IN 46268 Phone (317)875-5894 Email: kelly.jones@pacelabs.com	AES Atlanta, GA P.O._____

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved	Requested Analysis: TCLP pests	Requested Analysis: TCLP Herbs	LAB USE ONLY
1	Excavation	3/3/2010 16:36	5035158001	Solid	1	X	X	
2								
3								
4								
5								

Transfers	Released By	Date/Time	Received By	Date/Time
1	[illegible]	3/4/10 1600	[illegible]	3/5/10
2				
3				
4				
5				

Comments

10°C
F

Analytical Environmental Services, Inc **Date:** 15-Mar-10

Client:	Pace Analytical	**Client Sample ID:**	EXCAVATION
Lab Order	1003537	**Tag Number:**	
Project:	5035158	**Collection Date:**	3/3/2010 4:36:00 PM
Lab ID:	1003537-001A	**Matrix:**	Solid

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
PESTICIDES, TCLP SW1311/8081B				**(SW3510B)**				
Chlordane	BRL	0.0050		mg/L	126212	1	03/12/2010 01:29	KD
Endrin	BRL	0.0010		mg/L	126212	1	03/12/2010 01:29	KD
gamma-BHC	BRL	0.00050		mg/L	126212	1	03/12/2010 01:29	KD
Heptachlor	BRL	0.00050		mg/L	126212	1	03/12/2010 01:29	KD
Heptachlor epoxide	BRL	0.00050		mg/L	126212	1	03/12/2010 01:29	KD
Methoxychlor	BRL	0.0050		mg/L	126212	1	03/12/2010 01:29	KD
Toxaphene	BRL	0.050		mg/L	126212	1	03/12/2010 01:29	KD
Surr: Decachlorobiphenyl	64.5	35.5-128		%REC	126212	1	03/12/2010 01:29	KD
Surr: Tetrachloro-m-xylene	61.4	26.5-120		%REC	126212	1	03/12/2010 01:29	KD
HERBICIDES, TCLP SW1311/8151A				**(SW3510B)**				
2,4,5-TP (Silvex)	BRL	0.20		mg/L	126209	1	03/11/2010 22:04	AK
2,4-D	BRL	0.20		mg/L	126209	1	03/11/2010 22:04	AK
Surr: DCAA	120	53.1-142		%REC	126209	1	03/11/2010 22:04	AK

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc

Date: 15-Mar-10

Client: Pace Analytical
Project: 5035158
Lab Order: 1003537

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1003537-001A	EXCAVATION	3/3/2010 4:36:00PM	Solid	HERBICIDES, TCLP Leached	03/08/2010	03/10/2010	03/11/2010
1003537-001A	EXCAVATION	3/3/2010 4:36:00PM	Solid	PESTICIDES, TCLP Leached	03/08/2010	03/10/2010	03/12/2010

Analytical Environmental Services, Inc

Date: 15-Mar-10

Client: Pace Analytical
Project Name: 5035158
Workorder: 1003537

ANALYTICAL QC SUMMARY REPORT

BatchID: 126209

Sample ID: **MB-126209**	Client ID:			Units: **mg/L**	Prep Date: **03/10/2010**	Run No: **167376**
SampleType: **MBLK**	TestCode: **HERBICIDES, TCLP**	**SW1311/8151A**		BatchID: **126209**	Analysis Date: **03/11/2010**	Seq No: **3470424**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
2,4,5-TP (Silvex)	BRL	0.20	0	0	0	0	0	0	0	0	
2,4-D	BRL	0.20	0	0	0	0	0	0	0	0	
Surr: DCAA	0.4631	0	0.5	0	92.6	53.1	142	0	0	0	

Sample ID: **LCS-126209**	Client ID:			Units: **mg/L**	Prep Date: **03/10/2010**	Run No: **167376**
SampleType: **LCS**	TestCode: **HERBICIDES, TCLP**	**SW1311/8151A**		BatchID: **126209**	Analysis Date: **03/11/2010**	Seq No: **3470427**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
2,4,5-TP (Silvex)	0.4835	0.20	0.5	0	96.7	61.2	124	0	0	0	
2,4-D	0.4597	0.20	0.5	0	91.9	46.2	131	0	0	0	
Surr: DCAA	0.4732	0	0.5	0	94.6	53.1	142	0	0	0	

Sample ID: **1003537-001AMS**	Client ID: **EXCAVATION**			Units: **mg/L**	Prep Date: **03/10/2010**	Run No: **167376**
SampleType: **MS**	TestCode: **HERBICIDES, TCLP**	**SW1311/8151A**		BatchID: **126209**	Analysis Date: **03/11/2010**	Seq No: **3470432**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
2,4,5-TP (Silvex)	0.4668	0.20	0.5	0	93.4	60.5	130	0	0	0	
2,4-D	0.4905	0.20	0.5	0	98.1	39.9	141	0	0	0	
Surr: DCAA	0.6857	0	0.5	0	137	53.1	142	0	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Analytical Environmental Services, Inc

Date: 15-Mar-10

Client: Pace Analytical
Project Name: 5035158
Workorder: 1003537

ANALYTICAL QC SUMMARY REPORT

BatchID: 126212

Sample ID: **MB-126212** Client ID:
SampleType: **MBLK** TestCode: **PESTICIDES, TCLP SW1311/8081B**
Units: **mg/L** Prep Date: **03/10/2010** Run No: **167373**
BatchID: **126212** Analysis Date: **03/12/2010** Seq No: **3470439**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chlordane	BRL	0.0050	0	0	0	0	0	0	0	0	
Endrin	BRL	0.0010	0	0	0	0	0	0	0	0	
gamma-BHC	BRL	0.00050	0	0	0	0	0	0	0	0	
Heptachlor	BRL	0.00050	0	0	0	0	0	0	0	0	
Heptachlor epoxide	BRL	0.00050	0	0	0	0	0	0	0	0	
Methoxychlor	BRL	0.0050	0	0	0	0	0	0	0	0	
Toxaphene	BRL	0.050	0	0	0	0	0	0	0	0	
Surr: Decachlorobiphenyl	0.0040	0	0.005	0	79.4	35.5	128	0	0	0	
Surr: Tetrachloro-m-xylene	0.0028	0	0.005	0	55.3	26.5	120	0	0	0	

Sample ID: **LCS-126212** Client ID:
SampleType: **LCS** TestCode: **PESTICIDES, TCLP SW1311/8081B**
Units: **mg/L** Prep Date: **03/10/2010** Run No: **167373**
BatchID: **126212** Analysis Date: **03/12/2010** Seq No: **3470441**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Endrin	0.0067	0.0010	0.008	0	83.4	57.8	152	0	0	0	
gamma-BHC	0.0067	0.00050	0.008	0	83.4	61.7	133	0	0	0	
Heptachlor	0.0066	0.00050	0.008	0	82.3	62.3	130	0	0	0	
Heptachlor epoxide	0.0064	0.00050	0.008	0	79.7	65.7	135	0	0	0	
Methoxychlor	0.0331	0.0050	0.03	0	110	38.8	155	0	0	0	
Surr: Decachlorobiphenyl	0.0040	0	0.005	0	79.9	35.5	128	0	0	0	
Surr: Tetrachloro-m-xylene	0.0032	0	0.005	0	63.3	26.5	120	0	0	0	

Sample ID: **LCS-126212-2** Client ID:
SampleType: **LCS** TestCode: **PESTICIDES, TCLP SW1311/8081B**
Units: **mg/L** Prep Date: **03/10/2010** Run No: **167373**
BatchID: **126212** Analysis Date: **03/12/2010** Seq No: **3470443**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chlordane	0.0473	0.0050	0.04	0	118	57	146	0	0	0	
Toxaphene	0.0873	0.050	0.08	0	109	50.1	133	0	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Analytical Environmental Services, Inc

Date: 15-Mar-10

Client: Pace Analytical
Project Name: 5035158
Workorder: 1003537

ANALYTICAL QC SUMMARY REPORT

BatchID: 126212

Sample ID: **LCS-126212-2** Client ID:
SampleType: **LCS** TestCode: **PESTICIDES, TCLP SW1311/8081B**
Units: **mg/L** Prep Date: **03/10/2010** Run No: **167373**
BatchID: **126212** Analysis Date: **03/12/2010** Seq No: **3470443**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Surr: Decachlorobiphenyl	0.0042	0	0.005	0	83.8	35.5	128	0	0	0	
Surr: Tetrachloro-m-xylene	0.0034	0	0.005	0	67.1	26.5	120	0	0	0	

Sample ID: **1003537-001AMS-1** Client ID: **EXCAVATION**
SampleType: **MS** TestCode: **PESTICIDES, TCLP SW1311/8081B**
Units: **mg/L** Prep Date: **03/10/2010** Run No: **167373**
BatchID: **126212** Analysis Date: **03/12/2010** Seq No: **3470448**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Endrin	0.0070	0.0010	0.008	0	86.9	61.3	163	0	0	0	
gamma-BHC	0.0068	0.00050	0.008	0	84.9	60.2	144	0	0	0	
Heptachlor	0.0066	0.00050	0.008	0	83	52.3	145	0	0	0	
Heptachlor epoxide	0.0065	0.00050	0.008	0	81.5	61.1	149	0	0	0	
Methoxychlor	0.0335	0.0050	0.03	0	112	47.9	147	0	0	0	
Surr: Decachlorobiphenyl	0.0035	0	0.005	0	70.7	35.5	128	0	0	0	
Surr: Tetrachloro-m-xylene	0.0030	0	0.005	0	59.9	26.5	120	0	0	0	

Sample ID: **1003537-001AMS-2** Client ID: **EXCAVATION**
SampleType: **MS** TestCode: **PESTICIDES, TCLP SW1311/8081B**
Units: **mg/L** Prep Date: **03/10/2010** Run No: **167373**
BatchID: **126212** Analysis Date: **03/12/2010** Seq No: **3470449**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Chlordane	0.0472	0.0050	0.04	0	118	50.3	157	0	0	0	
Toxaphene	0.0871	0.050	0.08	0	109	45.3	137	0	0	0	
Surr: Decachlorobiphenyl	0.0034	0	0.005	0	67.6	35.5	128	0	0	0	
Surr: Tetrachloro-m-xylene	0.0034	0	0.005	0	67.4	26.5	120	0	0	0	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

SAMPLE SUMMARY

Project: Tetra Tech NUS / 10002
Pace Project No.: 5035158

Lab ID	Sample ID	Matrix	Date Collected	Date Received
5035158001	Excavation	Solid	03/03/10 16:36	03/04/10 10:27

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

SAMPLE ANALYTE COUNT

Project: Tetra Tech NUS / 10002
Pace Project No.: 5035158

Lab ID	Sample ID	Method	Analysts	Analytes Reported
5035158001	Excavation	EPA 8015 Mod Ext	SRS	2
		EPA 8082	LKC	8
		EPA 6010	FRW	7
		EPA 7470	RAK	1
		EPA 8270	KES	18
		EPA 8260	RSR	13
		ASTM D2974-87	ILP	1
		1030	DDM	1
		EPA 9045	CLS	1

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

ANALYTICAL RESULTS

Project: Tetra Tech NUS / 10002
Pace Project No.: 5035158

Sample: Excavation **Lab ID: 5035158001** Collected: 03/03/10 16:36 Received: 03/04/10 10:27 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015M TPH ERO	Analytical Method: EPA 8015 Mod Ext Preparation Method: EPA 3546							
High End Organics (C8-C34)	**234**	mg/kg	64.0	5	03/07/10 21:40	03/09/10 02:21		
n-Pentacosane (S)	0	%	45-170	5	03/07/10 21:40	03/09/10 02:21	629-99-2	S4
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3546							
PCB-1016 (Aroclor 1016)	ND	ug/kg	44.8	1	03/04/10 20:15	03/05/10 12:56	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	44.8	1	03/04/10 20:15	03/05/10 12:56	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	44.8	1	03/04/10 20:15	03/05/10 12:56	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	44.8	1	03/04/10 20:15	03/05/10 12:56	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	44.8	1	03/04/10 20:15	03/05/10 12:56	12672-29-6	
PCB-1254 (Aroclor 1254)	**140**	ug/kg	44.8	1	03/04/10 20:15	03/05/10 12:56	11097-69-1	2d
PCB-1260 (Aroclor 1260)	**65.5**	ug/kg	44.8	1	03/04/10 20:15	03/05/10 12:56	11096-82-5	2d
Tetrachloro-m-xylene (S)	69	%	20-130	1	03/04/10 20:15	03/05/10 12:56	877-09-8	
6010 MET ICP, TCLP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Arsenic	ND	mg/L	0.10	1	03/09/10 00:00	03/10/10 10:02	7440-38-2	1d
Barium	ND	mg/L	5.0	1	03/09/10 00:00	03/10/10 10:02	7440-39-3	
Cadmium	**0.18**	mg/L	0.050	1	03/09/10 00:00	03/10/10 10:02	7440-43-9	
Chromium	ND	mg/L	0.10	1	03/09/10 00:00	03/10/10 10:02	7440-47-3	
Lead	**3.4**	mg/L	0.10	1	03/09/10 00:00	03/10/10 10:02	7439-92-1	
Selenium	ND	mg/L	0.10	1	03/09/10 00:00	03/10/10 10:02	7782-49-2	
Silver	ND	mg/L	0.50	1	03/09/10 00:00	03/10/10 10:02	7440-22-4	
7470 Mercury, TCLP	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	ND	ug/L	2.0	1	03/09/10 00:00	03/10/10 12:53	7439-97-6	
8270 MSSV TCLP Sep Funnel	Analytical Method: EPA 8270 Preparation Method: EPA 3510							
1,4-Dichlorobenzene	ND	ug/L	100	1	03/10/10 09:00	03/10/10 23:22	106-46-7	
2,4-Dinitrotoluene	ND	ug/L	100	1	03/10/10 09:00	03/10/10 23:22	121-14-2	
Hexachloro-1,3-butadiene	ND	ug/L	100	1	03/10/10 09:00	03/10/10 23:22	87-68-3	
Hexachlorobenzene	ND	ug/L	100	1	03/10/10 09:00	03/10/10 23:22	118-74-1	
Hexachloroethane	ND	ug/L	100	1	03/10/10 09:00	03/10/10 23:22	67-72-1	
2-Methylphenol(o-Cresol)	ND	ug/L	100	1	03/10/10 09:00	03/10/10 23:22	95-48-7	
3&4-Methylphenol(m&p Cresol)	ND	ug/L	200	1	03/10/10 09:00	03/10/10 23:22		
Nitrobenzene	ND	ug/L	100	1	03/10/10 09:00	03/10/10 23:22	98-95-3	
Pentachlorophenol	ND	ug/L	500	1	03/10/10 09:00	03/10/10 23:22	87-86-5	
Pyridine	ND	ug/L	100	1	03/10/10 09:00	03/10/10 23:22	110-86-1	
2,4,5-Trichlorophenol	ND	ug/L	500	1	03/10/10 09:00	03/10/10 23:22	95-95-4	
2,4,6-Trichlorophenol	ND	ug/L	100	1	03/10/10 09:00	03/10/10 23:22	88-06-2	
Nitrobenzene-d5 (S)	84	%	38-129	1	03/10/10 09:00	03/10/10 23:22	4165-60-0	
2-Fluorobiphenyl (S)	83	%	39-128	1	03/10/10 09:00	03/10/10 23:22	321-60-8	
Terphenyl-d14 (S)	83	%	31-130	1	03/10/10 09:00	03/10/10 23:22	1718-51-0	
Phenol-d6 (S)	31	%	13-80	1	03/10/10 09:00	03/10/10 23:22	13127-88-3	
2-Fluorophenol (S)	51	%	25-78	1	03/10/10 09:00	03/10/10 23:22	367-12-4	
2,4,6-Tribromophenol (S)	84	%	35-130	1	03/10/10 09:00	03/10/10 23:22	118-79-6	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ACCREDITED IN ACCORDANCE WITH nelac

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

ANALYTICAL RESULTS

Project: Tetra Tech NUS / 10002
Pace Project No.: 5035158

Sample: Excavation **Lab ID: 5035158001** Collected: 03/03/10 16:36 Received: 03/04/10 10:27 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV TCLP	Analytical Method: EPA 8260							
Benzene	ND	ug/L	50.0	1		03/10/10 19:18	71-43-2	
2-Butanone (MEK)	ND	ug/L	1000	1		03/10/10 19:18	78-93-3	
Carbon tetrachloride	ND	ug/L	50.0	1		03/10/10 19:18	56-23-5	
Chlorobenzene	ND	ug/L	50.0	1		03/10/10 19:18	108-90-7	
Chloroform	ND	ug/L	50.0	1		03/10/10 19:18	67-66-3	
1,2-Dichloroethane	ND	ug/L	50.0	1		03/10/10 19:18	107-06-2	
1,1-Dichloroethene	ND	ug/L	50.0	1		03/10/10 19:18	75-35-4	
Tetrachloroethene	ND	ug/L	50.0	1		03/10/10 19:18	127-18-4	
Trichloroethene	ND	ug/L	50.0	1		03/10/10 19:18	79-01-6	
Vinyl chloride	ND	ug/L	20.0	1		03/10/10 19:18	75-01-4	
Toluene-d8 (S)	108	%	80-116	1		03/10/10 19:18	2037-26-5	
4-Bromofluorobenzene (S)	93	%	70-126	1		03/10/10 19:18	460-00-4	
Dibromofluoromethane (S)	97	%	80-123	1		03/10/10 19:18	1868-53-7	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**21.8**	%	0.10	1		03/04/10 15:13		
1030 Ignitability of Solids	Analytical Method: 1030							
Ignitability	**<2.2**	mm/sec	2.2	1		03/15/10 16:37		3d
9045 pH Soil	Analytical Method: EPA 9045							
pH at 25 Degrees C	**8.0**	Std. Units		1		03/16/10 12:15		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

QUALITY CONTROL DATA

Project: Tetra Tech NUS / 10002
Pace Project No.: 5035158

QC Batch: OEXT/17445
QC Batch Method: EPA 3546
Analysis Method: EPA 8015 Mod Ext
Analysis Description: EPA 8015 Modified
Associated Lab Samples: 5035158001

METHOD BLANK: 404011
Matrix: Solid
Associated Lab Samples: 5035158001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
High End Organics (C8-C34)	mg/kg	ND	10.0	03/09/10 02:07	
n-Pentacosane (S)	%	83	45-170	03/09/10 02:07	

LABORATORY CONTROL SAMPLE: 404012

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
High End Organics (C8-C34)	mg/kg	83.3	64.5	77	41-139	
n-Pentacosane (S)	%			81	45-170	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 404013 404014

Parameter	Units	5035263012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
High End Organics (C8-C34)	mg/kg	14.5	95.2	95.2	94.5	109	84	99	40-146	14	20	
n-Pentacosane (S)	%						97	105	45-170		20	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ACCREDITED IN ACCORDANCE WITH nelac

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

QUALITY CONTROL DATA

Project: Tetra Tech NUS / 10002
Pace Project No.: 5035158

QC Batch: OEXT/17417
QC Batch Method: EPA 3546
Analysis Method: EPA 8082
Analysis Description: 8082 GCS PCB
Associated Lab Samples: 5035158001

METHOD BLANK: 403125 Matrix: Solid
Associated Lab Samples: 5035158001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	ND	35.0	03/05/10 12:03	
PCB-1221 (Aroclor 1221)	ug/kg	ND	35.0	03/05/10 12:03	
PCB-1232 (Aroclor 1232)	ug/kg	ND	35.0	03/05/10 12:03	
PCB-1242 (Aroclor 1242)	ug/kg	ND	35.0	03/05/10 12:03	
PCB-1248 (Aroclor 1248)	ug/kg	ND	35.0	03/05/10 12:03	
PCB-1254 (Aroclor 1254)	ug/kg	ND	35.0	03/05/10 12:03	
PCB-1260 (Aroclor 1260)	ug/kg	ND	35.0	03/05/10 12:03	
Tetrachloro-m-xylene (S)	%	86	20-130	03/05/10 12:03	

LABORATORY CONTROL SAMPLE: 403126

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	167	123	74	46-129	
PCB-1260 (Aroclor 1260)	ug/kg	167	141	85	46-129	
Tetrachloro-m-xylene (S)	%			82	20-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 403127 403128

Parameter	Units	5035174004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
PCB-1016 (Aroclor 1016)	ug/kg	ND	191	191	151	140	79	74	50-150	8	20	
PCB-1260 (Aroclor 1260)	ug/kg	ND	191	191	168	191	88	100	50-150	13	20	
Tetrachloro-m-xylene (S)	%						81	79	20-130		20	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

QUALITY CONTROL DATA

Project: Tetra Tech NUS / 10002
Pace Project No.: 5035158

QC Batch: MPRP/5440
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET TCLP
Associated Lab Samples: 5035158001

METHOD BLANK: 404365 Matrix: Water
Associated Lab Samples: 5035158001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.10	03/10/10 09:22	
Barium	mg/L	ND	5.0	03/10/10 09:22	
Cadmium	mg/L	ND	0.050	03/10/10 09:22	
Chromium	mg/L	ND	0.10	03/10/10 09:22	
Lead	mg/L	ND	0.10	03/10/10 09:22	
Selenium	mg/L	ND	0.10	03/10/10 09:22	
Silver	mg/L	ND	0.50	03/10/10 09:22	

LABORATORY CONTROL SAMPLE: 404366

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	10	10.7	107	80-120	
Barium	mg/L	10	9.6	96	80-120	
Cadmium	mg/L	10	9.9	99	80-120	
Chromium	mg/L	10	9.7	97	80-120	
Lead	mg/L	10	9.7	97	80-120	
Selenium	mg/L	10	10.2	102	80-120	
Silver	mg/L	5	4.5	91	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 404367 404368

Parameter	Units	5035239001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	ND	10	10	10.8	10.7	108	107	50-150	1	20	
Barium	mg/L	ND	10	10	10.9	11.0	96	97	50-150	.9	20	
Cadmium	mg/L	ND	10	10	10	9.8	99	98	50-150	1	20	
Chromium	mg/L	ND	10	10	9.9	9.8	99	98	50-150	1	20	
Lead	mg/L	0.44	10	10	10.2	10.1	97	97	50-150	.4	20	
Selenium	mg/L	ND	10	10	10.2	10.2	102	102	50-150	.5	20	
Silver	mg/L	ND	5	5	4.6	4.6	92	91	50-150	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 404369 404370

Parameter	Units	5035158001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	ND	10	10	10.8	10.9	108	109	50-150	.2	20	
Barium	mg/L	ND	10	10	13.0	13.0	95	95	50-150	.03	20	
Cadmium	mg/L	0.18	10	10	10.1	10.1	99	99	50-150	.06	20	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

QUALITY CONTROL DATA

Project: Tetra Tech NUS / 10002
Pace Project No.: 5035158

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 404369 404370

Parameter	Units	5035158001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium	mg/L	ND	10	10	10	9.9	100	99	50-150	.3	20	
Lead	mg/L	3.4	10	10	13.1	13.0	97	97	50-150	.2	20	
Selenium	mg/L	ND	10	10	10.4	10.3	104	103	50-150	1	20	
Silver	mg/L	ND	5	5	4.6	4.6	93	93	50-150	.08	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 404371 404372

Parameter	Units	5035107002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	ND	10	10	10.8	10.7	108	107	50-150	.6	20	
Barium	mg/L	ND	10	10	13.1	13.3	96	98	50-150	2	20	
Cadmium	mg/L	ND	10	10	9.9	9.9	99	99	50-150	.9	20	
Chromium	mg/L	ND	10	10	9.9	9.9	99	99	50-150	.7	20	
Lead	mg/L	0.13	10	10	9.9	9.9	98	98	50-150	.06	20	
Selenium	mg/L	ND	10	10	10.3	10.4	103	104	50-150	.5	20	
Silver	mg/L	ND	5	5	4.6	4.6	92	91	50-150	.8	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 404387 404388

Parameter	Units	5035108001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	ND	10	10	12.2	11.0	122	109	50-150	11	20	
Barium	mg/L	ND	10	10	10.8	9.7	106	96	50-150	10	20	
Cadmium	mg/L	ND	10	10	10.9	9.9	109	99	50-150	10	20	
Chromium	mg/L	0.30	10	10	11.5	10.5	112	102	50-150	9	20	
Lead	mg/L	ND	10	10	10.6	9.6	106	96	50-150	10	20	
Selenium	mg/L	ND	10	10	11.9	10.7	118	106	50-150	10	20	
Silver	mg/L	ND	5	5	5.2	4.7	103	93	50-150	10	20	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ACCREDITED IN ACCORDANCE WITH nelac

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

QUALITY CONTROL DATA

Project: Tetra Tech NUS / 10002
Pace Project No.: 5035158

QC Batch: MERP/2479
QC Batch Method: EPA 7470
Analysis Method: EPA 7470
Analysis Description: 7470 Mercury TCLP
Associated Lab Samples: 5035158001

METHOD BLANK: 404487 Matrix: Water
Associated Lab Samples: 5035158001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	2.0	03/10/10 12:46	

LABORATORY CONTROL SAMPLE: 404488

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	15	15.6	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 404489 404490

Parameter	Units	5035239001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	15	15	15.3	15.4	102	103	75-125	.9	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 404491 404492

Parameter	Units	5035158001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	15	15	15.3	15.3	102	102	75-125	.09	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 404493 404494

Parameter	Units	5035107002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	15	15	10.5	11.1	70	74	75-125	5	20	M3

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 404495 404496

Parameter	Units	5035108001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	250	250	208	218	83	87	75-125	5	20	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ACCREDITED IN ACCORDANCE WITH nelac

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

QUALITY CONTROL DATA

Project: Tetra Tech NUS / 10002
Pace Project No.: 5035158

QC Batch: OEXT/17472
QC Batch Method: EPA 3510
Analysis Method: EPA 8270
Analysis Description: 8270 TCLP MSSV
Associated Lab Samples: 5035158001

METHOD BLANK: 404867
Matrix: Water
Associated Lab Samples: 5035158001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dichlorobenzene	ug/L	ND	100	03/10/10 22:22	
2,4,5-Trichlorophenol	ug/L	ND	500	03/10/10 22:22	
2,4,6-Trichlorophenol	ug/L	ND	100	03/10/10 22:22	
2,4-Dinitrotoluene	ug/L	ND	100	03/10/10 22:22	
2-Methylphenol(o-Cresol)	ug/L	ND	100	03/10/10 22:22	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	200	03/10/10 22:22	
Hexachloro-1,3-butadiene	ug/L	ND	100	03/10/10 22:22	
Hexachlorobenzene	ug/L	ND	100	03/10/10 22:22	
Hexachloroethane	ug/L	ND	100	03/10/10 22:22	
Nitrobenzene	ug/L	ND	100	03/10/10 22:22	
Pentachlorophenol	ug/L	ND	500	03/10/10 22:22	
Pyridine	ug/L	ND	100	03/10/10 22:22	
2,4,6-Tribromophenol (S)	%	84	35-130	03/10/10 22:22	
2-Fluorobiphenyl (S)	%	82	39-128	03/10/10 22:22	
2-Fluorophenol (S)	%	53	25-78	03/10/10 22:22	
Nitrobenzene-d5 (S)	%	84	38-129	03/10/10 22:22	
Phenol-d6 (S)	%	32	13-80	03/10/10 22:22	
Terphenyl-d14 (S)	%	94	31-130	03/10/10 22:22	

LABORATORY CONTROL SAMPLE: 404868

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	1000	734	73	22-107	
2,4,5-Trichlorophenol	ug/L	1000	862	86	41-154	
2,4,6-Trichlorophenol	ug/L	1000	878	88	46-136	
2,4-Dinitrotoluene	ug/L	1000	733	73	46-137	
2-Methylphenol(o-Cresol)	ug/L	1000	747	75	51-106	
3&4-Methylphenol(m&p Cresol)	ug/L	2000	1290	64	20-110	
Hexachloro-1,3-butadiene	ug/L	1000	805	80	31-119	
Hexachlorobenzene	ug/L	1000	783	78	30-126	
Hexachloroethane	ug/L	1000	758	76	20-114	
Nitrobenzene	ug/L	1000	909	91	45-122	
Pentachlorophenol	ug/L	1000	964	96	22-140	
Pyridine	ug/L	1000	315	31	10-120	
2,4,6-Tribromophenol (S)	%			87	35-130	
2-Fluorobiphenyl (S)	%			89	39-128	
2-Fluorophenol (S)	%			56	28-78	
Nitrobenzene-d5 (S)	%			92	38-129	
Phenol-d6 (S)	%			35	13-80	
Terphenyl-d14 (S)	%			93	31-130	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ACCREDITED IN ACCORDANCE WITH nelac

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

QUALITY CONTROL DATA

Project: Tetra Tech NUS / 10002
Pace Project No.: 5035158

MATRIX SPIKE SAMPLE: 404869

Parameter	Units	5035158001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	ND	1000	673	67	28-107	
2,4,5-Trichlorophenol	ug/L	ND	1000	791	79	38-135	
2,4,6-Trichlorophenol	ug/L	ND	1000	814	81	33-131	
2,4-Dinitrotoluene	ug/L	ND	1000	721	72	40-121	
2-Methylphenol(o-Cresol)	ug/L	ND	1000	753	75	31-114	
3&4-Methylphenol(m&p Cresol)	ug/L	ND	2000	1280	64	19-122	
Hexachloro-1,3-butadiene	ug/L	ND	1000	633	63	22-115	
Hexachlorobenzene	ug/L	ND	1000	721	72	24-119	
Hexachloroethane	ug/L	ND	1000	619	62	12-116	
Nitrobenzene	ug/L	ND	1000	778	78	37-122	
Pentachlorophenol	ug/L	ND	1000	940	94	20-130	
Pyridine	ug/L	ND	1000	349	35	10-120	
2,4,6-Tribromophenol (S)	%				87	35-130	
2-Fluorobiphenyl (S)	%				82	39-128	
2-Fluorophenol (S)	%				54	25-78	
Nitrobenzene-d5 (S)	%				86	38-129	
Phenol-d6 (S)	%				34	13-80	
Terphenyl-d14 (S)	%				92	31-130	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

QUALITY CONTROL DATA

Project: Tetra Tech NUS / 10002
Pace Project No.: 5035158

QC Batch: MSV/22142
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV TCLP
Associated Lab Samples: 5035158001

METHOD BLANK: 405543 Matrix: Water
Associated Lab Samples: 5035158001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1-Dichloroethene	ug/L	ND	50.0	03/10/10 13:50	
1,2-Dichloroethane	ug/L	ND	50.0	03/10/10 13:50	
2-Butanone (MEK)	ug/L	ND	1000	03/10/10 13:50	
Benzene	ug/L	ND	50.0	03/10/10 13:50	
Carbon tetrachloride	ug/L	ND	50.0	03/10/10 13:50	
Chlorobenzene	ug/L	ND	50.0	03/10/10 13:50	
Chloroform	ug/L	ND	50.0	03/10/10 13:50	
Tetrachloroethene	ug/L	ND	50.0	03/10/10 13:50	
Trichloroethene	ug/L	ND	50.0	03/10/10 13:50	
Vinyl chloride	ug/L	ND	20.0	03/10/10 13:50	
4-Bromofluorobenzene (S)	%	94	70-126	03/10/10 13:50	
Dibromofluoromethane (S)	%	97	80-123	03/10/10 13:50	
Toluene-d8 (S)	%	108	80-116	03/10/10 13:50	

LABORATORY CONTROL SAMPLE: 405544

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/L	500	443	89	53-136	
1,2-Dichloroethane	ug/L	500	394	79	68-128	
2-Butanone (MEK)	ug/L	2500	1680	67	32-190	
Benzene	ug/L	500	425	85	72-125	
Carbon tetrachloride	ug/L	500	380	76	60-130	
Chlorobenzene	ug/L	500	400	80	73-125	
Chloroform	ug/L	500	423	85	73-124	
Tetrachloroethene	ug/L	500	378	76	62-120	
Trichloroethene	ug/L	500	413	83	74-121	
Vinyl chloride	ug/L	500	520	104	42-151	
4-Bromofluorobenzene (S)	%			99	70-126	
Dibromofluoromethane (S)	%			99	80-123	
Toluene-d8 (S)	%			107	80-116	

MATRIX SPIKE SAMPLE: 405545

Parameter	Units	5035158001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1-Dichloroethene	ug/L	ND	500	497	99	53-139	
1,2-Dichloroethane	ug/L	ND	500	426	85	70-132	
2-Butanone (MEK)	ug/L	ND	2500	2010	81	43-157	
Benzene	ug/L	ND	500	393	79	70-127	
Carbon tetrachloride	ug/L	ND	500	343	69	52-134	
Chlorobenzene	ug/L	ND	500	248	50	50-133	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

QUALITY CONTROL DATA

Project: Tetra Tech NUS / 10002
Pace Project No.: 5035158

MATRIX SPIKE SAMPLE: 405545

Parameter	Units	5035158001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chloroform	ug/L	ND	500	445	89	75-127	
Tetrachloroethene	ug/L	ND	500	194	39	38-129	
Trichloroethene	ug/L	ND	500	333	58	48-145	
Vinyl chloride	ug/L	ND	500	639	128	40-156	
4-Bromofluorobenzene (S)	%				99	70-126	
Dibromofluoromethane (S)	%				99	80-123	
Toluene-d8 (S)	%				109	80-116	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

QUALITY CONTROL DATA

Project: Tetra Tech NUS / 10002
Pace Project No.: 5035158

QC Batch: PMST/4413
QC Batch Method: ASTM D2974-87
Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 5035158001

SAMPLE DUPLICATE: 402946

Parameter	Units	5035176001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	11.7	11.6	2	5	

SAMPLE DUPLICATE: 402947

Parameter	Units	5035094003 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	20.1	16.3	21	5	R2

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

QUALITY CONTROL DATA

Project: Tetra Tech NUS / 10002
Pace Project No.: 5035158

QC Batch: WET/5869
QC Batch Method: EPA 9045
Analysis Method: EPA 9045
Analysis Description: 9045 pH
Associated Lab Samples: 5035158001

SAMPLE DUPLICATE: 407887

Parameter	Units	5035158001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.0	8.0	.1		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

QUALIFIERS

Project: Tetra Tech NUS / 10002
Pace Project No.: 5035158

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

U - Indicates the compound was analyzed for, but not detected.

ANALYTE QUALIFIERS

1d	Closing CCV failed high, but the sample is <RL for the analyte. Result not affected by high bias. FRW 3-10-10
2d	Due to the presence of co-eluting Aroclors, the reported values may be biased high. 3-8-10 LKC
3d	Sample will not burn, smolder or propagate flame after 2 minutes of direct application of a >1000 degree C flame. ddm 3-15-10
M3	Matrix spike recovery was outside laboratory control limits due to matrix interferences.
R2	RPD value was outside control limits due to matrix interference
S4	Surrogate recovery not evaluated against control limits due to sample dilution.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

K

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:	Page: of
Company: Lee & Ryan	Report To: Angelo J. DaTtilo	Attention: Angelo J. DaTtilo	1303706
Address: 1707 Melody Lane Greenfield, IN 46140	Copy To: NA	Company Name: Lee & Ryan	REGULATORY AGENCY
Email To: adattilo@leeandryan.com	Purchase Order No.: 14124	Address:	☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
Phone: 800-680-8787 Fax:	Project Name: Tetra Tech NUS	Pace Quote Reference:	☐ UST ☐ RCRA ☒ OTHER
Requested Due Date/TAT: 03/10/10; 5 days	Project Number: 10002	Pace Project Manager:	Site Location STATE: IN
		Pace Profile #:	

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

ITEM #	Section D Required Client Information: SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	TCLP VOCs	" SVOCs	" Herbs/Herbs	" Metals	PCBs	TPH (C9-C39)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	Excavation	SL	C	3/3	4:36pm				18	✓									3	3	3	3	3	3		5035158
2																										001
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	KENNY LASLEY	3-4-10	10:27	[signature]	03/04/10	1027hrs	0.6°C Y M Y

W/ Client

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Angelo J. DaTtilo

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 03/04/2010

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

ATTACHMENT E

Subsurface and Topsoil Origin Letter

LEE & RYAN Environmental • Construction • Engineering • Mechanical

May 7, 2010

Mr. Nate Wagler
JJ's Concrete Construction, LLC
9149 East 800 North
Montgomery, IN 47558
Fax: 812.636.0193

RE: **Soil Supply, Naval Support, Crane**
SWMU-5 (Old Burn Pit)
Crane, IN
Lee & Ryan Project # 10002

Dear Mr. Wagler:

Lee & Ryan received fill dirt and topsoil from JJ's Concrete Construction, LLC (JJ's Concrete) at the above referenced facility located in Crane, Indiana on March 5, 2010. The purpose of this letter and signature is to confirm that to the best of your knowledge, the subsurface soil excavated from the Glen S. Graber Farm, located at 1000 East 1475 North, Odon, Indiana 47562, and the topsoil delivered from the JJ's Concrete property, was not impacted or contaminated with petroleum or any other potentially hazardous material.

If this letter meets your approval, please sign below and fax the signed letter to Lee & Ryan at (317) 467-6588.

Once again Nate, I sincerely appreciate your help with this project and hope to work with you again soon. If you have any questions or comments, please feel free to contact me at (800) 680-8987 ext. 201.

Sincerely,

LEE & RYAN ENVIRONMENTAL CONSULTING, INC.

