RCRA FACILITY INVESTIGATION REPORT
ASSEMBLY A — SWMU 1
FIRE DEPARTMENT DRILL AREA
NAVAL SUPPORT ACTIVITY MEMPHIS
MILLINGTON, TENNESSEE

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Department of the Navy
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Naval Facilities Engineering Command
North Charleston, South Carolina

Prepared by:

EnSafe/Allen & Hoshall
5720 Summer Trees Drive, Suite 8
Memphis, Tennessee 38134
(901) 383-9115

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ABBREVIATIONS AND ACRONYMS

AST	Aboveground Storage Tank
bls	below land surface
BRAC	Base Closure and Realignment Act of 1990
CFR	Code of Federal Regulations
cm/sec	centimeters per second
CSI	Confirmatory Sampling Investigation
DPT	Direct Push Technology
DQO	Data Quality Objectives
DRO	Diesel Range Organics
E/A&H	EnSafe/Allen & Hoshall
ERA	Ecological Risk Assessment
FDDA	Fire Department Drill Area
GC/FID	Gas Chromatograph/Flame Ionization Detector
GRO	Gasoline Range Organics
HI	Hazard Index
HSWA	Hazardous and Solid Waste Amendments
HQ	Hazard Quotient
IAS	Initial Assessment Study
ILCR	Incremental excess Lifetime Cancer Risk
IM	Interim Measures
MCL	Maximum Contaminant Level
μg/kg	micrograms per kilogram
mg/L	milligrams per liter
mg/kg	milligrams per kilogram
NAS	Naval Air Station
NSA	Naval Support Activity
PCB	Polychlorinated Biphenyls
PRE	Preliminary Risk Evaluation
QA/QC	Quality Assurance/Quality Control
RBC	Risk-Based Concentration
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
SOUTHDIV	Department of the Navy Southern Division
SSL	Soil Screening Level
SVOC	Semivolatile Organic Compound
SW 846	Solid Waste 846
SWMU	Solid Waste Management Unit
TCLP	Toxicity Characteristic Leaching Procedure
TDEC	Tennessee Department of Environment and Conservation
TPH	Total Petroleum Hydrocarbons
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey
VOC	Volatile Organic Compound

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EXECUTIVE SUMMARY

This report details the findings of the Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) for Solid Waste Management Unit (SWMU) 1, the Fire Department Drill Area (FDDA), at Naval Support Activity (NSA) Memphis in Millington, Tennessee. The following briefly summarizes the RFI report.

SWMU 1, within the west-central portion of the NSA Memphis Northside, comprises an asphalt area of approximately 1.5 acres at the west end of inactive Runway 09. The FDDA was within the 200-foot wide asphalt runway which is in poor condition because of weathering and lack of maintenance. Presently, remnants of the FDDA consist of a 20-foot X 20-foot area enclosed by railroad rails formerly used for burning operations and a 6-foot high pile of soil west of the burn area. SWMU 1 is bound on the west, north, and south by cultivated fields, and on the northeast and southeast by the grass apron adjacent to active Runway 04.

SWMU 1 was reportedly used as a simulated crash site for fire-fighting training from 1960 through 1984. Monthly fire training consisted of spraying fuel on an aircraft shell within the 20-foot square box, igniting it, and extinguishing the fire. Approximately 55 to 100 gallons of fuel were used in each training session.

Subsurface soil samples collected during a 1992 Interim Measures (IM) investigation were analyzed for volatile organic compounds (VOCs), total petroleum hydrocarbons (TPH) (by gas chromatograph/flame ionization device), cadmium, chromium, and lead. Soil samples from three locations (Borings 5, 11, and the background boring) were additionally analyzed for semivolatile organic compounds (SVOCs), cyanide, pesticides/polychlorinated biphenyls (PCBs), TPH (by USEPA Method 418.1), and Appendix IX metals. As part of the RFI, in 1995 a Direct Push Technology (DPT) survey was conducted to sample subsurface soil and groundwater; these samples were analyzed for VOCs only to determine whether any contamination that might be present had migrated vertically downward. VOCs were selected as an indicator parameter because of their mobility and because they include constituents of potential site contaminants

(solvents and petroleum). Surface soil samples (0 to 1 foot deep) collected in January 1996 for preliminary risk evaluation preparation were analyzed for VOCs, SVOCs, herbicides, pesticides/PCBs, Appendix IX metals, and TPH Gasoline Range Organics and Diesel Range Organics. Each contaminant group is discussed below, including those exceeding Risk-Based Concentrations (RBCs), Soil Screening Levels (SSLs) (USEPA Region III, June 1996), and/or two times (2X) mean background reference concentrations (RCs) for inorganics. Stockpiled soil west of the burn area also was sampled for disposal purposes.

Conclusions

- No SVOCs, herbicides, or organophosphorus pesticides were detected in any soil samples. Additionally, no VOCs detected in soil exceeded their respective RBCs or SSLs and no metals were detected in soil exceeding both their RBCs or SSLs and their RCs.

- One surface soil sample exhibited an elevated TPH concentration (390 mg/kg) exceeding the Tennessee Department of Environment and Conservation, Division of Solid Waste Management, State Remediation Section action level of 100 milligrams per kilogram. However, this was an isolated occurrence.

- Dieldrin was the only detected site constituent in surface soil exceeding its residential RBC and SSL. Dieldrin is ubiquitous at NSA Memphis from aerial applications in the 1950s and 1960s resulting from a U.S. Department of Agriculture quarantine on the white-fringed beetle. A June 1995, technical memorandum, *Discussion of Dieldrin Risk Management Issues,* concluded "... dieldrin levels found at each SMWU do not necessitate remedial action in the absence of other significant carcinogenic risk contributors."

- Groundwater samples collected at SWMU 1 during the DPT survey were analyzed for VOCs to determine whether solvent or petroleum contamination, if any, had migrated

vertically downward. No VOCs were detected in any of the samples analyzed in the onsite laboratory.

- The soil stockpile within SWMU 1, of unknown origin, was sampled and analyzed first for a full-scan analysis and then for disposal characterization. Toluene, chlorinated herbicides, chlorinated pesticides, metals, and TPH were detected in the full scan analysis sample. Except for barium, the results of the toxicity characteristic leaching procedure (TCLP) analyses, necessary for disposal, were less than detection limits. The barium concentration (0.92 mg/kg) was less than the TCLP limit (100 mg/kg) and was therefore not a characteristic hazardous waste. The soil stockpile was transported offsite for disposal as nonhazardous waste in June 1996.

- A Preliminary Risk Evaluation (PRE) was conducted in accordance with *Guidance on Preliminary Risk Evaluations for the Purpose of Reaching a Finding of Suitability to Lease* (USEPA Region IV Memorandum, November 1994). Data from the three SWMU 1 surface soil samples were used to perform the PRE. The risk sums for carcinogenic site contaminants were 2×10^{-5} and 3×10^{-6} for residential and industrial use scenarios, respectively. A site exceeding a risk threshold of 1×10^{-4} generally indicates that additional investigation is required. The Hazard Indices (HI) for noncarcinogenic site constituents were 0.3 and 0.01 for residential and industrial use scenarios, respectively. An HI greater than 1 generally indicates the site will require further investigation. Based on the PRE, SWMU 1 is suitable for either residential or industrial land use.

- No significant habitat features were identified at SWMU 1 that could provide shelter, substantive food or water, or a mixture of cover types for wildlife. This absence of habitat, and thus receptors, limits the potential for ecological risk.

Recommendations

Based on the information gathered during the RFI conducted for SWMU 1, risk to human health and the environment associated with the constituents detected onsite should be minimal. No further action is recommended for SWMU 1.

1.0 INTRODUCTION

As part of the U.S. Navy's Installation Restoration program, the following Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) report has been prepared for Solid Waste Management Unit (SWMU) 1, the Fire Department Drill Area (FDDA), at Naval Support Activity (NSA) Memphis, Millington, Tennessee. SWMU 1 was scheduled for an RFI because of the former Naval Air Station (NAS) Memphis fire department burning operations conducted onsite.

As a result of the Base Closure and Realignment Act (BRAC) of 1990, a portion of NSA Memphis that includes SWMU 1 is being closed and transferred to the City of Millington for reuse. SWMU 1 is one of 15 SWMUs at NSA Memphis requiring a full RFI because of known or suspected releases of contaminants; 35 other SWMUs are undergoing Confirmatory Sampling Investigations (CSIs). The RFI SWMUs have been categorized into three assemblies (A, B, and E) according to their BRAC status. The FDDA is one of six Assembly A SWMUs. Assemblies A and B, on the Northside, are within the closing portion of NSA Memphis, while Assembly E, on the Southside, is within the portion that will realign and remain open. Closing Assemblies C and D and realigning Assemblies F, G, and H are undergoing CSIs.

This RFI, undertaken by EnSafe/Allen & Hoshall (E/A&H) and the U.S. Geological Survey (USGS), adhered to the requirements of the Hazardous and Solid Waste Amendments portion (HSWA-TN02) of RCRA Permit No. TN2-170022-600 and applicable regulations. This report summarizes activities conducted during the investigation and the resulting findings and conclusions.

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2.0 SITE DESCRIPTION AND BACKGROUND INFORMATION

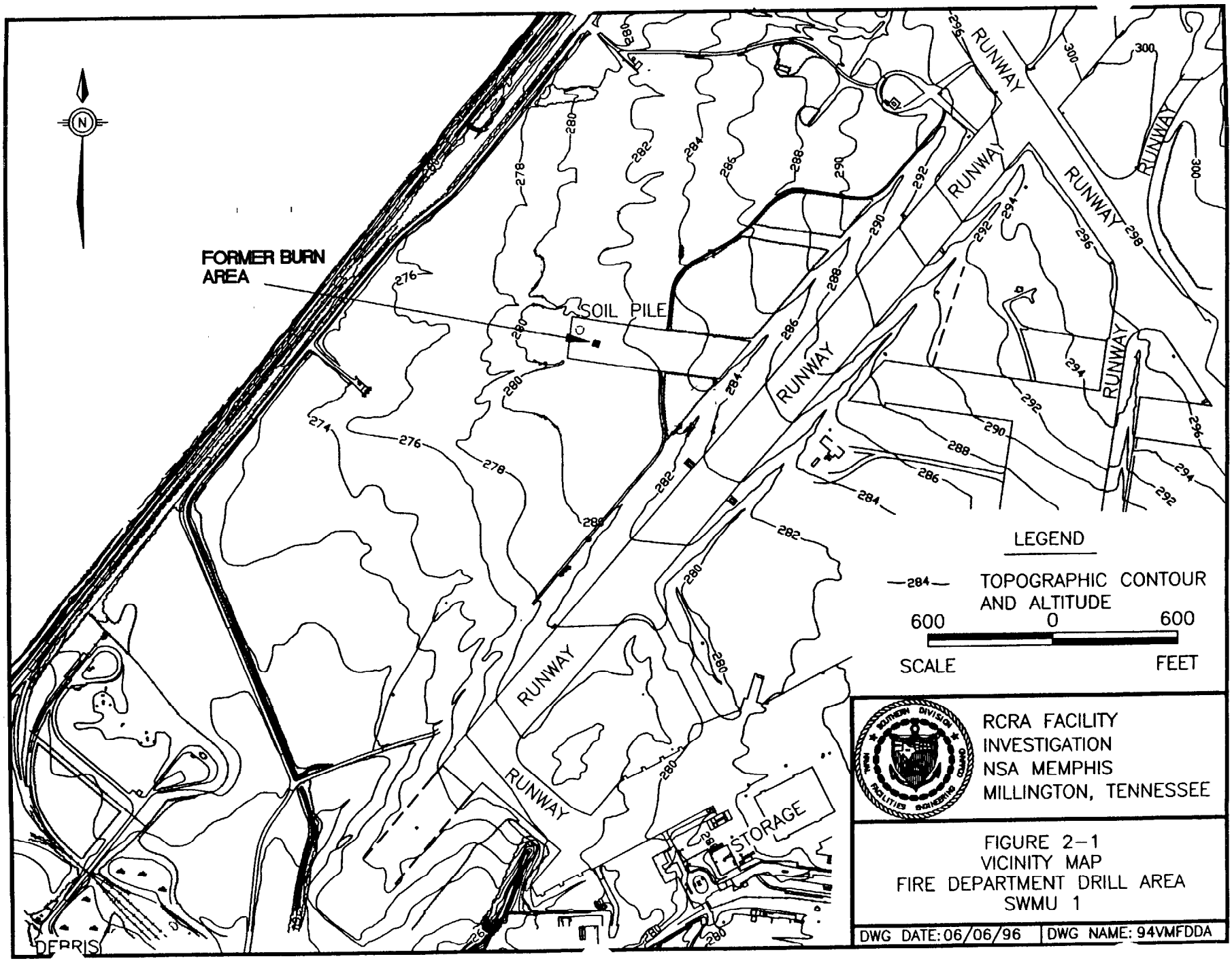
SWMU 1, within the west-central portion of the NSA Memphis Northside, comprises an asphalt area of approximately 1.5 acres at the west end of inactive Runway 09. The FDDA was within the 200-foot wide asphalt runway which is in poor condition because of weathering and lack of maintenance. Presently, remnants of the FDDA consist of a 20-foot X 20-foot area enclosed by railroad rails formerly used for burning operations and a 6-foot high pile of soil west of the burn area. SWMU 1 is bound on the west, north, and south by cultivated fields, and on the northeast and southeast by the grass apron adjacent to active Runway 04.

Topography at the site consists of a subtle, 1% to 3%, downward slope to the west. The western end of Runway 09 and the FDDA drain to the southwest to a point approximately 800 feet west of the site, where runoff is collected by a north-south drainage ditch near the western perimeter of the NSA Memphis Northside. This drainage ditch empties into North Fork Creek, approximately 4,000 feet southwest of the site. No surface water bodies are within 1,000 feet of the SWMU. A vicinity map of SWMU 1 is provided in Figure 2-1 and a site map of SWMU 1 is presented in Figure 2-2.

SWMU 1 was reportedly used as a simulated crash site for fire-fighting training from 1960 through 1984. Monthly fire training consisted of spraying fuel on an aircraft shell within the 20-foot square box, igniting it, and extinguishing the fire. Approximately 55 to 100 gallons of fuel were used in each training session.

SWMU 1 reportedly contained two aboveground storage tanks (ASTs). One AST of unknown capacity was immediately east of the aircraft shell, while the second AST, elevated on a steel stand, with a reported capacity of 200 gallons was on the northwest side of the burn area. Both ASTs were within a containment area, an asphalt area surrounded by railroad rails. Cracks in the asphalt may have allowed fuel to penetrate the underlying soil. Before the late 1970s, no containment (i.e., railroad rails) was in place. These tanks are no longer onsite.

Aviation fuel (JP-4) and waste fuels, such as deplaned fuels from aircraft, were used in the burning operations. Naphtha, xylene, toluene, and benzene were constituents of JP-4 fuel. The *RCRA Facility Assessment* (ERC/EDGe, 1990) reported the common practice of mixing waste fuel with waste solvents such as naphtha, xylene, methyl ethyl ketone, toluene, and benzene during burning operations at the FDDA. In addition, the waste fuels reportedly may have contained lead, cadmium, and chromium. Polychlorinated biphenyls (PCBs) were not likely to have been mixed in with the waste fuels, but they were evaluated during the RFI.


FORMER BURN AREA
SOIL PILE
RUNWAY
RUNWAY
RUNWAY
RUNWAY
RUNWAY
RUNWAY
STORAGE
DEBRIS
LEGEND
284 TOPOGRAPHIC CONTOUR AND ALTITUDE
600 0 600
SCALE FEET
RCRA FACILITY INVESTIGATION
NSA MEMPHIS
MILLINGTON, TENNESSEE
FIGURE 2-1
VICINITY MAP
FIRE DEPARTMENT DRILL AREA
SWMU 1
DWG DATE: 06/06/96
DWG NAME: 94VMFDDA

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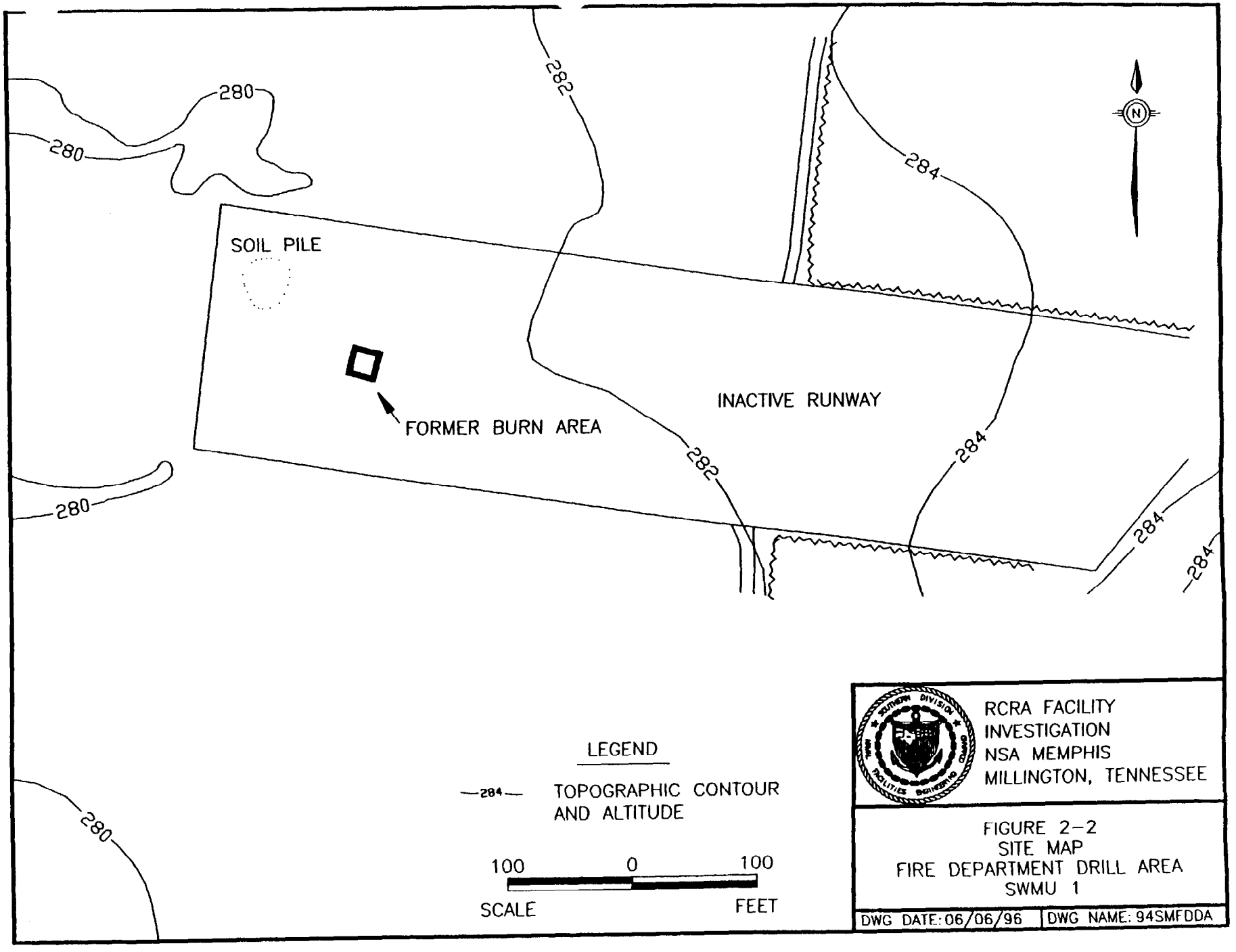
280
280
282
284
SOIL PILE
FORMER BURN AREA
INACTIVE RUNWAY
282
284
280
284
284
280
LEGEND
284
TOPOGRAPHIC CONTOUR AND ALTITUDE
100
0
100
SCALE
FEET
RCRA FACILITY INVESTIGATION
NSA MEMPHIS
MILLINGTON, TENNESSEE
FIGURE 2-2
SITE MAP
FIRE DEPARTMENT DRILL AREA
SWMU 1
DWG DATE: 06/06/96
DWG NAME: 94SMFDDA

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3.0 PRELIMINARY INVESTIGATIONS

Previous studies conducted at SWMU 1 include an Initial Assessment Study (IAS), a soil-gas survey, and an Interim Measures (IM) investigation. The IM investigation was performed in October and November 1992 to expedite a proposed lease of 50.5 acres, including SWMU 1, to the City of Millington for a joint-use air facility by Millington and the former NAS Memphis. The IM investigation was conducted to determine if previous activities at the FDDA had contaminated the soil and, if so, whether corrective measures should be implemented before leasing the land. Lease of the 50.5 acres no longer applies since the area, including SWMU 1, is being transferred to the City of Millington as part of BRAC. Previous investigations are summarized below.

3.1 Initial Assessment Study — Harmon Engineering (1983)

An IAS conducted in 1983 did not recommend SWMU 1 for a confirmation study (Harmon Engineering & Testing/NEESA, 1983). Additionally, a Visual Site Inspection conducted on April 19, 1990, by the Navy and the USGS identified no adverse conditions such as stained soil at or near the burn area within SWMU 1.

3.2 Soil-Gas Survey — USGS (May 1991)

The USGS performed a soil-gas survey at SWMU 1 in May 1991. A summary of the survey and the data generated were included in the *Assembly A Site Investigation Plans* (E/A&H, 1994a). Relatively low-level values (sums of volt-seconds for peaks of unidentified compounds ranging from 0.1 to 16.7) were reported for most sampling stations. The highest values were reported at stations along the centerline of the old runway and near the former burn area.

3.3 Interim Measures Investigation — USGS and E/A&H (October-November 1992)

The IM investigation, performed by the USGS between October 26 and November 6, 1992, consisted of 26 soil samples from 12 shallow borings (less than 15 feet) submitted for laboratory

analysis. In addition, two soil samples from a shallow boring drilled 800 feet west of SWMU 1 and two soil samples were submitted for laboratory analysis to provide background information. No groundwater monitoring wells were installed as part of the IM investigation.

Boring locations are provided in Figure TM-2 of the *Technical Memorandum — Interim Measures Field and Analytical Summary for SWMU 1* (SOUTHDIV, USGS, and E/A&H, 1993). This technical memorandum is provided as Appendix A of this report.

All soil samples except those from Borings SB-5, SB-12, and the background boring were analyzed for:

- Aromatic volatile organic compounds (VOCs) by U.S. Environmental Protection Agency (USEPA) Method 8020.

- Total petroleum hydrocarbons (TPH) by gas chromatograph/flame ionization detection (GC/FID).

- Total cadmium, chromium, and lead by USEPA Methods 7130, 7190, and 7421.

Soil samples collected from Borings SB-5, SB-12, and the background boring were analyzed for the following parameters:

- VOCs by USEPA Method 8240.
- Semivolatile organic compounds (SVOCs) by USEPA Method 8270.
- TPH by USEPA Method 418.1.
- Chlorinated pesticides/PCBs by USEPA Method 8080.
- RCRA Part 264, Appendix IX total metals by USEPA Method 6010/7000 series.
- Total cyanide by USEPA Method 9010.

Analytical results indicated the presence of low concentrations of TPH (≤ 7.1 milligrams per kilogram [mg/kg]), in the upper 7 feet of soil at SWMU 1. The Technical Memorandum noted TPH contamination at SWMU 1 does not appear to be a problem. Acetone was the only VOC detected in the soil samples. The highest measured acetone concentration of 130,000 micrograms per kilogram (μg/kg) was detected in the 5- to 7-foot below land surface (bls) interval in Boring SB-5 at the southwest corner of the runways, approximately 100 feet southwest of SWMU 1. The Technical Memorandum noted acetone could not be discounted to laboratory contamination, but detected concentrations were well below the RCRA Subpart S action level in Title 40 Code of Federal Regulation (CFR) Part 264.521.

Except for beryllium, all metals concentrations were less than their respective action levels listed in RCRA Subpart S, 40 CFR Part 264.521. The Technical Memorandum noted all of the beryllium concentrations exceeded the 0.2 mg/kg action level for soil, but reported values were well within the typical range of uncontaminated soil. Furthermore, the maximum beryllium concentration of 0.71 mg/kg was less than two times (2X) the mean background reference concentration of 1.02 mg/kg, as determined from subsurface-soil samples collected at background locations during the 1995 Assembly A RFI drilling activities. Figure 3-1 presents the Assembly A background sample locations. Determination of background reference concentrations (RCs) is discussed further in Section 6.1. Soil organic and inorganic analyte data for SWMU 1 are summarized in Attachment B of the Technical Memorandum in Appendix A.

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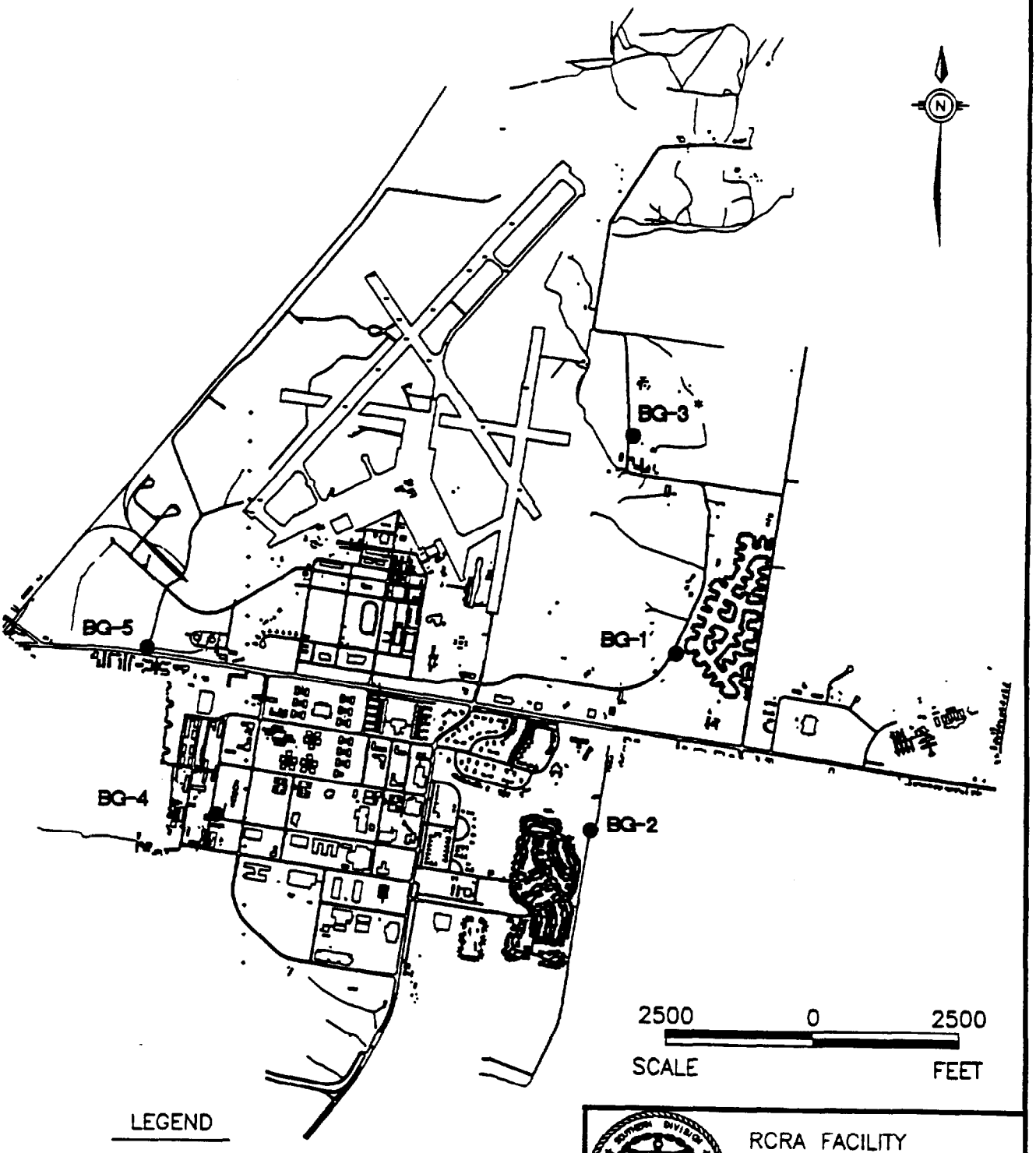

LEGEND

* SOIL BACKGROUND DATA ONLY

BG-2 BACKGROUND LOCATION 2

NOTE: SOIL DATA CONSIST OF ONE SURFACE & TWO SUBSURFACE SOIL SAMPLES. GROUNDWATER DATA CONSIST OF THREE SAMPLES; THE LOESS, UPPER FLUVIAL & LOWER FLUVIAL DEPOSITS.

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INVESTIGATION
NSA MEMPHIS
MILLINGTON, TENNESSEE

FIGURE 3-1
SOIL AND GROUNDWATER
BACKGROUND LOCATIONS

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4.0 FIELD INVESTIGATIONS AND METHODOLOGY

Soil and groundwater were sampled to confirm whether contaminants were present at SWMU 1 as a result of previous drill exercises involving burning.

Specific RFI objectives were to:

- Address the potential for groundwater contamination onsite.
- Confirm the acetone detected in soil samples collected during the IM investigation.
- Collect surface-soil samples for Preliminary Risk Evaluation (PRE).

This section summarizes the field-sampling protocols employed during the RFI, which were based on the USEPA and Tennessee Department of Environment and Conservation (TDEC)-approved *Comprehensive RFI Work Plan* (E/A&H, 1994b) and *Assembly A Site Investigation Plans* (E/A&H, 1994a). Soil and groundwater sampling performed during the RFI followed the procedures outlined in the *Comprehensive RFI Work Plan*.

The subsurface investigation at SWMU 1 consisted of Direct Push Technology (DPT) soil and groundwater sampling, while the surface investigation consisted of soil sampling with hand augers (see Section 4.5 and Appendix B for DPT survey details). Sample locations were selected to supplement the IM investigation soil borings and to determine if VOCs were present in fluvial deposits groundwater. VOCs were selected as an indicator parameter for groundwater because they were the most likely contaminant to reach groundwater, due to their mobility, and because they include constituents of potential site contaminants (solvents and petroleum). Surface soil was sampled so a PRE could be conducted to assess risk. Analytical methods and specific sampling protocols (sample handling, field Quality Assurance/Quality Control [QA/QC] and decontamination) are presented in Sections 4.1 and 4.2, respectively.

4.1 Analytical Methods

DPT subsurface soil and groundwater samples were analyzed in an onsite laboratory using USEPA Method 8021 for halogenated and aromatic VOCs only. A laboratory-quality gas chromatograph (GC) equipped with an electrolytic conductivity detector (or Hall detector) and a photoionization detector was used to perform the analyses. Level-II equivalent Data Quality Objectives (DQOs) were provided by the onsite laboratory. A minimum of 25% of DPT samples were submitted to NET Laboratory in Bedford, Massachusetts, for confirmatory VOC analysis by USEPA Method 8240 using a GC with mass spectrometer. Soil and groundwater samples analyzed by NET used Level III-equivalent DQO for 95% of the samples and Level IV-equivalent DQO for the remaining 5%.

Surface soil samples were submitted to NET for analysis using USEPA Solid Waste-846 Methods and Contract Laboratory Program reporting requirements, as listed in Table 4-1.

Table 4-1
Analytical Parameters for Surface Soil Samples
Chemical Characterization

Media	Parameters	SW-846 Method
Soil	TCL Volatile Organic Compounds	8240
	TCL Semivolatile Organic Compounds	8270
	TCL Chlorinated Pesticides/PCBs	8080
	Organophosphorus Pesticides	8140
	Chlorinated Herbicides	8150
	Metals (Appendix IX) and Cyanide	6010, 7080, 7421, 7841, 9012
	TPH — GRO/DRO	Tennessee Modified 8015 — GRO.BTEX/DRO
	TPH	418.1

Notes:
TCL = Target Compound List
GRO/DRO = Gasoline Range Organics/Diesel Range Organics
BTEX = Benzene, toluene, ethylbenzene, and xylene

4.2 Sampling Protocols

All sampling adhered to the approved *Comprehensive RFI Work Plan* and the *Assembly A Site Investigation Plans*. See Sections 4.4.4.1 and 4.4.4.3 of the *Comprehensive RFI Work Plan* for hand auger and DPT sampling techniques. Where warranted by field conditions, all deviations from the approved procedures were appropriately documented in the field logbook.

QA/QC Samples

QA/QC samples were collected to test the level of reproducibility attainable in the sampling and analytical process, quality of equipment decontamination, quality of source waters and materials, and sample exposure to ambient contamination during handling. QA/QC samples were analyzed for the same contaminant-assessment parameters as the associated environmental samples.

DPT survey QA/QC samples, including three field blanks of deionized/organic-free water and four rinsate blanks, were collected at other SWMUs being investigated concurrently and analyzed in an onsite laboratory. No VOCs were detected in any of the blank samples. At least 25% of the samples collected were split and submitted to NET for VOC analysis to confirm the onsite laboratory results. The split-sample analytical results are included in Appendix B.

Sample Labeling

DPT samples were labeled with a seven-digit alphanumeric code that identified the site, sample type, sampling device, location, and depth. The first digit identified the site location (SWMU 1 = 1). The second digit identified the sample type collected (soil = S, groundwater = G). The third digit indicated the sampling device used (geocone = G, hydrocone = H). The fourth and fifth digits represented the sample station location (location 2 = 02). The final two digits represented the deepest point of the sample interval (5-7 feet = 07).

Examples: 1SG0107 SWMU 01/soil/geocone/location 1/7-foot depth
1GH0135 SWMU 01/groundwater/hydrocone/location 1/35-foot depth

Surface soil samples were labeled using a 10-digit sample identification number. The first three digits represented the SWMU number (SWMU 1 = 001). The fourth digit represented the matrix sampled (soil = S, soil duplicate = C). The fifth and sixth digits represented the sampling device (hand auger = HA). The seventh and eighth digits represented the sample location (hand auger boring 1 = 01). The ninth and 10th digits represented the deepest point of the sample interval (0 to 1 foot = 01).

Example: 001SHA0201 SWMU 1/soil/hand auger/location 2/1-foot depth

4.3 Data Validation

Assembly A data were validated either by E/A&H contractors CKY Environmental Services, Inc., of Torrance, California, or Validata Chemical Services of Norcross, Georgia. Validation results were described in the *Data Validation Report — Assembly A, Naval Air Station Memphis* (E/A&H, 1995). The 1996 surface-soil and stockpiled-soil data were validated by Heartland Environmental Services, Inc., of St. Charles, Missouri. All data were validated in accordance with *USEPA Contract Laboratory Program National Functional Guidelines for Organic and Inorganic Data Review* (USEPA, 1994a). A detailed data-validation report for the January 1996 surface soil samples is provided in Appendix C of this report.

4.4 Decontamination and Investigation-Derived Waste

Decontamination

Field equipment was decontaminated following guidelines set forth in the *Comprehensive RFI Work Plan*. All downhole equipment was decontaminated before and after use at the central decontamination pad, the N-7 aircraft wash rack.

Rinse water generated from decontamination activities was stored in a 2,000-gallon holding tank at the decontamination pad and emptied into the oil-water separator (which drains into the sanitary sewer) after a VOC scan and approval from the City of Millington's wastewater consultant, Fisher & Arnold, Inc.

Investigation-Derived Waste

No soil investigation-derived waste was generated during the RFI at SWMU 1 due to the type (i.e., DPT) of sampling conducted. Decontamination fluids generated during the RFI were bulked with those from other SWMU investigations.

4.5 DPT Soil and Groundwater Investigation — USGS and E/A&H (November to December 1995)

DPT sampling was conducted by Subsurface Technology of Orlando, Florida, to determine if VOC contamination was present in soil and groundwater onsite. Soil samples were collected at the six locations shown in Figure 4-1. DPT sample location 1 was selected to duplicate the IM investigation location where acetone was detected in subsurface soil. Due to the close proximity of the sample locations, groundwater samples were collected only at locations 1, 2, 3, and 5. None of the sample locations yielded shallow water, so no loess groundwater samples were collected. All groundwater samples were from the fluvial deposits. Location 1 samples were collected at two depths, 35 feet and 50 bls, in an effort to characterize the upper and lower fluvial deposits. Soil and groundwater samples were analyzed in an onsite laboratory set up by the DPT contractor. A minimum of 25% of these samples were split and submitted to NET for confirmation analyses. Analytical methods were discussed in Section 4.1. A detailed discussion of DPT survey methodologies is provided in Appendix B of this report and the results of the DPT survey are discussed in Section 6.

4.6 Surface-Soil Sampling

During the IM investigation, the first soil interval sampled was 1 to 3 feet bls, because the asphalt and gravel base prevented sample collection from the surface to 1 foot depth. As part

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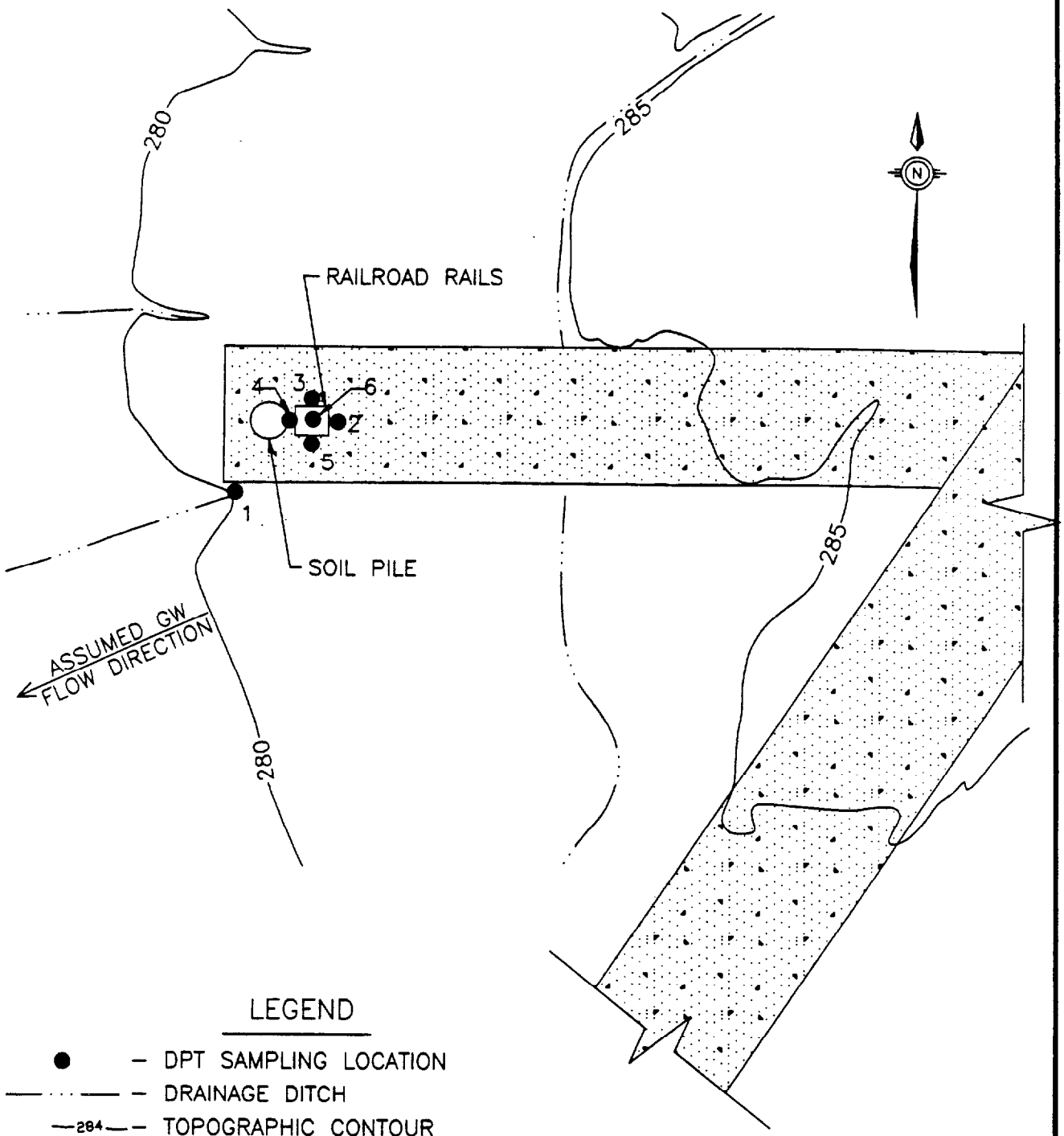

LEGEND

- ● – DPT SAMPLING LOCATION
- — · · — – DRAINAGE DITCH
- —284— – TOPOGRAPHIC CONTOUR AND ALTITUDE
- – RUNWAY SURFACE

SAMPLE LOCATIONS ARE APPROXIMATE

200 0 200
SCALE FEET

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MILLINGTON, TENNESSEE

FIGURE 4–1
DPT SAMPLE LOCATIONS
FIRE DEPARTMENT DRILL AREA
SWMU 1

DWG DATE: 06/06/96 | DWG NAME: 94DSL1

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of the RFI, on January 31, 1996, surface soil (0 to 1 foot bls) samples were collected outside the paved areas to provide surface soil data needed for risk evaluation. Three surface soil locations were selected along the perimeter of the runway, one of which was collected in duplicate. Figure 4-2 presents the surface soil sample locations. Data generated from these samples were used to prepare a PRE in accordance with the USEPA Region IV memorandum *Guidance on Preliminary Risk Evaluations for the Purpose of Reaching a Finding of Suitability to Lease* (USEPA, 1994b). The PRE is discussed in Section 7.

4.7 Stockpiled-Soil Sampling

As previously mentioned, a soil stockpile was approximately 30 feet west of the burn area. A composite soil sample was collected on February 15, 1995, from five locations within the stockpile at depths ranging from 1 to 2 feet below the surface of the pile and submitted for analysis of VOCs, SVOCs, herbicides, pesticides, and metals. Another composite soil sample was collected on November 6, 1995, from five locations within the stockpile at depths ranging from 2 to 3 feet below the surface of the pile and submitted for Toxicity Characteristic Leaching Procedure (TCLP) analyses for VOCs, SVOCs, herbicides, pesticides, and metals. The TCLP soil sample was necessary to facilitate disposal of the stockpiled soil. The stockpiled soil was transported offsite for proper disposal as a non-hazardous, special waste in June 1996.

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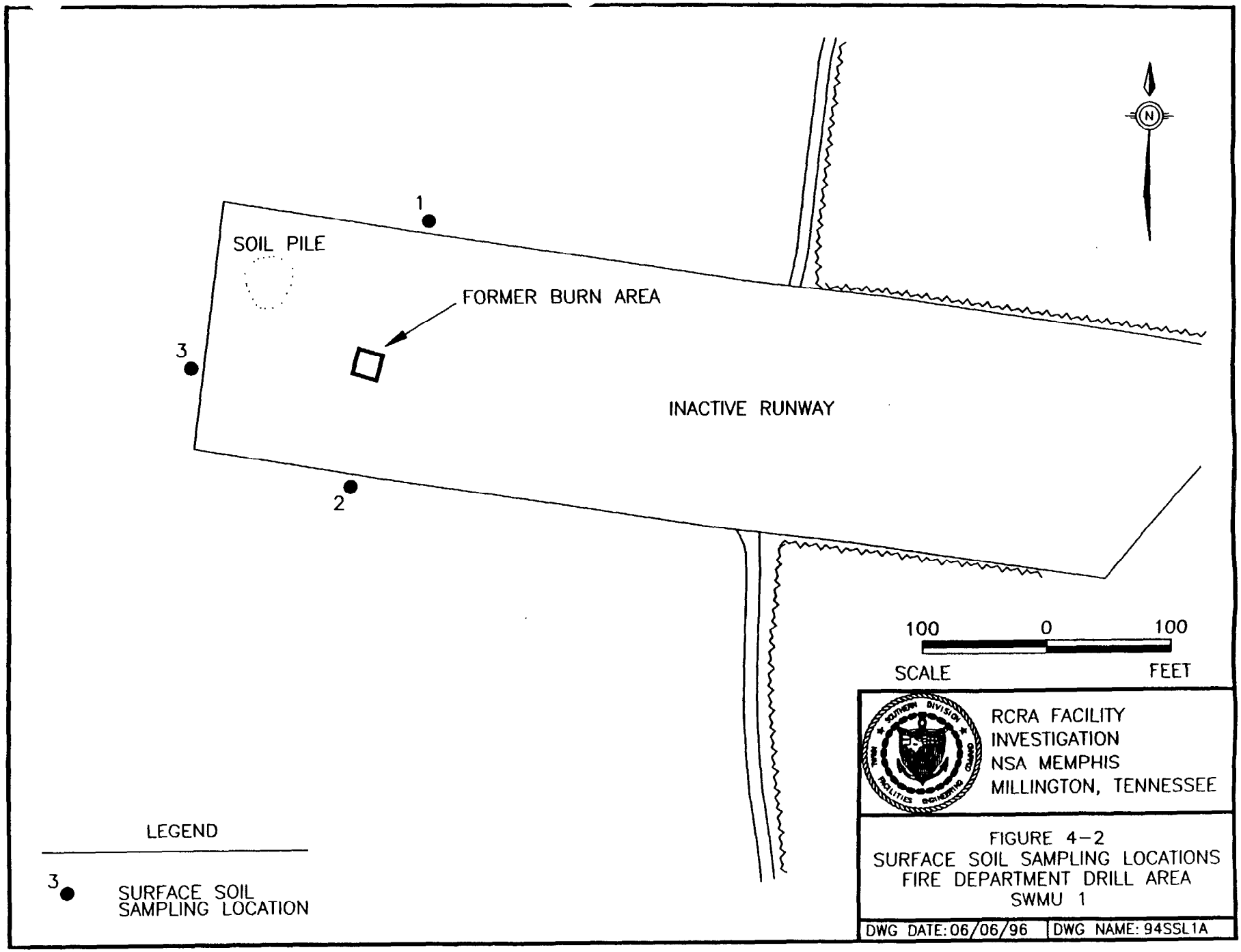
1
SOIL PILE
FORMER BURN AREA
3
INACTIVE RUNWAY
2
N
100
0
100
SCALE
FEET
LEGEND
3
SURFACE SOIL
SAMPLING LOCATION
RCRA FACILITY
INVESTIGATION
NSA MEMPHIS
MILLINGTON, TENNESSEE
FIGURE 4-2
SURFACE SOIL SAMPLING LOCATIONS
FIRE DEPARTMENT DRILL AREA
SWMU 1
DWG DATE: 06/06/96
DWG NAME: 94SSL1A

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5.0 GEOLOGY AND HYDROGEOLOGY

5.1 Regional Geology and Hydrogeology

The general hydrogeology of the Memphis area and a conceptual model of the hydrogeology at NSA Memphis were discussed in Sections 2.11 and 2.12 respectively, of the *Comprehensive RFI Work Plan*. Updated information is available in the *Hydrogeology of Post-Wilcox Group Stratigraphic Units in the Area of the Naval Air Station Memphis, near Millington, Tennessee* (Kingsbury and Carmichael, 1995).

The two stratigraphic units investigated during the RFIs at NSA Memphis are the loess/alluvial deposits of Pleistocene and Holocene age and the underlying fluvial deposits of Pleistocene to Pliocene age. The loess — eolian deposits consisting of silt, silty clay, clay, and minor amounts of sand — is the principal unit occurring at land surface throughout the NSA Memphis Northside. Alluvium, which is restricted to stream valleys, includes alluviated or reworked loess. The loess is typically 0 to 65 feet thick in the Memphis area; at NSA Memphis it ranges from 15 to 45 feet thick. Water-bearing zones are present in the loess primarily in the upper part of this unit; however, yields are low and water quality analyses performed during previous investigations at NSA Memphis indicated that loess groundwater does not meet many primary and secondary drinking water standards. Previous investigations at NSA Memphis have found depth to water in the loess varying between 5 and 15 feet bls and vertical hydraulic conductivities to range from 10^{-6} to 10^{-8} centimeter per second (cm/sec). Although the loess may be considered an aquitard on the basis of the relatively low hydraulic conductivities, this shallowest water-bearing zone is present within this interval. Groundwater flow in the loess is primarily downward, although locally some groundwater in the loess may discharge to nearby streams, drainage ditches, and other surface water bodies.