Angelo J. Dattilo, L.P.G.
Director of Environmental Operations

Signature of Mr. Nate Wagler
JJ's Concrete Construction, LLC

AJD/ajd

ATTACHMENT F

Analytical Laboratory Reports for the Subsurface Soil and Topsoil

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

February 01, 2010

Mr. Angelo Dattilo
Lee & Ryan Environmental Consultants
1707 Melody Lane
Greenfield, IN 46140

RE: Project: 5WMV5-Old Burn Pit/ 10002
Pace Project No.: 5033900

Dear Mr. Dattilo:
Enclosed are the analytical results for sample(s) received by the laboratory on January 14, 2010. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kelly M Jones

Kelly Jones

kelly.jones@pacelabs.com
Project Manager

Enclosures

cc: Julie Janes, Lee & Ryan Environmental Consultants

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ACCREDITED IN ACCORDANCE WITH nelac

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

CERTIFICATIONS

Project: 5WMV5-Old Burn Pit/ 10002
Pace Project No.: 5033900

Indiana Certification IDs
Illinois/NELAC Certification #: 100418
Indiana Certification #: C-49-06
Kansas Certification #: E-10247
Kentucky Certification #: 0042
Ohio VAP: CL0065
Pennsylvania: 68-00791
West Virginia Certification #: 330
7726 Moller Road Indianapolis, IN 46268

Kansas Certification IDs
A2LA Certification #: 2456.01
Arkansas Certification #: 05-008-0
Illinois Certification #: 001191
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Oregon Certification #: KS200001
Texas Certification #: T104704407-08-TX
Utah Certification #: 9135995665
Washington Certification #: C2069
9608 Loiret Boulevard Lenexa, KS 66219

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

SAMPLE SUMMARY

Project: 5WMV5-Old Burn Pit/ 10002
Pace Project No.: 5033900

Lab ID	Sample ID	Matrix	Date Collected	Date Received
5033900001	**Topsoil**	Solid	01/13/10 08:00	01/14/10 16:10

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

SAMPLE ANALYTE COUNT

Project: 5WMV5-Old Burn Pit/ 10002
Pace Project No.: 5033900

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
5033900001	**Topsoil**	EPA 8015 Modified	SRS	2	PASI-I
		EPA 8082	LKC	8	PASI-I
		EPA 8015 Mod Pur	BCC	2	PASI-I
		EPA 8021	TLC	5	PASI-I
		EPA 6010	FRW	1	PASI-I
		EPA 6010	FRW	1	PASI-I
		ASTM D2974-87	CLS	1	PASI-I
		1030	DDM	1	PASI-I
		SW-846 7.3.4.2	SAH	1	PASI-K
		EPA 9045	TPD	1	PASI-I
		SW-846 7.3.3.2	CCT	1	PASI-K

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

ANALYTICAL RESULTS

Project: 5WMV5-Old Burn Pit/ 10002
Pace Project No.: 5033900

Sample: Topsoil **Lab ID: 5033900001** Collected: 01/13/10 08:00 Received: 01/14/10 16:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel	Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546							
Diesel Range Organics (C8-C28)	ND	mg/kg	12.0	1	01/15/10 10:45	01/19/10 09:47		
n-Pentacosane (S)	68	%	45-170	1	01/15/10 10:45	01/19/10 09:47	629-99-2	
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3546							
PCB-1016 (Aroclor 1016)	ND	ug/kg	41.9	1	01/15/10 10:45	01/20/10 23:10	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	41.9	1	01/15/10 10:45	01/20/10 23:10	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	41.9	1	01/15/10 10:45	01/20/10 23:10	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	41.9	1	01/15/10 10:45	01/20/10 23:10	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	41.9	1	01/15/10 10:45	01/20/10 23:10	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	41.9	1	01/15/10 10:45	01/20/10 23:10	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	41.9	1	01/15/10 10:45	01/20/10 23:10	11096-82-5	
Tetrachloro-m-xylene (S)	64	%	20-130	1	01/15/10 10:45	01/20/10 23:10	877-09-8	
8015 Gasoline Range Organics	Analytical Method: EPA 8015 Mod Pur							
Gasoline Range Organics	ND	mg/kg	1.2	1		01/16/10 03:44		
4-Bromofluorobenzene (S)	87	%	40-159	1		01/16/10 03:44	460-00-4	
8021 GCV Low BTEX	Analytical Method: EPA 8021							
Benzene	ND	ug/kg	1.2	1		01/19/10 10:33	71-43-2	
Ethylbenzene	ND	ug/kg	6.0	1		01/19/10 10:33	100-41-4	
Toluene	ND	ug/kg	6.0	1		01/19/10 10:33	108-88-3	
Xylene (Total)	ND	ug/kg	12.0	1		01/19/10 10:33	1330-20-7	
a,a,a-Trifluorotoluene (S)	95	%	54-150	1		01/19/10 10:33	98-08-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Lead	**8.7**	mg/kg	2.3	1	01/14/10 00:00	01/18/10 10:10	7439-92-1	
6010 MET ICP, TCLP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Lead	ND	mg/L	0.10	1	01/27/10 00:00	01/28/10 11:33	7439-92-1	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**16.5**	%	0.10	1		01/15/10 14:38		
1030 Ignitability of Solids	Analytical Method: 1030							
Ignitability	**<2.2**	mm/sec	2.2	1		01/18/10 14:30		1d
Reactive Sulfide	Analytical Method: SW-846 7.3.4.2							
Sulfide, Reactive	ND	mg/kg	100	1		01/21/10 00:00		
9045 pH Soil	Analytical Method: EPA 9045							
pH at 25 Degrees C	**6.4**	Std. Units		1		01/20/10 15:04		
733C S Reactive Cyanide	Analytical Method: SW-846 7.3.3.2							
Cyanide, Reactive	ND	mg/kg	0.025	1		01/21/10 14:47		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ACCREDITED IN ACCORDANCE WITH nelac

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

QUALITY CONTROL DATA

Project: 5WMV5-Old Burn Pit/ 10002
Pace Project No.: 5033900

QC Batch: OEXT/16810
QC Batch Method: EPA 3546
Analysis Method: EPA 8015 Modified
Analysis Description: 8015 Solid GCSV
Associated Lab Samples: 5033900001

METHOD BLANK: 388827 Matrix: Solid
Associated Lab Samples: 5033900001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range Organics (C8-C28)	mg/kg	ND	10.0	01/19/10 09:12	
n-Pentacosane (S)	%	77	45-170	01/19/10 09:12	

LABORATORY CONTROL SAMPLE: 388828

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Range Organics (C8-C28)	mg/kg	83.3	63.3	76	41-139	
n-Pentacosane (S)	%			85	45-170	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 388829 388830

Parameter	Units	5033900001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Diesel Range Organics (C8-C28)	mg/kg	ND	99.7	99.7	60.7	61.5	60	60	40-146	1	20	
n-Pentacosane (S)	%						62	61	45-170		20	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ACCREDITED IN ACCORDANCE WITH nelac

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

QUALITY CONTROL DATA

Project: 5WMV5-Old Burn Pit/ 10002
Pace Project No.: 5033900

QC Batch: OEXT/16812
QC Batch Method: EPA 3546
Analysis Method: EPA 8082
Analysis Description: 8082 GCS PCB
Associated Lab Samples: 5033900001

METHOD BLANK: 388839 Matrix: Solid
Associated Lab Samples: 5033900001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	ND	35.0	01/20/10 22:44	
PCB-1221 (Aroclor 1221)	ug/kg	ND	35.0	01/20/10 22:44	
PCB-1232 (Aroclor 1232)	ug/kg	ND	35.0	01/20/10 22:44	
PCB-1242 (Aroclor 1242)	ug/kg	ND	35.0	01/20/10 22:44	
PCB-1248 (Aroclor 1248)	ug/kg	ND	35.0	01/20/10 22:44	
PCB-1254 (Aroclor 1254)	ug/kg	ND	35.0	01/20/10 22:44	
PCB-1260 (Aroclor 1260)	ug/kg	ND	35.0	01/20/10 22:44	
Tetrachloro-m-xylene (S)	%	95	20-130	01/20/10 22:44	

LABORATORY CONTROL SAMPLE: 388840

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	167	167	100	46-129	
PCB-1260 (Aroclor 1260)	ug/kg	167	168	101	46-129	
Tetrachloro-m-xylene (S)	%			86	20-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 388841 388842

Parameter	Units	5033900001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
PCB-1016 (Aroclor 1016)	ug/kg	ND	200	200	121	157	60	79	50-150	26	20	R1
PCB-1260 (Aroclor 1260)	ug/kg	ND	200	200	114	148	57	74	50-150	26	20	R1
Tetrachloro-m-xylene (S)	%						45	71	20-130		20	R1

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

QUALITY CONTROL DATA

Project: 5WMV5-Old Burn Pit/ 10002
Pace Project No.: 5033900

QC Batch: GCV/9735
QC Batch Method: EPA 8015 Mod Pur
Analysis Method: EPA 8015 Mod Pur
Analysis Description: 8015 Solid GCV
Associated Lab Samples: 5033900001

METHOD BLANK: 389487 Matrix: Solid
Associated Lab Samples: 5033900001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	mg/kg	ND	1.0	01/16/10 00:56	
4-Bromofluorobenzene (S)	%	84	40-159	01/16/10 00:56	

LABORATORY CONTROL SAMPLE: 389488

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	mg/kg	10	9.6	96	79-128	
4-Bromofluorobenzene (S)	%			112	40-159	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 389489 389490

Parameter	Units	5033856003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Gasoline Range Organics	mg/kg	ND	12.2	12.2	7.5	7.9	60	63	40-135	5	20	
4-Bromofluorobenzene (S)	%						97	101	40-159		20	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

QUALITY CONTROL DATA

Project: 5WMV5-Old Burn Pit/ 10002
Pace Project No.: 5033900

QC Batch: GCV/9754 Analysis Method: EPA 8021
QC Batch Method: EPA 8021 Analysis Description: 8021 Low Level Solid GCV
Associated Lab Samples: 5033900001

METHOD BLANK: 390077 Matrix: Solid
Associated Lab Samples: 5033900001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/kg	ND	1.0	01/19/10 10:11	
Ethylbenzene	ug/kg	ND	5.0	01/19/10 10:11	
Toluene	ug/kg	ND	5.0	01/19/10 10:11	
Xylene (Total)	ug/kg	ND	10.0	01/19/10 10:11	
a,a,a-Trifluorotoluene (S)	%	91	50-160	01/19/10 10:11	

LABORATORY CONTROL SAMPLE: 390078

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/kg	100	96.3	96	77-124	
Ethylbenzene	ug/kg	100	100	100	76-123	
Toluene	ug/kg	100	97.6	98	76-121	
Xylene (Total)	ug/kg	300	302	101	76-123	
a,a,a-Trifluorotoluene (S)	%			103	50-160	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 390079 390080

Parameter	Units	5033900001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/kg	ND	120	120	119	122	100	102	40-129	3	20	
Ethylbenzene	ug/kg	ND	120	120	112	110	93	92	40-120	1	20	
Toluene	ug/kg	ND	120	120	112	112	93	94	40-120	.7	20	
Xylene (Total)	ug/kg	ND	359	359	332	327	93	91	40-120	2	20	
a,a,a-Trifluorotoluene (S)	%						100	101	50-160		20	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

QUALITY CONTROL DATA

Project: 5WMV5-Old Burn Pit/ 10002
Pace Project No.: 5033900

QC Batch: MPRP/5270
QC Batch Method: EPA 3050
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Associated Lab Samples: 5033900001

METHOD BLANK: 388547
Matrix: Solid
Associated Lab Samples: 5033900001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Lead	mg/kg	ND	2.0	01/18/10 08:34	

LABORATORY CONTROL SAMPLE: 388548

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	mg/kg	50	50.3	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 388549 388550

Parameter	Units	5033865003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	mg/kg	3.9	58.9	58.3	53.3	50.9	84	81	75-125	5	20	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

QUALITY CONTROL DATA

Project: 5WMV5-Old Burn Pit/ 10002
Pace Project No.: 5033900

QC Batch: MPRP/5310
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET TCLP
Associated Lab Samples: 5033900001

METHOD BLANK: 391956
Matrix: Water
Associated Lab Samples: 5033900001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Lead	mg/L	ND	0.10	01/28/10 08:26	

LABORATORY CONTROL SAMPLE: 391957

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	mg/L	10	10.0	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 391958 391959

Parameter	Units	5033900001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	mg/L	ND	10	10	10.3	10.2	103	102	50-150	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 391960 391961

Parameter	Units	5034150001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	mg/L	0.10	10	10	10.0	10.1	99	100	50-150	1	20	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ACCREDITED IN ACCORDANCE WITH nelac

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

QUALITY CONTROL DATA

Project: 5WMV5-Old Burn Pit/ 10002
Pace Project No.: 5033900

QC Batch: PMST/4312
QC Batch Method: ASTM D2974-87
Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 5033900001

SAMPLE DUPLICATE: 389091

Parameter	Units	5033886003 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	12.3	12.2	.6	5	

SAMPLE DUPLICATE: 389092

Parameter	Units	5033902008 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	12.3	11.7	5	5	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

QUALITY CONTROL DATA

Project: 5WMV5-Old Burn Pit/ 10002
Pace Project No.: 5033900

QC Batch: WET/21511
QC Batch Method: SW-846 7.3.4.2
Analysis Method: SW-846 7.3.4.2
Analysis Description: Reactive Sulfide
Associated Lab Samples: 5033900001

METHOD BLANK: 593445 Matrix: Solid
Associated Lab Samples: 5033900001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfide, Reactive	mg/kg	ND	100	01/21/10 00:00	

LABORATORY CONTROL SAMPLE: 593446

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Reactive	mg/kg	200	171	85	77-110	

MATRIX SPIKE SAMPLE: 593447

Parameter	Units	5033900001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Reactive	mg/kg	ND	500	398	80	67-116	

SAMPLE DUPLICATE: 593448

Parameter	Units	10120685001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Reactive	mg/kg	ND	38.8J		30	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

QUALITY CONTROL DATA

Project: 5WMV5-Old Burn Pit/ 10002
Pace Project No.: 5033900

QC Batch: WET/5644
QC Batch Method: EPA 9045
Analysis Method: EPA 9045
Analysis Description: 9045 pH
Associated Lab Samples: 5033900001

SAMPLE DUPLICATE: 389935

Parameter	Units	5033846001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.7	7.8	.8		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

QUALITY CONTROL DATA

Project: 5WMV5-Old Burn Pit/ 10002
Pace Project No.: 5033900

QC Batch: WETA/11955
QC Batch Method: SW-846 7.3.3.2
Analysis Method: SW-846 7.3.3.2
Analysis Description: 733C Reactive Cyanide
Associated Lab Samples: 5033900001

METHOD BLANK: 593395 Matrix: Solid
Associated Lab Samples: 5033900001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide, Reactive	mg/kg	ND	0.025	01/21/10 14:42	

LABORATORY CONTROL SAMPLE: 593396

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide, Reactive	mg/kg	.5	0.51	102	71-123	

MATRIX SPIKE SAMPLE: 593397

Parameter	Units	10120685001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cyanide, Reactive	mg/kg	ND	.5	0.43	82	57-132	

MATRIX SPIKE SAMPLE: 593653

Parameter	Units	6072356009 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cyanide, Reactive	mg/kg	0.26	.5	0.70	87	57-132	

SAMPLE DUPLICATE: 593398

Parameter	Units	5033900001 Result	Dup Result	RPD	Max RPD	Qualifiers
Cyanide, Reactive	mg/kg	ND	ND		23	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ACCREDITED IN ACCORDANCE WITH nelac

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

QUALIFIERS

Project: 5WMV5-Old Burn Pit/ 10002
Pace Project No.: 5033900

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

U - Indicates the compound was analyzed for, but not detected.

LABORATORIES

PASI-I	Pace Analytical Services - Indianapolis
PASI-K	Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

1d	Sample will not burn, smolder or propagate flame after 2 minutes of direct application of a >1000 degree C flame. ddm 1-18-10
R1	RPD value was outside control limits.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical®
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

AV 1/25/10

Page: of

1339722

Section A Required Client Information:

Company: Lee & Ryan
Address: 1707 Melody Lane
Carmel, IN
Email To: adattilo@leeandryan.com
Phone: 800-680-8987 Fax:
Requested Due Date/TAT: 1/26/2010 7-10 bus. days

Section B Required Project Information:

Report To: Angelo J. Dattilo
Copy To:
Purchase Order No.:
Project Name: SWMU5-Old Burn Pit
Project Number: 10002

Section C Invoice Information:

Attention: Angelo Dattilo
Company Name: Lee & Ryan
Address: 1707 Melody Ln., G-field 46140
Pace Quote Reference:
Pace Project Manager: Tina?
Pace Profile #: 13101 (bottle order #)

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☒ OTHER

Site Location STATE: IN

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

ITEM #	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N: TPH-DRO (8015M)	TPH-GRO	Total PCBs (8082)	BTEX (5030/8021)	Ignitability/Corrosivity/Reactivity/Toxicity (1311)	Lead (6010B or 6020)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	SL	G						6	X								Y	Y	Y	Y	Y	Y		ADD 1/14/10 001
2								1									Y	Y	Y	N	N	Y		
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

Item 1: ~~Top Soil~~ Topsoil
ADD 1/14/10

5033900

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Call to discuss 5030 method	[signature] /LR	1/14/10	2:37 PM	Zeb Tetz	1/14/10	2:3	2.8	Y	Y	Y
				Emily Pettway	1/14/10	1610				

ORIGINAL

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Angelo J. Dattilo
SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY): 01/14/10

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

February 17, 2010

Mr. Angelo Dattilo
Lee & Ryan Environmental Consultants
1707 Melody Lane
Greenfield, IN 46140

RE: Project: 5WMV5- Old Burn Pit/ 10002
Pace Project No.: 5034462

Dear Mr. Dattilo:
Enclosed are the analytical results for sample(s) received by the laboratory on February 04, 2010. The results relate only to the samples included in this report. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kelly M Jones

Kelly Jones

kelly.jones@pacelabs.com
Project Manager

Enclosures

cc: Julie Janes, Lee & Ryan Environmental Consultants

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

CERTIFICATIONS

Project: 5WMV5- Old Burn Pit/ 10002
Pace Project No.: 5034462

Indiana Certification IDs
West Virginia Certification #: 330
7726 Moller Road Indianapolis, IN 46268
Illinois/NELAC Certification #: 100418
Indiana Certification #: C-49-06
Kansas Certification #: E-10247
Kentucky Certification #: 0042
Ohio VAP: CL0065
Pennsylvania: 68-00791

Kansas Certification IDs
A2LA Certification #: 2456.01
Arkansas Certification #: 05-008-0
Illinois Certification #: 001191
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Oregon Certification #: KS200001
Texas Certification #: T104704407-08-TX
Utah Certification #: 9135995665
Washington Certification #: C2069
9608 Loiret Boulevard Lenexa, KS 66219

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

SAMPLE SUMMARY

Project: 5WMV5- Old Burn Pit/ 10002
Pace Project No.: 5034462

Lab ID	Sample ID	Matrix	Date Collected	Date Received
5034462001	Subsoil	Solid	02/04/10 14:15	02/04/10 15:10

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

SAMPLE ANALYTE COUNT

Project: 5WMV5- Old Burn Pit/ 10002
Pace Project No.: 5034462

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
5034462001	**Subsoil**	EPA 8015 Modified	SRS	2	PASI-I
		EPA 8082	LKC	8	PASI-I
		EPA 8015 Mod Pur	BCC	2	PASI-I
		EPA 8021	TLC	6	PASI-I
		EPA 6010	FRW	1	PASI-I
		EPA 6010	FRW	1	PASI-I
		ASTM D2974-87	TPD	1	PASI-I
		1030	DDM	1	PASI-I
		SW-846 7.3.4.2	SAH	1	PASI-K
		EPA 9045	TPD	1	PASI-I
		SW-846 7.3.3.2	CCT	1	PASI-K

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

ANALYTICAL RESULTS

Project: 5WMV5- Old Burn Pit/ 10002
Pace Project No.: 5034462

Sample: Subsoil **Lab ID: 5034462001** Collected: 02/04/10 14:15 Received: 02/04/10 15:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS THC-Diesel	Analytical Method: EPA 8015 Modified Preparation Method: EPA 3546							
Diesel Range Organics (C8-C28)	ND	mg/kg	12.3	1	02/04/10 19:50	02/09/10 19:10		
n-Pentacosane (S)	68	%	45-170	1	02/04/10 19:50	02/09/10 19:10	629-99-2	
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3546							
PCB-1016 (Aroclor 1016)	ND	ug/kg	43.1	1	02/05/10 11:30	02/09/10 14:21	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/kg	43.1	1	02/05/10 11:30	02/09/10 14:21	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/kg	43.1	1	02/05/10 11:30	02/09/10 14:21	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/kg	43.1	1	02/05/10 11:30	02/09/10 14:21	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/kg	43.1	1	02/05/10 11:30	02/09/10 14:21	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/kg	43.1	1	02/05/10 11:30	02/09/10 14:21	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/kg	43.1	1	02/05/10 11:30	02/09/10 14:21	11096-82-5	
Tetrachloro-m-xylene (S)	54	%	20-130	1	02/05/10 11:30	02/09/10 14:21	877-09-8	
8015 Gasoline Range Organics	Analytical Method: EPA 8015 Mod Pur							
Gasoline Range Organics	ND	mg/kg	1.2	1		02/11/10 16:59		
4-Bromofluorobenzene (S)	89	%	40-159	1		02/11/10 16:59	460-00-4	
8021 GCV Low BTEX	Analytical Method: EPA 8021							
Benzene	ND	ug/kg	1.2	1		02/10/10 19:45	71-43-2	
Ethylbenzene	ND	ug/kg	6.2	1		02/10/10 19:45	100-41-4	
Methyl-tert-butyl ether	ND	ug/kg	4.9	1		02/10/10 19:45	1634-04-4	
Toluene	ND	ug/kg	6.2	1		02/10/10 19:45	108-88-3	
Xylene (Total)	ND	ug/kg	12.3	1		02/10/10 19:45	1330-20-7	
a,a,a-Trifluorotoluene (S)	97	%	54-150	1		02/10/10 19:45	98-08-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3050							
Lead	**6.7**	mg/kg	2.3	1	02/08/10 00:00	02/09/10 23:31	7439-92-1	
6010 MET ICP, TCLP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Lead	ND	mg/L	0.10	1	02/09/10 00:00	02/10/10 10:26	7439-92-1	
Percent Moisture	Analytical Method: ASTM D2974-87							
Percent Moisture	**18.8**	%	0.10	1		02/05/10 11:18		
1030 Ignitability of Solids	Analytical Method: 1030							
Ignitability	**<2.2**	mm/sec	2.2	1		02/05/10 14:15		1d
Reactive Sulfide	Analytical Method: SW-846 7.3.4.2							
Sulfide, Reactive	ND	mg/kg	100	1		02/15/10 11:00		
9045 pH Soil	Analytical Method: EPA 9045							
pH at 25 Degrees C	**5.8**	Std. Units		1		02/11/10 09:16		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ACCREDITED IN ACCORDANCE WITH nelac

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

ANALYTICAL RESULTS

Project: 5WMV5- Old Burn Pit/ 10002
Pace Project No.: 5034462

Sample: Subsoil **Lab ID: 5034462001** Collected: 02/04/10 14:15 Received: 02/04/10 15:10 Matrix: Solid

Results reported on a "dry-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
733C S Reactive Cyanide	Analytical Method: SW-846 7.3.3.2							
Cyanide, Reactive	ND	mg/kg	0.025	1		02/12/10 14:16		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

QUALITY CONTROL DATA

Project: 5WMV5- Old Burn Pit/ 10002
Pace Project No.: 5034462

QC Batch: OEXT/17094
QC Batch Method: EPA 3546
Analysis Method: EPA 8015 Modified
Analysis Description: 8015 Solid GCSV
Associated Lab Samples: 5034462001

METHOD BLANK: 394727 Matrix: Solid
Associated Lab Samples: 5034462001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Diesel Range Organics (C8-C28)	mg/kg	ND	10.0	02/09/10 18:13	
n-Pentacosane (S)	%	84	45-170	02/09/10 18:13	

LABORATORY CONTROL SAMPLE: 394728

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Diesel Range Organics (C8-C28)	mg/kg	83.3	70.2	84	41-139	
n-Pentacosane (S)	%			81	45-170	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 394729 394730

Parameter	Units	5034437002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Diesel Range Organics (C8-C28)	mg/kg	68.9	83.3	83.3	154	110	102	49	40-146	34	20	
n-Pentacosane (S)	%						174	110	45-170		20	2d,R1

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

QUALITY CONTROL DATA

Project: 5WMV5- Old Burn Pit/ 10002
Pace Project No.: 5034462

QC Batch: OEXT/17105
QC Batch Method: EPA 3546
Analysis Method: EPA 8082
Analysis Description: 8082 GCS PCB
Associated Lab Samples: 5034462001

METHOD BLANK: 394851 Matrix: Solid
Associated Lab Samples: 5034462001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	ND	35.0	02/09/10 13:41	
PCB-1221 (Aroclor 1221)	ug/kg	ND	35.0	02/09/10 13:41	
PCB-1232 (Aroclor 1232)	ug/kg	ND	35.0	02/09/10 13:41	
PCB-1242 (Aroclor 1242)	ug/kg	ND	35.0	02/09/10 13:41	
PCB-1248 (Aroclor 1248)	ug/kg	ND	35.0	02/09/10 13:41	
PCB-1254 (Aroclor 1254)	ug/kg	ND	35.0	02/09/10 13:41	
PCB-1260 (Aroclor 1260)	ug/kg	ND	35.0	02/09/10 13:41	
Tetrachloro-m-xylene (S)	%	87	20-130	02/09/10 13:41	

LABORATORY CONTROL SAMPLE: 394852

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/kg	167	146	88	46-129	
PCB-1260 (Aroclor 1260)	ug/kg	167	128	77	46-129	
Tetrachloro-m-xylene (S)	%			88	20-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 394853 394854

Parameter	Units	5034462001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
PCB-1016 (Aroclor 1016)	ug/kg	ND	206	206	147	152	72	74	50-150	3	20	
PCB-1260 (Aroclor 1260)	ug/kg	ND	206	206	127	132	62	64	50-150	4	20	
Tetrachloro-m-xylene (S)	%						72	75	20-130		20	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

QUALITY CONTROL DATA

Project: 5WMV5- Old Burn Pit/ 10002
Pace Project No.: 5034462

QC Batch: GCV/9919
QC Batch Method: EPA 8015 Mod Pur
Analysis Method: EPA 8015 Mod Pur
Analysis Description: 8015 Solid GCV
Associated Lab Samples: 5034462001

METHOD BLANK: 397127 Matrix: Solid
Associated Lab Samples: 5034462001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Gasoline Range Organics	mg/kg	ND	1.0	02/11/10 14:37	
4-Bromofluorobenzene (S)	%	103	40-159	02/11/10 14:37	

LABORATORY CONTROL SAMPLE: 397128

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Gasoline Range Organics	mg/kg	10	10.4	104	79-128	
4-Bromofluorobenzene (S)	%			115	40-159	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

QUALITY CONTROL DATA

Project: 5WMV5- Old Burn Pit/ 10002
Pace Project No.: 5034462

QC Batch: GCV/9904
QC Batch Method: EPA 8021
Analysis Method: EPA 8021
Analysis Description: 8021 Low Level Solid GCV
Associated Lab Samples: 5034462001

METHOD BLANK: 396203 Matrix: Solid
Associated Lab Samples: 5034462001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	ug/kg	ND	1.0	02/10/10 18:37	
Ethylbenzene	ug/kg	ND	5.0	02/10/10 18:37	
Methyl-tert-butyl ether	ug/kg	ND	4.0	02/10/10 18:37	
Toluene	ug/kg	ND	5.0	02/10/10 18:37	
Xylene (Total)	ug/kg	ND	10.0	02/10/10 18:37	
a,a,a-Trifluorotoluene (S)	%	93	50-160	02/10/10 18:37	

LABORATORY CONTROL SAMPLE: 396204

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/kg	100	98.3	98	77-124	
Ethylbenzene	ug/kg	100	100	100	76-123	
Methyl-tert-butyl ether	ug/kg	100	96.6	97	71-124	
Toluene	ug/kg	100	101	101	76-121	
Xylene (Total)	ug/kg	300	296	99	76-123	
a,a,a-Trifluorotoluene (S)	%			99	50-160	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 396205 396206

Parameter	Units	5034462001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/kg	ND	123	123	101	121	82	99	40-129	18	20	
Ethylbenzene	ug/kg	ND	123	123	98.6	116	80	94	40-120	16	20	
Methyl-tert-butyl ether	ug/kg	ND	123	123	113	131	92	107	48-124	14	20	
Toluene	ug/kg	ND	123	123	107	127	87	103	40-120	17	20	
Xylene (Total)	ug/kg	ND	369	369	288	342	78	93	40-120	17	20	
a,a,a-Trifluorotoluene (S)	%						104	104	50-160		20	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

QUALITY CONTROL DATA

Project: 5WMV5- Old Burn Pit/ 10002
Pace Project No.: 5034462

QC Batch: MPRP/5349
QC Batch Method: EPA 3050
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Associated Lab Samples: 5034462001

METHOD BLANK: 395384
Matrix: Solid
Associated Lab Samples: 5034462001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Lead	mg/kg	ND	2.0	02/09/10 22:23	

LABORATORY CONTROL SAMPLE: 395385

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	mg/kg	50	49.6	99	80-120	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

QUALITY CONTROL DATA

Project: 5WMV5- Old Burn Pit/ 10002
Pace Project No.: 5034462

QC Batch: MPRP/5353
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET TCLP
Associated Lab Samples: 5034462001

METHOD BLANK: 395543 Matrix: Water
Associated Lab Samples: 5034462001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Lead	mg/L	ND	0.10	02/10/10 09:04	

LABORATORY CONTROL SAMPLE: 395544

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	mg/L	10	9.9	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 395545 395546

Parameter	Units	5034268001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	mg/L	ND	10	10	9.8	9.7	98	97	50-150	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 395547 395548

Parameter	Units	5034292007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	mg/L	ND	10	10	9.9	9.7	98	96	50-150	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 395549 395550

Parameter	Units	5034265007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	mg/L	0.79	10	10	10.5	10.3	97	95	50-150	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 395551 395552

Parameter	Units	5034462001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	mg/L	ND	10	10	9.6	9.7	96	97	50-150	.9	20	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ACCREDITED IN ACCORDANCE WITH nelac

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

QUALITY CONTROL DATA

Project: 5WMV5- Old Burn Pit/ 10002
Pace Project No.: 5034462

QC Batch: PMST/4362
QC Batch Method: ASTM D2974-87
Associated Lab Samples: 5034462001

Analysis Method: ASTM D2974-87
Analysis Description: Dry Weight/Percent Moisture

SAMPLE DUPLICATE: 394901

Parameter	Units	5034462001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	18.8	19.3	3	5	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

QUALITY CONTROL DATA

Project: 5WMV5- Old Burn Pit/ 10002
Pace Project No.: 5034462

QC Batch: WET/21852
QC Batch Method: SW-846 7.3.4.2
Analysis Method: SW-846 7.3.4.2
Analysis Description: Reactive Sulfide
Associated Lab Samples: 5034462001

METHOD BLANK: 603103 Matrix: Solid
Associated Lab Samples: 5034462001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfide, Reactive	mg/kg	ND	100	02/15/10 11:00	

LABORATORY CONTROL SAMPLE: 603104

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide, Reactive	mg/kg	200	163	82	77-110	

MATRIX SPIKE SAMPLE: 603105

Parameter	Units	10121719003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide, Reactive	mg/kg	ND	500	379	70	67-116	

SAMPLE DUPLICATE: 603106

Parameter	Units	10121719005 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide, Reactive	mg/kg	ND	29.2J		30	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

QUALITY CONTROL DATA

Project: 5WMV5- Old Burn Pit/ 10002
Pace Project No.: 5034462

QC Batch: WET/5722
QC Batch Method: EPA 9045
Analysis Method: EPA 9045
Analysis Description: 9045 pH
Associated Lab Samples: 5034462001

SAMPLE DUPLICATE: 396028

Parameter	Units	5034454001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.6	7.6	.3		

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Pace Analytical
www.pacelabs.com

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

QUALITY CONTROL DATA

Project: 5WMV5- Old Burn Pit/ 10002
Pace Project No.: 5034462

QC Batch: WETA/12114
QC Batch Method: SW-846 7.3.3.2
Analysis Method: SW-846 7.3.3.2
Analysis Description: 733C Reactive Cyanide
Associated Lab Samples: 5034462001

METHOD BLANK: 601675 Matrix: Solid
Associated Lab Samples: 5034462001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide, Reactive	mg/kg	ND	0.025	02/12/10 13:47	

LABORATORY CONTROL SAMPLE: 601676

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide, Reactive	mg/kg	.48	0.48	99	71-123	

MATRIX SPIKE SAMPLE: 601677

Parameter	Units	6073136001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cyanide, Reactive	mg/kg	0.066	.48	0.55	101	57-132	

MATRIX SPIKE SAMPLE: 602252

Parameter	Units	6073136011 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cyanide, Reactive	mg/kg	ND	.48	0.51	103	57-132	

SAMPLE DUPLICATE: 601678

Parameter	Units	6073136001 Result	Dup Result	RPD	Max RPD	Qualifiers
Cyanide, Reactive	mg/kg	0.066	ND		23	

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

ACCREDITED IN ACCORDANCE WITH nelac

Pace Analytical Services, Inc.
7726 Moller Road
Indianapolis, IN 46268
(317)875-5894

QUALIFIERS

Project: 5WMV5- Old Burn Pit/ 10002
Pace Project No.: 5034462

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

U - Indicates the compound was analyzed for, but not detected.

LABORATORIES

PASI-I	Pace Analytical Services - Indianapolis
PASI-K	Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

1d	Sample will not burn, smolder or propagate flame after 2 minutes of direct application of a >1000 degree C flame. ddm 1-18-10
2d	Surrogate recovery exceeds laboratory control limits due to significant target analyte contribution. 02/11/10 EDD
R1	RPD value was outside control limits.

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc..

Med

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Lee & Ryan	Report To:	Angelo Dattilo	Attention:	Accounts Payable
Address:	1707 Melody Lane	Copy To:	Julie Janes	Company Name:	Lee & Ryan
	Greenfield, IN 46140		1707 Melody Lane, Greenfield, IN 46140	Address:	1707 Melody Lane, Greenfield, IN 46140
Email To:	ADattilo@LeeandRyan.com	Purchase Order No.	14080	Pace Quote Reference:	
Phone:	317-467-6577 Ext 201	Client Project Nan	5WMV5 - Old Burn Pit	Pace Project Manager:	Jones, Kelly
Requested Due Date/TAT:	10 Day (Default)	Client Project ID:	10002	Pace Profile #:	

Regulatory Agency: Other

State / Location: Indiana

Requested Analysis Filtered (Y/N)

ITEM#	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other - DI Water	Y/N	Analyses Test: TPH-DRO (8015)	Total PCB's (8082)	TPH-GRO (8015)	BTEX-MTBE (8021)	Lead (6010)	pH	TCLP	Ignitability	Reactivity			Residual Chlorine (Y/N)	5034462
1	Subsoil	SL	G	2/4/10	2:15	--	--		11	X									1		1		1	4	2	2				001
2																														
3																														
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Non - ELTF	Jacob Tenschert	2-4-10	3:10pm	Marcia Bennett	2/4/10	15:10	4.9°C	Y	Y	
2 Extra 4oz Jars Included										

Client w/ice

SAMPLER NAME AND SIGNATURE							
PRINT Name of SAMPLER:	Jacob Tenschert						
SIGNATURE of SAMPLER:	Jacob Tenschert	DATE Signed:	2-4-10	TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

ATTACHMENT G

Geotechnical Laboratory Reports

PATRIOT ENGINEERING
and Environmental, Inc.
Engineering Value for Project Success
Consulting Environmental, Geotechnical and Materials Engineers

January 22, 2010

Mr. Angelo Dattilo, LPG
Lee & Ryan
1707 Melody Lane
Greenfield, IN 46140

Re: Soil Testing
Lee & Ryan Topsoil
Greenfield, Indiana
Patriot Project No. 01-10-0069

Dear Angelo:

Submitted herewith are results of Atterberg Limits (ASTM D4318), Material Finer Than 75µm Sieve (ASTM D1140) and Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System) (ASTM D2487) for the referenced project for the period of January 14 to January 19, 2010.

A representative sample of proposed backfill material was collected and delivered to our laboratory by the client. The Atterberg limits of the backfill material were determined in our laboratory in accordance with ASTM D4318. It was determined that the soil sample has a plasticity index of 3, a plastic limit of 20, and a liquid limit of 23. The Material Finer Than 75µm Sieve was 79.3%. This soil has a USCS classification of (ML) low plasticity silt. These results are noted on the attached test report sheets.

We appreciate the opportunity to be of service to you on this project. If you have any questions, please call us.

Respectfully Submitted,
Patriot Engineering and Environmental, Inc.

Mike T.Moir, LEED® AP
Laboratory Supervisor

Harold Rothkopf
Senior Project Manager

Copies: (1) Client (adattilo@leeandryan.com)

6330 East 75th Street, Suite 216, Indianapolis, Indiana 46250
(317) 576-8058 · (317) 576-1965 FAX · www.patrioteng.com
Offices in Indianapolis, Evansville, Fort Wayne, Lafayette, Terre Haute, Louisville and Dayton.

PATRIOT ENGINEERING
and Environmental, Inc.
6330 East 75th Street, Suite 216
Indianapolis, IN 46250-2700
(317) 576-8058 FAX: (317) 576-1965

ASTM D1140

☐ Original
☐ Amended

Material Finer Than 75um Sieve

Project:	Lee & Ryan - Topsoil	Client:	Lee & Ryan
Project number:	1-10-0069		
Date Recieved:	01/14/10	Sample Number:	SS-015
Date Tested:	01/19/10	Sampled by	Client
Source:		Tested by:	C. Thomas

Pre Wash

Tare weight:	1362.1 g
Tare + Sample weight:	562.9 g
Sample weight:	799.2 g

Post Wash

Tare weight:	728.5 g
Tare + Sample weight:	562.9 g
Sample weight:	165.6 g

LOSS: 633.6 g

% Fines 79.3 %

PATRIOT ENGINEERING
and Environmental, Inc.
6330 East 75th Street, Suite 216
Indianapolis, IN 46250-2700
(317) 576-8058 FAX: (317) 576-1965

Atterberg Limits
ASTM D4318

☐ original
☐ amended

Project Name: Lee & Ryan - Topsoil **Client:** Lee & Ryan

Project Number: 1-10-0069 **Client Address:**

Date Received: 01/14/10

Date Tested: 01/19/10 **Sampled By:** Client

Sample Number: SS-015 **Tested By:** C. Thomas

Delivered %MC

Tare #	
Wet + tare	
Dry + tare	
tare wgt	
water wgt	0
dry wgt	0
% MC	#DIV/0!

Plastic limit

426	219
18.13	18.23
17.51	17.5
14.34	13.81
0.62	0.73
3.17	3.69
19.56%	19.78%
Avg.	19.7%

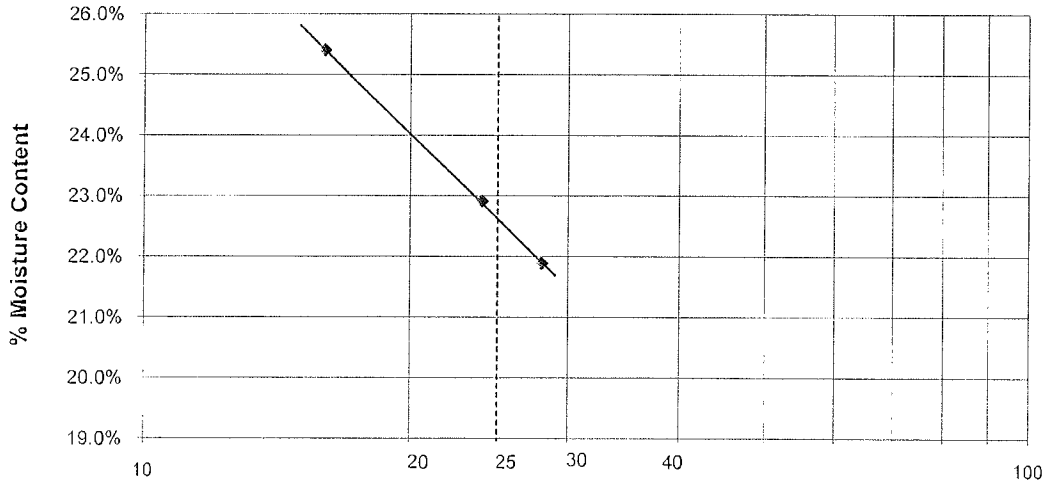
Liquid Limit

187	194	239
25.16	24.35	24.22
23.4	22.73	22.5
15.36	15.66	15.73
1.76	1.62	1.72
8.04	7.07	6.77
21.9%	22.9%	25.4%
# of blows= 28	24	16

Liquid Limit 23 Plastic Limit 20 Plastic Index 3

USCS Classification ML

Liquid Limit



PATRIOT ENGINEERING
and Environmental, Inc.
Engineering Value for Project Success
Consulting Environmental, Geotechnical and Materials Engineers

February 11, 2010

Mr. Angelo Dattilo, LPG
Lee & Ryan
1707 Melody Lane
Greenfield, IN 46140

Re: Subsurface Soil Testing
Lee & Ryan Soil Testing
Greenfield, Indiana
Patriot Project No. 01-10-0069

Dear Angelo:

Submitted herewith are results of Atterberg Limits (ASTM D4318), Material Finer Than 75µm Sieve (ASTM D1140), Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System) (ASTM D2487) and standard Proctor (ASTM D698) for the referenced project for the period of February 4 to February 8, 2010.

A representative sample of proposed backfill material was collected and delivered to our laboratory by the client. The Atterberg limits of the backfill material were determined in our laboratory in accordance with ASTM D4318. It was determined that the soil sample has a plasticity index of 8, a plastic limit of 17, and a liquid limit of 25. The Material Finer Than 75µm Sieve was 56.3%. This soil has a USCS classification of (CL) lean clay. These results are noted on the attached test report sheets.

Also one representative sample of proposed fill material was collected and analyzed in our laboratory in accordance with ASTM D-698 (standard Proctor). Results are shown on the attached report of Proctor test sheet.

We appreciate the opportunity to be of service to you on this project. If you have any questions, please call us.

Respectfully Submitted,
Patriot Engineering and Environmental, Inc.

Mike T.Moir, LEED® AP
Laboratory Supervisor

Harold Rothkopf
Senior Project Manager

Copies: (1) Client (adattilo@leeandryan.com)

PATRIOT ENGINEERING
and Environmental, Inc.
6330 East 75th Street, Suite 216
Indianapolis, IN 46250-2700
(317) 576-8058 FAX: (317) 576-1965

ASTM D1140

☐ Original
☐ Amended

Material Finer Than 75um Sieve

Project:	Lee & Ryan - Subsurface soil	Client:	Lee & Ryan
Project number:	1-10-0069		
Date Recieved:	2/4/2010	Sample Number:	SS-025
Date Tested:	2/5/2010	Sampled by:	Client
Source:		Tested by:	C. Thomas

Pre Wash

Tare + Sample weight:	1052.5 g
Tare weight:	560.3 g
Sample weight:	492.2 g

Post Wash

Tare + Sample weight:	775.3 g
Tare weight:	560.3 g
Sample weight:	215 g

LOSS: 277.2 g

% Fines 56.3 %

PATRIOT ENGINEERING
and Environmental, Inc.
6330 East 75th Street, Suite 216
Indianapolis, IN 46250-2700
(317) 576-8058 FAX: (317) 576-1965

Atterberg Limits
ASTM D4318

☐ original
☐ amended

Project Name: Lee & Ryan Subsurface Soil **Client:** Lee & Ryan

Project Number: 1-10-0069 **Client Address:**

Date Received: 2/4/2010

Date Tested: 2/8/2010 **Sampled By:** Client

Sample Number: SS-025 **Tested By:** C. Thomas

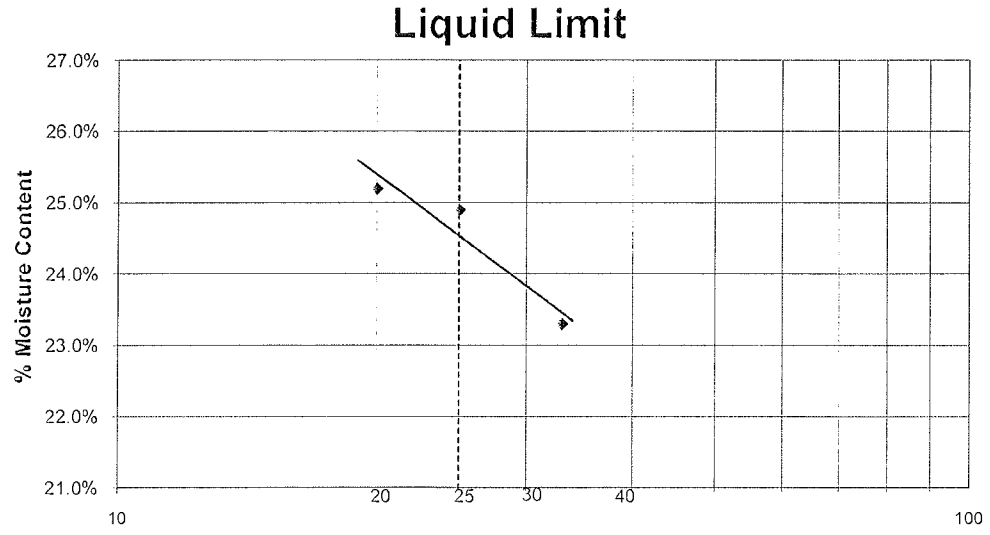
Delivered %MC	
Tare #	
Wet + tare	
Dry + tare	
tare wgt	
water wgt	0
dry wgt	0
% MC	#DIV/0!

Plastic limit		
	407	422
	18.41	20.51
	17.83	19.64
	14.26	14.46
	0.58	0.87
	3.57	5.18
	16.25%	16.80%
Avg.	16.5%	

Liquid Limit			
	154	199	512
	23	24.75	24.86
	21.56	22.87	22.96
	15.38	15.32	15.42
	1.44	1.88	1.9
	6.18	7.55	7.54
	23.3%	24.9%	25.2%
# of blows=	33	25	20

Liquid Limit 25 Plastic Limit 17 Plastic Index 8

USCS Classification CL



PATRIOT ENGINEERING
and Environmental, Inc.
6330 East 75th Street, Suite 216
Indianapolis, IN 46250-2700
(317) 576-8058 FAX: (317) 576-1965

Report of Proctor Test

☒ Original
☐ Amended

Project Name: Lee & Ryan Topsoil
Client: Lee & Ryan

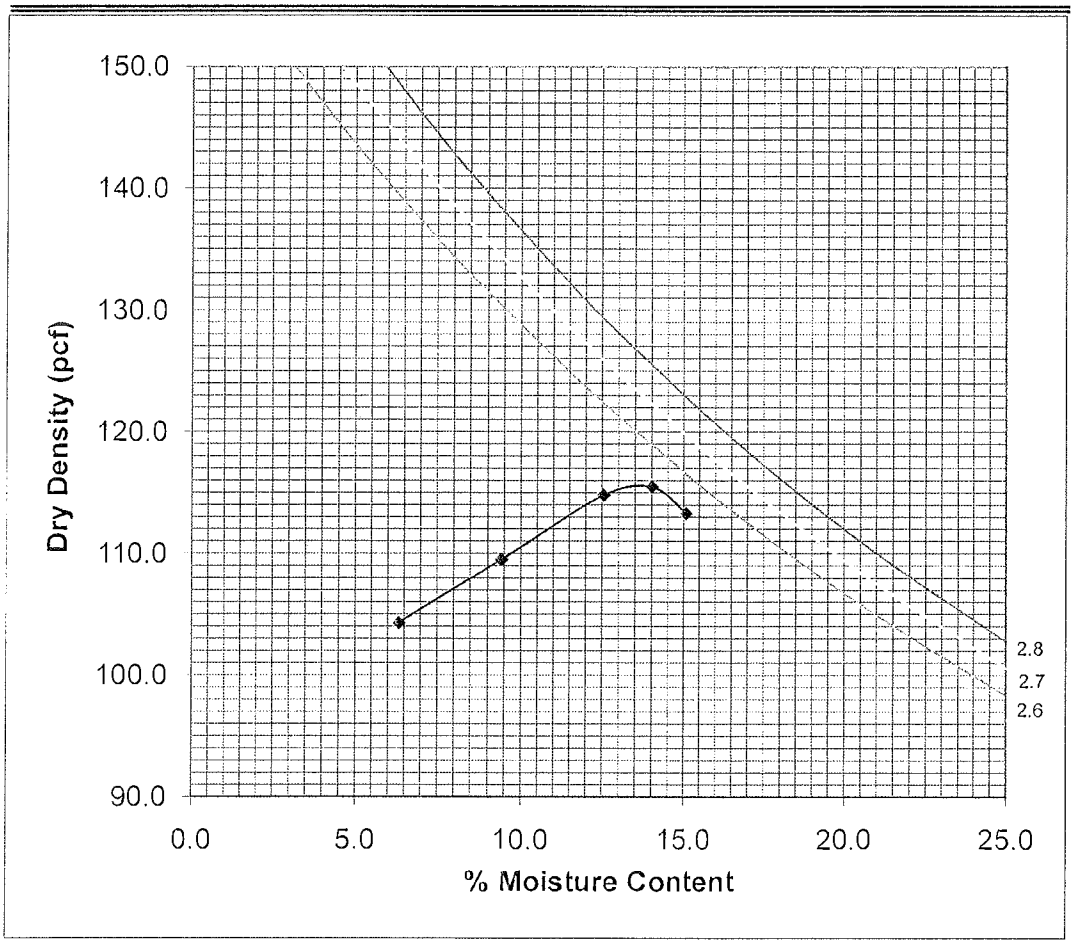
Project Number: 1-10-0069

Date Received: 2/4/2010
Sampled by: Client

Date Tested: 2/5/2010
Tested by: C. Thomas

Sample Number: SS-025
Sample Source:

Proctor Type: ASTM D698 Standard (A)



Maximum Dry Density: 115.5 pcf
Optimum Moisture: 14.0%

Sample Description: CL: Red silty clay with trace gravel

ATTACHMENT H

Soil Compaction Test Results

PATRIOT ENGINEERING
and Environmental, Inc.
Engineering Value for Project Success
Consulting Environmental, Geotechnical and Materials Engineers

March 18, 2010

Mr. Angelo Dattilo, LPG
Lee & Ryan
1707 Melody Lane
Greenfield, IN 46140

Re: Field Density Testing
Lee & Ryan Subsurface Soil Testing
Greenfield, Indiana
Patriot Project No. 01-10-0069

Dear Angelo:

Submitted herewith are results of field density (compaction) testing for the referenced project for the period of March 8, 2010.

Field density (compaction) tests were performed at locations shown on the attached field density test sheet. The test results meet the minimum specified requirement of 90 percent standard Proctor dry density.

We appreciate the opportunity to be of service to you on this project. If you have any questions, please call us.

Respectfully Submitted,
Patriot Engineering and Environmental, Inc.

Michael Moir, LEED® AP
Project Manager

Harold Rothkopf
Senior Project Manager

Copies: (1) Client (adattilo@leeandryan.com)

PATRIOT ENGINEERING
and ENVIRONMENTAL, INC.
6330 E. 75th Street, Suite 216
Indianapolis, IN 46250
(317) 576-8058 FAX: (317) 576-1965
PatriotEng.com

FIELD DENSITY TEST RESULTS

Project: Lee & Ryan Subsurface Soil Testing Date: 03/08/10

Client: Lee & Ryan Patriot Project No.: 01-10-0069

Grading Contractor: Lee & Ryan Patriot Rep.: John Fagg

Test Number	Moisture Content (%)	Dry Density {pcf}	Maximum Proctor Dry Density {pcf}	Compaction {%}	Minimum Compaction {%}	Pass/Fail	Elevation	Location
1	16.2	105.2	115.5	91.1	90	P	FSG -6"	Pit in old barn area.

Compaction Equipment Used: Excavator Bucket Proctor Type: Standard

Weather: Clear Temperature: 50° RX = Retest of Test No. X

Remarks: Pit to be backfilled 6' x 6' x 2'

FSG = Final Subgrade Elevation

FF = Finished Floor Elevation

ATTACHMENT I

Waste Disposal Manifests and Documentation

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
IN5170023498	1	(800)326-1221	000316305WAS

GENERATOR

5. Generator's Name and Mailing Address
NSA CRANE / THOMAS BRENT
300 HIGHWAY 361
CRANE, IN 47522
(812)854-6150
Generator's Phone:

Generator's Site Address (if different than mailing address)
NSA CRANE / THOMAS BRENT
300 HIGHWAY 361
CRANE, IN 47522
GEN: 121933

6. Transporter 1 Company Name: HERITAGE TRANSPORT, LLC/TECH SERVICES — U.S. EPA ID Number: IND058484114

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address
HERITAGE ENVIRONMENTAL SERVICES LLC
7901 WEST MORRIS STREET
INDIANAPOLIS, IN 46231
(317)243-0811
Facility's Phone: — U.S. EPA ID Number: IND093219012

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. NA3077, HAZARDOUS WASTE, SOLID, N.O.S., 9, PGIII, (CHROMIUM), ERG#171 (1x55DF, 1x30DF, 2x20DF)	4 3	DF DF	120	K	D007
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
EARLIEST DATE OF REMOVAL FROM SERVICE 4/1/10
1.W3_0537785
1) 6x55 gal parts overpacked in 4 drums
[13645891]

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Thomas J. Brent — Signature: Thomas J. Brent — Month 4 Day 1 Year 10

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Alvin K Barnes — Signature: — Month 4 Day 1 Year 10
Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H111			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name — Signature — Month 04 Day 07 Year 10

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
IN5170023498	1	(800)324-1221	000325233WAS

GENERATOR

5. Generator's Name and Mailing Address
NSA CRANE / THOMAS BRENT
300 HIGHWAY 361
CRANE, IN 47522
Generator's Phone: (812)854-6160

Generator's Site Address (if different than mailing address)
NSA CRANE / THOMAS BRENT
300 HIGHWAY 361
CRANE, IN 47522
GEN: 121853

6. Transporter 1 Company Name: HERITAGE TRANSPORT, LLC — U.S. EPA ID Number: IND058484114

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address
HERITAGE ENVIRONMENTAL SERVICES LLC
7901 WEST MORRIS STREET
INDIANAPOLIS, IN 46231
Facility's Phone: (317)243-0811
U.S. EPA ID Number: IND093219012

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. NA3077, HAZARDOUS WASTE, SOLID, N.O.S., 9, PGIII, (CHROMIUM), ERG#171 2x200 DM P	2	DM	400	P	D007
X	2. NA3077, Hazardous waste, Solid, N.O.S., 9, PG-III (chromium), ERG#171	1	DM	150	P	D007 a2 4/13/10
	3.					
	4.					

14. Special Handling Instructions and Additional Information
EARLIEST DATE OF REMOVAL FROM SERVICE ___/___/____
1.W3_0537785

[13644331]

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Dennis A. Lankford — Signature — Month 4 Day 9 Year 10

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Tony Bailey — Signature — Month 4 Day 9 Year 10

Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☒ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
added D007 OK Per Angela Dattilo a2 4/13/10
Manifest Reference Number:

18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H111	H111		

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: Machelon A Cooper — Signature — Month 4 Day 10 Year 10

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete. DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

1172960-9000

HAZMAT BILL OF LADING/MANIFEST	1. Offeror's ID Number	2. Page 1 of	3. Emergency Response Phone	4. Tracking Number
	IN5170023498	1	(800)326-1221	1172960-9000

5. Offeror's Name and Mailing Address
NSA CRANE / THOMAS BRENT
300 HIGHWAY 361
CRANE, IN 47522
Offeror's Phone: (812)854-6160

Offeror's Site Address (if different than mailing address)
NSA CRANE / THOMAS BRENT
300 HIGHWAY 361
CRANE, IN 47522
GEN: 121853

6. Transporter 1 Company Name: HERITAGE TRANSPORT, LLC — U.S. EPA ID Number: IND058484114

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address
HERITAGE ENVIRONMENTAL SERVICES LLC
7901 WEST MORRIS STREET
INDIANAPOLIS, IN 46231
Facility's Phone: (317)243-0811
U.S. EPA ID Number: IND093219012

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.
	1. NON-DOT/NON-RCRA REGULATED	1	CW	2500	P
	2.				
	3.				
	4.				
	5.				
	6.				
	7.				

13. Special Handling Instructions and Additional Information
1. W2_Q538241

[13666341]

14. **OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Offeror's Printed/Typed Name: Dennis A. Lankford — Signature: [signature] — Month: 4 Day: 9 Year: 10

15. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Tony Bailey — Signature: [signature] — Month: 4 Day: 9 Year: 10

Transporter 2 Printed/Typed Name — Signature — Month — Day — Year

16. Discrepancy

17. Designated Facility Owner or Operator: Certification of receipt of hazardous Bill of Lading/Manifest covered by the manifest except as noted in item 16

Printed/Typed Name: MacHan A O'Connor — Signature: [signature] — Month: 4 Day: 18 Year: 10

OFFEROR — TRANSPORTER — DESIGNATED FACILITY

DESIGNATED FACILITY TO OFFEROR

Stop Ticket

Stop#: **1172960-9000**

Trip#: 848126

Site#: 121853

EPA ID#: IN5170023498
PO#: 10002

HERITAGE

Pick-up: 04/09/10 - 04/09/10

Internal Contact
CARMA BLACKWELL (877)381-2341

Mailing Address

THOMAS BRENT
NSA CRANE
300 HIGHWAY 361
CRANE, IN 47522
UNITED STATES

Site Address (None)

NSA CRANE
300 HIGHWAY 361
CRANE, IN 47522
UNITED STATES

Phone# (812)854-6160
DATTILO, ANGELO - (317)467-6577

HERITAGE TRANSPORT, LLC (8000) (317)486-2973
IND058484114 US DOT#: 314460

Emergency Rate_____ Pickup Demurrage_____ Final Delivery Demurrage_____

Tractor# 2400 Trailer#_____36-04_____

Liner Qty_____

PICKUP TIME: 08:00-16:00

Driver# 5007 Driver Name Tony Bailey Date 9 Apr 2010

HERITAGE ENVIRONMENTAL SERVICES LLC (9000) IND093219012
7901 WEST MORRIS STREET, INDIANAPOLIS, IN 46231 UNITED STATES (317)243-0811

P/U Items	Common Name	See Manifest	Transaction	Prod	Ref#	Ord	Type
1	CHROMIUM PAINT WASTE	000325233WAS-1	2268189	3057	Y3N	3	DT
2	BURN PIT SOIL	1172960-9000-1	2268186	601	N2N	1	CW

Site Rep
Name_____ Signature_____ Date_____

128605: LEE & RYAN ENVIRONMENTAL CONSULTING, INC
Company\Loc: 48\7

APPENDIX B

PROJECT PHOTOGRAPHS

SITE PHOTOGRAPHS

Date:	View:	Photographer:
3/4/2010	NE	M. Reising

Typical surficial metallic debris on-site prior to interim measures.

Date:	View:	Photographer:
3/4/2010	NW	M. Reising

Typical surficial metallic debris on-site prior to interim measures.

Date:	View:	Photographer:
3/4/2010	SE	M. Reising

Surficial metallic debris being transported via skid steer during interim measures.

Date:	View:	Photographer:
3/4/2010	N	M. Reising

Typical surficial debris on-site prior to interim measures.

SITE PHOTOGRAPHS

Date:	View:	Photographer:
3/3/2010	SE	M. Reising

Initial excavation of lead contaminated hot spot.

Date:	View:	Photographer:
3/3/2010	NW	M. Reising

Excavation of lead contaminated hot spot. Excavated material was placed in cardboard boxes in left background of photo.

Date:	View:	Photographer:
3/8/2010	W	M. Reising

Back filling hot spot excavation with compacted common fill.

Date:	View:	Photographer:
3/3/2010	NA	M. Reising

Typical material (ash and debris) excavated from hot spot.

SITE PHOTOGRAPHS

Date:	View:	Photographer:
3/9/2010	S	M. Reising

Waste Sample – 05-WA-04. Yellow waste material from decomposed drum that was determined to be hazardous for chromium based on TCLP analysis

Date:	View:	Photographer:
3/8/2010	N	M. Reising

Erosion control logs placed along stream down gradient of disturbed area.

Date:	View:	Photographer:
4/9/2010	E	M. Reising

Erosion control matting placed on slope where debris removal occurred to prevent erosion.

Date:	View:	Photographer:
4/9/2010	SW	M. Reising

Erosion control logs placed along stream and erosion control matting placed on disturbed areas.

APPENDIX C

LABORATORY ANALYTICAL DATA – LEAD HOT SPOT

Empirical Laboratories, LLC

621 Mainstream Drive, Suite 270
Nashville, TN 37228
615.345.1115 Phone
615.846.5426 Fax

08 March 2010

Accounts Payable
Tetra Tech NUS, Inc. (T010)
Foster Plaza 7, 661 Anderson Drive
Pittsburgh, PA 15220

RE: SMU5 Crane (Laboratory WorkOrder # 1003055)

Enclosed are the results of analyses for samples received by the laboratory on 03/05/2010 08:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kim Kostzer
Project Manager

Laboratory Analytical Results Report

Client Sample ID: 05-SO-CF-01A **Sample Collection Date/Time: 03/03/2010 16:35**

Lab Sample ID: 1003055-01 **Sample Received Date/Time: 03/05/2010 08:30**

Sample Matrix: Solid

Analyte	Result	MDL	RL	Units	Dilution	Analyzed	Method	Batch	Notes
Classical Chemistry Parameters									
% Solids	**81**	1.0	1.0	%	1	03/08/10 07:50	SM2540B	0C05016	
Metals (Total) by ICP									
Lead	**4290**	1.73	3.46	mg/Kg dry	5	03/08/10 11:49	SW6010B	0C05013	

Client Sample ID: 05-SO-GW-02A **Sample Collection Date/Time: 03/03/2010 16:45**

Lab Sample ID: 1003055-02 **Sample Received Date/Time: 03/05/2010 08:30**

Sample Matrix: Solid

Analyte	Result	MDL	RL	Units	Dilution	Analyzed	Method	Batch	Notes
Classical Chemistry Parameters									
% Solids	**77**	1.0	1.0	%	1	03/08/10 07:50	SM2540B	0C05016	
Metals (Total) by ICP									
Lead	**4110**	1.99	3.98	mg/Kg dry	5	03/08/10 11:53	SW6010B	0C05013	

Client Sample ID: 05-SO-GW-03A **Sample Collection Date/Time: 03/03/2010 16:50**

Lab Sample ID: 1003055-03 **Sample Received Date/Time: 03/05/2010 08:30**

Sample Matrix: Solid

Analyte	Result	MDL	RL	Units	Dilution	Analyzed	Method	Batch	Notes
Classical Chemistry Parameters									
% Solids	**73**	1.0	1.0	%	1	03/08/10 07:50	SM2540B	0C05016	
Metals (Total) by ICP									
Lead	**4440**	2.04	4.09	mg/Kg dry	5	03/08/10 11:58	SW6010B	0C05013	

Laboratory Analytical Results Report

Client Sample ID: 05-FD-030310-01 **Sample Collection Date/Time: 03/03/2010 17:05**

Lab Sample ID: 1003055-04 **Sample Received Date/Time: 03/05/2010 08:30**

Sample Matrix: Solid

Analyte	Result	MDL	RL	Units	Dilution	Analyzed	Method	Batch	Notes
Classical Chemistry Parameters									
% Solids	**75**	1.0	1.0	%	1	03/08/10 07:50	SM2540B	0C05016	
Metals (Total) by ICP									
Lead	**4330**	1.95	3.90	mg/Kg dry	5	03/08/10 12:03	SW6010B	0C05013	

Client Sample ID: 05-SO-GW-04A **Sample Collection Date/Time: 03/03/2010 17:10**

Lab Sample ID: 1003055-05 **Sample Received Date/Time: 03/05/2010 08:30**

Sample Matrix: Solid

Analyte	Result	MDL	RL	Units	Dilution	Analyzed	Method	Batch	Notes
Classical Chemistry Parameters									
% Solids	**78**	1.0	1.0	%	1	03/08/10 07:50	SM2540B	0C05016	
Metals (Total) by ICP									
Lead	**3020**	1.80	3.60	mg/Kg dry	5	03/08/10 12:26	SW6010B	0C05013	

Client Sample ID: 05-SO-GW-05A **Sample Collection Date/Time: 03/03/2010 17:15**

Lab Sample ID: 1003055-06 **Sample Received Date/Time: 03/05/2010 08:30**

Sample Matrix: Solid

Analyte	Result	MDL	RL	Units	Dilution	Analyzed	Method	Batch	Notes
Classical Chemistry Parameters									
% Solids	**82**	1.0	1.0	%	1	03/08/10 07:50	SM2540B	0C05016	
Metals (Total) by ICP									
Lead	**2460**	1.86	3.71	mg/Kg dry	5	03/08/10 12:31	SW6010B	0C05013	

Notes and Definitions

4x	Sample concentration is greater than 4x concentration of spike added.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
RL	Reporting Limit

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER 2137 | PAGE 1 OF 1

PROJECT NO: 112G01796	FACILITY: SWMU 5-NSA CRANE	PROJECT MANAGER Tony Klimek	PHONE NUMBER 5135575057	LABORATORY NAME AND CONTACT: Empirical Lab LLC - Kim Kostzer
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER Mark Reising	PHONE NUMBER 513-557-5045	ADDRESS 621 Mainstream Drive
		CARRIER/WAYBILL NUMBER Federal Express 8631 3888 3001		CITY, STATE Nashville TN 37228

STANDARD TAT ☐
RUSH TAT ☐
☒ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE (YEAR 2010)	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: Lead	TYPE OF ANALYSIS: Temp	COMMENTS
									G	4°C			1003055
									G	4°C HCl			
03/03	1635	05-SO-CF-01A	Floor	0	0.5	SO	C	1		X	X		-01
03/03	1645	05-SO-GW-02A	N Wall	0	0.5	SO	G	1		X	X		-02
03/03	1650	05-SO-GW-03A	E Wall	0	0.5	SO	G	1		X	X		-03
03/03	1705	05-FD-030310-01	DUP	0	0.5	QC	G	1		X	X		-04
03/03	1710	05-SO-GW-04A	S. Wall	0	0.5	SO	G	1		X	X		-05
03/03	1715	05-SO-GW-05A	W. Wall	0	0.5	SO	G	1		X	X		-06
03/04	1745	Temp Blank	—	—	—	QC	G	1				X	

1. RELINQUISHED BY		DATE 03/04/2010	TIME 1650	1. RECEIVED BY		DATE	TIME
2. RELINQUISHED BY		DATE	TIME	2. RECEIVED BY		DATE	TIME
3. RELINQUISHED BY		DATE	TIME	3. RECEIVED BY		DATE 3/5/10	TIME 08:30
COMMENTS					1.4°C		

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 1003055 Number of Co[redacted] of 1

Client: TTNUS Project: [redacted]

Date/Time Received: **03/05/10 08:30** Date co[redacted] **03/05/10**

Opened By (print): **WILLIAM SCHWAB** (signature): [redacted]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
   EL Courier Other: _____

If applicable, enter airbill number here: [redacted]

2. Were custody seals on outside of cooler(s)? ..... (Yes) No

How many: 1 Seal date: 3/4/10 Seal Initials: _____

3. Were custody seals unbroken and intact at the date and time of arrival?	(Yes)	No	N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler?	(Yes)	No	N/A
5. Were custody papers filled out properly (ink, signed, etc.)?	(Yes)	No	N/A
6. Did you sign custody papers in the appropriate place for acceptance?	(Yes)	No	N/A
7. Was project identifiable from custody papers?	(Yes)	No	N/A
8. If required, was enough ice present in the cooler(s)?	(Yes)	No	N/A

Type of Coolant: (WET) DRY BLUE NONE Temperature of Samples upon Receipt: 1.4°C

Dates samples were logged-in: **03/05/10**

9. Initial this form to acknowledge login of sample(s): (Name): Will Schwab (Initial) WS

10. Were all bottle lids intact and sealed tightly?	(Yes)	No	N/A
11. Did all bottles arrive unbroken?	(Yes)	No	N/A
12. Was all required bottle label information complete?	(Yes)	No	N/A
13. Did all bottle labels agree with custody papers?	(Yes)	No	N/A
14. Were correct containers used for the analyses indicated?	(Yes)	No	N/A
15. Were preservative levels correct in all applicable sample containers?	Yes	No	(N/A)
16. Was residual chlorine present in any applicable sample containers?	Yes	No	(N/A)
17. Was sufficient amount of sample sent for the analyses required?	(Yes)	No	N/A
18. Was headspace present in any included VOA vials?	Yes	No	(N/A)

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

APPENDIX D

LABORATORY ANALYTICAL DATA – SOLID WASTE FROM DECOMPOSED DRUMS

Summary Package

Tetra Tech NUS, Inc.
Tobreena Skeen
Foster Plaza 7
661 Anderson Drive
Pittsburgh, PA 15220

SDG #SMU5Crane_002

SMU5Crane_002 Summ Package

TETRA TECH NUS, INC. | CHAIN OF CUSTODY | NUMBER 2138 | PAGE 1 OF 1

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112901796	SWMU 5-N3A Crane	Tony Klimek	513-557-5057	Empirical Lab LLC - Kim Kostzer
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER	PHONE NUMBER	ADDRESS
Mark W. Raising		Mark Raising	513-557-5045	621 Mainstream Drive, Suite 270
		CARRIER/WAYBILL NUMBER		CITY, STATE
		Federal Express		Nashville, TN 37228

STANDARD TAT ☐
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☒ 72 hr. ☐ 7 day ☐ 14 day

DATE (YEAR 2010)	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: TCLP Metals	TCLP Semi/Pest/Herb	TCLP Volatiles	Temp					COMMENTS
									G										
										4°C									
03/08	1330	05-WA-01	Hillside	0	0	WA	G	3			X	X	X						1003088-01
03/09	1113	05-WA-02	Valley	0	0	WA	G	3			X	X	X						-02
03/09	1103	05-WA-03	Valley Slope	0	0	WA	G	3			X	X	X						-03
03/09	1117	05-WA-04	Valley Floor	0	0	WA	G	3			X	X	X						-04
03/09	1515	Temp Blank	—	—	—	QC	G	1						X					

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	03/09/10	1550	1. RECEIVED BY		
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	3/10/10	08:30

COMMENTS: Note: "WA" designation is for waste

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

7.2°C

4/02R
FORM NO. TtNUS-001

1

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 1003088 Number of Coolers: 1 of 1

Client: TTNUS Project: SWMUS - NSA Crane

Date/Time Received: **03/10/10 08:30** Date cooler(s) opened: **03/10/10**

Opened By (print): **WILLIAM SCHWAB** (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
EL Courier Other: _____

If applicable, enter airbill number here: 3034

2. Were custody seals on outside of cooler(s)? ..... (Yes) No

How many: 1 Seal date: 3/9/10 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival?	(Yes)	No	N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler?	(Yes)	No	N/A
5. Were custody papers filled out properly (ink, signed, etc.)?	(Yes)	No	N/A
6. Did you sign custody papers in the appropriate place for acceptance?	(Yes)	No	N/A
7. Was project identifiable from custody papers?	(Yes)	No	N/A
8. If required, was enough ice present in the cooler(s)?	(Yes)	No	N/A

Type of Coolant: (WET) DRY BLUE NONE Temperature of Samples upon Receipt: 1.2°C

Dates samples were logged-in: **03/10/10**

9. Initial this form to acknowledge login of sample(s): (Name): Will Schwab (Initial): WS

10. Were all bottle lids intact and sealed tightly?	(Yes)	No	N/A
11. Did all bottles arrive unbroken?	(Yes)	No	N/A
12. Was all required bottle label information complete?	(Yes)	No	N/A
13. Did all bottle labels agree with custody papers?	(Yes)	No	N/A
14. Were correct containers used for the analyses indicated?	(Yes)	No	N/A
15. Were preservative levels correct in all applicable sample containers?	Yes	No	(N/A)
16. Was residual chlorine present in any applicable sample containers?	Yes	No	(N/A)
17. Was sufficient amount of sample sent for the analyses required?	(Yes)	No	N/A
18. Was headspace present in any included VOA vials?	Yes	No	(N/A)

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

Sample Delivery Group Assignment Form

CLIENT: Tetra Tech NUS, Inc. (T010)
PROJECT NAME: SMU5 Crane
SDG #: SMU5Crane_002
MATRIX: Solid

QC LEVEL: EDD/IVQSM
Report Due: 3/15/2010
Client Sample Count: 4

Sample Type	Sampled	Received	Lab ID	Client ID	SM2540B	SW1311	SW6010B	SW7470A	SW8081A	SW8151A	SW8260B	SW8270C
Client Sample	3/8/2010	3/10/2010	1003088-01	05-WA-01	3 DAY RUSH TAT!!	3 DAY RUSH TAT!!	3 DAY RUSH TAT!!	3 DAY RUSH TAT!!	3 DAY RUSH TAT!!	3 DAY RUSH TAT!!	3 DAY RUSH TAT!!	3 DAY RUSH TAT!!
Client Sample	3/8/2010	3/10/2010	1003088-02	05-WA-02	3 DAY RUSH TAT!!	3 DAY RUSH TAT!!	3 DAY RUSH TAT!!	3 DAY RUSH TAT!!	3 DAY RUSH TAT!!	3 DAY RUSH TAT!!	3 DAY RUSH TAT!!	3 DAY RUSH TAT!!
Client Sample	3/8/2010	3/10/2010	1003088-03	05-WA-03	3 DAY RUSH TAT!!	3 DAY RUSH TAT!!	3 DAY RUSH TAT!!	3 DAY RUSH TAT!!	3 DAY RUSH TAT!!	3 DAY RUSH TAT!!	3 DAY RUSH TAT!!	3 DAY RUSH TAT!!
Client Sample	3/8/2010	3/10/2010	1003088-04	05-WA-04	3 DAY RUSH TAT!!	3 DAY RUSH TAT!!	3 DAY RUSH TAT!!	3 DAY RUSH TAT!!	3 DAY RUSH TAT!!	3 DAY RUSH TAT!!	3 DAY RUSH TAT!!	3 DAY RUSH TAT!!

ORGANIC CASE NARRATIVE
Tetra Tech NUS, Inc. – SMU5 Crane
SDG: SMU5Crane_002
Workorder: 1003088

Sampled	Rec'd	Lab ID	Client ID
03/08/10	03/10/10	1003088-01	05-WA-01
03/08/10	03/10/10	1003088-02	05-WA-02
03/08/10	03/10/10	1003088-03	05-WA-03
03/08/10	03/10/10	1003088-04	05-WA-04

Pesticide TCLP Samples

Method: The samples were analyzed for the TCLP analyte list by USEPA SW-846 Methods 1311/3510C/8081A (TCLP leaching followed by separatory funnel extraction followed by capillary column GC/ECD) for IDW soils upon receipt to the laboratory in satisfactory condition.

Comments: The analyses for these samples were satisfactorily completed within sample holding times and met the corresponding specifications with the following exceptions:

- Performance Evaluation Mix: All method criteria were met.
- Initial Calibration Criteria: All method criteria were met. The multi-component analytes toxaphene and chlordane were calibrated using a single point at the low standard level. No further calibration was required, as it was not detected in the sample.
- Calibration Criteria: All method calibration criteria were met or exceeded calibration criteria with a positive bias and were not detected in the associated samples.
- Blank Results: No target analytes were detected in the method blank.
- Surrogate Recoveries: All recoveries were within limits.
- LCS Results: All recoveries were within limits.
- MS Results: All recoveries were within limits.
- Dilutions: All TCLP analyses are completed using a 10x dilution.
- Manual Integrations: As is necessary for all GC/LC chromatography, manual integrations were performed to correctly quantitate target analytes. A "before" chromatogram and "after" chromatogram is available for all analyses to provide information regarding the manual integrations performed.

I certify that, to the best of my knowledge and based upon my inquiry of those individuals immediately responsible for obtaining the information, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in the case narrative, as verified by the following signature.

Jade Holliman
Organic Manager

ANALYTICAL REPORT TERMS AND QUALIFIERS (ORGANIC)

MDL: The method detection limit (MDL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The MDL is determined from analysis of a sample containing the analyte in a given matrix.

EQL: The estimated quantitation limit (EQL) is defined as the estimated concentration above which quantitative results can be obtained with a specific degree of confidence. Empirical Laboratories defines the EQL to be at or near the lowest standard of the calibration curve.

U: The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte quantitated below the MDL.

B: The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the correct sample result might be less than the reported result and, perhaps, zero.

D: When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".

E: The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound.

J: The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The data pass the identification criteria indicating that the compound is present, but the calculated result is less than the EQL.

ANALYSIS DATA SHEET

05-WA-01

Laboratory: Empirical Laboratories, LLC SDG: SMU5Crane_002

Client: Tetra Tech NUS, Inc. (T010) Project: SMU5 Crane

Matrix: Solid Laboratory ID: 1003088-01 File ID: 008F0801.D

Sampled: 03/08/10 13:30 Prepared: 03/11/10 10:30 Analyzed: 03/12/10 11:27

Solids: 75.43 Preparation: EXT_3510 Dilution: 1

Batch: 0C11003 Sequence: 0C07113 Calibration: 0013002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (mg/L)	TCLP Reg Limit	MRL	Q
72-20-8	Endrin		0.02	0.000200	U
58-89-9	gamma-BHC (Lindane)		0.4	0.00100	U
76-44-8	Heptachlor		0.008	0.00100	U
1024-57-3	Heptachlor epoxide		0.008	0.00100	U
72-43-5	Methoxychlor		10	0.00100	U
57-74-9	Chlordane (tech)		0.03	0.000500	U
8001-35-2	Toxaphene		0.5	0.0100	U

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
Decachlorobiphenyl	0.005000	0.004321	86.4	40 - 135	
Decachlorobiphenyl [2C]	0.005000	0.004774	95.5	40 - 135	
Tetrachloro-m-xylene	0.005000	0.003891	77.8	25 - 140	
Tetrachloro-m-xylene [2C]	0.005000	0.004193	83.9	25 - 140	

Values outside of QC limits

ANALYSIS DATA SHEET

05-WA-02

Laboratory: Empirical Laboratories, LLC SDG: SMU5Crane_002

Client: Tetra Tech NUS, Inc. (T010) Project: SMU5 Crane

Matrix: Solid Laboratory ID: 1003088-02 File ID: 011F1101.D

Sampled: 03/08/10 11:12 Prepared: 03/11/10 10:30 Analyzed: 03/12/10 12:22

Solids: 63.04 Preparation: EXT_3510 Dilution: 1

Batch: 0C11003 Sequence: 0C07113 Calibration: 0013002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (mg/L)	TCLP Reg Limit	MRL	Q
72-20-8	Endrin		0.02	0.000200	U
58-89-9	gamma-BHC (Lindane)		0.4	0.00100	U
76-44-8	Heptachlor		0.008	0.00100	U
1024-57-3	Heptachlor epoxide		0.008	0.00100	U
72-43-5	Methoxychlor		10	0.00100	U
57-74-9	Chlordane (tech)		0.03	0.000500	U
8001-35-2	Toxaphene		0.5	0.0100	U

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
Decachlorobiphenyl	0.005000	0.002336	46.7	40 - 135	
Decachlorobiphenyl [2C]	0.005000	0.002659	53.2	40 - 135	
Tetrachloro-m-xylene	0.005000	0.004530	90.6	25 - 140	
Tetrachloro-m-xylene [2C]	0.005000	0.004853	97.1	25 - 140	

* Values outside of QC limits

ANALYSIS DATA SHEET

05-WA-03

Laboratory: Empirical Laboratories, LLC SDG: SMU5Crane_002

Client: Tetra Tech NUS, Inc. (T010) Project: SMU5 Crane

Matrix: Solid Laboratory ID: 1003088-03 File ID: 012F1201.D

Sampled: 03/08/10 11:03 Prepared: 03/11/10 10:30 Analyzed: 03/12/10 12:40

Solids: 76.61 Preparation: EXT_3510 Dilution: 1

Batch: 0C11003 Sequence: 0C07113 Calibration: 0013002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (mg/L)	TCLP Reg Limit	MRL	Q
72-20-8	Endrin		0.02	0.000200	U
58-89-9	gamma-BHC (Lindane)		0.4	0.00100	U
76-44-8	Heptachlor		0.008	0.00100	U
1024-57-3	Heptachlor epoxide		0.008	0.00100	U
72-43-5	Methoxychlor		10	0.00100	U
57-74-9	Chlordane (tech)		0.03	0.000500	U
8001-35-2	Toxaphene		0.5	0.0100	U

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
Decachlorobiphenyl	0.005000	0.004053	81.1	40 - 135	
Decachlorobiphenyl [2C]	0.005000	0.004515	90.3	40 - 135	
Tetrachloro-m-xylene	0.005000	0.004065	81.3	25 - 140	
Tetrachloro-m-xylene [2C]	0.005000	0.004367	87.3	25 - 140	

* Values outside of QC limits

ANALYSIS DATA SHEET

05-WA-04

Laboratory: Empirical Laboratories, LLC SDG: SMU5Crane_002

Client: Tetra Tech NUS, Inc. (T010) Project: SMU5 Crane

Matrix: Solid Laboratory ID: 1003088-04 File ID: 013F1301.D

Sampled: 03/08/10 11:17 Prepared: 03/11/10 10:30 Analyzed: 03/12/10 12:59

Solids: 70.28 Preparation: EXT_3510 Dilution: 1

Batch: 0C11003 Sequence: 0C07113 Calibration: 0013002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (mg/L)	TCLP Reg Limit	MRL	Q
72-20-8	Endrin		0.02	0.000200	U
58-89-9	gamma-BHC (Lindane)		0.4	0.00100	U
76-44-8	Heptachlor		0.008	0.00100	U
1024-57-3	Heptachlor epoxide		0.008	0.00100	U
72-43-5	Methoxychlor		10	0.00100	U
57-74-9	Chlordane (tech)		0.03	0.000500	U
8001-35-2	Toxaphene		0.5	0.0100	U

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
Decachlorobiphenyl	0.005000	0.003907	78.1	40 - 135	
Decachlorobiphenyl [2C]	0.005000	0.004312	86.2	40 - 135	
Tetrachloro-m-xylene	0.005000	0.004467	89.3	25 - 140	
Tetrachloro-m-xylene [2C]	0.005000	0.004726	94.5	25 - 140	

* Values outside of QC limits

LCS / LCS DUPLICATE RECOVERY

SW8081A

Laboratory: Empirical Laboratories, LLC
SDG: SMU5Crane_002
Client: Tetra Tech NUS, Inc. (T010)
Project: SMU5 Crane
Matrix: Water
Batch: 0C11003
Laboratory ID: 0C11003-BS1
Preparation: EXT_3510
Initial/Final: 100 mL / 10 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Endrin	0.01000	0.01154	115	55 - 135
Endrin [2C]	0.01000	0.01122	112	55 - 135
gamma-BHC (Lindane)	0.01000	0.01067	107	25 - 135
gamma-BHC (Lindane) [2C]	0.01000	0.01069	107	25 - 135
Heptachlor	0.01000	0.009887	98.9	40 - 130
Heptachlor [2C]	0.01000	0.009088	90.9	40 - 130
Heptachlor epoxide	0.01000	0.01004	100	60 - 130
Heptachlor epoxide [2C]	0.01000	0.01213	121	60 - 130
Methoxychlor	0.01000	0.01048	105	55 - 150
Methoxychlor [2C]	0.01000	0.009883	98.8	55 - 150

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW8081A

05-WA-01

Laboratory: Empirical Laboratories, LLC

Client: Tetra Tech NUS, Inc. (T010)

Matrix: Water

Batch: 0C11003

% Solids: 75.43

SDG: SMU5Crane_002

Project: SMU5 Crane

Source Sample Name: **1003088-01**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Chlordane (tech)	1.000	ND	0.8830	88.3		50 - 150
Chlordane (tech) [2C]	1.000	ND	0.5104	51.0		50 - 150
Toxaphene	0.1000	ND	0.1191	119		50 - 150
Toxaphene [2C]	0.1000	ND	0.09153	91.5		50 - 150

PREPARATION BATCH SUMMARY

SW8081A

Laboratory: Empirical Laboratories, LLC SDG: SMU5Crane_002

Client: Tetra Tech NUS, Inc. (T010) Project: SMU5 Crane

Batch: 0C11003 Batch Matrix: Water Preparation: EXT_3510

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
Blank	0C11003-BLK1	03/11/10 10:30	100.00	10.00
LCS	0C11003-BS1	03/11/10 10:30	100.00	10.00
05-WA-01	0C11003-MS2	03/11/10 10:30	100.00	10.00
05-WA-01	1003088-01	03/11/10 10:30	100.00	10.00
05-WA-02	1003088-02	03/11/10 10:30	100.00	10.00
05-WA-03	1003088-03	03/11/10 10:30	100.00	10.00
05-WA-04	1003088-04	03/11/10 10:30	100.00	10.00

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC SDG: SMU5Crane_002

Client: Tetra Tech NUS, Inc. (T010) Project: SMU5 Crane

Matrix: Laboratory ID: 0C11003-BLK1 File ID: 006F0601.D

Sampled: Prepared: 03/11/10 10:30 Analyzed: 03/12/10 10:50

Solids: Preparation: EXT_3510 Dilution:

Batch: 0C11003 Sequence: 0C07113 Calibration: 0013002 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	MRL	Q
72-20-8	Endrin		0.0000500	0.000200	U
58-89-9	gamma-BHC (Lindane)		0.0000330	0.00100	U
76-44-8	Heptachlor		0.0000330	0.00100	U
1024-57-3	Heptachlor epoxide		0.0000330	0.00100	U
72-43-5	Methoxychlor		0.0000330	0.00100	U
57-74-9	Chlordane (tech)		0.000170	0.000500	U
8001-35-2	Toxaphene		0.00330	0.0100	U

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
Decachlorobiphenyl	0.005000	0.003963	79.3	40 - 135	
Decachlorobiphenyl [2C]	0.005000	0.004325	86.5	40 - 135	
Tetrachloro-m-xylene	0.005000	0.004473	89.5	25 - 140	
Tetrachloro-m-xylene [2C]	0.005000	0.004688	93.8	25 - 140	

* Values outside of QC limits

INITIAL CALIBRATION DATA
SW8081A

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Calibration: 0013002
Matrix: Water
SDG: SMU5Crane_002
Project: SMU5 Crane
Instrument: GL-ECD4
Calibration Date: 1/12/2010 12:08:25PM

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Decachlorobiphenyl	200	35800.54	100	36807.33	50	40048.4	25	41893.32	10	41204.1	5	38964.4
Decachlorobiphenyl [2C]	200	34554.16	100	37267.08	50	41766.72	25	44653.28	10	45013	5	42624
Endrin	200	44674.2	100	42736.28	50	43352.14	25	47184.2	10	42539.6	5	37493.4
Endrin [2C]	200	37580.26	100	39104.26	50	42641.92	25	49545.76	10	47763.7	5	43561.4
gamma-BHC (Lindane)	200	55470.4	100	56158.79	50	58949.8	25	61302.04	10	55118.3	5	53180.8
gamma-BHC (Lindane) [2C]	200	46726.74	100	51736.66	50	57862.2	25	62757.04	10	60590.3	5	59333
Heptachlor	200	49809.06	100	53175.89	50	54461.9	25	56630	10	51497.5	5	49324.4
Heptachlor [2C]	200	45315.55	100	48888.8	50	52448.2	25	57422.68	10	56294.1	5	56939.2
Heptachlor epoxide	200	47908	100	50257.32	50	52899.62	25	58064.52	10	52477.1	5	50125
Heptachlor epoxide [2C]	200	41177.71	100	45992.39	50	49100.08	25	56843	10	55915.8	5	56554.2
Methoxychlor	200	22610.97	100	22667.67	50	23020.78	25	25492.76	10	22874.7	5	21751.4
Methoxychlor [2C]	200	19417.22	100	20815	50	22314.9	25	25445.72	10	25324.9	5	24289.6
Tetrachloro-m-xylene	200	39065.59	100	41779.2	50	44138.8	25	44697.04	10	42108.6	5	41903.4
Tetrachloro-m-xylene [2C]	200	36191.07	100	38317.4	50	42080.86	25	43485.44	10	46202.6	5	48332.6

INITIAL CALIBRATION DATA (Continued)

SW8081A

Laboratory: Empirical Laboratories, LLC
SDG: SMU5Crane_002
Client: Tetra Tech NUS, Inc. (T010)
Project: SMU5 Crane
Calibration: 0013002
Instrument: GL-ECD4
Matrix: Water
Calibration Date: 1/12/2010 12:08:25PM

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Decachlorobiphenyl	1	52540	100		50		25		10		5	
Decachlorobiphenyl [2C]	1	57944	100		50		25		10		5	
Endrin	1	44213										
Endrin [2C]	1	57244										
gamma-BHC (Lindane)	1	61842										
gamma-BHC (Lindane) [2C]	1	80885										
Heptachlor	1	60946										
Heptachlor [2C]	1	74281										
Heptachlor epoxide	1	61436										
Heptachlor epoxide [2C]	1	75511										
Methoxychlor	1	25116										
Methoxychlor [2C]	1	32461										
Tetrachloro-m-xylene	1	47880										
Tetrachloro-m-xylene [2C]	1	62670	100		50		25		10		5	

INITIAL CALIBRATION DATA (Continued)

SW8081A

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Calibration:	0013002	Instrument:	GL-ECD4
Matrix:	Water	Calibration Date:	1/12/2010 12:08:25PM

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Decachlorobiphenyl	41036.87	13.48224	9.981714	2.451952E-02			20	
Decachlorobiphenyl [2C]	43403.18	17.21139	8.538428	5.439522E-03			20	
Endrin	43170.4	6.839388	7.085714	4.679358E-02			20	
Endrin [2C]	45348.76	14.92361	5.915143	3.791836E-03			20	
gamma-BHC (Lindane)	57431.73	5.758421	4.857857	5.883799E-02			20	
gamma-BHC (Lindane) [2C]	59984.42	17.92434	4.158429	2.374263E-02			20	
Heptachlor	53692.11	7.644472	5.373572	4.887659E-02			20	
Heptachlor [2C]	55941.36	16.55337	4.434286	2.848869E-02			20	
Heptachlor epoxide	53309.65	9.000877	6.133571	0.0582253			20	
Heptachlor epoxide [2C]	54442.03	20.29071	5.075429	1.867334E-03	0.9955418		0.995	
Methoxychlor	23362.04	5.954469	8.238143	2.847385E-02			20	
Methoxychlor [2C]	24295.48	17.53467	6.992571	0.0160826			20	
Tetrachloro-m-xylene	43081.81	6.490372	4.192714	5.400127E-02			20	
Tetrachloro-m-xylene [2C]	45325.71	19.25703	3.529857	6.161348E-02			20	