The fluvial deposits underlie the loess in upland areas, and consist of sand, gravel, and some clay, with thin layers of ferruginous sandstone and conglomerate at the base. This unit ranges

from 0 to 100 feet thick in the Memphis area; on the Northside of NSA Memphis it ranges from 10 to 35 feet thick and represents the most significant component of the surficial aquifer. Many shallow domestic wells in Memphis rural areas are completed in the fluvial deposits. Relative groundwater elevations between wells completed in the loess/alluvium and fluvial deposits indicate semiconfined to confined conditions in the fluvial deposits. Typically a downward vertical gradient exists between water in the loess and the fluvial deposits. Sediments in the fluvial deposits generally coarsen with depth, and typically, the upper portion consists of a mixture of very fine sand with varying degrees of silt and clay and becomes increasingly less silty with depth, grading into a fine to medium sand near the middle of the unit. Grain sizes typically coarsen below this interval, grading into a gravelly sand near the fluvial deposits basal section.

The fluvial deposits are underlain by the Cockfield Formation, a part of the Jackson-upper Claiborne confining unit, which is a heterogeneous formation consisting of very fine silty sand interbedded with clay and silt lenses or clay with interbedded fine sand lenses. The more-permeable characteristics of the fluvial deposits, compared to the relatively impermeable properties of the overlying loess/alluvium and the underlying Jackson-upper Claiborne confining unit, result in the fluvial deposits being the preferential zone of groundwater flow and the route for contaminant transport in the NSA Memphis subsurface.

5.2 Site-Specific Geology

Site geology is described briefly in the Technical Memorandum (Appendix A), summarizing the activities of the IM investigation, including logs for the borings installed. The logs from the DPT investigation are also provided in Appendix D. According to observations made during the IM investigation, the upper 44 feet beneath SWMU 1 consists of silt, clay, or a combination of these materials, and they are assumed to be of low to very low permeability. Also, the saturated zone was encountered at about 43 feet bls.

6.0 NATURE AND EXTENT OF CONTAMINATION

Contaminant risk-based concentrations (RBCs) and soil screening levels (SSLs), as listed in the *Risk-Based Concentration Table, January to June 1996* (USEPA, 1996a), were used as assessment reference values for organics and inorganics detected in soil and groundwater. Surface soil samples were compared to RBCs (residential and industrial values) while both surface and subsurface soil samples were compared to SSLs (reasonable maximum estimate of cross-media transfer from soil to groundwater). As an assessment reference for groundwater, contaminant concentrations were compared to tap water RBCs and Maximum Contaminant Levels (MCLs) from the *National Primary Drinking Water Standards* (USEPA, 1996b).

Comparison of RBCs to individual surface soil samples is consistent with current human risk models which consider contaminants in the 0 to 1-foot bls interval to pose the greatest risk to human health. SSLs, as indicated in the RBC table, should be compared to the contaminant average in each borehole, beginning at 6 inches bls and ending at the termination of the borehole. To simplify the comparison of SSLs to contaminants, and since data collected during this RFI did not begin at 6 inches bls, the maximum concentration of each detected contaminant will be compared to the SSL value, rather than the borehole average. Any individual contaminant exceeding both the SSL values and RCs will be evaluated in the fate and transport discussion (Section 9).

The background criteria are discussed briefly in Section 6.1. Section 6.2 summarizes the contaminants detected in soil at SWMU 1, from the IM investigation and this RFI, and their respective RBC and/or SSL values. Section 6.3 provides a discussion of the stockpiled soil samples analytical results. Section 6.4 summarizes the contaminants detected in groundwater. The nature and extent of contaminants detected at SWMU 1 are summarized in Section 6.5, which includes concentrations in soil exceeding the RBCs and RCs, or exceeding the SSL for transfer from soil to groundwater, or contaminants in groundwater exceeding the RBCs and/or

MCLs. Contaminants identified in soil and groundwater are further evaluated in the PRE assessment, ecological risk assessment, and fate and transport discussion (Sections 7, 8, and 9, respectively).

6.1 Background Reference Concentrations

Background locations were established at five areas at NSA Memphis (shown in Figure 3-1) to assess ambient soil and groundwater quality conditions. Background data for soil consist of 12 samples collected from five borings, while groundwater data were collected from monitoring well clusters at four of the five boring locations. Background monitoring wells were not installed at location BG-3, near the horse stables on the NSA Memphis Northside, because of the absence of groundwater in the loess and the unexpected thinness of the fluvial deposits in this area. The well clusters consist of three monitoring wells screening three depth intervals — one screened in the uppermost saturated zone in the loess, one screened in the uppermost part of the fluvial deposits, and one screened in the lower section of the fluvial deposits. The background reference concentrations and the methodologies used to calculate them are outlined in a technical memorandum included as Appendix E.

6.2 Soil Analytical Results

Soil samples collected during the 1992 IM investigation included analyses for VOCs, TPH (by GC/FID), cadmium, chromium, and lead, with the soil samples from three locations (Borings 5, 11, and the background boring) undergoing additional analyses for SVOCs, cyanide, pesticides/PCBs, TPH (by USEPA Method 418.1), and Appendix IX metals. The 1995 RFI DPT survey (see Section 4.5) included analysis of soil samples for VOCs only, with VOCs detected in two of six DPT sample locations. Surface soil samples (0 to 1 foot bls) collected in January 1996 were analyzed for VOCs, SVOCs, herbicides, pesticides/PCBs, Appendix IX metals, and TPH — Gasoline Range Organics (GRO) and Diesel Range Organics (DRO). The surface soil samples indicated detectable concentrations of VOCs, pesticides, and metals. Each

contaminant group is discussed below, including those exceeding RBCs, SSLs, and/or RCs for inorganics.

Volatile Organic Compounds

VOCs were detected in the three surface soil samples collected during the RFI at SWMU 1. All reported concentrations in surface soil samples were less than their respective RBCs and the maximum concentration of each VOC detected was less than its respective SSL.

VOCs were detected in four of 28 IM investigation soil samples, two of which were background samples. IM Boring 5, south of the southwest corner of the paved airstrip (see Figure TM-2 in Appendix A), exhibited acetone concentrations of 36,000 μg/kg and 130,000 μg/kg in samples from 1 to 3 feet and from 5 to 7 feet bls, respectively. Both acetone concentrations detected in Boring 5 exceeded the acetone SSL of 8,000 μg/kg. The two soil samples from the IM background boring location, approximately 800 feet west of Boring 5, also contained low (<1 mg/kg) concentrations of acetone and both detectable amounts were below acetone's SSL.

All onsite laboratory results for soil samples collected during the DPT survey were nondetect for VOCs. Offsite laboratory analysis of split soil samples (1SG0107 and 1SG0112) from DPT sample location 1, selected to confirm the acetone "hit" during the IM investigation in Boring 5, exhibited low (<1 mg/kg) concentrations of acetone, 2-butanone, and toluene. Analysis of the other split DPT boring split sample (1SG0607) , from location 6, also exhibited low (<1 mg/kg) concentrations of acetone and toluene. All reported VOC concentrations from the DPT survey soil samples analyzed offsite were less than their respective RBCs and the maximum concentration of each VOC detected was less than its respective SSL. There is no SSL available for 2-butanone; however, 2-butanone and acetone are common laboratory artifacts and the low concentrations indicate both may have been introduced into the sample at the

laboratory. VOC results for surface and subsurface soil samples are presented in Tables 6-1 and 6-2, respectively.

Semivolatile Organic Compounds

No SVOCs were detected in the soil samples collected from SWMU 1.

Total Petroleum Hydrocarbons

The three surface-soil samples collected during the RFI were analyzed for TPH-GRO and TPH-DRO. Detectable concentrations of TPH-GRO were exhibited in samples 001SHA0201 and 001SHA0301, while TPH-DRO was exhibited in sample 001SHA0301 (390 mg/kg). During the IM investigation TPH was analyzed by Method 418.1 and detectable concentrations ranged from 4.1 mg/kg to 7.1 mg/kg. The highest concentration was detected in the 0 to 1-foot sample interval of Boring 01-B-10 along the centerline of the airstrip (see Figure TM-2 in Appendix A).

The TDEC Division of Solid Waste Management, State Remediation Section, has issued an interim policy statement establishing TPH guidelines for petroleum sites that are not associated with regulated underground storage tanks. TDEC's recommended TPH concentration for determination of no further action at these sites is 100 mg/kg. Only one of the three surface soil samples collected during the RFI exceeded this concentration, sample 001SHA0301. These surface soil samples were collected within approximately 2 feet of the asphalt runway. The one isolated, elevated TPH-DRO concentration may have resulted from fuel used during training exercises being carried off the pavement by rainwater, or from the asphalt itself. Tables 6-3 and 6-4 present the results for TPH analyses for surface and subsurface soil samples.

Herbicides in Soil

No herbicides were detected in the soil samples collected from SWMU 1.

Table 6-1
Volatile Organic Compounds in Surface Soil
Fire Department Drill Area — SWMU 1
(in micrograms per kilogram)

	Sample ID			RBC		
Compound	001SHA0101	001SHA0201	001SHA0301	Residential	Industrial	SSL
Acetone	15	8 J	11 J	7,800,000	200,000,000	8,000
Benzene	ND	1 J	U	22,000	200,000	20
Ethylbenzene	1 J	5 J	3 J	7,800,000	200,000,000	5,000
Methylene Chloride	ND	8 J	5 J	85,000	760,000	10
Toluene	ND	2 J	2 J	16,000,000	410,000,000	5,000
Xylenes (total)	6 J	20	14	160,000,000	1,000,000,000	74,000

Notes:
ND = Compound was not detected
J = Estimated value
RBC = Risk-Based Concentration Table, January to June 1996 (USEPA, 1996a). RBCs are for comparison to data from the 0 to 1-foot interval (surface samples).
SSL = Soil Screening Level considered protective of contaminant transfer from soil to groundwater (USEPA, 1996a). The maximum concentration detected for each compound was compared to the SSL.

Table 6-2
Volatile Organic Compounds in Subsurface Soil
Fire Department Drill Area — SWMU 1
(in micrograms per kilogram)

	Sample ID							
	IM Investigation				DPT Survey			SSL
Compound	01-B-5-1	01-B-5-5	01-B-BG-11	01-B-BG-5	1SG0107	1SG0112	1SG0607	
Acetone	36,000	130,000	180	190	130	41 J	170	8,000
2-Butanone	ND	ND	ND	ND	9 J	ND	ND	NA
Toluene	ND	ND	ND	ND	16	12 J	7 J	5,000

Notes:
ND = Compound was not detected
J = Estimated value
SSL = Soil Screening Level considered protective of contaminant transfer from soil to groundwater (USEPA, 1996a). The maximum concentration detected for each compound was compared to the SSL.

Table 6-3
TPH-GRO and TPH-DRO in Surface Soil
Fire Department Drill Area — SWMU 1
(in milligrams per kilogram)

Compound	Sample ID 001SHA0101	001SHA0201	001SHA0301	TDEC Soil Action Level [a]
TPH-GRO	ND	0.059	0.11	100
TPH-DRO	ND	ND	390	100

Notes:
ND = Not detected
a = TDEC Soil Action Level for TPH, sum GRO and DRO concentrations for comparison

Table 6-4
Total Petroleum Hydrocarbons in Subsurface Soil
Fire Department Drill Area — SWMU 1
(in milligrams per kilogram)

Compound	Sample ID IM Investigation 01-B-1-1	01-B-8-5	01-B-9-1	01-B-10-1	01-B-10-5	01-B-11-5	TDEC Soil Action Level
TPH	4.1	4.7	4.7	7.1	4.2	5.3	100

Organophosphorus Pesticides and Chlorinated Pesticides/PCBs in Soil

No chlorinated pesticides or PCBs were detected in the two IM investigation soil borings designated for full-scan analysis and these samples were not analyzed for organophosphorus pesticides. However, dieldrin, technical chlordane and isomers, DDT, heptachlor epoxide, and methoxychlor were detected in all three RFI surface soil samples. All detected compounds, except dieldrin, exhibited concentrations less than the residential and industrial RBCs. Dieldrin, detected in all three surface soil samples, exceeded its residential RBC and SSL, but only one sample (001SHA0101) exceeded the industrial RBC. Pesticide/PCB results for surface soil samples are presented in Table 6-5.

Table 6-5
Pesticides/PCBs in Surface Soil
Fire Department Drill Area — SWMU 1
(in micrograms per kilogram)

	Sample ID			RBC		
Compound	001SHA0101	001SHA0201	001SHA0301	Residential	Industrial	SSL
alpha-Chlordane	35 D	18 DJ	ND	NA	NA	NA
gamma-Chlordane	21 D	13 DJ	ND	NA	NA	NA
Technical Chlordane	220 D	ND	ND	490	4,400	2,000
4,4'-DDT	ND	48 DJ	ND	1,900	17,000	1,000
Dieldrin	470 DJ	130 D	180 D	40	360	1
Methoxychlor	100 D	ND	ND	390,000	10,000,000	62,000

Notes:
RBC = Risk-Based Concentration Table, January to June 1996 (USEPA, 1996a). RBCs are for comparison to data from the 0 to 1-foot interval (surface samples).
SSL = Soil Screening Level considered protective of contaminant transfer from soil to groundwater (USEPA, 1996a). The maximum concentration detected for each compound was compared to the SSL.
D = Sample was diluted
J = Estimated concentration
ND = Compound was not detected
NA = Not available

The June 2, 1995, Technical Memorandum *Discussion of Dieldrin Risk Management Issues*, has been included in this RFI report as Appendix F. In summary, the memorandum stated that dieldrin was ubiquitous at NSA Memphis as a result of aerial applications during a U.S. Department of Agriculture (USDA) quarantine on the white-fringed beetle during the 1950s and 1960s. Dieldrin was also used in the pest-control trade along with chlordane for general subterranean termite control. Risk estimates based on the soil dieldrin concentrations reported at NSA Memphis did not exceed 1E-4 Incremental Excess Lifetime Cancer Risk (ILCR). As stated in the memorandum, "This finding indicates that dieldrin levels found at each SWMU do not necessitate remedial action in the absence of other significant carcinogenic risk contributors." The maximum dieldrin concentration at SWMU 1 was greater than the corresponding industrial RBC and was greater than background concentrations listed in the memorandum. As a result,

dieldrin at SWMU 1 was further assessed; however, no cumulative ILCR was estimated to exceed 1E-4 for any one receptor group and, therefore, dieldrin was not identified as a contaminant of concern at SWMU 1.

Metals and Cyanide in Soil

In the RFI surface soil samples, no metals concentrations were detected exceeding both their respective RBCs or SSLs and their RCs. All metals detected, except for arsenic, were less than their respective residential RBCs. Arsenic exceeded both residential and industrial RBCs, but it did not exceed its RC of 13.2 mg/kg. The maximum detected concentration of barium was the only metal exceeding its respective SSL, but no individual barium concentration exceeded the RC. Beryllium was not detected in any of the surface soil samples. Detected metals concentrations for surface soil are presented in Table 6-6.

Results of the subsurface soil samples collected during the IM investigation indicated no metals were detected in excess of both their respective SSLs and 2X mean background concentrations. Barium was detected in seven samples above its SSL, but none of the individual concentrations exceeded barium's RC of 289 mg/kg. Metals detected in subsurface soil are listed in Table 6-7. Cyanide was not detected in the soil samples.

Table 6-6
Metals in Surface Soil — Fire Department Drill Area — SWMU 1 (mg/kg)

	Sample ID				RBC		
Compound	001SHA0101	001SHA0201	001SHA0301	RC	Residential	Industrial	SSL
Arsenic	5.1	5.2	2.7	13.2	0.43	3.8	15
Barium	66.8	60	56.2	191	5,500	140,000	32
Cadmium	1.6	1 J	1.4	ND	39	1,000	6
Chromium	11.3 J	9.8 J	11 J	26.4	78,000	1,000,000	NA
Cobalt	5.5 J	4.1 J	6.6 J	20.6	4,700	120,000	NA
Copper	10.5	9.5	9.1	27	3,100	82,000	NA
Lead	18 J	15.4 J	83.9 J	28.7	NA	NA	NA
Nickel	8.4 J	7.6 J	6.7 J	ND	1,600	41,000	21
Tin	14.9 J	12.4 J	11.7 J	ND	47,000	1,000,000	NA
Vanadium	15.8	15.5	18.1	49.6	550	14,000	NA
Zinc	32.4	23.5	53.8	88.3	23,000	610,000	42,000

Notes:
RBC = Risk-Based Concentration Table, January to June 1996 (USEPA, 1996a). RBCs are for comparison to data from the 0- to 1-foot interval (surface samples).
RC = 2X mean background reference concentration
SSL = Soil Screening Level considered protective of contaminant transfer from soil to groundwater (USEPA, 1996a). The maximum concentration detected for each compound was compared to the SSL.
J = Reported concentration is an estimated value.
ND = Analyte not detected.
NA = Not applicable
a = USEPA soil cleanup concentration for lead is 400 mg/kg for residential scenarios and 1,000 mg/kg for industrial scenarios (USEPA, Office of Solid Waste and Emergency Response directive, 1994c).

Table 6-7
Metals in Subsurface Soil
Fire Department Drill Area — SWMU 1 (mg/kg)

	Sample ID											
Metal	**01-B-1-1**	**01-B-1-5**	**01-B-2-1**	**01-B-2-5**	**01-B-3-1**	**01-B-3-5**	**01-B-4-1**	**01-B-4-5**	**01-B-5-1**	**01-B-5-5**	**SSL**	**RC**
Arsenic	—	—	—	—	—	—	—	—	9.1	3.2	15	20.4
Barium	—	—	—	—	—	—	—	—	121	198	32	289
Beryllium	—	—	—	—	—	—	—	—	0.41	0.71	180	1.02
Cadmium	0.17	ND	ND	ND	0.19	0.16	0.22	ND	ND	ND	6	6.8
Chromium	11	8.4	9.3	11.2	11.5	16	9.1	12.2	10.6	13.6	NA	28.6
Cobalt	—	—	—	—	—	—	—	—	6.6	8.2	NA	15.3
Copper	—	—	—	—	—	—	—	—	15.1	13.4	NA	33.9
Lead	9.3	7.4	7.5	9.8	8.5	10	8	9.1	10.7	9.6	NA	25.1
Nickel	—	—	—	—	—	—	—	—	18.1	19.7	21	59.8
Vanadium	—	—	—	—	—	—	—	—	21.9	23.4	NA	46.3
Zinc	—	—	—	—	—	—	—	—	48.1	48	42,000	111.8

Table 6-7
Metals in Subsurface Soil
Fire Department Drill Area — SWMU 1 (mg/kg)

	Sample ID									
Metal	**01-B-6-1**	**01-B-6-5**	**01-B-7-1**	**01-B-7-5**	**01-B-8-1**	**01-B-8-5**	**01-B-9-1**	**01-B-9-5**	**SSL**	**RC**
Arsenic	—	—	—	—	—	—	—	—	15	20.4
Barium	—	—	—	—	—	—	—	—	32	289
Beryllium	—	—	—	—	—	—	—	—	180	1.02
Cadmium	0.14	0.5	0.15	ND	0.11	ND	ND	ND	6	6.8
Chromium	10.2	12.7	7.3	11.8	8.2	12.1	9.1	9	NA	28.6
Cobalt	—	—	—	—	—	—	—	—	NA	15.3
Copper	—	—	—	—	—	—	—	—	NA	33.9
Lead	10.3	14	6.6	11.2	7.2	7	8.8	6.4	NA	25.1
Nickel	—	—	—	—	—	—	—	—	21	59.8
Vanadium	—	—	—	—	—	—	—	—	NA	46.3
Zinc	—	—	—	—	—	—	—	—	42,000	111.8

Table 6-7
Metals in Subsurface Soil
Fire Department Drill Area — SWMU 1 (mg/kg)

	Sample ID											
Metal	**01-B-10-1**	**01-B-10-5**	**01-B-11-1**	**01-B-11-5**	**01-B-11-10**	**01-B-12-1**	**01-B-12-5**	**01-B-12-10**	**01-B-BG-1**	**01-B-BG-5**	**SSL**	**RC**
Arsenic	—	—	—	—	—	6.6	3.8	6.5	5.1	9.6	15	20.4
Barium	—	—	—	—	—	123	119	150	111	166	32	289
Beryllium	—	—	—	—	—	0.37	0.4	0.43	0.36	0.44	180	1.02
Cadmium	0.11	ND	0.12	ND	0.36	ND	ND	ND	ND	ND	6	6.8
Chromium	9.4	8.7	9.1	10.5	10.7	9.7	10.5	11.4	6.4	10.9	NA	28.6
Cobalt	—	—	—	—	—	6.9	5.8	6.3	4.4	2	NA	15.3
Copper	—	—	—	—	—	14.6	10.6	15.5	9	10.2	NA	33.9
Lead	8.8	14.4	8.7	8.9	9	10.6	15.6	10.3	11.8	15.3	NA	25.1
Nickel	—	—	—	—	—	17.3	9.3	18.7	9.5	10.7	21	59.8
Silver	—	—	—	—	—	1	—	—	—	—	NA	ND
Vanadium	—	—	—	—	—	19.8	17.7	22.4	15.7	15	NA	46.3
Zinc	—	—	—	—	—	47.6	30.2	51.4	27.4	39	42,000	111.8

Notes:
SSL = Soil Screening Level considered protective of contaminant transfer from soil to groundwater (USEPA, 1996a). The maximum concentration detected for each compound was compared to the SSL.
RC = 2X mean background reference concentration
— = Not analyzed
ND = Not detected
NA = Not available

6.3 Stockpile Soil Sample Results

Results for the February 1995 stockpile soil composite sample are presented in Table 6-8.

Table 6-8
Stockpile Soil Sample Results
Fire Department Drill Area — SWMU 1

Analysis	Parameter	001S000101
Volatile Organics (µg/kg)	Toluene	4 J
Herbicides (µg/kg)	2,4,5-TP (Silvex)	19 J
	Dichloropropane	49 J
	MCPP	12,000 J
Pesticides (µg/kg)	Heptachlor Epoxide	3.6 J
	Dieldrin	178 JD
	4,4'-DDE	12 J
	4,4'-DDD	12
	4,4'-DDT	27 J
Metals (mg/kg)	Arsenic	4.5
	Barium	276 J
	Beryllium	0.36 J
	Cadmium	2
	Chromium	23.1 J
	Cobalt	6.1 J
	Copper	10.8
	Lead	380 J
	Nickel	10
	Vanadium	18.2
	Zinc	97.9
Petroleum Hydrocarbons (mg/kg)	TPH (USEPA Method 418.1)	1300

Notes:
J = Estimated concentration
D = Diluted sample
µg/kg = micrograms per kilogram
mg/kg = milligrams per kilogram

In order to dispose of the stockpiled soil, another composite soil sample collected in November 1995 was submitted for full TCLP analysis. Except for barium, results for the TCLP analyses were less than detection limits. Barium had a reported TCLP concentration of 0.92 milligrams per liter (mg/L), which is less than the 100 mg/L TCLP limit. Analytical results for both stockpiled soil samples are included in Appendix G.

6.4 Groundwater Analytical Results

No monitoring wells have been installed at SWMU 1; however, fluvial deposits groundwater samples were collected at SWMU 1 during the DPT investigation. Five groundwater samples, two from sample location 1 and one each from locations 2, 3, and 5, were analyzed in an onsite laboratory for VOCs. No VOCs were detected in any of the groundwater samples analyzed onsite. Split samples from locations 1 and 2, sent to an offsite laboratory, exhibited low concentrations (<15 μg/kg) of acetone and carbon disulfide, whose tap water RBCs are 3,700 μg/kg and 1,000 μg/kg, respectively.

6.5 Summary of Nature and Extent

Soil analytical results indicate contamination at SWMU 1 is present in isolated areas only. Low VOC concentrations were detected in soil samples collected during the IM and RFI; however, the results were less than RBCs and SSLs. Dieldrin was the only pesticide detected in soil above RBCs and SSLs. As stated in Section 6.2, dieldrin is ubiquitous at NSA Memphis as a result of aerial applications conducted during the 1950s and 1960s due to a USDA quarantine of the white-fringed beetle. A TPH-DRO concentration of 390 mg/kg was detected in surface soil sample 001SHA0301, exceeding the TDEC TPH action level of 100 mg/kg. No metals concentrations in soil exceeded both their RBCs or SSLs and their RC.

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7.0 PRELIMINARY RISK EVALUATION

In accordance with *Guidance on Preliminary Risk Evaluations for the Purpose of Reaching a Finding of Suitability to Lease* (USEPA, 1994b), a PRE was conducted for SWMU 1 using data from the three surface-soil samples collected in January 1996 during the RFI. A PRE is conducted by constructing a table for carcinogenic and systemic (noncarcinogenic) compounds. The maximum concentration for each detected constituent and corresponding RBC concentration is entered into the table to calculate cumulative human-health risk. Soil data used in the calculations are exclusively from the samples collected across the 0- to 1-foot bls interval. Proportionate risk is calculated for each detected site constituent by comparing the maximum reported concentration with its respective RBC value. Separate calculations were performed for both residential and industrial scenarios. RBC values were calculated by USEPA based on a risk threshold of 10^{-6} for carcinogens or a hazard quotient (HQ) threshold of 1.0 for noncarcinogens. Therefore, a risk ratio is calculated for each contaminant by the following equations:

Carcinogenic Risk Ratio:

$$RR = \frac{Media\ Concentration}{Screening\ Value} \times TR$$

Noncarcinogenic Risk Ratio:

$$RR = \frac{Media\ Concentration}{Screening\ Value} \times THQ$$

where:

RR	=	risk ratio
Media Concentration	=	maximum concentration of a site constituent
Screening Value	=	RBC value for that particular constituent
TR	=	target risk for RBCs
THQ	=	target HQ for RBCs

The risk ratios for each constituent are summed separately for both residential and industrial scenarios to determine the overall risk associated with the site. If the carcinogenic ILCR is greater than 10^{-4} or the noncarcinogenic hazard index (HI) is greater than 1, the site may require additional investigation for the corresponding land-use scenario. If neither threshold is exceeded, no further action is recommended and the property is considered suitable to lease with respect to identified contaminants. Tables 7-1 and 7-2 summarize PRE results for SWMU 1 for carcinogens and noncarcinogens, respectively.

The resulting risk sums for carcinogens were 2 X 10^{-5} for residential and 3 X 10^{-6} for industrial soil. These are well below the carcinogenic ILCR of 10^{-4}.

Table 7-1
Preliminary Risk Evaluation — Carcinogens
Fire Department Drill Area — SWMU 1
(in micrograms per kilogram)

		Screening Value		Risk Ratio	
	Media Conc.	Residential	Industrial	Residential	Industrial
Chemical	Soil	Soil	Soil	Soil	Soil
Chlordane	230	4.90e+02	4.40e+03	4.69e-07	5.23e-08
Dieldrin	470	4.00e+01	3.60e+02	1.18e-05	1.31e-06
4,4'-DDT	48	1.90e+03	1.70e+04	2.53e-08	2.82e-09
Heptachlor Epoxide	5.5	7.00e+01	6.30e+02	7.86e-08	8.73e-09
Benzene	1	2.20e+04	2.00e+05	4.55e-11	5.00e-12
Methylene Chloride	8	8.50e+04	7.60e+05	9.41e-11	1.05e-11
Arsenic (as carcinogen)	5,200	4.30e+02	3.80e+03	1.21e-05	1.37e-06
Risk Sum				2e-05	3e-06

Notes:
The highest reported concentration for each contaminant, including the duplicate sample, was used to develop Table 7-1.
Soil sample data used were collected from the surface (0- to 1-foot) interval only.
Screening values (RBCs) are from the January to June 1996 RBC Table (USEPA, 1996a).

Table 7-2
Preliminary Risk Evaluation — Noncarcinogens
Fire Department Drill Area — SWMU 1
(in micrograms per kilogram)

		Screening Value		Risk Ratio	
	Media Conc.	Residential	Industrial	Residential	Industrial
Chemical	Soil	Soil	Soil	Soil	Soil
Acetone	15	7.8e+06	2.0e+08	1.92e-06	7.50e-08
Arsenic (as non-carcinogen)	5,200	2.3e+04	6.1e+05	2.26e-01	8.52e-03
Ethylbenzene	5	7.8e+06	2.0e+08	6.41e-07	2.50e-08
Toluene	2	1.6e+07	4.1e+08	1.25e-07	4.88e-09
Xylene	20	1.6e+08	1.0e+09	1.25e-07	2.00e-08
Methoxychlor	100	3.9e+05	1.0e+07	2.56e-04	1.00e-05
Barium	81,800	5.5e+06	1.4e+08	1.49e-02	5.84e-04
Cadmium	2,000	3.9e+04	1.0e+06	5.13e-02	2.00e-03
Chromium	15,000	7.8e+07	1.0e+09	1.92e-04	1.50e-05
Cobalt	6,600	4.7e+06	1.2e+08	1.40e-03	5.50e-05
Copper	11,700	3.1e+06	8.2e+07	3.77e-03	1.43e-04
Nickel (soluble salts)	12,000	1.6e+06	4.1e+07	7.50e-03	2.93e-04
Tin	14,900	4.7e+07	1.0e+09	3.17e-04	1.49e-05
Vanadium	19,400	5.5e+05	1.4e+07	3.53e-02	1.39e-03
Zinc	53,800	2.3e+07	6.1e+08	2.34e-03	8.82e-05
Risk Sum				0.3	0.01

Notes:
The highest reported concentration for each contaminant, including the duplicate sample, was used to develop Table 7-2.
Soil sample data used were collected from the surface (0 - 1 foot) interval only.
Screening values (RBCs) are from the January to June 1996 RBC Table (USEPA, 1996a).

The resulting risk sums for noncarcinogens were 0.3 for residential soil and 0.01 for industrial soil. Both are well below the established risk criterion of 1.

Lead and TPH do not have RBC values and were therefore not included in the PRE. Lead was detected at a maximum concentration of 83.9 mg/kg in surface soil, much less than the 400 mg/kg residential soil cleanup level for total lead (USEPA, 1994c). The maximum reported TPH-DRO concentration was 390 mg/kg. Currently, there is no established method for calculating risk for TPH. However, many of the individual compounds that make up TPH have RBCs, which are included in PRE calculations.

Conclusions and Recommendations

Based on the information gathered during this investigation, the following conclusions and recommendations have been reached:

- SWMU 1 can be developed for industrial/commercial use.

- VOCs, TPH, pesticides, and metals were detected in the three RFI surface soil samples collected from the 0 to 1-foot bls interval in January 1996.

- Maximum reported concentrations of all detected compounds in surface soil were less than either their respective residential and industrial RBCs or their respective RCs.

- Based on the PRE performed on data from samples collected from 0 to 1 foot bls:

  — Carcinogens: Site contaminants did not exceed the 10^{-4} risk threshold for residential or industrial scenarios, indicating suitability for lease for either residential or industrial land use.

— Noncarcinogens: Site contaminants did not exceed the HI of 1 for residential or industrial scenarios, indicating suitability for lease for either residential or industrial land use.

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8.0 ECOLOGICAL RISK ASSESSMENT

An ecological risk assessment (ERA) was conducted to develop a qualitative and/or quantitative ecological appraisal of the actual or potential effects on the ecosystem from contamination identified at SWMU 1. The assessment considers environmental media and exposure pathways that could result in unacceptable levels of exposure to flora and fauna now or in the foreseeable future. The approach to assessing risk components at SWMU 1 was based on *Ecological Risk Assessment — Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments* (USEPA, September 1994d), *Risk Assessment Guidance for Superfund, Volume II — Environmental Evaluation Manual* (USEPA, 1989), and *Framework for Ecological Risk Assessment* (USEPA, 1992).

8.1 Problem Formulation

Environmental Setting

SWMU 1 is an approximately 1.5-acre area which includes the west end of inactive Runway 09 and the surrounding agricultural area. No significant habitat features are present which could provide shelter, substantative food or water, or a mixture of cover types to wildlife. This absence of habitat, thus receptors, limits the potential for ecological risk.

Preliminary Risk Characterization

The Phase II Contamination Assessment of the ERA was conducted by reviewing the January 1996 results of surface soil from three sampling locations, along with reviewing previous investigations. The analytical results for these three samples are presented in Section 6.

Dieldrin was detected in surface soil. However, as stated in Section 6.2 , it has been determined that dieldrin concentrations detected at SWMU 1 do not necessitate remedial action in the absence of other significant carcinogenic risk contributors. No cumulative ILCR was estimated

to exceed IE-4 for any one receptor group and, therefore, dieldrin was not identified as a contaminant of concern at SWMU 1.

TPH-DRO was detected at a concentration of 390 mg/kg in the 0 to 1-foot sample from Boring 001SAH03. Because no other organics were detected at concentrations above action levels, and the occurrence of TPH was isolated, it does not pose a threat.

All inorganic parameters were less than their respective RCs and appear to represent ambient conditions.

8.2 Risk Summary

Although concentrations of some contaminants were greater than concentrations that would indicate risk to certain terrestrial groups, the absence of natural habitat features in the vicinity of the SWMU makes exposure unlikely.

9.0 FATE AND TRANSPORT

As discussed in Section 6, the 1992 IM investigation included analyses for VOCs, TPH, cadmium, chromium, and lead, with additional analyses for SVOCs, cyanide, pesticides/PCBs, and Appendix IX metals at three locations. The 1995 RFI DPT survey analyzed soil and groundwater samples for VOCs only. The 1996 RFI surface soil samples were analyzed for VOCs, SVOCs, herbicides, pesticides/PCBs, Appendix IX metals, and TPH-GRO/DRO.

All soil samples analyzed for VOCs during the above mentioned investigations contained concentrations that were less than RBCs and SSLs; therefore, fate and transport of VOCs do not warrant further discussion. No SVOCs were detected onsite; therefore, fate and transport of SVOCs will not be discussed.

Only one of the three 1996 surface-soil samples analyzed for TPH exceeded the TDEC Division of Solid Waste Management, State Remediation Section action level of 100 mg/kg. This isolated occurrence of TPH-DRO could possibly be due to asphalt, as the sample was collected approximately 2 feet from an asphalt runway. Fate and transport of TPH will not be discussed since the occurrence was isolated and may not be due to site activities.

Dieldrin was the only pesticide detected in concentrations exceeding SSLs and RBCs. The June 2, 1995, Technical Memorandum, *Discussion of Dieldrin Risk Management Issues* (Appendix F), states that dieldrin is ubiquitous across NSA Memphis as a result of aerial applications in the 1950s and 1960s; therefore, fate and transport of dieldrin is not discussed.

Barium was the only metal detected above its SSL; however, its maximum concentration did not exceed its RC. Hence, barium should warrant no further discussion.

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10.0 CONCLUSIONS AND RECOMMENDATIONS

Site contaminant concentrations, with the exception of dieldrin, were less than both their corresponding RBCs or SSLs and their RCs. As described in the June 2, 1995 Technical Memorandum, *Discussion of Dieldrin Rick Management Issues*, dieldrin is ubiquitous at NSA Memphis as a result of past aerial applications in response to a USDA quarantine of the white-fringed beetle. One surface-soil sample exhibited a TPH concentration exceeding the TDEC TPH action level of 100 mg/kg; however, this was an isolated occurrence.

Based on the information gathered during this and previous investigations, and the PRE conducted for SWMU 1, risk to human health and the environment associated with the contaminants detected in the surface soil should be minimal. As presented in the PRE, the carcinogenic ICLR was below 10^{-4} and the noncarcinogenic HI was less than 1. No further action is recommended for SWMU 1.

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Appendix A

Interim Measures Field and Analytical Summary for SWMU 1

NAS MEMPHIS
TECHNICAL MEMORANDUM
SWMU 1

Prepared for:

ALLISON DREW, RPM
EPA REGION IV

Prepared by:

SOUTHERN DIVISION,
U.S. GEOLOGICAL SURVEY,
AND ENSAFE/ALLEN & HOSHALL
(803) 743-0573

MARCH 1, 1993

TECHNICAL MEMORANDUM

TO: Allison Drew, RPM, EPA Region IV

FROM: Mark Taylor, EIC, SOUTHNAVFACENGCOM

SUBJECT: NAS Memphis RFI — Interim Measures Field and Analytical Summary for SWMU 1

DATE: March 1, 1993

INTRODUCTION

To expedite a proposed lease of NAS Memphis (NASMEM) property to the city of Millington, an Interim Measures investigation was recently conducted at SWMU 1 (Fire Department Drill Area [FDDA]), an area immediately west of the existing NASMEM aircraft landing strip. The tract of land proposed for lease would be developed into a municipal light-aircraft landing strip by the city.

More extensive characterization will take place at this SWMU during the full RCRA Facility Investigation (RFI) scheduled to begin later this year. The Interim Measures investigation was conducted before the RFI characterization to determine if fire fighting training activities conducted at the FDDA have resulted in soil contamination, and if so, to determine whether corrective measures should be implemented before leasing the land. The northern end of the tract of land under consideration encompasses the western edge of an abandoned runway used by the NASMEM fire department for training until 1981. See Figure TM-1 in Attachment A for details.

FIELD WORK SUMMARY

Field work was conducted from October 26 until November 6, 1992 by the U.S. Geological Survey (USGS). The work included the drilling of 12 shallow soil borings less than 15 feet deep. One background boring was also drilled at a location about 1,000 feet southwest of the site (Attachment A, Figures TM-1 and TM-2). The boring locations were originally proposed at selected stations where soil gas samples were collected in May 1991, so that a possible correlation could be drawn between soil gas analytical results and concentrations of contaminants in soil samples. However, the locations of several borings were adjusted because of wet soil conditions and to avoid damaging the cotton crop growing in fields surrounding the FDDA. The locations of all soil borings are shown in Figure TM-2 in Attachment A. The plan for collecting boring samples at the surface and at 5-foot increments until reaching the water table also required adjustment because the water table was encountered at a much greater depth than expected (43 feet below land surface).

Two subsurface soil samples (1-3 and 5-7 feet below land surface) were collected from Borings #1 through #10 at the FDDA and from the boring at the background location. Three subsurface soil samples (1-3, 5-7, 10-12 feet below land surface) were collected from Boring #11 and Boring #12. A third, deeper interval was sampled at these two locations because of their proximity to the actual area where the training operations were conducted.

Samples were collected using the procedures described in Sections 2.2 and 4.5 of the Interim Measures Work Plan for SWMUs 4 and 5, except that all borings were advanced to about 1 foot below land surface without sampling to avoid collecting asphalt and fill materials (mainly gravel) in the upper few inches beneath and adjacent to the runway. Samples from the background boring were collected using the same procedures for consistency, even though pavement or fill materials were not present at that location.

ANALYTICAL QUALITY ASSURANCE/QUALITY CONTROL SUMMARY

In all, 35 solid-phase environmental samples were collected, including 28 subsurface soil samples, three soil duplicates, two soil matrix spike samples, and two soil matrix spike duplicate samples. All samples were shipped under chain-of-custody by overnight carrier to the Enseco-Rocky Mountain Analytical Laboratory (RMAL) in Arvada, Colorado. All samples, except those from Boring #5, Boring #12, and the background boring, were analyzed for the following parameters:

- Aromatic Volatile Organic Compounds (EPA Method 8020)
- Total Petroleum Hydrocarbons (GC/FID)
- Total Cadmium, Chromium, and Lead (EPA Methods 7130, 7190, and 7421)

The selection of these parameters was based on the potential contaminants of concern described for the site in the Draft RFI Work Plan (May 1990). Samples from Boring #5, Boring #12, and the background boring (and their associated QC samples) were analyzed for the following RFI parameters:

- Volatile Organic Compounds (EPA Method 8240)
- Semivolatile Organic Compounds (EPA Method 8270)
- Total Petroleum Hydrocarbons (EPA Method 418.1)
- Total Cyanide (EPA Method 9010)
- Organochlorine Pesticides/PCBs (EPA Method 8080)
- RCRA Part 264, Appendix IX Metals (EPA Method 6010/7000 series)

These parameters are identical to those used for the Interim Measures investigation for SWMUs 4 and 5. They were selected to document the presence or absence of unexpected soil contaminants at the FDDA.

Quality assurance/quality control protocols identical to those utilized for the Interim Measures investigation for SWMUs 4 and 5 were adhered to throughout the sampling program. In addition to the solid-phase samples listed above, QA/QC included the collection of field blanks of potable, deionized/organic-free, and equipment-rinsate water (one set each day for a total of five sets), and inclusion of a trip blank for volatile organics (8020 or 8240) analysis in each of the 11 coolers used to ship samples to the laboratory. All expendable field sampling supplies (i.e., bottles, preservatives, labels, chain-of-custody forms, and trip blanks) used in the investigation were supplied by RMAL.

Potable and deionized/organic-free water for field blanks were obtained from the NASMEM public water system and the Memphis Subdistrict Office of the USGS, respectively. All pertinent data from the field investigation were recorded in a bound field logbook, or on boring logs and specially designed forms for recording field equipment calibration and measurement data.

FIELD OBSERVATIONS

Lithological observations made during the investigation show that materials in the upper 44 feet (total depth of the test boring) beneath the study area consist primarily of silt, clay, or a combination of these materials, and on the basis of visual qualification in the field, are assumed to be of low to very low permeability. The saturated zone was encountered at about 43 feet below land surface. A 20-foot rise in water level was observed in the test boring after it was left standing open overnight. The apparent rise in water level may have resulted from a combination of collapse of the hole to about 29 feet below land surface, runoff entering the open hole from rainfall which occurred overnight, and confined aquifer conditions.

DATA SUMMARIES

Tables TM-1 through TM-3 (Attachment B) summarize validated positive results for total petroleum hydrocarbons by GC/FID, volatile organic compounds, and total metals analytical data, respectively. Aromatic volatile organic compounds, semivolatile organic compounds, total petroleum hydrocarbons by IR, pesticides, and total cyanide were not detected above reporting limits.

Table TM-1 indicates the presence of TPH (GC/FID) at concentrations just above the 4 mg/kg reporting limit in the first two sampling intervals of five borings. TPH results for all samples analyzed by Method 418.1 (IR) were below the 20 mg/kg reporting limit. Based on the sampling conducted at the FDDA, TPH contamination does not appear to be a problem at this site.

Acetone was the only volatile organic compound with validated positive results reported for the soil samples (Table TM-2). It was detected in Boring #5 (36 mg/kg at 1-3 feet and 130 mg/kg at 5-7 feet) and in the background boring (0.18 mg/kg at 1-3 feet and 0.20 mg/kg at 5-7 feet). Acetone is a common laboratory contaminant and was detected at a concentration of 2.9 ppb in the blank associated with these samples. Because the acetone concentration was so low in the blank and was in the parts per million range for the soil samples, it cannot be discounted as laboratory contamination using the 5x or 10x rules for blanks found in the Contract Laboratory Program Data Validation Guidelines. However, acetone was detected in only one boring at the FDDA at a concentration well below the RCRA Subpart S action level in 40 CFR Part 264.521(a)(2)(i-iv) and was not detected at the deepest interval sampled in that boring.

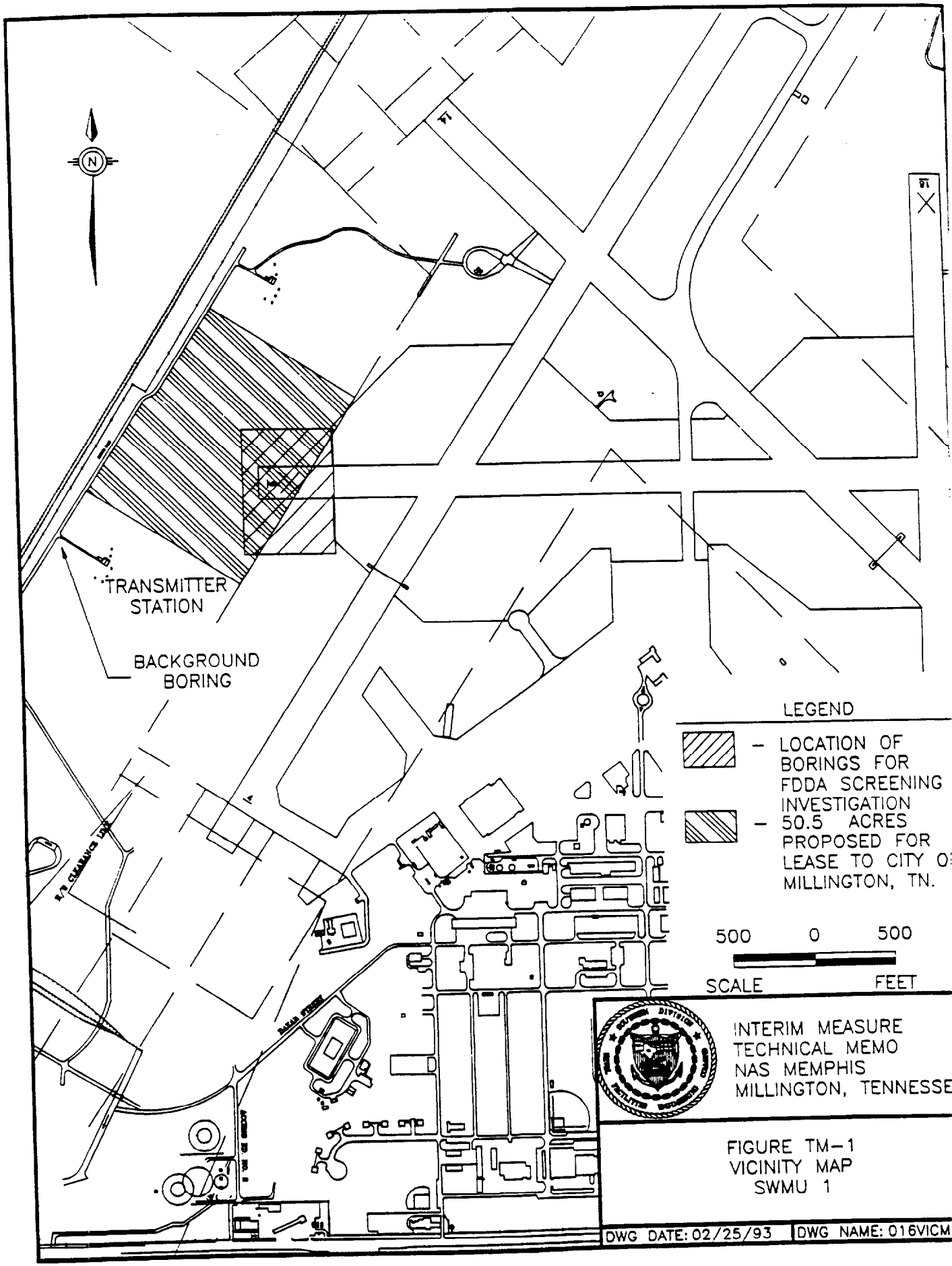
Results of inorganic analyses for total metals are summarized in Table TM-3. In general, results for samples from Boring #5 were slightly above those from the background boring (samples with "BG" in the identifier). However, a literature search indicates that the values for all samples are within the range of typical concentrations found in uncontaminated soils. The metals values were also compared to the RCRA Subpart S action levels in 40 CFR Part 264.521(a)(2)(i-iv). With the exception of beryllium, all values were well below their respective action levels. All of the beryllium values exceeded the 0.2 mg/kg action level for soil. Naturally occurring levels of beryllium could easily exceed the current action level. The beryllium values reported for the Interim Measure samples were 0.71 mg/kg or less which is well within the typical range of 0 to 5 mg/kg beryllium found in uncontaminated soils (*Criteria for Contaminated Soil/Sediment Cleanup*, J. Fitchko, 1989). Soil samples from the Interim Measures investigation at SWMUs 4 and 5 had similar beryllium concentrations. Therefore, the beryllium that was reported for samples from SWMU 1 is believed to be naturally occurring.