BREAKDOWN REPORT

ab Sample ID: 0C07113-PEM1 **Analyzed:** 03/12/2010

:olumn Number 1

\nalyte	**% Breakdown**
.4'-DDT	3.83
:ndrin	0.00

:olumn Number 2

\nalyte	**% Breakdown**
.4'-DDT	3.90
:ndrin	0.00

BREAKDOWN REPORT

ab Sample ID: 0A01310-PEM1 **Analyzed:** 01/12/2010

'olumn Number 1

\nalyte	**% Breakdown**
:ndrin	5.92

'olumn Number 2

\nalyte	**% Breakdown**
:ndrin	0.00

INITIAL CALIBRATION CHECK

SW8081A

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Instrument ID:	GL-ECD4	Calibration:	0013002
Lab File ID:	010F1001.D	Calibration Date:	01/12/10 12:08
Sequence:	0A01310	Injection Date:	01/12/10
Lab Sample ID:	0A01310-ICV1	Injection Time:	18:00

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN (#)	ICV	LIMIT (#)
Endrin	A	100.0	88.49	43170.4	38203.44		-11.5	20
Endrin [2C]	A	100.0	83.89	45348.76	38043.96		-16.1	20
gamma-BHC (Lindane)	A	100.0	98.18	57431.73	56389.39		-1.8	20
gamma-BHC (Lindane) [2C]	A	100.0	93.16	59984.42	55884.11		-6.8	20
Heptachlor	A	100.0	96.05	53692.11	51569.55		-4.0	20
Heptachlor [2C]	A	100.0	88.44	55941.36	49476.18		-11.6	20
Heptachlor epoxide	A	100.0	93.80	53309.65	50006.9		-6.2	20
Heptachlor epoxide [2C]	L	100.0	109.1	54442.03	47108.62		9.1	20
Methoxychlor	A	100.0	91.94	23362.04	21478.63		-8.1	20
Methoxychlor [2C]	A	100.0	83.92	24295.48	20389.26		-16.1	20

[1] Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

Values outside of QC limits

CONTINUING CALIBRATION CHECK

SW8081A

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Instrument ID:	GL-ECD4	Calibration:	0013002
Lab File ID:	003F0301.D	Calibration Date:	01/12/10 12:08
Sequence:	0C07113	Injection Date:	03/12/10
Lab Sample ID:	0C07113-CCV1	Injection Time:	09:55

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Endrin	A	100.0	112.3	43170.4	48488.25		12.3	20
Endrin [2C]	A	100.0	104.9	45348.76	47568.43		4.9	20
gamma-BHC (Lindane)	A	100.0	106.7	57431.73	61299.41		6.7	20
gamma-BHC (Lindane) [2C]	A	100.0	100.5	59984.42	60288.59		0.5	20
Heptachlor	A	100.0	104.0	53692.11	55871.33		4.1	20
Heptachlor [2C]	A	100.0	90.85	55941.36	50822.16		-9.2	20
Heptachlor epoxide	A	100.0	99.88	53309.65	53245.7		-0.1	20
Heptachlor epoxide [2C]	L	100.0	114.3	54442.03	49251.81		14.3	20
Methoxychlor	A	100.0	99.49	23362.04	23243.66		-0.5	20
Methoxychlor [2C]	A	100.0	88.71	24295.48	21552.08		-11.3	20
Decachlorobiphenyl	A	100.0	89.76	41036.87	36836.19		-10.2	20
Decachlorobiphenyl [2C]	A	100.0	90.32	43403.18	39202.21		-9.7	20
Tetrachloro-m-xylene	A	100.0	106.1	43081.81	45701.27		6.1	20
Tetrachloro-m-xylene [2C]	A	100.0	100.2	45325.71	45413.68		0.2	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

Values outside of QC limits

CONTINUING CALIBRATION CHECK

SW8081A

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Instrument ID:	GL-ECD4	Calibration:	0013002
Lab File ID:	015F1501.D	Calibration Date:	01/12/10 12:08
Sequence:	0C07113	Injection Date:	03/12/10
Lab Sample ID:	0C07113-CCV2	Injection Time:	13:36

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT		
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)	
Endrin	A	100.0	113.0	43170.4	48788.48		13.0	20	
Endrin [2C]	A	100.0	114.6	45348.76	51956.03		14.6	20	
gamma-BHC (Lindane)	A	100.0	107.7	57431.73	61856.87		7.7	20	
gamma-BHC (Lindane) [2C]	A	100.0	110.6	59984.42	66361.12		10.6	20	
Heptachlor	A	100.0	105.4	53692.11	56599.07		5.4	20	
Heptachlor [2C]	A	100.0	100.3	55941.36	56097.81		0.3	20	
Heptachlor epoxide	A	100.0	100.8	53309.65	53747.05		0.8	20	
Heptachlor epoxide [2C]	L	100.0	125.6	54442.03	53905.26		25.6	20	*
Methoxychlor	A	100.0	100.3	23362.04	23426.68		0.3	20	
Methoxychlor [2C]	A	100.0	96.93	24295.48	23550.38		-3.1	20	
Decachlorobiphenyl	A	100.0	88.64	41036.87	36374.08		-11.4	20	
Decachlorobiphenyl [2C]	A	100.0	97.89	43403.18	42485.64		-2.1	20	
Tetrachloro-m-xylene	A	100.0	106.5	43081.81	45893.69		6.5	20	
Tetrachloro-m-xylene [2C]	A	100.0	109.2	45325.71	49504.08		9.2	20	

ǂ Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

Values outside of QC limits

SURROGATE STANDARD RECOVERY AND RT SUMMARY

SW8081A

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Sequence: 0C07113

SDG: SMU5Crane_002
Project: SMU5 Crane
Instrument: GL-ECD4
Calibration: 0013002

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
Calibration Check (0C07113-CCV1) ug/L				Lab File ID: 003F0301.D		Analyzed: 03/12/10 09:55		
Decachlorobiphenyl	100.0	89.8	80 - 120	9.602	9.602	~~0.6020~~ 0.0000	+/-0.030	*
Decachlorobiphenyl [2C]	100.0	90.3	80 - 120	8.199	8.199	~~8.1990~~	+/-0.030	*
Tetrachloro-m-xylene	100.0	106	80 - 120	3.975	3.975	~~3.9750~~	+/-0.030	*
Tetrachloro-m-xylene [2C]	100.0	100	80 - 120	3.338	3.338	~~3.3380~~	+/-0.030	*
Blank (0C11003-BLK1) mg/L				Lab File ID: 006F0601.D		Analyzed: 03/12/10 10:50		
Decachlorobiphenyl	0.005000	79.3	40 - 135	9.601	9.602	-0.0010	+/-0.030	
Decachlorobiphenyl [2C]	0.005000	86.5	40 - 135	8.2	8.199	0.0010	+/-0.030	
Tetrachloro-m-xylene	0.005000	89.5	25 - 140	3.974	3.975	-0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	0.005000	93.8	25 - 140	3.339	3.338	0.0010	+/-0.030	
LCS (0C11003-BS1) mg/L				Lab File ID: 007F0701.D		Analyzed: 03/12/10 11:08		
Decachlorobiphenyl	0.005000	81.9	40 - 135	9.603	9.602	0.0010	+/-0.030	
Decachlorobiphenyl [2C]	0.005000	89.9	40 - 135	8.202	8.199	0.0030	+/-0.030	
Tetrachloro-m-xylene	0.005000	92.5	25 - 140	3.975	3.975	0.0000	+/-0.030	
Tetrachloro-m-xylene [2C]	0.005000	93.8	25 - 140	3.339	3.338	0.0010	+/-0.030	
05-WA-01 (1003088-01) mg/L				Lab File ID: 008F0801.D		Analyzed: 03/12/10 11:27		
Decachlorobiphenyl	0.005000	86.4	40 - 135	9.601	9.602	-0.0010	+/-0.030	
Decachlorobiphenyl [2C]	0.005000	95.5	40 - 135	8.2	8.199	0.0010	+/-0.030	
Tetrachloro-m-xylene	0.005000	77.8	25 - 140	3.974	3.975	-0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	0.005000	83.9	25 - 140	3.338	3.338	0.0000	+/-0.030	
Matrix Spike (0C11003-MS2) mg/L				Lab File ID: 010F1001.D		Analyzed: 03/12/10 12:03		
Decachlorobiphenyl	0.005000	93.8	40 - 135	9.602	9.602	0.0000	+/-0.030	
Decachlorobiphenyl [2C]	0.005000	120	40 - 135	8.2	8.199	0.0010	+/-0.030	
Tetrachloro-m-xylene	0.005000	77.3	25 - 140	3.975	3.975	0.0000	+/-0.030	
Tetrachloro-m-xylene [2C]	0.005000	87.1	25 - 140	3.34	3.338	0.0020	+/-0.030	
05-WA-02 (1003088-02) mg/L				Lab File ID: 011F1101.D		Analyzed: 03/12/10 12:22		
Decachlorobiphenyl	0.005000	46.7	40 - 135	9.602	9.602	0.0000	+/-0.030	
Decachlorobiphenyl [2C]	0.005000	53.2	40 - 135	8.201	8.199	0.0020	+/-0.030	
Tetrachloro-m-xylene	0.005000	90.6	25 - 140	3.975	3.975	0.0000	+/-0.030	
Tetrachloro-m-xylene [2C]	0.005000	97.1	25 - 140	3.338	3.338	0.0000	+/-0.030	
05-WA-03 (1003088-03) mg/L				Lab File ID: 012F1201.D		Analyzed: 03/12/10 12:40		
Decachlorobiphenyl	0.005000	81.1	40 - 135	9.601	9.602	-0.0010	+/-0.030	
Decachlorobiphenyl [2C]	0.005000	90.3	40 - 135	8.201	8.199	0.0020	+/-0.030	
Tetrachloro-m-xylene	0.005000	81.3	25 - 140	3.975	3.975	0.0000	+/-0.030	
Tetrachloro-m-xylene [2C]	0.005000	87.3	25 - 140	3.339	3.338	0.0010	+/-0.030	

J.H. 3.19.10

SURROGATE STANDARD RECOVERY AND RT SUMMARY

SW8081A

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Sequence: 0C07113

SDG: SMU5Crane_002
Project: SMU5 Crane
Instrument: GL-ECD4
Calibration: 0013002

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
05-WA-04 (1003088-04) mg/L				Lab File ID: 013F1301.D		Analyzed: 03/12/10 12:59		
Decachlorobiphenyl	0.005000	78.1	40 - 135	9.603	9.602	0.0010	+/-0.030	
Decachlorobiphenyl [2C]	0.005000	86.2	40 - 135	8.202	8.199	0.0030	+/-0.030	
Tetrachloro-m-xylene	0.005000	89.3	25 - 140	3.974	3.975	-0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	0.005000	94.5	25 - 140	3.339	3.338	0.0010	+/-0.030	
Calibration Check (0C07113-CCV2) ug/L				Lab File ID: 015F1501.D		Analyzed: 03/12/10 13:36		
Decachlorobiphenyl	100.0	88.6	80 - 120	9.602	9.602	0.0000	+/-0.030	
Decachlorobiphenyl [2C]	100.0	97.9	80 - 120	8.2	8.199	0.0010	+/-0.030	
Tetrachloro-m-xylene	100.0	106	80 - 120	3.974	3.975	-0.0010	+/-0.030	
Tetrachloro-m-xylene [2C]	100.0	109	80 - 120	3.338	3.338	0.0000	+/-0.030	

INITIAL CALIBRATION STANDARDS

SW8081A

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Sequence:	0A01310	Instrument:	GL-ECD4
Calibration:	0013002		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
09I0097	Pest ICAL @200ppb	0A01310-CAL1	003R0301.D	01/12/10 15:54
09I0097	Pest ICAL @200ppb	0A01310-CAL1	003F0301.D	01/12/10 15:54
09K0660	Pest CCV @100ppb	0A01310-CAL2	004F0401.D	01/12/10 16:12
09K0660	Pest CCV @100ppb	0A01310-CAL2	004R0401.D	01/12/10 16:12
09I0099	Pest ICAL @50ppb	0A01310-CAL3	005F0501.D	01/12/10 16:30
09I0099	Pest ICAL @50ppb	0A01310-CAL3	005R0501.D	01/12/10 16:30
09I0100	Pest ICAL @25ppb	0A01310-CAL4	006F0601.D	01/12/10 16:48
09I0100	Pest ICAL @25ppb	0A01310-CAL4	006R0601.D	01/12/10 16:48
09I0101	Pest ICAL@10ppb	0A01310-CAL5	007R0701.D	01/12/10 17:06
09I0101	Pest ICAL@10ppb	0A01310-CAL5	007F0701.D	01/12/10 17:06
09I0102	Pest ICAL @5ppb	0A01310-CAL6	008R0801.D	01/12/10 17:24
09I0102	Pest ICAL @5ppb	0A01310-CAL6	008F0801.D	01/12/10 17:24
09I0103	Pest ICAL @1ppb	0A01310-CAL7	009F0901.D	01/12/10 17:42
09I0103	Pest ICAL @1ppb	0A01310-CAL7	009R0901.D	01/12/10 17:42
10A0247	Aro-1660 Cal1@2500/100	0A01310-CAL8	011R1101.D	01/12/10 18:18
10A0248	Aro-1660 Cal2@1000/50	0A01310-CAL9	012R1201.D	01/12/10 18:36
10A0249	Aro-1660 Cal3@750/25	0A01310-CALA	013R1301.D	01/12/10 18:54
10A0250	Aro-1660 Cal4@500/10	0A01310-CALB	014R1401.D	01/12/10 19:13
10A0251	Aro-1660 Cal5@100/5	0A01310-CALC	015R1501.D	01/12/10 19:31
10A0252	Aro-1660 Cal6@50/1	0A01310-CALD	016R1601.D	01/12/10 19:49

FORM X
IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

LCS

Lab Name: Empirical Laboratories, LLC

Lab Sample ID: 0C11003-BS1 Date(s) Analyzed: 03/12/2010 03/12/2010

Instrument ID (1): GL-ECD4 Instrument ID (2): GL-ECD4

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Endrin	1	6.74	7.06	7.12	0.01154	
	2	5.63	5.89	5.95	0.01122	3
gamma-BHC (Lindane)	1	4.60	4.83	4.89	0.01067	
	2	3.96	4.13	4.19	0.01069	0
Heptachlor	1	5.09	5.34	5.40	0.009887	
	2	4.22	4.40	4.46	0.009088	8
Heptachlor epoxide	1	5.82	6.10	6.16	0.01004	
	2	4.83	5.05	5.11	0.01213	19
Methoxychlor	1	7.89	8.21	8.27	0.01048	
	2	6.69	6.96	7.02	0.009883	6

FORM X
IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

Matrix Spike

Lab Name: Empirical Laboratories, LLC

Lab Sample ID: 0C11003-MS2 Date(s) Analyzed: 03/12/2010 03/12/2010

Instrument ID (1): GL-ECD4 Instrument ID (2): GL-ECD4

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
Chlordane (tech)	1	6.17	-0.03	0.03	0.8830	
	2	5.10	-0.03	0.03	0.5104	54
Toxaphene	1	8.46	-0.03	0.03	0.1191	
	2	7.26	-0.03	0.03	0.09153	26

ORGANIC CASE NARRATIVE
Tetra Tech NUS, Inc. – SMU5 Crane
SDG: SMU5Crane_002
Workorder: 1003088

Sampled	Rec'd	Lab ID	Client ID
03/08/10	03/10/10	1003088-01	05-WA-01
03/08/10	03/10/10	1003088-02	05-WA-02
03/08/10	03/10/10	1003088-03	05-WA-03
03/08/10	03/10/10	1003088-04	05-WA-04

Herbicide TCLP Samples

Method: The samples were analyzed for the TCLP analyte list by USEPA SW-846 Methods 1311/8151A (TCLP leaching followed by separatory funnel extraction then esterification and capillary column GC/ECD) for IDW soils upon receipt to the laboratory in satisfactory condition.

Comments: The analyses for these samples were satisfactorily completed within sample holding times and met the corresponding specifications with the following note/exceptions:

- Initial Calibration Criteria: All method criteria were met for the target analytes.
- Calibration Criteria: All method calibration criteria were met.
- Blank Results: No target analytes were detected.
- Surrogate Recoveries: The surrogate 2,4-dichlorophenylacetic acid exceeded the upper recovery limit of 140% at 194% in sample 05-WA-04. All other recoveries were within limits.
- LCS Results: All recoveries were within limits.
- MS results: All recoveries were within limits.
- Dilutions: All TCLP analyses are completed using a 10x dilution.
- Manual Integrations: As is necessary for all GC/LC chromatography, manual integrations were performed to correctly quantitate target analytes. A "before" chromatogram and "after" chromatogram is available for all analyses to provide information regarding the manual integrations performed.

I certify that, to the best of my knowledge and based upon my inquiry of those individuals immediately responsible for obtaining the information, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in the case narrative, as verified by the following signature.

Jade Holliman
Organic Manager

ANALYTICAL REPORT TERMS AND QUALIFIERS (ORGANIC)

MDL: The method detection limit (MDL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The MDL is determined from analysis of a sample containing the analyte in a given matrix.

EQL: The estimated quantitation limit (EQL) is defined as the estimated concentration above which quantitative results can be obtained with a specific degree of confidence. Empirical Laboratories defines the EQL to be at or near the lowest standard of the calibration curve.

U: The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte quantitated below the MDL.

B: The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the correct sample result might be less than the reported result and, perhaps, zero.

D: When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".

E: The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound.

J: The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The data pass the identification criteria indicating that the compound is present, but the calculated result is less than the EQL.

ANALYSIS DATA SHEET

05-WA-01

Laboratory:	Empirical Laboratories, LLC			SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)			Project:	SMU5 Crane
Matrix:	Solid	Laboratory ID:	1003088-01	File ID:	013F1301.D
Sampled:	03/08/10 13:30	Prepared:	03/11/10 10:15	Analyzed:	03/13/10 03:23
Solids:	75.43	Preparation:	EXT_8151	Dilution:	1
Batch:	0C11004	Sequence:	0C07109	Calibration:	0075003
Instrument:	GL-ECD4				

CAS NO.	COMPOUND	CONC. (mg/L)	TCLP Reg Limit	MRL	Q
93-72-1	2,4,5-TP (Silvex)		1	0.000500	U
94-75-7	2,4-D		10	0.00500	U

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	0.01000	0.004302	43.0	20 - 140	
2,4-Dichlorophenylacetic acid [2C]	0.01000	0.004101	41.0	20 - 140	

* Values outside of QC limits

ANALYSIS DATA SHEET

05-WA-02

Laboratory:	Empirical Laboratories, LLC			SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)			Project:	SMU5 Crane
Matrix:	Solid	Laboratory ID:	1003088-02	File ID:	015F1501.D
Sampled:	03/08/10 11:12	Prepared:	03/11/10 10:15	Analyzed:	03/13/10 05:13
Solids:	63.04	Preparation:	EXT_8151	Dilution:	1
Batch:	0C11004	Sequence:	0C07109	Calibration:	0075003
Instrument:	GL-ECD4				

CAS NO.	COMPOUND	CONC. (mg/L)	TCLP Reg Limit	MRL	Q
93-72-1	2,4,5-TP (Silvex)		1	0.000500	U
94-75-7	2,4-D		10	0.00500	U

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	0.01000	0.006227	62.3	20 - 140	
2,4-Dichlorophenylacetic acid [2C]	0.01000	0.006922	69.2	20 - 140	

* Values outside of QC limits

ANALYSIS DATA SHEET

05-WA-03

Laboratory:	Empirical Laboratories, LLC			SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)			Project:	SMU5 Crane
Matrix:	Solid	Laboratory ID:	1003088-03	File ID:	016R1601.D
Sampled:	03/08/10 11:03	Prepared:	03/11/10 10:15	Analyzed:	03/13/10 06:08
Solids:	76.61	Preparation:	EXT_8151	Dilution:	1
Batch:	0C11004	Sequence:	0C07109	Calibration:	0075003
Instrument:	GL-ECD4				

CAS NO.	COMPOUND	CONC. (mg/L)	TCLP Reg Limit	MRL	Q
93-72-1	2,4,5-TP (Silvex)		1	0.000500	U
94-75-7	2,4-D		10	0.00500	U

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	0.01000	0.006314	63.1	20 - 140	
2,4-Dichlorophenylacetic acid [2C]	0.01000	0.006565	65.7	20 - 140	

* Values outside of QC limits

ANALYSIS DATA SHEET

05-WA-04

Laboratory:	Empirical Laboratories, LLC			SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)			Project:	SMU5 Crane
Matrix:	Solid	Laboratory ID:	1003088-04	File ID:	017R1701.D
Sampled:	03/08/10 11:17	Prepared:	03/11/10 10:15	Analyzed:	03/13/10 07:03
Solids:	70.28	Preparation:	EXT_8151	Dilution:	1
Batch:	0C11004	Sequence:	0C07109	Calibration:	0075003
Instrument:	GL-ECD4				

CAS NO.	COMPOUND	CONC. (mg/L)	TCLP Reg Limit	MRL	Q
93-72-1	2,4,5-TP (Silvex)		1	0.000500	U
94-75-7	2,4-D		10	0.00500	U

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	0.01000	0.01941	194	20 - 140	*
2,4-Dichlorophenylacetic acid [2C]	0.01000	0.008849	88.5	20 - 140	

* Values outside of QC limits

LCS / LCS DUPLICATE RECOVERY

SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Matrix:	Water		
Batch:	0C11004	Laboratory ID:	0C11004-BS1
Preparation:	EXT_8151	Initial/Final:	100 mL / 10 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
2,4,5-TP (Silvex)	0.002000	0.001407	70.3	50 - 115
2,4,5-TP (Silvex) [2C]	0.002000	0.001593	79.6	50 - 115
2,4-D	0.02000	0.01616	80.8	35 - 115
2,4-D [2C]	0.02000	0.01788	89.4	35 - 115

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW8151A

05-WA-01

Laboratory: Empirical Laboratories, LLC

SDG: SMU5Crane_002

Client: Tetra Tech NUS, Inc. (T010)

Project: SMU5 Crane

Matrix: Water

Batch: 0C11004

% Solids: 75.43

Source Sample Name: **1003088-01**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
2,4,5-TP (Silvex)	0.002000	ND	0.001373	68.7		50 - 115
2,4,5-TP (Silvex) [2C]	0.002000	ND	0.001585	79.2		50 - 115
2,4-D	0.02000	ND	0.01471	73.5		35 - 115
2,4-D [2C]	0.02000	ND	0.01746	87.3		35 - 115

PREPARATION BATCH SUMMARY

SW8151A

Laboratory: Empirical Laboratories, LLC SDG: SMU5Crane_002

Client: Tetra Tech NUS, Inc. (T010) Project: SMU5 Crane

Batch: 0C11004 Batch Matrix: Water Preparation: EXT_8151

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
Blank	0C11004-BLK1	03/11/10 10:15	100.00	10.00
LCS	0C11004-BS1	03/11/10 10:15	100.00	10.00
05-WA-01	0C11004-MS1	03/11/10 10:15	100.00	10.00
05-WA-01	1003088-01	03/11/10 10:15	100.00	10.00
05-WA-02	1003088-02	03/11/10 10:15	100.00	10.00
05-WA-03	1003088-03	03/11/10 10:15	100.00	10.00
05-WA-04	1003088-04	03/11/10 10:15	100.00	10.00

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC SDG: SMU5Crane_002

Client: Tetra Tech NUS, Inc. (T010) Project: SMU5 Crane

Matrix: Laboratory ID: 0C11004-BLK1 File ID: 011F1101.D

Sampled: Prepared: 03/11/10 10:15 Analyzed: 03/13/10 01:33

Solids: Preparation: EXT_8151 Dilution:

Batch: 0C11004 Sequence: 0C07109 Calibration: 0075003 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	MRL	Q
93-72-1	2,4,5-TP (Silvex)		0.000250	0.000500	U
94-75-7	2,4-D		0.00250	0.00500	U

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	0.01000	0.008240	82.4	20 - 140	
2,4-Dichlorophenylacetic acid [2C]	0.01000	0.007797	78.0	20 - 140	

* Values outside of QC limits

INITIAL CALIBRATION STANDARDS

SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Sequence:	0C07503	Instrument:	GL-ECD4
Calibration:	0075003		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
10A0113	Herb/DCAA @ 100/500 ppb	0C07503-CAL1	002R0201.D	03/12/10 17:18
10A0113	Herb/DCAA @ 100/500 ppb	0C07503-CAL1	002F0201.D	03/12/10 17:18
10A0114	Herb/DCAA @ 50/250 ppb	0C07503-CAL2	003R0301.D	03/12/10 18:13
10A0114	Herb/DCAA @ 50/250 ppb	0C07503-CAL2	003F0301.D	03/12/10 18:13
10A0115	Herb/DCAA @ 40/200 ppb	0C07503-CAL3	004R0401.D	03/12/10 19:08
10A0115	Herb/DCAA @ 40/200 ppb	0C07503-CAL3	004F0401.D	03/12/10 19:08
10A0116	Herb/DCAA @ 25/125 ppb	0C07503-CAL4	005R0501.D	03/12/10 20:03
10A0116	Herb/DCAA @ 25/125 ppb	0C07503-CAL4	005F0501.D	03/12/10 20:03
10A0117	Herb/DCAA @ 20/100 ppb	0C07503-CAL5	006R0601.D	03/12/10 20:58
10A0117	Herb/DCAA @ 20/100 ppb	0C07503-CAL5	006F0601.D	03/12/10 20:58
10A0118	Herb/DCAA @ 10/50 ppb	0C07503-CAL6	007R0701.D	03/12/10 21:53
10A0118	Herb/DCAA @ 10/50 ppb	0C07503-CAL6	007F0701.D	03/12/10 21:53
10A0119	Herb/DCAA @ 5/25 ppb	0C07503-CAL7	008R0801.D	03/12/10 22:48
10A0119	Herb/DCAA @ 5/25 ppb	0C07503-CAL7	008F0801.D	03/12/10 22:48

INITIAL CALIBRATION DATA (Continued)

SW8151A

Laboratory: Empirical Laboratories, LLC
SDG: SMU5Crane_002
Client: Tetra Tech NUS, Inc. (T010)
Project: SMU5 Crane
Calibration: 0075003
Instrument: GL-ECD4
Matrix: Water
Calibration Date: 3/12/2010 9:18:04AM

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
2,4,5-TP (Silvex)	4.753	38455.08										
2,4,5-TP (Silvex) [2C]	4.753	45231.43										
2,4-D	47.04	8671.089										
2,4-D [2C]	47.04	8971.301										
2,4-Dichlorophenylacetic acid	23.41	7884.237										
2,4-Dichlorophenylacetic acid [2C]	23.41	8543.87										

INITIAL CALIBRATION DATA

SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Calibration:	0075003	Instrument:	GL-ECD4
Matrix:	Water	Calibration Date:	3/12/2010 9:18:04AM

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
2,4,5-TP (Silvex)	95.06	33957.65	47.53	35782.35	38.02	36679.09	23.76	38021.55	19.01	37686.69	9.506	39079.21
2,4,5-TP (Silvex) [2C]	95.06	32706.48	47.53	36399.81	38.02	37673.64	23.76	39922.68	19.01	40315.31	9.506	43669.26
2,4-D	940.7	6134.622	470.4	6692.525	376.3	7068.631	235.2	7732.453	188.1	7974.806	94.07	8493.813
2,4-D [2C]	940.7	5737.573	470.4	6351.55	376.3	6844.858	235.2	7333.291	188.1	7777.847	94.07	8162.432
2,4-Dichlorophenylacetic acid	468.2	5431.862	234.1	5874.87	187.3	6109.269	117	6615.385	93.64	6803.545	46.82	7491.563
2,4-Dichlorophenylacetic acid [2C]	468.2	4967.322	234.1	5470.551	187.3	5670.897	117	6177.803	93.64	6398.131	46.82	7281.098

INITIAL CALIBRATION DATA (Continued)

SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Calibration:	0075003	Instrument:	GL-ECD4
Matrix:	Water	Calibration Date:	3/12/2010 9:18:04AM

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
2,4,5-TP (Silvex)	37094.52	4.763608	9.427143	1.526131E-02			20	
2,4,5-TP (Silvex) [2C]	39416.95	10.86891	7.274714	9.040115E-03			20	
2,4-D	7538.277	12.50385	8.093286	1.804421E-02			20	
2,4-D [2C]	7311.265	15.10059	6.511286	2.778823E-02			20	
2,4-Dichlorophenylacetic acid	6601.533	13.28797	6.654571	1.953349E-02			20	
2,4-Dichlorophenylacetic acid [2C]	6358.525	19.10878	5.642429	1.954604E-02			20	

INITIAL CALIBRATION CHECK

SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Instrument ID:	GL-ECD4	Calibration:	0075003
Lab File ID:	009F0901.D	Calibration Date:	03/12/10 09:18
Sequence:	0C07503	Injection Date:	03/12/10
Lab Sample ID:	0C07503-ICV1	Injection Time:	23:43

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN (#)	ICV	LIMIT (#)
2,4,5-TP (Silvex)	A	19.01	19.86	37094.52	38751.29		4.5	20
2,4,5-TP (Silvex) [2C]	A	19.01	20.25	39416.95	41983.96		6.5	20
2,4-D	A	188.1	198.0	7538.277	7936.507		5.3	20
2,4-D [2C]	A	188.1	196.2	7311.265	7628.166		4.3	20
2,4-Dichlorophenylacetic acid	A	93.64	97.21	6601.533	6853.503		3.8	20
2,4-Dichlorophenylacetic acid [2C]	A	93.64	96.70	6358.525	6566.499		3.3	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Instrument ID:	GL-ECD4	Calibration:	0075003
Lab File ID:	010F1001.D	Calibration Date:	03/12/10 09:18
Sequence:	0C07109	Injection Date:	03/13/10
Lab Sample ID:	0C07109-CCV1	Injection Time:	00:38

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
2,4,5-TP (Silvex)	A	19.01	19.20	37094.52	37457.39		1.0	20
2,4,5-TP (Silvex) [2C]	A	19.01	19.03	39416.95	39449.92		0.08	20
2,4-D	A	188.1	176.0	7538.277	7053.62		-6.4	20
2,4-D [2C]	A	188.1	173.7	7311.265	6753.392		-7.6	20
2,4-Dichlorophenylacetic acid	A	93.64	94.03	6601.533	6629.304		0.4	20
2,4-Dichlorophenylacetic acid [2C]	A	93.64	95.35	6358.525	6474.786		1.8	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SW8151A

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Instrument ID:	GL-ECD4	Calibration:	0075003
Lab File ID:	019F1901.D	Calibration Date:	03/12/10 09:18
Sequence:	0C07109	Injection Date:	03/13/10
Lab Sample ID:	0C07109-CCV2	Injection Time:	08:53

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
2,4,5-TP (Silvex)	A	19.01	17.26	37094.52	33671.07		-9.2	20
2,4,5-TP (Silvex) [2C]	A	19.01	19.45	39416.95	40336.77		2.3	20
2,4-D	A	188.1	164.5	7538.277	6594.29		-12.5	20
2,4-D [2C]	A	188.1	182.9	7311.265	7107.767		-2.8	20
2,4-Dichlorophenylacetic acid	A	93.64	88.63	6601.533	6248.398		-5.3	20
2,4-Dichlorophenylacetic acid [2C]	A	93.64	100.4	6358.525	6820.525		7.3	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

SURROGATE STANDARD RECOVERY AND RT SUMMARY

SW8151A

Laboratory: Empirical Laboratories, LLC
SDG: SMU5Crane_002
Client: Tetra Tech NUS, Inc. (T010)
Project: SMU5 Crane
Sequence: 0C07109
Instrument: GL-ECD4
Calibration: 0075003

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
Calibration Check (0C07109-CCV1) ug/L				Lab File ID: 010F1001.D		Analyzed: 03/13/10 00:38		
2,4-Dichlorophenylacetic acid	93.64	100	80 - 120	6.654	6.654	~~0.0000~~ ~~6.6540~~	+/-0.030	✓
2,4-Dichlorophenylacetic acid [2C]	93.64	102	80 - 120	5.642	5.642	~~0.0000~~ ~~5.6420~~	+/-0.030	✓
Blank (0C11004-BLK1) mg/L				Lab File ID: 011F1101.D		Analyzed: 03/13/10 01:33		
2,4-Dichlorophenylacetic acid	0.01000	82.4	20 - 140	6.654	6.654	0.0000	+/-0.030	
2,4-Dichlorophenylacetic acid [2C]	0.01000	78.0	20 - 140	5.642	5.642	0.0000	+/-0.030	
LCS (0C11004-BS1) mg/L				Lab File ID: 012F1201.D		Analyzed: 03/13/10 02:28		
2,4-Dichlorophenylacetic acid	0.01000	83.2	20 - 140	6.654	6.654	0.0000	+/-0.030	
2,4-Dichlorophenylacetic acid [2C]	0.01000	84.7	20 - 140	5.642	5.642	0.0000	+/-0.030	
05-WA-01 (1003088-01) mg/L				Lab File ID: 013F1301.D		Analyzed: 03/13/10 03:23		
2,4-Dichlorophenylacetic acid	0.01000	43.0	20 - 140	6.657	6.654	0.0030	+/-0.030	
2,4-Dichlorophenylacetic acid [2C]	0.01000	41.0	20 - 140	5.643	5.642	0.0010	+/-0.030	
Matrix Spike (0C11004-MS1) mg/L				Lab File ID: 014F1401.D		Analyzed: 03/13/10 04:18		
2,4-Dichlorophenylacetic acid	0.01000	57.2	20 - 140	6.654	6.654	0.0000	+/-0.030	
2,4-Dichlorophenylacetic acid [2C]	0.01000	60.9	20 - 140	5.642	5.642	0.0000	+/-0.030	
05-WA-02 (1003088-02) mg/L				Lab File ID: 015F1501.D		Analyzed: 03/13/10 05:13		
2,4-Dichlorophenylacetic acid	0.01000	62.3	20 - 140	6.655	6.654	0.0010	+/-0.030	
2,4-Dichlorophenylacetic acid [2C]	0.01000	69.2	20 - 140	5.641	5.642	-0.0010	+/-0.030	
05-WA-03 (1003088-03) mg/L				Lab File ID: 016F1601.D		Analyzed: 03/13/10 06:08		
2,4-Dichlorophenylacetic acid	0.01000	63.1	20 - 140	6.653	6.654	-0.0010	+/-0.030	
2,4-Dichlorophenylacetic acid [2C]	0.01000	65.7	20 - 140	5.641	5.642	-0.0010	+/-0.030	
05-WA-04 (1003088-04) mg/L				Lab File ID: 017F1701.D		Analyzed: 03/13/10 07:03		
2,4-Dichlorophenylacetic acid	0.01000	194	20 - 140	6.651	6.654	-0.0030	+/-0.030	*
2,4-Dichlorophenylacetic acid [2C]	0.01000	88.5	20 - 140	5.64	5.642	-0.0020	+/-0.030	
Calibration Check (0C07109-CCV2) ug/L				Lab File ID: 019F1901.D		Analyzed: 03/13/10 08:53		
2,4-Dichlorophenylacetic acid	93.64	94.6	80 - 120	6.649	6.654	-0.0050	+/-0.030	
2,4-Dichlorophenylacetic acid [2C]	93.64	107	80 - 120	5.639	5.642	-0.0030	+/-0.030	

WL 3/22/10

FORM X
IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

LCS

Lab Name: Empirical Laboratories, LLC

Lab Sample ID: 0C11004-BS1 Date(s) Analyzed: 03/13/2010 03/13/2010

Instrument ID (1): GL-ECD4 Instrument ID (2): GL-ECD4

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
2,4,5-TP (Silvex)	1	9.43	9.40	9.46	0.001407	
	2	7.27	7.24	7.30	0.001593	12
2,4-D	1	8.09	8.06	8.12	0.01616	
	2	6.51	6.48	6.54	0.01788	10

FORM X
IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

Matrix Spike

Lab Name: Empirical Laboratories, LLC

Lab Sample ID: 0C11004-MS1 Date(s) Analyzed: 03/13/2010 03/13/2010

Instrument ID (1): GL-ECD4 Instrument ID (2): GL-ECD4

GC Column (1): ID: (mm) GC Column (2): ID: (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%D
			FROM	TO		
2,4,5-TP (Silvex)	1	9.42	9.40	9.46	0.001373	
	2	7.27	7.24	7.30	0.001585	14
2,4-D	1	8.09	8.06	8.12	0.01471	
	2	6.51	6.48	6.54	0.01746	17

ANALYSIS DATA SHEET

LCS

Laboratory:	Empirical Laboratories, LLC		SDG:	SMU5Crane_002	
Client:	Tetra Tech NUS, Inc. (T010)		Project:	SMU5 Crane	
Matrix:		Laboratory ID:	0C11004-BS1	File ID:	012F1201.D
Sampled:		Prepared:		Analyzed:	03/13/10 02:28
Solids:		Preparation:	EXT_8151	Dilution:	
Batch:	0C11004	Sequence:	0C07109	Calibration:	0075003
Instrument:	GL-ECD4				

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	MRL	Q
93-72-1	2,4,5-TP (Silvex)	0.001407	0.000250	0.000500	
94-75-7	2,4-D	0.01616	0.00250	0.00500	

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	0.01000	0.008322	83.2	20 - 140	

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC SDG: SMU5Crane_002

Client: Tetra Tech NUS, Inc. (T010) Project: SMU5 Crane

Matrix: Laboratory ID: 0C11004-BS1 File ID: 012R1201.D

Sampled: Prepared: Analyzed: 03/13/10 02:28

Solids: Preparation: EXT_8151 Dilution:

Batch: 0C11004 Sequence: 0C07109 Calibration: 0075003 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	MRL	Q
93-72-1	2,4,5-TP (Silvex) [2C]	0.001593	0.000250	0.000500	
94-75-7	2,4-D [2C]	0.01788	0.00250	0.00500	

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid [2C]	0.01000	0.008466	84.7	20 - 140	

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC SDG: SMU5Crane_002

Client: Tetra Tech NUS, Inc. (T010) Project: SMU5 Crane

Matrix: Laboratory ID: 0C11004-MS1 File ID: 014F1401.D

Sampled: Prepared: Analyzed: 03/13/10 04:18

Solids: Preparation: EXT_8151 Dilution:

Batch: 0C11004 Sequence: 0C07109 Calibration: 0075003 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	MRL	Q
93-72-1	2,4,5-TP (Silvex)	0.001373	0.000250	0.000500	
94-75-7	2,4-D	0.01471	0.00250	0.00500	

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid	0.01000	0.005718	57.2	20 - 140	

ANALYSIS DATA SHEET

Matrix Spike

Laboratory:	Empirical Laboratories, LLC			SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)			Project:	SMU5 Crane
Matrix:		Laboratory ID:	0C11004-MS1	File ID:	014R1401.D
Sampled:		Prepared:		Analyzed:	03/13/10 04:18
Solids:		Preparation:	EXT_8151	Dilution:	

Batch: 0C11004 Sequence: 0C07109 Calibration: 0075003 Instrument: GL-ECD4

CAS NO.	COMPOUND	CONC. (mg/L)	MDL	MRL	Q
93-72-1	2,4,5-TP (Silvex) [2C]	0.001585	0.000250	0.000500	
94-75-7	2,4-D [2C]	0.01746	0.00250	0.00500	

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
2,4-Dichlorophenylacetic acid [2C]	0.01000	0.006094	60.9	20 - 140	

INORGANIC CASE NARRATIVE
TETRA TECH NUS
SMU5 Crane
SDG# SMU5Crane_002
Work Order #1003088
March, 2010

Empirical Laboratories ID	Client ID
1003088-01	05-WA-01
1003088-02	05-WA-02
1003088-03	05-WA-03
1003088-04	05-WA-04

I certify that, based upon my inquiry of those individuals immediately responsible for obtaining the information and to the best of my knowledge, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in the case narrative, as verified by the following signature.

Betty DeVille
Inorganic Lab Manager

I. RECEIPT

No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody included with this data package.

I. HOLDING TIMES

A. Sample Preparation: All holding times were met.

B. Sample Analysis: All holding times were met.

II. METHODS

US EPA SW846

- Method 1311A was used to extract the samples for TCLP.
- Method 6010B was used to analyze ICAP metals using a Thermo Fisher 6400 DUO instrument.
- Method 7470A was used to analyze mercury using a Perkin Elmer FIMS instrument.

Note: The "U" flag indicates that the sample concentration is reported down to the laboratory MDL. The "J" flag indicates that the analyte result is between the laboratory reporting limit and the laboratory MDL. All methods performed according to EPA guidelines and Empirical Laboratories Standard Operating Procedures.

III. PREPARATION

INORGANIC CASE NARRATIVE
TETRA TECH NUS
SMU5 Crane
SDG# SMU5Crane_002
Work Order #1003088
March, 2010

US EPA SW846

- Method 3010A was used to digest ICAP metals.

All methods performed according to EPA guidelines and Empirical Laboratories Standard Operating Procedures.

IV. ANALYSIS

A. Calibration: All calibration criteria were met with the following exceptions: 0C07114-CCVA and CCVB were out of the specification limits for chromium at 85.0 and 80.1%; and in CCVB for arsenic at 88.4%, lead at 85.5% and silver at 87.9%. These CCV's impact sample 05-WA-04 reanalysis for Arsenic only.

B. Blanks: All blank criteria were met.

C. Spikes: All matrix spikes quality control criteria were met.

D. Duplicates: All duplicate quality control criteria were met.

E. Samples: All sample analysis proceeded normally. Note: Sample 05-WA-04 was reanalyzed for arsenic because the original analysis concentration was more negative than the reporting limit.

F. Laboratory Control Samples: All percent recovery quality control criteria were met.

G. Serial Dilution: All serial dilution quality control criteria were met.

1003088

Empirical Laboratories, LLC

Client: Tetra Tech NUS, Inc. (T010)
Project: SMU5 Crane

Project Manager: Kim Kostzer
Project Number: SMU5 Crane

Report To:
Tetra Tech NUS, Inc. (T010)
Accounts Payable
Foster Plaza 7, 661 Anderson Drive
Pittsburgh, PA 15220
Phone: (412) 921-8182
Fax: (412) 921-4040

Invoice To:
Tetra Tech NUS, Inc. (T010)
Accounts Payable
Foster Plaza 7, 661 Anderson Drive
Pittsburgh, PA 15220
Phone :(412) 921-8182
Fax: (412) 921-4040

Date Due: 03/15/2010 16:00 (3 day TAT)

Received By: William Schwab
Date Received: 03/10/2010 08:30

Logged In By: William Schwab
Date Logged In: 03/10/2010 09:55

Samples Received at: **2.2°C**

Custody Seals	Yes	Received On Ice	Yes
Containers Intact	Yes		
COC/Labels Agree	Yes		
Preservation Confirr	Yes		

Analysis	Due	TAT	Expires	Comments
1003088-01 05-WA-01 [Solid] Sampled 03/08/2010 13:30 Eastern				**3 DAY RUSH TAT!!**
MET_TCLP_7470A	03/12/2010 14:00	3	04/05/2010 12:30	3 DAY RUSH TAT!!
SGC_TCLP_8081A	03/12/2010 14:00	3	03/22/2010 12:30	3 DAY RUSH TAT!!
SGC_TCLP_8151A	03/12/2010 14:00	3	03/22/2010 12:30	3 DAY RUSH TAT!!
SMS_TCLP_8270C	03/12/2010 14:00	3	03/22/2010 12:30	3 DAY RUSH TAT!!
TCLP_STD	03/12/2010 14:00	3	03/22/2010 12:30	3 DAY RUSH TAT!!
TCLP_ZHE	03/12/2010 14:00	3	03/22/2010 12:30	3 DAY RUSH TAT!!
VOC_TCLP_8260B	03/12/2010 14:00	3	03/22/2010 12:30	3 DAY RUSH TAT!!
WC_PERCENT_SOLIDS_2540B	03/12/2010 14:00	3	03/15/2010 12:30	3 DAY RUSH TAT!!
MET_TCLP_6010B	03/12/2010 14:00	3	04/05/2010 12:30	3 DAY RUSH TAT!!
1003088-02 05-WA-02 [Solid] Sampled 03/08/2010 11:12 Eastern				**3 DAY RUSH TAT!!**
TCLP_STD	03/12/2010 14:00	3	03/22/2010 10:12	3 DAY RUSH TAT!!
MET_TCLP_6010B	03/12/2010 14:00	3	04/05/2010 10:12	3 DAY RUSH TAT!!
MET_TCLP_7470A	03/12/2010 14:00	3	04/05/2010 10:12	3 DAY RUSH TAT!!
SGC_TCLP_8081A	03/12/2010 14:00	3	03/22/2010 10:12	3 DAY RUSH TAT!!
SMS_TCLP_8270C	03/12/2010 14:00	3	03/22/2010 10:12	3 DAY RUSH TAT!!
TCLP_ZHE	03/12/2010 14:00	3	03/22/2010 10:12	3 DAY RUSH TAT!!
WC_PERCENT_SOLIDS_2540B	03/12/2010 14:00	3	03/15/2010 10:12	3 DAY RUSH TAT!!
SGC_TCLP_8151A	03/12/2010 14:00	3	03/22/2010 10:12	3 DAY RUSH TAT!!
VOC_TCLP_8260B	03/12/2010 14:00	3	03/22/2010 10:12	3 DAY RUSH TAT!!

1003088

Empirical Laboratories, LLC

Client:	**Tetra Tech NUS, Inc. (T010)**	**Project Manager:**	**Kim Kostzer**
Project:	**SMU5 Crane**	**Project Number:**	**SMU5 Crane**

Analysis	Due	TAT	Expires	Comments
1003088-03 05-WA-03 [Solid] Sampled 03/08/2010 11:03 Eastern				**3 DAY RUSH TAT!!**
TCLP_ZHE	03/12/2010 14:00	3	03/22/2010 10:03	3 DAY RUSH TAT!!
VOC_TCLP_8260B	03/12/2010 14:00	3	03/22/2010 10:03	3 DAY RUSH TAT!!
TCLP_STD	03/12/2010 14:00	3	03/22/2010 10:03	3 DAY RUSH TAT!!
SMS_TCLP_8270C	03/12/2010 14:00	3	03/22/2010 10:03	3 DAY RUSH TAT!!
SGC_TCLP_8151A	03/12/2010 14:00	3	03/22/2010 10:03	3 DAY RUSH TAT!!
SGC_TCLP_8081A	03/12/2010 14:00	3	03/22/2010 10:03	3 DAY RUSH TAT!!
MET_TCLP_7470A	03/12/2010 14:00	3	04/05/2010 10:03	3 DAY RUSH TAT!!
MET_TCLP_6010B	03/12/2010 14:00	3	04/05/2010 10:03	3 DAY RUSH TAT!!
WC_PERCENT_SOLIDS_2540B	03/12/2010 14:00	3	03/15/2010 10:03	3 DAY RUSH TAT!!
1003088-04 05-WA-04 [Solid] Sampled 03/08/2010 11:17 Eastern				**3 DAY RUSH TAT!!**
SMS_TCLP_8270C	03/12/2010 14:00	3	03/22/2010 10:17	3 DAY RUSH TAT!!
MET_TCLP_6010B	03/12/2010 14:00	3	04/05/2010 10:17	3 DAY RUSH TAT!!
MET_TCLP_7470A	03/12/2010 14:00	3	04/05/2010 10:17	3 DAY RUSH TAT!!
SGC_TCLP_8081A	03/12/2010 14:00	3	03/22/2010 10:17	3 DAY RUSH TAT!!
WC_PERCENT_SOLIDS_2540B	03/12/2010 14:00	3	03/15/2010 10:17	3 DAY RUSH TAT!!
VOC_TCLP_8260B	03/12/2010 14:00	3	03/22/2010 10:17	3 DAY RUSH TAT!!
TCLP_ZHE	03/12/2010 14:00	3	03/22/2010 10:17	3 DAY RUSH TAT!!
TCLP_STD	03/12/2010 14:00	3	03/22/2010 10:17	3 DAY RUSH TAT!!
SGC_TCLP_8151A	03/12/2010 14:00	3	03/22/2010 10:17	3 DAY RUSH TAT!!

Reviewed By

Date

ANALYSIS DATA SHEET

05-WA-01

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Solid
Sampled: 03/08/10 13:30
% Solids: 75.43

SDG: SMU5Crane_002
Project: SMU5 Crane
Laboratory ID: 1003088-01
Received: 03/10/10 08:30

CAS NO.	Analyte	Conc. (mg/L)	MDL	RL	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury TCLP		0.000800	0.00200	1	U	SW7470A	0C11019	03/11/10 20:26
7440-38-2	Arsenic TCLP		0.0300	0.100	1	U	SW6010B	0C11030	03/11/10 20:28
7440-39-3	Barium TCLP	0.143	0.0500	0.400	1	J	SW6010B	0C11030	03/11/10 20:28
7440-43-9	Cadmium TCLP		0.0100	0.0500	1	U	SW6010B	0C11030	03/11/10 20:28
7440-47-3	Chromium TCLP	0.0715	0.0200	0.100	1	J	SW6010B	0C11030	03/11/10 20:28
7439-92-1	Lead TCLP		0.0150	0.0300	1	U	SW6010B	0C11030	03/11/10 20:28
7782-49-2	Selenium TCLP		0.0300	0.0600	1	U	SW6010B	0C11030	03/11/10 20:28
7440-22-4	Silver TCLP		0.0100	0.100	1	U	SW6010B	0C11030	03/11/10 20:28

ANALYSIS DATA SHEET

05-WA-02

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Solid
Sampled: 03/08/10 11:12
% Solids: 63.04

SDG: SMU5Crane_002
Project: SMU5 Crane
Laboratory ID: 1003088-02
Received: 03/10/10 08:30

CAS NO.	Analyte	Conc. (mg/L)	MDL	RL	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury TCLP		0.000800	0.00200	1	U	SW7470A	0C11019	03/11/10 20:27
7440-38-2	Arsenic TCLP		0.0300	0.100	1	U	SW6010B	0C11030	03/11/10 20:39
7440-39-3	Barium TCLP	1.98	0.0500	0.400	1		SW6010B	0C11030	03/11/10 20:39
7440-43-9	Cadmium TCLP	0.0331	0.0100	0.0500	1	J	SW6010B	0C11030	03/11/10 20:39
7440-47-3	Chromium TCLP	0.0283	0.0200	0.100	1	J	SW6010B	0C11030	03/11/10 20:39
7439-92-1	Lead TCLP	2.88	0.0150	0.0300	1		SW6010B	0C11030	03/11/10 20:39
7782-49-2	Selenium TCLP		0.0300	0.0600	1	U	SW6010B	0C11030	03/11/10 20:39
7440-22-4	Silver TCLP		0.0100	0.100	1	U	SW6010B	0C11030	03/11/10 20:39

ANALYSIS DATA SHEET

05-WA-03

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Solid
Sampled: 03/08/10 11:03
% Solids: 76.61

SDG: SMU5Crane_002
Project: SMU5 Crane
Laboratory ID: 1003088-03
Received: 03/10/10 08:30

CAS NO.	Analyte	Conc. (mg/L)	MDL	RL	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury TCLP		0.000800	0.00200	1	U	SW7470A	0C11019	03/11/10 20:28
7440-38-2	Arsenic TCLP		0.0300	0.100	1	U	SW6010B	0C11030	03/11/10 20:44
7440-39-3	Barium TCLP	0.553	0.0500	0.400	1		SW6010B	0C11030	03/11/10 20:44
7440-43-9	Cadmium TCLP		0.0100	0.0500	1	U	SW6010B	0C11030	03/11/10 20:44
7440-47-3	Chromium TCLP	0.106	0.0200	0.100	1		SW6010B	0C11030	03/11/10 20:44
7439-92-1	Lead TCLP	0.110	0.0150	0.0300	1		SW6010B	0C11030	03/11/10 20:44
7782-49-2	Selenium TCLP		0.0300	0.0600	1	U	SW6010B	0C11030	03/11/10 20:44
7440-22-4	Silver TCLP		0.0100	0.100	1	U	SW6010B	0C11030	03/11/10 20:44

ANALYSIS DATA SHEET

05-WA-04

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Matrix: Solid
Sampled: 03/08/10 11:17
% Solids: 70.28

SDG: SMU5Crane_002
Project: SMU5 Crane
Laboratory ID: 1003088-04
Received: 03/10/10 08:30

CAS NO.	Analyte	Conc. (mg/L)	MDL	RL	D.F.	Q	Method	Batch	Analyzed
7439-97-6	Mercury TCLP		0.000800	0.00200	1	U	SW7470A	0C11019	03/11/10 20:29
7440-38-2	Arsenic TCLP		0.0800	0.200	2	U	SW6010B	0C11030	03/12/10 09:32
7440-39-3	Barium TCLP	0.396	0.0500	0.400	1	J	SW6010B	0C11030	03/11/10 20:49
7440-43-9	Cadmium TCLP	0.0774	0.0100	0.0500	1		SW6010B	0C11030	03/11/10 20:49
7440-47-3	Chromium TCLP	91.0	0.0200	0.100	1		SW6010B	0C11030	03/11/10 20:49
7439-92-1	Lead TCLP	0.0296	0.0150	0.0300	1	J	SW6010B	0C11030	03/11/10 20:49
7782-49-2	Selenium TCLP	0.0400	0.0300	0.0600	1	J	SW6010B	0C11030	03/11/10 20:49
7440-22-4	Silver TCLP		0.0100	0.100	1	U	SW6010B	0C11030	03/11/10 20:49

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP

SDG: SMU5Crane_002
Project: SMU5 Crane
Calibration: 0071007
Sequence: 0C07114

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
)C07114-ICV1	Arsenic	1000	969.6	97.0	ug/L	+/- 10.00%
	Barium	1000	1076	108	ug/L	+/- 10.00%
	Cadmium	1000	1040	104	ug/L	+/- 10.00%
	Chromium	1000	972.2	97.2	ug/L	+/- 10.00%
	Lead	1000	990.0	99.0	ug/L	+/- 10.00%
	Selenium	1000	1010	101	ug/L	+/- 10.00%
	Silver	500.0	490.0	98.0	ug/L	+/- 10.00%
)C07114-CCV1	Arsenic	1000	1046	105	ug/L	+/- 10.00%
	Barium	1000	1067	107	ug/L	+/- 10.00%
	Cadmium	1000	1052	105	ug/L	+/- 10.00%
	Chromium	1000	1010	101	ug/L	+/- 10.00%
	Lead	1000	1026	103	ug/L	+/- 10.00%
	Selenium	1000	1034	103	ug/L	+/- 10.00%
	Silver	500.0	495.5	99.1	ug/L	+/- 10.00%
)C07114-CCV2	Arsenic	1000	1045	105	ug/L	+/- 10.00%
	Barium	1000	1022	102	ug/L	+/- 10.00%
	Cadmium	1000	1066	107	ug/L	+/- 10.00%
	Chromium	1000	946.9	94.7	ug/L	+/- 10.00%
	Lead	1000	988.5	98.8	ug/L	+/- 10.00%
	Selenium	1000	1056	106	ug/L	+/- 10.00%
	Silver	500.0	494.0	98.8	ug/L	+/- 10.00%
C07114-CCV6	Arsenic	1000	1029	103	ug/L	+/- 10.00%
	Barium	1000	994.0	99.4	ug/L	+/- 10.00%
	Cadmium	1000	1053	105	ug/L	+/- 10.00%
	Chromium	1000	942.0	94.2	ug/L	+/- 10.00%
	Lead	1000	960.6	96.1	ug/L	+/- 10.00%
	Selenium	1000	1036	104	ug/L	+/- 10.00%
	Silver	500.0	498.9	99.8	ug/L	+/- 10.00%
C07114-CCV7	Arsenic	1000	1040	104	ug/L	+/- 10.00%
	Barium	1000	976.3	97.6	ug/L	+/- 10.00%
	Cadmium	1000	1066	107	ug/L	+/- 10.00%
	Chromium	1000	904.2	90.4	ug/L	+/- 10.00%
	Lead	1000	944.7	94.5	ug/L	+/- 10.00%
	Selenium	1000	1053	105	ug/L	+/- 10.00%
	Silver	500.0	494.2	98.8	ug/L	+/- 10.00%
C07114-CCV8	Arsenic	1000	1028	103	ug/L	+/- 10.00%
	Barium	1000	986.9	98.7	ug/L	+/- 10.00%
	Cadmium	1000	1056	106	ug/L	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-ICP

SDG: SMU5Crane_002
Project: SMU5 Crane
Calibration: 0071007
Sequence: 0C07114

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
)C07114-CCV8	Chromium	1000	925.3	92.5	ug/L	+/- 10.00%
	Lead	1000	950.6	95.1	ug/L	+/- 10.00%
	Selenium	1000	1039	104	ug/L	+/- 10.00%
	Silver	500.0	498.4	99.7	ug/L	+/- 10.00%
)C07114-CCV9	Arsenic	1000	1042	104	ug/L	+/- 10.00%
	Barium	1000	998.5	99.9	ug/L	+/- 10.00%
	Cadmium	1000	1060	106	ug/L	+/- 10.00%
	Chromium	1000	937.4	93.7	ug/L	+/- 10.00%
	Lead	1000	959.6	96.0	ug/L	+/- 10.00%
	Selenium	1000	1051	105	ug/L	+/- 10.00%
	Silver	500.0	503.5	101	ug/L	+/- 10.00%
)C07114-CCVA	Arsenic	1000	938.8	93.9	ug/L	+/- 10.00%
	Barium	1000	964.9	96.5	ug/L	+/- 10.00%
	Cadmium	1000	1013	101	ug/L	+/- 10.00%
	Chromium	**1000**	**850.4**	**85.0**	**ug/L**	+/- 10.00%
	Lead	1000	903.1	90.3	ug/L	+/- 10.00%
	Selenium	1000	997.8	99.8	ug/L	+/- 10.00%
	Silver	500.0	464.7	92.9	ug/L	+/- 10.00%
C07114-CCVB	**Arsenic**	**1000**	**883.6**	**88.4**	**ug/L**	+/- 10.00%
	Barium	1000	914.4	91.4	ug/L	+/- 10.00%
	Cadmium	1000	958.1	95.8	ug/L	+/- 10.00%
	Chromium	**1000**	**801.1**	**80.1**	**ug/L**	+/- 10.00%
	Lead	**1000**	**854.6**	**85.5**	**ug/L**	+/- 10.00%
	Selenium	1000	935.3	93.5	ug/L	+/- 10.00%
	Silver	**500.0**	**439.4**	**87.9**	**ug/L**	+/- 10.00%

INITIAL AND CONTINUING CALIBRATION CHECK

SW7470A

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Instrument ID: ME-FIMS

SDG: SMU5Crane_002
Project: SMU5 Crane
Calibration: 0071002
Sequence: 0C07107

Lab Sample ID	Analyte	True	Found	%R	Units	Control Limit
)C07107-ICV1	Mercury	4.000	4.232	106	ug/L	+/- 15.00%
)C07107-CCV1	Mercury	4.000	4.008	100	ug/L	+/- 15.00%
)C07107-CCV2	Mercury	4.000	3.980	99.5	ug/L	+/- 15.00%
)C07107-CCV3	Mercury	2.000	2.096	105	ug/L	+/- 15.00%
)C07107-CCV4	Mercury	2.000	2.101	105	ug/L	+/- 15.00%

CRDL STANDARD

SW6010B

Laboratory: Empirical Laboratories, LLC
SDG: SMU5Crane_002
Client: Tetra Tech NUS, Inc. (T010)
Project: SMU5 Crane
Instrument ID: ME-ICP
Calibration: 0071007
Sequence: 0C07114

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
)C07114-CRL1	Barium	10.00	10.80	108	ug/L	80 - 120
	Cadmium	2.000	2.239	112	ug/L	80 - 120
	Chromium	4.000	3.967	99.2	ug/L	80 - 120
	Lead	3.000	2.752	91.7	ug/L	80 - 120
	Silver	2.000	1.928	96.4	ug/L	80 - 120
)C07114-CRL2	Arsenic	5.000	4.269	85.4	ug/L	80 - 120
	Selenium	5.000	5.587	112	ug/L	80 - 120
)C07114-CRL4	Barium	10.00	10.88	109	ug/L	~~80 - 120~~
	Cadmium	2.000	2.149	107	ug/L	80 - 120
	Chromium	4.000	4.046	101	ug/L	80 - 120
	Lead	3.000	2.837	94.6	ug/L	80 - 120
	Selenium	6.000	6.651	111	ug/L	80 - 120
	Silver	2.000	1.791	89.6	ug/L	80 - 120
C07114-CRL5	Arsenic	5.000	5.667	113	ug/L	80 - 120
C07114-CRL7	Barium	10.00	10.34	103	ug/L	80 - 120
	Cadmium	2.000	1.686	84.3	ug/L	80 - 120
	Chromium	4.000	3.507	87.7	ug/L	80 - 120
	Lead	3.000	3.439	115	ug/L	80 - 120
	Silver	2.000	1.978	98.9	ug/L	80 - 120
C07114-CRL9	Arsenic	5.000	4.292	85.8	ug/L	80 - 120
	Selenium	5.000	5.959	119	ug/L	~~80 - 120~~

BLD 3/30/ 70-13

CRDL STANDARD

SW7470A

Laboratory: Empirical Laboratories, LLC

SDG: SMU5Crane_002

Client: Tetra Tech NUS, Inc. (T010)

Project: SMU5 Crane

Instrument ID: ME-FIMS

Calibration: 0071002

Sequence: 0C07107

Lab Sample ID	Analyte	True	Found	%R	Units	QC Limts
0C07107-CRL1	Mercury	0.2000	0.1463	73.2	ug/L	70 - 130
0C07107-CRL2	Mercury	0.2000	0.1503	75.1	ug/L	70 - 130
0C07107-CRL3	Mercury	0.2000	0.1549	77.5	ug/L	70 - 130

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
SDG: SMU5Crane_002
Instrument ID: ME-ICP
Project: SMU5 Crane
Sequence: 0C07114
Calibration: 0071007

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
0C07114-ICB1	Arsenic	0.3328	3.00	10.0	ug/L	U	SW6010B
	Barium	0.1756	5.00	40.0	ug/L	U	SW6010B
	Cadmium	0.3518	1.00	5.00	ug/L	U	SW6010B
	Chromium	0.08797	2.00	10.0	ug/L	U	SW6010B
	Lead	-0.01831	1.50	3.00	ug/L	U	SW6010B
	Selenium	0.04523	3.00	6.00	ug/L	U	SW6010B
	Silver	-0.05788	1.00	10.0	ug/L	U	SW6010B
0C07114-CCB1	Arsenic	0.144	3.00	10.0	ug/L	U	SW6010B
	Barium	0.309	5.00	40.0	ug/L	U	SW6010B
	Cadmium	0.818	1.00	5.00	ug/L	U	SW6010B
	Chromium	0.472	2.00	10.0	ug/L	U	SW6010B
	Lead	0.370	1.50	3.00	ug/L	U	SW6010B
	Selenium	0.506	3.00	6.00	ug/L	U	SW6010B
	Silver	0.0506	1.00	10.0	ug/L	U	SW6010B
0C07114-CCB2	Arsenic	0.296	3.00	10.0	ug/L	U	SW6010B
	Barium	0.232	5.00	40.0	ug/L	U	SW6010B
	Cadmium	0.318	1.00	5.00	ug/L	U	SW6010B
	Chromium	0.0872	2.00	10.0	ug/L	U	SW6010B
	Lead	0.550	1.50	3.00	ug/L	U	SW6010B
	Selenium	0.879	3.00	6.00	ug/L	U	SW6010B
	Silver	-0.152	1.00	10.0	ug/L	U	SW6010B
0C07114-CCB6	Arsenic	-0.0160	3.00	10.0	ug/L	U	SW6010B
	Barium	0.255	5.00	40.0	ug/L	U	SW6010B
	Cadmium	-0.183	1.00	5.00	ug/L	U	SW6010B
	Chromium	0.145	2.00	10.0	ug/L	U	SW6010B
	Lead	1.12	1.50	3.00	ug/L	U	SW6010B
	Selenium	0.717	3.00	6.00	ug/L	U	SW6010B
	Silver	-0.170	1.00	10.0	ug/L	U	SW6010B
0C11030-BLK1	Arsenic	-0.000517	0.00300	0.0100	mg/L	U	SW6010B
	Barium	0.0000227	0.00500	0.0400	mg/L	U	SW6010B
	Cadmium	-0.0000713	0.00100	0.00500	mg/L	U	SW6010B
	Chromium	0.000600	0.00200	0.0100	mg/L	U	SW6010B
	Lead	0.000651	0.00150	0.00300	mg/L	U	SW6010B

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
SDG: SMU5Crane_002
Instrument ID: ME-ICP
Project: SMU5 Crane
Sequence: 0C07114
Calibration: 0071007

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
0C11030-BLK1	Selenium	0.00121	0.00300	0.00600	mg/L	U	SW6010B
	Silver	-0.000176	0.00100	0.0100	mg/L	U	SW6010B
0C07114-CCB7	Arsenic	-0.780	3.00	10.0	ug/L	U	SW6010B
	Barium	0.142	5.00	40.0	ug/L	U	SW6010B
	Cadmium	-0.295	1.00	5.00	ug/L	U	SW6010B
	Chromium	-0.0173	2.00	10.0	ug/L	U	SW6010B
	Lead	0.504	1.50	3.00	ug/L	U	SW6010B
	Selenium	1.47	3.00	6.00	ug/L	U	SW6010B
	Silver	0.0142	1.00	10.0	ug/L	U	SW6010B
0C07114-CCB8	Arsenic	-0.113	3.00	10.0	ug/L	U	SW6010B
	Barium	0.246	5.00	40.0	ug/L	U	SW6010B
	Cadmium	-0.311	1.00	5.00	ug/L	U	SW6010B
	Chromium	-0.0580	2.00	10.0	ug/L	U	SW6010B
	Lead	0.613	1.50	3.00	ug/L	U	SW6010B
	Selenium	0.646	3.00	6.00	ug/L	U	SW6010B
	Silver	-0.00595	1.00	10.0	ug/L	U	SW6010B
0C07114-CCB9	Arsenic	0.0467	3.00	10.0	ug/L	U	SW6010B
	Barium	0.185	5.00	40.0	ug/L	U	SW6010B
	Cadmium	-0.258	1.00	5.00	ug/L	U	SW6010B
	Chromium	-0.0602	2.00	10.0	ug/L	U	SW6010B
	Lead	0.160	1.50	3.00	ug/L	U	SW6010B
	Selenium	0.162	3.00	6.00	ug/L	U	SW6010B
	Silver	0.0315	1.00	10.0	ug/L	U	SW6010B
0C07114-CCBA	Arsenic	-0.755	3.00	10.0	ug/L	U	SW6010B
	Barium	-0.0182	5.00	40.0	ug/L	U	SW6010B
	Cadmium	-0.257	1.00	5.00	ug/L	U	SW6010B
	Chromium	-0.192	2.00	10.0	ug/L	U	SW6010B
	Lead	-0.0778	1.50	3.00	ug/L	U	SW6010B
	Selenium	1.43	3.00	6.00	ug/L	U	SW6010B
	Silver	-0.268	1.00	10.0	ug/L	U	SW6010B
0C07114-CCBB	Arsenic	-0.472	3.00	10.0	ug/L	U	SW6010B
	Barium	0.0462	5.00	40.0	ug/L	U	SW6010B
	Cadmium	-0.342	1.00	5.00	ug/L	U	SW6010B

BLANKS
SW6010B

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
SDG: SMU5Crane_002

Instrument ID: ME-ICP
Project: SMU5 Crane

Sequence: 0C07114
Calibration: 0071007

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
0C07114-CCBB	Chromium	-0.115	2.00	10.0	ug/L	U	SW6010B
	Lead	0.147	1.50	3.00	ug/L	U	SW6010B
	Selenium	0.377	3.00	6.00	ug/L	U	SW6010B
	Silver	-0.189	1.00	10.0	ug/L	U	SW6010B

BLANKS
SW7470A

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
SDG: SMU5Crane_002

Instrument ID: ME-FIMS
Project: SMU5 Crane

Sequence: 0C07107
Calibration: 0071002

Lab Sample ID	Analyte	Found	MDL	MRL	Units	C	Method
0C07107-ICB1	Mercury	-0.05078	0.0800	0.200	ug/L	U	SW7470A
0C11019-BLK1	Mercury	-0.0000680	).000080	0.00020(	mg/L	U	SW7470A
0C07107-CCB1	Mercury	-0.0706	0.0800	0.200	ug/L	U	SW7470A
0C07107-CCB2	Mercury	-0.0746	0.0800	0.200	ug/L	U	SW7470A
0C07107-CCB3	Mercury	-0.0534	0.0800	0.200	ug/L	U	SW7470A
0C07107-CCB4	Mercury	-0.0607	0.0800	0.200	ug/L	U	SW7470A

ICP INTERFERENCE CHECK SAMPLE

SW6010B

Laboratory: Empirical Laboratories, LLC
SDG: SMU5Crane_002
Client: Tetra Tech NUS, Inc. (T010)
Project: SMU5 Crane
Instrument ID: ME-ICP
Calibration: 0071007
Sequence: 0C07114

Lab Sample ID	Analyte	True	Found	%R	Units
0C07114-IFA1	Arsenic		-1.12		ug/L
	Barium		1.75		ug/L
	Cadmium		-0.52		ug/L
	Chromium		-1.61		ug/L
	Lead		-3.12		ug/L
	Selenium		2.06		ug/L
	Silver		-0.26		ug/L
0C07114-IFB1	Arsenic	100.0	106.93	107	ug/L
	Barium	500.0	545.91	109	ug/L
	Cadmium	1000	1,132.50	113	ug/L
	Chromium	500.0	434.29	86.9	ug/L
	Lead	50.00	44.78	89.6	ug/L
	Selenium	50.00	56.49	113	ug/L
	Silver	200.0	205.79	103	ug/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW6010B

05-WA-01

Laboratory: Empirical Laboratories, LLC

SDG: SMU5Crane_002

Client: Tetra Tech NUS, Inc. (T010)

Project: SMU5 Crane

Matrix: Water

Batch: 0C11030

% Solids: 75.43

Source Sample Name: **1003088-01**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Arsenic	2.500	ND	2.663	107		80 - 120
Barium	25.00	0.1434	25.55	102		80 - 120
Cadmium	0.5000	ND	0.5536	111		80 - 120
Chromium	2.500	0.07154	2.336	90.6		80 - 120
Lead	2.500	ND	2.369	94.8		80 - 120
Selenium	0.5000	ND	0.5503	110		80 - 120
Silver	2.000	ND	1.987	99.4		80 - 120

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW7470A

05-WA-04

Laboratory: Empirical Laboratories, LLC
SDG: SMU5Crane_002
Client: Tetra Tech NUS, Inc. (T010)
Project: SMU5 Crane
Matrix: Water
Batch: 0C11019
% Solids: 70.28
Source Sample Name: **1003088-04**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Mercury	0.02000	ND	0.01783	89.1		80 - 120

LCS / LCS DUPLICATE RECOVERY

SW6010B

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Matrix:	Water		
Batch:	0C11030	Laboratory ID:	0C11030-BS1
Preparation:	MET_3010A	Initial/Final:	50 mL / 50 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Arsenic	0.2500	0.2398	95.9	80 - 120
Barium	2.000	1.984	99.2	80 - 120
Cadmium	0.1250	0.1248	99.8	80 - 120
Chromium	0.2000	0.1806	90.3	80 - 120
Lead	0.2500	0.2385	95.4	80 - 120
Selenium	0.2500	0.2367	94.7	80 - 120
Silver	0.2500	0.2304	92.2	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW7470A

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Matrix:	Water		
Batch:	0C11019	Laboratory ID:	0C11019-BS1
Preparation:	MET_HG_W_E	Initial/Final:	30 mL / 30 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Mercury	0.002000	0.001970	98.5	80 - 120

ORGANIC CASE NARRATIVE
Tetra Tech NUS, Inc. – SMU5 Crane
SDG: SMU5Crane_002
Workorder: 1003088

Sampled	Rec'd	Lab ID	Client ID
03/08/10	03/10/10	1003088-01	05-WA-01
03/08/10	03/10/10	1003088-02	05-WA-02
03/08/10	03/10/10	1003088-03	05-WA-03
03/08/10	03/10/10	1003088-04	05-WA-04

Volatile TCLP Samples

Method: The samples were analyzed by USEPA SW-846 Methods 1311/5030B/8260B (ZHE leaching followed by 5ml purge and trap followed by capillary column GC/MS) for IDW soils upon receipt to the laboratory in satisfactory condition.

Comments: The analyses for these samples were satisfactorily completed within sample holding times and met the corresponding specifications with the following notes/exceptions:

- BFB Tuning: All method tuning criteria were met.
- Calibration Criteria: All method calibration criteria were met.
- Method Blank Results: No target analytes were detected in the method blank.
- Surrogate Recoveries: All recoveries were within limits.
- LCS/LCSD Results: All recoveries were within limits.
- MS Results: All recoveries were within limits.
- Internal Standard Area Counts: All internal standard responses were within limits.
- Dilutions: All TCLP samples are analyzed from a 10x dilution.
- Manual integrations: Quantitation signals were manually integrated in order to accurately reflect the peak areas based on the technical judgment of the analyst. A listing of the manual integrations performed and reason for the integration is included with the logs. Before and after "pictures" are available where manual integrations were performed.

I certify that, to the best of my knowledge and based upon my inquiry of those individuals immediately responsible for obtaining the information, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in the case narrative, as verified by the following signature.

Jade Holliman
Organic Manager

ANALYTICAL REPORT TERMS AND QUALIFIERS (ORGANIC)

MDL: The method detection limit (MDL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The MDL is determined from analysis of a sample containing the analyte in a given matrix.

EQL: The estimated quantitation limit (EQL) is defined as the estimated concentration above which quantitative results can be obtained with a specific degree of confidence. Empirical Laboratories defines the EQL to be at or near the lowest standard of the calibration curve.

U: The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte quantitated below the MDL.

B: The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the correct sample result might be less than the reported result and, perhaps, zero.

D: When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".

E: The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound.

J: The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The data pass the identification criteria indicating that the compound is present, but the calculated result is less than the EQL.

ANALYSIS DATA SHEET

05-WA-01

Laboratory:	Empirical Laboratories, LLC			SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)			Project:	SMU5 Crane
Matrix:	Solid	Laboratory ID:	1003088-01	File ID:	0308801T.D
Sampled:	03/08/10 13:30	Prepared:	03/11/10 11:00	Analyzed:	03/11/10 15:53
Solids:	75.43	Preparation:	5030B	Dilution:	1
Batch:	0C11002	Sequence:	0C07102	Calibration:	0061001
Instrument:	MS-VOA3				

CAS NO.	COMPOUND	CONC. (mg/L)	TCLP Reg Limit	MRL	Q
71-43-2	Benzene		0.5	0.0100	U
78-93-3	2-Butanone		200	0.100	U
56-23-5	Carbon tetrachloride		0.5	0.0100	U
108-90-7	Chlorobenzene		100	0.0100	U
67-66-3	Chloroform		6	0.0100	U
106-46-7	1,4-Dichlorobenzene		7.5	0.0100	U
107-06-2	1,2-Dichloroethane		0.5	0.0100	U
75-35-4	1,1-Dichloroethene		0.7	0.0100	U
156-59-4	cis-1,2-Dichloroethene		0	0.0100	U
127-18-4	Tetrachloroethene		0.7	0.0100	U
79-01-6	Trichloroethene		0.5	0.0100	U
75-01-4	Vinyl chloride		0.2	0.0200	U

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	0.03000	0.02968	98.9	85 - 120	
Dibromofluoromethane	0.03000	0.03259	109	85 - 120	
1,2-Dichloroethane-d4	0.03000	0.03095	103	80 - 135	
Toluene-d8	0.03000	0.03058	102	85 - 115	

ANALYSIS DATA SHEET

05-WA-02

Laboratory:	Empirical Laboratories, LLC			SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)			Project:	SMU5 Crane
Matrix:	Solid	Laboratory ID:	1003088-02	File ID:	0308802T.D
Sampled:	03/08/10 11:12	Prepared:	03/11/10 11:00	Analyzed:	03/11/10 16:23
Solids:	63.04	Preparation:	5030B	Dilution:	1
Batch:	0C11002	Sequence:	0C07102	Calibration:	0061001
Instrument:	MS-VOA3				

CAS NO.	COMPOUND	CONC. (mg/L)	TCLP Reg Limit	MRL	Q
71-43-2	Benzene		0.5	0.0100	U
78-93-3	2-Butanone		200	0.100	U
56-23-5	Carbon tetrachloride		0.5	0.0100	U
108-90-7	Chlorobenzene		100	0.0100	U
67-66-3	Chloroform		6	0.0100	U
106-46-7	1,4-Dichlorobenzene		7.5	0.0100	U
107-06-2	1,2-Dichloroethane		0.5	0.0100	U
75-35-4	1,1-Dichloroethene		0.7	0.0100	U
156-59-4	cis-1,2-Dichloroethene	0.0234	0	0.0100	
127-18-4	Tetrachloroethene		0.7	0.0100	U
79-01-6	Trichloroethene	0.185	0.5	0.0100	
75-01-4	Vinyl chloride		0.2	0.0200	U

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	0.03000	0.02921	97.4	85 - 120	
Dibromofluoromethane	0.03000	0.03252	108	85 - 120	
1,2-Dichloroethane-d4	0.03000	0.03207	107	80 - 135	
Toluene-d8	0.03000	0.03057	102	85 - 115	

ANALYSIS DATA SHEET

05-WA-03

Laboratory: Empirical Laboratories, LLC SDG: SMU5Crane_002

Client: Tetra Tech NUS, Inc. (T010) Project: SMU5 Crane

Matrix: Solid Laboratory ID: 1003088-03 File ID: 0308803T.D

Sampled: 03/08/10 11:03 Prepared: 03/11/10 11:00 Analyzed: 03/11/10 16:53

Solids: 76.61 Preparation: 5030B Dilution: 1

Batch: 0C11002 Sequence: 0C07102 Calibration: 0061001 Instrument: MS-VOA3

CAS NO.	COMPOUND	CONC. (mg/L)	TCLP Reg Limit	MRL	Q
71-43-2	Benzene		0.5	0.0100	U
78-93-3	2-Butanone	0.0445	200	0.100	J
56-23-5	Carbon tetrachloride		0.5	0.0100	U
108-90-7	Chlorobenzene		100	0.0100	U
67-66-3	Chloroform		6	0.0100	U
106-46-7	1,4-Dichlorobenzene		7.5	0.0100	U
107-06-2	1,2-Dichloroethane		0.5	0.0100	U
75-35-4	1,1-Dichloroethene		0.7	0.0100	U
156-59-4	cis-1,2-Dichloroethene		0	0.0100	U
127-18-4	Tetrachloroethene		0.7	0.0100	U
79-01-6	Trichloroethene		0.5	0.0100	U
75-01-4	Vinyl chloride		0.2	0.0200	U

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	0.03000	0.02937	97.9	85 - 120	
Dibromofluoromethane	0.03000	0.03233	108	85 - 120	
1,2-Dichloroethane-d4	0.03000	0.03189	106	80 - 135	
Toluene-d8	0.03000	0.03044	101	85 - 115	

ANALYSIS DATA SHEET

05-WA-04

Laboratory:	Empirical Laboratories, LLC			SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)			Project:	SMU5 Crane
Matrix:	Solid	Laboratory ID:	1003088-04	File ID:	0308804T.D
Sampled:	03/08/10 11:17	Prepared:	03/11/10 11:00	Analyzed:	03/11/10 17:22
Solids:	70.28	Preparation:	5030B	Dilution:	1
Batch:	0C11002	Sequence:	0C07102	Calibration:	0061001
Instrument:	MS-VOA3				

CAS NO.	COMPOUND	CONC. (mg/L)	TCLP Reg Limit	MRL	Q
71-43-2	Benzene		0.5	0.0100	U
78-93-3	2-Butanone		200	0.100	U
56-23-5	Carbon tetrachloride		0.5	0.0100	U
108-90-7	Chlorobenzene		100	0.0100	U
67-66-3	Chloroform		6	0.0100	U
106-46-7	1,4-Dichlorobenzene		7.5	0.0100	U
107-06-2	1,2-Dichloroethane		0.5	0.0100	U
75-35-4	1,1-Dichloroethene		0.7	0.0100	U
156-59-4	cis-1,2-Dichloroethene,		0	0.0100	U
127-18-4	Tetrachloroethene		0.7	0.0100	U
79-01-6	Trichloroethene		0.5	0.0100	U
75-01-4	Vinyl chloride		0.2	0.0200	U

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	0.03000	0.02928	97.6	85 - 120	
Dibromofluoromethane	0.03000	0.03356	112	85 - 120	
1,2-Dichloroethane-d4	0.03000	0.03138	105	80 - 135	
Toluene-d8	0.03000	0.03045	101	85 - 115	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

SW8260

Laboratory: Empirical Laboratories, LLC
SDG: SMU5Crane_002
Client: Tetra Tech NUS, Inc. (T010)
Project: SMU5 Crane
Sequence: 0C06104
Instrument: MS-VOA3
Calibration: 0061001

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
Initial Cal Check (0C06104-ICV1) ug/L				Lab File ID: SEQ-ICV1.D		Analyzed: 03/01/10 20:05		
Bromofluorobenzene	30.00	99.9	80 - 120	17.249	17.243	0.0060	+/-1.000	
Dibromofluoromethane	30.00	99.3	80 - 120	10.527	10.521	0.0060	+/-1.000	
1,2-Dichloroethane-d4	30.00	97.7	80 - 120	11.434	11.44	-0.0060	+/-1.000	
Toluene-d8	30.00	97.8	80 - 120	14.919	14.919	0.0000	+/-1.000	
Initial Cal Check (0C06104-ICV2) ug/L				Lab File ID: SEQ-ICV2.D		Analyzed: 03/01/10 21:04		
Bromofluorobenzene	30.00	96.5	80 - 120	17.249	17.249	0.0000	+/-1.000	
Dibromofluoromethane	30.00	99.7	80 - 120	10.527	10.527	0.0000	+/-1.000	
1,2-Dichloroethane-d4	30.00	106	80 - 120	11.44	11.434	0.0060	+/-1.000	
Toluene-d8	30.00	98.1	80 - 120	14.919	14.919	0.0000	+/-1.000	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

SW8260

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Sequence: 0C07102

SDG: SMU5Crane_002
Project: SMU5 Crane
Instrument: MS-VOA3
Calibration: 0061001

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
Calibration Check (0C07102-CCV1) ug/L				Lab File ID: SEQ-CCV1.D		Analyzed: 03/11/10 08:18		
Bromofluorobenzene	30.00	96.5	80 - 120	17.256		17.2560	+/-1.000	*
Dibromofluoromethane	30.00	105	80 - 120	10.558		10.5580	+/-1.000	*
1,2-Dichloroethane-d4	30.00	100	80 - 120	11.458		11.4580	+/-1.000	*
Toluene-d8	30.00	94.3	80 - 120	14.932		14.9320	+/-1.000	*
LCS (0C11002-BS1) mg/L				Lab File ID: V3LCS01.D		Analyzed: 03/11/10 09:00		
Bromofluorobenzene	0.03000	97.5	85 - 120	17.261	17.256	0.0050	+/-1.000	
Dibromofluoromethane	0.03000	99.7	85 - 120	10.557	10.558	-0.0010	+/-1.000	
1,2-Dichloroethane-d4	0.03000	100	80 - 135	11.464	11.458	0.0060	+/-1.000	
Toluene-d8	0.03000	101	85 - 115	14.938	14.932	0.0060	+/-1.000	
Blank (0C11002-BLK1) mg/L				Lab File ID: V3BLK01.D		Analyzed: 03/11/10 10:26		
Bromofluorobenzene	0.03000	99.7	85 - 120	17.261	17.256	0.0050	+/-1.000	
Dibromofluoromethane	0.03000	107	85 - 120	10.557	10.558	-0.0010	+/-1.000	
1,2-Dichloroethane-d4	0.03000	103	80 - 135	11.458	11.458	0.0000	+/-1.000	
Toluene-d8	0.03000	103	85 - 115	14.931	14.932	-0.0010	+/-1.000	
05-WA-01 (1003088-01) mg/L				Lab File ID: 0308801T.D		Analyzed: 03/11/10 15:53		
Bromofluorobenzene	0.03000	98.9	85 - 120	17.262	17.256	0.0060	+/-1.000	
Dibromofluoromethane	0.03000	109	85 - 120	10.57	10.558	0.0120	+/-1.000	
1,2-Dichloroethane-d4	0.03000	103	80 - 135	11.464	11.458	0.0060	+/-1.000	
Toluene-d8	0.03000	102	85 - 115	14.938	14.932	0.0060	+/-1.000	
05-WA-02 (1003088-02) mg/L				Lab File ID: 0308802T.D		Analyzed: 03/11/10 16:23		
Bromofluorobenzene	0.03000	97.4	85 - 120	17.268	17.256	0.0120	+/-1.000	
Dibromofluoromethane	0.03000	108	85 - 120	10.57	10.558	0.0120	+/-1.000	
1,2-Dichloroethane-d4	0.03000	107	80 - 135	11.464	11.458	0.0060	+/-1.000	
Toluene-d8	0.03000	102	85 - 115	14.938	14.932	0.0060	+/-1.000	
05-WA-03 (1003088-03) mg/L				Lab File ID: 0308803T.D		Analyzed: 03/11/10 16:53		
Bromofluorobenzene	0.03000	97.9	85 - 120	17.268	17.256	0.0120	+/-1.000	
Dibromofluoromethane	0.03000	108	85 - 120	10.576	10.558	0.0180	+/-1.000	
1,2-Dichloroethane-d4	0.03000	106	80 - 135	11.47	11.458	0.0120	+/-1.000	
Toluene-d8	0.03000	101	85 - 115	14.938	14.932	0.0060	+/-1.000	
05-WA-04 (1003088-04) mg/L				Lab File ID: 0308804T.D		Analyzed: 03/11/10 17:22		
Bromofluorobenzene	0.03000	97.6	85 - 120	17.262	17.256	0.0060	+/-1.000	
Dibromofluoromethane	0.03000	112	85 - 120	10.564	10.558	0.0060	+/-1.000	
1,2-Dichloroethane-d4	0.03000	105	80 - 135	11.47	11.458	0.0120	+/-1.000	
Toluene-d8	0.03000	101	85 - 115	14.938	14.932	0.0060	+/-1.000	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