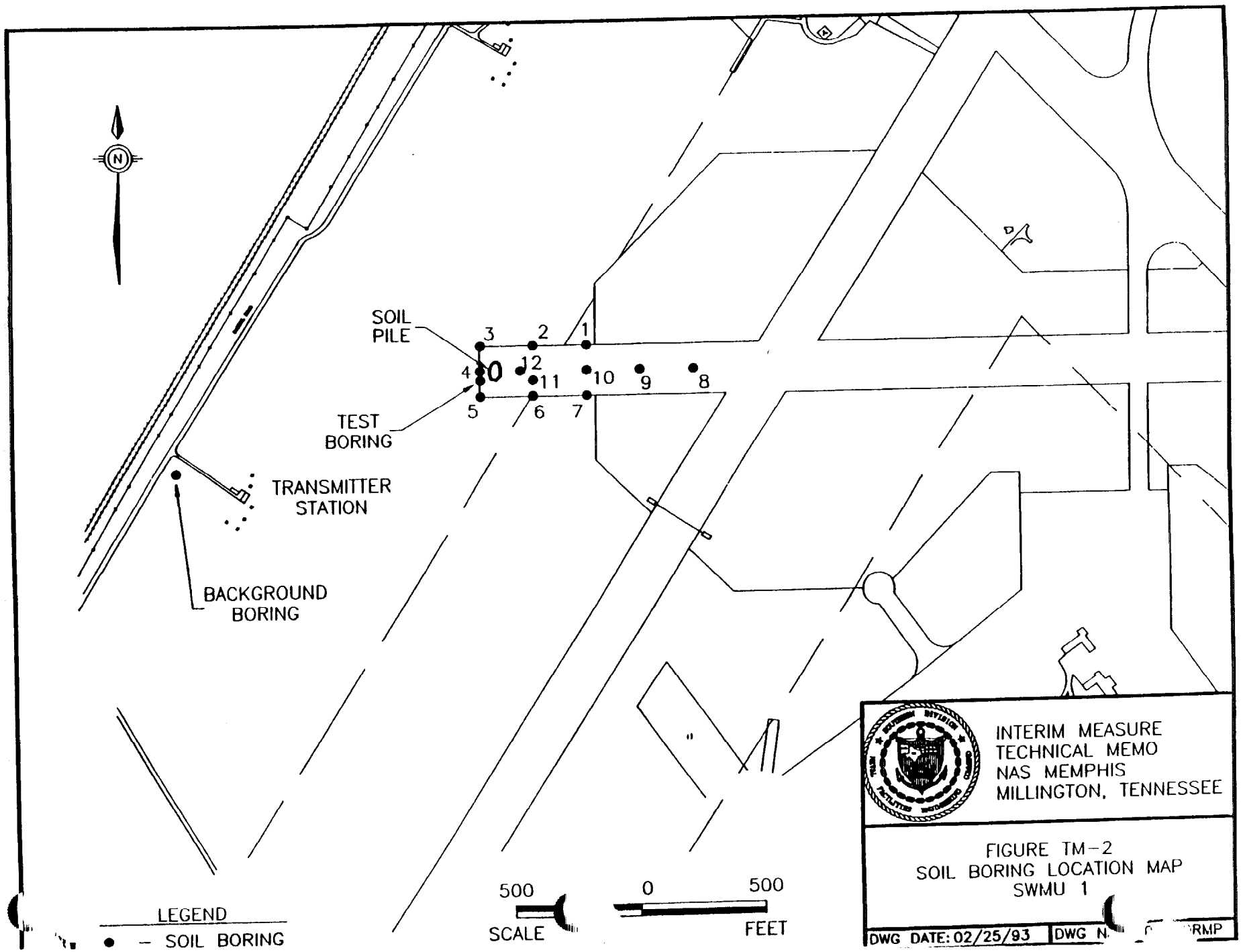
CONCLUSIONS AND RECOMMENDATIONS

Based on the data generated by the Interim Measures investigation at SWMU 1, SOUTHDIV does not feel that leasing the land south of this area will expose construction workers or the public to adverse health risks. Therefore, SOUTHDIV recommends that no further action be required in the Interim Measures investigation area for SWMU 1 and that all data generated under this investigation be cataloged as supplemental data for use in the RFI. Corrective measures, if any, should be included with those for the entire site following complete RFI characterization.

ATTACHMENT A

Figures


N
TRANSMITTER STATION
BACKGROUND BORING
LEGEND
– LOCATION OF BORINGS FOR FDDA SCREENING INVESTIGATION
– 50.5 ACRES PROPOSED FOR LEASE TO CITY O
MILLINGTON, TN.
500 0 500
SCALE FEET
INTERIM MEASURE
TECHNICAL MEMO
NAS MEMPHIS
MILLINGTON, TENNESSE
FIGURE TM–1
VICINITY MAP
SWMU 1
DWG DATE: 02/25/93
DWG NAME: 016VICM


SOIL PILE
TEST BORING
TRANSMITTER STATION
BACKGROUND BORING
1
2
3
4
5
6
7
8
9
10
11
12
LEGEND
● – SOIL BORING
500
SCALE
0
500
FEET
INTERIM MEASURE
TECHNICAL MEMO
NAS MEMPHIS
MILLINGTON, TENNESSEE
FIGURE TM-2
SOIL BORING LOCATION MAP
SWMU 1
DWG DATE: 02/25/93
DWG N
RMP

ATTACHMENT B

Data Summary Tables

Table TM-1 Summary of Validated Positive Results Total Petroleum Hydrocarbons (GC/FID)	
Sample I.D. Number	Concentration (mg/kg)
01-B-1-1	4.1
01-B-8-5	4.7
01-B-9-1	4.7
01-B-10-1	7.1
01-B-10-5/5D	4.2/< 4.0
01-B-11-5	5.3

Table TM-2 Summary of Validated Positive Results Volatile Organic Compounds	
Sample I.D. Number	Acetone (mg/kg)
01-B-5-1	36
01-B-5-5	130
01-B-5-5D	130
01-B-BG-1	0.18
01-B-BG-5	0.19
01-B-BG-5D	0.20

Table TM-3 (1 of 3)
Summary of Validated Positive Results
Inorganic Analytical Data
(mg/kg)

	Sample 01-B-1-1	Sample 01-B-1-5	Sample 01-B-2-1	Sample 01-B-2-5	Sample 01-B-3-1	Sample 01-B-3-5	Sample 01-B-4-1	Sample 01-B-4-5	Sample 01-B-5-1	Sample 01-B-5-5	Sample 01-B-5-5D
Arsenic									9.1	3.2	4.6
Barium									121	198	178
Beryllium									0.41	0.71	0.50
Cadmium	0.17				0.19	0.16	0.22				
Chromium	11.0	8.4	9.3	11.2	11.5	16.0	9.1	12.2	10.6	13.6	13.0
Cobalt									6.6	8.2	8.5
Copper									15.1	13.4	12.2
Lead	9.3	7.4	7.5	9.8	8.5	10.0	8.0	9.1	10.7	9.6	6.5
Nickel									18.1	19.7	16.6
Vanadium									21.9	23.4	20.7
Zinc									48.1	48.0	43.1

Table TM-3 (2 of 3)
Summary of Validated Positive Results
Inorganic Analytical Data
(mg/kg)

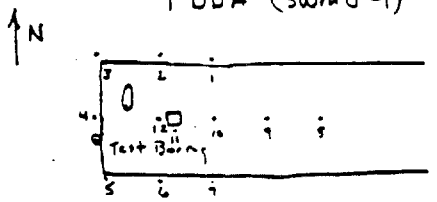
	Sample 01-B-6-1	Sample 01-B-6-5	Sample 01-B-BG-1	Sample 01-B-BG-5	Sample 01-B-BG-5D	Sample 01-B-7-1	Sample 01-B-7-5	Sample 01-B-8-1	Sample 01-B-8-5	Sample 01-B-9-1
Arsenic			5.1	9.6	2.8					
Barium			111	166	176					
Beryllium			0.36	0.44	0.42					
Cadmium	0.14	0.50				0.15		0.11		0.10
Chromium	10.2	12.7	6.4	10.9	11.1	7.3	11.8	8.2	12.1	9.1
Cobalt			4.4	2.0	1.5					
Copper			9.0	10.2	9.8					
Lead	10.3	14.0	11.8	15.3	5.3	6.6	11.2	7.2	7.0	8.8
Nickel			9.5	10.7	11.2					
Vanadium			15.7	15.0	14.1					
Zinc			27.4	39.0	37.4					

Table TM-3 (3 of 3)
Summary of Validated Positive Results
Inorganic Analytical Data
(mg/kg)

	Sample 01-B-9-5	Sample 01-B-10-1	Sample 01-B-10-5	Sample 01-B-10-5D	Sample 01-B-11-1	Sample 01-B-11-5	Sample 01-B-11-10	Sample 01-B-12-1	Sample 01-B-12-5	Sample 01-B-12-10
Arsenic								6.6	3.8	6.5
Barium								123	119	150
Beryllium								0.37	0.40	0.43
Cadmium		0.11			0.12		0.36			
Chromium	9.0	9.4	8.7	9.4	9.1	10.5	10.7	9.7	10.5	11.4
Cobalt								6.9	5.8	6.3
Copper								14.6	10.6	15.5
Lead	6.4	8.8	14.4	7.4	8.7	8.9	9.0	10.6	15.6	10.3
Nickel								17.3	9.3	18.7
Silver								1.0		
Vanadium								19.8	17.7	22.4
Zinc								47.6	30.2	51.4

LOCATION OF BORING

FDDA (SWMU 41)



All sites on ≈ 100' grid spacing w/ center @ #12; sites located by tape and compass

DATUM (and surface) ELEVATION 285'(T)

JOB NO.	CLIENT	LOCATION
FDDA	SOUTHDIV	NASM

DRILLING METHOD: 4½" ID HSA w/ 6¼" bit

SAMPLING METHOD: 2" OD SS Split Spoon

BORING NO.: 1

SHEET: 1 OF 1

DRILLING: START TIME 1400, FINISH TIME 1445; START DATE 10/27, FINISH DATE 10/27

WATER LEVEL	N/A			
TIME				
DATE	↓			
CASING DEPTH	↓			

DRILLING CONTR: U.S.G.S.

SAMPLER TYPE	SAMPLE RECOVERED / SAMPLE DRIVEN	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT SAMPLER	WATER CONCENTRATIONS (PPM)	DEPTH IN FEET	SOIL GRAPH
						0	
SS	12/12	N/A	1/1-3'	27	0	1	
"	12/12	N/A	"	39	0	2	
						3	
						4	
						5	
SS	12/12	N/A	2/5-7'	9	0	6	
"	12/12	N/A	"	15	0	7	
						8	
						9	
						10	
						11	
						12	
						13	
						14	
						15	
						16	
						17	
						18	
						19	
						20	

auger

auger

Sample @ 1425

Sample @ 1440

Stained

To Sampled

SURFACE CONDITIONS: Stained asphalt @ 1400; site is NE most site ≈ 5' N of runway bordered runway & cotton fld. Weather is sunny, slight breeze ≈ 75°, relative humidity

0-2' = sample contained asphalt from ≈ 4"-12" BLS decided to back up & auger to 1' BLS then sample from 1-3' BLS → just through asphalt = HNU reading 0 & no odor noted. Soil is SS

1-3' silt mottled tan & brown w/ small biomass roots to ≈ 12" and rare (organic) occasional trace to trace wood = If → next non-plastic crumbly into circular fragments ≈ ¼" to 1" in thickness; HNU reading 0 & no odor noted same as while on site SS

3-4' Same as above & ≈ 4' change to silt w/ some clay mod brown might be b/c auger

5-7' silt w/ some clay grades to light brown iron oxide nodules & inclusions throughout wood organic odor stiff low plastic moist HNU read 0 & no odor noted Sample while in SS

Samples for BTEX non-composited - all others composited

Chronos elevation data error = 639

no evidence of contamination in boring

BY J. Carmichael DATE 10/27/92 CHK BY

INTERIM MEASURE
WORK PLAN
NAS MEMPHIS
MILLINGTON, TENNESSEE

Boring log for 01-B-1 samples

DATE: 02/17/92 DWG NAME: C

LOCATION OF BORING

See log for boring #1

JOB NO.	CLIENT	LOCATION
F00#	SOUTH DIV	NASM

DRILLING METHOD: 4½" ID HSA w/ glow auger bit — BORING NO. 2

SAMPLING METHOD: 3" OD SS Split Spoon — SHEET 1 OF 1

DRILLING: START / FINISH

WATER LEVEL	N/A				TIME: 1645 / TIME: 1745
TIME					
DATE					DATE: 1/27 / DATE: 1/27
CASING DEPTH	▼				

DATUM land surface ELEVATION 285'(T)

DRILLING CONTR U.S.G.S.

SURFACE CONDITIONS: Steel casing to 1050 hours. Dug before collaring 1st 5' with post hole digger. Site is N side of runway 5/06 ~50' off runway between runway and taxiway ~100' of TB#1. Weather is overcast ~ 70°

SAMPLER TYPE	BLOWS DRIVEN / BLOWS RECOVERED	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT SAMPLER	VAPOR CONCENTRATION (PPM)	DEPTH IN FEET	SOIL GRAPH
						0	
SS	12/12	N/A	1 / 1-3'	27	0	1	
SS	12/12	N/A	2 / 3-5'	31	0	2	
						3	
						4 TD Cored	
SS	12/	N/A	3 / 5-7'	13	0	5	
SS	12/	N/A	4 /	18	0	6 TD Sampler	
						7	
						8	
						9	
						0	
						1	
						2	
						3	
						4	
						5	
						6	
						7	
						8	
						9	
						0	

Auger to 4'

Sampler @ 1655

Auger

Sampler @ 1735

1'-3' Silt w/ some clay, moist, red brown, trace fine sand, trace organic intrusions, becoming more sandy ~ 2½' TD. Slight change in color, moist, HNu reading 0 throughout sample which is SS

3-5' Silt, same as above, ~ 2½' TD SS moist, hole caved

5'-7' Silt w/ some clay, mottled grey, tan, brown, trace fine sand, trace organic intrusions becoming more sandy ~ 2½' TD. Slight change in color, moist, HNu reading 0 throughout sample which is SS

Samples for BTEX non-composited - all others composited

Cuttings shoveled into drum @ 1637

no evidence of contamination in boring

MS/MSD samples collected from 5-7' interval

BY J. Carmichael
DATE 10/27/92 CHK BY

INTERIM MEASURE
WORK PLAN
NAS MEMPHIS
MILLINGTON, TENNESSEE

Boring log for 01-B-2 Samples

DATE: 02/17/92 | DWG NAME: CLENBOR

LOCATION OF BORING

See log for boring #1

JOB NO.	CLIENT	LOCATION
FOOA	SOUTH DIV	NASM

DRILLING METHOD: 4 1/4" ID HSA w/ plug in bit — BORING NO. 3

SAMPLING METHOD: 3" OD SS Split Spoon — SHEET 1 OF 1

		DRILLING START	DRILLING FINISH
WATER LEVEL	N/A	TIME	TIME
TIME		1310	1355
DATE		DATE	DATE
CASING DEPTH		10/29	10/29

DATUM land surface ELEVATION 295'(T)

BY S. Carmichael
DATE 10/28/92 CHK BY

SAMPLER TYPE	BLOWS PER 6" (RECOVERED)	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT SAMPLER	VAPOR CONCENTRATION PPM	DEPTH IN FEET	SOIL GRAPH
						0	
SS	12/12	N/A	1/1-3'	60	0	1	
"	12/12	N/A	"	65	0	2	
						3	
						4	
SS	12/12	N/A	2/5-7'	12	0	5	
"	12/12	N/A	"	16	0	6	
						7	
						8	
						9	
						10	
						11	
						12	
						13	
						14	
						15	
						16	
						17	
						18	
						19	
						20	

Auger

Sample @ 1320

Auger

Sample @ 1350

SURFACE CONDITIONS: Started boring @ ; Site is @ NW corner of runway ≈ 12' off) runway between runway end cotton field ≈ 100' W of SB#3, weather is sunny, breezy, ≈ 70°

0-1' silt: mottled light tan-gray to brown; roots; non-plastic, extremely hard, dry; sample crumbled into disks ≈ 1/4" to 1" in SS; HNu reading 0 along entire sample while still in SS

3-4.5 Silt w/ trace clay brown, trace moist small balls on auger (≈ 1/4"-1/2")

4.5'-5' Silt w/ trace clay lighter brown than above, trace moist small balls on auger (≈ 1/4"-1/2")

5-7' Silt w/clay: mottled green to tan to brown; non staining and grainy in places; stiff to very stiff low plastic, moist; HNu reading 0 along entire sample while still in SS

Samples for BTEX non-composited - all others composited

Cuttings shoveled into drum # 621

no evidence of contamination in boring

INTERIM MEASURE
WORK PLAN
NAS MEMPHIS
MILLINGTON, TENNESSEE

Boring log for 01-B-3 Sample

DATE: 02/17/92 | DWG NAME: C

LOCATION OF BORING

See log for boring # 1

JOB NO.	CLIENT	LOCATION
F00A	SOUTHDIV	NASM

DRILLING METHOD: 4 1/4" ID HSA w/ plug in bit — BORING NO. 4

SAMPLING METHOD: 3" OD SS Split Spoon — SHEET 1 OF 1

DRILLING START TIME 1530 — DRILLING FINISH TIME 1550

WATER LEVEL	N/A			
TIME				
DATE				
CASING DEPTH				

DRILLING START DATE 10/28 — DRILLING FINISH DATE 10/28

DRILLING CONTR U.S.G.S.

DATUM land surface ELEVATION 285'(T)

SURFACE CONDITIONS: Started coring @ 1530: Site is ≈ 8' W of center of W end of runway between runway and cotton field: ≈ 100' S of SB # 3 & ≈ 40'N of pilot boring @ F00A; weather is sunny, breezy, ≈ 75°

SAMPLER TYPE	BLOWS PER 6" / BLOWS RECOVERED	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT SAMPLER	VOA CONCENTRATION (PPM)	DEPTH IN FEET	SOIL GRAPH	
						0		
SS	12/12	N/A	1/1-3'	14	0	1		1-3' Silt w/ some clay, mottled grey-tan to brown, trace organic inclusions, ≈ ff, low plastic, moist, HNU reading 0 along entire sample while still in SS
"	12/12	N/A	"	14	0	2		
						3		@ 3.5' DLS, change to grey clayey silt, moist, soils on auger
						4		
SS	12/12	N/A	2/5-7'	9	0	5		5-7' Silt w/ clay, mott. ∫ tan to brown, organic inclusions & trace iron stains, stiff, low to mod. plastic, moist, HNU reading 0 throughout entire sample while still in SS.
"	12/12	N/A	"	14	0	6		
						7		
						8		Samples for BTEX non-composited - all others composited
						9		
						10		Cuttings shoveled into drum #637
						11		no evidence of contamination in boring
						12		
						13		
						14		
						15		
						16		
						17		
						18		
						19		
						20		

Sample @ 15:40

auger

Sample @ 15:50

To Ground

To Sampled

BY J. Carmichael

DATE 10/28/92 CHK BY

INTERIM MEASURE
WORK PLAN
NAS MEMPHIS
MILLINGTON, TENNESSEE

Boring log for 01-B-4 Samples

DATE: 02/17/92

DWG NAME: CLENBOR

LOCATION OF BORING

See log for boring #1

JOB NO.	CLIENT	LOCATION
F00R	SOUTHDIV	NASM

DRILLING METHOD: 4¼" ID HSA w/ plug in bit

SAMPLING METHOD: 3" ID SS Split Spoon

BORING NO. 5

SHEET 1 OF 1

		DRILLING START	DRILLING FINISH
WATER LEVEL	N/A	TIME	TIME
TIME	↓	0955	1015
DATE		DATE	DATE
CASING DEPTH	↓	10/29	10/29

DATUM land surface ELEVATION 295'(T)

DRILLING CONTR U.S.G.S.

SAMPLER TYPE	BOXES RECOVERED / BOXES DRIVEN	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT SAMPLER	VOCS CONCENTRATIONS (PPM)	DEPTH IN FEET	SOIL GRAPH	SURFACE CONDITIONS: Started boring @ 0955. Site is @ SW corner of old runway ≈10'W of W edge of runway, between runway & cattle fence - site selected for drainage and RFI analysis because of SW movement of runoff from bare area ≈ 200' to the NE. weather is overcast, chance of rain ≈ 50%
						0		
SS	12/12	N/A	1 / 1-3'	16	0	1		1-3'- Silt, brown w/ trace fine silt, fairly uniform color & texture, very stiff, non-plastic, dry, HNu reading 0 along entire sample while still in SS. Did not encounter water From gravel under apron or original apron along runway after auger penetrated to 1'
"	12/12	N/A	2 / 3-5'	24	0	2		
						3		
						4		
						TD Bored		≈3.5'-5'- grey silt w/ some clay, moist, boulders in auger
SS	12/	N/A	3 / 5-7'	6	0	5		5-7'- Silt w/ clay, grades to ≈ 6'3" becomes grey & then from 6'3"-7' light tan, more clay & some manganese stains, possible organic material (looks almost like FeO stains), firm to stiff, low to med plasticity, trace moist to moist, HNu reading 0 along entire sample while still in SS
"	12/	N/A	4 /	10	0	6		
						TD Sampled		
						7		
						8		
						9		
						0		Samples for VOCs non-composited - all others composited
						1		Cuttings shoveled in drum @ 1028
						2		* Samples to be enclosed for RFI screening
						3		Duplicate of sample #2 collected
						4		No evidence of contamination in boring
						5		
						6		
						7		
						8		
						9		
						0		

Sample @ 0955 — Auger — Sample @ 1015

BY V. Cornelius DATE 10/29/92 CHK BY

INTERIM MEASURE
WORK PLAN
NAS MEMPHIS
MILLINGTON, TENNESSEE

Boring log for 01-B-5 samples

DATE: 02/17/92 DWG NAME: CL

LOCATION OF BORING

See log for boring #1

JOB NO.	CLIENT	LOCATION
FDOA	SOUTHDIV	NASMH

DRILLING METHOD: 4 1/4" ID HSA w/ plug in bit — BORING NO. 6

SHEET 1 OF 1

SAMPLING METHOD: 3" OD SS Split Spoon

					DRILLING START	DRILLING FINISH
WATER LEVEL	N/A					
TIME					1330	1355
DATE	/				DATE 10/29	DATE 10/29
CASING DEPTH	V					

DRILLING CONTR: U.S.G.S.

DATUM: ELEVATION 285'(T)

SAMPLER TYPE	BLOWS PER 6" / RECOVERED	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT SAMPLER	VAPOR CONCENTRATIONS PPM	DEPTH IN FEET	SOIL GRAPH	
						0		SURFACE CONDITIONS: Started boring @ 1330 site is overgrown 90'-100' E of SR 95 elev 5 edge of runway between cattle field and runway + about 5'-10' S of runway weather is PC already = 60°
SS	12/12	N/A	1 / 1-3'	10	0	1		1'-2' Silt w/ clay mottled tan to brown trace roots slow entire sample; stiff to very stiff low plastic; moist; HNU reading 0 slow entire sample while still in SS
"	12/12	N/A	"	18	0	2		
						3		3'-4' - same as above
						4		4-5' clayey silt, grey, moist; balls on auger
						TD Auger		
SS	12/12	N/A	2 / 5-7'	9	0	5		5-7' clay w/ silt; mottled light grey to grey; iron staining throughout; trace roots; slow to start, hard plastic; moist; HNU reading zero clay entire sample while still in SS
"	12/12	N/A	"	8	0	6		
						TD Sampler		
						7		
						8		Sampler for BTEX non-composited - all others composited
						9		Cuttings shoveled into drum # 626
						0		no evidence of contamination in boring
						1		
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						0		

BY: D. Carmichael DATE: 10/29/92 CHK BY:

INTERIM MEASURE
WORK PLAN
NAS MEMPHIS
MILLINGTON, TENNESSEE

Boring log for 01-B26 samples

DATE: 02/17/92

DWG NAME: CLENBO

LOCATION OF BORING

See log for boring #1

JOB NO.	CLIENT	LOCATION
FOOA	SOUTHDIV	NASM

DRILLING METHOD: 4¼" ID HSA w/ plug in bit

SAMPLING METHOD: 3" OD SS Split Spoon

BORING NO. 7

SHEET 1 OF 1

					DRILLING START TIME	DRILLING FINISH TIME
WATER LEVEL	N/A				1620	1630
TIME	↓				DATE	DATE
DATE					10/29	10/29
CASING DEPTH	↓					

DATUM land surface ELEVATION 285'(T)

DRILLING CONTR U.S.G.S.

SURFACE CONDITIONS: Started boring @ 1620: Site is ≈ 100' E of SB#6 along S edge of runway between taxiway and runway (about 5' S of runway); weather is PC, breezy ≈ 65°

SAMPLER TYPE	BLOWS RECOVERED	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT SAMPLER	VOCs CONCENTRATIONS PPM	DEPTH IN FEET	SOIL GRAPH	
						0		1-3' silt trace clay; brown, some roots; very stiff; low plastic; moist; HNu reading 0 ppm; native
SS	12	N/A	1 / 1-3'	27	0	1		
"	12	N/A	2 / 3-5'	25	0	2		sample while still in SS
						3		3-5' - Same as above more moist, smell (+) coils on auger
						4		
						TO Reamed		5-7' silt w/ clay, mottled tan to brown, some organic inclusions and iron stains; firm; low plastic; silt; moist; HNu reading 0 ppm; native sample while still in SS
SS	12	N/A	3 / 5-7'	5	0	5		
"	12	N/A	4	8	0	6		
						TO Stopped		
						7		Samples for BTEX non-composited; all others composited
						8		Cuttings shoveled into drum #623
						9		no evidence of contamination in boring
						0		
						1		
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						0		

Sample @ 1620

Auger

Sample @ 1625

BY J. Cumbest

DATE 10/29/92 CHK BY

INTERIM MEASURE
WORK PLAN
NAS MEMPHIS
MILLINGTON, TENNESSEE

Boring log for 01-B-7 samples

DATE: 02/17/92 DWG NAME: C

LOCATION OF BORING

See log for boring #1

JOB NO.	CLIENT	LOCATION
FDDA	SOUTHDIV	NASM

DRILLING METHOD: 4 1/4" ID HSA w/ plug in bit

BORING NO. 8

SHEET 1 OF 1

SAMPLING METHOD: 3" OD SS Split Spoon

		START	FINISH
WATER LEVEL	N/A	DRILLING	
TIME		TIME	TIME
DATE		1025	1050
CASING DEPTH	V	DATE	DATE
		11/3	11/3

DATUM land surface ELEVATION 285(T)

DRILLING CONTR U.S.G.S.

BY J. Carmichael

DATE 11/3/92 CHK BY

SAMPLER TYPE	BLOWS/6" (BOXES RECOVERED)	DEPTH OF CASING	SAMPLE NO. (SAMPLE DEPTH)	BLOWS/FT SAMPLER	VAPOR CONCENTRATIONS (PPM)	DEPTH IN FEET	SOIL GRAPH	
						0		SURFACE CONDITIONS: Ground boring @ 1025; site is @ center of runway ± 375' E of corner of old fire box; drilling thru runway, weather is sunny, windy, ± 65°
						1		Broke hole in runway w/ pick to ± 1' BLS before advancing to 1'
SS	12/12	N/A	1 1-3	24	0	2		1'-3' - Silt w/ trace clay mottled grey to tan to brown; very stiff to hard; low plastic; dry to slightly moist; HNu reading ± 0 along outside of sample while still in SS
"	12/12	N/A	"	36	0	3		3-4.5' same as above
						4		-4.5-5' silt w/ clay, grey, moist, balls on auger
						TD Bored		5-7' - silt w/ clay; grey; trace rock stains & organics (@ ± 6'); stiff; low plastic; slightly moist; HNu reading ± 0 along entire sample while still in SS
SS	12/12	N/A	2 5-7	9	0	5		
"	12/12	N/A	"	11	0	6	TD Sampled	Samples for ISTER non-composited - all others composited
						7		Cuttings shoveled into drum # 625
						8		
						9		no evidence of contamination in boring
						0		
						1		
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						0		

INTERIM MEASURE
WORK PLAN
NAS MEMPHIS
MILLINGTON, TENNESSEE

Boring log for 01-B-8 samples

DATE: 02/17/92 | DWG NAME: CLENBO

LOCATION OF BORING

See log for boring #1

JOB NO.	CLIENT	LOCATION
FDOA	SOUTHDIV	NASM

DRILLING METHOD: 4 1/4" ID HSA w/ plug in bit

SAMPLING METHOD: 3" ID SS Split Spoon

BORING NO.: 9

SHEET: 1 OF 1

		DRILLING START	DRILLING FINISH
WATER LEVEL	N/A		
TIME		TIME: 1400	TIME: 1430
DATE		DATE: 11/3	DATE: 11/3
CASING DEPTH	↓		

DATUM land surface ELEVATION 265'(T)

DRILLING CONTR: U.S.G.S

BY: J. Carmichael DATE: 11/3/92 CHK BY:

SAMPLER TYPE	BLOWS/6" (BORE HOLE / RECOVERED)	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT SAMPLER	VAPOR CONCENTRATIONS (PPM)	DEPTH IN FEET	SOIL GRAPH
						0	
SS	12/12	N/A	1 / 1.3'-3.7'	50	0	1	
"	12/12	N/A	"	25	0	2	
						3	
						4	
						TD bored	
SS	12/12	N/A	2 / 5'-7'	5	0	5	
"	12/12	N/A	"	8	0	6	
						TD Sampled	
						7	
						8	
						9	
						10	
						11	
						12	
						13	
						14	
						15	
						16	
						17	
						18	
						19	
						20	

SURFACE CONDITIONS: Started boring @ 1400; site is on center line of runway ≈ 100' W of SB#8; asphalt ≈ 8" thick here so hole covered to ≈ 1.3' before collecting 1st sample; weather is sunny, windy, ≈ 70°

0-1.3' - ~2.0' - silt, mottled orange/tan → brown; extremely hard; non-plastic; dry; broke disks in SS 1/8" to 1/2" thick; @ ≈ 2.0' change → silt w/ trace clay; brown; non to low plastic; hard; dry. @ ~3.0' change to clay silt w/ some clay - this interval could possibly have residual asphalt contamination - HNu reading 0 clay entire sample

~3.0' - ~3.7' - grey silt w/ clay; moist; ball in cuve

~3.7' - 4.5' - change to brown silt w/ clay; moist; soft

5'-7' - silt w/ clay; grey; trace iron stains & organics (rootlets); in concentration below ~6'; firm; low plastic; moist; HNu reading 0 clay entire sample while in SS

Samples for BTEX non-composited - all others composited

Cuttings shoveled into an unnumbered drum - top marked "#1 - SB#9 Cuttings" w/ black marker

☆ no evidence of contamination in borma; however presence of thick layer of asphalt (≈ 9" thick) & rainwater standing in hole that was removed prior to sampling could cause residual contamination by asphalt in the #1 samples from this boring

INTERIM MEASURE
WORK PLAN
NAS MEMPHIS
MILLINGTON, TENNESSEE

Boring log for 01-B-9 samples

DATE: 02/17/92 | DWG NAME:

LOCATION OF BORING

See log for boring #1

JOB NO.	CLIENT	LOCATION
FDDA	SOUTH DIV	NASM

DRILLING METHOD: 4¼" ID HSA w/ plug & bit — BORING NO. 10

SHEET 1 OF 1

SAMPLING METHOD: 3" OD SS Split Spoon

		DRILLING START	DRILLING FINISH
WATER LEVEL	N/A		
TIME		TIME 1615	TIME 1640
DATE		DATE 11/3	DATE 11/3
CASING DEPTH			

DATUM land surface ELEVATION 235'(+)

DRILLING CONTR U.S.G.S.

SAMPLER TYPE	BOXES DRIVEN / BOXES RECOVERED	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT SAMPLER	VAPOR CONCENTRATIONS PPM	DEPTH IN FEET	SOIL GRAPH	SURFACE CONDITIONS: Location of boring @ 1615 site is along center of runway ≈ 100' N of SB 49/and ≈ 90' E/of E edge of old fire box; entry in hole made in runway w/a pick, asphalt ≈ 5" thick; weather is cloudy, windy, ≈ 30°
auger						0		
SS	12/12	N/A	1 / 1-3'	24	0	1		1'-3' - silt w/some clay; tan to brown; very stiff; low plastic; trace moist; changes to grey silt w/clay @ ≈ 2.2' BLS; trace iron stains & nodules in this interval; trace moist; HNu reading 2 along entire sample while still in SS
"	12/12	N/A	1	21	0	2		3'-5' Same as above
						3		
auger						4		5'-7' silt w/some clay; grey to blue; trace iron stains & organic nodules; firm; med plastic; moist; HNu reading 2 along entire sample while still in SS
						TD Bored		
SS	12/12	N/A	2 / 5-7'	5	0	5		Samples for BTEX non-compressed - all others compressed
"	12/12	N/A	1	5	0	6		
						TD Sampled		
						7		CuMings shoveled into an unnumbered drum - top marked ≈ 2 90-SB w/ paint & black marker
						8		no evidence of contamination in boring
						9		Samples from 5'-7' collected for duplicate, matrix spike, and matrix spike duplicates
						0		
						1		
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						0		

BY V. Carmichael DATE 11/3/92 CHK BY ____

INTERIM MEASURE
WORK PLAN
NAS MEMPHIS
MILLINGTON, TENNESSEE

Boring log for 01-B-10 samples

DATE: 02/17/92 | DWG NAME: CLENBOR

LOCATION OF BORING

See log for boring #1

JOB NO.	CLIENT	LOCATION
FOOA	SOUTHDIV	NASM

DRILLING METHOD: 4¼" ID HSA w/ plug in bit — BORING NO. 11

SAMPLING METHOD: 3" ID SS Split Spoon — SHEET 1 of 1

					DRILLING START	DRILLING FINISH
WATER LEVEL	N/A				TIME	TIME
TIME					1040	1120
DATE					DATE	DATE
CASING DEPTH	↓				11/4	11/4

DATUM land surface — ELEVATION 275'(T)

DRILLING CONTR U.S.G.S.

BY J. Carmichael — DATE 11/4/92 — CHK BY

SAMPLER TYPE	BLOWS PER 6 INCHES / RECOVERED	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT SAMPLER	VAPOR CONCENTRATIONS PPM	DEPTH IN FEET	SOIL GRAPH	
						0		SURFACE CONDITIONS: Started boring @ 1145; site is ≈ 5' S of S edge of old fire box = 50 center of box; weather is overcast windy ≈ 50° rain last night; sample #1 collected in ≈ 9" hole sleeved thru asphalt which was asphalt ≈ 4" thick
SS	12/12	N/A	1 1-3'	26	0	1		1-3' silt w/ trace clay; tan to brown; very stiff; non-plastic; dry; trace organics in lower 6"-8"; HNu reading 0 along entire sample while still in SS
"	12/12	N/A	"	29	0	2		
						3		3-4.5' Same as above; change to grey silt w/ clay @ ≈ 4.5' BLS; slightly moist)
						4		
SS	12/12	N/A	2 5'-7'	7	0	5		5'-7'- silt w/ clay; mottled grey to tan; some iron stains & organic inclusions; some roots; firm to stiff; low-plastic; slightly moist; HNu reading 0 along entire sample while still in SS
"	12/12	N/A	"	12	0	6		
						7		7'-10' @ ≈ 7' BLS change to tan silt w/ clay; slightly moist - small balls in cores
						8		
						9		10'-12'- silt w/ some clay; mottled tan to brown w/ iron stains and organic inclusions throughout; very stiff; low plastic; slightly moist; HNu reading 0 along entire sample while still in SS
						TD Bored 10		
SS	12/12	N/A	3 10'-12'	17	0	11		Samples for BTEX non-composited - all others composited
"	12/12	N/A	"	21	0	TD Sampled 12		
								Cuttings shoveled into unnumbered drum - top marked "#3 - 11-5B Cuttings" w/ black marker
								no evidence of contamination in hole

INTERIM MEASURE
WORK PLAN
NAS MEMPHIS
MILLINGTON, TENNESSEE

Boring log for 01-B-11 samples

DATE: 02/17/92 | DWG NAME: C

LOCATION OF BORING

See log for boring # 1

JOB NO.	CLIENT	LOCATION
F00A	SOUTHDIV	NASM

DRILLING METHOD: 4¼" ID HSA w/ plug in bit — BORING NO. 12

SAMPLING METHOD: 3" OD SS Split Spoon — SHEET 1 OF 1

		DRILLING START TIME	DRILLING FINISH TIME
WATER LEVEL	N/A	1520	1600
TIME			
DATE		11/4	11/4
CASING DEPTH	▼		

DATUM land surface ELEVATION 295'(T)

DRILLING CONTR: U.S.G.S.

BY: V. Carmichael DATE: 11/4/92 CHK BY: ____ DATE: ____

SURFACE CONDITIONS: Started boring @ 1520. Site is ± 6'W of old fire box. @ center of box: 4" hole thru asphalt w/ pick. Fill material to 6" then native sand directly beneath asphalt, medium to coarse grained ≈ 50%

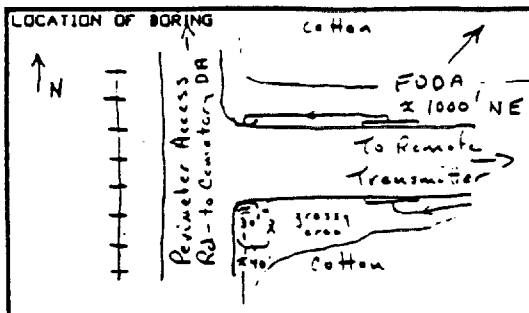
SAMPLER TYPE	INCHES RECOVERED / INCHES ATTEMPTED	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT SAMPLER	VAPOR CONCENTRATIONS PPM	DEPTH IN FEET	SOIL GRAPH	
						0		
SS	12/12	N/A	1 / 1-3'	34	0	1		1-3' - silt, brown w/ trace of fine, hard, non-plastic, dry. HNu reading ≈ 0 thru entire sample while still in SS - no evidence of contamination to 3' BLS
"	12/12	N/A	"	36	0	2		
						3		3'-4' - Same as above, becoming slightly moist. @ 4' BLS change to grey silt w/ clay, moist balls on auger; no evidence of contamination in cuttings
						4		
SS	12/12	N/A	2 / 5-7'	7	0	5		5-7' Silt w/ clay, grey to olive grey, trace iron stain; transitional to mottled grey-tan silt w/ clay @ ≈ 6' BLS; this interval has increase in iron stain, & percent in cohesive content, stiff, low to med (lower 1') plasticity, moist; HNu reading 0 along entire sample while still in SS
"	12/12	N/A	"	13	0	6		
						7		
						8		
						9		7-10' silt w/ some clay, brown to grey-brown, moist balls on auger
						TD Bored		
SS	12/12	N/A	3 / 10-12'	16	0	10		10'-12' silt w/ trace clay, mottled grey to tan to brown w/ iron stains & ferrous inclusions, very stiff, non to low plastic, dry, moist. HNu reading 0 along entire sample while still in SS; upon compositing, silt from this interval crumbles into an almost powder consistency
"	12/12	N/A	"	24	0	11		
						TD Sampled		
						12		Samples from this boring collected for full RFI analysis
						3		
						4		Samples for VOC's non-composited - all others composited
						5		Cuttings shoveled into drum # 646
						6		* no evidence of contamination in boring
						7		
						8		
						9		
						0		

INTERIM MEASURE
WORK PLAN
NAS MEMPHIS
MILLINGTON, TENNESSEE

Boring log for 01-B-12 samples

DATE: 02/17/92 | DWG NAME: CLENBOR

LOCATION OF BORING



JOB NO.	CLIENT	LOCATION
FODA	SOUTHDIV	NASM

DRILLING METHOD: 4¼" ID HSA w/ plug in bit

SAMPLING METHOD: 3" OD SS Split Spoon

BORING NO. B6

SHEET 1 OF 1

		START	FINISH
WATER LEVEL	N/A		
TIME		1535	1600
DATE		11/5	11/5
CASING DEPTH	↓		

DRILLING CONTR: U.S.G.S.

DATUM: land surface ELEVATION:

SAMPLER TYPE	SAMPLER BLOWS PER FOOT / BLOWS PER 6"	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT SAMPLER	VAPOR CONCENTRATION (PPM)	DEPTH IN FEET	SOIL GRAPH	SURFACE CONDITIONS: Started boring @1535. site is in SE corner of gravel drive leading to Remote Transmitter off Perimeter Access Rd leading to Cemetery Disposal Area; corner is ≈ 40' E of Per. Rd. & ≈ 75' S of gravel drive; weather is clear cool breezy ≈ 45°
						0		covered to 1' BLS in hole auger thru crust w/ shovel
SS	12/12 / N/A	N/A	1 / 1-3'	18	0	1		1-3' - silt w/ trace c sw in order 1' washed thru to brown with iron staining throughout + trace organics; some roots; very stiff; sample recovered = SS. breaks into pieces ½" to ½" dia upon opening spoon. ran to low plastic; dry to 2' low moist; HNu reading 0 along entire sample while still in SS
"	12/12 / N/A	N/A	"	17	0	2		
						3		
						4		3-5' - silt w/ trace clay; brown to light brown; moist - coll on augers
SS	12/12 / N/A	N/A	2 / 5-7'	11	0	5		
"	12/12 / N/A	N/A	"	13	0	6		5-7' - silt w/ trace clay; mottled tan-cream to brown w/ iron staining throughout + roots; stiff; low plastic; trace moist; HNu reading 0 along entire sample while still in SS
						7		
						8		Samples collected for RFI parameters
						9		
						0		Samples for VOCs non-composited - all others composited
						1		
						2		Cuttings shoveled back into hole
						3		
						4		no evidence of contamination in boring
						5		
						6		
						7		
						8		
						9		
						0		

Sample @1540

Auger

Sample @1550

Auger

TD Reached

TD Sampled

BY V. Carmichael DATE 11/5/92 CHK BY

INTERIM MEASURE
WORK PLAN
NAS MEMPHIS
MILLINGTON, TENNESSEE

Boring log for 01-B-B6 samples

DATE: 02/17/92

DWG NAME: C1

Appendix B

DPT Survey Summary

ASSEMBLY A
DPT SURVEY SUMMARY

The DPT survey for Assembly A solid waste management units (SWMUs) was conducted between Monday, November 14 and Wednesday, December 21. Soil and groundwater samples collected at each SWMU were analyzed at a mobile laboratory set up by the DPT subcontractor. The samples were analyzed according to EPA Method 8021 (halogenated and aromatic volatile organic compounds) using a gas chromatograph with an electrolytic conductivity detector and a photoionization detector (GC/ELCD/PID). The ELCD, also known as a Hall detector, was selected to improve our ability to detect halogenated volatile compounds (e.g., chlorinated solvents such as trichloroethene), while the PID was selected because of its ability to identify volatile petroleum constituents (e.g., the aromatic compounds benzene, toluene, ethylbenzene, and xylene).

At least 25 percent of the samples collected were split and sent to an offsite laboratory for confirmatory VOC analysis using EPA Method 8240. This method requires the use of a gas chromatograph with mass spectrometer (GC/MS). GC/MS methods are generally more accurate for compound identification, but less accurate (than GC with a detector other than a MS) for determining the concentrations of the identified compounds.

Reasons for selecting VOC analysis as the field screening analytical method include:

- It is a good "indicator" method. Many wastes that require other methods for detection (e.g., metals or PCBs) are often contained in petroleum products that have volatile constituents. Thus, detection of VOCs indicates that a waste release has possibly occurred, and further investigation may be necessary.

- Though the required laboratory equipment is sophisticated, the amount of equipment needed and sample preparation are fairly minimal.

- Test results can be obtained within hours which facilitates quick decision making and sampling strategy development.

- Chlorinated solvents can be detected. These are primary contaminants of concern because they are often "sinkers" that can threaten groundwater supplies and many of them are carcinogens.

The sampling strategy was essentially the same for all SWMUs, but was often modified based on site-specific conditions. An attempt was made at each SWMU to collect the following samples:

- Shallow soil from the unsaturated zone in the loess (usually less than 13 feet bls).

- Shallow groundwater from the loess (typically at 13 feet bls or a little deeper). If the formation was too tight to yield water, a soil sample was usually collected.

- Intermediate groundwater from the loess (typically about 25 feet bls). If groundwater could not be obtained, soil samples were usually collected.

- Deeper groundwater from the top of the fluvial deposits (typically around 40 feet bls). The fluvial deposits are much more permeable than the loess. Therefore, they yield more water than the loess and also provide less resistance to lateral migration of contaminants. The top of the fluvial deposits was also the maximum depth of penetration for the DPT rig due to the type of material (sand and gravel) that makes up the formation.

All samples at SWMUs 1 (Fire Department Drill Area), 8 (Cemetery Disposal Area), and 60 (Northside Landfill) were below detection limits (BDL). At SWMU 3, all samples were BDL except one shallow (17 feet bls) methylene chloride hit in groundwater that was resampled and reported as BDL the second time.

At SWMU 5 (Aircraft Fire Fighting Training Facility), no solvents were detected. As expected, petroleum constituents were detected in shallow soil and groundwater in areas of known contamination (from previous investigations). Shallow soil near the old fire extinguisher pits was heavily contaminated.

At SWMU 7 (N-126 Plating Shop Dry Well), groundwater contamination by chlorinated solvents was detected by field analyses in the mobile laboratory and confirmed by GC/MS analyses performed in an offsite laboratory. The contamination was detected at depths of 36 to 42 feet and ranged from 5.4 ppb cis-1,2-Dichloroethene to 320 ppb 1,1-Dichloroethane. The source of the contamination is believed to be a grassy area south of the dry well where used solvents were reportedly poured directly onto the ground. Groundwater contamination (6 ppb 1,1-Dichloroethane and 2.6 ppb Trichloroethene) was detected adjacent to Production Well No. 1 at 43 feet; however, water samples collected from the production well, which is screened at 523 feet, were not contaminated.

SWMU 1 — Fire Department Drill Area

Background

The Fire Department Drill Area (Figure 1) was used to train firemen in fire fighting and crew rescue techniques for downed aircraft. The area, which consisted of approximately 3,000 square feet of existing asphalt runway on the approach end of abandoned Runway 09, is now part of the airfield.

One training session per month was conducted in this area from 1960 until 1984. During each training session, approximately 55 to 100 gallons of JP-4 and waste fuels were sprayed on and around an aircraft simulator and ignited. The fire created by the burning fuel was extinguished by the training crew. A small containment area consisting of steels rails (1 inch to 2 inches high and 15 to 20 feet square) in the form of a box with an asphalt bottom was used to contain the fuel during training exercises. Fire training is currently conducted at the Fire Fighting Training Area SWMU 5) near the southwest corner of the North Complex.

Summary

Soil and groundwater samples were collected at the six locations shown in Figure 1. The attached table provides the sample depths and types (i.e., soil or water). No contamination was detected during the survey, which is consistent with the results of the interim measure investigation conducted in 1992. The only sample result of concern from the interim measure investigation was an anomalous acetone "hit" in a soil sample collected near the southwest corner of the site. During the DPT survey, a soil sample was collected at the same location and depth and sent to an offsite laboratory for GC/MS analysis. No contaminants were detected in this sample or any other soil or groundwater sample collected during the DPT survey, including a soil sample collected 7 feet below the center of the burn area.