SW8260

Laboratory: Empirical Laboratories, LLC
Client: Tetra Tech NUS, Inc. (T010)
Sequence: 0C07102

SDG: SMU5Crane_002
Project: SMU5 Crane
Instrument: MS-VOA3
Calibration: 0061001

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
Matrix Spike (0C11002-MS1) mg/L				Lab File ID: 0308801TM.D		Analyzed: 03/11/10 18:22		
Bromofluorobenzene	0.03000	100	85 - 120	17.261	17.256	0.0050	+/-1.000	
Dibromofluoromethane	0.03000	105	85 - 120	10.57	10.558	0.0120	+/-1.000	
1,2-Dichloroethane-d4	0.03000	98.3	80 - 135	11.464	11.458	0.0060	+/-1.000	
Toluene-d8	0.03000	98.9	85 - 115	14.938	14.932	0.0060	+/-1.000	
LCS Dup (0C11002-BSD1) mg/L				Lab File ID: V3LCSD01.D		Analyzed: 03/11/10 18:52		
Bromofluorobenzene	0.03000	98.4	85 - 120	17.262	17.256	0.0060	+/-1.000	
Dibromofluoromethane	0.03000	102	85 - 120	10.57	10.558	0.0120	+/-1.000	
1,2-Dichloroethane-d4	0.03000	97.2	80 - 135	11.464	11.458	0.0060	+/-1.000	
Toluene-d8	0.03000	101	85 - 115	14.938	14.932	0.0060	+/-1.000	

LCS / LCS DUPLICATE RECOVERY

SW8260

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Matrix:	Water		
Batch:	0C11002	Laboratory ID:	0C11002-BS1
Preparation:	5030B	Initial/Final:	5 mL / 5 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
Benzene	0.05000	0.0478	95.5	80 - 120
2-Butanone	0.1000	0.0862	86.2	30 - 150
Carbon tetrachloride	0.05000	0.0488	97.5	65 - 140
Chlorobenzene	0.05000	0.0475	95.0	80 - 120
Chloroform	0.05000	0.0497	99.4	65 - 135
1,4-Dichlorobenzene	0.05000	0.0471	94.1	75 - 125
1,2-Dichloroethane	0.05000	0.0462	92.4	70 - 130
1,1-Dichloroethene	0.05000	0.0488	97.6	70 - 130
cis-1,2-Dichloroethene	0.05000	0.0473	94.6	70 - 125
Tetrachloroethene	0.05000	0.0496	99.2	45 - 150
Trichloroethene	0.05000	0.0476	95.2	70 - 125
Vinyl chloride	0.05000	0.0528	106	50 - 145

ANALYTE	SPIKE ADDED (mg/L)	LCSD CONCENTRATION (mg/L)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Benzene	0.05000	0.0486	97.3	1.78	30	80 - 120
2-Butanone	0.1000	0.0896	89.6	3.96	30	30 - 150
Carbon tetrachloride	0.05000	0.0517	103	5.78	30	65 - 140
Chlorobenzene	0.05000	0.0470	94.0	1.12	30	80 - 120
Chloroform	0.05000	0.0512	102	3.03	30	65 - 135
1,4-Dichlorobenzene	0.05000	0.0453	90.6	3.75	30	75 - 125
1,2-Dichloroethane	0.05000	0.0499	99.8	7.71	30	70 - 130
1,1-Dichloroethene	0.05000	0.0492	98.4	0.784	30	70 - 130
cis-1,2-Dichloroethene	0.05000	0.0479	95.9	1.29	30	70 - 125
Tetrachloroethene	0.05000	0.0494	98.8	0.410	30	45 - 150
Trichloroethene	0.05000	0.0482	96.4	1.24	30	70 - 125
Vinyl chloride	0.05000	0.0561	112	6.18	30	50 - 145

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW8260

05-WA-01

Laboratory: Empirical Laboratories, LLC

SDG: SMU5Crane_002

Client: Tetra Tech NUS, Inc. (T010)

Project: SMU5 Crane

Matrix: Water

Batch: 0C11002

% Solids: 75.43

Source Sample Name: **1003088-01**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
Benzene	0.5000	ND	0.495	99.0		80 - 120
2-Butanone	1.000	ND	0.909	90.9		30 - 150
Carbon tetrachloride	0.5000	ND	0.546	109		65 - 140
Chlorobenzene	0.5000	ND	0.475	95.0		80 - 120
Chloroform	0.5000	ND	0.530	106		65 - 135
1,4-Dichlorobenzene	0.5000	ND	0.453	90.6		75 - 125
1,2-Dichloroethane	0.5000	ND	0.519	104		70 - 130
1,1-Dichloroethene	0.5000	ND	0.498	99.7		70 - 130
cis-1,2-Dichloroethene	0.5000	ND	0.497	99.4		70 - 125
Tetrachloroethene	0.5000	ND	0.501	100		45 - 150
Trichloroethene	0.5000	ND	0.502	100		70 - 125
Vinyl chloride	0.5000	ND	0.578	116		50 - 145

PREPARATION BATCH SUMMARY

SW8260

Laboratory: Empirical Laboratories, LLC SDG: SMU5Crane_002

Client: Tetra Tech NUS, Inc. (T010) Project: SMU5 Crane

Batch: 0C11002 Batch Matrix: Water Preparation: 5030B

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
Blank	0C11002-BLK1	03/11/10 07:05	5.00	5.00
LCS	0C11002-BS1	03/11/10 07:05	5.00	5.00
LCS Dup	0C11002-BSD1	03/11/10 07:05	5.00	5.00
05-WA-01	0C11002-MS1	03/11/10 11:00	5.00	5.00
05-WA-01	1003088-01	03/11/10 11:00	5.00	5.00
05-WA-02	1003088-02	03/11/10 11:00	5.00	5.00
05-WA-03	1003088-03	03/11/10 11:00	5.00	5.00
05-WA-04	1003088-04	03/11/10 11:00	5.00	5.00

METHOD BLANK DATA SHEET
SW8260

Laboratory:	Empirical Laboratories, LLC			SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)			Project:	SMU5 Crane
Matrix:	Water	Laboratory ID:	0C11002-BLK1	File ID:	V3BLK01.D
Prepared:	03/11/10 07:05	Preparation:	5030B	Initial/Final:	5 mL / 5 mL
Analyzed:	03/11/10 10:26	Instrument:	MS-VOA3		
Batch:	0C11002	Sequence:	0C07102	Calibration:	0061001

CAS NO.	COMPOUND	CONC. (mg/L)	Q
71-43-2	Benzene	0.00100	U
78-93-3	2-Butanone	0.0100	U
56-23-5	Carbon tetrachloride	0.00100	U
108-90-7	Chlorobenzene	0.00100	U
67-66-3	Chloroform	0.00100	U
106-46-7	1,4-Dichlorobenzene	0.00100	U
107-06-2	1,2-Dichloroethane	0.00100	U
75-35-4	1,1-Dichloroethene	0.00100	U
156-59-4	cis-1,2-Dichloroethene	0.00100	U
127-18-4	Tetrachloroethene	0.00100	U
79-01-6	Trichloroethene	0.00100	U
75-01-4	Vinyl chloride	0.00200	U

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
Bromofluorobenzene	0.03000	0.02991	99.7	85 - 120	
Dibromofluoromethane	0.03000	0.03197	107	85 - 120	
1,2-Dichloroethane-d4	0.03000	0.03088	103	80 - 135	
Toluene-d8	0.03000	0.03105	103	85 - 115	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
Fluorobenzene	1061107	12.735	1099743	12.736	
Chlorobenzene-d5	498653	16.288	574833	16.282	
1,4-Dichlorobenzene-d4	684058	18.284	748406	18.284	

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

SW8260

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Lab File ID:	SEQ-TUN2.D	Injection Date:	03/01/10
Instrument ID:	MS-VOA3	Injection Time:	16:37
Sequence:	0C06104	Lab Sample ID:	0C06104-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15 - 40% of 95	15.5	PASS
75	30 - 60% of 95	49.1	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	7.34	PASS
173	Less than 2% of 174	0.369	PASS
174	50 - 200% of 95	94.3	PASS
175	5 - 9% of 174	7.01	PASS
176	95 - 101% of 174	95.4	PASS
177	5 - 9% of 176	7.58	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

SW8260

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Lab File ID:	SEQ-TUN1.D	Injection Date:	03/11/10
Instrument ID:	MS-VOA3	Injection Time:	07:49
Sequence:	0C07102	Lab Sample ID:	0C07102-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15 - 40% of 95	17.9	PASS
75	30 - 60% of 95	51	PASS
95	Base peak, 100% relative abundance	100	PASS
96	5 - 9% of 95	7.13	PASS
173	Less than 2% of 174	0	PASS
174	50 - 200% of 95	99.8	PASS
175	5 - 9% of 174	7.26	PASS
176	95 - 101% of 174	96.5	PASS
177	5 - 9% of 176	7.48	PASS

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA29287

Lab File ID: SEQ-TUN2 BFB Injection Date: 03/01/10

Instrument ID: VOA3 BFB Injection Time: 1637

GC Column: RTX-VRX ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	15.5
75	30.0 - 60.0% of mass 95	49.1
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.3
173	Less than 2.0% of mass 174	0.3 (0.4)1
174	Greater than 50.0% of mass 95	94.3
175	5.0 - 9.0% of mass 174	6.6 (7.0)1
176	95.0 - 101.0% of mass 174	90.0 (95.4)1
177	5.0 - 9.0% of mass 176	6.8 (7.6)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	V3STD0.50PPB	SEQ-CAL2	SEQ-CAL2	03/01/10	1706
02	V3STD1.0PPB	SEQ-CAL3	SEQ-CAL3	03/01/10	1736
03	V3STD2.0PPB	SEQ-CAL4	SEQ-CAL4	03/01/10	1806
04	V3STD10PPB	SEQ-CAL5	SEQ-CAL5	03/01/10	1836
05	V3STD20PPB	SEQ-CAL6	SEQ-CAL6	03/01/10	1905
06	V3STD50PPB	SEQ-CAL7	SEQ-CAL7	03/01/10	1935
07	V3STD100PPB	SEQ-CAL8	SEQ-CAL8	03/01/10	2034
08	V3ICV100PPB	SEQ-ICV2	SEQ-ICV2	03/01/10	2104
09	V3STD200PPB	SEQ-CAL9	SEQ-CAL9	03/01/10	2134
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

INTERNAL STANDARD AREA AND RT SUMMARY
SW8260

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Sequence:	0C06104	Instrument:	MS-VOA3
		Calibration:	0061001

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Initial Cal Check (0C06104-ICV1)			Lab File ID: SEQ-ICV1.D			Analyzed: 03/01/10 20:05			
Fluorobenzene	1413825	12.717	1278237	12.717	111	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	695805	16.27	595902	16.27	117	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	921491	18.271	849603	18.271	108	50 - 200	0.0000	+/-0.50	
Initial Cal Check (0C06104-ICV2)			Lab File ID: SEQ-ICV2.D			Analyzed: 03/01/10 21:04			
Fluorobenzene	1489897	12.717	1413825	12.717	105	50 - 200	0.0000	+/-0.50	
Chlorobenzene-d5	749796	16.27	695805	16.27	108	50 - 200	0.0000	+/-0.50	
1,4-Dichlorobenzene-d4	963008	18.271	921491	18.271	105	50 - 200	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
SW8260

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Sequence:	0C07102	Instrument:	MS-VOA3
		Calibration:	0061001

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (0C07102-CCV1)			Lab File ID: SEQ-CCV1.D			Analyzed: 03/11/10 08:18			
Fluorobenzene	1099743	12.736	1278237	12.717	86	50 - 200	0.0190	+/-0.50	
Chlorobenzene-d5	574833	16.282	595902	16.27	96	50 - 200	0.0120	+/-0.50	
1,4-Dichlorobenzene-d4	748406	18.284	849603	18.271	88	50 - 200	0.0130	+/-0.50	
LCS (0C11002-BS1)			Lab File ID: V3LCS01.D			Analyzed: 03/11/10 09:00			
Fluorobenzene	1218426	12.735	1099743	12.736	111	50 - 200	-0.0010	+/-0.50	
Chlorobenzene-d5	585807	16.288	574833	16.282	102	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	788008	18.284	748406	18.284	105	50 - 200	0.0000	+/-0.50	
Blank (0C11002-BLK1)			Lab File ID: V3BLK01.D			Analyzed: 03/11/10 10:26			
Fluorobenzene	1061107	12.735	1099743	12.736	96	50 - 200	-0.0010	+/-0.50	
Chlorobenzene-d5	498653	16.288	574833	16.282	87	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	684058	18.284	748406	18.284	91	50 - 200	0.0000	+/-0.50	
05-WA-01 (1003088-01)			Lab File ID: 0308801T.D			Analyzed: 03/11/10 15:53			
Fluorobenzene	966279	12.741	1099743	12.736	88	50 - 200	0.0050	+/-0.50	
Chlorobenzene-d5	462116	16.288	574833	16.282	80	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	629353	18.29	748406	18.284	84	50 - 200	0.0060	+/-0.50	
05-WA-02 (1003088-02)			Lab File ID: 0308802T.D			Analyzed: 03/11/10 16:23			
Fluorobenzene	961128	12.741	1099743	12.736	87	50 - 200	0.0050	+/-0.50	
Chlorobenzene-d5	461507	16.288	574833	16.282	80	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	623651	18.29	748406	18.284	83	50 - 200	0.0060	+/-0.50	
05-WA-03 (1003088-03)			Lab File ID: 0308803T.D			Analyzed: 03/11/10 16:53			
Fluorobenzene	950039	12.741	1099743	12.736	86	50 - 200	0.0050	+/-0.50	
Chlorobenzene-d5	459502	16.288	574833	16.282	80	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	631012	18.29	748406	18.284	84	50 - 200	0.0060	+/-0.50	
05-WA-04 (1003088-04)			Lab File ID: 0308804T.D			Analyzed: 03/11/10 17:22			
Fluorobenzene	934916	12.742	1099743	12.736	85	50 - 200	0.0060	+/-0.50	
Chlorobenzene-d5	460096	16.288	574833	16.282	80	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	622315	18.29	748406	18.284	83	50 - 200	0.0060	+/-0.50	
Matrix Spike (0C11002-MS1)			Lab File ID: 0308801TM.D			Analyzed: 03/11/10 18:22			
Fluorobenzene	1041154	12.741	1099743	12.736	95	50 - 200	0.0050	+/-0.50	
Chlorobenzene-d5	518693	16.288	574833	16.282	90	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	730381	18.29	748406	18.284	98	50 - 200	0.0060	+/-0.50	
LCS Dup (0C11002-BSD1)			Lab File ID: V3LCSD01.D			Analyzed: 03/11/10 18:52			
Fluorobenzene	1097684	12.741	1099743	12.736	100	50 - 200	0.0050	+/-0.50	
Chlorobenzene-d5	546111	16.288	574833	16.282	95	50 - 200	0.0060	+/-0.50	
1,4-Dichlorobenzene-d4	741598	18.29	748406	18.284	99	50 - 200	0.0060	+/-0.50	

INITIAL CALIBRATION DATA

SW8260

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Calibration:	0061001	Instrument:	MS-VOA3
Matrix:	Water	Calibration Date:	3/1/2010 10:36:47AM

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Benzene	0.5	0.7892658	1	0.799688	2	0.7787355	10	0.8179727	20	0.8403572	50	0.7903966
Bromofluorobenzene	30	1.005579	30	1.014768	30	0.9940513	30	1.039137	30	0.9947044	30	0.9923372
2-Butanone	1	0	2	0	4	2.517667E-02	20	5.376233E-02	40	5.897592E-02	100	5.765737E-02
Carbon tetrachloride	0.5	0.3788364	1	0.3540257	2	0.3621112	10	0.3807134	20	0.3882306	50	0.3772559
Chlorobenzene	0.5	1.754799	1	1.626372	2	1.690516	10	1.796072	20	1.70553	50	1.569996
Chloroform	0.5	0.5861604	1	0.5003782	2	0.4366254	10	0.4326991	20	0.4369041	50	0.4092733
1,4-Dichlorobenzene	0.5	1.321637	1	1.289424	2	1.243553	10	1.28014	20	1.294032	50	1.167438
1,2-Dichloroethane	0.5	0.3425558	1	0.3360405	2	0.3265954	10	0.3437625	20	0.3406606	50	0.3193294
1,1-Dichloroethene	0.5	0.1946681	1	0.1827743	2	0.1844717	10	0.173489	20	0.1840574	50	0.1801611
cis-1,2-Dichloroethene	0.5	0.257995	1	0.2261098	2	0.2207373	10	0.2334098	20	0.2378842	50	0.2325885
Tetrachloroethene	0.5	0.776245	1	0.8058837	2	0.7597067	10	0.8042329	20	0.7730221	50	0.7465351
Trichloroethene	0.5	0.2582762	1	0.2563544	2	0.2478366	10	0.2623222	20	0.2612485	50	0.2475473
Vinyl chloride	0.5	0.1657936	1	0.1496549	2	0.1524386	10	0.1624511	20	0.1619578	50	0.1549377
Dibromofluoromethane	30	0.2785578	30	0.2857635	30	0.2845399	30	0.2767836	30	0.2806477	30	0.2807334
1,2-Dichloroethane-d4	30	5.525986E-02	30	5.546505E-02	30	5.642541E-02	30	5.344627E-02	30	5.561889E-02	30	5.356853E-02
Toluene-d8	30	2.206416	30	2.182525	30	2.160066	30	2.202409	30	2.116276	30	2.129779

INITIAL CALIBRATION DATA (Continued)

SW8260

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Calibration:	0061001	Instrument:	MS-VOA3
Matrix:	Water	Calibration Date:	3/1/2010 10:36:47AM

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Benzene	100	0.774402	200	0.6978833								
Bromofluorobenzene	30	0.9394368	30	0.9181363								
2-Butanone	200	5.534885E-02	400	5.829939E-02								
Carbon tetrachloride	100	0.3548244	200	0.3342218								
Chlorobenzene	100	1.417537	200	1.195825								
Chloroform	100	0.3920425	200	0.3750978								
1,4-Dichlorobenzene	100	1.090154	200	0.9742626								
1,2-Dichloroethane	100	0.3054549	200	0.2834521								
1,1-Dichloroethene	100	0.1715393	200	0.1715803								
cis-1,2-Dichloroethene	100	0.2296235	200	0.2253781								
Tetrachloroethene	100	0.684628	200	0.6233364								
Trichloroethene	100	0.2449454	200	0.2303697								
Vinyl chloride	100	0.141608	200	0.1361608								
Dibromofluoromethane	30	0.2777573	30	0.268065								
1,2-Dichloroethane-d4	30	5.213871E-02	30	5.523605E-02								
Toluene-d8	30	2.040193	30	2.03039								

INITIAL CALIBRATION DATA (Continued)

SW8260

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Calibration:	0061001	Instrument:	MS-VOA3
Matrix:	Water	Calibration Date:	3/1/2010 10:36:47AM

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Benzene	0.7860876	5.299038	12.37813	2.668277E-02			15	
Bromofluorobenzene	0.9872688	4.010857	17.24475	1.432483E-02			15	
2-Butanone	4.417436E-02	51.69995	7.994286	44.09643	0.9994103		0.995	
Carbon tetrachloride	0.3662774	4.94326	12.33775	2.629546E-02			15	
Chlorobenzene	1.594581	12.53683	16.30037	3.15553E-03			SPCC (0.3)	
Chloroform	0.4461476	15.21065	10.26175	5.599266E-02			CCC (20)	
1,4-Dichlorobenzene	1.20758	10.07322	18.29075	1.672438E-02			15	
1,2-Dichloroethane	0.3247314	6.552981	11.57588	3.274237E-02			15	
1,1-Dichloroethene	0.1803427	4.412484	6.335625	0.1180371			CCC (20)	
cis-1,2-Dichloroethene	0.2329658	4.911021	9.72025	7.241006E-02			15	
Tetrachloroethene	0.7466987	8.412239	15.71	1.730557E-02			15	
Trichloroethene	0.2511125	4.254356	13.31163	3.101055E-02			15	
Vinyl chloride	0.1531253	6.812391	4.141375	0.1161856			CCC (20)	
Dibromofluoromethane	0.279106	1.95434	10.524	3.138851E-02			15	
1,2-Dichloroethane-d4	5.464485E-02	2.624305	11.433	3.799452E-02			15	
Toluene-d8	2.133507	3.209546	14.91862	1.471819E-02			15	

INITIAL CALIBRATION CHECK

SW8260

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Instrument ID:	MS-VOA3	Calibration:	0061001
Lab File ID:	SEQ-ICV1.D	Calibration Date:	03/01/10 10:36
Sequence:	0C06104	Injection Date:	03/01/10
Lab Sample ID:	0C06104-ICV1	Injection Time:	20:05

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN (#)	ICV	LIMIT (#)
Benzene	A	50.00	50.21	0.7860876	0.7894325		0.4	20
2-Butanone	L	100.0	97.10	4.417436E-02	5.522657E-02		-2.9	20
Carbon tetrachloride	A	50.00	51.35	0.3662774	0.3761812		2.7	20
Chlorobenzene	A	50.00	48.28	1.594581	1.539689	0.3	-3.4	20
Chloroform	A	50.00	51.86	0.4461476	0.4030055		-9.7	20
1,4-Dichlorobenzene	A	50.00	47.14	1.20758	1.138473		-5.7	20
1,2-Dichloroethane	A	50.00	48.57	0.3247314	0.3154545		-2.9	20
1,1-Dichloroethene	A	50.00	51.62	0.1803427	0.1861694		3.2	20
cis-1,2-Dichloroethene	A	50.00	49.25	0.2329658	0.229474I		-1.5	20
Tetrachloroethene	A	50.00	49.72	0.7466987	0.742546		-0.6	20
Trichloroethene	A	50.00	48.54	0.2511125	0.243794		-2.9	20
Vinyl chloride	A	50.00	55.72	0.1531253	0.1706307		11.4	20
Bromofluorobenzene	A	30.00	29.97	0.9872688	0.9863784		-0.09	20
Dibromofluoromethane	A	30.00	29.80	0.279106	0.277233		-0.7	20
1,2-Dichloroethane-d4	A	30.00	29.30	5.464485E-02	5.336163E-02		-2.3	20
Toluene-d8	A	30.00	29.33	2.133507	2.085918		-2.2	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

INITIAL CALIBRATION CHECK

SW8260

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Instrument ID:	MS-VOA3	Calibration:	0061001
Lab File ID:	SEQ-ICV2.D	Calibration Date:	03/01/10 10:36
Sequence:	0C06104	Injection Date:	03/01/10
Lab Sample ID:	0C06104-ICV2	Injection Time:	21:04

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN (#)	ICV	LIMIT (#)
Benzene	A	100.0	98.59	0.7860876	0.7749963		-1.4	20
2-Butanone	L	200.0	207.9	4.417436E-02	0.0598339		3.9	20
Carbon tetrachloride	A	100.0	98.63	0.3662774	0.3612509		-1.4	20
Chlorobenzene	A	100.0	89.44	1.594581	1.426232	0.3	-10.6	20
Chloroform	A	100.0	101.4	0.4461476	0.3878159		-13.1	20
1,4-Dichlorobenzene	A	100.0	85.98	1.20758	1.038337		-14.0	20
1,2-Dichloroethane	A	100.0	95.45	0.3247314	0.3099559		-4.6	20
1,1-Dichloroethene	A	100.0	103.4	0.1803427	0.1864013		3.4	20
cis-1,2-Dichloroethene	A	100.0	99.30	0.2329658	0.2313438		-0.7	20
Tetrachloroethene	A	100.0	92.23	0.7466987	0.6886573		-7.8	20
Trichloroethene	A	100.0	96.60	0.2511125	0.2425849		-3.4	20
Vinyl chloride	A	100.0	106.2	0.1531253	0.162639		6.2	20
Bromofluorobenzene	A	30.00	28.96	0.9872688	0.9530992		-3.5	20
Dibromofluoromethane	A	30.00	29.91	0.279106	0.2782461		-0.3	20
1,2-Dichloroethane-d4	A	30.00	31.66	5.464485E-02	5.766506E-02		5.5	20
Toluene-d8	A	30.00	29.44	2.133507	2.093954		-1.9	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SW8260

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Instrument ID:	MS-VOA3	Calibration:	0061001
Lab File ID:	SEQ-CCV1.D	Calibration Date:	03/01/10 10:36
Sequence:	0C07102	Injection Date:	03/11/10
Lab Sample ID:	0C07102-CCV1	Injection Time:	08:18

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Benzene	A	100.0	96.48	0.7860876	0.7584136		-3.5	20
2-Butanone	L	200.0	176.7	4.417436E-02	5.076204E-02		-11.6	20
Carbon tetrachloride	A	100.0	103.0	0.3662774	0.3773103		3.0	20
Chlorobenzene	A	100.0	85.36	1.594581	1.361127	0.3	-14.6	20
Chloroform	A	100.0	103.1	0.4461476	0.3940027		-11.7	20
1,4-Dichlorobenzene	A	100.0	91.62	1.20758	1.106379		-8.4	20
1,2-Dichloroethane	A	100.0	95.67	0.3247314	0.3106866		-4.3	20
1,1-Dichloroethene	A	100.0	91.58	0.1803427	0.1651575		-8.4	20
cis-1,2-Dichloroethene	A	100.0	94.02	0.2329658	0.2190272		-6.0	20
Tetrachloroethene	A	100.0	91.63	0.7466987	0.6842222		-8.4	20
Trichloroethene	A	100.0	95.82	0.2511125	0.2406227		-4.2	20
Vinyl chloride	A	100.0	88.86	0.1531253	0.1360657		-11.1	20
Bromofluorobenzene	A	30.00	28.94	0.9872688	0.9523462		-3.5	20
Dibromofluoromethane	A	30.00	31.44	0.279106	0.2924892		4.8	20
1,2-Dichloroethane-d4	A	30.00	30.15	5.464485E-02	5.492465E-02		0.5	20
Toluene-d8	A	30.00	28.29	2.133507	2.011706		-5.7	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

ANALYSIS SEQUENCE SUMMARY

SW8260

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Sequence:	0C06104	Instrument:	MS-VOA3
Calibration:	0061001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	0C06104-TUN1	SEQ-TUN2.D	03/01/10 16:37
Cal Standard	0C06104-CAL2	SEQ-CAL2.D	03/01/10 17:06
Cal Standard	0C06104-CAL3	SEQ-CAL3.D	03/01/10 17:36
Cal Standard	0C06104-CAL4	SEQ-CAL4.D	03/01/10 18:06
Cal Standard	0C06104-CAL5	SEQ-CAL5.D	03/01/10 18:36
Cal Standard	0C06104-CAL6	SEQ-CAL6.D	03/01/10 19:05
Cal Standard	0C06104-CAL7	SEQ-CAL7.D	03/01/10 19:35
Initial Cal Check	0C06104-ICV1	SEQ-ICV1.D	03/01/10 20:05
Cal Standard	0C06104-CAL8	SEQ-CAL8.D	03/01/10 20:34
Initial Cal Check	0C06104-ICV2	SEQ-ICV2.D	03/01/10 21:04
Cal Standard	0C06104-CAL9	SEQ-CAL9.D	03/01/10 21:34

ANALYSIS SEQUENCE SUMMARY

SW8260

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Sequence:	0C07102	Instrument:	MS-VOA3
Calibration:	0061001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	0C07102-TUN1	SEQ-TUN1.D	03/11/10 07:49
Calibration Check	0C07102-CCV1	SEQ-CCV1.D	03/11/10 08:18
LCS	0C11002-BS1	V3LCS01.D	03/11/10 09:00
Blank	0C11002-BLK1	V3BLK01.D	03/11/10 10:26
05-WA-01	1003088-01	0308801T.D	03/11/10 15:53
05-WA-02	1003088-02	0308802T.D	03/11/10 16:23
05-WA-03	1003088-03	0308803T.D	03/11/10 16:53
05-WA-04	1003088-04	0308804T.D	03/11/10 17:22
05-WA-01	0C11002-MS1	0308801TM.D	03/11/10 18:22
LCS Dup	0C11002-BSD1	V3LCSD01.D	03/11/10 18:52

ORGANIC CASE NARRATIVE
Tetra Tech NUS, Inc. – SMU5 Crane
SDG: SMU5Crane_002
Workorder: 1003088

Sampled	Rec'd	Lab ID	Client ID
03/08/10	03/10/10	1003088-01	05-WA-01
03/08/10	03/10/10	1003088-02	05-WA-02
03/08/10	03/10/10	1003088-03	05-WA-03
03/08/10	03/10/10	1003088-04	05-WA-04

Semi-Volatile TCLP samples

Method: The samples were extracted/analyzed USEPA SW-846 Methods 1311/3510C/8270C (TCLP leaching followed by separatory funnel extraction then capillary column GC/MS) for IDW soils upon receipt to the laboratory in satisfactory condition.

Comments: The analyses for these samples were satisfactorily completed within sample holding times and met the corresponding specifications with the following note/exceptions:

- DFTPP Tuning: All method tuning criteria were met.
- Calibration Criteria: All method calibration criteria were met.
- Method Blank Results: No target analytes were detected.
- Surrogate Recoveries: All recoveries were within limits.
- 0C11005-BS1 Results: Pyridine recovered below the lower recovery limit of 5% at 4.11%. Evaluating the quantitation limit using the recoveries, the quantitation limit for pyridine remains at or below the regulatory limit. All other recoveries were within limits.
- MS results: All recoveries were within limits.
- Internal Standard Area Counts: All internal standard area counts were within limits.
- Dilutions: All TCLP analyses are completed using a 10x dilution.
- Manual integrations: Quantitation signals were manually integrated in order to accurately reflect the peak areas based on the technical judgment of the analyst. A listing of the manual integrations performed and reason for the integration is included with the logs. Before and after "pictures" are available where manual integrations were performed.

I certify that, to the best of my knowledge and based upon my inquiry of those individuals immediately responsible for obtaining the information, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in the case narrative, as verified by the following signature.

Jade Holliman
Organic Manager

ANALYTICAL REPORT TERMS AND QUALIFIERS (ORGANIC)

MDL: The method detection limit (MDL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The MDL is determined from analysis of a sample containing the analyte in a given matrix.

EQL: The estimated quantitation limit (EQL) is defined as the estimated concentration above which quantitative results can be obtained with a specific degree of confidence. Empirical Laboratories defines the EQL to be at or near the lowest standard of the calibration curve.

U: The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte quantitated below the MDL.

B: The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the correct sample result might be less than the reported result and, perhaps, zero.

D: When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".

E: The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound.

J: The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The data pass the identification criteria indicating that the compound is present, but the calculated result is less than the EQL.

ANALYSIS DATA SHEET

05-WA-01

Laboratory: Empirical Laboratories, LLC SDG: SMU5Crane_002

Client: Tetra Tech NUS, Inc. (T010) Project: SMU5 Crane

Matrix: Solid Laboratory ID: 1003088-01 File ID: 0308801T.D

Sampled: 03/08/10 13:30 Prepared: 03/11/10 10:30 Analyzed: 03/11/10 17:08

Solids: 75.43 Preparation: EXT_3510 Dilution: 1

Batch: 0C11005 Sequence: 0C07105 Calibration: 0056004 Instrument: MS-BNA3

CAS NO.	COMPOUND	CONC. (mg/L)	TCLP Reg Limit	MRL	Q
121-14-2	2,4-Dinitrotoluene		0.13	0.00500	U
118-74-1	Hexachlorobenzene		0.13	0.00500	U
87-68-3	Hexachlorobutadiene		0.5	0.00500	U
67-72-1	Hexachloroethane		3	0.00500	U
95-48-7	2-Methylphenol		200	0.00500	U
108-39-4	3-Methylphenol		200	0.00500	U
106-44-5	4-Methylphenol		200	0.00500	U
98-95-3	Nitrobenzene		2	0.00500	U
87-86-5	Pentachlorophenol		100	0.0200	U
110-86-1	Pyridine		5	0.00500	U
88-06-2	2,4,6-Trichlorophenol		2	0.00500	U
95-95-4	2,4,5-Trichlorophenol		400	0.00500	U

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	0.5000	0.3959	79.2	35 - 110	
2-Fluorophenol	1.000	0.4259	42.6	15 - 110	
Nitrobenzene-d5	0.5000	0.4636	92.7	30 - 110	
Phenol-d6	1.000	0.2422	24.2	15 - 110	
Terphenyl-dl4	0.5000	0.5532	111	55 - 125	
2,4,6-Tribromophenol	1.000	0.9044	90.4	45 - 125	

ANALYSIS DATA SHEET

05-WA-02

Laboratory:	Empirical Laboratories, LLC			SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)			Project:	SMU5 Crane
Matrix:	Solid	Laboratory ID:	1003088-02	File ID:	0308802T.D
Sampled:	03/08/10 11:12	Prepared:	03/11/10 10:30	Analyzed:	03/11/10 17:44
Solids:	63.04	Preparation:	EXT_3510	Dilution:	1
Batch:	0C11005	Sequence:	0C07105	Calibration:	0056004
Instrument:	MS-BNA3				

CAS NO.	COMPOUND	CONC. (mg/L)	TCLP Reg Limit	MRL	Q
121-14-2	2,4-Dinitrotoluene		0.13	0.00500	U
118-74-1	Hexachlorobenzene		0.13	0.00500	U
87-68-3	Hexachlorobutadiene		0.5	0.00500	U
67-72-1	Hexachloroethane		3	0.00500	U
95-48-7	2-Methylphenol		200	0.00500	U
108-39-4	3-Methylphenol		200	0.00500	U
106-44-5	4-Methylphenol		200	0.00500	U
98-95-3	Nitrobenzene		2	0.00500	U
87-86-5	Pentachlorophenol		100	0.0200	U
110-86-1	Pyridine		5	0.00500	U
88-06-2	2,4,6-Trichlorophenol		2	0.00500	U
95-95-4	2,4,5-Trichlorophenol		400	0.00500	U

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	0.5000	0.4001	80.0	35 - 110	
2-Fluorophenol	1.000	0.4150	41.5	15 - 110	
Nitrobenzene-d5	0.5000	0.4721	94.4	30 - 110	
Phenol-d6	1.000	0.2362	23.6	15 - 110	
Terphenyl-dl4	0.5000	0.5009	100	55 - 125	
2,4,6-Tribromophenol	1.000	0.9034	90.3	45 - 125	

ANALYSIS DATA SHEET

05-WA-03

Laboratory:	Empirical Laboratories, LLC			SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)			Project:	SMU5 Crane
Matrix:	Solid	Laboratory ID:	1003088-03	File ID:	0308803T.D
Sampled:	03/08/10 11:03	Prepared:	03/11/10 10:30	Analyzed:	03/11/10 18:19
Solids:	76.61	Preparation:	EXT_3510	Dilution:	1
Batch:	0C11005	Sequence:	0C07105	Calibration:	0056004
Instrument:	MS-BNA3				

CAS NO.	COMPOUND	CONC. (mg/L)	TCLP Reg Limit	MRL	Q
121-14-2	2,4-Dinitrotoluene		0.13	0.00500	U
118-74-1	Hexachlorobenzene		0.13	0.00500	U
87-68-3	Hexachlorobutadiene		0.5	0.00500	U
67-72-1	Hexachloroethane		3	0.00500	U
95-48-7	2-Methylphenol		200	0.00500	U
108-39-4	3-Methylphenol		200	0.00500	U
106-44-5	4-Methylphenol		200	0.00500	U
98-95-3	Nitrobenzene		2	0.00500	U
87-86-5	Pentachlorophenol		100	0.0200	U
110-86-1	Pyridine		5	0.00500	U
88-06-2	2,4,6-Trichlorophenol		2	0.00500	U
95-95-4	2,4,5-Trichlorophenol		400	0.00500	U

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	0.5000	0.3686	73.7	35 - 110	
2-Fluorophenol	1.000	0.3898	39.0	15 - 110	
Nitrobenzene-d5	0.5000	0.4371	87.4	30 - 110	
Phenol-d6	1.000	0.2179	21.8	15 - 110	
Terphenyl-dl4	0.5000	0.5019	100	55 - 125	
2,4,6-Tribromophenol	1.000	0.8211	82.1	45 - 125	

ANALYSIS DATA SHEET

05-WA-04

Laboratory:	Empirical Laboratories, LLC			SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)			Project:	SMU5 Crane
Matrix:	Solid	Laboratory ID:	1003088-04	File ID:	0308804T.D
Sampled:	03/08/10 11:17	Prepared:	03/11/10 10:30	Analyzed:	03/11/10 18:55
Solids:	70.28	Preparation:	EXT_3510	Dilution:	1
Batch:	0C11005	Sequence:	0C07105	Calibration:	0056004
Instrument:	MS-BNA3				

CAS NO.	COMPOUND	CONC. (mg/L)	TCLP Reg Limit	MRL	Q
121-14-2	2,4-Dinitrotoluene		0.13	0.00500	U
118-74-1	Hexachlorobenzene		0.13	0.00500	U
87-68-3	Hexachlorobutadiene		0.5	0.00500	U
67-72-1	Hexachloroethane		3	0.00500	U
95-48-7	2-Methylphenol		200	0.00500	U
108-39-4	3-Methylphenol		200	0.00500	U
106-44-5	4-Methylphenol		200	0.00500	U
98-95-3	Nitrobenzene		2	0.00500	U
87-86-5	Pentachlorophenol		100	0.0200	U
110-86-1	Pyridine		5	0.00500	U
88-06-2	2,4,6-Trichlorophenol		2	0.00500	U
95-95-4	2,4,5-Trichlorophenol		400	0.00500	U

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	0.5000	0.3914	78.3	35 - 110	
2-Fluorophenol	1.000	0.4112	41.1	15 - 110	
Nitrobenzene-d5	0.5000	0.4621	92.4	30 - 110	
Phenol-d6	1.000	0.2327	23.3	15 - 110	
Terphenyl-dl4	0.5000	0.4818	96.4	55 - 125	
2,4,6-Tribromophenol	1.000	0.8980	89.8	45 - 125	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

SW8270C

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Sequence:	0B05601	Instrument:	MS-BNA3
		Calibration:	0056004

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
Initial Cal Check (0B05601-ICV3) ng/uL				Lab File ID: SEQ-ICV3.D		Analyzed: 01/06/10 22:14		
2-Fluorobiphenyl	50.00	95.3	75 - 125	8.122		8.1220	+/-0.500	*
2-Fluorophenol	100.0	94.5	75 - 125	4.415		4.4150	+/-0.500	*
Nitrobenzene-d5	50.00	98.5	75 - 125	5.925		5.9250	+/-0.500	*
Phenol-d6	100.0	95.6	75 - 125	5.122		5.1220	+/-0.500	*
Terphenyl-dl4	50.00	105	75 - 125	15.124		15.1240	+/-0.500	*
2,4,6-Tribromophenol	100.0	108	75 - 125	10.618		10.6180	+/-0.500	*

SURROGATE STANDARD RECOVERY AND RT SUMMARY

SW8270C

Laboratory: Empirical Laboratories, LLC
SDG: SMU5Crane_002
Client: Tetra Tech NUS, Inc. (T010)
Project: SMU5 Crane
Sequence: 0C07105
Instrument: MS-BNA3
Calibration: 0056004

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
Calibration Check (0C07105-CCV1) ng/uL				Lab File ID: SEQ-CCV1.D		Analyzed: 03/11/10 14:38		
2-Fluorobiphenyl	50.00	91.1	80 - 110	7.674		7.6740	+/-0.500	*
2-Fluorophenol	100.0	104	80 - 110	4.154		4.1540	+/-0.500	*
Nitrobenzene-d5	50.00	108	80 - 110	5.587		5.5870	+/-0.500	*
Phenol-d6	100.0	100	80 - 110	4.842		4.8420	+/-0.500	*
Terphenyl-dl4	50.00	108	80 - 120	14.565		14.5650	+/-0.500	*
2,4,6-Tribromophenol	100.0	96.6	80 - 120	10.107		10.1070	+/-0.500	*
Blank (0C11005-BLK1) mg/L				Lab File ID: C11005B1.D		Analyzed: 03/11/10 15:20		
2-Fluorobiphenyl	0.5000	72.9	35 - 110	7.673	7.674	-0.0010	+/-0.500	
2-Fluorophenol	1.000	40.1	15 - 110	4.153	4.154	-0.0010	+/-0.500	
Nitrobenzene-d5	0.5000	85.3	30 - 110	5.581	5.587	-0.0060	+/-0.500	
Phenol-d6	1.000	24.0	15 - 110	4.831	4.842	-0.0110	+/-0.500	
Terphenyl-dl4	0.5000	100	55 - 125	14.568	14.565	0.0030	+/-0.500	
2,4,6-Tribromophenol	1.000	86.8	45 - 125	10.096	10.107	-0.0110	+/-0.500	
LCS (0C11005-BS1) mg/L				Lab File ID: C11005L1.D		Analyzed: 03/11/10 15:56		
2-Fluorobiphenyl	0.5000	77.1	35 - 110	7.675	7.674	0.0010	+/-0.500	
2-Fluorophenol	1.000	40.7	15 - 110	4.155	4.154	0.0010	+/-0.500	
Nitrobenzene-d5	0.5000	90.1	30 - 110	5.588	5.587	0.0010	+/-0.500	
Phenol-d6	1.000	23.5	15 - 110	4.833	4.842	-0.0090	+/-0.500	
Terphenyl-dl4	0.5000	96.7	55 - 125	14.571	14.565	0.0060	+/-0.500	
2,4,6-Tribromophenol	1.000	89.7	45 - 125	10.104	10.107	-0.0030	+/-0.500	
05-WA-01 (1003088-01) mg/L				Lab File ID: 0308801T.D		Analyzed: 03/11/10 17:08		
2-Fluorobiphenyl	0.5000	79.2	35 - 110	7.67	7.674	-0.0040	+/-0.500	
2-Fluorophenol	1.000	42.6	15 - 110	4.155	4.154	0.0010	+/-0.500	
Nitrobenzene-d5	0.5000	92.7	30 - 110	5.583	5.587	-0.0040	+/-0.500	
Phenol-d6	1.000	24.2	15 - 110	4.833	4.842	-0.0090	+/-0.500	
Terphenyl-dl4	0.5000	111	55 - 125	14.566	14.565	0.0010	+/-0.500	
2,4,6-Tribromophenol	1.000	90.4	45 - 125	10.094	10.107	-0.0130	+/-0.500	
05-WA-02 (1003088-02) mg/L				Lab File ID: 0308802T.D		Analyzed: 03/11/10 17:44		
2-Fluorobiphenyl	0.5000	80.0	35 - 110	7.671	7.674	-0.0030	+/-0.500	
2-Fluorophenol	1.000	41.5	15 - 110	4.156	4.154	0.0020	+/-0.500	
Nitrobenzene-d5	0.5000	94.4	30 - 110	5.584	5.587	-0.0030	+/-0.500	
Phenol-d6	1.000	23.6	15 - 110	4.834	4.842	-0.0080	+/-0.500	
Terphenyl-dl4	0.5000	100	55 - 125	14.567	14.565	0.0020	+/-0.500	
2,4,6-Tribromophenol	1.000	90.3	45 - 125	10.095	10.107	-0.0120	+/-0.500	