NAS Memphis RFI DPT Survey Results SWMU 1				
Sample Location	Sample ID	Soil or Water	Depth (ft. bls)	Compound Detected/Concentration
1	1SG0107	S	07	NONE
1	1SG0112	S	12	NONE
1	1GH0135	W	35	NONE
1	1GH0150	W	50	NONE
2	1SG0210	S	10	NONE
2	1SG0221	S	21	NONE
2	1GH0250	W	50	NONE
3	1SG0310	S	10	NONE
3	1SG0321	S	21	NONE
3	1GH0350	W	50	NONE
4	1SG0421	S	21	NONE
5	1SG0521	S	21	NONE
5	1GH0552	W	52	NONE
6	1SG0607	S	07	NONE

NAS Memphis RFI DPT Survey Results Production Wells				
Sample Location	Sample ID	Soil or Water	Depth (ft. bls)	Compound Detected/Concentration
Production Well No. 1	MSPW1	W	**	NONE
Production Well No. 2	MSPW2	W	**	NONE

NAS Memphis RFI DPT Survey Results Quality Control Samples			
Sample Location	Sample ID	Sample Type	Compound Detected/Concentration
1	3F0100	Field blank of deionized/organic free water	NONE
1	5EO100	Equipment rinsate blank	NONE
1	7EO100	Equipment rinsate blank	NONE
2	7E0200	Equipment rinsate blank	NONE
1	7F0100	Field blank of deionized/organic free water	NONE
1	8EO100	Equipment rinsate blank	NONE
1	8FO100	Field blank of deionized/organic free water	NONE

DATALCP3
04/05/96

NSA MEMPHIS RFI
SWMU 1 - FIRE DEPARTMENT DRILL AREA
DPT SURVEY SPLIT SAMPLE RESULTS

Time: 15:50

VOA													
	SAMPLE ID ------>	001-S-0G01-07		001-S-0G01-12		001-S-0G04-21		001-S-0G86-07		001-G-0H01-50		001-G-0H02-50	
	ORIGINAL ID ----->	001S0G0107		001S0G0112		001S0G0421		001S0G8607		001G0H0150		001G0H0250	
	LAB SAMPLE ID --->	113565		113566		113571		113825		113567		113572	
	ID FROM REPORT -->	1SG0107		1SG0112		1SG0421		1SG8607		1GH0150		1GH0250	
	SAMPLE DATE ----->	11/29/94		11/29/94		11/30/94		11/30/94		11/29/94		11/30/94	
	DATE ANALYZED --->	12/06/94		12/06/94		12/06/94		12/08/94		12/06/94		12/08/94	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
CAS #	Parameter	FD1271	VAL	FD1271	VAL	FD1271	VAL	FD1271	VAL	FD1271	VAL	FD1271	VAL
74-87-3	Chloromethane	13.	U	12.	UJ	13.	UJ	13.	U	10.	U	10.	U
74-83-9	Bromomethane	13.	U	12.	UJ	13.	UJ	13.	U	10.	U	10.	U
75-01-4	Vinyl chloride	13.	U	12.	UJ	13.	UJ	13.	U	10.	U	10.	U
75-00-3	Chloroethane	13.	U	12.	UJ	13.	UJ	13.	U	10.	U	10.	U
75-09-2	Methylene chloride	13.	U	12.	UJ	13.	UJ	13.	U	10.	U	10.	U
67-64-1	Acetone	130.		41.	J	13.	UJ	170.		14.		10.	J
75-15-0	Carbon disulfide	13.	U	12.	UJ	13.	UJ	13.	U	5.	J	1.	J
75-35-4	1,1-Dichloroethene	13.	U	12.	UJ	13.	UJ	13.	U	10.	U	10.	U
75-34-3	1,1-Dichloroethane	13.	U	12.	UJ	13.	UJ	13.	U	10.	U	10.	U
540-59-0	1,2-Dichloroethene (total)	13.	U	12.	UJ	13.	UJ	13.	U	10.	U	10.	U
67-66-3	Chloroform	13.	U	12.	UJ	13.	UJ	13.	U	10.	U	10.	U
107-06-2	1,2-Dichloroethane	13.	U	12.	UJ	13.	UJ	13.	U	10.	U	10.	U
78-93-3	2-Butanone (MEK)	9.	J	12.	UJ	13.	UJ	13.	U	10.	U	10.	U
71-55-6	1,1,1-Trichloroethane	13.	U	12.	UJ	13.	U	13.	U	10.	U	10.	U
56-23-5	Carbon tetrachloride	13.	U	12.	UJ	13.	U	13.	U	10.	U	10.	U
75-27-4	Bromodichloromethane	13.	U	12.	UJ	13.	U	13.	U	10.	U	10.	U
78-87-5	1,2-Dichloropropane	13.	U	12.	UJ	13.	U	13.	U	10.	U	10.	U
10061-01-5	cis-1,3-Dichloropropene	13.	U	12.	UJ	13.	U	13.	U	10.	U	10.	U
79-01-6	Trichloroethene	13.	U	12.	UJ	13.	U	13.	U	10.	U	10.	U
124-48-1	Dibromochloromethane	13.	U	12.	UJ	13.	U	13.	U	10.	U	10.	U
79-00-5	1,1,2-Trichloroethane	13.	U	12.	UJ	13.	U	13.	U	10.	U	10.	U
71-43-2	Benzene	13.	U	12.	UJ	13.	U	13.	U	10.	U	10.	U
10061-02-6	trans-1,3-Dichloropropene	13.	U	12.	UJ	13.	U	13.	U	10.	U	10.	U
75-25-2	Bromoform	13.	U	12.	UJ	13.	U	13.	U	10.	U	10.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	13.	U	12.	UJ	13.	U	13.	U	10.	U	10.	U
591-78-6	2-Hexanone	13.	U	12.	UJ	13.	U	13.	U	10.	U	10.	U
127-18-4	Tetrachloroethene	13.	U	12.	UJ	13.	U	13.	U	10.	U	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	13.	U	12.	UJ	13.	U	13.	U	10.	U	10.	U
108-88-3	Toluene	16.		12.	J	13.	U	7.	J	10.	U	10.	U
108-90-7	Chlorobenzene	13.	U	12.	UJ	13.	U	13.	U	10.	U	10.	U
100-41-4	Ethylbenzene	13.	U	12.	UJ	13.	U	13.	U	10.	U	10.	U
100-42-5	Styrene	13.	U	12.	UJ	13.	U	13.	U	10.	U	10.	U
1330-20-7	Xylene (Total)	13.	U	12.	UJ	13.	U	13.	U	10.	U	10.	U

*** Validation Complete ***

Appendix C
Data Validation Report

Table of Contents

List of Tables

List of Attachments

1.0 INTRODUCTION

This report presents the analytical data collected during the Resource Conservation Recovery Act Facility Investigation (RFI) of Naval Support Activity (NSA) Memphis Assembly A Solid Waste Management Unit (SWMU) 1 and the quality assurance/quality control (QA/QC) evaluation of those data. The purpose of the data evaluation is to verify that the QC requirements of the data set have been met and to characterize the weakness of any questionable data.

The Assembly A soil samples were collected at NSA Memphis on January 31, 1996; submitted to National Environmental Testing, Inc., laboratory in Bedford, Massachusetts; and reported using U.S. Environmental Protection Agency (USEPA) Data Quality Objectives (DQO) Level III and Level IV equivalents. The analytical methods and DQO laboratory deliverables are summarized in Table 1.

Table 1
NSA Memphis Analytical Program

Analytical Method	Data Quality Level	Method Reference
Full Scan		
Volatile Organic Compounds (VOCs)	IV	SW-846 8240
Semivolatile Organic Compounds (SVOCs)	IV	SW-846 8270
Pesticides/Polychlorinated Biphenyls (Pest/PCBs)	IV	SW-846 8080
Chlorinated Herbicides	IV	SW-846 8150
Organophosphorus Pesticides (OP Pesticides)	IV	SW-846 8140
Total Petroleum Hydrocarbons (TPH)	III	USEPA 418.1
Metals	IV	40 Code of Federal Regulations Part 264 Appendix IX (SW-846 6010/7060/7421/7471/7740/7841)
Cyanide	III	SW-846 9010
Gasoline Range Organics (GRO)	III	Modified 8015/TN GRO, 8020
Diesel Range Organics (DRO)	III	Modified 8015/TN DRO

The references for the methods listed in Table 1 were obtained from the following sources:

- USEPA Office of Solid Waste and Emergency Response, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (SW-846), Third Edition, revised July 1992.

- USEPA Environmental Monitoring and Support Laboratory, *Methods for Chemical Analysis of Water and Wastes* (EPA-600/4-79-020, revised March 1983).

- USEPA *Title 40 Code of Federal Regulations Part 264, Appendix IX (52 Federal Register 25947,* July 1987)

Data were validated using the following documents (as appropriate):

- *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*, February 1994 (EPA-540/R-94/012).

- *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, February 1994 (EPA-540/R-94/013).

The NSA Memphis data were validated by EnSafe/Allen and Hoshall (E/A&H) at DQO Level III. The data validation findings were summarized separately for each sample delivery group (SDG). Each SDG usually contains 20 samples of one matrix type, i.e., either a solid (soil and/or sediment) or water (groundwater and/or surface water) samples, except for QC samples. QC samples are included in each SDG, but are not counted as part of the 20 samples. The data summary tables are included in Attachment A to this document.

Section 2 discusses the significant data validation findings for the metals, cyanide, volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticide/polychlorinated biphenyl (PCB), herbicide, organophosphorus (OP) pesticide, diesel range organics (DRO), and gasoline range organics (GRO) analyses at SWMU 1.

1.1 Organic Evaluation Criteria

The USEPA methods described in the following define QC criteria that the laboratory must meet:

- *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*
- *Methods for Chemical Analysis of Water and Wastes.*

These methods do not address data evaluation from a user's perspective. Evaluation criteria are available in *USEPA Contract Laboratory National Functional Guidelines for Organic Data Review* (Organic Functional Guidelines), February 1994, which was used throughout the data evaluation process when the analytical methods did not address data usability.

Data evaluation for samples collected at NSA Memphis included the following parameters:

- Holding times
- Gas chromatograph/mass spectrometry (GC/MS) instrument performance checks
- Surrogate spike recoveries
- Instrument calibration
- Matrix spike and matrix spike duplicates (MS/MSD)
- Blank analysis
- Internal standard performance
- Compound quantitation
- Field duplicate precision

According to the Organic Functional Guidelines, when the QC parameters do not fall within the specific method guidelines, the data evaluator annotates or "flags" the corresponding compounds where deficiencies were found. NSA Memphis data were evaluated using this approach. The following flags were used to annotate data with laboratory and/or field deficiencies or problems:

U **Undetected** — The analyte was analyzed for but not detected or was also found in an associated blank, but at a concentration less than 10 times the blank concentration for common laboratory constituents (contaminants) or five times the blank concentration for other constituents; the associated value shown is the quantitation limit. The quantitation limit is the minimum level of detection acceptable under the contract Statement of Work.

J **Estimated Value** — One or more QC parameters were outside control limits or the concentration of the analyte was less than the Practical Quantitation Limit (PQL).

UJ **Undetected and Estimated** — The analyte was analyzed for but not detected above the listed estimated quantitation limit; the quantitation limit is estimated because at least one QC parameter was outside control limits.

D **Diluted Result** — The compound was reanalyzed at a secondary dilution factor. If at least one compound was outside the calibration range during an initial analysis, the laboratory flags the analyte "E." When diluted, the sample results will be flagged "D." Generally, values from the initial analysis will be used except where the value exceeded the calibration range. Values exceeding the calibration range in the initial analysis will be substituted by the diluted value to ensure the most representative data. The "D" flag will remain on the value to alert the data user that the secondary dilution value was used.

R/UR **Unusable Data** — At least one QC parameter grossly exceeded control limits.

These validation flags were applied to data where deficiencies were noted. Attachment A includes tables of all qualified data.

1.1.1 Holding Times

Acceptable technical holding times are specified in the analytical methods. The sample holding time depends on the type of analysis and whether the sample was preserved. For water samples, the holding time for preserved VOC and GRO analysis is 14 days from the collection date. SVOC, pesticide/PCB, OP pesticide, and chlorinated herbicide water samples must be extracted within seven days (14 days for DRO) and analyzed within 40 days after extraction. Holding times for soil matrices are not specified in SW-846. Therefore, data reviewers can apply the water sample holding times criteria to soil at their discretion.

1.1.2 GC/MS Mass Calibration (Instrument Performance Checks)

Tuning and performance criteria are established to ensure that the data produced by the instrument may be correctly interpreted according to the requirements of the method being used. These criteria are not sample-specific; conformance is determined using standard materials. Therefore, these criteria must be met in all circumstances. The performance standards for VOC (bromofluorobenzene [BFB]) and SVOC (decafluorotriphenylphosphine [DFTPP]) analyses are evaluated to determine if the data produced by the instrument may be correctly interpreted according to the method requirements. Performance standards must be analyzed within 12 hours of sample analysis, and the results must be within the established criteria.

1.1.3 Surrogate Spike Recoveries

Surrogate compounds are added to samples and laboratory blanks before extraction and sample preparation to evaluate the effect of the sample matrix on extraction and measurement procedures. Surrogates are organic compounds which are chemically similar to analytes of interest but not normally found in environmental samples. Three surrogate compounds are added to samples for VOC analysis, eight are added to samples for SVOC analysis, two are added to

pesticide/PCB samples, and one is added to both OP pesticides and chlorinated herbicides. Percent recovery (%R) of the surrogates is calculated by comparing the amount of the compound recovered by the analysis to the amount added to the sample.

Below is a list of surrogate compounds recommended by the SW-846 methods. Abbreviations for each compound are in parentheses (when applicable).

VOC Surrogates	SVOC Surrogates	Pesticide/PCB Surrogates	Herbicide Surrogate	OP Pesticide Surrogate
Toluene-d8 (TOL)	Nitrobenzene-d5 (NBZ)	Tetrachloro-m-xylene (TCMX)	DCAA	4-Chloro-3-Nitrobenzotrifluoride (CNBT)
BFB	2-Fluorobiphenyl (FBP)	Decachlorobiphenyl (DCB)		
1,2-Dichloroethane (DCE)	Terphenyl-d14 (TPH)			
	2,4,6-Tribromophenol (TBP)			
	Phenol-d5 (PHL)			
	2-Chlorophenol-d4 (2CP)			
	1,2-Dichlorobenzene-d4 (DCB)			

1.1.4 Instrument Calibration

Instruments are initially and continually calibrated with standard solutions to verify that they are capable of producing acceptable quantitative data for the compounds.

Initial calibration (GC/MS): The instrument is initially calibrated at the beginning of the analytical run to check its performance and to establish a linear five-point calibration curve. The initial calibration is verified by calculating the relative response factor (RRF) and the percent relative standard deviation (%RSD) for each compound. An RRF less than 0.05 or a %RSD greater than 30% is outside the QC limits for the initial calibration.

Continuing calibration (GC/MS): Standard solutions are run periodically to check the daily performance of the instrument and to establish the 12-hour RRF on which the sample quantitations are based. The continuing calibration is verified by calculating the RRF and the percent difference (%D) for each compound. An RRF less than 0.05 or a %D greater than 25% is outside the QC limits for the continuing calibration.

Initial calibration (GC): For single-component pesticides, two separate standard mixes are used, five-point calibrations are analyzed, and calibration factors (CF) are established. The CF for single-component pesticides must be less than or equal to 20%.

The multicomponent pesticide toxaphene and all PCBs (or Aroclors) are analyzed separately. Retention times and CFs are determined for three to five primary peaks. The only review criteria for multicomponent compounds is to verify these steps were taken.

A five-point initial calibration is analyzed for GRO, DRO, herbicides, and OP pesticides. Two methods for calibration may be used: external or linear regression methods. For the external method, the initial calibration may be verified by calculating the RRF and the %RSD for each compound. An RRF less than 0.05 or a %RSD greater than 20% is outside the QC limits for the initial calibration. If linear regression is used, the correlation coefficient must meet or exceed 0.995 before the samples can be analyzed.

Continuing calibration (GC): To confirm the calibration and evaluate instrument performance for single-component pesticides, calibration verification consisting of instrument blank, performance evaluation mixtures, and the midpoint concentration of the two standard mixes are analyzed. The %D between the calculated amount and the true amount must not exceed 15% on the primary column.

Multicomponent compounds do not require continuing calibration.

For GRO, DRO, herbicides, and OP pesticides, the continuing calibration is verified by calculating the RRF and the %D for each compound. An RRF less than 0.05 or a %D greater than 15% is outside the QC limits for the continuing calibration.

For NSA Memphis, only positive results were flagged when the %RSDs and %D were outside control limits but were less than 50%. If the %RSD or %D exceeded 50%, both the positive and nondetected results were flagged. Based on professional judgment, the results were flagged because the risk would be in reporting results with a high bias rather than a low bias.

1.1.5 Matrix Spikes/Matrix Spike Duplicates

The MS, which is used to determine the accuracy of the analysis for a given matrix, consists of a known quantity of stock solution added to the sample before its preparation and analysis. Evaluating the MS data involves two calculations. First, the %R is calculated by comparing the amount of the compound recovered by the analysis to the amount added to the sample. In addition, the relative percent difference (RPD) between the MS and the MSD samples is calculated and assessed. No specific requirements have been established for qualifying MS/MSD data. However, guidelines to aid in applying professional judgment are discussed in the Organic Functional Guidelines.

1.1.6 Laboratory Control Samples and Laboratory Duplicates

Some GC methods may require that a laboratory control sample (LCS) and laboratory duplicate be performed with each SDG. The LCS monitors the overall performance of each step during analysis, including sample preparation. All aqueous LCS percent recovery results must fall within the control limits established by the laboratory. Laboratory duplicate samples are used to demonstrate acceptable method precision at the time of analysis. The RPD between the sample and the duplicate sample is calculated. Although no guidelines are established for organic laboratory duplicates, sample qualification is left up to professional judgment.

1.1.7 Blank Analysis

Laboratory method blanks are used to assess the existence and magnitude of potential contamination introduced during analysis. Additionally, *field blanks* may be collected to assess any contamination introduced while collecting samples. When chemicals are found both in

samples and laboratory blanks analyzed within the same 12-hour period and/or field-derived blanks, the usability of the data depends on the reviewer's judgment and the blank's origin. According to Organic Functional Guidelines, a sample result should not be considered positive unless the concentration of the compound in the sample exceeds 10 times the amount in any blank for common laboratory contaminants (i.e., methylene chloride, acetone, 2-butanone, and common phthalate esters), or five times the amount for other constituents. These amounts are referred to as action levels (ALs). Because blank samples may not be prepared using the same weight or volume of sample or dilution, these variables also should be considered when using these blank criteria. The specific actions to be taken are as follows:

- If a chemical is found in the blank but not the sample, no action is taken.
- If the sample concentration is less than the quantitation limit and less than the AL, the quantitation limit is reported.
- If the sample concentration is between the quantitation limit and the AL, the concentration is reported as nondetect "U."
- If the sample concentration is greater than the AL, the concentration may be used unqualified.

Field-Derived Blanks

For this project, one type of field-derived blank was collected: the *trip blank.* The trip blank is a 40-milliliter volatile organic analysis vial filled at the laboratory with certifiable water to assess cross-contamination during VOC sample shipment.

One trip blank per shipment containing samples for VOCs was collected as defined in Section 4 of the *NSA Memphis Comprehensive RFI Work Plan* (E/A&H, October 1994).

For data validation, each trip blank is associated only with the samples from the same shipment/cooler. Because field-derived blanks are used with method blanks to assess potential cross-contamination of field investigative samples, no action was taken if contamination was detected in the method blanks associated with the trip blanks.

1.1.8 Internal Standard Performance

GC/MS internal standards are added to samples to check the stability of the instrument's sensitivity and response during each analytical VOC and SVOC run. Internal standard area counts for samples and blanks must not vary more than a factor of two (-50% to +100%) from the associated calibration standard. If an internal standard area count is outside this window, action should be taken.

Listed below are the internal standard compounds recommended by the methods:

VOC Compounds	SVOC Compounds
Bromochloromethane (BCM)	1,4-Dichlorobenzene-d4 (DCB)
1,4-Difluorobenzene (DFB)	Naphthalene-d8 (NPT)
Chlorobenzene-d5 (CBZ)	Acenaphthene-d10 (ANT)
	Phenanthrene-d10 (PHN)
	Chrysene-d12 (CRY)
	Perylene-d12 (PRY)

1.1.9 Field Duplicate Precision

One field duplicate was collected at NSA Memphis for each 10 soil samples collected. Field duplicate samples are analyzed to evaluate data precision, which measures the reproducibilty of the analysis.

For the NSA Memphis RFI, RPDs between the samples and duplicates were calculated during the validation processes for sample results above the PQL. If the results for any compounds did not meet RPD criteria of less than 50% for soil, the positive results for that compound were flagged as estimated for the sample and duplicate only. If one value was nondetected and the other value was above the PQL, the positive result was flagged as estimated "J," and the nondetected result as estimated "UJ."

1.2 Inorganic Evaluation Criteria

The USEPA methods described in *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* and *Title 40 Code of Federal Regulations Part 264, Appendix IX* define QC criteria that the laboratory must meet, but the methods do not address data evaluation from a user's perspective. Evaluation criteria are available in *USEPA Contract Laboratory National Functional Guidelines for Inorganic Data Review* (Inorganic Functional Guidelines), February 1994, which was used throughout the data evaluation process when the analytical methods did not address data usability.

Data evaluation for samples collected at NSA Memphis included the following parameters:

- Holding times
- Instrument calibration
- MS
- Laboratory duplicates
- Blank analysis
- Inductively Coupled Plasma (ICP) interference check samples
- ICP serial dilutions
- LCS results
- Atomic Absorption (AA) duplicate injections and postdigestion spike recoveries
- Field duplicate precision

According to Inorganic Functional Guidelines, when the QC parameters do not fall within the specific method guidelines, the data evaluator annotates or "flags" the corresponding deficient compounds. The data from NSA Memphis were evaluated using this approach. The following flags were used to annotate data exhibiting laboratory and/or field deficiencies or problems:

U **Undetected** — The analyte was analyzed for but not detected above the instrument detection limit (IDL) or was also found in an associated blank at a concentration less than five times the blank concentration. The IDL is described as the lowest possible concentration an instrument can detect a particular analyte. The IDL is determined by multiplying by three the standard deviation obtained for the analysis of a standard solution at a concentration of 3x to 5x IDL on three nonconsecutive days with seven consecutive measurements per day.

J **Estimated Value** — At least one QC parameter was outside control limits or the analyte's concentration was less than the PQL.

UJ **Undetected and Estimated** — The analyte was analyzed for but not detected above the listed estimated IDL; the IDL is estimated because at least one QC parameter was outside control limits.

R/UR **Unusable Data** — One or more QC parameter grossly exceeded control limits.

1.2.1 Holding Times

Acceptable technical holding times are specified in the analytical methods. For aqueous samples, the holding time for cyanide analysis is 14 days, and metals analysis is six months, except for mercury, which is 28 days from the date of collection. Holding times for soil are not specified in the methods. Therefore, data reviewers can apply the water sample holding times criteria to soil at their discretion.

1.2.2 Instrument Calibration

Initial and continuing calibrations of the instruments with standard solutions are used to check that the instrument is capable of producing acceptable qualitative and quantitative data for the analytes on the Appendix IX list.

An initial calibration is performed to check the performance of the instrument at the beginning of the analytical run and to establish a linear calibration curve. Calibration standard solutions are analyzed periodically to check the performance of the instrument and confirm that the initial calibration curve is still valid. Calibrations are verified by calculating the %R and comparing the amount of the analyte recovered by analysis to the known amount of standard. The %R for metals should fall between 90% and 110%. The %R for mercury should fall between 80% and 120%, and the %R for cyanide should fall between 85% and 115%.

1.2.3 Blank Analysis

Laboratory method blanks are used to assess the existence and magnitude of potential contamination introduced during analysis. When chemicals are found in samples and laboratory blanks, the usability of the data depends on the reviewer's judgment and the blank's origin. According to Inorganic Functional Guidelines, a sample result should not be considered positive unless the compound concentration in the sample exceeds five times the amount in any blank. These amounts are referred to as ALs. Because blank samples may not be prepared using the same weight or volume of sample or dilution, these variables also should be considered when using these blank criteria. The specific actions to be taken are as follows:

- If a chemical is found in the blank but not the sample, no action is taken.

- If the sample concentration is between the IDL, and less than the AL, the concentration is reported as "U."

- If the sample concentration is greater than the AL, the concentration may be used unqualified.

1.2.4 ICP Interference Check Samples

The ICP interference check sample is used to confirm the laboratory instrument's inter-element and background correction factors. Interference samples should be run at the beginning and end of each sample analysis run or at least twice per eight-hour working shift. The %R for the interference check sample should fall between 80% and 120%.

1.2.5 Laboratory Control Samples

LCSs are used to monitor the overall performance of steps in the analysis, including the sample preparation. All aqueous LCS %R results must fall within the control limits of 80% to 120%, except for antimony and silver for which control limits have not been established. Soil LCS standards are generally provided by the USEPA (or state agency or private laboratory). Control limits are established for each soil LCS standard prepared.

1.2.6 MS Analysis

Samples are spiked with known quantities of analytes to evaluate the effect of the sample matrix on digestion and measurement procedures. The %R should be within 75% to 125%. However, when the sample concentration exceeds the spike concentration by a factor of four or more, spike recovery criteria are not applicable.

1.2.7 Laboratory Duplicates

Laboratory duplicate samples are analyzed to evaluate data precision, a measure of the reproducibilty of the analysis. The RPD between the sample and the duplicate sample is calculated. A control limit of 20 RPD for aqueous samples and 35% for soil or sediment samples should not be exceeded for analyte values greater than the quantitation limit or two times the quantitation limit, respectively.

1.2.8 ICP Serial Dilutions

ICP serial dilutions assess whether matrix interference occurred. One sample from each set of similar matrix type is chosen for the serial dilution (a fivefold dilution). For an analyte concentration that is at least a factor of 10 times above the instrument detection limit, the measured concentrations of the undiluted sample and of the diluted sample should agree within 10%.

1.2.9 AA Duplicate Injections and Postdigestion Spike Recoveries

During AA analysis, duplicate injections and postdigestion spikes are used to assess precision and accuracy of the laboratory analysis. The %RSD of duplicate injections must agree within 20%. Percent recovery of the postdigestion spike sample should fall between 85% and 115%.

1.2.10 Field Duplicate Precision

One field duplicate was collected for each 10 soil samples collected. Field duplicate samples are analyzed to evaluate data precision, which measures the reproducibilty of the analysis.

For the NSA Memphis RFI, RPDs between the samples and duplicates were calculated during the validation processes for sample results above the PQL. If the results for any compounds did not meet RPD criteria of $<30\%$ for water and $<50\%$ for soil or sediment, the positive results for that compound were flagged as estimated for the sample and duplicate only. If one value was nondetected and the other value was above the PQL, the positive result was flagged as estimated "J," and the nondetected result as estimated "UJ."

2.0 DATA VALIDATION RESULTS — SWMU 1

All samples were received by the laboratory intact and with the proper documentation. Table 2 summarizes the samples that were included in SWMU 1.

Table 2
SWMU 1 Sample IDs

Sample ID	VOCs	SVOCs	Pest/PCB	OP Pest	Herb	DRO	GRO	Metals & Cyanide
001CHA0101	X	X	X	X	X	X	X	X
001CHA0101DL2			X					
001SHA0101	X	X	X	X	X	X	X	X
001SHA0101DL2			X					
001SHA0201	X	X	X	X	X	X	X	X
001SHA0301	X	X	X	X	X	X	X	X

Three investigative samples and one field duplicate were analyzed in SDG 1686 for SWMU 1. Validated data tables can be found in Attachment A of this document.

2.1 Data Quality

The overall data quality of the analytical work performed for NSA Memphis at SWMU 1 was considered satisfactory and usable for site remediation and risk assessment. Results that were outside QA/QC requirements were flagged as estimated "J," indicating that the data could be biased either high or low. Although the data are qualified as estimated, they remain dependable for use in risk assessment and site remediation. The following sections address only the data that exhibited deficiencies resulting in qualification.

2.2 Appendix IX Metals and Cyanide

2.2.1 Blanks

Silver was detected in the preparation blank at a concentration of 3.4 micrograms per liter (μg/L). Samples 001SHA0101, 001CHA0101, and 001SHA0201 exhibited concentrations less than the AL of 17 μg/L (3.4 milligrams per kilogram [mg/kg]) and were qualified as nondetect.

Tin demonstrated negative bias in the initial calibration blank (ICB) (-23.1 μg/L) and in the preparation blank (-6.028 mg/kg). All results less than 10 times the absolute value of the highest detection (46.2 mg/kg, 231 μg/L) were qualified as estimated (J) for positive results and (UJ) for undetected results.

2.2.2 Matrix Spike Recovery

Antimony (38.9%) and selenium (60.5%) displayed %Rs outside the 75% to 125% control limits. All antimony and selenium results were qualified as estimated (J) for positive results and (UJ) for undetected results. Lead (-28.5%) exhibited a %R less than 30% and was qualified as estimated (J) for positive results and unusable (UR) for undetected results.

2.2.3 Laboratory Duplicates

Chromium (50.0%) demonstrated a RPD greater than the control limits of 35%. All positive chromium results were qualified as estimated (J) and undetected results were accepted without qualification.

2.3 Volatile Organic Compounds

2.3.1 Field Duplicates

Samples 001SHA0101 and 001CHA0101 were analyzed as field duplicates for SWMU 1. Xylene (100%) and ethylbenzene (169%) displayed RPDs greater than 50%. Xylene was qualified as estimated (J) for positive results and ethylbenzene was qualified as estimated (J) for a positive result and (UJ) for an undetected result in these two samples only.

2.4 Pesticide/Polychlorinated Bipenyls

2.4.1 Surrogate Recovery

Samples 001SHA0201 (141%, 139%) and 001CHA0101DL2 (144%, 140%) exhibited percent recoveries greater than the 40% to 137% control limits for tetrachloro-m-xylene (TCMX) on both the primary and confirmation columns. Samples 001SHA0301 (145%) and 001SHA0101

(166%) exhibited %Rs greater than the 40% to 137% control limits for TCMX on the primary column only. All positive results in these samples were qualified as estimated (J). All undetected results were accepted without qualification.

2.4.2 Field Duplicates

Samples 001SHA0101 and 001CHA0101 were analyzed as field duplicates for SWMU 1. Heptachlor epoxide (58.1%) displayed a RPD greater than 50%. Heptachlor epoxide was qualified as estimated (J) for a positive result and (UJ) for an undetected result in these two samples only.

2.5 Herbicides

2.5.1 Laboratory Control Samples

Dinoseb (0.0%) did not display a percent recovery for the LCS. All results for SWMU 1 were undetected and qualified as unusable (UR).

2.6 OP Pesticides

2.6.1 Laboratory Control Samples

Naled (39%) demonstrated a %R less than the 50% to 150% control limits. All results for SWMU 1 were undetected and qualified as estimated (UJ).

Attachment A

Validated Data Tables

DATALCP3
04/05/96

NSA MEMPHIS RFI
SWMU 1 - FIRE DEPARTMENT DRILL AREA
SURFACE SOIL SAMPLES

APX9-METAL												
	SAMPLE ID ------>	001-S-HA01-01		001-C-HA01-01		001-S-HA02-01		001-S-HA03-01				
	ORIGINAL ID ----->	001SHA0101		001CHA0101		001SHA0201		001SHA0301				
	LAB SAMPLE ID --->	142111S		142110S		142112S		142113S				
	ID FROM REPORT -->	001SHA0101		001CHA0101		001SHA0201		001SHA0301				
	SAMPLE DATE ----->	01/31/96		01/31/96		01/31/96		01/31/96				
	MATRIX ---------->	Soil		Soil		Soil		Soil				
	UNITS ----------->	MG/KG		MG/KG		MG/KG		MG/KG				
CAS #	Parameter	1686	VAL	1686	VAL	1686	VAL	1686	VAL			
SB	Antimony	6.9	UJ	7.	UJ	6.9	UJ	6.9	UJ			
AS	Arsenic	5.1		4.7		5.2		2.7				
BA	Barium	66.8		81.8		60.		56.2				
BE	Beryllium	0.92	U	0.93	U	0.92	U	0.92	U			
CD	Cadmium	1.6		2.		1.	J	1.4				
CR	Chromium	11.3	J	15.	J	9.8	J	11.	J			
CO	Cobalt	5.5	J	6.2	J	4.1	J	6.6	J			
CU	Copper	10.5		11.7		9.5		9.1				
PB	Lead	18.	J	15.2	J	15.4	J	83.9	J			
HG	Mercury	0.12	U	0.12	U	0.12	U	0.11	U			
NI	Nickel	8.4	J	12.		7.6	J	6.7	J			
SE	Selenium	0.46	UJ	0.46	UJ	0.46	UJ	0.46	UJ			
AG	Silver	0.74	U	0.76	U	0.73	U	0.69	U			
TL	Thallium	0.69	U	0.7	U	0.69	U	0.69	U			
V	Vanadium	15.8		19.4		15.5		18.1				
ZN	Zinc	32.4		34.2		23.5		53.8				
SN	Tin	14.9	J	13.8	J	12.4	J	11.7	J			

NSA MEMPHIS RFI
SWMU 1 - FIRE DEPARTMENT DRILL AREA
SURFACE SOIL SAMPLES

METAL-CN									
	SAMPLE ID ------>	001-S-HA01-01		001-C-HA01-01		001-S-HA02-01		001-S-HA03-01			
	ORIGINAL ID ----->	001SHA0101		001CHA0101		001SHA0201		001SHA0301			
	LAB SAMPLE ID --->	142111		142110		142112		142113			
	ID FROM REPORT -->	001SHA0101		001CHA0101		001SHA0201		001SHA0301			
	SAMPLE DATE ----->	01/31/96		01/31/96		01/31/96		01/31/96			
	DATE ANALYZED --->	02/26/96		02/26/96		02/26/96		02/26/96			
	MATRIX ---------->	Soil		Soil		Soil		Soil			
	UNITS ----------->	MG/KG		MG/KG		MG/KG		MG/KG			
CAS #	Parameter	1686	VAL	1686	VAL	1686	VAL	1686	VAL		
CN	Cyanide	0.01	U	0.01	U	0.01	U	0.01	U		
57-12-5	Cyanide (CN)	NR		NR		NR		NR			

NSA MEMPHIS RFI
SWMU 1 - FIRE DEPARTMENT DRILL AREA
SURFACE SOIL SAMPLES

SW846-8ERB								
	SAMPLE ID ------>	001-S-HA01-01		001-C-HA01-01		001-S-HA02-01		001-S-HA03-01			
	ORIGINAL ID ----->	001SHA0101		001CHA0101		001SHA0201		001SHA0301			
	LAB SAMPLE ID --->	142111		142110		142112		142113			
	ID FROM REPORT -->	001SHA0101		001CHA0101		001SHA0201		001SHA0301			
	SAMPLE DATE ----->	01/31/96		01/31/96		01/31/96		01/31/96			
	DATE EXTRACTED -->	02/05/96		02/05/96		02/05/96		02/05/96			
	DATE ANALYZED --->	02/10/96		02/10/96		02/10/96		02/10/96			
	MATRIX ---------->	Soil		Soil		Soil		Soil			
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG			
CAS #	Parameter	1686	VAL	1686	VAL	1686	VAL	1686	VAL		
94-82-6	2,4-DB	9.5	U	9.5	U	9.5	U	9.5	U		
88-85-7	Dinoseb	4.7	UR	4.7	UR	4.7	UR	4.7	UR		
93-76-5	2,4,5-T	0.95	U	0.95	U	0.95	U	0.95	U		
93-72-1	2,4,5-TP (Silvex)	0.95	U	0.95	U	0.95	U	0.95	U		
75-99-0	Dalapon	23.	U	23.	U	23.	U	23.	U		
1918-00-9	Dicamba	0.94	U	0.94	U	0.94	U	0.94	U		
120-36-5	Dichlorprop	9.4	U	9.4	U	9.4	U	9.4	U		
94-74-6	MCPA	940.	U	940.	U	940.	U	930.	U		
93-65-2	MCPP	940.	U	940.	U	940.	U	940.	U		
94-75-7	2,4-D	9.4	U	9.4	U	9.4	U	9.4	U		

NSA MEMPHIS RFI
SWMU 1 - FIRE DEPARTMENT DRILL AREA
SURFACE SOIL SAMPLES

SW846-OP P	SAMPLE ID ------>	001-S-HA01-01	001-C-HA01-01	001-S-HA02-01	001-S-HA03-01		
	ORIGINAL ID ----->	001SHA0101	001CHA0101	001SHA0201	001SHA0301		
	LAB SAMPLE ID --->	142111	142110	142112	142113		
	ID FROM REPORT -->	001SHA0101	001CHA0101	001SHA0201	001SHA0301		
	SAMPLE DATE ----->	01/31/96	01/31/96	01/31/96	01/31/96		
	DATE EXTRACTED -->	02/02/96	02/02/96	02/02/96	02/02/96		
	DATE ANALYZED --->	02/08/96	02/08/96	02/08/96	02/08/96		
	MATRIX ---------->	Soil	Soil	Soil	Soil		
	UNITS ---------->	UG/KG	UG/KG	UG/KG	UG/KG		

CAS #	Parameter	1686	VAL	1686	VAL	1686	VAL	1686	VAL			
86-50-0	Guthion	100.	U	98.	U	98.	U	95.	U			
35400-43-2	Sulprofos	100.	U	98.	U	98.	U	95.	U			
2921-88-2	Chloropyrifos	100.	U	98.	U	98.	U	95.	U			
56-72-4	Coumaphos	100.	U	98.	U	98.	U	95.	U			
8065-48-3	Demeton,O	100.	U	98.	U	98.	U	95.	U			
333-41-5	Diazinon	100.	U	98.	U	98.	U	95.	U			
62-73-7	Dichlorvos	100.	U	98.	U	98.	U	95.	U			
298-04-4	Disulfoton	100.	U	98.	U	98.	U	95.	U			
13194-48-4	Ethoprop	100.	U	98.	U	98.	U	95.	U			
115-90-2	Fensulfothion	100.	U	98.	U	98.	U	95.	U			
55-38-9	Fenthion	100.	U	98.	U	98.	U	95.	U			
150-50-5	Merphos	100.	U	98.	U	98.	U	95.	U			
7786-34-7	Mevinphos, Alpha	100.	U	98.	U	98.	U	95.	U			
300-76-5	Naled	200.	UJ	200.	UJ	200.	UJ	190.	UJ			
298-00-0	Methyl parathion	100.	U	98.	U	98.	U	95.	U			
298-02-2	Phorate	100.	U	98.	U	98.	U	95.	U			
299-84-3	Ronnel	100.	U	98.	U	98.	U	95.	U			
22248-79-9	Stirophos (Tetrachlorovinphos)	100.	U	98.	U	98.	U	95.	U			
34643-46-4	Tokuthion	100.	U	98.	U	98.	U	95.	U			
327-98-0	Trichloronate	100.	U	98.	U	98.	U	95.	U			
126-75-0	Demeton,S	100.	U	98.	U	98.	U	95.	U			
26718-65-0	Mevinphos	NR		NR		NR		NR				

NSA MEMPHIS RFI
SWMU 1 - FIRE DEPARTMENT DRILL AREA
SURFACE SOIL SAMPLES

SW846-PEST

SAMPLE ID ------>	001-S-HA01-01	001-C-HA01-01	001-S-HA02-01	001-S-HA03-01
ORIGINAL ID ----->	001SHA0101	001CHA0101	001SHA0201	001SHA0301
LAB SAMPLE ID --->	142111	142110	142112	142113
ID FROM REPORT -->	001SHA0101	001CHA0101	001SHA0201	001SHA0301
SAMPLE DATE ----->	01/31/96	01/31/96	01/31/96	01/31/96
DATE EXTRACTED -->	02/02/96	02/02/96	02/02/96	02/02/96
DATE ANALYZED --->	02/08/96	02/08/96	02/08/96	02/08/96
MATRIX ---------->	Soil	Soil	Soil	Soil
UNITS ---------->	UG/KG	UG/KG	UG/KG	UG/KG

CAS #	Parameter	1686	VAL	1686	VAL	1686	VAL	1686	VAL
319-84-6	alpha-BHC	10.	U	9.8	U	20.	U	38.	U
319-85-7	beta-BHC	10.	U	9.8	U	20.	U	38.	U
319-86-8	delta-BHC	10.	U	9.8	U	20.	U	38.	U
58-89-9	gamma-BHC (Lindane)	10.	U	9.8	U	20.	U	38.	U
76-44-8	Heptachlor	20.	U	9.8	U	20.	U	38.	U
309-00-2	Aldrin	10.	U	9.8	U	20.	U	38.	U
1024-57-3	Heptachlor epoxide	10.	UJ	5.5	JD	20.	U	38.	U
959-98-8	Endosulfan I	10.	U	9.8	U	20.	U	38.	U
60-57-1	Dieldrin	470.	JD	450.	JD	130.	JD	180.	JD
72-55-9	4,4'-DDE	20.	U	20.	U	39.	U	76.	U
72-20-8	Endrin	20.	U	20.	U	39.	U	76.	U
33213-65-9	Endosulfan II	20.	U	20.	U	39.	U	76.	U
72-54-8	4,4'-DDD	20.	U	20.	U	39.	U	76.	U
1031-07-8	Endosulfan sulfate	20.	U	20.	U	39.	U	76.	U
50-29-3	4,4'-DDT	20.	U	20.	U	48.	JD	76.	U
72-43-5	Methoxychlor	100.	D	98.	U	200.	U	380.	U
53494-70-5	Endrin ketone	20.	U	20.	U	39.	U	76.	U
7421-93-4	Endrin aldehyde	20.	U	20.	U	39.	U	76.	U
5103-71-9	alpha-Chlordane	35.	D	37.	D	18.	JD	38.	U
5103-74-2	gamma-Chlordane	21.	D	22.	JD	13.	JD	38.	U
8001-35-2	Toxaphene	200.	U	200.	U	390.	U	760.	U
12674-11-2	Aroclor-1016	200.	U	200.	U	390.	U	760.	U
11104-28-2	Aroclor-1221	200.	U	200.	U	390.	U	760.	U
53469-21-9	Aroclor-1242	200.	U	200.	U	390.	U	760.	U
12672-29-6	Aroclor-1248	200.	U	200.	U	390.	U	760.	U
11097-69-1	Aroclor-1254	200.	U	200.	U	390.	U	760.	U
11096-82-5	Aroclor-1260	200.	U	200.	U	390.	U	760.	U
12789-03-6	Technical Chlordane	220.	D	230.	D	390.	U	760.	U
11141-16-5	Aroclor-1232	200.	U	200.	U	390.	U	760.	U
57-74-9	Chlordane	NR		NR		NR		NR	
1114-16-5		NR		NR		NR		NR	

NSA MEMPHIS RFI
SWMU 1 - FIRE DEPARTMENT DRILL AREA
SURFACE SOIL SAMPLES

SW846-SVOA												
	SAMPLE ID ------>	001-S-HA01-01		001-C-HA01-01		001-S-HA02-01		001-S-HA03-01				
	ORIGINAL ID ----->	001SHA0101		001CHA0101		001SHA0201		001SHA0301				
	LAB SAMPLE ID --->	142111		142110		142112		142113				
	ID FROM REPORT -->	001SHA0101		001CHA0101		001SHA0201		001SHA0301				
	SAMPLE DATE ----->	01/31/96		01/31/96		01/31/96		01/31/96				
	DATE EXTRACTED -->	02/05/96		02/05/96		02/05/96		02/05/96				
	DATE ANALYZED --->	02/06/96		02/06/96		02/06/96		02/07/96				
	MATRIX ---------->	Soil		Soil		Soil		Soil				
	UNITS ---------->	ug/Kg		ug/Kg		ug/Kg		ug/Kg				
CAS #	Parameter	1686	VAL	1686	VAL	1686	VAL	1686	VAL			
108-95-2	Phenol	2000.	U	2000.	U	2000.	U	1900.	U			
111-44-4	bis(2-Chloroethyl)ether	2000.	U	2000.	U	2000.	U	1900.	U			
95-57-8	2-Chlorophenol	2000.	U	2000.	U	2000.	U	1900.	U			
541-73-1	1,3-Dichlorobenzene	2000.	U	2000.	U	2000.	U	1900.	U			
106-46-7	1,4-Dichlorobenzene	2000.	U	2000.	U	2000.	U	1900.	U			
95-50-1	1,2-Dichlorobenzene	2000.	U	2000.	U	2000.	U	1900.	U			
95-48-7	2-Methylphenol (o-Cresol)	2000.	U	2000.	U	2000.	U	1900.	U			
108-60-1	2,2'-oxybis(1-Chloropropane)	2000.	U	2000.	U	2000.	U	1900.	U			
106-44-5	4-Methylphenol (p-Cresol)	2000.	U	2000.	U	2000.	U	1900.	U			
621-64-7	N-Nitroso-di-n-propylamine	2000.	U	2000.	U	2000.	U	1900.	U			
67-72-1	Hexachloroethane	2000.	U	2000.	U	2000.	U	1900.	U			
98-95-3	Nitrobenzene	2000.	U	2000.	U	2000.	U	1900.	U			
78-59-1	Isophorone	2000.	U	2000.	U	2000.	U	1900.	U			
88-75-5	2-Nitrophenol	2000.	U	2000.	U	2000.	U	1900.	U			
105-67-9	2,4-Dimethylphenol	2000.	U	2000.	U	2000.	U	1900.	U			
120-83-2	2,4-Dichlorophenol	2000.	U	2000.	U	2000.	U	1900.	U			
120-82-1	1,2,4-Trichlorobenzene	2000.	U	2000.	U	2000.	U	1900.	U			
91-20-3	Naphthalene	2000.	U	2000.	U	2000.	U	1900.	U			
106-47-8	4-Chloroaniline	2000.	U	2000.	U	2000.	U	1900.	U			
87-68-3	Hexachlorobutadiene	2000.	U	2000.	U	2000.	U	1900.	U			
111-91-1	bis(2-Chloroethoxy)methane	2000.	U	2000.	U	2000.	U	1900.	U			
59-50-7	4-Chloro-3-methylphenol	2000.	U	2000.	U	2000.	U	1900.	U			
91-57-6	2-Methylnaphthalene	2000.	U	2000.	U	2000.	U	1900.	U			
77-47-4	Hexachlorocyclopentadiene	2000.	U	2000.	U	2000.	U	1900.	U			
88-06-2	2,4,6-Trichlorophenol	2000.	U	2000.	U	2000.	U	1900.	U			
95-95-4	2,4,5-Trichlorophenol	5000.	U	4900.	U	4900.	U	4700.	U			
91-58-7	2-Chloronaphthalene	2000.	U	2000.	U	2000.	U	1900.	U			
88-74-4	2-Nitroaniline	5000.	U	4900.	U	4900.	U	4700.	U			
131-11-3	Dimethyl phthalate	2000.	U	2000.	U	2000.	U	1900.	U			
208-96-8	Acenaphthylene	2000.	U	2000.	U	2000.	U	1900.	U			
606-20-2	2,6-Dinitrotoluene	2000.	U	2000.	U	2000.	U	1900.	U			
99-09-2	3-Nitroaniline	5000.	U	4900.	U	4900.	U	4700.	U			
83-32-9	Acenaphthene	2000.	U	2000.	U	2000.	U	1900.	U			
51-28-5	2,4-Dinitrophenol	5000.	U	4900.	U	4900.	U	4700.	U			
100-02-7	4-Nitrophenol	5000.	U	4900.	U	4900.	U	4700.	U			
132-64-9	Dibenzofuran	2000.	U	2000.	U	2000.	U	1900.	U			

NSA MEMPHIS RFI
SWMU 1 - FIRE DEPARTMENT DRILL AREA
SURFACE SOIL SAMPLES

SW846-SWDA									
	SAMPLE ID ------>	001-S-HA01-01		001-C-HA01-01		001-S-HA02-01		001-S-HA03-01			
	ORIGINAL ID ----->	001SHA0101		001CHA0101		001SHA0201		001SHA0301			
	LAB SAMPLE ID --->	142111		142110		142112		142113			
	ID FROM REPORT -->	001SHA0101		001CHA0101		001SHA0201		001SHA0301			
	SAMPLE DATE ----->	01/31/96		01/31/96		01/31/96		01/31/96			
	DATE EXTRACTED -->	02/05/96		02/05/96		02/05/96		02/05/96			
	DATE ANALYZED --->	02/06/96		02/06/96		02/06/96		02/07/96			
	MATRIX ---------->	Soil		Soil		Soil		Soil			
	UNITS ---------->	ug/Kg		ug/Kg		ug/Kg		ug/Kg			
CAS #	Parameter	1686	VAL	1686	VAL	1686	VAL	1686	VAL		
121-14-2	2,4-Dinitrotoluene	2000.	U	2000.	U	2000.	U	1900.	U		
84-66-2	Diethylphthalate	2000.	U	2000.	U	2000.	U	1900.	U		
7005-72-3	4-Chlorophenylphenylether	2000.	U	2000.	U	2000.	U	1900.	U		
86-73-7	Fluorene	2000.	U	2000.	U	2000.	U	1900.	U		
100-01-6	4-Nitroaniline	5000.	U	4900.	U	4900.	U	4700.	U		
534-52-1	2-Methyl-4,6-Dinitrophenol	5000.	U	4900.	U	4900.	U	4700.	U		
86-30-6	N-Nitrosodiphenylamine	2000.	U	2000.	U	2000.	U	1900.	U		
101-55-3	4-Bromophenyl-phenylether	2000.	U	2000.	U	2000.	U	1900.	U		
118-74-1	Hexachlorobenzene	2000.	U	2000.	U	2000.	U	1900.	U		
87-86-5	Pentachlorophenol	5000.	U	4900.	U	4900.	U	4700.	U		
85-01-8	Phenanthrene	2000.	U	2000.	U	2000.	U	1900.	U		
120-12-7	Anthracene	2000.	U	2000.	U	2000.	U	1900.	U		
86-74-8	Carbazole	2000.	U	2000.	U	2000.	U	1900.	U		
84-74-2	Di-n-butylphthalate	2000.	U	2000.	U	2000.	U	1900.	U		
206-44-0	Fluoranthene	2000.	U	2000.	U	2000.	U	1900.	U		
129-00-0	Pyrene	2000.	U	2000.	U	2000.	U	1900.	U		
85-68-7	Butylbenzylphthalate	2000.	U	2000.	U	2000.	U	1900.	U		
91-94-1	3,3'-Dichlorobenzidine	2000.	U	2000.	U	2000.	U	1900.	U		
56-55-3	Benzo(a)anthracene	2000.	U	2000.	U	2000.	U	1900.	U		
218-01-9	Chrysene	2000.	U	2000.	U	2000.	U	1900.	U		
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	2000.	U	2000.	U	2000.	U	1900.	U		
117-84-0	Di-n-octyl phthalate	2000.	U	2000.	U	2000.	U	1900.	U		
205-99-2	Benzo(b)fluoranthene	2000.	U	2000.	U	2000.	U	1900.	U		
207-08-9	Benzo(k)fluoranthene	2000.	U	2000.	U	2000.	U	1900.	U		
50-32-8	Benzo(a)pyrene	2000.	U	2000.	U	2000.	U	1900.	U		
193-39-5	Indeno(1,2,3-cd)pyrene	2000.	U	2000.	U	2000.	U	1900.	U		
53-70-3	Dibenz(a,h)anthracene	2000.	U	2000.	U	2000.	U	1900.	U		
191-24-2	Benzo(g,h,i)perylene	2000.	U	2000.	U	2000.	U	1900.	U		

NSA MEMPHIS RFI
SWMU 1 - FIRE DEPARTMENT DRILL AREA
SURFACE SOIL SAMPLES

SW846-VOA								
SAMPLE ID ------>	001-S-HA01-01		001-C-HA01-01		001-S-HA02-01		001-S-HA03-01			
ORIGINAL ID ----->	001SHA0101		001CHA0101		001SHA0201		001SHA0301			
LAB SAMPLE ID --->	142111		142110		142112		142113			
ID FROM REPORT -->	001SHA0101		001CHA0101		001SHA0201		001SHA0301			
SAMPLE DATE ----->	01/31/96		01/31/96		01/31/96		01/31/96			
DATE ANALYZED --->	02/06/96		02/06/96		02/06/96		02/06/96			
MATRIX ---------->	Soil		Soil		Soil		Soil			
UNITS ----------->	UG/KG		UG/KG		UG/KG		UG/KG			
CAS #	Parameter	1686	VAL	1686	VAL	1686	VAL	1686	VAL		
74-87-3	Chloromethane	12.	U	12.	U	12.	U	11.	U		
74-83-9	Bromomethane	12.	U	12.	U	12.	U	11.	U		
75-01-4	Vinyl chloride	12.	U	12.	U	12.	U	11.	U		
75-00-3	Chloroethane	12.	U	12.	U	12.	U	11.	U		
75-09-2	Methylene chloride	12.	U	12.	U	8.	J	5.	J		
67-64-1	Acetone	15.		14.		8.	J	11.	J		
75-15-0	Carbon disulfide	12.	U	12.	U	12.	U	11.	U		
75-35-4	1,1-Dichloroethene	12.	U	12.	U	12.	U	11.	U		
75-34-3	1,1-Dichloroethane	12.	U	12.	U	12.	U	11.	U		
540-59-0	1,2-Dichloroethene (total)	12.	U	12.	U	12.	U	11.	U		
67-66-3	Chloroform	12.	U	12.	U	12.	U	11.	U		
107-06-2	1,2-Dichloroethane	12.	U	12.	U	12.	U	11.	U		
78-93-3	2-Butanone (MEK)	12.	U	12.	U	12.	U	11.	U		
71-55-6	1,1,1-Trichloroethane	12.	U	12.	U	12.	U	11.	U		
56-23-5	Carbon tetrachloride	12.	U	12.	U	12.	U	11.	U		
75-27-4	Bromodichloromethane	12.	U	12.	U	12.	U	11.	U		
78-87-5	1,2-Dichloropropane	12.	U	12.	U	12.	U	11.	U		
10061-01-5	cis-1,3-Dichloropropene	12.	U	12.	U	12.	U	11.	U		
79-01-6	Trichloroethene	12.	U	12.	U	12.	U	11.	U		
124-48-1	Dibromochloromethane	12.	U	12.	U	12.	U	11.	U		
79-00-5	1,1,2-Trichloroethane	12.	U	12.	U	12.	U	11.	U		
71-43-2	Benzene	12.	U	12.	U	1.	J	11.	U		
10061-02-6	trans-1,3-Dichloropropene	12.	U	12.	U	12.	U	11.	U		
75-25-2	Bromoform	12.	U	12.	U	12.	U	11.	U		
108-10-1	4-Methyl-2-Pentanone (MIBK)	12.	U	12.	U	12.	U	11.	U		
591-78-6	2-Hexanone	12.	U	12.	U	12.	U	11.	U		
127-18-4	Tetrachloroethene	12.	U	12.	U	12.	U	11.	U		
79-34-5	1,1,2,2-Tetrachloroethane	12.	U	12.	U	12.	U	11.	U		
108-88-3	Toluene	12.	U	12.	U	2.	J	2.	J		
108-90-7	Chlorobenzene	12.	U	12.	U	12.	U	11.	U		
100-41-4	Ethylbenzene	1.	J	12.	UJ	5.	J	3.	J		
100-42-5	Styrene	12.	U	12.	U	12.	U	11.	U		
1330-20-7	Xylene (Total)	6.	J	2.	J	20.		14.			