SURROGATE STANDARD RECOVERY AND RT SUMMARY

SW8270C

Laboratory: Empirical Laboratories, LLC
SDG: SMU5Crane_002
Client: Tetra Tech NUS, Inc. (T010)
Project: SMU5 Crane
Sequence: 0C07105
Instrument: MS-BNA3
Calibration: 0056004

Surrogate Compound	Spike Level	% Recovery	Recovery Limits	RT	CCV RT	RT Diff	RT Diff Limit	Q
05-WA-03 (1003088-03) mg/L				Lab File ID: 0308803T.D		Analyzed: 03/11/10 18:19		
2-Fluorobiphenyl	0.5000	73.7	35 - 110	7.671	7.674	-0.0030	+/-0.500	
2-Fluorophenol	1.000	39.0	15 - 110	4.156	4.154	0.0020	+/-0.500	
Nitrobenzene-d5	0.5000	87.4	30 - 110	5.584	5.587	-0.0030	+/-0.500	
Phenol-d6	1.000	21.8	15 - 110	4.829	4.842	-0.0130	+/-0.500	
Terphenyl-dl4	0.5000	100	55 - 125	14.567	14.565	0.0020	+/-0.500	
2,4,6-Tribromophenol	1.000	82.1	45 - 125	10.095	10.107	-0.0120	+/-0.500	
05-WA-04 (1003088-04) mg/L				Lab File ID: 0308804T.D		Analyzed: 03/11/10 18:55		
2-Fluorobiphenyl	0.5000	78.3	35 - 110	7.671	7.674	-0.0030	+/-0.500	
2-Fluorophenol	1.000	41.1	15 - 110	4.155	4.154	0.0010	+/-0.500	
Nitrobenzene-d5	0.5000	92.4	30 - 110	5.584	5.587	-0.0030	+/-0.500	
Phenol-d6	1.000	23.3	15 - 110	4.833	4.842	-0.0090	+/-0.500	
Terphenyl-dl4	0.5000	96.4	55 - 125	14.566	14.565	0.0010	+/-0.500	
2,4,6-Tribromophenol	1.000	89.8	45 - 125	10.094	10.107	-0.0130	+/-0.500	
Matrix Spike (0C11005-MS1) mg/L				Lab File ID: 308802TM.D		Analyzed: 03/11/10 19:30		
2-Fluorobiphenyl	0.5000	77.3	35 - 110	7.675	7.674	0.0010	+/-0.500	
2-Fluorophenol	1.000	38.6	15 - 110	4.155	4.154	0.0010	+/-0.500	
Nitrobenzene-d5	0.5000	88.0	30 - 110	5.588	5.587	0.0010	+/-0.500	
Phenol-d6	1.000	22.9	15 - 110	4.833	4.842	-0.0090	+/-0.500	
Terphenyl-dl4	0.5000	89.9	55 - 125	14.566	14.565	0.0010	+/-0.500	
2,4,6-Tribromophenol	1.000	90.3	45 - 125	10.103	10.107	-0.0040	+/-0.500	

LCS / LCS DUPLICATE RECOVERY

SW8270C

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Matrix:	Water		
Batch:	0C11005	Laboratory ID:	0C11005-BS1
Preparation:	EXT_3510	Initial/Final:	100 mL / 1 mL

ANALYTE	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC.	QC LIMITS REC.
2,4-Dinitrotoluene	0.5000	0.5148	103	50 - 120
Hexachlorobenzene	0.5000	0.4538	90.8	50 - 110
Hexachlorobutadiene	0.5000	0.3461	69.2	25 - 105
Hexachloroethane	0.5000	0.3096	61.9	30 - 95
2-Methylphenol	0.5000	0.3299	66.0	40 - 110
3-Methylphenol	0.5000	0.3077	61.5	30 - 110
4-Methylphenol	0.5000	0.3079	61.6	30 - 110
Nitrobenzene	0.5000	0.4571	91.4	30 - 110
Pentachlorophenol	0.5000	0.4755	95.1	40 - 115
Pyridine	**0.5000**	**0.02055**	**4.11**	**5 - 110**
2,4,6-Trichlorophenol	0.5000	0.4711	94.2	50 - 115
2,4,5-Trichlorophenol	0.5000	0.4761	95.2	50 - 110

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW8270C

05-WA-02

Laboratory: Empirical Laboratories, LLC

SDG: SMU5Crane_002

Client: Tetra Tech NUS, Inc. (T010)

Project: SMU5 Crane

Matrix: Water

Batch: 0C11005

% Solids: 63.04

Source Sample Name: **1003088-02**

ANALYTE	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC.	Q	QC LIMITS REC.
2,4-Dinitrotoluene	0.5000	ND	0.5127	103		50 - 120
Hexachlorobenzene	0.5000	ND	0.4477	89.5		50 - 110
Hexachlorobutadiene	0.5000	ND	0.4010	80.2		25 - 105
Hexachloroethane	0.5000	ND	0.3408	68.2		30 - 95
2-Methylphenol	0.5000	ND	0.3240	64.8		40 - 110
3-Methylphenol	0.5000	ND	0.3065	61.3		30 - 110
4-Methylphenol	0.5000	ND	0.3066	61.3		30 - 110
Nitrobenzene	0.5000	ND	0.4470	89.4		30 - 110
Pentachlorophenol	0.5000	ND	0.4927	98.5		40 - 115
Pyridine	0.5000	ND	0.03089	6.18		5 - 110
2,4,6-Trichlorophenol	0.5000	ND	0.4611	92.2		50 - 115
2,4,5-Trichlorophenol	0.5000	ND	0.4810	96.2		50 - 110

PREPARATION BATCH SUMMARY

SW8270C

Laboratory: Empirical Laboratories, LLC SDG: SMU5Crane_002

Client: Tetra Tech NUS, Inc. (T010) Project: SMU5 Crane

Batch: 0C11005 Batch Matrix: Water Preparation: EXT_3510

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
Blank	0C11005-BLK1	03/11/10 10:30	100.00	1.00
LCS	0C11005-BS1	03/11/10 10:30	100.00	1.00
05-WA-02	0C11005-MS1	03/11/10 10:30	100.00	1.00
05-WA-01	1003088-01	03/11/10 10:30	100.00	1.00
05-WA-02	1003088-02	03/11/10 10:30	100.00	1.00
05-WA-03	1003088-03	03/11/10 10:30	100.00	1.00
05-WA-04	1003088-04	03/11/10 10:30	100.00	1.00

METHOD BLANK DATA SHEET
SW8270C

Laboratory:	Empirical Laboratories, LLC			SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)			Project:	SMU5 Crane
Matrix:	Water	Laboratory ID:	0C11005-BLK1	File ID:	C11005B1.D
Prepared:	03/11/10 10:30	Preparation:	EXT_3510	Initial/Final:	100 mL / 1 mL
Analyzed:	03/11/10 15:20	Instrument:	MS-BNA3		
Batch:	0C11005	Sequence:	0C07105	Calibration:	0056004

CAS NO.	COMPOUND	CONC. (mg/L)	Q
121-14-2	2,4-Dinitrotoluene	0.00500	U
118-74-1	Hexachlorobenzene	0.00500	U
87-68-3	Hexachlorobutadiene	0.00500	U
67-72-1	Hexachloroethane	0.00500	U
95-48-7	2-Methylphenol	0.00500	U
108-39-4	3-Methylphenol	0.00500	U
106-44-5	4-Methylphenol	0.00500	U
98-95-3	Nitrobenzene	0.00500	U
87-86-5	Pentachlorophenol	0.0200	U
110-86-1	Pyridine	0.00500	U
88-06-2	2,4,6-Trichlorophenol	0.00500	U
95-95-4	2,4,5-Trichlorophenol	0.00500	U

SYSTEM MONITORING COMPOUND	ADDED (mg/L)	CONC (mg/L)	% REC	QC LIMITS	Q
2-Fluorobiphenyl	0.5000	0.3645	72.9	35 - 110	
2-Fluorophenol	1.000	0.4009	40.1	15 - 110	
Nitrobenzene-d5	0.5000	0.4266	85.3	30 - 110	
Phenol-d6	1.000	0.2401	24.0	15 - 110	
Terphenyl-dl4	0.5000	0.4999	100	55 - 125	
2,4,6-Tribromophenol	1.000	0.8680	86.8	45 - 125	

INTERNAL STANDARD	AREA	RT	REF AREA	REF RT	Q
1,4-Dichlorobenzene-d4	709554	5.114	717137	5.121	
Naphthalene-d8	2437142	6.297	2457117	6.299	
Acenaphthene-d10	1511969	8.721	1560943	8.722	
Phenanthrene-d10	2559533	11.38	2856094	11.387	
Chrysene-d12	2198262	16.574	2217658	16.585	
Perylene-d12	1867869	19.204	1724325	19.206	

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

SW8270C

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Lab File ID:	SEQ-TUN1.D	Injection Date:	01/06/10
Instrument ID:	MS-BNA3	Injection Time:	10:15
Sequence:	0B05601	Lab Sample ID:	0B05601-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
51	30 - 60% of 198	45.3	PASS
68	Less than 2% of 69	0	PASS
69	Less than 200% of 198	58.9	PASS
70	Less than 2% of 69	0.475	PASS
127	40 - 60% of 198	58	PASS
197	Less than 1% of 198	0	PASS
198	Base peak, 100% relative abundance	100	PASS
199	5 - 9% of 198	7.28	PASS
275	10 - 30% of 198	22.2	PASS
365	1 - 200% of 198	1.92	PASS
441	0.001 - 100% of 443	69.2	PASS
442	40 - 200% of 198	44.8	PASS
443	17 - 23% of 442	20.8	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

SW8270C

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Lab File ID:	SEQ-TUN2.D	Injection Date:	01/06/10
Instrument ID:	MS-BNA3	Injection Time:	21:51
Sequence:	0B05601	Lab Sample ID:	0B05601-TUN2

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
51	30 - 60% of 198	41.9	PASS
68	Less than 2% of 69	0	PASS
69	Less than 200% of 198	50.1	PASS
70	Less than 2% of 69	0.391	PASS
127	40 - 60% of 198	53.6	PASS
197	Less than 1% of 198	0	PASS
198	Base peak, 100% relative abundance	100	PASS
199	5 - 9% of 198	6.98	PASS
275	10 - 30% of 198	22.3	PASS
365	1 - 200% of 198	2.59	PASS
441	0.001 - 100% of 443	68.6	PASS
442	40 - 200% of 198	52.4	PASS
443	17 - 23% of 442	20.4	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

SW8270C

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Lab File ID:	SEQ-TUN3.D	Injection Date:	01/11/10
Instrument ID:	MS-BNA3	Injection Time:	15:14
Sequence:	0B05601	Lab Sample ID:	0B05601-TUN3

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
51	30 - 60% of 198	41.6	PASS
68	Less than 2% of 69	0	PASS
69	Less than 200% of 198	54.7	PASS
70	Less than 2% of 69	0.243	PASS
127	40 - 60% of 198	53.9	PASS
197	Less than 1% of 198	0	PASS
198	Base peak, 100% relative abundance	100	PASS
199	5 - 9% of 198	6.75	PASS
275	10 - 30% of 198	20.9	PASS
365	1 - 200% of 198	1.95	PASS
441	0.001 - 100% of 443	73.5	PASS
442	40 - 200% of 198	43.5	PASS
443	17 - 23% of 442	20.2	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

SW8270C

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Lab File ID:	SEQ-TUN1.D	Injection Date:	03/11/10
Instrument ID:	MS-BNA3	Injection Time:	14:14
Sequence:	0C07105	Lab Sample ID:	0C07105-TUN1

m/z	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
51	30 - 60% of 198	36.8	PASS
68	Less than 2% of 69	0	PASS
69	Less than 200% of 198	45.6	PASS
70	Less than 2% of 69	0.532	PASS
127	40 - 60% of 198	48.5	PASS
197	Less than 1% of 198	0	PASS
198	Base peak, 100% relative abundance	100	PASS
199	5 - 9% of 198	6.83	PASS
275	10 - 30% of 198	24.1	PASS
365	1 - 200% of 198	2.64	PASS
441	0.001 - 100% of 443	72.6	PASS
442	40 - 200% of 198	62.5	PASS
443	17 - 23% of 442	20.4	PASS

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA79251

Lab File ID: SEQ-TUN1 DFTPP Injection Date: 01/06/10

Instrument ID: BNA3 DFTPP Injection Time: 1015

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	45.3
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	58.9
70	Less than 2.0% of mass 69	0.3 (0.5)1
127	40.0 - 60.0% of mass 198	58.0
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.3
275	10.0 - 30.0% of mass 198	22.2
365	Greater than 1.0% of mass 198	1.92
441	Present, but less than mass 443	6.4
442	Greater than 40.0% of mass 198	44.8
443	17.0 - 23.0% of mass 442	9.3 (20.8)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	CAL1.0PPM	SEQ-CAL2	SEQ-CAL2	01/06/10	1038
02	CAL2.0PPM	SEQ-CAL3	SEQ-CAL3	01/06/10	1112
03	CAL5.0PPM	SEQ-CAL4	SEQ-CAL4	01/06/10	1146
04	CAL10.0PPM	SEQ-CAL5	SEQ-CAL5	01/06/10	1220
05	CAL20.0PPM	SEQ-CAL6	SEQ-CAL6	01/06/10	1254
06	CAL40.0PPM	SEQ-CAL7	SEQ-CAL7	01/06/10	1328
07	CAL50.0PPM	SEQ-CAL8	SEQ-CAL8	01/06/10	1403
08	CAL60.0PPM	SEQ-CAL9	SEQ-CAL9	01/06/10	1437
09	CAL80.0PPM	SEQ-CALA	SEQ-CALA	01/06/10	1510
10	CAL100.0PPM	SEQ-CALB	SEQ-CALB	01/06/10	1544
11	CAL1.0PPM	SEQ-CALD	SEQ-CALD	01/06/10	1618
12	CAL2.0PPM	SEQ-CALE	SEQ-CALE	01/06/10	1652
13	CAL5.0PPM	SEQ-CALF	SEQ-CALF	01/06/10	1726
14	CAL10.0PPM	SEQ-CALG	SEQ-CALG	01/06/10	1800
15	CAL20.0PPM	SEQ-CALH	SEQ-CALH	01/06/10	1834
16	CAL40.0PPM	SEQ-CALI	SEQ-CALI	01/06/10	1907
17	CAL50.0PPM	SEQ-CALJ	SEQ-CALJ	01/06/10	1941
18	CAL60.0PPM	SEQ-CALK	SEQ-CALK	01/06/10	2014
19	CAL80.0PPM	SEQ-CALL	SEQ-CALL	01/06/10	2049
20	CAL100.0PPM	SEQ-CALM	SEQ-CALM	01/06/10	2122
21					
22					

FORM 5
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: EMPIRICAL LABS Contract:

Lab Code: EL Case No.: NA SAS No.: NA SDG No.: SDGA79251

Lab File ID: SEQ-TUN1 DFTPP Injection Date: 01/06/10

Instrument ID: BNA3 DFTPP Injection Time: 1015

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	45.3
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	58.9
70	Less than 2.0% of mass 69	0.3 (0.5)1
127	40.0 - 60.0% of mass 198	58.0
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.3
275	10.0 - 30.0% of mass 198	22.2
365	Greater than 1.0% of mass 198	1.92
441	Present, but less than mass 443	6.4
442	Greater than 40.0% of mass 198	44.8
443	17.0 - 23.0% of mass 442	9.3 (20.8)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	ICV3-50.0PPM	SEQ-ICV3	SEQ-ICV3	01/06/10	2214
02	ICV4-50.0PPM	SEQ-ICV4	SEQ-ICV4	01/06/10	2248
03	ICV5-50.0PPM	SEQ-ICV5	SEQ-ICV5	01/06/10	2322
04	CAL2.0PPM	SEQ-CALO	SEQ-CALO	01/07/10	0031
05	CAL5.0PPM	SEQ-CALP	SEQ-CALP	01/07/10	0106
06	CAL10.0PPM	SEQ-CALQ	SEQ-CALQ	01/07/10	0140
07	CAL20.0PPM	SEQ-CALR	SEQ-CALR	01/07/10	0215
08	CAL40.0PPM	SEQ-CALS	SEQ-CALS	01/07/10	0249
09	CAL50.0PPM	SEQ-CALT	SEQ-CALT	01/07/10	0324
10	CAL60.0PPM	SEQ-CALU	SEQ-CALU	01/07/10	0359
11	CAL80.0PPM	SEQ-CALV	SEQ-CALV	01/07/10	0433
12	CAL100.0PPM	SEQ-CALW	SEQ-CALW	01/07/10	0507
13	ICV6-50PPM	SEQ-ICV6	SEQ-ICV6	01/07/10	0542
14					
15					
16					
17					
18					
19					
20					
21					
22					

INTERNAL STANDARD AREA AND RT SUMMARY
SW8270C

Laboratory: Empirical Laboratories, LLC
SDG: SMU5Crane_002
Client: Tetra Tech NUS, Inc. (T010)
Project: SMU5 Crane
Sequence: 0B05601
Instrument: MS-BNA3
Calibration: 0056004

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Initial Cal Check (0B05601-ICV3)			Lab File ID: SEQ-ICV3.D			Analyzed: 01/06/10 22:14			
1,4-Dichlorobenzene-d4	667789	5.429	623902	5.423	107	50 - 200	0.0060	+/-0.50	
Naphthalene-d8	2237968	6.684	2164267	6.678	103	50 - 200	0.0060	+/-0.50	
Acenaphthene-d10	1336478	9.209	1277527	9.203	105	50 - 200	0.0060	+/-0.50	
Phenanthrene-d10	2157484	11.921	2020278	11.915	107	50 - 200	0.0060	+/-0.50	
Chrysene-d12	1767502	17.177	1912827	17.161	92	50 - 200	0.0160	+/-0.50	
Perylene-d12	1727613	19.822				50 - 200	19.8220	+/-0.50	*
Initial Cal Check (0B05601-ICV4)			Lab File ID: SEQ-ICV4.D			Analyzed: 01/06/10 22:48			
1,4-Dichlorobenzene-d4	635584	5.425	667789	5.429	95	50 - 200	-0.0040	+/-0.50	
Naphthalene-d8	2206862	6.68	2237968	6.684	99	50 - 200	-0.0040	+/-0.50	
Acenaphthene-d10	1296309	9.199	1336478	9.209	97	50 - 200	-0.0100	+/-0.50	
Phenanthrene-d10	2016062	11.916	2157484	11.921	93	50 - 200	-0.0050	+/-0.50	
Chrysene-d12	1869730	17.163	1767502	17.177	106	50 - 200	-0.0140	+/-0.50	
Perylene-d12	1675605	19.817	1727613	19.822	97	50 - 200	-0.0050	+/-0.50	
Initial Cal Check (0B05601-ICV5)			Lab File ID: SEQ-ICV5.D			Analyzed: 01/06/10 23:22			
1,4-Dichlorobenzene-d4	554647	5.424	635584	5.425	87	50 - 200	-0.0010	+/-0.50	
Naphthalene-d8	1958859	6.679	2206862	6.68	89	50 - 200	-0.0010	+/-0.50	
Acenaphthene-d10	1148031	9.204	1296309	9.199	89	50 - 200	0.0050	+/-0.50	
Phenanthrene-d10	1881953	11.916	2016062	11.916	93	50 - 200	0.0000	+/-0.50	
Chrysene-d12	1836223	17.162	1869730	17.163	98	50 - 200	-0.0010	+/-0.50	
Perylene-d12	1712360	19.817	1675605	19.817	102	50 - 200	0.0000	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
SW8270C

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Sequence:	0C07105	Instrument:	MS-BNA3
		Calibration:	0056004

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
Calibration Check (0C07105-CCV1)			Lab File ID: SEQ-CCV1.D			Analyzed: 03/11/10 14:38			
1,4-Dichlorobenzene-d4	717137	5.121	623902	5.423	115	50 - 200	-0.3020	+/-0.50	
Naphthalene-d8	2457117	6.299	2164267	6.678	114	50 - 200	-0.3790	+/-0.50	
Acenaphthene-d10	1560943	8.722	1277527	9.203	122	50 - 200	-0.4810	+/-0.50	
Phenanthrene-d10	2856094	11.387	2020278	11.915	141	50 - 200	-0.5280	+/-0.50	
Chrysene-d12	2217658	16.585	1912827	17.161	116	50 - 200	-0.5760	+/-0.50	
Perylene-d12	1724325	19.206				50 - 200	19.2060	+/-0.50	
Blank (0C11005-BLK1)			Lab File ID: C11005B1.D			Analyzed: 03/11/10 15:20			
1,4-Dichlorobenzene-d4	709554	5.114	717137	5.121	99	50 - 200	-0.0070	+/-0.50	
Naphthalene-d8	2437142	6.297	2457117	6.299	99	50 - 200	-0.0020	+/-0.50	
Acenaphthene-d10	1511969	8.721	1560943	8.722	97	50 - 200	-0.0010	+/-0.50	
Phenanthrene-d10	2559533	11.38	2856094	11.387	90	50 - 200	-0.0070	+/-0.50	
Chrysene-d12	2198262	16.574	2217658	16.585	99	50 - 200	-0.0110	+/-0.50	
Perylene-d12	1867869	19.204	1724325	19.206	108	50 - 200	-0.0020	+/-0.50	
LCS (0C11005-BS1)			Lab File ID: C11005L1.D			Analyzed: 03/11/10 15:56			
1,4-Dichlorobenzene-d4	764003	5.117	717137	5.121	107	50 - 200	-0.0040	+/-0.50	
Naphthalene-d8	2590245	6.3	2457117	6.299	105	50 - 200	0.0010	+/-0.50	
Acenaphthene-d10	1617781	8.724	1560943	8.722	104	50 - 200	0.0020	+/-0.50	
Phenanthrene-d10	2907644	11.388	2856094	11.387	102	50 - 200	0.0010	+/-0.50	
Chrysene-d12	2458364	16.586	2217658	16.585	111	50 - 200	0.0010	+/-0.50	
Perylene-d12	1792896	19.207	1724325	19.206	104	50 - 200	0.0010	+/-0.50	
05-WA-01 (1003088-01)			Lab File ID: 0308801T.D			Analyzed: 03/11/10 17:08			
1,4-Dichlorobenzene-d4	695944	5.116	717137	5.121	97	50 - 200	-0.0050	+/-0.50	
Naphthalene-d8	2378555	6.295	2457117	6.299	97	50 - 200	-0.0040	+/-0.50	
Acenaphthene-d10	1451853	8.718	1560943	8.722	93	50 - 200	-0.0040	+/-0.50	
Phenanthrene-d10	2385716	11.377	2856094	11.387	84	50 - 200	-0.0100	+/-0.50	
Chrysene-d12	1775317	16.571	2217658	16.585	80	50 - 200	-0.0140	+/-0.50	
Perylene-d12	1222533	19.197	1724325	19.206	71	50 - 200	-0.0090	+/-0.50	
05-WA-02 (1003088-02)			Lab File ID: 0308802T.D			Analyzed: 03/11/10 17:44			
1,4-Dichlorobenzene-d4	759838	5.118	717137	5.121	106	50 - 200	-0.0030	+/-0.50	
Naphthalene-d8	2531369	6.296	2457117	6.299	103	50 - 200	-0.0030	+/-0.50	
Acenaphthene-d10	1558689	8.72	1560943	8.722	100	50 - 200	-0.0020	+/-0.50	
Phenanthrene-d10	2653676	11.379	2856094	11.387	93	50 - 200	-0.0080	+/-0.50	
Chrysene-d12	2263520	16.572	2217658	16.585	102	50 - 200	-0.0130	+/-0.50	
Perylene-d12	1727258	19.203	1724325	19.206	100	50 - 200	-0.0030	+/-0.50	

INTERNAL STANDARD AREA AND RT SUMMARY
SW8270C

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Sequence:	0C07105	Instrument:	MS-BNA3
		Calibration:	0056004

Internal Standard	Response	RT	Reference Response	Reference RT	Area %	Area % Limits	RT Diff	RT Diff Limit	Q
05-WA-03 (1003088-03)			Lab File ID: 0308803T.D			Analyzed: 03/11/10 18:19			
1,4-Dichlorobenzene-d4	775573	5.118	717137	5.121	108	50 - 200	-0.0030	+/-0.50	
Naphthalene-d8	2567153	6.296	2457117	6.299	104	50 - 200	-0.0030	+/-0.50	
Acenaphthene-d10	1581849	8.72	1560943	8.722	101	50 - 200	-0.0020	+/-0.50	
Phenanthrene-d10	2604686	11.379	2856094	11.387	91	50 - 200	-0.0080	+/-0.50	
Chrysene-d12	1954536	16.572	2217658	16.585	88	50 - 200	-0.0130	+/-0.50	
Perylene-d12	1372337	19.198	1724325	19.206	80	50 - 200	-0.0080	+/-0.50	
05-WA-04 (1003088-04)			Lab File ID: 0308804T.D			Analyzed: 03/11/10 18:55			
1,4-Dichlorobenzene-d4	753314	5.117	717137	5.121	105	50 - 200	-0.0040	+/-0.50	
Naphthalene-d8	2554560	6.295	2457117	6.299	104	50 - 200	-0.0040	+/-0.50	
Acenaphthene-d10	1560688	8.719	1560943	8.722	100	50 - 200	-0.0030	+/-0.50	
Phenanthrene-d10	2641750	11.378	2856094	11.387	92	50 - 200	-0.0090	+/-0.50	
Chrysene-d12	2280590	16.576	2217658	16.585	103	50 - 200	-0.0090	+/-0.50	
Perylene-d12	1801544	19.202	1724325	19.206	104	50 - 200	-0.0040	+/-0.50	
Matrix Spike (0C11005-MS1)			Lab File ID: 308802TM.D			Analyzed: 03/11/10 19:30			
1,4-Dichlorobenzene-d4	758080	5.116	717137	5.121	106	50 - 200	-0.0050	+/-0.50	
Naphthalene-d8	2548431	6.299	2457117	6.299	104	50 - 200	0.0000	+/-0.50	
Acenaphthene-d10	1619083	8.723	1560943	8.722	104	50 - 200	0.0010	+/-0.50	
Phenanthrene-d10	2925962	11.387	2856094	11.387	102	50 - 200	0.0000	+/-0.50	
Chrysene-d12	2691947	16.59	2217658	16.585	121	50 - 200	0.0050	+/-0.50	
Perylene-d12	2014990	19.211	1724325	19.206	117	50 - 200	0.0050	+/-0.50	

INITIAL CALIBRATION DATA

SW8270C

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Calibration:	0056004	Instrument:	MS-BNA3
Matrix:	Water	Calibration Date:	1/6/2010 12:49:08PM

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ng/uL	RF	ng/uL	RF	ng/uL	RF	ng/uL	RF	ng/uL	RF	ng/uL	RF
1,4-Dichlorobenzene	1	1.624898	2	1.60057	5	1.55575	10	1.542681	20	1.573615	40	1.522601
2,4-Dinitrotoluene	1	~~0.2190787~~	2	0.2741756	5	0.3420853	10	0.3868097	20	0.4151408	40	0.4078312
2-Fluorobiphenyl	1	1.557404	2	1.489884	5	1.487231	10	1.494237	20	1.477516	40	1.38765
2-Fluorophenol	2	1.273763	4	1.267814	10	1.293633	20	1.284659	40	1.299308	80	1.276641
Hexachlorobenzene	1	0.2592416	2	0.2687354	5	0.2629616	10	0.2593293	20	0.2620445	40	0.2569733
Hexachlorobutadiene	1	0.235249	2	0.2277751	5	0.2288093	10	0.2259281	20	0.2344975	40	0.2273967
Hexachloroethane	1	0.5150678	2	0.5279449	5	0.544491	10	0.5487768	20	0.5592072	40	0.5877675
2-Methylphenol	1	1.040942	2	1.092754	5	1.161271	10	1.130075	20	1.181437	40	1.132394
3-Methylphenol	1	1.01669	2	1.075375	5	1.161271	10	1.090738	20	1.129463	40	1.109054
4-Methylphenol	1	1.01669	2	1.071104	5	1.161271	10	1.090738	20	1.129463	40	1.109054
Nitrobenzene	1	0.4237405	2	0.4297949	5	0.4379195	10	0.4349863	20	0.4347563	40	0.4282321
Nitrobenzene-d5	1	0.407884	2	0.4245175	5	0.4314492	10	0.4316745	20	0.4434793	40	0.4389771
Pentachlorophenol	1		2	~~4.006507E-02~~	5	8.330138E-02	10	0.1164321	20	0.1342403	40	0.1623934
Phenol-d6	2	1.572925	4	1.590535	10	1.587712	20	1.602929	40	1.632193	80	1.568407
Pyridine	1	1.444388	2	1.453758	5	1.458891	10	1.438487	20	1.43716	40	1.435702
Terphenyl-dl4	1	0.8673526	2	0.8352802	5	0.9205058	10	0.9283752	20	0.97079	40	0.9579425
2,4,6-Tribromophenol	2	~~7.284342E-02~~	4	8.154003E-02	10	0.0991439	20	0.1077891	40	0.111547	80	0.1233793
2,4,6-Trichlorophenol	1	0.2768618	2	0.3001276	5	0.3517297	10	0.3883008	20	0.4004558	40	0.4077175
2,4,5-Trichlorophenol	1	0.3376426	2	0.3001569	5	0.3662274	10	0.403034	20	0.4204659	40	0.4384232
Perylene-d12	40	34602.98	40	49503.98	40	38898.88	40	43250.95	40	39501.9	40	39547.95

INITIAL CALIBRATION DATA (Continued)

SW8270C

Laboratory: Empirical Laboratories, LLC
SDG: SMU5Crane_002
Client: Tetra Tech NUS, Inc. (T010)
Project: SMU5 Crane
Calibration: 0056004
Instrument: MS-BNA3
Matrix: Water
Calibration Date: 1/6/2010 12:49:08PM

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ng/uL	RF	ng/uL	RF	ng/uL	RF	ng/uL	RF	ng/uL	RF	ng/uL	RF
1,4-Dichlorobenzene	50	1.456078	60	1.491527	100	1.436722	80	1.467509				
2,4-Dinitrotoluene	50	0.3971548	60	0.4075956	100	0.4173171	80	0.4184121				
2-Fluorobiphenyl	50	1.341686	60	1.367262	100	1.262805	80	1.299577				
2-Fluorophenol	100	1.213763	120	1.244716	200	1.179062	160	1.206834				
Hexachlorobenzene	50	0.2452966	60	0.2542771	100	0.2515904	80	0.2511919				
Hexachlorobutadiene	50	0.220299	60	0.2276463	100	0.2260744	80	0.2268394				
Hexachloroethane	50	0.5508992	60	0.5719125	100	0.5729705	80	0.5756856				
2-Methylphenol	50	1.062504	60	1.094162	100	1.081617	80	1.097588				
3-Methylphenol	50	1.054299	60	1.093092	100	1.097744	80	1.110646				
4-Methylphenol	50	1.054299	60	1.093092	100	1.097744	80	1.110646				
Nitrobenzene	50	0.4103601	60	0.4221392	100	0.4064212	80	0.4120548				
Nitrobenzene-d5	50	0.4178774	60	0.4300993	100	0.4210676	80	0.424139				
Pentachlorophenol	50	0.1593097	60	0.1651558	100	0.178319	80	0.1751542				
Phenol-d6	100	1.499366	120	1.532517	200	1.455028	160	1.491224				
Pyridine	50	1.345129	60	1.39299	100	1.370303	80	1.392924				
Terphenyl-dl4	50	0.9694739	60	1.0098	100	0.9352449	80	0.9589841				
2,4,6-Tribromophenol	100	0.1181786	120	0.1244012	200	0.1274387	160	0.12573				
2,4,6-Trichlorophenol	50	0.3973733	60	0.4147241	100	0.4166234	80	0.4152052				
2,4,5-Trichlorophenol	50	0.4208594	60	0.4406194	100	0.4494258	80	0.4401475				
Perylene-d12	40	40165.38	40	33657.13	40	40963.85	40	43229.23	40		40	

INITIAL CALIBRATION DATA (Continued)

SW8270C

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Calibration:	0056004	Instrument:	MS-BNA3
Matrix:	Water	Calibration Date:	1/6/2010 12:49:08PM

Compound	Level 13		Level 14		Level 15		Level 16		Level 17		Level 18	
	ng/uL	RF	ng/uL	RF	ng/uL	RF	ng/uL	RF	ng/uL	RF	ng/uL	RF
1,4-Dichlorobenzene												
2,4-Dinitrotoluene												
2-Fluorobiphenyl												
2-Fluorophenol												
Hexachlorobenzene												
Hexachlorobutadiene												
Hexachloroethane												
2-Methylphenol												
3-Methylphenol												
4-Methylphenol												
Nitrobenzene												
Nitrobenzene-d5												
Pentachlorophenol												
Phenol-d6												
Pyridine												
Terphenyl-dl4												
2,4,6-Tribromophenol												
2,4,6-Trichlorophenol												
2,4,5-Trichlorophenol												
Perylene-d12	40		40		40		40		40		40	

INITIAL CALIBRATION DATA (Continued)

SW8270C

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Calibration:	0056004	Instrument:	MS-BNA3
Matrix:	Water	Calibration Date:	1/6/2010 12:49:08PM

Compound	Level 19		Level 20		Level 21		Level 22		Level 23		Level 24	
	ng/uL	RF	ng/uL	RF	ng/uL	RF	ng/uL	RF	ng/uL	RF	ng/uL	RF
1,4-Dichlorobenzene												
2,4-Dinitrotoluene												
2-Fluorobiphenyl												
2-Fluorophenol												
Hexachlorobenzene												
Hexachlorobutadiene												
Hexachloroethane												
2-Methylphenol												
3-Methylphenol												
4-Methylphenol												
Nitrobenzene												
Nitrobenzene-d5												
Pentachlorophenol												
Phenol-d6												
Pyridine												
Terphenyl-dl4												
2,4,6-Tribromophenol												
2,4,6-Trichlorophenol												
2,4,5-Trichlorophenol												
Perylene-d12	40		40		40		40		40		40	

INITIAL CALIBRATION DATA (Continued)

SW8270C

Laboratory: Empirical Laboratories, LLC
SDG: SMU5Crane_002
Client: Tetra Tech NUS, Inc. (T010)
Project: SMU5 Crane
Calibration: 0056004
Instrument: MS-BNA3
Matrix: Water
Calibration Date: 1/6/2010 12:49:08PM

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
1,4-Dichlorobenzene	1.527195	4.154995	5.4414	0.0537821			CCC (30)	
2,4-Dinitrotoluene	0.3851691	12.44295	9.545667	0.163893			15	
2-Fluorobiphenyl	1.416525	6.907079	8.1166	8.790024E-02			15	
2-Fluorophenol	1.254019	3.277491	4.4138	0.1019536			15	
Hexachlorobenzene	0.2571642	2.644585	11.1999	8.399097E-02			15	
Hexachlorobutadiene	0.2280515	1.875174	6.8498	5.412798E-02			CCC (30)	
Hexachloroethane	0.5554723	4.078205	5.8852	4.131995E-02			15	
2-Methylphenol	1.107474	3.936513	5.6197	0.1072129			15	
3-Methylphenol	1.093837	3.632919	5.7435	0.8210103			15	
4-Methylphenol	1.09341	3.656531	5.7435	0.8210103			15	
Nitrobenzene	0.4240405	2.634175	5.9406	0.1338213			15	
Nitrobenzene-d5	0.4271165	2.423498	5.9209	0.1184946			15	
Pentachlorophenol	0.1467882	22.51529	11.57512	5.436755E-02		0.9994994	CCC (30)	
Phenol-d6	1.553284	3.63699	5.1129	0.2348143			15	
Pyridine	1.416973	2.74101	3.3622	0.230911			15	
Terphenyl-dl4	0.9353749	5.513732	15.122	0.0567854			15	
2,4,6-Tribromophenol	0.1132386	13.41287	10.61156	0.1209772			15	
2,4,6-Trichlorophenol	0.3769119	13.43117	7.9867	9.160673E-02			CCC (30)	
2,4,5-Trichlorophenol	0.4017002	12.58819	8.0386	0.1350719			15	
Perylene-d12	40332.22	11.15579	19.8204	2.979444E-02			15	

INITIAL CALIBRATION CHECK

SW8270C

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Instrument ID:	MS-BNA3	Calibration:	0056004
Lab File ID:	SEQ-ICV3.D	Calibration Date:	01/06/10 12:49
Sequence:	0B05601	Injection Date:	01/06/10
Lab Sample ID:	0B05601-ICV3	Injection Time:	22:14

		CONC. (ng/uL)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN (#)	ICV	LIMIT (#)
2,4-Dinitrotoluene	A	50.00	58.68	0.3851691	0.4520574		17.4	20
Hexachlorobenzene	A	50.00	49.67	0.2571642	0.2554594		-0.7	20
Hexachlorobutadiene	A	50.00	56.21	0.2280515	0.2563597		12.4	20
Hexachloroethane	A	50.00	56.37	0.5554723	0.6262385		12.7	20
2-Methylphenol	A	50.00	46.24	1.107474	1.024301		-7.5	20
3-Methylphenol	A	50.00	48.56	1.093837	1.062373		-2.9	20
4-Methylphenol	A	50.00	48.58	1.09341	1.062373		-2.8	20
Nitrobenzene	A	50.00	54.70	0.4240405	0.4638636		9.4	20
Pentachlorophenol	Q	50.00	50.93	0.1467882	0.1657935		1.9	20
Pyridine	A	50.00	47.44	1.416973	1.344348		-5.1	20
2,4,6-Trichlorophenol	A	50.00	53.38	0.3769119	0.402368		6.8	20
2,4,5-Trichlorophenol	A	50.00	54.26	0.4017002	0.435971		8.5	20
2-Fluorobiphenyl	A	50.00	47.64	1.416525	1.349664		-4.7	20
2-Fluorophenol	A	100.0	94.50	1.254019	1.185056		-5.5	20
Nitrobenzene-d5	A	50.00	49.27	0.4271165	0.4208739		-1.5	20
Phenol-d6	A	100.0	95.62	1.553284	1.485333		-4.4	20
Terphenyl-dl4	A	50.00	52.40	0.9353749	0.9803309		4.8	20
2,4,6-Tribromophenol	A	100.0	107.6	0.1132386	0.1218403		7.6	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

INITIAL CALIBRATION CHECK

SW8270C

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Instrument ID:	MS-BNA3	Calibration:	0056004
Lab File ID:	SEQ-ICV4.D	Calibration Date:	01/06/10 12:49
Sequence:	0B05601	Injection Date:	01/06/10
Lab Sample ID:	0B05601-ICV4	Injection Time:	22:48

		CONC. (ng/uL)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN (#)	ICV	LIMIT (#)

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

INITIAL CALIBRATION CHECK

SW8270C

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Instrument ID:	MS-BNA3	Calibration:	0056004
Lab File ID:	SEQ-ICV5.D	Calibration Date:	01/06/10 12:49
Sequence:	0B05601	Injection Date:	01/06/10
Lab Sample ID:	0B05601-ICV5	Injection Time:	23:22

		CONC. (ng/uL)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN (#)	ICV	LIMIT (#)

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

CONTINUING CALIBRATION CHECK

SW8270C

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Instrument ID:	MS-BNA3	Calibration:	0056004
Lab File ID:	SEQ-CCV1.D	Calibration Date:	01/06/10 12:49
Sequence:	0C07105	Injection Date:	03/11/10
Lab Sample ID:	0C07105-CCV1	Injection Time:	14:38

		CONC. (ng/uL)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
2,4-Dinitrotoluene	A	50.00	52.54	0.3851691	0.4047143		5.1	20
Hexachlorobenzene	A	50.00	46.53	0.2571642	0.2393061		-6.9	20
Hexachlorobutadiene	A	50.00	52.35	0.2280515	0.2387523		4.7	20
Hexachloroethane	A	50.00	54.02	0.5554723	0.6000962		8.0	20
2-Methylphenol	A	50.00	49.82	1.107474	1.103547		-0.4	20
3-Methylphenol	A	50.00	52.01	1.093837	1.13783		4.0	20
4-Methylphenol	A	50.00	52.03	1.09341	1.13783		4.1	20
Nitrobenzene	A	50.00	52.90	0.4240405	0.4486556		5.8	20
Pentachlorophenol	Q	50.00	50.81	0.1467882	0.1653612		1.6	20
Pyridine	A	50.00	47.51	1.416973	1.34634		-5.0	20
2,4,6-Trichlorophenol	A	50.00	51.42	0.3769119	0.3876165		2.8	20
2,4,5-Trichlorophenol	A	50.00	51.03	0.4017002	0.4100055		2.1	20
2-Fluorobiphenyl	A	50.00	45.57	1.416525	1.290959		-8.9	20
2-Fluorophenol	A	100.0	103.5	1.254019	1.297942		3.5	20
Nitrobenzene-d5	A	50.00	53.92	0.4271165	0.4606104		7.8	20
Phenol-d6	A	100.0	100.0	1.553284	1.553786		0.03	20
Terphenyl-dl4	A	50.00	54.08	0.9353749	1.011668		8.2	20
2,4,6-Tribromophenol	A	100.0	96.64	0.1132386	0.1094344		-3.4	20

Column to be used to flag Response Factor and %Diff/Drift values with an asterisk