*** Validation Complete ***

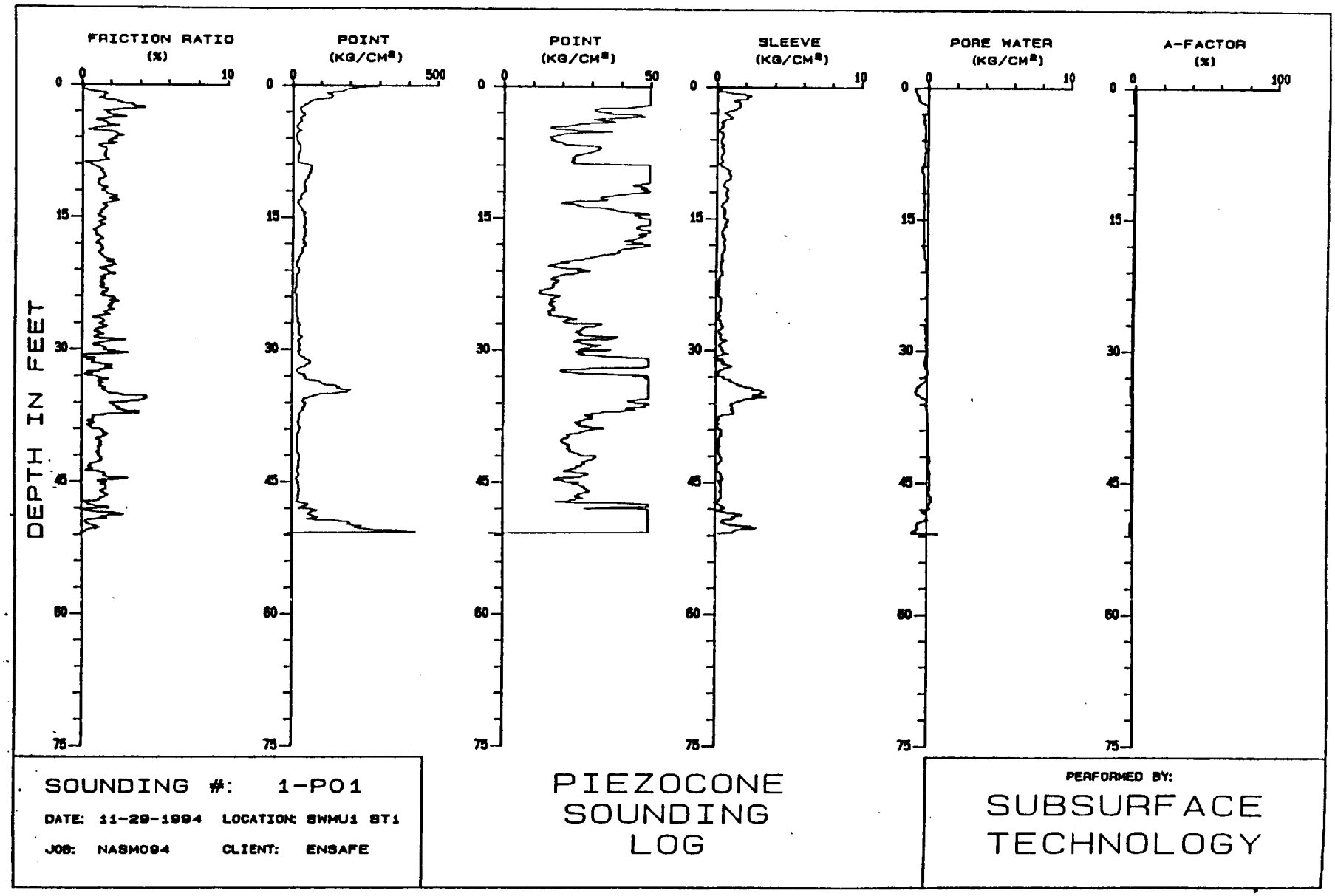
NSA MEMPHIS RFI
SWMU 1 - FIRE DEPARTMENT DRILL AREA
SURFACE SOIL SAMPLES

TPH-DRO									
	SAMPLE ID ------>	001-S-HA01-01		001-C-HA01-01		001-S-HA02-01		001-S-HA03-01			
	ORIGINAL ID ----->	001SHA0101		001CHA0101		001SHA0201		001SHA0301			
	LAB SAMPLE ID --->	142111		142110		142112		142113			
	ID FROM REPORT -->	001SHA0101		001CHA0101		001SHA0201		001SHA0301			
	SAMPLE DATE ----->	01/31/96		01/31/96		01/31/96		01/31/96			
	DATE EXTRACTED -->	02/03/96		02/03/96		02/03/96		02/03/96			
	DATE ANALYZED --->	02/16/96		02/16/96		02/16/96		02/16/96			
	MATRIX ---------->	Soil		Soil		Soil		Soil			
	UNITS ----------->	UG/KG		UG/KG		UG/KG		UG/KG			
CAS #	Parameter	1686	VAL	1686	VAL	1686	VAL	1686	VAL		
9999900-02-6	TPH - Diesel Range Organics	24000.	U	24000.	U	24000.	U	390000.			

NSA MEMPHIS RFI
SWMU 1 - FIRE DEPARTMENT DRILL AREA
SURFACE SOIL SAMPLES

TPH-GRO									
	SAMPLE ID ------>	001-S-HA01-01		001-C-HA01-01		001-S-HA02-01		001-S-HA03-01			
	ORIGINAL ID ----->	001SHA0101		001CHA0101		001SHA0201		001SHA0301			
	LAB SAMPLE ID --->	142111		142110		142112		142113			
	ID FROM REPORT -->	001SHA0101		001CHA0101		001SHA0201		001SHA0301			
	SAMPLE DATE ----->	01/31/96		01/31/96		01/31/96		01/31/96			
	DATE ANALYZED --->	02/06/96		02/06/96		02/06/96		02/06/96			
	MATRIX ---------->	Soil		Soil		Soil		Soil			
	UNITS ---------->	UG/KG		UG/KG		UG/KG		UG/KG			
CAS #	Parameter	1686	VAL	1686	VAL	1686	VAL	1686	VAL		
9999900-02-5	TPH - Gasoline Range Organics	60.	U	59.	U	59.		110.			

Appendix D
DPT Logs


FRICTION RATIO
(%)
0
10
POINT
(KG/CM²)
0
500
POINT
(KG/CM²)
0
50
SLEEVE
(KG/CM²)
0
10
PORE WATER
(KG/CM²)
0
10
A-FACTOR
(%)
0
100
DEPTH IN FEET
0
15
30
45
60
75
SOUNDING #: 1-P01
DATE: 11-29-1994 LOCATION: SWMU1 ST1
JOB: NASM094 CLIENT: ENSAFE
PIEZOCONE
SOUNDING
LOG
PERFORMED BY:
SUBSURFACE
TECHNOLOGY

PIEZOCONE SOUNDING LOG

****

HOLE: 1-P01 CLIENT: ENSAFE
JOB: NASM094 LOC: SWMU1 ST1
GWD: 0 Ft TECHS:

****

Depth	PP	PT	SL	FR	Soil Type	N	VES
44.00	0.25	27.43	-0.05	0.19	Silty to Clayey F.S.	9	1.36
45.00	0.27	23.00	-0.11	0.48	Silty to Clayey F.S.	8	1.39
46.00	0.20	29.83	-0.08	0.28	Silty to Clayey F.S.	10	1.42
47.00	0.34	24.70	-0.19	0.77	Silty to Clayey F.S.	8	1.45
48.00	0.27	28.11	0.07	0.25	Silty to Clayey F.S.	9	1.48
49.00	0.01	90.99	0.86	0.94	Silty Fine Sand	23	1.51
50.00	-0.64	245.39	1.75	0.71	Fine Sand	49	1.54

PP - Pore Pressure (Kg/cm2)
PT - Point Bearing (Kg/cm2)
SL - Sleeve Friction (Kg/cm2)
FR - Friction Ratio (%)
GWD - Ground Water Depth

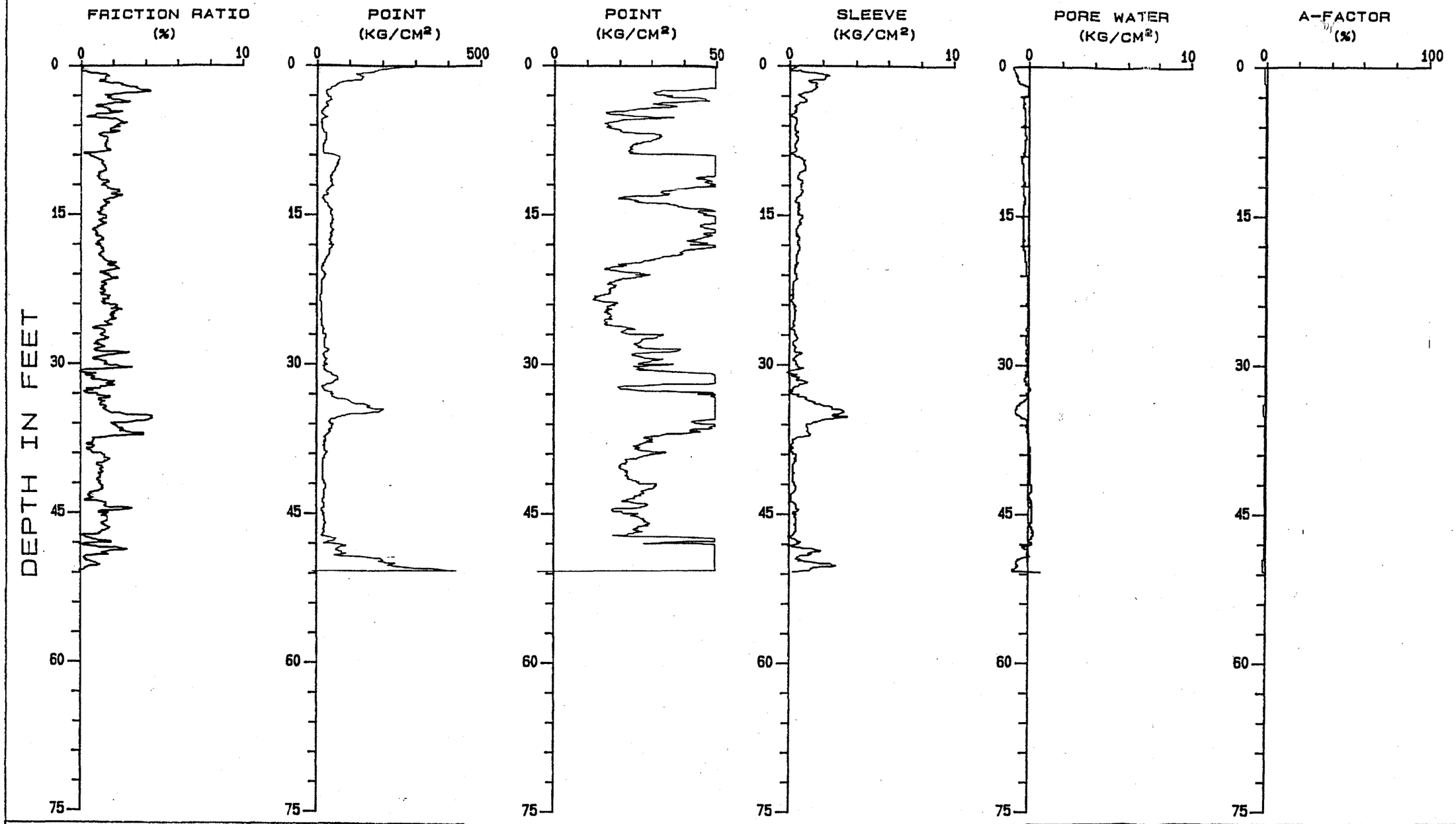
N - Equivalent SPT Blow Count (bpf)
VES - Vertical Effective Stress (Kg/cm2)
FA - Friction Angle (Degress)
RD - Relative Density (+ or - 5%)
YM - Youngs Modulus

The above data was computed following basic guidelines by P.K. Robertson and R.G. Campanella in the handbook 'Guidelines for Use and Interpretation of the Electronic Cone Penetration Test', September, 1989.

PIEZOCONE SOUNDING LOG

HOLE: 1-P02 CLIENT: ENSAFE
JOB: NASM094 LOC: SWMU1 ST2
GWD: 0 Ft TECHS:

Depth	PP	PT	SL	FR	Soil Type	N	VES
2.00	-1.10	225.09	1.89	0.84	Fine Sand	45	0.03
3.00	-0.42	51.02	1.28	2.51	Clayey Fine Sand	20	0.06
4.00	-0.28	33.07	0.41	1.23	Silty to Clayey F.S.	11	0.09
5.00	-0.28	33.80	-0.06	0.18	Silty to Clayey F.S.	11	0.13
6.00	-0.23	19.18	-0.24	1.24	Clayey Fine Sand	8	0.16
7.00	-0.26	21.79	0.11	0.53	Silty to Clayey F.S.	7	0.19
8.00	-0.31	23.58	0.21	0.90	Silty to Clayey F.S.	8	0.22
9.00	-0.35	40.32	0.23	0.58	Silty to Clayey F.S.	13	0.25
10.00	-0.50	52.88	0.72	1.36	Silty to Clayey F.S.	18	0.28
11.00	-0.64	51.95	0.44	0.85	Silty to Clayey F.S.	17	0.31
12.00	-0.65	64.89	0.72	1.10	Silty Fine Sand	16	0.34
13.00	-0.48	50.67	1.03	2.02	Silty to Clayey F.S.	17	0.37
14.00	-0.45	34.45	0.51	1.49	Silty to Clayey F.S.	11	0.40
15.00	-0.38	36.45	0.32	0.87	Silty to Clayey F.S.	12	0.43
16.00	-0.58	80.27	0.58	0.72	Silty Fine Sand	20	0.46
17.00	-0.66	87.87	0.87	0.99	Silty Fine Sand	22	0.49
18.00	-0.43	48.74	0.52	1.06	Silty to Clayey F.S.	16	0.53
19.00	-0.51	65.26	0.34	0.52	Silty Fine Sand	16	0.56
20.00	-0.36	44.35	0.06	0.14	Silty Fine Sand	11	0.59
21.00	-0.31	33.40	-0.14	0.41	Silty to Clayey F.S.	11	0.62
22.00	-0.25	26.33	0.01	0.05	Silty to Clayey F.S.	9	0.65
23.00	-0.24	22.66	-0.04	0.17	Silty to Clayey F.S.	8	0.68
24.00	-0.24	23.86	-0.07	0.30	Silty to Clayey F.S.	8	0.71
25.00	-0.20	20.35	-0.06	0.32	Silty to Clayey F.S.	7	0.74
26.00	-0.19	20.40	-0.02	0.11	Silty to Clayey F.S.	7	0.77
27.00	-0.20	23.19	0.05	0.23	Silty to Clayey F.S.	8	0.80
28.00	-0.21	24.21	-0.03	0.11	Silty to Clayey F.S.	8	0.83
29.00	-0.19	30.90	0.18	0.57	Silty to Clayey F.S.	10	0.86
30.00	-0.23	41.28	0.06	0.15	Silty Fine Sand	10	0.89
31.00	-0.15	34.01	0.06	0.19	Silty to Clayey F.S.	11	0.93
32.00	-0.10	43.79	-0.01	0.01	Silty Fine Sand	11	0.96
33.00	-0.19	37.32	-0.18	0.49	Silty to Clayey F.S.	12	0.99
34.00	-0.20	20.28	-0.04	0.19	Silty to Clayey F.S.	7	1.02
35.00	-0.17	29.76	0.48	1.62	Clayey Fine Sand	12	1.05
36.00	-0.18	18.67	-0.07	0.36	Silty to Clayey F.S.	6	1.08
37.00	-0.07	27.11	0.17	0.63	Silty to Clayey F.S.	9	1.11
38.00	-0.13	34.89	0.45	1.30	Silty to Clayey F.S.	12	1.14
39.00	-0.12	35.03	0.44	1.25	Silty to Clayey F.S.	12	1.17
40.00	-0.07	26.31	-0.02	0.09	Silty to Clayey F.S.	9	1.20
41.00	-0.03	23.93	0.04	0.16	Silty to Clayey F.S.	8	1.23
42.00	-0.00	20.91	0.00	0.02	Silty to Clayey F.S.	7	1.26
43.00	0.01	27.20	-0.02	0.08	Silty to Clayey F.S.	9	1.29
44.00	0.01	25.78	0.01	0.03	Silty to Clayey F.S.	9	1.33



SOUNDING #: 1-PO1

DATE: 11-29-1994 LOCATION: SWMU1 ST1

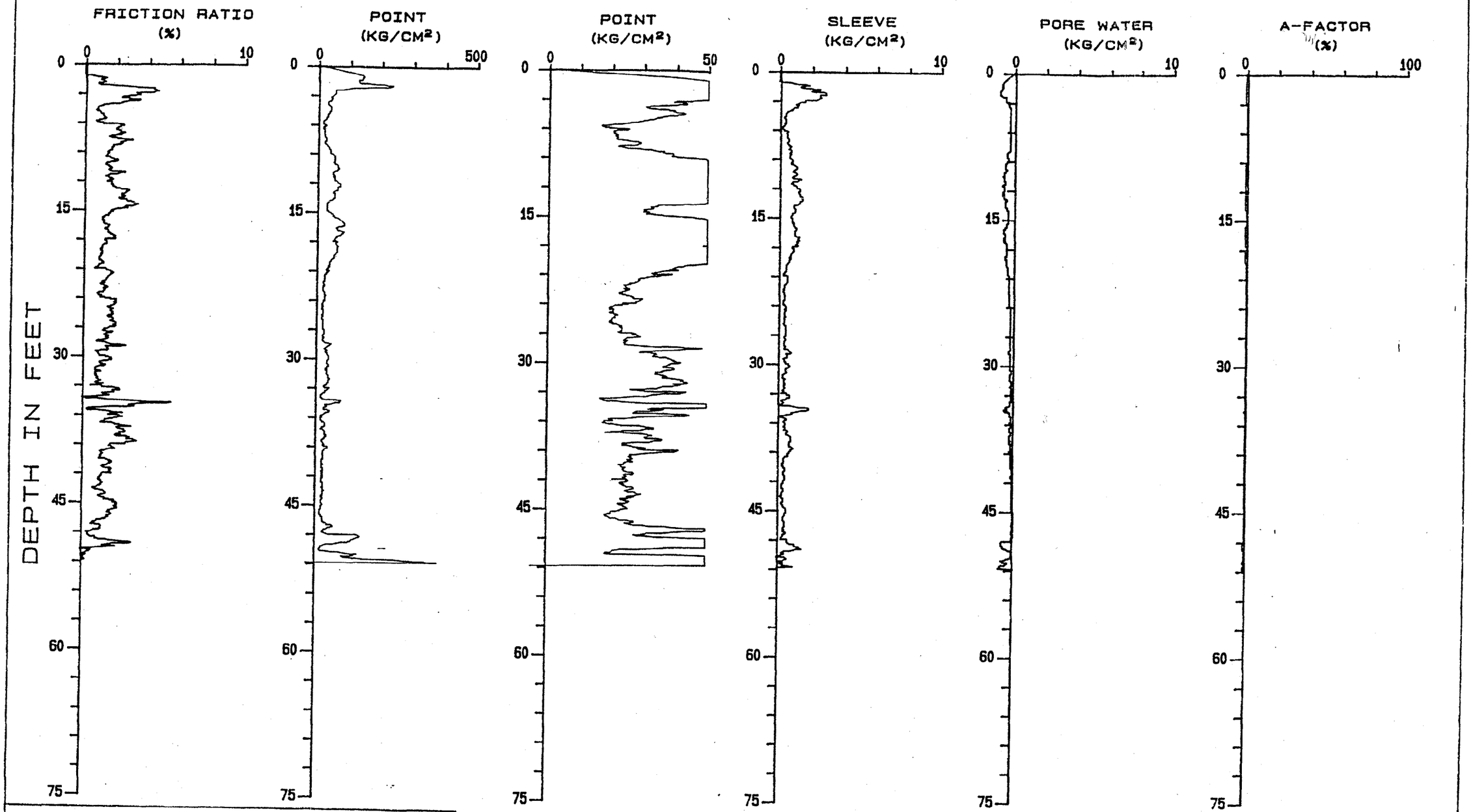
JOB: NASM094 CLIENT: ENSAFE

PIEZOCONE SOUNDING LOG

PERFORMED BY:

SUBSURFACE TECHNOLOGY

00603EB1Z



SOUNDING #: 1-P02

DATE: 11-29-1994 LOCATION: SWMU1 ST2

JOB: NASM094 CLIENT: ENSAFE

PIEZOCONE SOUNDING LOG

PERFORMED BY:

SUBSURFACE TECHNOLOGY

Appendix E

Assemblies A-D Background Reference Concentrations

TECHNICAL MEMORANDUM

TO: Mark Taylor/David Porter, SOUTHDIV
Tonya Barker/Rob Williamson, NSA Memphis
Jack Carmichael, USGS
Brian Donaldson, USEPA
Jim Morrison, TDEC
Brenda Duggar, MSCHD
E/A&H Project Team

FROM: Brian Mulhearn, E/A&H

DATE: September 18, 1996

RE: Assemblies A through D Background Reference Concentrations

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The purpose of this technical memorandum is to document the methods used to calculate Naval Support Activity (NSA) Memphis reference concentrations (RCs) for Assemblies A, B, C, and D. USEPA Region IV recommends using two-times the mean concentration, which was the method used to calculate RCs presented in this memorandum. RCs were calculated based on facility-wide data, and sample locations are shown in Figure 1. RCs were calculated separately for the loess, upper fluvial deposits, lower fluvial deposits, combined upper and lower fluvial deposits, alluvial, and upper Cockfield Formation water bearing zones. RCs were calculated separately for surface (0-1 foot) and subsurface soil. As discussed in Section 2.9 of the *Comprehensive RFI Work Plan* (E/A&H, 1994), there are 13 soil types at NSA Memphis. Eleven are silty loams, and two are fill containing silt. NSA Memphis soil was assumed to be homogeneous, and the average background concentration was assumed to represent base-wide conditions. RCs do not account for different soil types.

Table 1 summarizes NSA Memphis RCs. A data validation report and analytical data used to calculate RCs are included in Attachment 1. Tables 2, 3, 4, 5, 6, and 7 summarize samples and data used for loess, upper fluvial deposits, lower fluvial deposits, combined fluvial deposits, alluvial, and upper Cockfield Formation groundwater, respectively. Table 8 summarizes samples used and RCs calculated for surface and subsurface soil. For each background dataset, some inorganics were not detected by the reporting laboratory. These were noted as not applicable in Tables 2

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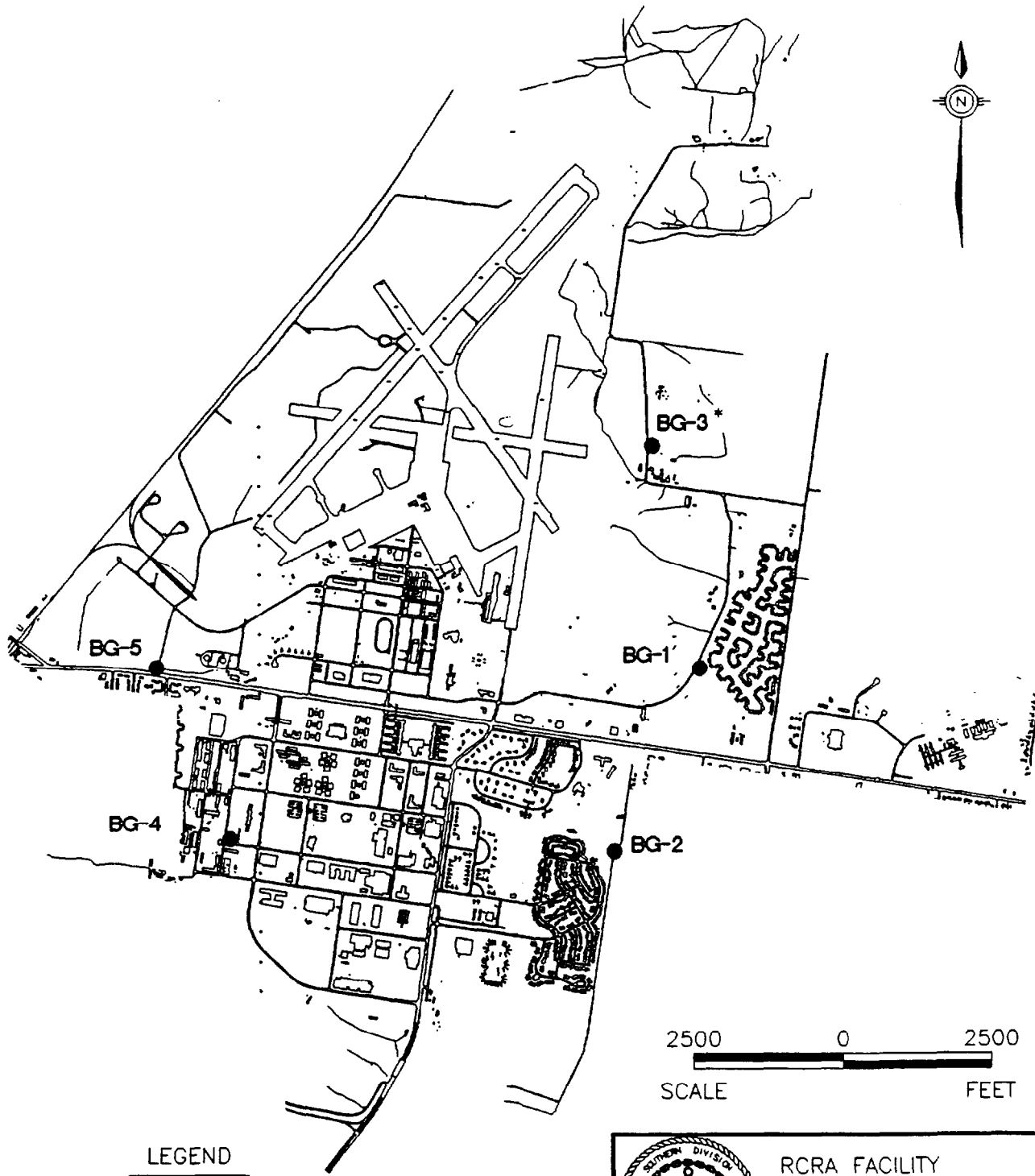

LEGEND

* SOIL BACKGROUND DATA ONLY

BG-2 BACKGROUND LOCATION 2

NOTE: SOIL DATA CONSIST OF ONE SURFACE & TWO SUBSURFACE SOIL SAMPLES. GROUNDWATER DATA CONSIST OF THREE SAMPLES; THE LOESS, UPPER FLUVIAL & LOWER FLUVIAL DEPOSITS.

RCRA FACILITY
INVESTIGATION
NAS MEMPHIS
MILLINGTON, TN

FIGURE 1
SOIL & GROUNDWATER
BACKGROUND LOCATIONS

DWG DATE: 09/08/95 | DWG NAME: 94TVG60P

through 8. Some inorganics were reported in 100% of the samples, and the arithmetic mean was calculated to determine the average background concentration. Other inorganics were reported in less than 100% of the samples analyzed, and for those, nondetects were reported as "U" values, which are the concentrations detectable by the laboratory.

Different methods were used to account for nondetects because suggested methods for calculating default concentrations and management of field duplicate data changed over time, and RCs were calculated for each medium at different times on an as-needed basis. If an inorganic was detected in less than 100% of the samples, that inorganic was assumed to be present at a default concentration. The default concentration was inserted in the data where "U" values were reported before calculating the average background concentration. Data management methods and how default concentrations were determined are described below.

Loess Groundwater

One-half of each reported "U" value was used as the default concentration when calculating RCs for inorganics in loess groundwater, when the inorganic was detected in at least one sample. In addition, estimated concentrations reported as "J" values were included in the RC calculations. Field duplicate data were not collected for this dataset, which was comprised of first and second quarter groundwater monitoring data.

Upper Fluvial Deposits, Lower Fluvial Deposits, Combined Fluvial Deposits, Alluvial, and Upper Cockfield Formation Groundwater

One-half of each reported "U" value was used as the default concentration when calculating RCs for inorganics in these water-bearing zones when the inorganic was detected in at least one sample. In addition, estimated concentrations reported as "J" values were included in the RC calculations. Field duplicate data were not included, and the dataset was comprised of first and third quarter groundwater monitoring data. Second quarter data for some inorganics were considerably elevated with respect to the first and third quarter, so second quarter data were not

included when calculating RCs. This method is more conservative because including the second quarter fluvial deposits groundwater data would elevate the average background concentrations.

Surface Soil

The arithmetic mean concentration was multiplied by two to calculate the RC for all inorganics except mercury, which was the only inorganic reported in at least one sample and in less than 100% of the samples analyzed. For mercury, the lowest hit reported in background samples was divided by two, and the result was used as the default concentration for nondetects. In addition, estimated concentrations reported as "J" values were included in the RC calculations, and field duplicate data were not collected for this dataset.

Subsurface Soil

The arithmetic mean concentration was multiplied by two to calculate the RC for all inorganics except cadmium, mercury, and nickel, which were reported in at least one sample and in less than 100% of the samples analyzed. For these inorganics, the lowest hit was used as the default concentration for nondetects. In addition, estimated concentrations reported as "J" values were included in the RC calculations, and field duplicate data were included as separate samples in the dataset.

Dieldrin, a chlorinated pesticide, was used extensively in the 1950s and 1960s during a white fringed beetle quarantine. These pesticides were aerially applied across NSA Memphis, and the BRAC Cleanup Team (BCT) agreed that anthropogenic (man-made) background determinations were applicable for this compound based on the June 2, 1995 *Discussion of Dieldrin Risk Management Issues* technical memorandum, which is included as Attachment 2.

Table 1
Summary of Reference Concentrations for Assemblies A, B, C, and D
NSA Memphis

Chemical	Loess GW (µg/L)	Upper Fluvial Deposits GW (µg/L)	Lower Fluvial Deposits GW (µg/L)	Combined Fluvial Deposits GW (µg/L)	Alluvial GW (µg/L)	Upper Cockfield GW (µg/L)	Surface Soil (mg/kg)	Subsurface Soil (mg/kg)
Antimony	50.1	NA	NA	NA	NA	NA	NA	NA
Arsenic	7.32	3.1	NA	2.55	4.2	NA	13.1	20.4
Barium	442	157.5	223.9	190.7	844	287.8	191	289
Beryllium	1.3	NA	NA	NA	NA	NA	0.96	1.02
Cadmium	5.88	NA	3.55	3.28	NA	NA	NA	6.8
Chromium	239	34.9	11.53	23.23	69.2	36.6	26.4	28.6
Cobalt	17.8	8.2	7.38	7.79	27	14.5	15.0	15.3
Copper	38.8	5.8	5.05	5.44	NA	NA	23.6	33.9
Cyanide	NA	NA	NA	NA	NA	NA	NA	NA
Lead	17.5	5.85	3.83	4.84	NA	3.1	28.7	25.1
Mercury	0.24	0.31	0.23	0.27	NA	NA	1.1	0.38
Nickel	173.5	29.3	NA	24.66	57.6	41.6	NA	59.8
Selenium	3.45	NA	NA	NA	NA	NA	NA	NA
Silver	4.5	NA	NA	NA	NA	NA	NA	NA
Thallium	NA	NA	NA	NA	NA	NA	NA	NA
Tin	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	40.9	17.8	4.65	11.24	11	11.7	49.6	46.3
Zinc	154.6	13.85	13.38	13.61	NA	NA	88.3	111.8

Notes:
NA — Not applicable
GW — Groundwater
µg/L — Micrograms per liter
mg/kg — Milligrams per kilogram

Table 2
Loess Groundwater Reference Concentrations
NSA Memphis

Sample ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
0BGG01LS01	20	4.4	163	0.5	3.9	20.5	8.1	27.3	0.01	12.2	0.1	7.5	1.5	1.5	2	15	34	107
0BGG01LS02	25	1	150	0.5	3.2	86	12.5	8.6		3.2	0.1	54.6	1	4.9	3	20	2	10.9
0BGG02LS01	20	9.3	556	1.7	5	167	16.5	45.8	0.01	33.6	0.26	143	3.2	1.5	2	15	51	179
0BGG02LS02	25	1	173	0.5	1.5	62	2	9.4		1	0.1	43	1	1.5	3	20	2	5
0BGG04LS01	20	4	186	0.5	1.5	213	9.6	21.4	0.01	6.6	0.1	165	1	1.5	2	15	26.9	202
0BGG04LS02	25	2.6	170	0.5	5.4	222	8.4	22.3		4.4	0.1	157	1	4.1	3	20	21.8	45.7
0BGG05LS01	40.5	6	215	0.5	1.5	160	9.3	17.9	0.01	8.1	0.1	114	2.7	1.5	2	15	23.9	63.8
0BGG05LS02	25	1	156	0.5	1.5	26.8	4.6	2.5		1	0.1	10	2.4	1.5	3	20	2	5
Frequency of Hits	1/8	5/8	8/8	1/8	3/8	8/8	7/8	7/8	0/4	6/8	1/8	6/8	3/8	2/8	0/8	0/8	5/8	6/8
Default Conc.	2025	1	NA	0.5	1.5	NA	2	2.5	NA	1	0.1	7.5,10	1,1.5	1.5	NA	NA	2	5
Mean	25.0625	3.6625	221.125	0.65	2.9375	119.6625	8.875	19.4	NA	8.763	0.12	86.763	1.725	2.25	NA	NA	20.45	77.3
2x Mean	50.125	7.325	442.25	1.3	5.875	239.325	17.75	38.8	NA	17.53	0.24	173.53	3.45	4.5	NA	NA	40.9	154.6

Table 3
Reference Concentrations for Upper Fluvial Deposits Groundwater
NSA Memphis

Sample ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
0BGG01UF01	40	3.9	18.4	1	3	15.4	2.5	2.5	0.01	1	0.1	7.5	2	1.5	2	15	24.1	2.5
0BGG01UF03	30	2.5	33.9	1	3	14.3	2	2		2.6	0.1	12.5	1	1.5	2	45	6.6	17.7
0BGG02UF01	40	1	89.1	1	3	2.5	2.5	2.5	0.01	3.6	0.1	7.5	2	1.5	2	15	2	2.5
0BGG02UF03	30	1	144	1	3	2.5	2	2		4	0.1	12.5	1	1.5	2	45	2	2.5
0BGG04UF01	40	1	111	1	3	2.5	2.5	2.5	0.01	1	0.32	7.5	2	1.5	2	15	2	2.7
0BGG04UF03	30	1	111	1	3	19	2	2		1	0.31	12.5	1	1.5	2	45	2	2.5
0BGG05UF01	40	1	50.3	1	3	6.2	2.5	2.5	0.01	4.2	0.1	7.5	2	1.5	2	15	14.7	9.5
0BGG05UF03	30	1	72.1	1	3	77.3	16.8	7.3		6	0.1	49.8	1	1.5	2	45	17.9	15.5
freq. of hits	0/8	2/8	8/8	0/8	0/8	5/8	1/8	1/8	0/4	5/8	2/8	1/8	0/8	0/8	0/8	0/8	4/8	3/8
default conc.	NA	1	NA	NA	NA	2.5	2,2.5	2,2.5	NA	1	0.1	7.5,10,12.5,	NA	NA	NA	NA	2	2.5,2.7,5
mean	NA	1.55	78.725	NA	NA	17.4625	4.1	2.9125	NA	2.925	0.15375	14.6625	NA	NA	NA	NA	8.9125	6.925
2x mean	NA	3.1	157.45	NA	NA	34.925	8.2	5.825	NA	5.85	0.3075	29.325	NA	NA	NA	NA	17.825	13.85

Table 4
Reference Concentrations for Lower Fluvial Deposits Groundwater
NSA Memphis

Sample ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
0BGG01LF01	40	2	192	1	3.7	2.5	2.5	2.5	0.01	4	0.1	15	2	3	2	15	2	7
0BGG01LF03	30	2	123	1	1.5	2.5	2	2		3.2	0.1	25	1	3	2	45	2	5
0BGG02LF01	40	2	155	1	1.5	2.5	7.6	2.5	0.01	1	0.21	15	2	3	2	15	2	5.6
0BGG02LF03	30	2	61.8	1	1.5	2.5	2	2		1	0.1	25	1	3	2	45	2	7.8
0BGG04LF01	40	2	143	1	1.5	2.5	2.5	2.5	0.01	2.1	0.1	15	2	3	2	15	2	2.5
0BGG04LF03	30	2	127	1	1.5	2.5	2	2		1	0.1	25	1	3	2	45	2	11.3
0BGG05LF01	40	2	46.7	1	1.5	2.5	5.2	2.5	0.01	1	0.1	15	2	3	2	15	2	2.6
0BGG05LF03	30	2	47.2	1	1.5	28.6	5.7	4.2		2	0.1	25	1	3	2	45	4.6	11.7
freq. of hits	0/8	0/8	8/8	0/8	1/8	1/8	3/8	1/8	0/4	4/10	1/8	0/8	0/8	0/8	0/8	0/8	1/8	4/8
default conc.	NA	NA	NA	NA	1.5	2.5	2,2.5	2,2.5	NA	1	0.1	NA	NA	NA	NA	NA	2	2.5,2.6,5,5.6
mean	NA	NA	111.963	NA	1.775	5.7625	3.6875	2.525	NA	1.913	0.11375	NA	NA	NA	NA	NA	2.325	6.6875
2x mean	NA	NA	223.925	NA	3.55	11.525	7.375	5.05	NA	3.825	0.2275	NA	NA	NA	NA	NA	4.65	13.375

Table 5
Reference Concentrations for Combined Upper and Lower Fluvial Deposits Groundwater
NSA Memphis

Sample ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
0BGG01LF01	40	1	192	1	3.7	2.5	2.5	2.5	0.01	4	0.1	7.5	2	3	2	15	2	7
0BGG01LF03	30	1	123	1	1.5	2.5	2	2		3.2	0.1	12.5	1	3	2	45	2	5
0BGG02LF01	40	1	155	1	1.5	2.5	7.6	2.5	0.01	1	0.21	7.5	2	3	2	15	2	5.6
0BGG02LF03	30	1	61.8	1	1.5	2.5	2	2		1	0.1	12.5	1	3	2	45	2	7.8
0BGG04LF01	40	1	143	1	1.5	2.5	2.5	2.5	0.01	2.1	0.1	7.5	2	3	2	15	2	2.5
0BGG04LF03	30	1	127	1	1.5	2.5	2	2		1	0.1	12.5	1	3	2	45	2	11.3
0BGG05LF01	40	1	46.7	1	1.5	2.5	5.2	2.5	0.01	1	0.1	7.5	2	3	2	15	2	2.6
0BGG05LF03	30	1	47.2	1	1.5	28.6	5.7	4.2		2	0.1	12.5	1	3	2	45	4.6	11.7
0BGG01UF01	40	3.9	18.4	1	1.5	15.4	2.5	2.5	0.01	1	0.1	7.5	2	3	2	15	24.1	2.5
0BGG01UF03	30	2.5	33.9	1	1.5	14.3	2	2		2.6	0.1	12.5	1	3	2	45	6.6	17.7
0BGG02UF01	40	1	89.1	1	1.5	2.5	2.5	2.5	0.01	3.6	0.1	7.5	2	3	2	15	2	2.5
0BGG02UF03	30	1	144	1	1.5	2.5	2	2		4	0.1	12.5	1	3	2	45	2	2.5
0BGG04UF01	40	1	111	1	1.5	2.5	2.5	2.5	0.01	1	0.32	7.5	2	3	2	15	2	2.7
0BGG04UF03	30	1	111	1	1.5	19	2	2		1	0.31	12.5	1	3	2	45	2	2.5
0BGG05UF01	40	1	50.3	1	1.5	6.2	2.5	2.5	0.01	4.2	0.1	7.5	2	3	2	15	14.7	9.5
0BGG05UF03	30	1	72.1	1	1.5	77.3	16.8	7.3		6	0.1	49.8	1	3	2	45	17.9	15.5
freq. of hits	0/16	2/16	16/16	0/16	1/16	6/16	4/16	2/16	0/8	9/16	3/16	1/16	0/16	0/16	0/16	0/16	5/16	7/16
default conc.	NA	1	NA	NA	1.5	2.5	2,2.5	2,2.5	NA	1	0.1	7.5,10, 12.5,	NA	NA	NA	NA	2	2.5,2.6, 2.7,5,5.6
mean	NA	1.275	95.3438	NA	1.6375	11.6125	3.89375	2.71875	NA	2.419	0.13375	12.33125	NA	NA	NA	NA	5.61875	6.80625
2x mean	NA	2.55	190.688	NA	3.275	23.225	7.7875	5.4375	NA	4.838	0.2675	24.6625	NA	NA	NA	NA	11.2375	13.6125

Table 6
Alluvial Groundwater Reference Concentrations
NSA Memphis

Sample ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
0BGG11UF01		2.1	422			34.6	13.5					28.8					5.5	
Default Conc.	NA	1	NA	NA	NA	2.5	22.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	2	NA
Mean	NA	2.1	422	NA	NA	34.6	13.5	NA	NA	NA	NA	28.8	NA	NA	NA	NA	5.5	NA
2 x Mean	NA	4.2	844	NA	NA	69.32	27	NA	NA	NA	NA	57.6	NA	NA	NA	NA	11	NA

Table 7
Upper Cockfield Groundwater Reference Concentrations
NSA Memphis

Sample ID	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Cyanide	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Tin	Vanadium	Zinc
0BGG06UC01			220			5.4	9.5			1		12.5					2	
0BGG07UC01			67.8			31.2	5			2.1		29.1					9.7	
Default Conc.	NA	NA	NA	NA	NA	NA	NA	NA	NA	1	NA	12.5	NA	NA	NA	NA	2	NA
Mean	NA	NA	143.9	NA	NA	18.3	7.25	NA	NA	1.55	NA	20.8	NA	NA	NA	NA	5.85	NA
2 x Mean	NA	NA	287.8	NA	NA	36.6	14.5	NA	NA	3.1	NA	41.6	NA	NA	NA	NA	11.7	NA

Table 8
Background Reference Concentrations for Metals in Soil (mg/kg)
Sample ID

	1BGS000101	1BGS000110	2BGS000201	2BGS000210	3BGS000301	3BGS000310	4BGS000401	4BGS000411	5BGS000501	5BGS000510	5BGC000510		
Sample Date	**09-Jan-95**	**09-Jan-95**	**12-Jan-95**	**12-Jan-95**	**10-Jan-95**	**10-Jan-95**	**11-Jan-95**	**11-Jan-95**	**12-Jan-95**	**12-Jan-95**	**12-Jan-95**		
Parameter												**RC_S**	**RC_{SS}**
Antimony	13.4 UR	10.4 UR	10.3 UR	10 UR	10.8 UR	9.8 UR	9.9 UR	10.3 UR	9.8 UR	10.2 UR	10.3 UR	BDL	BDL
Arsenic	7.1 J	20.2 J	5.4 J	1.8 J	6.3 J	8.7 J	9.1 J	11.1 J	4.9 J	9 J	10.4 J	13.1	20.4
Barium	70.8 J	93.8 J	93.3 J	193 J	101 J	132 J	131 J	130 J	81.7 J	114 J	205 J	191	289
Beryllium	0.4 J	0.39 J	0.39 J	0.58 J	0.52 J	0.51 J	0.69 J	0.61 J	0.4 J	0.42 J	0.55 J	0.96	1.02
Cadmium	1.9 UJ	3.4 J	1.7 UJ	2.4 UJ	3.0 UJ	2.9 UJ	3.0 UJ	2.3 UJ	2.3 UJ	1.8 UJ	2.2 UJ	BDL	6.8
Chromium	9.5	11.7	12.2	17	14.8	12.7	18	16.6	11.6	12.7	15.1	26.4	28.6
Cobalt	7.8 J	7.3 J	5.8 J	5 J	8.3 J	8.9 J	9.1 J	7.8 J	6.6 J	6.9 J	10.1 J	15.0	15.3
Copper	9.9 U	14.8	12	12.6	14.5	18.8	17.8	19.9	9.7	15.2	20.3	23.6	33.9
Cyanide	0.57 U	0.5 U	0.5 U	0.5 U	0.51 U	0.55 U	0.5 U	0.58 U	0.5 U	0.5 U	0.54 U	BDL	BDL
Lead	14.5 J	8.7 J	18 J	7.9 J	11.6 J	12.2 J	18 J	11.7 J	9.7 J	9 J	14.2 J	28.7	25.1
Mercury	2.1	0.13 U	0.21	0.12 U	0.12 U	0.12 U	0.12 U	0.19	0.12 U	0.13 U	0.13 U	1.1	0.38
Nickel	10.7 UJ	19.4 UJ	12.8 UJ	14.2 UJ	15.8 UJ	21.5 UJ	20.8 UJ	18.1 UJ	10.1 UJ	14.1 UJ	29.9 J	BDL	59.8
Selenium	0.52 UJ	0.52 UJ	0.51 UJ	0.50 UJ	0.49 UJ	0.49 UJ	0.50 UJ	0.51 UJ	0.49 UJ	0.51 UJ	0.52 UJ	BDL	BDL
Silver	1.2 U	1.7 U	1.6 U	1.8 UJ	1.5 U	1.9 U	1.6 U	1.7 U	1.5 U	2.5 U	2 U	BDL	BDL
Thallium	0.52 U	0.52 U	0.51 U	0.5 U	0.49 U	0.49 U	0.5 U	0.51 U	0.49 U	0.51 U	0.52 U	BDL	BDL
Tin	25.7 UJ	32.3 UJ	21.3 UJ	22.5 UJ	31.9 UJ	22.6 UJ	23.9 UJ	29.1 UJ	22.7 UJ	22.8 UJ	38.7 UJ	BDL	BDL
Vanadium	17.8	18.5	20.8	18.6	29.3	22.5	33.1	27.3	22.9	22.3	29.8	49.6	46.3
Zinc	35.2 J	47.7 J	39.8 J	60.8 J	49.1 J	54.8 J	62.7 J	59.7 J	34 J	49.5 J	63.1 J	88.3	111.8

Notes:
U — Analyzed parameter not detected
UR — Nondetect result; detection limit was rejected due to laboratory nonconformity
J — Estimated value because quality control criteria were not met
RC_S — Surface Reference Concentration
RC_{SS} — Subsurface Reference Concentration
BDL — Below detection limits
mg/kg — Milligrams per Kilogram

ATTACHMENT 1

DATA VALIDATION AND PRESENTATION OF ANALYTICAL DATA USED TO CALCULATE NSA MEMPHIS ASSEMBLIES A THROUGH D BACKGROUND REFERENCE CONCENTRATIONS

8.0 DATA VALIDATION RESULTS - BACKGROUND DATA

All samples were received by the laboratory intact and with the proper documentation. Table 8-1 summarizes the samples that were included in this solid waste management unit.

Table 8-1
Background Sample IDs

Samples	VOC	SVOC	Pest/ PCB	Herb	OP Pest	APP IX Metals	Cyanide	TPH
1BGS000100	X	X	X	X	X	X	X	X
1BGS000101	X	X	X	X	X	X	X	X
1BGS000110	X	X	X	X	X	X	X	X
1BGT032095 (Trip Blank)	X							
1BGF032095 (Field Blank)	X	X	X	X	X	X	X	X
1BGGMW01LF	X	X	X	X	X	X	X	X
1BGHMW01LF	X	X	X	X	X	X	X	X
1BGGMW01LS	X	X	X	X	X	X	X	X
1BGGMW01UF	X	X	X	X	X	X	X	X
2BGS000201	X	X	X	X	X	X	X	X
2BGS000210	X	X	X	X	X	X	X	X
2BGE031795 (Rinsate Blank)	X	X	X	X	X	X	X	X
2BGF031795 (Field Blank)	X	X	X	X	X	X	X	X
2BGGMW02LF	X	X	X	X	X	X	X	X
2BGGMW02LS	X	X	X	X	X	X	X	X
2BGGMW02UF	X	X	X	X	X	X	X	X
3BGS000301	X	X	X	X	X	X	X	X
3BGS000310	X	X	X	X	X	X	X	X
4BGS000401	X	X	X	X	X	X	X	X
4BGS000411	X	X	X	X	X	X	X	X
4BGF031695 (Field Blank)	X	X	X	X	X	X	X	X
4BGGMW04LF	X	X	X	X	X	X	X	X

Table 8-1
Background Sample IDs

Samples	VOC	SVOC	Pest/ PCB	Herb	OP Pest	APP IX Metals	Cyanide	TPH
4BGGMW04LS	X	X	X	X	X	X	X	X
4BGGMW04UF	X	X	X	X	X	X	X	X
5BGS000501	X	X	X	X	X	X	X	X
5BGS000510	X	X	X	X	X	X	X	X
5BGC000510	X	X	X	X	X	X	X	X
5BGT031795 (Trip Blank)	X							
5BGF031795 (Field Blank)	X	X	X	X	X	X	X	X
5BGGMW05LF	X	X	X	X	X	X	X	X
5BGHMW05LF	X	X	X	X	X	X	X	X
5BGGMW05LS	X	X	X	X	X	X	X	X
5BGGMW05UF	X	X	X	X	X	X	X	X
BG2E011195 (Rinsate Blank)	X	X	X	X	X	X	X	X
BG2F011195 (Field Blank)	X	X	X	X	X	X	X	X
BG2T011195 (Trip Blank)	X							
BG5T011295 (Trip Blank)	X							
BG5GMW05LF	X							
BG5HMW05LF	X							
BG5GMW05LS	X							
BG5GMW05UF	X							

Notes:

[a] Kjeldahl, Nitrate, TOC, Total Phosphate
[b] Alkalinity, BOD_5, COD, Hardness, Kjeldahl, Nitrate, Total Phosphate, TSS, Turbidity
[c] Iron, Manganese, Calcium, Magnesium
[d] Hardness, Sulfate

Thirty investigative samples and 11 field QC samples were analyzed in four SDGs for the background data. Full validation reports of each SDG and data tables can be found in Attachment A of this document.

8.1 Data Quality

The overall data quality of the analytical work performed for the background data for NAS Memphis was considered to be satisfactory and usable for site remediation and risk assessment. Results that were outside QA/QC requirements were flagged as estimated "J." The estimated qualification indicates that the data could be biased either high or low. The "J" flag alerts the data user to the possibility of a high or low bias. Although the data are qualified as estimated, they remain dependable for use in risk assessment and site remediation.

8.2 Unusable Data

A few samples were rendered unusable because the samples grossly exceeded QC parameters. Table 8-2 summarizes the unusable data and explains the qualification.

Table 8-2
Background Unusable Data

Sample ID	Fraction	Compound(s)	Reason
2BGGMW02LF	Semivolatiles	acid fraction	Surrogate percent recovery
2BGGMW02LF	OP Pesticides	phorate demeton, S diazinon methyl parathion ronnel ferthion chlorpyritos merphos fensulfothion stirophos	Matrix spike/Matrix spike duplicate percent recoveries

Table 8-2
Background Unusable Data

Sample ID	Fraction	Compound(s)	Reason
2BGGMW02LF 2BGGMW02LS 5BGGMW05LF 5BGHMW05LF 5BGGMW05LS 5BGGMW05UF	OP Pesticides	Dichlorvos mevinphos, alpha demeton, O ethoprop naled disulfoton tokuthion trichloronate sulprofos guthion coumophos	Matrix spike/Matrix spike duplicate percent recoveries LCS percent recovery
1BGGMW01LF 1BGHMW01LF	Semivolatiles	acid fraction	Surrogate percent recovery
1BGS000100 1BGS000101 1BGS000110 2BGS000201 2BGS000210 3BGS000301 3BGS000310 4BGS000401 4BGS000411 5BGS000501 5BGS000510 5BGC000510	Metals	silver thallium	Matrix spike percent recovery
1BGS000100	Semivolatiles	acid fraction	Surrogate percent recovery
3BGS000310	Herbicides	dalapon dinoseb	Matrix spike/Matrix spike duplicate percent recovery
	OP Pesticides	merphos	
1BGS000101 1BGS000110 3BGS000301 3BGS000310 1BGS000100 4BGS000401 4BGS000411 2BGS000201 2BGS000210 5BGS000501 5BGS000510 5BGC000510	OP Pesticides	merphos	LCS percent recovery

Samples 1BGGMW01LF, 1BGHMW01LF, and 1BGS000100 were re-analyzed for semivolatiles; however, the surrogate results remained unchanged. The re-analysis of each sample, except for 1BGS000100, exceeded the 14-day extraction holding time by more than two times the initial holding time. Therefore, all results in samples 1BGGMW01LFRE and 1BGHMW01LFRE were qualified as unusable (R). Because the initial analysis represented the preferred holding time for all three samples, the results from the first analysis were used for investigative interpretation.

8.3 Blanks

Acetone, methylene chloride, di-n-butylphthalate, bis(2-ethylhexyl)phthalate, cadmium and lead were detected in several method and field blanks. The blanks were examined during the validation process and sample results for acetone, methylene chloride, di-n-butylphthalate, bis(2-ethylhexyl)phthalate, cadmium, and lead that were believed to be from blank contamination were nullified.

C K Y incorporated
Environmental Services

DATA VALIDATION REPORT (Revision 3)

Parameters:	INORGANIC
Project	NAS Millington 0094/09000
Client:	Ensafe/Allen & Hoshall
Laboratory:	NET Atlantic, Inc. Cambridge Division
NET Job Nº:	95.00038, 95.00039, 95.00071, 95.00072, 95.00093, and 95.00094 (Level III Validation)
Case Nº:	FD1303

Sample Identification	Matrix
001D011095	Water
1BGS000101	Soil
1BGS000110	Soil
3BGS000301	Soil
3BGS000310	Soil
1BG2000100	Soil
4BGS000401	Soil
4BGS000411	Soil
BG2E011195	Water
BG2F011195	Water
2BGS000201	Soil
2BGS000210	Soil
5BGS000501	Soil
5BGS000510	Soil
5BGC000510	Soil
1BG2000100S	Soil
1BG2000100D	Soil

210.618.0818

INTRODUCTION

This data review report covers 14 soil samples and 3 water samples listed on the cover page. The analyses were per EPA Method 6010, 7421, 7841, 7060, 7470, 7740, and 9010 SW846, November 1986.

This review follows USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February, 1994).

Definition of Qualifiers:

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

NJ - The analysis indicates the presence of analyte that has been "tentatively identified: and the associated numerical value represents its approximate concentration.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

A table summarizing all data qualification flags is provided at the end of this report.

No raw data were checked for this SDG. The review was based on QC data.

I. HOLDING TIME

All criteria for laboratory contractual holding times were met.

II. CALIBRATION

Calibration curves were analyzed at the required frequency and met QC requirements.

CRDL standards for ICP and AA were analyzed and reported as required.

The frequency and analysis criteria of the calibration curve, initial calibration verification (ICV), and continuing calibration verification (CCV) were met.

Instrument detection limits (Form X), inter-element corrections (Form XI A & B) and linear range analysis (Form XII) were performed at required frequency.

III. BLANKS

The required frequency and criteria for blank analyses were met.

No contaminant above IDL was detected in the initial, continuing calibration, and preparation blanks except for the following:

Element	IDL (µg/L)	Initial Calibration Blank (µg/L)	Continuing Calibration Blank (µg/L)	Preparation Blank		Field Trip, or other Blank (µg/L)	Action Level (5x high. blk.)		Associated Samples
				(mg/kg)	(µg/L)		Soil (mg/kg)	Water (µg/L)	
Aluminum									
Antimony	40.0		57.2			40.0	57.2	286	All
Cadmium	3.0		-3.4	-0.63			3.4	17.0	All
Chromium	5.0			1.33	6.65	7.4	7.4	37.0	All
Copper	5.0			1.656			8.28	41.4	All
Lead	2.0					2.6	2.6	13	All
Nickel	15.0		19.1			24.1	24.1	120.5	All
Silver	3.1	3.5	9.9	1.072	8.24	8.9	9.9	49.5	All
Tin	15.0	26.6	74.6	5.662	-87.32	44.2	87.32	436.6	All
Vanadium	4.0								
Zinc	5.0								

The sample data are qualified according to the contaminants found in the method blank(s). The qualified data are listed as follows:

Sample	Compound	Reported Concentration (mg/kg)	Modified Final Concentration (mg/kg)
1BGS101	Antimony	13.4B	13.4U
	Cadmium	1.9	1.9U
	Nickel	10.7	10.7U
	Silver	1.2B	1.2U
	Tin	25.7B	25.7U
1BGS110	Nickel	19.4	19.4U
	Silver	1.7B	1.7U
	Tin	32.3B	32.3U
3BGS301	Antimony	10.8B	10.8U
	Cadmium	3.0	3.0U
	Nickel	15.8	15.8U
	Silver	1.5B	1.5U
	Tin	31.9B	31.9U
3BGS310	Cadmium	2.9	2.9U
	Nickel	21.5	21.5U
	Silver	1.9B	1.9U
	Tin	22.6B	22.6U
1BG210	Antimony	8.7B	8.7U
	Cadmium	2.0	2.0U
	Silver	1.2B	1.2U
4BGS401	Cadmium	3.0	3.0U
	Nickel	20.8	20.8U
	Silver	1.6B	1.6U
	Tin	23.9B	23.9U
4BGS411	Cadmium	2.3	2.3U
	Nickel	18.1	18.1U
	Silver	1.7B	1.7U
	Tin	29.1B	29.1U
2BGS201	Cadmium	1.7	1.7U
	Nickel	12.8	12.8U
	Silver	1.6B	1.6U
	Tin	21.3B	21.3U
2BGS210	Cadmium	2.4	2.4U
	Nickel	14.2	14.2U
	Silver	1.8B	1.8U
	Tin	22.5B	22.5U
5BGS501	Cadmium	2.3	2.3U
	Nickel	10.1	10.1U
	Silver	1.5B	1.5U
	Tin	22.7B	22.7U
5BGS510	Cadmium	1.8	1.8U
	Nickel	14.1	14.1U
	Silver	2.5B	2.5U
	Tin	22.8B	22.8U
5BGC510	Cadmium	2.2	2.2U
	Silver	2.0B	2.0U
	Tin	38.7B	38.7U

IV. ICP INTERFERENCE CHECK SAMPLE (ICS)

The frequency and criteria for analysis were met.

Results for the ICP analyses of solution AB fell within 20% of the true value.

Analytes that are not present in the ICS solution but have an absolute value > IDL are listed below:

Sample	Element	Initial Found (µg/L)	Final Found (µg/L)	IDL (µg/L)	Affected Sample	Affected Element	Flag
ICSA	Barium	22	22	2.0	1BG210	Ag	J
	Cadmium	31	28	3.0	1BG210D		
	Chromium	-18	-18	5.0			
	Copper	21	23	5.0			
	Silver	6	11	3.0			
	Vanadium	-11	-10	4.0			
	Zinc	64	64	5.0			

Samples 1BG210 and 1BG210D have comparable or higher levels of interferants than the ICS solution. Silver concentrations in these two samples approximate those levels found in the ICS. Therefore, Silver results in samples 1BG210 and 1BG210D were qualified as estimated.

V. LABORATORY CONTROL SAMPLE (LCS)

The frequency and criteria for analysis were met.

VI. DUPLICATE SAMPLE ANALYSIS

Frequency and criteria for analysis were met except for the following:

Element	RPD	QC Limit	Associated Samples	Flag
Lead	103.8	35%	All	J

VII. MATRIX SPIKE SAMPLE ANALYSIS

Spiked sample analysis was performed as required. The percent recoveries were within advisory limits of 75-125% except for the following:

Analyte	%R	Associated Samples	Qualifications	Flag
Antimony	12.8	All	75-125%	+J/-R
Arsenic	-17.4	All	75-125%	+J/-R
Cadmium	73.9	All	75-125%	+J/-UJ
Cobalt	71.4	All	75-125%	+J/-UJ
Nickel	72.6	All	75-125%	+J/-UJ
Selenium	37.5	All	75-125%	+J/-UJ
Thallium	26.4	All	75-125%	+J/-R
Zinc	74.0	All	75-125%	+J/-UJ
Tin	45.5	All	75-125%	+J/-UJ

Post digestive/distillation spike was performed for element outside of the control recovery limit.

VIII. GRAPHITE FURNACE ATOMIC ABSORPTION QC

The samples/elements for duplicate injection have %RSD within $\pm$20.0%.

The analytical spike recoveries were within QC limit of 85-115% except for the following:

Sample	Element	%R	QC Limit	Flag
1BGS101	Selenium	116	85-115%	UJ
1BG210D	Selenium Lead	46.0 74.5	85-115% 85-115%	None(MSA passed) None(MSA passed)
3BGS310	Lead Selenium	78.5 82.0	85-115% 85-115%	None(MSA passed) UJ
5BGS510	Arsenic Selenium	125.8 83.5	85-115% 85-115%	None(MSA passed) UJ
5BGC510	Arsenic	115.5	85-115%	J(MSA failed)
1BG210D	Arsenic	65	85-115%	J(MSA failed)
1BG210	Selenium	56	85-115%	UJ

MSA was performed and the results were within QC limit.

The following samples/elements have correlation coefficients <0.995 and are qualified as (J):

Sample	Element	Correlation Coefficient	QC Limit	Flag
1BG210D	Arsenic	0.9851	0.995	J
5BGC510	Arsenic	0.9924	0.995	J

MSA was required for the following samples but were not performed

Sample	Element	Flag
1BGS101	Selenium	UJ
5BGS510	Selenium	UJ
1BG210	Selenium	UJ
3BGS310	Selenium	UJ

IX. ICP SERIAL DILUTION

The frequency and criteria for analysis were met except for the following:

Element	IDL (µg/L)	50 x IDL (µg/L)	I (µg/L)	S (µg/L)	%D	Associated Samples	Flag
Barium	2.0	100	482.9	411.9	14.7	All	J(detects)/None(non-detects)
Tin	15.0	750	817.4	181.81	77.8	All	J(detects)/None(non-detects)
Zinc	5.0	250	392.6	348.3	11.3	All	J(detects)/None(non-detects)

I = Initial sample results
S = Serial dilution result (instrument reading x 5)

X. SAMPLE RESULTS VERIFICATION

No raw data were reviewed.

XI. FIELD DUPLICATES

One set of field duplicates was analyzed in this SDG. All detected analytes were within RPD limit.

XII. OVERALL ASSESSMENT OF DATA

Field QC samples were used only to assess blank cross-contamination in the investigative samples.

Data flags have been summarized at the end of the report.

Inorganic Data Qualification Summary - SDG Nº FD1303

SDG Nº	Sample ID	Parameter	Flag	Reason
FD1303	1BGS101 3BGS301	Antimony Cadmium Nickel Silver Tin	U	Blank contamination
FD1303	3BGS310 4BGS401 4BGS411 2BGS201 2BGS210 5BGS501 5BGS510	Cadmium Nickel Silver Tin	U	Blank contamination
FD1303	1BGS110	Nickel Silver Tin	U	Blank contamination
FD1303	1BG210	Antimony Cadmium Silver	U	Blank contamination
FD1303	5BGC510	Cadmium Silver Tin	U	Blank contamination
FD1303	1BG210 1BG210D	Silver	J	ICS > IDL
FD1303	All	Lead	J	Duplicate RPD out
FD1303	All	Antimony Arsenic Thallium	J(detects)/R(non-detects)	MS %R out
FD1303	All	Cadmium Cobalt Nickel Selenium Zinc Tin	J(detects)/UJ(non-detects)	MS %R out
FD1303	5BGC510 1BG210D	Arsenic	J	Analytical spike %R out and MSA failed.
FD1303	1BGS101 5BGS510 1BG210 3BGS310	Selenium	UJ	Analytical spike %R out and MSA was not performed
FD1303	All	Barium Zinc Tin	J(detects)/None(non-detects)	ICP serial dilution %D out
FD1303	All	Barium Tin Zinc	J	Serial dilution

C K Y incorporated
Environmental Services

DATA VALIDATION REPORT (Revision 2)

Parameters:	VOLATILE
Project	NAS Millington 0094/09000
Client:	Ensafe/Allen & Hoshall
Laboratory:	NET Atlantic, Inc. Cambridge Division
NET Job Nº:	95.00038, 95.00039, 95.00071, 95.00072, 95.00093, & 95.00094 (Level III Validation)
Case Nº:	FD1303

Sample Identification	Matrix
001D011095	Water
001T011095	Water
BG2E011195	Water
BG2F011195	Water
BG2T011195	Water
BG5T011295	Water
1BGS000101	Soil
1BGS000110	Soil
2BGS000201	Soil
2BGS000210	Soil
3BGS000301	Soil
3BGS000310	Soil
4BGS000401	Soil
4BGS000411	Soil
5BGC000510	Soil
5BGS000501	Soil
5BGS000510	Soil
1BGS000100	Soil
3BGS000301MS	Soil
3BGS000301MSD	Soil

630 Manle Ave.. Torrance. Calif. 90503 • Telephone 310-618-8889 • Fax: 310-618-0818

INTRODUCTION

This data review report covers 14 soil samples and 6 water samples listed on the cover page. The analyses were per EPA Method 8240 in SW846.

This review follows USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February, 1993). The subsections correlate to the above guidelines. In the event that the SW846 requirement is different from that of the guidelines, the guideline QC limit will be replaced by the SW846 QC limit.

Definition of Qualifiers:

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

NJ - The analysis indicates the presence of analyte that has been "tentatively identified: and the associated numerical value represents its approximate concentration.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

A table summarizing all data qualification flags is provided at the end of this report.

No raw data were checked for this SDG. The review was based on QC data.

I. TECHNICAL HOLDING TIME

All holding time requirements were met.

II. GC/MS INSTRUMENT PERFORMANCE CHECK

Instrument performance check was carried out at 12-hour intervals.

All ion abundance requirements were met.

III. INITIAL CALIBRATION

Initial calibrations were performed using required standard concentrations. QC methodology and criteria were applied.

For all compounds and surrogates, percent relative standard deviations (%RSD) for RRF and relative response factors (RRF) met QC requirements.

IV. CONTINUING CALIBRATION

Continuing calibrations were run at the required frequency.

The percent difference (%D) between the initial calibration RRF and the continuing calibration RRF and all of the continuing calibration RRF values met QC requirements except for the following:

Date/ Time	Instrument	Compound	%D (SW846 QC Limit)	Associated Samples	Flag
01/13/95 11:46	HP5970E	Chloromethane Bromomethane Carbon disulfide	-38.4 (±25.0%) -26.4 (±25.0%) -26.3 (±25.0%)	BG2T011195	J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect)
01/17/95 11:58	HP5907E	Acetone	-79.3 (±25.0%)	BG2E011195 BG2F011195 BG5T011295	J(detect)/UJ(non-detect)
01/18/95 10:44	HP5907E	Acetone	-40.7 (±25.0%)	001D011095 1BGS000100	J(detect)/UJ(non-detect)
01/17/95 12:08	HP5907F	Chloromethane Vinyl chloride Chloroethane 2-Butanone 4-Methyl-2-pentanone 2-Hexanone	30.9 (±25.0%) 25.5 (±25.0%) 40.0 (±25.0%) 31.9 (±25.0%) 29.3 (±25.0%) 28.7 (±25.0%)	1BGS000101 1BGS000110 2BGS000201 2BGS000210 3BGS000301 3BGS000310 4BGS000401 4BGS000411 5BGC000510 5BGS000501 5BGS000510	J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect)

V. BLANKS

The method blank analyses were performed at required frequencies. Contaminants found in the method blank(s) are listed as follow:

Date	Blank	Compound	Concentration (µg/L)	Action Level (µg/L)		Samples Affected	Reported Concentration (µg/L)	Modified Final Concentration (µg/L)
				5 x	10 x			
01/17/95	VBLK011794K	Methylene chloride	2J		20	1BGS000101	4BJ	13U
						1BGS000110	4BJ	13U
						2BGS000201	4BJ	13U
						2BGS000210	4BJ	12U
						3BGS000301	5BJ	12U
						3BGS000310	5BJ	12U
						4BGS000401	4BJ	12U
						4BGS000411	4BJ	13U
						5BGS000510	5BJ	13U
						5BGS000501	4BJ	12U
						5BGC000510	4BJ	13U
01/18/95	VBLK011895E	Methylene chloride	350J		3500	1BGS000100	420BJ	1400U

The field blank analyses were performed at required frequencies. Contaminants found in the field blank(s) that resulted in data qualifications are listed as follow:

Date	Blank	Compound	Concentration (µg/L)	Action Level (µg/L) 10 x	Samples Affected	Reported Concentration (µg/kg)	Modified Final Concentration (µg/kg)
01/18/95	001D011095	Acetone	45	450	3BGS000301	7J	12U
01/17/95	BG2E011195	Methylene chloride	1BJ	10	1BG2000100	420BJ	1400U
					4BGS000401	4BJ	12U
					4BGS000411	4BJ	13U
01/17/95	BG2F011195	Methylene chloride	1BJ	10	1BG2000100	420BJ	1400U
					4BGS000401	4BJ	12U
					4BGS000411	4BJ	13U
01/13/95	BG2T011195	Methylene chloride	5BJ	50	1BG2000100	420BJ	1400U
					4BGS000401	4BJ	12U
					4BGS000411	4BJ	13U
01/17/95	BG5T011295	Methylene chloride	11B	110	2BGS000201	4BJ	13U
					2BGS000210	4BJ	12U
					2BGS000501	4BJ	12U
					5BGS000510	4BJ	13U
					5BGC000510	5BJ	13U
01/18/95	001D011095	Methylene chloride	1BJ	10	1BGS000101	4BJ	13U
					1BGS000110	4BJ	13U
					3BGS000301	5BJ	12U
					3BGS000310	5BJ	12U
01/16/95	001T011095	Methylene chloride	4BJ	40	1BGS000101	4BJ	13U
					1BGS000110	4BJ	13U
					3BGS000301	5BJ	12U
					3BGS000310	5BJ	12U

VI. SYSTEM MONITORING COMPOUNDS

System monitoring compounds were added to all samples and blanks as required by the SW846.

All system monitoring compound recoveries met QC requirements.

VII. MATRIX SPIKES/MATRIX SPIKE DUPLICATES

One set of matrix spike (MS) and matrix spike duplicate (MSD) was analyzed at required frequencies. Spike recoveries and relative percent difference were within advisory limits.

VIII. LABORATORY CONTROL SAMPLES

LCS not required by SW846.

IX. REGIONAL QUALITY ASSURANCE AND QUALITY CONTROL

Not applicable.

X. INTERNAL STANDARDS

All internal standard areas and retention times met QC requirements.

XI. TARGET COMPOUND IDENTIFICATION

No raw data were reviewed.

XII. COMPOUND QUANTITATION AND REPORTED CRQLs

No raw data were reviewed.

XIII. TENTATIVELY IDENTIFIED COMPOUNDS

No raw data were reviewed.

XIV. SYSTEM PERFORMANCE

No raw data were reviewed.

XV. FIELD DUPLICATES

One set of field duplicates was analyzed in this SDG. All detected analytes were within QC limit.

XVI. OVERALL ASSESSMENT OF DATA

Field QC samples were used only to assess blank cross-contamination in the investigative samples.

Data flags have been summarized at the end of the report.

Volatile Data Qualification Summary - SDG Nº FD1303

SDG Nº	Sample ID	Parameter	Flag	Reason
FD1303	BG2T011195	Chloromethane Bromomethane Carbon disulfide	J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect)	Continuing calibration %D
FD1303	BG2E011195 BG2F011195 BG5T011295	Acetone	J(detect)/UJ(non-detect)	Continuing calibration %D
FD1303	1BGS000100	Acetone	J(detect)/UJ(non-detect)	Continuing calibration %D
FD1303	1BGS000101 1BGS000110 2BGS000201 2BGS000210 3BGS000301 3BGS000310 4BGS000401 4BGS000411 5BGC000510 5BGS000501 5BGS000510	Chloromethane Vinyl chloride Chloroethane 2-Butanone 4-Methyl-2-pentanone 2-Hexanone	J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect)	Continuing calibration %D
FD1303	BG2T011195	Methylene chloride	10U	Blank contamination
FD1303	001T011095	Methylene chloride	10U	Blank contamination
FD1303	1BGS000101 1BGS000110 2BGS000201 2BGS000210 3BGS000301 3BGS000310 4BGS000401 4BGS000411 5BGS000510 5BGS000501 5BGC000510	Methylene chloride	13U 13U 13U 12U 12U 12U 12U 13U 13U 12U 13U	Blank contamination
FD1303	1BGS000100	Methylene chloride	1400U	Blank contamination
FD1303	3BGS000301	Acetone	12U	Blank contamination

C K Y incorporated
Environmental Services

DATA VALIDATION REPORT (Revision 2)

Parameters:	SEMIVOLATILE
Project	NAS Millington 0094/09000
Client:	Ensafe/Allen & Hoshall
Laboratory:	NET Atlantic, Inc. Cambridge Division
NET Job Nº:	95.00038, 95.00039, 95.00071, 95.00072, 95.00093, and 95:00094 (Level III Validation)
Case Nº:	FD1303

Sample Identification	Matrix
001D011095	Water
1BG2000100	Soil
1BG2000100RE	Soil
1BGS000101	Soil
1BGS000110	Soil
2BGS000201	Soil
2BGS000210	Soil
3BGS000301	Soil
3BGS000310	Soil
4BGS000401	Soil
4BGS000411	Soil
5BGS000501	Soil
5BGS000510	Soil
5BGC000510	Soil
BG2E011195	Water
BG2F011195	Water
3BGS000301MS	Soil
3BGS000301MSD	Soil

630 Maple Ave. Torrance, Calif. 90503 • Telephone 310-618-8889 • Fax: 310-618-0818

INTRODUCTION

This data review report covers 15 soil samples and 3 water samples listed on the cover page. The analyses were per EPA Method 8270 in SW846.

This review follows USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February, 1993); the following subsections correlate to the above guidelines. In the event that the SOW requirement is more stringent than that of the guidelines, the guideline QC limit will be replaced by the SOW QC limit.

Definition of Qualifiers:

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

NJ - The analysis indicates the presence of analyte that has been "tentatively identified: and the associated numerical value represents its approximate concentration.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

A table summarizing all data qualification flags is provided at the end of this report.

No raw data were checked for this package. The review was based on QC data.

I. TECHNICAL HOLDING TIME

All holding time requirements were met except for the following:

Sample	Matrix	Out of Limit Contractual Analysis Holding Time/ QC Limit	Flag
1BG2000100RE	Soil	16 (14)	J(detect)/UJ(non-detect)

1BG2000100RE is the re-extracted sample of 1BG2000100. Both samples gave similar low acid surrogate recovery. In addition, 1BG2000100 RE was extracted out of technical holding time, had blank contamination and with more compounds that failed CCV %D. Therefore, data from 1BG2000100 should be reported.

II. GC/MS INSTRUMENT PERFORMANCE CHECK

Instrument performance check was carried out at 12-hour intervals.

All ion abundance requirements were met.

III. INITIAL CALIBRATION

Initial calibrations were performed using required standard concentrations. QC methodology and criteria were applied.

For all compounds and system monitoring compounds, percent relative standard deviations (%RSD) for RRF and relative response factors(RRF) met requirement except for the following:

Date	Instrument	Compound	%RSD (Guideline QC Limit)	Associated Samples	Flag
01/16/95	HP5970F	2,4-Dinitrophenol	44.7 (<30%)	All samples	J(detect)/UJ(non-detect)

IV. CONTINUING CALIBRATION

Continuing calibrations were run at the required frequency.

The percent difference (%D) between the initial calibration RRF and the continuing calibration RRF was within $\pm$ 25.0 percent and all of the continuing calibration RRF values were greater than or equal to 0.05 per guideline (unless QC limits were replaced by more stringent SOW QC limits) except for the following:

Date	Instrument	Compound	%D (Guideline QC Limit)	Associated Samples	Flag
01/19/95	HP5970F	3-Nitroaniline 4-Nitroaniline Carbazole 3,3'-Dichlorobenzidine	-32.8 (<25%) -43.0 (<25%) -25.2 (<25%) -29.3 (<25%)	None	None

Date	Instrument	Compound	%D (Guideline QC Limit)	Associated Samples	Flag
01/20/95	HP5970F	Hexachlorocyclopentadiene 2,4-Dinitrophenol 4,6-Dinitro-2-methylphenol 3,3'-Dichlorobenzidine	50.0 (<25%) 65.2 (<25%) 47.3 (<25%) -25.6 (<25%)	None	None None None None
01/25/95	HP5970F	4-Chloroaniline Hexachlorocyclopentadiene 4-Nitroaniline N-Nitrosodiphenylamine 3,3'-Dichlorobenzidine	73.6 (<25%) 26.2 (<25%) -25.3 (<25%) 64.0 (<25%) -54.3 (<25%)	1BG2000100 2BGS000201 2BGS000210 3BGS000301 3BGS000310 4BGS000401 4BGS000411 5BGC000510 5BGS000501 5BGS000510 BG2E011195 BG2F011195	J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect)
01/26/95	HP5970F	4-Chloroaniline Hexachlorocyclopentadiene 4-Nitroaniline N-Nitrosodiphenylamine 3,3'-Dichlorobenzidine	73.6 (<25%) 26.2 (<25%) -25.8 (<25%) 63.7 (<25%) -46.3 (<25%)	1BGS000101 1BGS000110	J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect)
01/30/95	HP5970F	4-Chloroaniline Hexachlorocyclopentadiene 3-Nitroaniline 4-Nitroaniline N-Nitrosodiphenylamine 3,3'-Dichlorobenzidine	74.0 (<25%) 31.7 (<25%) -29.6 (<25%) -38.5 (<25%) 61.1 (<25%) -37.4 (<25%)	1BG2000100RE	J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect)

V. BLANKS

The method blank analyses were performed at required frequencies.

Contaminants found in the method blanks are listed as follow:

Date	Blank	Compound	Concentration (µg/kg)	Action Level 10 (µg/kg)	Associated Samples	Reported Concentration (µg/kg)	Modified Final Concentration (µg/kg)
01/27/95	SBLK012795F	Di-n-Butylphthalate	440	4400	1BG2000100RE	330U	330U

2) Field Blank:

The field blanks were analyzed for this SDG.

No contaminant was found in the field blanks.

VI. SYSTEM MONITORING COMPOUNDS

System monitoring compounds were added to all samples and blanks as required by the SOW.

All system monitoring compound recoveries met QC requirements except for the following:

Sample	System Monitoring Compound	%R	QC Limit	Compounds Affected	Flag
1BG2000100	2-Fluorophenol 2,4,6-Tribromophenol	19 5	25-121% 19-122%	Acid fraction	J(detect)/R(non-detect)
1BG2000100RE	2-Fluorophenol 2,4,6-Tribromophenol	19 0	25-121% 19-122%	Acid fraction	J(detect)/R(non-detect)

VII. MATRIX SPIKES/MATRIX SPIKE DUPLICATES

One set of matrix spike (MS) and matrix spike duplicate (MSD) was analyzed at required frequencies. Spike recoveries and relative percent difference were within advisory limits.

VIII. LABORATORY CONTROL SAMPLES

LCS not required by SW-846.

IX. REGIONAL QUALITY ASSURANCE AND QUALITY CONTROL

Not applicable.

X. INTERNAL STANDARDS

All internal standard areas and retention times met QC requirements.

XI. TARGET COMPOUND IDENTIFICATION

No raw data checks were carried out for this package.

XII. COMPOUND QUANTITATION AND REPORTED CRQLs

No raw data checks were carried out for this package.

XIII. TENTATIVELY IDENTIFIED COMPOUNDS

No raw data checks were carried out for this package.

XIV. SYSTEM PERFORMANCE

No raw data checks were carried out for this package.

XV. FIELD DUPLICATES

1 set of field duplicates were analyzed for this package. No analytes were detected.

XVI. OVERALL ASSESSMENT OF DATA

Field QC samples were used only to assess blank cross-contamination in the investigative samples.

Data flags have been summarized at the end of the report.

Semivolatile Data Qualification Summary - Case Nº FD1303

Case Nº	Sample ID	Parameter	Flag	Reason
FD1303	1BG2000100RE	All compounds	J(detect)/UJ(non-detect)	Technical holding time violation
FD1303	All samples	2,4-Dinitrophenol	J(detect)/UJ(non-detect)	Initial calibration %RSD
FD1303	001D011095	Hexachlorocyclopentadiene 2,4-Dinitrophenol 4,6-Dinitro-2-methylphenol 3,3'-Dichlorobenzidine	J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect)	Continuing calibration %D
FD1303	1BG2000100 2BGS000201 2BGS000210 3BGS000301 3BGS000310 4BGS000401 4BGS000411 5BGC000510 5BGS000501 5BGS000510 BG2E011195 BG2F011195	4-Chloroaniline Hexachlorocyclopentadiene 4-Nitroaniline N-Nitrosodiphenylamine 3,3'-Dichlorobenzidine	J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect)	Continuing calibration %D
FD1303	1BGS000101 1BGS000110	4-Chloroaniline Hexachlorocyclopentadiene 4-Nitroaniline N-Nitrosodiphenylamine 3,3'-Dichlorobenzidine	J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect)	Continuing calibration %D
FD1303	1BG2000100RE	4-Chloroaniline Hexachlorocyclopentadiene 3-Nitroaniline 4-Nitroaniline N-Nitrosodiphenylamine 3,3'-Dichlorobenzidine	J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect)	Continuing calibration %D
FD1303	1BG2000100 1BG2000100RE	All acid fraction	J(detect)/R(non-detect)	Surrogate recovery

C K Y incorporated
Environmental Services

DATA VALIDATION REPORT (Revision 3)

Parameters:	ORGANOCHLORINE PESTICIDES/PCBs
Project	NAS Millington 0094/09000
Client:	Ensafe/Allen & Hoshall
Laboratory:	NET Atlantic, Inc. Cambridge Division
NET Job Nº:	95.00038, 95.00039, 95.00071, 95.00072, 95.00093, and 95.00094 (Level III Validation)
Case Nº:	FD1303

Sample Identification	Matrix
001D011095	Water
1BG2000100	Soil
1BGS000101	Soil
1BGS000110	Soil
2BGS000201	Soil
2BGS000210	Soil
3BGS000301	Soil
3BGS000310	Soil
4BGS000401	Soil
4BGS000411	Soil
5BGC000510	Soil
5BGS000501	Soil
BG2E011195	Water
BG2F011195	Water
5BGS000510	Soil
4BGS000401DL	Soil
1BGS000101DL	Soil
2BGS000201DL	Soil
001D011095MS	Water
001D011095MSD	Water
3BGS000301MS	Soil
3BGS000301MSD	Soil

INTRODUCTION

This data review report covers 17 soil samples and 5 water samples listed on the cover page. The analyses were per EPA Method 8080 in SW846, November 1986.

This review follows the approach of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February, 1993).

Definition of Qualifiers:

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

NJ - The analysis indicates the presence of analyte that has been "tentatively identified: and the associated numerical value represents its approximate concentration.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

A table summarizing all data qualification flags is provided at the end of this report.

No raw data checks were carried out for this SDG, the review was based on QC data.

I. TECHNICAL HOLDING TIME

All holding time requirements were met.

II. ANALYTICAL SEQUENCE

Instrument evaluation mixtures, standards, blanks, and sample extracts were analyzed according to the required analytical sequence and frequency.

The retention time of TCX and DCB were within the QC limit.

III. INSTRUMENT PERFORMANCE EVALUATION

Not applicable.

IV. INITIAL CALIBRATION

Initial calibration of single and multi-component analytes were performed for both columns.

The retention time windows for both columns were established according to the SOW (Form 6D).

The %RSD for calibration factors of single component analytes were within QC limits (Form 6E).

V. CALIBRATION VERIFICATION

Calibration verifications of INDAM and INDBM were performed at required frequencies and sequence for both columns. The RT windows and RPD were within QC limit (Form 7E) except for the following:

Date/Time	Standard/ Column	Compound	Associated Compounds	%D (QC limit)	Flag
01/20/95 06:48	INDAM05/XTI5	4,4'-DDD Methoxychlor	1BGS000101 1BGS000110 3BGS000301 3BGS000310 1BG2000100 4BGS000401 4BGS000411 2BGS000201 2BGS000210 5BGS000501 5BGS000510 5BGC000510	-18.44 (≤ ±15%) -16.50 (≤ ±15%)	None (confirmation only) None (confirmation only)
01/20/95 14:52	INDAM06/XTI5	Endrin 4,4'-DDD 4,4'-DDT Methoxychlor	1BG2000100 4BGS000401 4BGS000411 2BGS000201 2BGS000210 5BGS000501 5BGS000510 5BGC000510	-17.53 (≤ ±15%) -20.85 (≤ ±15%) -16.70 (≤ ±15%) -21.69 (≤ ±15%)	None (confirmation only) None (confirmation only) None (confirmation only) None (confirmation only)
01/20/95 15:32	INDBM06/XTI5	beta-BHC delta-BHC Aldrin Heptachlor epoxide alpha-chlordane Endosulfan II Endrin aldehyde Endosulfan sulfate Endrin ketone	1BG2000100 4BGS000401 4BGS000411 2BGS000201 2BGS000210 5BGS000501 5BGS000510 5BGC000510	-15.72 (≤ ±15%) -20.14 (≤ ±15%) -15.69 (≤ ±15%) -16.23 (≤ ±15%) -17.41 (≤ ±15%) -17.29 (≤ ±15%) -20.51 (≤ ±15%) -18.81 (≤ ±15%) -16.52 (≤ ±15%)	None (confirmation only) None (confirmation only) None (confirmation only) None (confirmation only) None (confirmation only) None (confirmation only) None (confirmation only) None (confirmation only) None (confirmation only)

Date/Time	Standard/ Column	Compound	Associated Compounds	%D (QC limit)	Flag
01/23/95 11:59	INDAM08/XTI5	gamma-BHC alpha-BHC 4,4'-DDD Dieldrin Endosulfan I Endrin Methoxychlor	4BGS000401DL 1BGS000101DL 2BGS000201DL	-18.23 (≤ ±15%) -17.47 (≤ ±15%) -24.40 (≤ ±15%) -16.99 (≤ ±15%) -17.55 (≤ ±15%) -20.62 (≤ ±15%) -27.04 (≤ ±15%)	None (confirmation only) None (confirmation only) None (confirmation only) None (confirmation only) None (confirmation only) None (confirmation only) None (confirmation only)
01/23/95 12:39	INDBM08/XTI5	Aldrin beta-BHC delta-BHC 4,4'-DDE Endosulfan II Endosulfan sulfate Endrin aldehyde Heptachlor epoxide g-Chlordane a-Chlordane Endrin ketone	4BGS000401DL 1BGS000101DL 2BGS000201DL	-19.12 (≤ ±15%) -19.42 (≤ ±15%) -23.32 (≤ ±15%) -20.26 (≤ ±15%) -20.23 (≤ ±15%) -22.63 (≤ ±15%) -21.02 (≤ ±15%) -17.26 (≤ ±15%) -16.98 (≤ ±15%) -16.91 (≤ ±15%) -22.18 (≤ ±15%)	None (confirmation only) None (confirmation only) None (confirmation only) None (confirmation only) None (confirmation only) None (confirmation only) None (confirmation only) None (confirmation only) None (confirmation only) None (confirmation only) None (confirmation only)
01/23/95 12:39	INDBM08/RTX35	Endosulfan sulfate	4BGS000401DL 1BGS000101DL 2BGS000201DL	-15.25 (≤ ±15%)	J(detect)/UJ(non-detect)

VI. BLANKS

Instrument blanks were performed at the required frequency. RT windows were all within QC limit.

Instrument blanks were free of contamination.

The method blanks were extracted and performed according to the SOW. The blanks were free of contamination.

The field blank analyses were performed at required frequencies. No contaminant was found in the field blank.

VII. SURROGATE SPIKES

Surrogate spikes were analyzed as required by the SOW. Surrogate spike recoveries were within QC limits except for the following:

Sample ID	Column	Surrogate Spike	%R (Adv. Limit)	Compounds Affected	Flag
BG2E011195	RTX35	TCX2 DCB2	24 (31-130%) 45 (51-127%)	All compounds	J(detect)/UJ(non-detect)
001D011095MD	RTX35	DCB2	49 (51-127%)	None	None (only 1 out)

VIII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Two sets of matrix spike (MS) and matrix spike duplicate (MSD) were analyzed at required frequencies. The %Rs on the MS/MSD of the investigative samples were within QC limits. Sample 001D011095 should have never been spiked since it is a field blank. No data qualification was resulted.

IX. LABORATORY CONTROL SAMPLES

No laboratory control samples were analyzed for this SDG.

X. FLORISIL CARTRIDGE CHECK

The %Rs for florisil cartridge check were within QC limit.

XI. COMPOUND IDENTIFICATION

Form I, the associated raw data, and the identification summary (Form X) were reviewed and all compounds were properly identified. %D between 2 columns met QC requirement except for the following:

Sample	Compound	%D (QC Limit)	Flag
2BGS000201	4,4'-DDT	28.6 (≤25%)	J

XII. COMPOUND QUANTITATION AND REPORTED CRQLs

No raw data were reviewed for this level III package. The CRQLs of all samples were checked to make sure that they reflected all sample dilution, concentrations, split, clean-up activities, and dry weight factors. Compound quantitation and reported CRQLs met QC requirements except for the following:

Sample	Compound	Modified Results	Reported Results
1BGS000101DL	Methoxychlor	210U	2100U

The case narrative stated that XTI5 was the primary column. On Form 1D, all results were reported from RTX35 instead of XTI5. Since CCV results of RTX35 met QC requirements for the detected compounds, no action was taken.

XIII. SYSTEM PERFORMANCE

The quality control parameters: Resolution Checks, PEM, Standards, Blanks, MS/MSD, and Surrogate Spike Recoveries for this SDG were all properly performed and within QC limits.

XIV. FIELD DUPLICATES

One set of field duplicates was analyzed in this SDG. No target analytes were detected in any of the samples.

XV. OVERALL ASSESSMENT OF DATA

Field QC samples were used only to assess blank cross-contamination in the investigative samples.

Data flags have been summarized at the end of the report.

Organochlorine Pesticide/PCBs Data Qualification Summary - SDG Nº FD1303

SDG Nº	Sample ID	Parameter	Flag	Reason
FD1303	4BGS000401DL 1BGS000101DL 2BGS000201DL	Endosulfan sulfate	J(detect)/UJ(non-detect)	CCV %D out
FD1303	1BGS000101DL	Methoxychlor	210U	Erroneous CRDL
FD1303	2BGS000201	4,4'-DDT	J	Compound Identification %D between 2 columns

C K Y incorporated
Environmental Services

DATA VALIDATION REPORT (Revision 2)

Parameters:	ORGANOCHLORINE HERBICIDES
Project	NAS Millington 0094/09000
Client:	Ensafe/Allen & Hoshall
Laboratory:	NET Atlantic, Inc. Cambridge Division
NET Job Nº:	95.00038, 95.00039, 95.00071, 95.00072, 95.00093, & 95.00094 (Level III Validation)
SDG Nº:	FD1303

Sample Identification	Matrix
001D011095	Water
1BG2000100	Soil
1BGS000101	Soil
1BGS000110	Soil
2BGS000201	Soil
2BGS000210	Soil
3BGS000301	Soil
3BGS000310	Soil
4BGS000401	Soil
4BGS000411	Soil
5BGC000510	Soil
5BGS000501	Soil
5BGS000510	Soil
BG2E011195	Water
BG2F011195	Water
3BGS000310MS	Soil
3BGS000310MSD	Soil

INTRODUCTION

This data review report covers 14 soil samples and 3 water samples listed on the cover page. The analyses were per EPA Method 8150, SW846, November 1986.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February, 1993) as there are no current guidelines for evaluating chlorinated pesticides.

Definition of Qualifiers:

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

NJ - The analysis indicates the presence of analyte that has been "tentatively identified: and the associated numerical value represents its approximate concentration.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

A table summarizing all data qualification flags is provided at the end of this report.