* Values outside of QC limits

ANALYSIS SEQUENCE SUMMARY

SW8270C

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Sequence:	0B05601	Instrument:	MS-BNA3
Calibration:	0056004		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	0B05601-TUN1	SEQ-TUN1.D	01/06/10 10:15
Cal Standard	0B05601-CAL2	SEQ-CAL2.D	01/06/10 10:38
Cal Standard	0B05601-CAL3	SEQ-CAL3.D	01/06/10 11:12
Cal Standard	0B05601-CAL4	SEQ-CAL4.D	01/06/10 11:46
Cal Standard	0B05601-CAL5	SEQ-CAL5.D	01/06/10 12:20
Cal Standard	0B05601-CAL6	SEQ-CAL6.D	01/06/10 12:54
Cal Standard	0B05601-CAL7	SEQ-CAL7.D	01/06/10 13:28
Cal Standard	0B05601-CAL8	SEQ-CAL8.D	01/06/10 14:03
Cal Standard	0B05601-CAL9	SEQ-CAL9.D	01/06/10 14:37
Cal Standard	0B05601-CALA	SEQ-CALA.D	01/06/10 15:10
Cal Standard	0B05601-CALB	SEQ-CALB.D	01/06/10 15:44
Cal Standard	0B05601-CALD	SEQ-CALD.D	01/06/10 16:18
Cal Standard	0B05601-CALE	SEQ-CALE.D	01/06/10 16:52
Cal Standard	0B05601-CALF	SEQ-CALF.D	01/06/10 17:26
Cal Standard	0B05601-CALG	SEQ-CALG.D	01/06/10 18:00
Cal Standard	0B05601-CALH	SEQ-CALH.D	01/06/10 18:34
Cal Standard	0B05601-CALI	SEQ-CALI.D	01/06/10 19:07
Cal Standard	0B05601-CALJ	SEQ-CALJ.D	01/06/10 19:41
Cal Standard	0B05601-CALK	SEQ-CALK.D	01/06/10 20:14
Cal Standard	0B05601-CALL	SEQ-CALL.D	01/06/10 20:49
Cal Standard	0B05601-CALM	SEQ-CALM.D	01/06/10 21:22
MS Tune	0B05601-TUN2	SEQ-TUN2.D	01/06/10 21:51
Initial Cal Check	0B05601-ICV3	SEQ-ICV3.D	01/06/10 22:14
Initial Cal Check	0B05601-ICV4	SEQ-ICV4.D	01/06/10 22:48
Initial Cal Check	0B05601-ICV5	SEQ-ICV5.D	01/06/10 23:22
Cal Standard	0B05601-CALO	SEQ-CALO.D	01/07/10 00:31
Cal Standard	0B05601-CALP	SEQ-CALP.D	01/07/10 01:06
Cal Standard	0B05601-CALQ	SEQ-CALQ.D	01/07/10 01:40
Cal Standard	0B05601-CALR	SEQ-CALR.D	01/07/10 02:15
Cal Standard	0B05601-CALS	SEQ-CALS.D	01/07/10 02:49
Cal Standard	0B05601-CALT	SEQ-CALT.D	01/07/10 03:24
Cal Standard	0B05601-CALU	SEQ-CALU.D	01/07/10 03:59

ANALYSIS SEQUENCE SUMMARY

SW8270C

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Sequence:	0B05601	Instrument:	MS-BNA3
Calibration:	0056004		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
Cal Standard	0B05601-CALV	SEQ-CALV.D	01/07/10 04:33
Cal Standard	0B05601-CALW	SEQ-CALW.D	01/07/10 05:07
MS Tune	0B05601-TUN3	SEQ-TUN3.D	01/11/10 15:14

ANALYSIS SEQUENCE SUMMARY

SW8270C

Laboratory:	Empirical Laboratories, LLC	SDG:	SMU5Crane_002
Client:	Tetra Tech NUS, Inc. (T010)	Project:	SMU5 Crane
Sequence:	0C07105	Instrument:	MS-BNA3
Calibration:	0056004		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	0C07105-TUN1	SEQ-TUN1.D	03/11/10 14:14
Calibration Check	0C07105-CCV1	SEQ-CCV1.D	03/11/10 14:38
Blank	0C11005-BLK1	C11005B1.D	03/11/10 15:20
LCS	0C11005-BS1	C11005L1.D	03/11/10 15:56
05-WA-01	1003088-01	0308801T.D	03/11/10 17:08
05-WA-02	1003088-02	0308802T.D	03/11/10 17:44
05-WA-03	1003088-03	0308803T.D	03/11/10 18:19
05-WA-04	1003088-04	0308804T.D	03/11/10 18:55
05-WA-02	0C11005-MS1	308802TM.D	03/11/10 19:30

APPENDIX E

MONTHLY INSPECTION REPORTS

SWMU 5 MONTHLY INSPECTION REPORT

Date: 04/29/10	Time: 0900

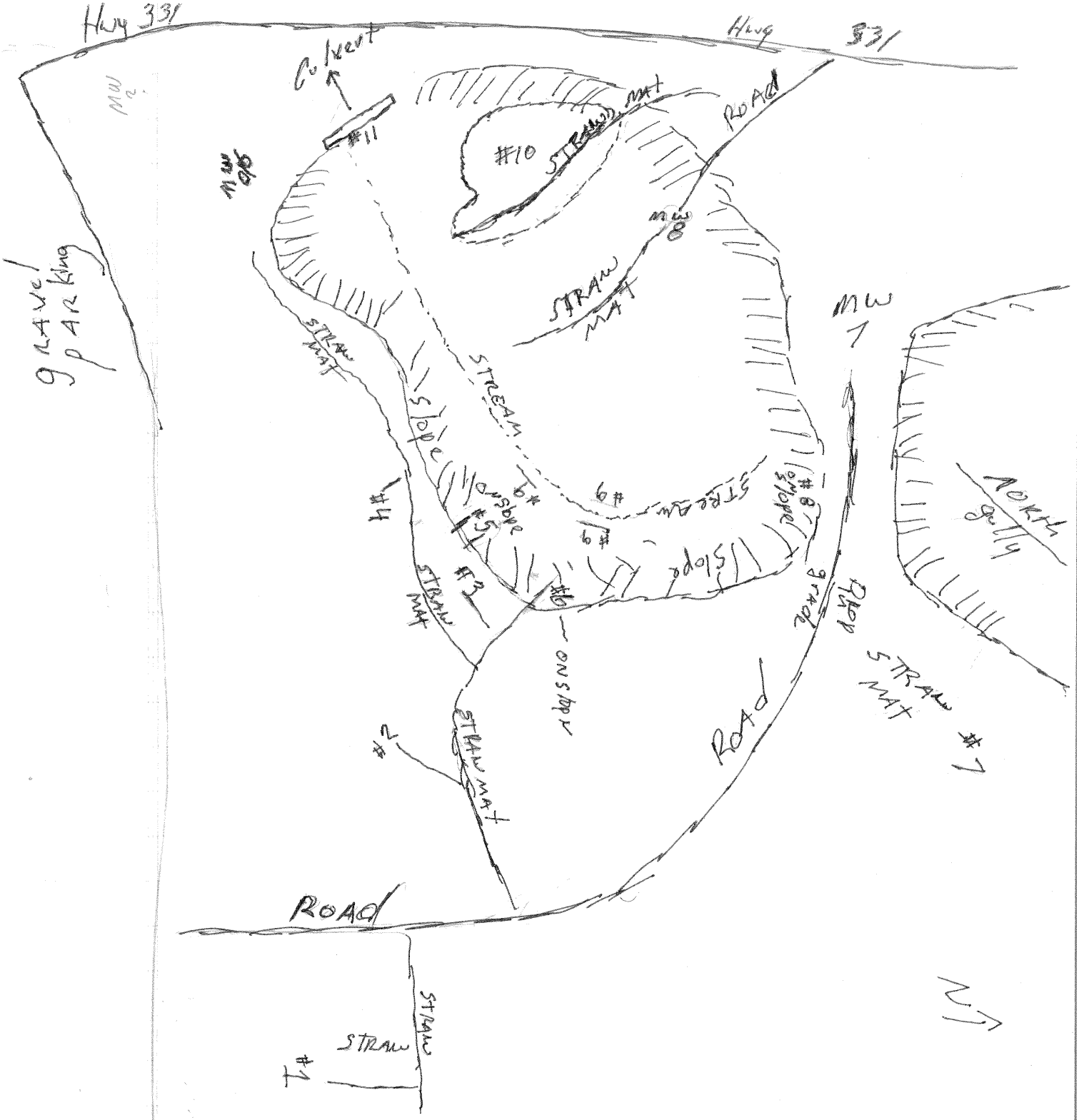
Personnel on Inspection		Weather
Name	Company	Temperature 60 deg F
Lauren Foster	Tetra Tech	Conditions: Sunny, Winds 10mph WSW
Jessica Taylor	Tetra Tech	
Mike Tuttle	Lee & Ryan	

Observations:

Location	Type of Control [1]	Conditions [2]	Comments/Actions(3)
1. East-South, Skid Steer Trail	ST	MR	Add 1-100 ft roll of MAT**
2. Path to Excavation Area	MAT	MR	Add 1-100 ft roll of MAT**
3. SW Gully, Center Area, Top of Slope	None	MR	Drainage channel has formed; Add SF and seeding, repair channel**
4. SW Gully, West-Center Area, Top and Middle of Slope	ST	MR	Add 1-100 ft roll of MAT**
5. SW Gully, Western Area, Top and Middle of Slope	ST	MR	Add seeding and strips of 1-100 ft roll of MAT on slope, add SF at bottom of slope**
6. SW Gully, Center Area, Middle of Slope (located by #3)	MAT	MR	Add seeding and ST**
7. NE Gully	None	MR	Add strips of MAT (should have enough left over from #5)**
8. SW Gully, North-East Area, Middle and Top of Slope	SF	MR	Add strips of MAT (should have enough left over from #5)**
9. All SF in SW Gully (except 2 by culvert and 2 by #4)	SF	Fair	Re-stake all Coir Logs
10. SW Gully, NW Area, Top and Middle of Slope	MAT	MR	Add 1-100 ft roll of MAT and seeding where necessary**
11. At Culvert	SF	Fair	Possibly add more Coir Logs**
Define Locations	(1) Type of Control SF- Silt fence or Coir Log MAT - Straw matting ST - Straw mulch SD - Seed	(2) Conditions Good Fair MR - Maintenance Required (Explain in Comments)	(3) Include dates for follow-up if required

Sketch/Other Comments: ** - To be completed on 05/05/10.....Sketch attached on separate page.

Inspector Name: Lauren Foster	Inspector Signature: Lauren Foster



Hwy 331
Hwy 331
Culvert
#11
#10
STRAW MAT
ROAD
MW 8
STRAW MAT
MW 7
gravel parking
STRAW MAT
STREAM
slope
#4
#5
#6
#9
#8
#3
#2
#1
STRAW MAT
STRAW MAT
STRAW MAT
ROAD
ROAD
STRAW
STRAW
#7
North gully

May 13, 2010

Mr. Tony Klimek, P.E.
Cincinnati Operations Manager
Tetra Tech NUS, Inc.
250 West Court Street, Suite 200 W
Cincinnati, Ohio 45202

RE: **Monthly Erosion Control Report**
For April 2010
SWMU 5 – Old Burn Pit
Soil Excavation and Debris Removal Actions
Naval Support Activity, Crane
Crane, Indiana
Subcontract No. 1056398
Lee & Ryan Project No. 10002

Dear Mr. Klimek:

Lee & Ryan Environmental Consulting, Inc. (Lee & Ryan) respectfully submits this *Monthly Erosion Control Progress Report* to Tetra Tech NUS, Inc. (Tetra Tech) to document environmental services conducted at Solid Waste Management Unit 5 (SWMU 5) - Old Burn Pit located at Naval Support Activity, Crane (NSA Crane), in Crane, IN. The 25-acre SWMU 5 is comprised of the Burn Pit Area and 16-acre Gully Area (Work Area).

This letter report describes the first of six (6) routine monthly inspections of erosion and sediment control devices at SWMU 5. The first monthly inspection was conducted on April 29, 2010, with follow-up work completed on May 5, 2010. This letter report includes a summary of site conditions, a description of progress on the stabilization of disturbed areas, a checklist for inspection of erosion and sediment control devices, and a description of the maintenance performed.

Summary of Site Inspections

Lee & Ryan conducted erosion and sediment control device inspections and repairs on April 29 and May 5, 2010. Lee & Ryan's *Daily Field Logs,* which describe the work activities for these two (2) days, are provided as **Attachment A.** Lee & Ryan completed repair work based on Tetra Tech's *SWMU 5 Monthly Inspection Report* (*Report*) and associated map (**Attachment B)** as well as on-site direction from Tetra Tech personnel. Tetra Tech identified 11 locations to be addressed for erosion and sediment control management in the *Report* and cross-referenced them on an associated map. With some modifications, the *Report* and map were the basis of the activities conducted on April 29 and May 5, 2010.

On April 29, 2010, after inspecting the site, all coir logs were re-secured with additional wooden stakes (Location 9 on *SWMU 5 Monthly Inspection Report*). Subsequently, Tetra Tech and Lee & Ryan determined that a follow-up visit was necessary to address the other 10 of 11 locations.

During the follow-up visit conducted on May 5, 2010, it was determined that Locations 5 and 11 did not require additional attention; however, loose straw was added to Location 7, although Location 7 indicates 'None' in the *Report* under 'Type of Control'. Straw blankets were added to Locations 1 (~40 feet), 2 (~30 feet), 3 (~50 feet), 4 (~50 feet), 6 (~10 feet), 8 (~10 feet), and 10 (~50 feet), although 'MAT' (straw matting) was not listed as the type of control for Locations 3, 4, and 8 in the *Report*. One (1) coir log was added in the vicinity of Location 11.

At Location 6, erosion rills formed on both sides of the existing straw blanket. Therefore, Lee & Ryan excavated soil and filled the rills by hand, and then applied erosion control blankets to both sides.

Approximately 250 feet of straw blankets were placed during the visit. Lee & Ryan dispersed shady grass seed mix on all areas with erosion control straw blankets and loose straw. Lee & Ryan noted that vegetation grew significantly on the erosion and sediment controlled areas between April 29 and May 5, 2010, adding to the stabilization efforts.

If you have any questions regarding this report, please contact Angelo Dattilo at (800) 680-8987, extension 201.

Sincerely,

LEE & RYAN ENVIRONMENTAL CONSULTING, INC.

Angelo J. Dattilo, L.P.G.
Director of Environmental Operations

Scott Randall, L.P.G., C.H.M.M.
Senior Project Manager

Enclosures: Attachment A
Attachment B

AD/ad/jj

ATTACHMENT A

Daily Summary Reports

LEE & RYAN

Daily Summary Report

General Information

Date:	4.29.10
Project Name:	Clark
Project Number:	10002
L&R Personell:	Mike Tuttle
Arrival Time:	9:00
Departure Time:	1:15
Subcontractors:	-
Client:	Tetra Tech
Equipment:	-
Weather:	Sunny (cool)

Key Observations/Activities

Looked over site after rain fall.

Daily Activities Checklist

	Yes	No	Comments
Equipment inspected?			N/A
Tailgate H&S meeting held prior to beginning field activities?	✓		
Monitoring equipment calibrated?			N/A
Calibration results?			↓
Have site conditions changed from the previous day? How?			

Summary of Work Performed - Soil

	Yes	No	Comments
Was soil excavated today? If yes, how much?		✓	
Were soil samples collected today?			N/A
Was soil transported offsite? If yes, by whom?			↓
What is the manifest number(s) for soil removal?			
What disposal facility will the soil be disposed?			
What lead dust readings were collected? Time(s)?			↓
Were erosion control methods implemented? Which ones?	—	—	

Summary of Work Performed - Metallic Debris and General Refuse

	Yes	No	Comments
Was metallic debris and general refuse removed today?		✓	
How much debris and refuse was removed?			N/A
What types of debris was removed?			↓
What types of refuse was removed?			
Was debris transported offsite? If yes, by whom?			
What is the manifest number(s) for debris removal?			
Was refuse transported offsite? If yes, by whom?			
What is the manifest number(s) for refuse removal?			
Were erosion control methods implemented? Which ones?	✓		re-staked all the logs (staked) ASD 5/13/10
Was a cutting torch used? How many times?			
Did Lee & Ryan secure a fire permit for the cutting torch?			

General Comments

Walked property with Lauren Foster & Jessica Caylor from Tetra Tech. - They want more straw blankets put down in many areas. Maybe 3 logs added in couple areas - also while on site I re-staked all the logs

Lee & Ryan Representative

4.29.10

Date

LEE & RYAN

Daily Summary Report

General Information

Date:	5-5-10
Project Name:	Crane
Project Number:	10002
L&R Personell:	Mike Tuttle Dene Zamudio
Arrival Time:	9:00
Departure Time:	1:00
Subcontractors:	-
Client:	Tetra Tech Lauren Foster
Equipment:	-
Weather:	Sunny Warm

Key Observations/Activities

put appox. 250 ft. of straw blankets down. Seeded & put straw down added 1 log

Daily Activities Checklist

	Yes	No	Comments
Equipment inspected?	✓		
Tailgate H&S meeting held prior to beginning field activities?	✓		
Monitoring equipment calibrated?	N/A		
Calibration results?	↓		
Have site conditions changed from the previous day? How?	↓		

Summary of Work Performed - Soil

	Yes	No	Comments
Was soil excavated today? If yes, how much?		✓	
Were soil samples collected today?		✓	
Was soil transported offsite? If yes, by whom?		✓	
What is the manifest number(s) for soil removal?	N/A		
What disposal facility will the soil be disposed?	↓		
What lead dust readings were collected? Time(s)?		✓	
Were erosion control methods implemented? Which ones?			

Summary of Work Performed - Metallic Debris and General Refuse

	Yes	No	Comments
Was metallic debris and general refuse removed today?		✓	
How much debris and refuse was removed?	N/A		
What types of debris was removed?	↓		
What types of refuse was removed?			
Was debris transported offsite? If yes, by whom?			
What is the manifest number(s) for debris removal?			
Was refuse transported offsite? If yes, by whom?			
What is the manifest number(s) for refuse removal?			
Were erosion control methods implemented? Which ones?	✓		straw blankets & 1 log seeding & straw
Was a cutting torch used? How many times?	N/A		
Did Lee & Ryan secure a fire permit for the cutting torch?	↓		

General Comments

Met with Lauren Foster with Tetra Tech - put down appox. 250 ft. of straw blankets down. Added 1 log near area #11 - put down 30-35 pounds of local light seed throw all areas.

Lee & Ryan Representative

5-5-10

Date

ATTACHMENT B

SWMU 5 Monthly Inspection Report and Site Map

SWMU 5 MONTHLY INSPECTION REPORT

Date: 04/29/10	Time: 0900

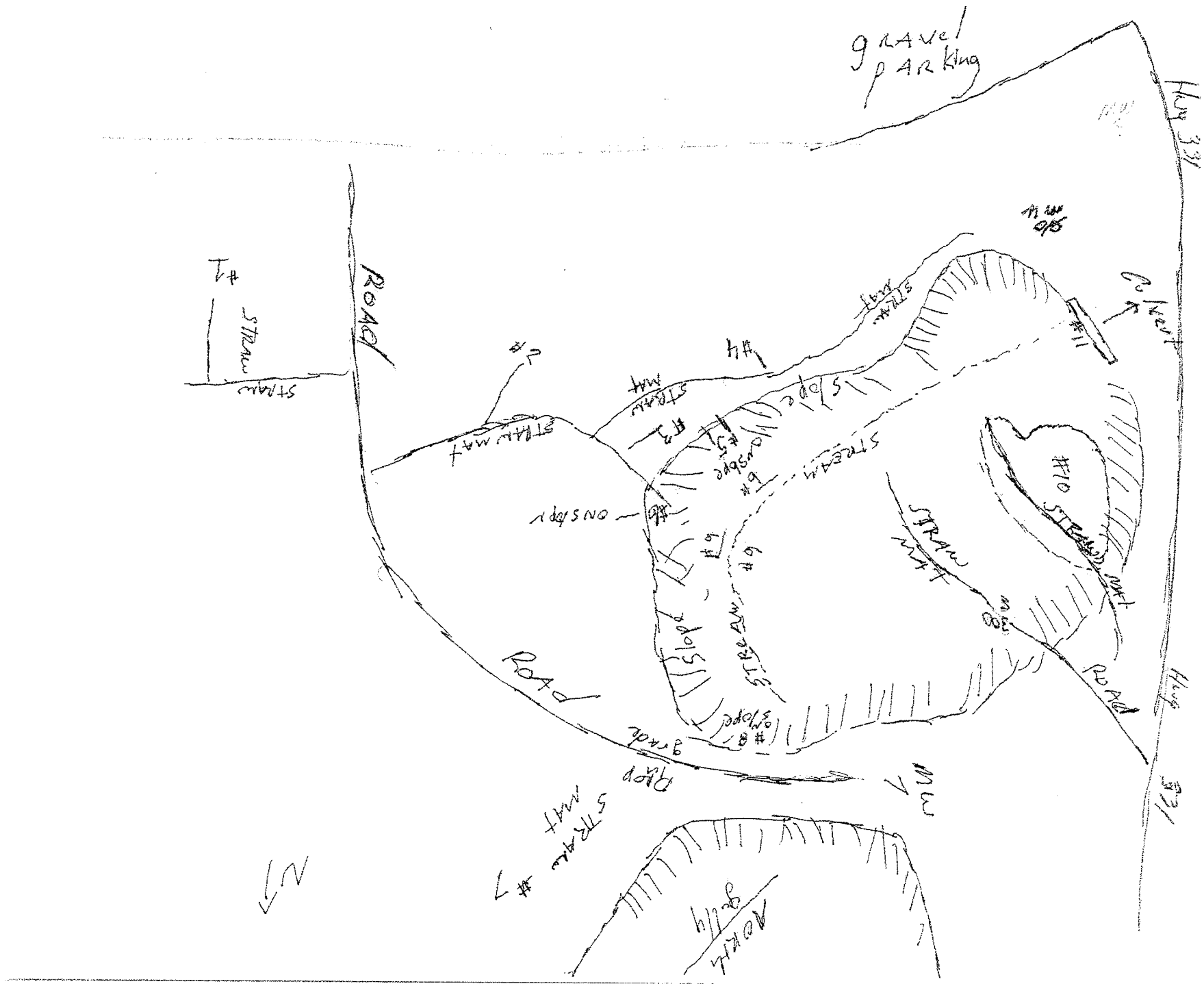
Personnel on Inspection		Weather
Name	Company	Temperature 60 deg F
Lauren Foster	Tetra Tech	Conditions: Sunny, Winds 10mph WSW
Jessica Taylor	Tetra Tech	
Mike Tuttle	Lee & Ryan	

Observations:

Location	Type of Control [1]	Conditions [2]	Comments/Actions(3)
1. East-South, Skid Steer Trail	ST	MR	Add 1-100 ft roll of MAT**
2. Path to Excavation Area	MAT	MR	Add 1-100 ft roll of MAT**
3. SW Gully, Center Area, Top of Slope	None	MR	Drainage channel has formed; Add SF and seeding, repair channel**
4. SW Gully, West-Center Area, Top and Middle of Slope	ST	MR	Add 1-100 ft roll of MAT**
5. SW Gully, Western Area, Top and Middle of Slope	ST	MR	Add seeding and strips of 1-100 ft roll of MAT on slope, add SF at bottom of slope**
6. SW Gully, Center Area, Middle of Slope (located by #3)	MAT	MR	Add seeding and ST**
7. NE Gully	None	MR	Add strips of MAT (should have enough left over from #5)**
8. SW Gully, North-East Area, Middle and Top of Slope	SF	MR	Add strips of MAT (should have enough left over from #5)**
9. All SF in SW Gully (except 2 by culvert and 2 by #4)	SF	Fair	Re-stake all Coir Logs
10. SW Gully, NW Area, Top and Middle of Slope	MAT	MR	Add 1-100 ft roll of MAT and seeding where necessary**
11. At Culvert	SF	Fair	Possibly add more Coir Logs**
Define Locations	(1) Type of Control SF- Silt fence or Coir Log MAT - Straw matting ST - Straw mulch SD - Seed	(2) Conditions Good Fair MR - Maintenance Required (Explain in Comments)	(3) Include dates for follow-up if required.

Sketch/Other Comments: ** - To be completed on 05/05/10.....Sketch attached on separate page.

Inspector Name: Lauren Foster	Inspector Signature:


gravel parking
Hwy 331
Culvert
#11
#10
Straw mat
Slope
Stream
Road
#1
#2
#3
#4
#5
#6
#7
#8
#9
Drop grade
Rock gully
N

SWMU 5 MONTHLY INSPECTION REPORT

Date: 05/25/10 | Time: 1100

Personnel on Inspection	
Name	Company
Jessica Taylor	Tetra Tech
Mike Tuttle	Lee & Ryan

Weather
Temperature 77 deg F
Conditions: Sunny, Winds 6 mph SSE, 66% Humidity

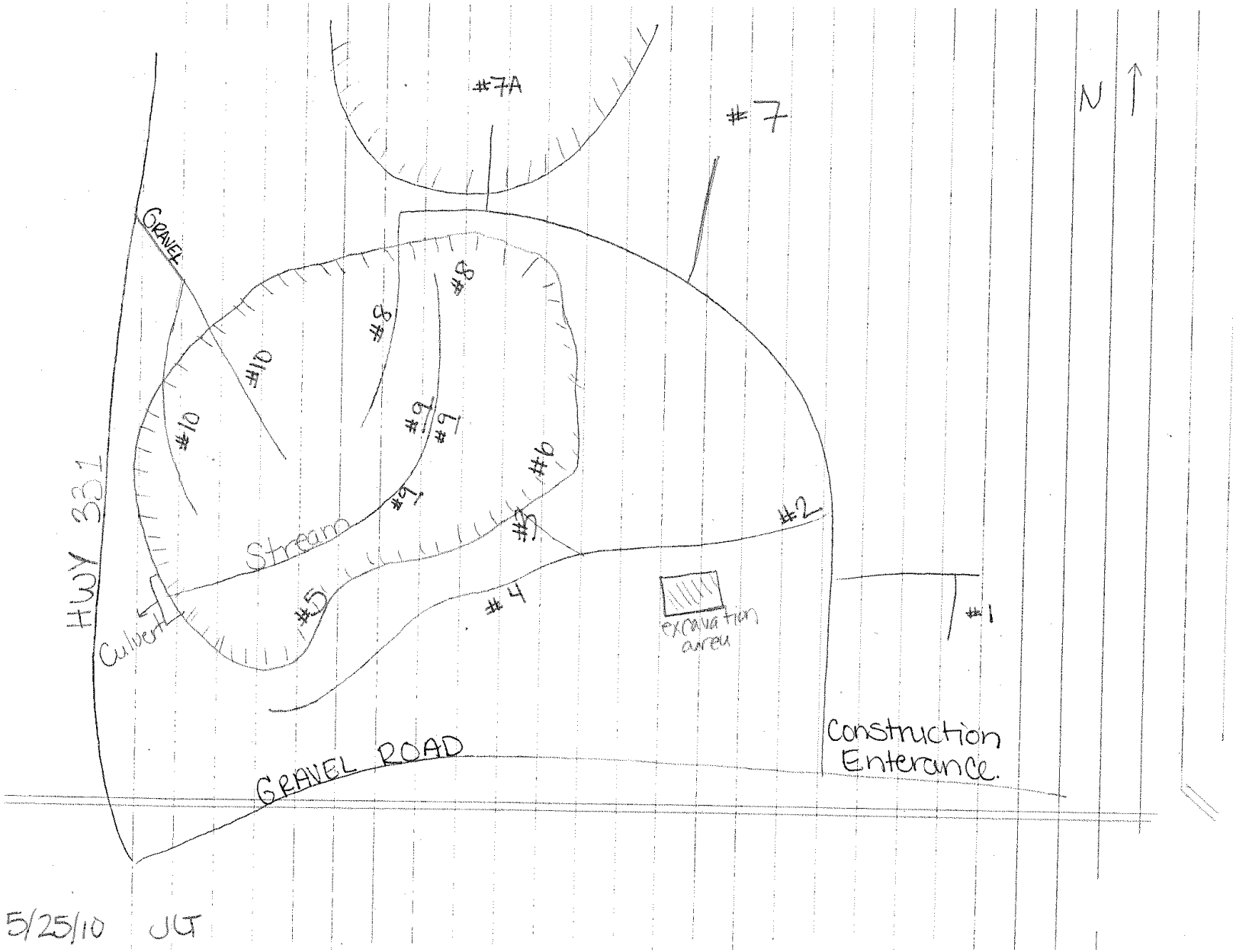
Observations:

Location	Type of Control (1)	Conditions (2)	Comments/Actions(3)
1. East-South, Skid Steer Trail	MAT, SD	Fair	MAT and SD were added previously, seed germinating
2. Path to Excavation Area	MAT, SD	Fair	MAT and SD were added previously, seed germinating
3. SW Gully, Center Area, Top of Slope	MAT, SD	Fair	SF was not added as suggested in previous inspection; may be added in June if necessary.
4. SW Gully, West-Center Area, Top and Middle of Slope	SD, ST	MR	SD was added and ST was replaced in areas where it was dislocated by a storm event, if similar problem exists in June, straw matting will be placed down.
5. SW Gully, Western Area, Top and Middle of Slope	MAT, SD, SF	Fair	MAT, SD and SF were added previously, seed germinating
6. SW Gully, Center Area, Middle of Slope (located by #3)	MAT, SD	Fair	MAT and SD were added previously, seed germinating
7. NE Gully	MAT, SD	Fair	MAT and SD were added previously, seed germinating
7A. NE Gully, Northern Area	MAT, SD	Fair	MAT and SD were added previously, seed germinating
8. SW Gully, North-East Area, Middle and Top of Slope	MAT, SF	Fair	MAT and SD were added previously, seed germinating
9. All SF in SW Gully (except 2 by culvert and 2 by #4)	SF	Good	n/a
10. SW Gully, NW Area, Top and Middle of Slope	MAT, SD	MR	1-100 ft roll of MAT and seeding were not added on 05/05/10, was completed on 05/25/10 instead. A coir log was added along the western side to prevent sediment runoff from HWY 331.
11. At Culvert	SF	MR	Added one coir log.

Define Locations	(1) Type of Control SF - Silt fence or Coir Log MAT - Straw matting ST - Straw mulch SD - Seed	(2) Conditions Good Fair MR - Maintenance Required (Explain in Comments)	(3) Include dates for follow-up if required.

Sketch/Other Comments: All previous actions were completed on 05/05/10. Seeding was added and vegetation is returning. Lee and Ryan accomplished all maintenance efforts on 05/25/10 and a follow up inspection was held at 1230 to review such efforts. Next anticipated followup is the monthly inspection for June.

Inspector Name: Jessica Taylor | Inspector Signature: JT


#7A
#7
N
GRAVEL
#8
#8
#10
#10
#9
#9
#9
#6
#3
#2
Stream
#5
#4
#1
HWY 331
Culvert
excavation area
Construction Enterance.
GRAVEL ROAD

5/25/10 JGT

June 4, 2010

Mr. Tony Klimek, P.E.
Cincinnati Operations Manager
Tetra Tech NUS, Inc.
250 West Court Street, Suite 200 W
Cincinnati, Ohio 45202

RE: **Monthly Erosion Control Progress Report**
For May 2010 (Report 2 of 6)
SWMU 5 – Old Burn Pit
Soil Excavation and Debris Removal Actions
Naval Support Activity, Crane
Crane, Indiana
Subcontract No. 1056398
Lee & Ryan Project No. 10002

Dear Mr. Klimek:

Lee & Ryan Environmental Consulting, Inc. (Lee & Ryan), respectfully submits this *Monthly Erosion Control Progress Report* to Tetra Tech NUS, Inc. (Tetra Tech), to document environmental services conducted at Solid Waste Management Unit 5 (SWMU 5) - Old Burn Pit located at Naval Support Activity, Crane (NSA Crane), in Crane, IN. The 25-acre SWMU 5 is comprised of the Burn Pit Area and 16-acre Gully Area (Work Area).

This letter report describes the second of six (6) routine monthly inspections of erosion and sediment control devices at SWMU 5, conducted on May 25, 2010. The first monthly inspection was conducted on April 29, 2010, with follow-up work completed on May 5, 2010.

Lee & Ryan conducted erosion and sediment control device inspections and repairs on May 25, 2010. These activities are summarized on the attached *Daily Summary Report* (see **Attachment A**). Lee & Ryan conducted the inspection and repairs based on guidance by Ms. Jessica Caylor, Tetra Tech's on-site representative during the inspection, and from the prior inspections in April and May. The results of the May 25, 2010, inspection activities are discussed below.

During the site inspection on May 25, 2010, Lee & Ryan observed grass growing in all areas previously seeded in April and May. Lee & Ryan repaired loose straw in a few areas on top and adjacent to the exposed slope of the landfill. The straw was moved by hand back to the original location after it was washed away by heavy rain. Lee & Ryan subsequently reseeded this area.

Lee & Ryan added two (2) coir logs and approximately 70 feet of a 105 foot long straw blanket roll to the Work Area. The coir logs were placed in two (2) separate areas in the vicinity of the culvert underlying Highway 331. Approximately 50 feet of the straw blanket was placed along the base of the access road leading from Highway 331 to the creek and approximately 20 feet of the straw blanket was placed on the trail from the base of the access road to the culvert. Lee & Ryan seeded all four (4) repaired areas with shady grass seed.

The next erosion control inspection event is anticipated to be conduced the week of June 28, 2010, pending Tetra Tech's approval. If you have any questions regarding this report, please contact Angelo J. Dattilo at (800) 680-8987, extension 201.

Sincerely,

LEE & RYAN ENVIRONMENTAL CONSULTING, INC.

Angelo J. Dattilo, L.P.G.
Director of Environmental Operations

Julie Jones for
Scott Randall, L.P.G., C.H.M.M.
Senior Project Manager

Enclosures: Attachment A

AD/ad/jj

ATTACHMENT A

Daily Summary Report for May 25, 2010

LEE & RYAN

Daily Summary Report

General Information

Date:	5-25-10
Project Name:	Crane
Project Number:	10002
L&R Personell:	Mike Tuffle
Arrival Time:	10:40
Departure Time:	1:45
Subcontractors:	—
Client:	Tetra Tech
Equipment:	—
Weather:	partly sunny & muggy warm

Key Observations/Activities

Added 2 logs & 1 roll of straw blankets

Daily Activities Checklist

	Yes	No	Comments
Equipment inspected?			N/A
Tailgate H&S meeting held prior to beginning field activities?	x		
Monitoring equipment calibrated?			N/A
Calibration results?			N/A
Have site conditions changed from the previous ~~day~~ month? How?	x		in new areas

Summary of Work Performed - Soil

	Yes	No	Comments
Was soil excavated today? If yes, how much?		x	
Were soil samples collected today?		x	
Was soil transported offsite? If yes, by whom?			N/A
What is the manifest number(s) for soil removal?			↓
What disposal facility will the soil be disposed?			↓
What lead dust readings were collected? Time(s)?		x	
Were erosion control methods implemented? Which ones?	x		2 logs & 1 roll of straw blankets 2 areas

Summary of Work Performed - Metallic Debris and General Refuse

	Yes	No	Comments
Was metallic debris and general refuse removed today?		x	
How much debris and refuse was removed?			N/A
What types of debris was removed?			↓
What types of refuse was removed?			↓
Was debris transported offsite? If yes, by whom?			↓
What is the manifest number(s) for debris removal?			↓
Was refuse transported offsite? If yes, by whom?			↓
What is the manifest number(s) for refuse removal?			↓
Were erosion control methods implemented? Which ones?	x		
Was a cutting torch used? How many times?		x	
Did Lee & Ryan secure a fire permit for the cutting torch?			

General Comments

Met with Jessica Caylor - added log to culvert - added 20 ft. of blanket near culvert - added log for erosion control in same area - added 70 ft. of blanket on N-W road where drums were picked up for erosion control - fixed couple spots up on top - seeded all repaired areas

Lee & Ryan Representative

5-25-10

Date

SWMU 5 MONTHLY INSPECTION REPORT

Date: 07/07/10	Time: 1300

Personnel on Inspection		Weather
Name	Company	Temperature 90 deg F
Jessica Taylor	Tetra Tech	Conditions: Sunny, Winds 6 mph SSE, 46% Humidity
Mike Tuttle	Lee & Ryan	

Observations:

Location	Type of Control [1]	Conditions [2]	Comments/Actions(3)
1. East-South, Skid Steer Trail	MAT, SD	Good	SD not germinating well. Natural vegetation returning
2. Path to Excavation Area	MAT, SD	Good	Natural Vegetation Returning
3. SW Gully, Center Area, Top of Slope	MAT, SD	Fair	No SF was needed. SD is not germinating well, however, natural vegetation is returning.
4. SW Gully, West-Center Area, Top and Middle of Slope	SD, ST	Good	No MAT needed. Natural vegetation is returning.
5. SW Gully, Western Area, Top and Middle of Slope	MAT, SD, SF	Good	
6. SW Gully, Center Area, Middle of Slope (located by #3)	MAT, SD	Good	
7. NE Gully	MAT, SD	Good	SD not germinating well. Natural vegetation is returning.
7A. NE Gully, Northern Area	MAT, SD	Good	
8. SW Gully, North-East Area, Middle and Top of Slope	MAT, SF	Good	Natural Vegetation Returning
9. All SF in SW Gully (except 2 by culvert and 2 by #4)	SF	Good	
10. SW Gully, NW Area, Top and Middle of Slope	MAT, SD	Good	
11. At Culvert	SF	Good	All 3 coir logs were removed.
Define Locations	(1) Type of Control SF- Silt fence or Coir Log MAT - Straw matting ST - Straw mulch SD - Seed	(2) Conditions Good Fair MR - Maintenance Required (Explain in Comments)	(3) Include dates for follow-up if required.

Sketch/Other Comments: The area's natural vegetation is returning. The seed that was placed down has germinated well in some areas and not well in others, however, with the natural vegetation returning this should not be an issue. No other areas of concern appeared and the erosion control is stable in place. It is recommended that no further erosion control efforts be exercised at this site.

Inspector Name: Jessica Taylor

Inspector Signature: [signature] for JT

July 14, 2010

Mr. Tony Klimek, P.E.
Cincinnati Operations Manager
Tetra Tech NUS, Inc.
250 West Court Street, Suite 200 W
Cincinnati, Ohio 45202

RE: **Monthly Erosion Control Progress Report (3 of 6)**
SWMU 5 – Old Burn Pit
Soil Excavation and Debris Removal Actions
Naval Support Activity, Crane
Crane, Indiana
Subcontract No. 1056398
Lee & Ryan Project No. 10002

Dear Mr. Klimek:

Lee & Ryan Environmental Consulting, Inc. (Lee & Ryan), respectfully submits this *Monthly Erosion Control Progress Report* to Tetra Tech NUS, Inc. (Tetra Tech), to document environmental services conducted at Solid Waste Management Unit 5 (SWMU 5) - Old Burn Pit located at Naval Support Activity, Crane (NSA Crane), in Crane, IN. The 25-acre SWMU 5 is comprised of the Burn Pit Area and 16-acre Gully Area (Work Area).

This letter report describes the third of six (6) routine monthly inspections of erosion and sediment control devices at SWMU 5, conducted on July 7, 2010. Prior monthly inspections were conducted on April 29, 2010, and May 5, 2010.

Lee & Ryan conducted erosion and sediment control device inspections and repairs on July 7, 2010. These activities are summarized on the attached *Daily Summary Report* (see **Attachment A**). Lee & Ryan conducted the inspection and repairs based on guidance by Ms. Jessica Taylor, Tetra Tech's on-site representative during the inspection, and from prior inspections in April and May. The results of the July 7, 2010, inspection activities are discussed below.

During the site inspection, Lee & Ryan observed grass growing in all areas previously seeded in April and May 2010. In addition, Lee & Ryan inspected the erosion control devices that had been constructed for the project site. All areas, including the excavation repaired with erosion control devices, appeared to be in good condition and no repair was necessary. Lee & Ryan manually removed and properly disposed of three (3) coir logs in front of the culvert under the adjacent road. Photos of the inspection are provided as **Attachment B**.

The next erosion control inspection event is anticipated to be conduced the week of August 9, 2010, pending Tetra Tech's approval. If you have any questions regarding this report, please contact Angelo J. Dattilo at (800) 680-8987, extension 201.

Sincerely,

LEE & RYAN ENVIRONMENTAL CONSULTING, INC.

Angelo J. Dattilo, L.P.G.
Director of Environmental Operations

Scott Randall, L.P.G., C.H.M.M.
Senior Project Manager

Enclosures: Attachment A
Attachment B

AD/ad/jj

ATTACHMENT A

Daily Summary Report for Site Inspection on July 7, 2010

LEE & RYAN

Daily Summary Report

General Information

Date:	7·7·10
Project Name:	Crane
Project Number:	10002
L&R Personell:	M. Tuttle
Arrival Time:	11:00
Departure Time:	2:30
Subcontractors:	-
Client:	Tetra Tech.
Equipment:	-
Weather:	Hot SUNNY

Key Observations/Activities: Look over site & remove 3 logs from in front of culvert

Daily Activities Checklist

	Yes	No	Comments
Equipment inspected?			N/A
Tailgate H&S meeting held prior to beginning field activities?			↓
Monitoring equipment calibrated?			
Calibration results?			
Have site conditions changed from the previous day? How?			

Summary of Work Performed - Soil

	Yes	No	Comments
Was soil excavated today? If yes, how much?		/	
Were soil samples collected today?		/	
Was soil transported offsite? If yes, by whom?			N/A
What is the manifest number(s) for soil removal?			↓
What disposal facility will the soil be disposed?			
What lead dust readings were collected? Time(s)?			
Were erosion control methods implemented? Which ones?		/	

Summary of Work Performed - Metallic Debris and General Refuse

	Yes	No	Comments
Was metallic debris and general refuse removed today?		/	
How much debris and refuse was removed?			N/A
What types of debris was removed?			↓
What types of refuse was removed?			
Was debris transported offsite? If yes, by whom?		/	
What is the manifest number(s) for debris removal?			N/A
Was refuse transported offsite? If yes, by whom?			↓
What is the manifest number(s) for refuse removal?			
Were erosion control methods implemented? Which ones?		/	
Was a cutting torch used? How many times?		/	
Did Lee & Ryan secure a fire permit for the cutting torch?			N/A

General Comments

Met with Jessica Taylor to look over site & take Pictures Jessica very happy with site - I removed the three logs from in front of culvert & removed off of property.

Lee & Ryan Representative

7·7·10
Date

7/14/10

ATTACHMENT B

Site Photographs from Site Inspection on July 7, 2010

MONTHLY EROSION CONTROL PROGRESS REPORT

SWMU 5 – Old Burn Pit; Site Inspection Conducted on July 7, 2010

Erosion control matting along the entrance road.

MONTHLY EROSION CONTROL PROGRESS REPORT

SWMU 5 – Old Burn Pit; Site Inspection Conducted on July 7, 2010

Erosion control blankets on the pathway east of the main trial.

Vegetated slope of exposed waste face.

MONTHLY EROSION CONTROL PROGRESS REPORT

SWMU 5 – Old Burn Pit; Site Inspection Conducted on July 7, 2010

Coir logs at toe of slope of waste face and adjacent to creek.

Coir logs at toe of slope of waste face and adjacent to creek.

MONTHLY EROSION CONTROL PROGRESS REPORT

SWMU 5 – Old Burn Pit; Site Inspection Conducted on July 7, 2010

Coir logs at toe of slope of waste face and adjacent to creek.

Erosion control matting on a trail along the top of the waste area.