No raw data checks were carried out for this SDG, the review was based on QC data.

I. TECHNICAL HOLDING TIME

All holding time requirements were met.

II. ANALYTICAL SEQUENCE

Standards, blanks, and sample extracts were analyzed according to the required analytical sequence and frequency.

III. INITIAL CALIBRATION

Initial calibration of analytes were performed for both columns.

The %RSD for calibration factors of analytes were within QC limits (Form 6B) except for the following:

Date/ Time	Standard/ Column	Compounds	%RSD	QC Limit	Associated Samples	Flag
01/21/95 10:37	RF1x/RTX-35	MCPP	21.8	20%	All	J(detects)/UJ(non-detects)
	RF2x/RTX-35	MCPA	27.4	20%	All	J(detects)/UJ(non-detects)
	RF10x/RTX-5	MCPP	34.6	20%	All	None (confirmation only)
	RF20x/RTX-5	MCPA	34.7	20%	All	None (confirmation only)

IV. CALIBRATION VERIFICATION

Calibration verifications were performed at required frequencies and sequence for both columns. %D were within QC limit (Form 7B) except for the following:

Date/ Time	Standard/ Column	Compound	%D (QC Limit)	Associated Samples	Flag
01/21/95 19:56	8150H3/RTX-5	Dalapon	-21.3 (±15%)	BG2E011195	None (confirmation only)
		MCPP	-19.4 (±15%)	BG2F011195	None (confirmation only)
		MCPA	-16.5 (±15%)		None (confirmation only)
		2,4-DB	-18.5 (±15%)		None (confirmation only)
01/27/95 00:59	8150L3/RTX5	MCPP	-19.6 (±15%)	1BGS000101	None (confirmation only)
		Silvex	16.2 (±15%)	1BGS000110	None (confirmation only)
		2,4,5-T	17.5 (±15%)	3BGS000301	None (confirmation only)
		2,4-DB	-20.6 (±15%)	3BGS000310	None (confirmation only)
01/27/95 09:01	8150LS/RTX-35	MCPP	17.1 (±15%)	1BGS000101	J(detects)/UJ(non-detects)
		2,4-DB	17.7 (±15%)	1BGS000110	J(detects)/UJ(non-detects)
				3BGS000301	
				3BGS000310	
				1BG2000100	
				4BGS000401	
				4BGS000411	
				2BGS000201	
				2BGS000210	
				5BGS000501	
				5BGS000510	
				5BGC000510	

Date/ Time	Standard/ Column	Compound	%D (QC Limit)	Associated Samples	Flag
01/27/95 09:01	8150LS/RTX-5	MCPP Silvex	-20.0 (±15%) 15.3 (±15%)	1BGS000101 1BGS000110 3BGS000301 3BGS000310 1BG2000110 4BGS000401 4BGS000411 2BGS000201 2BGS000210 5BGS000501 5BGS000510 5BGC000510	None (confirmation only) None (confirmation only)
01/27/95 17:20	8150L3/RTX-35	MCPA MCPP	20.6 (±15%) 15.3 (±15%)	1BG2000110 4BGS000401 4BGS000411 2BGS000201 2BGS000210 5BGS000501 5BGS000510 5BGC000510	J(detects)/UJ(non-detects) J(detects)/UJ(non-detects)
01/27/95 17:20	8150L3/RTX-5	MCPP MCPA	-23.1 (±15%) -16.0 (±15%)	1BG2000110 4BGS000401 4BGS000411 2BGS000201 2BGS000210 5BGS000501 5BGS000510 5BGC000510	None (confirmation only) None (confirmation only)

V. BLANKS

Instrument blanks were performed at the required frequency and were free of contamination.

The method blanks were extracted and performed according to the SW846. The blanks were free of contamination.

The field blanks were extracted and performed according to the SW846. The blanks were free of contamination.

VI. SURROGATE SPIKES

Surrogate spikes were analyzed as required by the SW846. Surrogate spike recoveries were within QC limits except for the following:

Sample ID	Column	Matrix	%R (Adv. Limit %)	Compounds Affected	Flag
2BGS000210	RTX-35	Soil	126 (40-115)	All	J(detects)/None(non-detects)
2BGS000201 5BGC000510	RTX-5	Soil	176 (40-115) 135 (40-115)	All All	None (confirmation only) None (confirmation only)

VII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

One set of matrix spike (MS) and matrix spike duplicate (MSD) was analyzed at required frequencies. Spike recoveries and relative percent difference were within advisory limits except for the following:

Sample	Column	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limit)	Flag
3BGS000310	RTX-5	Dicamba			36 (<20%)	None (conf. only)
		MCPP			43 (<20%)	None (conf. only)
		2,4-D			57 (<20%)	None (conf. only)
		2,4-DB	4 (10-150%)		173 (<20%)	None (conf. only)
		Dinoseb	0 (10-150%)	0 (10-150%)		None (conf. only)
3BGS000310	RTX-35	Dalapon	0 (10-150%)	0 (10-150%)		J(detects)/R(non-detects)
		Dicamba			26 (<20%)	J(detects)/UJ(non-detects)
		MCPP			110 (<20%)	J(detects)/UJ(non-detects)
		MCPA			33 (<20%)	J(detects)/UJ(non-detects)
		2,4-D			48 (<20%)	J(detects)/UJ(non-detects)
		Silvex			55 (<20%)	J(detects)/UJ(non-detects)
		Dinoseb	0 (10-150%)	0 (10-150%)		J(detects)/R(non-detects)

VIII. LABORATORY CONTROL SAMPLES

Laboratory control samples were analyzed and met QC requirements except for the following:

LCS	Column	LCS Spike	%R (QC Limit)	RT (QC Limit)	Associated Samples	Flag
LCS0116A	RTX-5	Dalapon	184.96 (10-150%)		BG2E011195 BG2F011195	None (confirmation only)
LCS01205	RTX-5	Dinoseb	5.08 (10-150%)	17.78 (17.83-17.93)	1BG2000100 1BGS000101 1BGS000110 2BGS000201 2BGS000210 3BGS000301 3BGS000310 4BGS000401 4BGS000411 5BGC000510 5BGS000501 5BGS000510	None (confirmation only)
		Dalapon	9.16 (10-150%)			
LCS01205	RTX-35	Dinoseb		25.51 (25.36-24.46)	1BG2000100 1BGS000101 1BGS000110 2BGS000201 2BGS000210 3BGS000301 3BGS000310 4BGS000401 4BGS000411 5BGC000510 5BGS000501 5BGS000510	J(detects)/UJ(non-detects)

IX. ESTERIFICATION SPIKE SAMPLE

Esterification spike samples were analyzed and met QC requirements except for the following:

EST	Column	EST Spike	%R	QC Limit	Associated Samples	Flag
ESTSPK0116	RTX-5	MCPP MCPA	253.06 222.94	10-150	BG2E011195 BG2F011195	None (conf. only) None (conf. only)

X. COMPOUND IDENTIFICATION

The %D between 2 columns were <25% except for the following:

Sample	Compound	%D	QC Limit	Action
3BG5000310	MCPP	498.1	< 25%	J
5BGC000510	DCAA 2,4 -DB	44.9 172.5	< 25%	J
5BGS000501	MCAA 2,4 - DB	48.2 233.9	< 25%	J

XI. COMPOUND QUANTITATION AND REPORTED CROLs

No raw data were reviewed.

XII. FIELD DUPLICATES

One set of field duplicates was analyzed in this SDG. All detected analytes were within QC limit except for the following:

Compound	Concentration (µg/kg)		RPD (QC Limit)	Flag
	5BGS000510	5BGC000510		
2,4-DB	9.5U	48	NA (50%)	J(detects)/UJ(non-detects)

XIII. OVERALL ASSESSMENT OF DATA

Field QC samples were used only to assess blank cross-contamination in the investigative samples.

Data flags have been summarized at the end of the report.

Organochlorine Herbicides Data Qualification Summary - SDG Nº FD1303

SDG Nº	Sample ID	Parameter	Flag	Reason
FD1303	All	MCPP MCPA	J(detects)/UJ(non-detects) J(detects)/UJ(non-detects)	Initial calibration %RSD
FD1303	1BGS000101 1BGS000110 3BGS000301 3BGS000310 1BGS000110 4BGS000401 4BGS000411 2BGS000201 2BGS000210 5BGS000501 5BGS000510 5BGC000510	MCPP 2,4-DB	J(detects)/UJ(non-detects) J(detects)/UJ(non-detects)	Continuing calibration %D
FD1303	1BGS000110 4BGS000411 4BGS000401 2BGS000201 2BGS000210 5BGS000501 5BGS000510 5BGC000510	MCPA MCPP	J(detects)/UJ(non-detects)	Continuing calibration %D
FD1303	2BGS000210	All	J(detects)/None(non-detects)	Surrogate %R
FD1303	3BGS000310	Dalapon Dicamba MCPP MCPA 2,4-D Silvex Dinoseb	J(detects)/R(non-detects) J(detects)/UJ(non-detects) J(detects)/UJ(non-detects) J(detects)/UJ(non-detects) J(detects)/UJ(non-detects) J(detects)/UJ(non-detects) J(detects)/R(non-detects)	MS/MSD %R & RPD
FD1303	1BG2000100 1BGS000101 1BGS000110 2BGS000201 2BGS000210 3BGS000301 3BGS000310 4BGS000401 4BGS000411 5BGC000510 5BGS000501 5BGS000510	Dinoseb	J(detects)/UJ(non-detects)	LCS %R
FD1303	5BGS000510 5BGC000510	2,4 - DB	J(detects)/UJ(non-detects)	Field duplicate RPD
FD1303	3BGS000310	MCPP	J	%D between 2 columns
FD1303	5BGC000510	DCAA 2,4 - DB	J	%D between 2 columns
FD1303	5BGS000501	MCPA 2,4 - DB	J	%D between 2 columns

C K Y incorporated
Environmental Services

DATA VALIDATION REPORT (Revision 2)

Parameters:	ORGANOPHOSPHORUS PESTICIDES
Project	NAS Millington 0094/09000
Client:	Ensafe/Allen & Hoshall
Laboratory:	NET Atlantic, Inc. Cambridge Division
NET Job Nº:	93.00038 95.00071 95.00093 (Level III Validation) 95.00039 95.00072 95.00094
SDG Nº:	FD1303

Sample Identification	Matrix
001D011095	Water
1BG2000100	Soil
1BGS000101	Soil
1BGS000110	Soil
2BGS000201	Soil
2BGS000210	Soil
3BGS000301	Soil
3BGS000310	Soil
4BGS000401	Soil
4BGS000411	Soil
5BGC000510	Soil
5BGS000501	Soil
5BGS000510	Soil
BG2E011195	Water
BG2F011195	Water
3BGS000310MS	Soil
3BGS000310MSD	Soil

INTRODUCTION

This data review report covers 14 soil samples and 3 water samples listed on the cover page. The analyses were per EPA Method 8140, SW846, November 1986.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February, 1993) as there are no current guidelines for evaluating chlorinated pesticides.

Definition of Qualifiers:

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

NJ - The analysis indicates the presence of analyte that has been "tentatively identified: and the associated numerical value represents its approximate concentration.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

A table summarizing all data qualification flags is provided at the end of this report.

No raw data checks were carried out for this SDG, the review was based on QC data.

I. TECHNICAL HOLDING TIME

All holding time requirements were met.

II. ANALYTICAL SEQUENCE

Standards, blanks, and sample extracts were analyzed according to the required analytical sequence and frequency.

III. INITIAL CALIBRATION

Initial calibration of analytes were performed for both columns.

The %RSD for calibration factors of single component analytes were within QC limits (Form 6B) except for the following:

Date/ Time	Standard/ Column	Compounds	%RSD	QC Limit	Associated Samples	Flag
01/24/95	RF250/Rtx5 RF500 RF1000 RF2000 RF4000	Fensulfothion	21.8	± 20%	All	J(detect)/UJ(non detect)

IV. CALIBRATION VERIFICATION

Calibration verifications were performed at required frequencies and sequence for both columns. %D were within QC limit (Form 7B) except for the following:

Date/ Time	Standard/ Column	Compound	%D (QC Limit %)	RT (QC Limit)	Associated Samples	Flag
01/24/95	Prime 4000/Rtx5	Demeton,O Naled Guthion	 19.99(≤15) 19.98(≤15)	16.94 (16.71-16.91)	BG2E011105 BG2F011105 IBG2000100 48GS000401 48GS000411	J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect)
01/26/95	OCHK1000-01/Rtx5	Demeton,O Ethoprop Naled Phorate Demeton,S Diazinon Disulfoton Methyl Parathion Ronnel Fenthion Chlorpyrifos Trichloronate Tokuthion Fensulfothion Stirophos Sulprofos Guthion Coumaphos	23.08(≤15) 17.37(≤15) 56.07(≤15) 16.95(≤15) 16.35(≤15) 22.62(≤15) 16.85(≤15) 20.15(≤15) 19.20(≤15) 21.14(≤15) 21.98(≤15) 16.28(≤15) 16.66(≤15) 21.88(≤15) 24.15(≤15) 18.10(≤15) 31.51(≤15) 24.54(≤15)		1BGS000101 1BGS000110 2BGS000301 2BGS000310 1BG2000100 48GS000401 48GS000411	J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect)

Date/ Time	Standard/ Column	Compound	%D (QC Limit %)	RT (QC Limit)	Associated Samples	Flag
01/26/95	OCHK1000-02/Rtx5	Dichlorvos	47.00(≤15)		28GS000201	J(detect)/UJ(non-detect)
		Mevinphos alpha	41.21(≤15)		28GS000210	J(detect)/UJ(non-detect)
		Demeton, O	62.13(≤15)		58GS000501	J(detect)/UJ(non-detect)
		Ethoprop	46.42(≤15)		58GS000510	J(detect)/UJ(non-detect)
		Naled	30.78(≤15)		58GC000510	J(detect)/UJ(non-detect)
		Phorate	46.01(≤15)		18GS000101	J(detect)/UJ(non-detect)
		Demeton, S	49.74(≤15)		18GS000110	J(detect)/UJ(non-detect)
		Diazinon	61.39(≤15)		38GS000301	J(detect)/UJ(non-detect)
		Disulfoton	42.68(≤15)		38GS000310	J(detect)/UJ(non-detect)
		Methyl Parathion	60.81(≤15)			J(detect)/UJ(non-detect)
		Ronnel	48.32(≤15)			J(detect)/UJ(non-detect)
		Fenthion	51.55(≤15)			J(detect)/UJ(non-detect)
		Chloropyrifos	52.91(≤15)			J(detect)/UJ(non-detect)
		Trichloronate	41.77(≤15)			J(detect)/UJ(non-detect)
		Merphos	19.95(≤15)			J(detect)/UJ(non-detect)
		Tokuthion	43.54(≤15)			J(detect)/UJ(non-detect)
		Fensulfothion	41.87(≤15)			J(detect)/UJ(non-detect)
		Stirophos	51.51(≤15)			J(detect)/UJ(non-detect)
		Sulprofos	44.04(≤15)			J(detect)/UJ(non-detect)
		Guthion	59.07(≤15)			J(detect)/UJ(non-detect)
		Coumaphos	57.90(≤15)			J(detect)/UJ(non-detect)
01/26/95	OCHK1000-03/Rtx5	Dichlorvos	45.40(≤15)		28GS000201	J(detect)/UJ(non-detect)
		Mevinphos, alpha	19.61(≤15)		28GS000210	J(detect)/UJ(non-detect)
		Demeton, O	59.46(≤15)		58GS000501	J(detect)/UJ(non-detect)
		Ethoprop	48.17(≤15)		58GS000510	J(detect)/UJ(non-detect)
		Naled	20.88(≤15)		58GC000510	J(detect)/UJ(non-detect)
		Phorate	46.84(≤15)			J(detect)/UJ(non-detect)
		Demeton, S	44.48(≤15)			J(detect)/UJ(non-detect)
		Diazinon	62.03(≤15)			J(detect)/UJ(non-detect)
		Disulfoton	44.62(≤15)			J(detect)/UJ(non-detect)
		Methyl Parathion	62.22(≤15)			J(detect)/UJ(non-detect)
		Ronnel	50.41(≤15)			J(detect)/UJ(non-detect)
		Fenthion	54.77(≤15)			J(detect)/UJ(non-detect)
		Chloropyrifos	62.67(≤15)			J(detect)/UJ(non-detect)
		Trichloronate	45.36(≤15)			J(detect)/UJ(non-detect)
		Tokuthion	45.14(≤15)			J(detect)/UJ(non-detect)
		Stirophos	46.52(≤15)			J(detect)/UJ(non-detect)
		Sulprofos	45.89(≤15)			J(detect)/UJ(non-detect)
		Guthion	27.66(≤15)			J(detect)/UJ(non-detect)
		Coumaphos	47.40(≤15)			J(detect)/UJ(non-detect)

On Form 7E, the concentration recovery window for Prime 4000 calibration check should be (3400-4600) instead of (850-1150) as indicated.

V. BLANKS

Instrument blanks were performed at the required frequency and were free of contamination except for the following:

Date	Blank	Compound	Conc. (ppb)	QC limit Conc.	Associated Samples	Flag
01/24/95	NIBLK01	Fensulfothion	4.3	(≤1.25)	None	None

The method blanks were extracted and performed according to the SW846. The blanks were free of contamination.

The field blanks were extracted and performed according to the SW846. The blanks were free of contamination.

VI. SURROGATE SPIKES

Surrogate spikes were analyzed as required by the SW846. Surrogate spike recoveries were within QC limits except for the following:

Sample ID	Column	Surrogate Spike Compound	%R (Adv. Limit %)	Compounds Affected	Flag
1BG2000100	RTX5	4-Chloro-3-Nitrobenzotrifluoride	128 (50-120)	All	J(detect)/None(non-detect)

VII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

One set of matrix spike (MS) and matrix spike duplicate (MSD) was analyzed at required frequencies. Spike recoveries and relative percent difference were within advisory limits except for the following:

Sample	Column	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limit)	Flag
3BGS000310	Rtx5	Dichlorvos	151 (50-150)			J(detect)/None(non-detect)
		Demeton, O	279 (50-150)	216 (50-150)		J(detect)/None(non-detect)
		Demeton, S	23 (50-150)	23 (50-150)		J(detect)/UJ(non-detect)
		Merphos	0 (50-150)	0 (50-150)		J(detect)/R(non-detect)

VIII. LABORATORY CONTROL SAMPLES

Laboratory control samples were analyzed and met QC requirements except for the following:

LCS	Column	Compounds Affected	%R (QC Limit)	RT (QC Limit)	Associated Samples	Flag
OPLCS0013A	Rtx5	Demeton, O	309.4 (50-150)		BG2E011195	J(detect)/None(non-detect)
		Naled	43.9 (50-150)		BG2F011195	J(detect)/UJ(non-detect)
		Demeton, S	21.9 (50-150)			J(detect)/UJ(non-detect)
OPLCS0117S	Rtx5	Demeton, O	393.0 (50-150)		1BGS000101	J(detect)/None(non-detect)
		Demeton, S	24.1 (50-150)		1BGS000110	J(detect)/UJ(non-detect)
		Merphos	0.0 (50-150)		3BGS000301	J(detect)/R(non-detect)
					3BGS000310	
OPLCS0118S	Rtx5	Demeton, O	375.9 (50-150)		IBG2000100	J(detect)/None(non-detect)
		Naled	151.6 (50-150)		4BGS000401	J(detect)/None(non-detect)
		Demeton, S	23.7 (50-150)		4BGS000411	J(detect)/UJ(non-detect)
		Merphos	0.0 (50-150)			J(detect)/R(non-detect)
OPLCS0119S	Rtx5	Demeton, O	453.3 (50-150)		2BGS000201	J(detect)/None(non-detect)
		Demeton, S	26.6 (50-150)		2BGS000210	J(detect)/UJ(non-detect)
		Merphos	0.0 (50-150)		5BGS000501	J(detect)/R(non-detect)
					5BGS000510	
					5BGC000510	

IX. COMPOUND IDENTIFICATION

Form 1, the associated raw data, and the identification summary (Form 10) were reviewed and all compounds were undetected.

X. COMPOUND QUANTITATION AND REPORTED CRQLs

All sample results were checked against.The CRQLs of all samples were checked to make sure that they reflected all sample dilution, concentrations, split, clean-up activities, and dry weight factors. Compound quantitation and reported CRQLs met QC requirements.

XI. FIELD DUPLICATES

One set of field duplicates was analyzed in this SDG. No target analytes were detected in any of the samples.

XII. OVERALL ASSESSMENT OF DATA

Field QC samples were used only to assess blank cross-contamination in the investigative samples.

Data flags have been summarized at the end of the report.

Organophosphorus Pesticides Data Qualification Summary - SDG Nº FD1303

SDG Nº	Sample ID	Parameter	Flag	Reason
FD1303	All	Fensulfothion	J(detect)/UJ(non-detect)	Initial Calibration %RSD out
FD1302	BG2E011195	Demeton, O	J(detect)/UJ(non-detect)	Continuing calibration %D
	BG2F011195	Naled	J(detect)/UJ(non-detect)	
	1BG2000100	Guthion	J(detect)/UJ(non-detect)	
	4BGS000401			
	4BGS000411			
FD1303	1BGS000101	Demeton,O	J(detect)/UJ(non-detect)	Continuing calibration %D
	1BGS000110	Ethoprop	J(detect)/UJ(non-detect)	
	3BGS000301	Naled	J(detect)/UJ(non-detect)	
	3BGS000310	Phorate	J(detect)/UJ(non-detect)	
	1BG2000100	Demeton, S	J(detect)/UJ(non-detect)	
	4BGS000401	Diazinon	J(detect)/UJ(non-detect)	
	4BGS000411	Disulfoton	J(detect)/UJ(non-detect)	
		Methyl Parathion	J(detect)/UJ(non-detect)	
		Ronnel	J(detect)/UJ(non-detect)	
		Fenthion	J(detect)/UJ(non-detect)	
		Chloropyrifos	J(detect)/UJ(non-detect)	
		Trichloronate	J(detect)/UJ(non-detect)	
		Tokuthion	J(detect)/UJ(non-detect)	
		Fensulfothion	J(detect)/UJ(non-detect)	
		Stirophos	J(detect)/UJ(non-detect)	
		Sulprofos	J(detect)/UJ(non-detect)	
		Guthion	J(detect)/UJ(non-detect)	
		Coumaphos	J(detect)/UJ(non-detect)	
FD1303	2BG0000201	Dichlorvos	J(detect)/UJ(non-detect)	Continuing calibration %D
	2BG0000210	Mevinphos, alpha	J(detect)/UJ(non-detect)	
	5BGS000501	Demeton, O	J(detect)/UJ(non-detect)	
	5BGS000510	Ethoprop	J(detect)/UJ(non-detect)	
	5BGC000510	Naled	J(detect)/UJ(non-detect)	
	1BGS000101	Phorate	J(detect)/UJ(non-detect)	
	1BGS000110	Demeton, S	J(detect)/UJ(non-detect)	
	3BGS000301	Diazinon	J(detect)/UJ(non-detect)	
	3BGS000310	Disulfoton	J(detect)/UJ(non-detect)	
		Methyl Parathion	J(detect)/UJ(non-detect)	
		Ronnel	J(detect)/UJ(non-detect)	
		Fenthion	J(detect)/UJ(non-detect)	
		Chloropyrifos	J(detect)/UJ(non-detect)	
		Trichloronate	J(detect)/UJ(non-detect)	
		Merphos	J(detect)/UJ(non-detect)	
		Tokuthion	J(detect)/UJ(non-detect)	
		Fensulfothion	J(detect)/UJ(non-detect)	
		Stirophos	J(detect)/UJ(non-detect)	
		Sulprofos	J(detect)/UJ(non-detect)	
		Guthion	J(detect)/UJ(non-detect)	
		Coumaphos	J(detect)/UJ(non-detect)	
FD1303	2BGS000201	Dichlorvos	J(detect)/UJ(non-detect)	Continuing calibration %D
	2BGS000210	Mevinphos, alpha	J(detect)/UJ(non-detect)	
	5BGS000501	Demeton, O	J(detect)/UJ(non-detect)	
	5BGS000510	Ethoprop	J(detect)/UJ(non-detect)	
	5BGC000510	Naled	J(detect)/UJ(non-detect)	
		Phorate	J(detect)/UJ(non-detect)	
		Demeton, S	J(detect)/UJ(non-detect)	
		Diazinon	J(detect)/UJ(non-detect)	
		Disulfoton	J(detect)/UJ(non-detect)	
		Methyl Parathion	J(detect)/UJ(non-detect)	
		Ronnel	J(detect)/UJ(non-detect)	
		Fenthion	J(detect)/UJ(non-detect)	
		Chloropyrifos	J(detect)/UJ(non-detect)	
		Trichloronate	J(detect)/UJ(non-detect)	
		Tokuthion	J(detect)/UJ(non-detect)	
		Stirophos	J(detect)/UJ(non-detect)	
		Sulprofos	J(detect)/UJ(non-detect)	
		Guthion	J(detect)/UJ(non-detect)	
		Coumaphos	J(detect)/UJ(non-detect)	
FD1303	1BG2000100	All compounds	J(detect)/None(non-detect)	Surrogate spike %R

SDG N°	Sample ID	Parameter	Flag	Reason
FD1303	3BGS000310	Dichlorvos Demeton, O Demeton, S Merphos	J(detect)/None(non-detect) J(detect)/None(non-detect) J(detect)/UJ(non-detect) J(detect)/R(non-detect)	Matrix spike/matrix spike duplicate %R
FD1303	1BGS000101 1BGS000110 3BGS000301 3BGS000310	Demeton, O Demeton, S Merphos	J(detect)/None(non-detect) J(detect)/UJ(non-detect) J(detect)/R(non-detect)	Laboratory control sample %R
FD1303	1BG2000100 4BGS000401 4BGS000411	Demeton, O Naled Demeton, S Merphos	J(detect)/None(non-detect) J(detect)/None(non-detect) J(detect)/UJ(non-detect) J(detect)/R(non-detect)	Laboratory control sample %R
FD1303	2BGS000201 2BGS000210 5BGS000501 5BGS000510 5BGC000510	Demeton, O Demeton, S Merphos	J(detect)/None(non-detect) J(detect)/UJ(non-detect) J(detect)/R(non-detect)	Laboratory control sample %R
FD1303	BG2E011195 BG2F011195	Demeton, O Naled Demeton, S	J(detect)/None(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect)	Laboratory control sample %R

C K Y incorporated
Environmental Services

DATA VALIDATION REPORT

Parameters:	TOTAL RECOVERABLE PETROLEUM HYDROCARBON BY IR METHOD 418.1
Project	NAS Millington 0094/09000
Client:	Ensafe/Allen & Hoshall
Laboratory:	NET Atlantic, Inc. Cambridge Division
NET Job Nº:	95.00038, 95.00039, 95.00071, 95.00072, 95.00093, and 95.00094 (Level III Validation)
SDG Nº:	FD1303

Sample Identification	Matrix
001D011095	Water
1BGS000101	Soil
1BGS000110	Soil
3BGS000301	Soil
3BGS000310	Soil
1BG2000100	Soil
4BGS000401	Soil
4BGS000411	Soil
BG2E011195	Water
BG2F011195	Water
2BGS000201	Soil
2BGS000210	Soil
5BGS000501	Soil
5BGS000510	Soil
5BGC000510	Soil

INTRODUCTION

This data review report covers 12 soil samples and 3 water samples listed on the cover page. The analyses were per EPA 418.1 in "Method for Chemical Analysis of Water and Wastes" EPA 600/4-79/020.

This review follows the approach of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February, 1993).

Definition of Qualifiers:

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

NJ - The analysis indicates the presence of analyte that has been "tentatively identified: and the associated numerical value represents its approximate concentration.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

A table summarizing all data qualification flags is provided at the end of this report.

No raw data checks were carried out for this SDG, the review was based on QC data.

I. HOLDING TIME

All holding time requirements were met.

II. INITIAL CALIBRATION

Initial calibrations were performed using required standard concentrations. QC methodology and criteria were applied.

The correlation coefficients were greater than or equal to 0.995.

III. CONTINUING CALIBRATION

Not applicable since all samples were run the same day as initial calibration.

IV. BLANKS

The method blank analyses were performed at required frequencies. No contaminant was found in the method blanks.

The field blank analyses were performed at required frequencies. No contaminant was found in the field blanks.

V. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

One set of matrix spike (MS) and matrix spike duplicate (MSD) was analyzed at required frequencies. Spike recoveries and relative percent difference were within advisory limits.

VI. LABORATORY CONTROL SAMPLES

Laboratory control samples were analyzed and met QC requirements.

VII. PARAMETER IDENTIFICATION

No raw data were reviewed.

VIII. QUANTITATION AND REPORTED CRQLs

No raw data were reviewed.

IX. FIELD DUPLICATES

One set of field duplicates was analyzed in this SDG. No target analytes were detected in any of the samples.

X. OVERALL ASSESSMENT OF DATA

Data flags have been summarized at the end of the report.

TRPH by IR Method 418.1 Data Qualification Summary - Case № FD1303

No data were qualified for this package.

E/A&H VALIDATION ADDENDUM

Validation Subcontractor:	CKY Environmental Services, Inc.
Site Name:	NAS Memphis, Millington, Tennessee
CTO and Subtask No.:	0094-04730
Laboratory:	NET Atlantic, Inc.
Sample Delivery Group:	FD1303
Matrix:	Water
Samples:	BG2T011195, BG2E011195, BG2F011195, BG5T011295, 001D011095
E/A&H Project Chemist:	Charlene M. Thompson CMT

The above samples were identified as field blanks, trip blanks, rinsate blanks, and DI system blanks. Field-derived blanks were used with method blanks to assess possible cross-contamination of field investigative samples. No action was taken if compounds were detected in the method blanks associated with the field-derived blanks or if QC parameters were not met in the field-derived blanks. The field blanks were used to assess cross-contamination in investigative samples only.

The validator qualified compounds in these blanks based on various QA/QC parameters in several different fractions. CKY was told that the only purpose for the field QC was to assess cross-contamination in investigative samples. Therefore, E/A&H has removed the estimated qualifiers from the field QC.

NAS MEMPHIS
NAS MEMPHIS, RFI, ASSEMBLY A
Primary Samples

FD1303 HERB						
SAMPLE ID ------->	1BG-S-0001-00	1BG-S-0001-01	1BG-S-0001-10	2BG-S-0002-01	2BG-S-0002-10	3BG-S-0003-01
ORIGINAL ID ----->	1BG2000100	1BGS000101	1BGS000110	2BGS000201	2BGS000210	3BGS000301
LAB SAMPLE ID --->	115300	115198	115199	115341	115342	115200
SAMPLE DATE ----->	01/11/95	01/09/95	01/09/95	01/12/95	01/12/95	01/10/95
DATE EXTRACTED -->	01/18/95	01/17/95	01/17/95	01/19/95	01/19/95	01/17/95
DATE ANALYZED --->	01/25/95	01/25/95	01/25/95	01/26/95	01/26/95	01/25/95
MATRIX ---------->	Soil	Soil	Soil	Soil	Soil	Soil
UNITS ---------->	UG/KG A	UG/KG A	UG/KG A	UG/KG A	UG/KG A	UG/KG A
CAS # Parameter						
94-82-6 2,4-DB	9.5 UJ	9.5 UJ	9.5 UJ	9.5 UJ	9.5 UJ	9.5 UJ
88-85-7 Dinoseb	4.7 UJ	4.7 UJ	4.7 UJ	4.7 UJ	4.7 UJ	4.7 UJ
93-76-5 2,4,5-T	0.95 U	0.95 U	0.95 U	0.95 U	0.95 UJ	0.95 U
93-72-1 2,4,5-TP (Silvex)	0.95 U	0.95 U	0.95 U	0.95 U	0.95 UJ	0.95 U
75-99-0 Dalapon	23. U	23. U	23. U	23. U	23. UJ	23. U
1918-00-9 Dicamba	0.94 U	0.94 U	0.94 U	0.94 U	0.94 UJ	0.94 U
120-36-5 Dichlorprop	9.4 U	9.4 U	9.4 U	9.4 U	9.4 UJ	9.4 U
94-74-6 MCPA	940. UJ	940. UJ	940. UJ	940. UJ	940. UJ	940. UJ
93-65-2 MCPP	940. UJ	940. UJ	940. UJ	4900. UJ	940. UJ	940. UJ
94-75-7 2,4-D	9.4 U	9.4 U	9.4 U	9.4 U	9.4 UJ	9.4 U

*** Validation Complete ***

NAS MEMPHIS
NAS MEMPHIS, RFI, ASSEMBLY A
Primary Samples

FD1303 HERB						
SAMPLE ID ------>	3BG-S-0003-10	4BG-S-0004-01	4BG-S-0004-11	5BG-S-0005-01	5BG-S-0005-10	5BG-C-0005-10
ORIGINAL ID ----->	3BGS000310	4BGS000401	4BGS000411	5BGS000501	5BGS000510	5BGC000510
LAB SAMPLE ID --->	115201	115301	115302	115343	115344	115345
SAMPLE DATE ----->	01/10/95	01/11/95	01/11/95	01/12/95	01/12/95	01/12/95
DATE EXTRACTED -->	01/17/95	01/18/95	01/18/95	01/19/95	01/19/95	01/19/95
DATE ANALYZED --->	01/25/95	01/25/95	01/25/95	01/26/95	01/26/95	01/26/95
MATRIX ---------->	Soil	Soil	Soil	Soil	Soil	Soil
UNITS ---------->	UG/KG A	UG/KG A	UG/KG A	UG/KG A	UG/KG A	UG/KG A

CAS #	Parameter												
94-82-6	2,4-DB	9.5	UJ	9.5	UJ	9.5	UJ	85.	J	9.5	UJ	48.	J
88-85-7	Dinoseb	4.7	UR	4.7	UJ	4.7	UJ	4.7	UJ	4.7	UJ	4.7	UJ
93-76-5	2,4,5-T	0.95	U	0.95	U	0.95	U	0.95	U	0.95	U	0.95	U
93-72-1	2,4,5-TP (Silvex)	0.95	UJ	0.95	U	0.95	U	0.95	U	0.95	U	0.95	U
75-99-0	Dalapon	23.	UR	23.	U	23.	U	23.	U	23.	U	23.	U
1918-00-9	Dicamba	0.94	UJ	0.94	U	0.94	U	0.94	U	0.94	U	0.94	U
120-36-5	Dichlorprop	9.4	U	9.4	U	9.4	U	0.94	U	9.4	U	9.4	U
94-74-6	MCPA	940.	UJ	940.	UJ	940.	UJ	1800.	J	940.	UJ	940.	UJ
93-65-2	MCPP	1600.	J	940.	UJ	940.	UJ	940.	UJ	940.	UJ	940.	UJ
94-75-7	2,4-D	9.4	UJ	9.4	U	9.4	U	9.4	U	9.4	U	9.4	U

NAS MEMPHIS
NAS MEMPHIS, RFI, ASSEMBLY A
Primary Samples

FD1303 METAL	SAMPLE ID ---------->	1BG-S-0001-00		1BG-S-0001-01		1BG-S-0001-10		2BG-S-0002-01		2BG-S-0002-10		3BG-S-0003-01	
	ORIGINAL ID ----->	1BGS000100		1BGS000101		1BGS000110		2BGS000201		2BGS000210		3BGS000301	
	LAB SAMPLE ID --->	2-115306S		9-115204S		9-115205S		4-115347S		4-115348S		9-115206S	
	SAMPLE DATE ----->	01/11/95		01/09/95		01/09/95		01/12/95		01/12/95		01/10/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A
CAS #	Parameter												
SB	Antimony	8.7	UR	13.4	UR	10.4	UR	10.3	UR	10.	UR	10.8	UR
AS	Arsenic	3.4	J	7.1	J	20.2	J	5.4	J	1.8	J	6.3	J
BA	Barium	96.6	J	70.8	J	93.8	J	93.3	J	193.	J	101.	J
BE	Beryllium	0.65	J	0.4	J	0.39	J	0.39	J	0.58	J	0.52	J
CD	Cadmium	2.	UJ	1.9	UJ	3.4	J	1.7	UJ	2.4	UJ	3.	UJ
CR	Chromium	46.3		9.5		11.7		12.2		17.		14.8	
CO	Cobalt	6.4	J	7.8	J	7.3	J	5.8	J	5.	J	8.3	J
CU	Copper	46.		9.9	U	14.8		12.		12.6		14.5	
PB	Lead	13.6	J	14.5	J	8.7	J	18.	J	7.9	J	11.6	J
HG	Mercury	0.1	U	2.1		0.13	U	0.21		0.12	U	0.12	U
NI	Nickel	25.2	J	10.7	UJ	19.4	UJ	12.8	UJ	14.2	UJ	15.8	UJ
SE	Selenium	0.4	UJ	0.52	UJ	0.52	UJ	0.51	UJ	0.5	UJ	0.49	UJ
AG	Silver	1.2	UJ	1.2	U	1.7	U	1.6	U	1.8	UJ	1.5	U
TL	Thallium	2.	UR	0.52	UR	0.52	UR	0.51	UR	0.5	UR	0.49	UR
V	Vanadium	30.1		17.8		18.5		20.8		18.6		29.3	
ZN	Zinc	78.5	J	35.2	J	47.7	J	39.8	J	60.8	J	49.1	J
SN	Tin	163.	J	25.7	UJ	32.3	UJ	21.3	UJ	22.5	UJ	31.9	UJ

*** Validation Complete ***

NAS MEMPHIS
NAS MEMPHIS, RFI, ASSEMBLY A
Primary Samples

FD1303 METAL	SAMPLE ID ------>	3BG-S-0003-10		4BG-S-0004-01		4BG-S-0004-11		5BG-S-0005-01		5BG-S-0005-10		5BG-C-0005-10	
	ORIGINAL ID ----->	3BGS000310		4BGS000401		4BGS000411		5BGS000501		5BGS000510		5BGC000510	
	LAB SAMPLE ID --->	9-115207S		2-115307S		2-115308S		4-115349S		4-115350S		4-115351S	
	SAMPLE DATE ----->	01/10/95		01/11/95		01/11/95		01/12/95		01/12/95		01/12/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A	MG/KG	A
CAS #	Parameter												
SB	Antimony	9.8	UR	9.9	UR	10.3	UR	9.8	UR	10.2	UR	10.3	UR
AS	Arsenic	8.7	J	9.1	J	11.1	J	4.9	J	9.	J	10.4	J
BA	Barium	132.	J	131.	J	130.	J	81.7	J	114.	J	205.	J
BE	Beryllium	0.51	J	0.69	J	0.61	J	0.4	J	0.42	J	0.55	J
CD	Cadmium	2.9	UJ	3.	UJ	2.3	UJ	2.3	UJ	1.8	UJ	2.2	UJ
CR	Chromium	12.7		18.		16.6		11.6		12.7		15.1	
CO	Cobalt	8.9	J	9.1	J	7.8	J	6.6	J	6.9	J	10.1	J
CU	Copper	18.8		17.8		19.9		9.7		15.2		20.3	
PB	Lead	12.2	J	18.	J	11.7	J	9.7	J	9.	J	14.2	J
HG	Mercury	0.12	U	0.12	U	0.19		0.12	U	0.13	U	0.13	U
NI	Nickel	21.5	UJ	20.8	UJ	18.1	UJ	10.1	UJ	14.1	UJ	29.9	J
SE	Selenium	0.49	UJ	0.5	UJ	0.51	UJ	0.49	UJ	0.51	UJ	0.52	UJ
AG	Silver	1.9	U	1.6	U	1.7	U	1.5	U	2.5	U	2.	U
TL	Thallium	0.49	UR	0.5	UR	0.51	UR	0.49	UR	0.51	UR	0.52	UR
V	Vanadium	22.5		33.1		27.3		22.9		22.3		29.8	
ZN	Zinc	54.8	J	62.7	J	59.7	J	34.	J	49.5	J	63.1	J
SN	Tin	22.6	UJ	23.9	UJ	29.1	UJ	22.7	UJ	22.8	UJ	38.7	UJ

NAS MEMPHIS
NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

FD1303 METAL-CN						
SAMPLE ID ------->	1BG-S-0001-00	1BG-S-0001-01	1BG-S-0001-10	2BG-S-0002-01	2BG-S-0002-10	3BG-S-0003-01
ORIGINAL ID ----->	1BG2000100	1BGS000101	1BGS000110	2BGS000201	2BGS000210	3BGS000301
LAB SAMPLE ID --->	115306	115204	115205	115347	115348	115206
SAMPLE DATE ----->	01/11/95	01/09/95	01/09/95	01/12/95	01/12/95	01/10/95
DATE EXTRACTED -->	01/16/95	01/16/95	01/16/95	01/16/95	01/16/95	01/16/95
DATE ANALYZED --->	01/17/95	01/17/95	01/17/95	01/17/95	01/17/95	01/17/95
MATRIX ---------->	Soil	Soil	Soil	Soil	Soil	Soil
UNITS ---------->	MG/KG A	MG/KG A	MG/KG A	MG/KG A	MG/KG A	MG/KG A
CAS # Parameter						
CN Cyanide	0.5 U	0.57 U	0.5 U	0.5 U	0.5 U	0.51 U

*** Validation Complete ***

NAS MEMPHIS
NAS MEMPHIS, RFI, ASSEMBLY A
Primary Samples

FD1303 METAL-CN						
SAMPLE ID ------->	3BG-S-0003-10	4BG-S-0004-01	4BG-S-0004-11	5BG-S-0005-01	5BG-S-0005-10	5BG-C-0005-10
ORIGINAL ID ----->	3BGS000310	4BGS000401	4BGS000411	5BGS000501	5BGS000510	5BGC000510
LAB SAMPLE ID --->	115207	115307	115308	115349	115350	115351
SAMPLE DATE ----->	01/10/95	01/11/95	01/11/95	01/12/95	01/12/95	01/12/95
DATE EXTRACTED -->	01/16/95	01/16/95	01/16/95	01/16/95	01/16/95	01/16/95
DATE ANALYZED --->	01/17/95	01/17/95	01/17/95	01/17/95	01/17/95	01/17/95
MATRIX ---------->	Soil	Soil	Soil	Soil	Soil	Soil
UNITS ---------->	MG/KG A	MG/KG A	MG/KG A	MG/KG A	MG/KG A	MG/KG A
CAS # Parameter						
CN Cyanide	0.55 U	0.5 U	0.58 U	0.5 U	0.5 U	0.54 U

*** Validated Complete ***

FD1303 OP PEST													
	SAMPLE ID ------>	1BG-S-0001-00		1BG-S-0001-01		1BG-S-0001-10		2BG-S-0002-01		2BG-S-0002-10		3BG-S-0003-01	
	ORIGINAL ID ----->	1BG2000100		1BGS000101		1BGS000110		2BGS000201		2BGS000210		3BGS000301	
	LAB SAMPLE ID --->	115300		115198		115199		115341		115342		115200	
	SAMPLE DATE ----->	01/11/95		01/09/95		01/09/95		01/12/95		01/12/95		01/10/95	
	DATE EXTRACTED -->	01/18/95		01/17/95		01/17/95		01/19/95		01/19/95		01/17/95	
	DATE ANALYZED --->	01/25/95		01/25/95		01/25/95		01/26/95		01/26/95		01/25/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG	A	UG/KG	A	UG/KG	A	UG/KG	A	UG/KG	A	UG/KG	A
CAS #	Parameter												
86-50-0	Guthion	83.	UJ	100.	UJ	100.	UJ	110.	UJ	100.	UJ	110.	UJ
35400-43-2	Sulprofos	83.	UJ	100.	UJ	100.	UJ	110.	UJ	100.	UJ	110.	UJ
2921-88-2	Chloropyrifos	83.	UJ	100.	UJ	100.	UJ	110.	UJ	100.	UJ	110.	UJ
56-72-4	Coumaphos	83.	UJ	100.	UJ	100.	UJ	110.	UJ	100.	UJ	110.	UJ
8065-48-3	Demeton,O	83.	UJ	100.	UJ	100.	UJ	110.	UJ	100.	UJ	110.	UJ
333-41-5	Diazinon	83.	UJ	100.	UJ	100.	UJ	110.	UJ	100.	UJ	110.	UJ
62-73-7	Dichlorvos	83.	U	100.	UJ	100.	UJ	110.	UJ	100.	UJ	110.	UJ
298-04-4	Disulfoton	83.	UJ	100.	UJ	100.	UJ	110.	UJ	100.	UJ	110.	UJ
13194-48-4	Ethoprop	83.	UJ	100.	UJ	100.	UJ	110.	UJ	100.	UJ	110.	UJ
115-90-2	Fensulfothion	83.	UJ	100.	UJ	100.	UJ	110.	UJ	100.	UJ	110.	UJ
55-38-9	Fenthion	83.	UJ	100.	UJ	100.	UJ	110.	UJ	100.	UJ	110.	UJ
150-50-5	Merphos	83.	UR	100.	UR	100.	UR	110.	UR	100.	UR	110.	UR
7786-34-7	Mevinphos, Alpha	83.	U	100.	UJ	100.	UJ	110.	UJ	100.	UJ	110.	UJ
300-76-5	Naled	83.	UJ	100.	UJ	100.	UJ	110.	UJ	100.	UJ	110.	UJ
298-00-0	Methyl parathion	83.	UJ	100.	UJ	100.	UJ	110.	UJ	100.	UJ	110.	UJ
298-02-2	Phorate	83.	UJ	100.	UJ	100.	UJ	110.	UJ	100.	UJ	110.	UJ
299-84-3	Ronnel	83.	UJ	100.	UJ	100.	UJ	110.	UJ	100.	UJ	110.	UJ
22248-79-9	Stirophos (Tetrachlorovinphos)	83.	UJ	100.	UJ	100.	UJ	110.	UJ	100.	UJ	110.	UJ
34643-46-4	Tokuthion	83.	UJ	100.	UJ	100.	UJ	110.	UJ	100.	UJ	110.	UJ
327-98-0	Trichloronate	83.	UJ	100.	UJ	100.	UJ	110.	UJ	100.	UJ	110.	UJ
126-75-0	Demeton,S	83.	UJ	100.	UJ	100.	UJ	110.	UJ	100.	UJ	110.	UJ

*** Validation Complete ***

NAS MEMPHIS

NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

FD1303 OP PEST													
	SAMPLE ID ------>	3BG-S-0003-10		4BG-S-0004-01		4BG-S-0004-11		5BG-S-0005-01		5BG-S-0005-10		5BG-C-0005-10	
	ORIGINAL ID ----->	3BGS000310		4BGS000401		4BGS000411		5BGS000501		5BGS000510		5BGC000510	
	LAB SAMPLE ID --->	115201		115301		115302		115343		115344		115345	
	SAMPLE DATE ----->	01/10/95		01/11/95		01/11/95		01/12/95		01/12/95		01/12/95	
	DATE EXTRACTED -->	01/17/95		01/18/95		01/18/95		01/19/95		01/19/95		01/19/95	
	DATE ANALYZED --->	01/25/95		01/25/95		01/25/95		01/26/95		01/26/95		01/26/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG	A	UG/KG	A	UG/KG	A	UG/KG	A	UG/KG	A	UG/KG	A
CAS #	Parameter												
86-50-0	Guthion	110.	UJ	100.	UJ	110.	UJ	100.	UJ	110.	UJ	110.	UJ
35400-43-2	Sulprofos	110.	UJ	100.	UJ	110.	UJ	100.	UJ	110.	UJ	110.	UJ
2921-88-2	Chloropyrifos	110.	UJ	100.	UJ	110.	UJ	100.	UJ	110.	UJ	110.	UJ
56-72-4	Coumaphos	110.	UJ	100.	UJ	110.	UJ	100.	UJ	110.	UJ	110.	UJ
8065-48-3	Demeton,O	110.	UJ	100.	UJ	110.	UJ	100.	UJ	110.	UJ	110.	UJ
333-41-5	Diazinon	110.	UJ	100.	UJ	110.	UJ	100.	UJ	110.	UJ	110.	UJ
62-73-7	Dichlorvos	110.	UJ	100.	U	110.	U	100.	UJ	110.	UJ	110.	UJ
298-04-4	Disulfoton	110.	UJ	100.	UJ	110.	UJ	100.	UJ	110.	UJ	110.	UJ
13194-48-4	Ethoprop	110.	UJ	100.	UJ	110.	UJ	100.	UJ	110.	UJ	110.	UJ
115-90-2	Fensulfothion	110.	UJ	100.	UJ	110.	UJ	100.	UJ	110.	UJ	110.	UJ
55-38-9	Fenthion	110.	UJ	100.	UJ	110.	UJ	100.	UJ	110.	UJ	110.	UJ
150-50-5	Merphos	110.	UR	100.	UR	110.	UR	100.	UR	110.	UR	110.	UR
7786-34-7	Mevinphos, Alpha	110.	UJ	100.	U	110.	U	100.	UJ	110.	UJ	110.	UJ
300-76-5	Naled	110.	UJ	100.	UJ	110.	UJ	100.	UJ	110.	UJ	110.	UJ
298-00-0	Methyl parathion	110.	UJ	100.	UJ	110.	UJ	100.	UJ	110.	UJ	110.	UJ
298-02-2	Phorate	110.	UJ	100.	UJ	110.	UJ	100.	UJ	110.	UJ	110.	UJ
299-84-3	Ronnel	110.	UJ	100.	UJ	110.	UJ	100.	UJ	110.	UJ	110.	UJ
22248-79-9	Stirophos (Tetrachlorovinphos)	110.	UJ	100.	UJ	110.	UJ	100.	UJ	110.	UJ	110.	UJ
34643-46-4	Tokuthion	110.	UJ	100.	UJ	110.	UJ	100.	UJ	110.	UJ	110.	UJ
327-98-0	Trichloronate	110.	UJ	100.	UJ	110.	UJ	100.	UJ	110.	UJ	110.	UJ
126-75-0	Demeton,S	110.	UJ	100.	UJ	110.	UJ	100.	UJ	110.	UJ	110.	UJ

FD1303 PEST													
	SAMPLE ID ------>	1BG-S-0001-00		1BG-S-0001-01		1BG-S-0001-10		2BG-S-0002-01		2BG-S-0002-10		3BG-S-0003-01	
	ORIGINAL ID ----->	1BG2000100		1BGS000101		1BGS000110		2BGS000201		2BGS000210		3BGS000301	
	LAB SAMPLE ID --->	115306		115204		115205		115347		115348		115206	
	SAMPLE DATE ----->	01/11/95		01/09/95		01/09/95		01/12/95		01/12/95		01/10/95	
	DATE EXTRACTED -->	01/18/95		01/18/95		01/18/95		01/18/95		01/18/95		01/18/95	
	DATE ANALYZED --->	01/20/95		01/20/95		01/20/95		01/20/95		01/20/95		01/20/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ----------->	UG/KG	A	UG/KG	A	UG/KG	A	UG/KG	A	UG/KG	A	UG/KG	A
CAS #	Parameter												
319-84-6	alpha-BHC	1.6	U	2.1	U	2.2	U	2.2	U	2.	U	2.	U
319-85-7	beta-BHC	1.6	U	2.1	U	2.2	U	2.2	U	2.	U	2.	U
319-86-8	delta-BHC	1.6	U	2.1	U	2.2	U	2.2	U	2.	U	2.	U
58-89-9	gamma-BHC (Lindane)	1.6	U	2.1	U	2.2	U	2.2	U	2.	U	2.	U
76-44-8	Heptachlor	1.6	U	2.1	U	2.2	U	2.2	U	2.	U	2.	U
309-00-2	Aldrin	1.6	U	2.1	U	2.2	U	2.2	U	2.	U	2.	U
1024-57-3	Heptachlor epoxide	1.6	U	2.1	U	2.2	U	2.2	U	2.	U	2.	U
959-98-8	Endosulfan I	1.6	U	2.1	U	2.2	U	2.2	U	2.	U	2.	U
60-57-1	Dieldrin	3.2	U	215.	D	4.3	U	82.	D	4.	U	4.	U
72-55-9	4,4'-DDE	3.2	U	4.3	U	4.3	U	4.2	U	4.	U	4.	U
72-20-8	Endrin	3.2	U	4.3	U	4.3	U	4.2	U	4.	U	4.	U
33213-65-9	Endosulfan II	3.2	U	4.3	U	4.3	U	4.2	U	4.	U	4.	U
72-54-8	4,4'-DDD	3.2	U	4.3	U	4.3	U	4.2	U	4.	U	4.	U
1031-07-8	Endosulfan sulfate	3.2	U	4.3	U	4.3	U	4.2	U	4.	U	4.	U
50-29-3	4,4'-DDT	3.2	U	4.3	U	4.3	U	14.	J	4.	U	4.	U
72-43-5	Methoxychlor	16.	U	21.	U	22.	U	22.	U	20.	U	20.	U
53494-70-5	Endrin ketone	3.2	U	4.3	U	4.3	U	4.2	U	4.	U	4.	U
7421-36-3	Endrin aldehyde	3.2	U	4.3	U	4.3	U	4.2	U	4.	U	4.	U
5103-71-9	alpha-Chlordane	1.6	U	2.3	U	2.2	U	2.2	U	2.	U	2.	U
5103-74-2	gamma-Chlordane	1.6	U	2.3	U	2.2	U	2.2	U	2.	U	2.	U
8001-35-2	Toxaphene	32.	U	210.	U	43.	U	42.	U	40.	U	40.	U
12674-11-2	Aroclor-1016	32.	U	43.	U	43.	U	42.	U	40.	U	40.	U
11104-28-2	Aroclor-1221	32.	U	43.	U	43.	U	42.	U	40.	U	40.	U
11141-16-5	Aroclor-1232	32.	U	43.	U	43.	U	42.	U	40.	U	40.	U
53469-21-9	Aroclor-1242	32.	U	43.	U	43.	U	42.	U	40.	U	40.	U
12672-29-6	Aroclor-1248	32.	U	43.	U	43.	U	42.	U	40.	U	40.	U
11097-69-1	Aroclor-1254	32.	U	43.	U	43.	U	42.	U	40.	U	40.	U
11096-82-5	Aroclor-1260	32.	U	43.	U	43.	U	42.	U	40.	U	40.	U

*** Validation Complete ***

NAS MEMPHIS
NAS MEMPHIS, RFI, ASSEMBLY A
Primary Samples

FD1303 PEST													
	SAMPLE ID ------>	3BG-S-0003-10		4BG-S-0004-01		4BG-S-0004-11		5BG-S-0005-01		5BG-S-0005-10		5BG-C-0005-10	
	ORIGINAL ID ----->	3BGS000310		4BGS000401		4BGS000411		5BGS000501		5BGS000510		5BGC000510	
	LAB SAMPLE ID --->	115207		115307		115308		115349		115350		115351	
	SAMPLE DATE ----->	01/11/95		01/11/95		01/11/95		01/12/95		01/12/95		01/12/95	
	DATE EXTRACTED -->	01/18/95		01/18/95		01/18/95		01/18/95		01/18/95		01/18/95	
	DATE ANALYZED --->	01/20/95		01/20/95		01/20/95		01/20/95		01/20/95		01/20/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG	A	UG/KG	A	UG/KG	A	UG/KG	A	UG/KG	A	UG/KG	A
CAS #	Parameter												
319-84-6	alpha-BHC	2.1	U	2.1	U	2.2	U	2.	U	2.1	U	2.1	U
319-85-7	beta-BHC	2.1	U	2.1	U	2.2	U	2.	U	2.1	U	2.1	U
319-86-8	delta-BHC	2.1	U	2.1	U	2.2	U	2.	U	2.1	U	2.1	U
58-89-9	gamma-BHC (Lindane)	2.1	U	2.1	U	2.2	U	2.	U	2.1	U	2.1	U
76-44-8	Heptachlor	2.1	U	2.1	U	2.2	U	2.	U	2.1	U	2.1	U
309-00-2	Aldrin	2.1	U	2.1	U	2.2	U	2.	U	2.1	U	2.1	U
1024-57-3	Heptachlor epoxide	2.1	U	2.1	U	2.2	U	2.	U	2.1	U	2.1	U
959-98-8	Endosulfan I	2.1	U	2.1	U	2.2	U	2.	U	2.1	U	2.1	U
60-57-1	Dieldrin	4.2	U	311.	D	4.3	U	44.		4.2	U	4.3	U
72-55-9	4,4'-DDE	4.2	U	4.1	U	4.3	U	4.	U	4.2	U	4.3	U
72-20-8	Endrin	4.2	U	4.1	U	4.3	U	4.	U	4.2	U	4.3	U
33213-65-9	Endosulfan II	4.2	U	4.1	U	4.3	U	4.	U	4.2	U	4.3	U
72-54-8	4,4'-DDD	4.2	U	4.1	U	4.3	U	4.	U	4.2	U	4.3	U
1031-07-8	Endosulfan sulfate	4.2	U	4.1	U	4.3	U	4.	U	4.2	U	4.3	U
50-29-3	4,4'-DDT	4.2	U	4.1	U	4.3	U	4.	U	4.2	U	4.3	U
72-43-5	Methoxychlor	21.	U	21.	U	22.	U	20.	U	21.	U	21.	U
53494-70-5	Endrin ketone	4.2	U	4.1	U	4.3	U	4.	U	4.2	U	4.3	U
7421-36-3	Endrin aldehyde	4.2	U	4.1	U	4.3	U	4.	U	4.2	U	4.3	U
5103-71-9	alpha-Chlordane	2.1	U	2.1	U	2.2	U	2.	U	2.1	U	2.1	U
5103-74-2	gamma-Chlordane	2.1	U	2.1	U	2.2	U	2.	U	2.1	U	2.1	U
8001-35-2	Toxaphene	42.	U	41.	U	43.	U	40.	U	42.	U	43.	U
12674-11-2	Aroclor-1016	42.	U	41.	U	43.	U	40.	U	42.	U	43.	U
11104-28-2	Aroclor-1221	42.	U	41.	U	43.	U	40.	U	42.	U	43.	U
11141-16-5	Aroclor-1232	42.	U	41.	U	43.	U	40.	U	42.	U	43.	U
53469-21-9	Aroclor-1242	42.	U	41.	U	43.	U	40.	U	42.	U	43.	U
12672-29-6	Aroclor-1248	42.	U	41.	U	43.	U	40.	U	42.	U	43.	U
11097-69-1	Aroclor-1254	42.	U	41.	U	43.	U	40.	U	42.	U	43.	U
11096-82-5	Aroclor-1260	42.	U	41.	U	43.	U	40.	U	42.	U	43.	U

*** Validation Complete ***

FD1303 SVOA													
	SAMPLE ID ------>	1BG-S-0001-00		1BG-S-0001-01		1BG-S-0001-10		2BG-S-0002-01		2BG-S-0002-10		3BG-S-0003-01	
	ORIGINAL ID ----->	1BG2000100		1BGS000101		1BGS000110		2BGS000201		2BGS000210		3BGS000301	
	LAB SAMPLE ID --->	115306		115204		115205		115347		115348		115206	
	SAMPLE DATE ----->	01/11/95		01/09/95		01/09/95		01/12/95		01/12/95		01/10/95	
	DATE EXTRACTED -->	01/17/95		01/17/95		01/17/95		01/17/95		01/17/95		01/17/95	
	DATE ANALYZED --->	01/25/95		01/26/95		01/26/95		01/25/95		01/25/95		01/25/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG	A	UG/KG	A	UG/KG	A	UG/KG	A	UG/KG	A	UG/KG	A
CAS #	Parameter												
621-64-7	N-Nitroso-di-n-propylamine	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
67-72-1	Hexachloroethane	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
78-59-1	Isophorone	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
88-75-5	2-Nitrophenol	330.	UR	420.	U	390.	U	430.	U	410.	U	410.	U
105-67-9	2,4-Dimethylphenol	330.	UR	420.	U	390.	U	430.	U	410.	U	410.	U
111-91-1	bis(2-Chloroethoxy)methane	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
120-83-2	2,4-Dichlorophenol	330.	UR	420.	U	390.	U	430.	U	410.	U	410.	U
120-82-1	1,2,4-Trichlorobenzene	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
91-20-3	Naphthalene	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
106-47-8	4-Chloroaniline	330.	UJ	420.	UJ	390.	UJ	430.	UJ	410.	UJ	410.	UJ
87-68-3	Hexachlorobutadiene	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
59-50-7	4-Chloro-3-methylphenol	330.	UR	420.	U	390.	U	430.	U	410.	U	410.	U
91-57-6	2-Methylnaphthalene	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
77-47-4	Hexachlorocyclopentadiene	330.	UJ	420.	UJ	390.	UJ	430.	UJ	410.	UJ	410.	UJ
88-06-2	2,4,6-Trichlorophenol	330.	UR	420.	U	390.	U	430.	U	410.	U	410.	U
95-95-4	2,4,5-Trichlorophenol	800.	UR	1000.	U	940.	U	1000.	U	990.	U	990.	U
91-58-7	2-Chloronaphthalene	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
88-74-4	2-Nitroaniline	800.	U	1000.	U	940.	U	1000.	U	990.	U	990.	U
131-11-3	Dimethylphthalate	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
208-96-8	Acenaphthylene	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
606-20-2	2,6-Dinitrotoluene	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
99-09-2	3-Nitroaniline	800.	U	1000.	U	940.	U	1000.	U	990.	U	990.	U
83-32-9	Acenaphthene	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
51-28-5	2,4-Dinitrophenol	800.	UR	1000.	UJ	940.	UJ	1000.	UJ	990.	UJ	990.	UJ
100-02-7	4-Nitrophenol	800.	UR	1000.	U	940.	U	1000.	U	990.	U	990.	U
132-64-9	Dibenzofuran	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
121-14-2	2,4-Dinitrotoluene	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
84-66-2	Diethylphthalate	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
7005-72-3	4-Chlorophenylphenylether	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
86-73-7	Fluorene	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
100-01-6	4-Nitroaniline	800.	UJ	1000.	UJ	940.	UJ	1000.	UJ	990.	UJ	990.	UJ
534-52-1	4,6-Dinitro-2-methylphenol	800.	UR	1000.	U	940.	U	1000.	U	990.	U	990.	U
86-30-6	N-Nitrosodiphenylamine	330.	UJ	420.	UJ	390.	UJ	430.	UJ	410.	UJ	410.	UJ
101-55-3	4-Bromophenylphenylether	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
118-74-1	Hexachlorobenzene	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
87-86-5	Pentachlorophenol	800.	UR	1000.	U	940.	U	1000.	U	990.	U	990.	U
85-01-8	Phenanthrene	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U

*** Validation Complete ***

NAS MEMPHIS
NAS MEMPHIS, RFI, ASSEMBLY A
Primary Samples

FD1303 / SVOA													
	SAMPLE ID ------->	1BG-S-0001-00		1BG-S-0001-01		1BG-S-0001-10		2BG-S-0002-01		2BG-S-0002-10		3BG-S-0003-01	
	ORIGINAL ID ----->	1BG2000100		1BGS000101		1BGS000110		2BGS000201		2BGS000210		3BGS000301	
	LAB SAMPLE ID --->	115306		115204		115205		115347		115348		115206	
	SAMPLE DATE ----->	01/11/95		01/09/95		01/09/95		01/12/95		01/12/95		01/10/95	
	DATE EXTRACTED -->	01/17/95		01/17/95		01/17/95		01/17/95		01/17/95		01/17/95	
	DATE ANALYZED --->	01/25/95		01/26/95		01/26/95		01/25/95		01/25/95		01/25/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG	A	UG/KG	A	UG/KG	A	UG/KG	A	UG/KG	A	UG/KG	A
CAS #	Parameter												
120-12-7	Anthracene	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
86-74-8	Carbazole	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
84-74-2	Di-n-butylphthalate	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
206-44-0	Fluoranthene	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
129-00-0	Pyrene	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
85-68-7	Butylbenzylphthalate	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
91-94-1	3,3'-Dichlorobenzidine	330.	UJ	420.	UJ	390.	UJ	430.	UJ	410.	UJ	410.	UJ
56-55-3	Benzo(a)anthracene	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
218-01-9	Chrysene	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
117-84-0	Di-n-octylphthalate	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
205-99-2	Benzo(b)fluoranthene	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
207-08-9	Benzo(k)fluoranthene	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
50-32-8	Benzo(a)pyrene	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
193-39-5	Indeno(1,2,3-cd)pyrene	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
53-70-3	Dibenzo(a,h)anthracene	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
191-24-2	Benzo(g,h,i)perylene	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
108-95-2	Phenol	330.	UR	420.	U	390.	U	430.	U	410.	U	410.	U
111-44-4	bis(2-Chloroethyl)ether	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
95-57-8	2-Chlorophenol	330.	UR	420.	U	390.	U	430.	U	410.	U	410.	U
541-73-1	1,3-Dichlorobenzene	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
106-46-7	1,4-Dichlorobenzene	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
95-50-1	1,2-Dichlorobenzene	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
95-48-7	2-Methylphenol (o-Cresol)	330.	UR	420.	U	390.	U	430.	U	410.	U	410.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U
106-44-5	4-Methylphenol (p-Cresol)	330.	UR	420.	U	390.	U	430.	U	410.	U	410.	U
98-95-3	Nitrobenzene	330.	U	420.	U	390.	U	430.	U	410.	U	410.	U

NAS MEMPHIS
NAS MEMPHIS, RFI, ASSEMBLY A
Primary Samples

FD1303 SVOA													
	SAMPLE ID ------>	3BG-S-0003-10		4BG-S-0004-01		4BG-S-0004-11		5BG-S-0005-01		5BG-S-0005-10		5BG-C-0005-10	
	ORIGINAL ID ----->	3BGS000310		4BGS000401		4BGS000411		5BGS000501		5BGS000510		5BGC000510	
	LAB SAMPLE ID --->	115207		115307		115308		115349		115350		115351	
	SAMPLE DATE ----->	01/11/95		01/11/95		01/11/95		01/12/95		01/12/95		01/12/95	
	DATE EXTRACTED -->	01/17/95		01/17/95		01/18/95		01/17/95		01/17/95		01/17/95	
	DATE ANALYZED --->	01/25/95		01/25/95		01/25/95		01/25/95		01/25/95		01/25/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG	A	UG/KG	A	UG/KG	A	UG/KG	A	UG/KG	A	UG/KG	A
CAS #	Parameter												
621-64-7	N-Nitroso-di-n-propylamine	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
67-72-1	Hexachloroethane	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
78-59-1	Isophorone	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
88-75-5	2-Nitrophenol	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
105-67-9	2,4-Dimethylphenol	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
111-91-1	bis(2-Chloroethoxy)methane	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
120-83-2	2,4-Dichlorophenol	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
120-82-1	1,2,4-Trichlorobenzene	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
91-20-3	Naphthalene	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
106-47-8	4-Chloroaniline	410.	UJ	410.	UJ	430.	UJ	400.	UJ	420.	UJ	430.	UJ
87-68-3	Hexachlorobutadiene	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
59-50-7	4-Chloro-3-methylphenol	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
91-57-6	2-Methylnaphthalene	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
77-47-4	Hexachlorocyclopentadiene	410.	UJ	410.	UJ	430.	UJ	400.	UJ	420.	UJ	430.	UJ
88-06-2	2,4,6-Trichlorophenol	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
95-95-4	2,4,5-Trichlorophenol	1000.	U	1000.	U	1000.	U	980.	U	1000.	U	1000.	U
91-58-7	2-Chloronaphthalene	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
88-74-4	2-Nitroaniline	1000.	U	1000.	U	1000.	U	980.	U	1000.	U	1000.	U
131-11-3	Dimethylphthalate	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
208-96-8	Acenaphthylene	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
606-20-2	2,6-Dinitrotoluene	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
99-09-2	3-Nitroaniline	1000.	U	1000.	U	1000.	U	980.	U	1000.	U	1000.	U
83-32-9	Acenaphthene	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
51-28-5	2,4-Dinitrophenol	1000.	UJ	1000.	UJ	1000.	UJ	980.	UJ	1000.	UJ	1000.	UJ
100-02-7	4-Nitrophenol	1000.	U	1000.	U	1000.	U	980.	U	1000.	U	1000.	U
132-64-9	Dibenzofuran	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
121-14-2	2,4-Dinitrotoluene	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
84-66-2	Diethylphthalate	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
7005-72-3	4-Chlorophenylphenylether	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
86-73-7	Fluorene	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
100-01-6	4-Nitroaniline	1000.	UJ	1000.	UJ	1000.	UJ	980.	UJ	1000.	UJ	1000.	UJ
534-52-1	4,6-Dinitro-2-methylphenol	1000.	U	1000.	U	1000.	U	980.	U	1000.	U	1000.	U
86-30-6	N-Nitrosodiphenylamine	410.	UJ	410.	UJ	430.	UJ	400.	UJ	420.	UJ	430.	UJ
101-55-3	4-Bromophenylphenylether	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
118-74-1	Hexachlorobenzene	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
87-86-5	Pentachlorophenol	1000.	U	1000.	U	1000.	U	980.	U	1000.	U	1000.	U
85-01-8	Phenanthrene	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U

*** Validation Complete ***

NAS MEMPHIS
NAS MEMPHIS, RFI, ASSEMBLY A
Primary Samples

FD1303 / SVOA						
SAMPLE ID ------->	3BG-S-0003-10	4BG-S-0004-01	4BG-S-0004-11	5BG-S-0005-01	5BG-S-0005-10	5BG-C-0005-10
ORIGINAL ID ----->	3BGS000310	4BGS000401	4BGS000411	5BGS000501	5BGS000510	5BGC000510
LAB SAMPLE ID --->	115207	115307	115308	115349	115350	115351
SAMPLE DATE ----->	01/11/95	01/11/95	01/11/95	01/12/95	01/12/95	01/12/95
DATE EXTRACTED -->	01/17/95	01/17/95	01/18/95	01/17/95	01/17/95	01/17/95
DATE ANALYZED --->	01/25/95	01/25/95	01/25/95	01/25/95	01/25/95	01/25/95
MATRIX ---------->	Soil	Soil	Soil	Soil	Soil	Soil
UNITS ---------->	UG/KG A	UG/KG A	UG/KG A	UG/KG A	UG/KG A	UG/KG A

CAS #	Parameter												
120-12-7	Anthracene	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
86-74-8	Carbazole	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
84-74-2	Di-n-butylphthalate	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
206-44-0	Fluoranthene	410.	U	42.	J	430.	U	110.	J	420.	U	430.	U
129-00-0	Pyrene	410.	U	410.	U	430.	U	94.	J	420.	U	430.	U
85-68-7	Butylbenzylphthalate	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
91-94-1	3,3'-Dichlorobenzidine	410.	UJ	410.	UJ	430.	UJ	400.	UJ	420.	UJ	430.	UJ
56-55-3	Benzo(a)anthracene	410.	U	410.	U	430.	U	67.	J	420.	U	430.	U
218-01-9	Chrysene	410.	U	410.	U	430.	U	65.	J	420.	U	430.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
117-84-0	Di-n-octylphthalate	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
205-99-2	Benzo(b)fluoranthene	410.	U	410.	U	430.	U	81.	J	420.	U	430.	U
207-08-9	Benzo(k)fluoranthene	410.	U	410.	U	430.	U	76.	J	420.	U	430.	U
50-32-8	Benzo(a)pyrene	410.	U	410.	U	430.	U	93.	J	420.	U	430.	U
193-39-5	Indeno(1,2,3-cd)pyrene	410.	U	410.	U	430.	U	77.	J	420.	U	430.	U
53-70-3	Dibenzo(a,h)anthracene	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
191-24-2	Benzo(g,h,i)perylene	410.	U	410.	U	430.	U	95.	J	420.	U	430.	U
108-95-2	Phenol	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
111-44-4	bis(2-Chloroethyl)ether	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
95-57-8	2-Chlorophenol	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
541-73-1	1,3-Dichlorobenzene	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
106-46-7	1,4-Dichlorobenzene	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
95-50-1	1,2-Dichlorobenzene	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
95-48-7	2-Methylphenol (o-Cresol)	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
106-44-5	4-Methylphenol (p-Cresol)	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U
98-95-3	Nitrobenzene	410.	U	410.	U	430.	U	400.	U	420.	U	430.	U

FD1303 TPH						
SAMPLE ID ------->	1BG-S-0001-00	1BG-S-0001-01	1BG-S-0001-10	2BG-S-0002-01	2BG-S-0002-10	3BG-S-0003-01
ORIGINAL ID ----->	1BG2000100	1BGS000101	1BGS000110	2BGS000201	2BGS000210	3BGS000301
LAB SAMPLE ID --->	115300	115198	115199	115341	115342	115200
SAMPLE DATE ----->	01/11/95	01/09/95	01/09/95	01/12/95	01/12/95	01/10/95
DATE EXTRACTED -->	01/27/95	01/27/95	01/27/95	01/27/95	01/27/95	01/27/95
DATE ANALYZED --->	01/30/95	01/27/95	01/27/95	01/30/95	01/30/95	01/27/95
MATRIX ---------->	Soil	Soil	Soil	Soil	Soil	Soil
UNITS ---------->	MG/KG A	MG/KG A	MG/KG A	MG/KG A	MG/KG A	MG/KG A
CAS # Parameter						
9999900-02-4 Petroleum Hydrocarbons, TPH	67. U	82. U	84. U	87. U	83. U	88. U

*** Validation Complete ***

NAS MEMPHIS
NAS MEMPHIS, RFI, ASSEMBLY A
Primary Samples

FD1303 TPH						
SAMPLE ID ------->	3BG-S-0003-10	4BG-S-0004-01	4BG-S-0004-11	5BG-S-0005-01	5BG-S-0005-10	5BG-C-0005-10
ORIGINAL ID ----->	3BGS000310	4BGS000401	4BGS000411	5BGS000501	5BGS000510	5BGC000510
LAB SAMPLE ID --->	115201	115301	115302	115343	115344	115345
SAMPLE DATE ----->	01/10/95	01/11/95	01/11/95	01/12/95	01/12/95	01/12/95
DATE EXTRACTED -->	01/27/95	01/27/95	01/27/95	01/27/95	01/27/95	01/27/95
DATE ANALYZED --->	01/27/95	01/30/95	01/30/95	01/30/95	01/30/95	01/30/95
MATRIX ---------->	Soil	Soil	Soil	Soil	Soil	Soil
UNITS ---------->	MG/KG A	MG/KG A	MG/KG A	MG/KG A	MG/KG A	MG/KG A
CAS # Parameter						
9999900-02-4 Petroleum Hydrocarbons, TPH	82. U	81. U	85. U	82. U	85. U	84. U

*** Validat Complete ***

NAS MEMPHIS
NAS MEMPHIS, RFI, ASSEMBLY A
Primary Samples

FD1303 VOA	SAMPLE ID ------>	1BG-S-0001-00		1BG-S-0001-01		1BG-S-0001-10		2BG-S-0002-01		2BG-S-0002-10		3BG-S-0003-01	
	ORIGINAL ID ----->	1BG2000100		1BGS000101		1BGS000110		2BGS000201		2BGS000210		3BGS000301	
	LAB SAMPLE ID --->	115306		115204		115205		115347		115348		115206	
	SAMPLE DATE ----->	01/11/95		01/09/95		01/09/95		01/12/95		01/12/95		01/10/95	
	DATE ANALYZED --->	01/18/95		01/17/95		01/17/95		01/17/95		01/17/95		01/17/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG	A	UG/KG	A	UG/KG	A	UG/KG	A	UG/KG	A	UG/KG	A
CAS #	Parameter												
74-87-3	Chloromethane	1400.	U	13.	UJ	13.	UJ	13.	UJ	12.	UJ	12.	UJ
74-83-9	Bromomethane	1400.	U	13.	U	13.	U	13.	U	12.	U	12.	U
75-01-4	Vinyl chloride	1400.	U	13.	UJ	13.	UJ	13.	UJ	12.	UJ	12.	UJ
75-00-3	Chloroethane	1400.	U	13.	UJ	13.	UJ	13.	UJ	12.	UJ	12.	UJ
75-09-2	Methylene chloride	1400.	U	13.	U	13.	U	13.	U	12.	U	12.	U
67-64-1	Acetone	1400.	UJ	13.	U	13.	U	13.	U	12.	U	12.	U
75-15-0	Carbon disulfide	1400.	U	13.	U	13.	U	13.	U	12.	U	12.	U
75-35-4	1,1-Dichloroethene	1400.	U	13.	U	13.	U	13.	U	12.	U	12.	U
75-34-3	1,1-Dichloroethane	1400.	U	13.	U	13.	U	13.	U	12.	U	12.	U
540-59-0	1,2-Dichloroethene (total)	1400.	U	13.	U	13.	U	13.	U	12.	U	12.	U
67-66-3	Chloroform	1400.	U	13.	U	13.	U	13.	U	12.	U	12.	U
107-06-2	1,2-Dichloroethane	1400.	U	13.	U	13.	U	13.	U	12.	U	12.	U
78-93-3	2-Butanone (MEK)	1400.	U	13.	UJ	13.	UJ	13.	UJ	12.	UJ	12.	UJ
71-55-6	1,1,1-Trichloroethane	1400.	U	13.	U	13.	U	13.	U	12.	U	12.	U
56-23-5	Carbon tetrachloride	1400.	U	13.	U	13.	U	13.	U	12.	U	12.	U
75-27-4	Bromodichloromethane	1400.	U	13.	U	13.	U	13.	U	12.	U	12.	U
78-87-5	1,2-Dichloropropane	1400.	U	13.	U	13.	U	13.	U	12.	U	12.	U
10061-01-5	cis-1,3-Dichloropropene	1400.	U	13.	U	13.	U	13.	U	12.	U	12.	U
79-01-6	Trichloroethene	1400.	U	13.	U	13.	U	13.	U	12.	U	12.	U
124-48-1	Dibromochloromethane	1400.	U	13.	U	13.	U	13.	U	12.	U	12.	U
79-00-5	1,1,2-Trichloroethane	1400.	U	13.	U	13.	U	13.	U	12.	U	12.	U
71-43-2	Benzene	1400.	U	13.	U	13.	U	13.	U	12.	U	12.	U
10061-02-6	trans-1,3-Dichloropropene	1400.	U	13.	U	13.	U	13.	U	12.	U	12.	U
75-25-2	Bromoform	1400.	U	13.	U	13.	U	13.	U	12.	U	12.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	1400.	U	13.	UJ	13.	UJ	13.	UJ	12.	UJ	12.	UJ
591-78-6	2-Hexanone	1400.	U	13.	UJ	13.	UJ	13.	UJ	12.	UJ	12.	UJ
127-18-4	Tetrachloroethene	1400.	U	13.	U	13.	U	13.	U	12.	U	12.	U
79-34-5	1,1,2,2-Tetrachloroethane	1400.	U	13.	U	13.	U	13.	U	12.	U	12.	U
108-88-3	Toluene	1400.	U	13.	U	13.	U	13.	U	12.	U	12.	U
108-90-7	Chlorobenzene	1400.	U	13.	U	13.	U	13.	U	12.	U	12.	U
100-41-4	Ethylbenzene	1400.	U	13.	U	13.	U	13.	U	12.	U	12.	U
100-42-5	Styrene	1400.	U	13.	U	13.	U	13.	U	12.	U	12.	U
1330-20-7	Xylene (Total)	1400.	U	13.	U	13.	U	13.	U	12.	U	12.	U

*** Validation Complete ***

NAS MEMPHIS
NAS MEMPHIS, RFI, ASSEMBLY A
Primary Samples

FD1303 / VOA													
	SAMPLE ID ------>	3BG-S-0003-10		4BG-S-0004-01		4BG-S-0004-11		5BG-S-0005-01		5BG-S-0005-10		5BG-C-0005-10	
	ORIGINAL ID ----->	3BGS000310		4BGS000401		4BGS000411		5BGS000501		5BGS000510		5BGC000510	
	LAB SAMPLE ID --->	115207		115307		115308		115349		115350		115351	
	SAMPLE DATE ----->	01/11/95		01/11/95		01/11/95		01/12/95		01/12/95		01/12/95	
	DATE ANALYZED --->	01/17/95		01/17/95		01/17/95		01/17/95		01/17/95		01/17/95	
	MATRIX ---------->	Soil		Soil		Soil		Soil		Soil		Soil	
	UNITS ---------->	UG/KG	A	UG/KG	A	UG/KG	A	UG/KG	A	UG/KG	A	UG/KG	A
CAS #	Parameter												
74-87-3	Chloromethane	12.	UJ	12.	UJ	13.	UJ	12.	UJ	13.	UJ	13.	UJ
74-83-9	Bromomethane	12.	U	12.	U	13.	U	12.	U	13.	U	13.	U
75-01-4	Vinyl chloride	12.	UJ	12.	UJ	13.	UJ	12.	UJ	13.	UJ	13.	UJ
75-00-3	Chloroethane	12.	UJ	12.	UJ	13.	UJ	12.	UJ	13.	UJ	13.	UJ
75-09-2	Methylene chloride	12.	U	12.	U	13.	U	12.	U	13.	U	13.	U
67-64-1	Acetone	12.	U	12.	U	13.	U	12.	U	13.	U	13.	U
75-15-0	Carbon disulfide	12.	U	12.	U	13.	U	12.	U	13.	U	13.	U
75-35-4	1,1-Dichloroethene	12.	U	12.	U	13.	U	12.	U	13.	U	13.	U
75-34-3	1,1-Dichloroethane	12.	U	12.	U	13.	U	12.	U	13.	U	13.	U
540-59-0	1,2-Dichloroethene (total)	12.	U	12.	U	13.	U	12.	U	13.	U	13.	U
67-66-3	Chloroform	12.	U	12.	U	13.	U	12.	U	13.	U	13.	U
107-06-2	1,2-Dichloroethane	12.	U	12.	U	13.	U	12.	U	13.	U	13.	U
78-93-3	2-Butanone (MEK)	12.	UJ	12.	UJ	13.	UJ	12.	UJ	13.	UJ	13.	UJ
71-55-6	1,1,1-Trichloroethane	12.	U	12.	U	13.	U	12.	U	13.	U	13.	U
56-23-5	Carbon tetrachloride	12.	U	12.	U	13.	U	12.	U	13.	U	13.	U
75-27-4	Bromodichloromethane	12.	U	12.	U	13.	U	12.	U	13.	U	13.	U
78-87-5	1,2-Dichloropropane	12.	U	12.	U	13.	U	12.	U	13.	U	13.	U
10061-01-5	cis-1,3-Dichloropropene	12.	U	12.	U	13.	U	12.	U	13.	U	13.	U
79-01-6	Trichloroethene	12.	U	12.	U	13.	U	12.	U	13.	U	13.	U
124-48-1	Dibromochloromethane	12.	U	12.	U	13.	U	12.	U	13.	U	13.	U
79-00-5	1,1,2-Trichloroethane	12.	U	12.	U	13.	U	12.	U	13.	U	13.	U
71-43-2	Benzene	12.	U	12.	U	13.	U	12.	U	13.	U	13.	U
10061-02-6	trans-1,3-Dichloropropene	12.	U	12.	U	13.	U	12.	U	13.	U	13.	U
75-25-2	Bromoform	12.	U	12.	U	13.	U	12.	U	13.	U	13.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	12.	UJ	12.	UJ	13.	UJ	12.	UJ	13.	UJ	13.	UJ
591-78-6	2-Hexanone	12.	UJ	12.	UJ	13.	UJ	12.	UJ	13.	UJ	13.	UJ
127-18-4	Tetrachloroethene	12.	U	12.	U	13.	U	12.	U	13.	U	13.	U
79-34-5	1,1,2,2-Tetrachloroethane	12.	U	12.	U	13.	U	12.	U	13.	U	13.	U
108-88-3	Toluene	12.	U	12.	U	13.	U	12.	U	13.	U	13.	U
108-90-7	Chlorobenzene	12.	U	12.	U	13.	U	12.	U	13.	U	13.	U
100-41-4	Ethylbenzene	12.	U	12.	U	13.	U	12.	U	13.	U	13.	U
100-42-5	Styrene	12.	U	12.	U	13.	U	12.	U	13.	U	13.	U
1330-20-7	Xylene (Total)	12.	U	12.	U	13.	U	12.	U	13.	U	13.	U

C K Y incorporated
Environmental Services

DATA VALIDATION REPORT

Parameters:	INORGANIC
Project	NAS Millington 0094/09000
Client:	Ensafe/Allen & Hoshall
Laboratory:	NET Atlantic, Inc. Cambridge Division
NET Job Nº:	95.00911, 95.00912, 95.00913, 95.00914, 95.00925, and 95.00926 (Level III Validation)
Case Nº:	FD1345

Sample Identification	Matrix
007GGM09MF	Water
007GMW03LS	Water
007GMW08LS	Water
4BGF031695	Water
4BGGMW04LF	Water
4BGGMW04LS	Water
4BGGMW04UF	Water
2BGE031795	Water
2BGF031795	Water
2BGGMW02LF	Water
2BGGMW02LS	Water
5BGF031795	Water
5BGGMW05LF	Water
5BGHMW05LF	Water
5BGGMW05LS	Water
003E032095	Water
003F032095	Water
003GGM06UF	Water
5BGGMW05UF	Water
2BGGMW02LFS	Water
2BGGMW02LFD	Water

INTRODUCTION

This data review report covers 21 water samples listed on the cover page. The analyses were per EPA Method 6010, 7421, 7841, 7060, 7470, 7740, and 9010 SW846, November 1986.

This review follows USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February, 1994).

Definition of Qualifiers:

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

NJ - The analysis indicates the presence of analyte that has been "tentatively identified: and the associated numerical value represents its approximate concentration.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

A table summarizing all data qualification flags is provided at the end of this report.

No raw data were checked for this SDG. The review was based on QC data.

I. HOLDING TIME

All criteria for laboratory contractual holding times were met.

Metal analyses were requested for samples 1BGE032095, 1BGF032095, 1BGGMW01LF, and 1BGHMW01LF on C.O.C. but were not analyzed by the laboratory.

II. CALIBRATION

Calibration curves were analyzed at the required frequency and met QC requirements.

CRDL standards for ICP and AA were analyzed and reported as required.

The frequency and analysis criteria of the calibration curve, initial calibration verification (ICV), and continuing calibration verification (CCV) were met.

Instrument detection limits (Form X), inter-element corrections (Form XI A & B) and linear range analysis (Form XII) were performed at required frequency.

III. BLANKS

The required frequency and criteria for blank analyses were met.

No contaminant above IDL was detected in the initial, continuing calibration, and preparation blanks except for the following:

Element	IDL (µg/L)	Initial Calibration Blank (µg/L)	Continuing Calibration Blank (µg/L)	Preparation Blank (µg/L)	Field, Trip, or Other Blank (µg/L)	Action Level (5 x highest blank) in (µg/L)	Samples Affected
Cadmium	3.0	-4.2		-4.2		21.0	All
Calcium	20.0			20.24		101.2	All
Iron	10.0			20.83		104.15	All
Lead	2.0				2.0	10.0	003GGM06UF
Silver	3.0		-4.6	-3.3		23.0	All
Zinc	5.0				5.3	26.5	007GGM09MF 007GMW03LS 007GMW08LS 4BGGMW04LF 4BGGMW04LS 4BGGMW04UF
Zinc	5.0				5.8	29.0	2BGGMW02LF 2BGGMW02LS 5BGGMW05LF 5BGHMW05LF 5BGGMW05LS

The sample data are qualified according to the contaminants found in the method blank(s). The qualified data are listed as follows:

Sample	Compound	Reported Concentration (ug/L)	Modified Final Concentration (ug/L)
2BGGMW02LS	Cd	5.0	5.0U
003GGM06UF	Pb	5.1	5.1U
007GGM09MF	Zn	7.1B	7.1U
4BGGMW04UF	Zn	5.4B	5.4U
2BGGMW02LF	Zn	11.2B	11.2U
5BGGMW05LF	Zn	5.1B	5.1U

IV. ICP INTERFERENCE CHECK SAMPLE (ICS)

The frequency and criteria for analysis were met.

Results for the ICP analyses of solution AB fell within 20% of the true value.

V. LABORATORY CONTROL SAMPLE (LCS)

The frequency and criteria for analysis were met.

VI. DUPLICATE SAMPLE ANALYSIS

Frequency and criteria for analysis were met.

VII. MATRIX SPIKE SAMPLE ANALYSIS

Spiked sample analysis was performed as required. The percent recoveries were within advisory limits of 75-125% except for the following:

Analyte	MS %R	Associated Samples	Flag
Se	129.5% (75-125%)	All	J(detect)/None(non-detect)

VIII. FURNACE ATOMIC ABSORPTION QC

The samples/elements for duplicate injection have %RSD within 20.0% except for the following:

The analytical spike recoveries were within QC limit of 85-115% except for the following:

Sample	Element	%R	QC Limit	Flag
MW02LF	Se	138.5	85-115%	J(detect)/UJ(non-detect)
GMW02LS	Se	76	85-115%	J(detect)/UJ(non-detect)
GMW05LF	Se	127	85-115%	J(detect)/UJ(non-detect)
GMW05UF	Se	117	85-115%	J(detect)/UJ(non-detect)
GGMW09MF	Se	124.5	85-115%	J(detect)/UJ(non-detect)
GMW08LS	Se	121.5	85-115%	J(detect)/UJ(non-detect)
GMW04UF	Se	117.5	85-115%	J(detect)/UJ(non-detect)
MW03LS	Tl	80	85-115%	J(detect)/UJ(non-detect)
GGM06UF	Tl	56	85-115%	J(detect)/UJ(non-detect)
MW02LF	As	118.5	85-115%	J(detect)/UJ(non-detect)
GGM06UF	As	117	85-115%	J(detect)/UJ(non-detect)
GMW04LS	Tl	78.0	85-115%	J(detect)/UJ(non-detect)
MW02LF	Pb	124.8	85-115%	J(detect)/UJ(non-detect)
GMW05LF	Pb	116.5	85-115%	J(detect)/UJ(non-detect)
HMW05LF	Pb	117.8	85-115%	J(detect)/UJ(non-detect)
GMW04LS	Pb	76.2	85-115%	J(detect)/UJ(non-detect)
GMW05UF	Pb	175.5	85-115%	J(detect)/UJ(non-detect)
GGM09MF	Pb	158	85-115%	J(detect)/UJ(non-detect)

IX. ICP SERIAL DILUTION

The frequency and criteria for analysis were met.

% D for the following was out of QC limit:

Element	IDL (µg/L)	50 x IDL (µg/L)	Sample #		%D	Associated Samples	Flag
			I (µg/L)	S (µg/L)			
Barium	2.0	100	155.45	130.60	16.0	All	J(detect)/None(non-detect)

X. SAMPLE RESULTS VERIFICATION

No raw data were reviewed.

XI. FIELD DUPLICATES

1 set of field duplicates was analyzed in this SDG. All detected analytes were within QC limit.

XII. OVERALL ASSESSMENT OF DATA

Field QC samples were used only to assess blank cross-contamination in the investigative samples.

Data flags have been summarized at the end of the report.

Inorganic Data Qualification Summary - SDG Nº FD1345

SDG Nº	Sample ID	Parameter	Flag	Reason
FD1345	ALL	Se	J(detect)/None(non-detect)	Matrix spike %R
FD1345	2BGGMW02LF	Se,Pb,As	J(detect)/UJ(non-detect)	Analytical spike %R
	2BGGMW02LS	Se	J(detect)/UJ(non-detect)	
	5BGGMW05LF	Se,Pb	J(detect)/UJ(non-detect)	
	5BGGMW05UF	Se,Pb	J(detect)/UJ(non-detect)	
	007GGM09MF	Se	J(detect)/UJ(non-detect)	
	007GMW08LS	Se	J(detect)/UJ(non-detect)	
	4BGGMW04UF	Se	J(detect)/UJ(non-detect)	
	007GMW03LS	Tl	J(detect)/UJ(non-detect)	
	003GGM06UF	Tl,As	J(detect)/UJ(non-detect)	
	5BGHMW05LF	Pb	J(detect)/UJ(non-detect)	
	4BGGMW04LS	Pb,Tl	J(detect)/UJ(non-detect)	
	007GGM09MF	Pb	J(detect)/UJ(non-detect)	
FD1345	ALL	Ba	J(detect)/None(non-detect)	Seral dilution %D
FD1345	2BGGMW02LS	Cd	U	Blank contamination
FD1345	003GGM06UF	Pb	U	Blank contamination
FD1345	007GGM09MF 4BGGMW04UF 2BGGMW02LF 5BGGMW05LF	Zn	U	Blank contamination

C K Y incorporated
Environmental Services

DATA VALIDATION REPORT

Parameters:	VOLATILE
Project	NAS Millington 0094/09000
Client:	Ensafe/Allen & Hoshall
Laboratory:	NET Atlantic, Inc. Cambridge Division
NET Job Nº:	95.00912, 95.914, 95.00926 (Level IV Validation)
Case Nº:	FD1345

Sample Identification	Matrix
003E032095	Water
003F032095	Water
003GGM06UF	Water
007GGM09MF	Water
007GMW01LS	Water
007GMW08LS	Water
007T031695	Water
2BGE031795	Water
2BGF031795	Water
2BGGMW02LF	Water
2BGGMW02LS	Water
4BGF031695	Water
4BGGMW04LF	Water
4BGGMW04LS	Water
4BGGMW040F	Water
5BGGMW05LF	Water
5BGGMW05LS	Water
5BGGMW05UF	Water
5BGHMW05LF	Water
5BGT031795	Water
2BGGMW02LFMS	Water
2BGGMW02LFMSD	Water

INTRODUCTION

This data review report covers 22 water samples listed on the cover page. The analyses were per EPA Method 8240 in SW846.

This review follows USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February, 1993). The subsections correlate to the above guidelines. In the event that the SW846 requirement is different from that of the guidelines, the guideline QC limit will be replaced by the SW846 QC limit.

Definition of Qualifiers:

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

NJ - The analysis indicates the presence of analyte that has been "tentatively identified: and the associated numerical value represents its approximate concentration.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

A table summarizing all data qualification flags is provided at the end of this report.

Raw data checks were carried out for this SDG, the review was based on full documentation.

I. TECHNICAL HOLDING TIME

All holding time requirements were met.

II. GC/MS INSTRUMENT PERFORMANCE CHECK

Instrument performance check was carried out at 12-hour intervals.

All ion abundance requirements were met.

III. INITIAL CALIBRATION

Initial calibrations were performed using required standard concentrations. QC methodology and criteria were applied.

For all compounds and surrogates, percent relative standard deviations (%RSD) for RRF and relative response factors (RRF) met QC requirements.

IV. CONTINUING CALIBRATION

Continuing calibrations were run at the required frequency.

The percent difference (%D) between the initial calibration RRF and the continuing calibration RRF and all of the continuing calibration RRF values met QC requirements except for the following:

Date/ Time	Instrument	Compound	%D (SW846 QC Limit)	Associated Samples	Flag
03/25/95 / 11:23	HP5970K	Chloromethane 2-Hexanone	36.7 (±25.0) 26.2 (±25.0)	007GGM09MF 007GMW01LS 007GMW08LS	J(detect)/UJ(non-detect)
03/27/95 / 11:27	HP5970K	Acetone	28.0 (±25.0)	003GGM06UF	J(detect)/UJ(non-detect)
03/24/95 / 10:36	HP5970K	Chloromethane	31.2 (±25.0)	4BGGMW04LF 4BGGMW04LS 4BGGMW04UF	J(detect)/UJ(non-detect)

V. BLANKS

The method blank analyses were performed at required frequencies. No contaminants were found in the method blank(s) that resulted in data qualifications.

The field blank analyses were performed at required frequencies. Contaminants found in the field blank(s) that resulted in data qualifications are listed as follow:

Date	Blank	Compound	Concentration (ug/L)	Action Level (ug/L)		Samples Affected	Flag	Modified Final Concentration (ug/L)
				5 x	10 x			
03/20/95	5BGF031795	Acetone	8J		80	2BGGMW02LS 5BGGMW05LF 5BGGMW05LS	17 3J 3J	17U 10U 10U

Date	Blank	Compound	Concentration (ug/L)	Action Level (ug/L)		Samples Affected	Flag	Modified Final Concentration (ug/L)
				5 x	10 x			
03/20/95	5BGT031795	Acetone	12		120	2BGGMW02LS 5BGGMW05LF 5BGGMW05LS	17 3J 3J	17U 10U 40U

VI. SYSTEM MONITORING COMPOUNDS

System monitoring compounds were added to all samples and blanks as required by the SW846.

All system monitoring compound recoveries met QC requirements.

VII. MATRIX SPIKES/MATRIX SPIKE DUPLICATES

1 set of matrix spike (MS) and matrix spike duplicate (MSD) was analyzed at required frequencies. Spike recoveries and relative percent difference were within advisory limits except for the following:

Sample	Spiked Compound	MS %R (Limit)	MSD %R (Limit)	RPD (Limit)	Flag
2BGGMW02LF	Trichloroethene Benzene Toluene	127 (71-120) 134 (76-127)	131 (71-120) 144 (76-127) 133 (76-125)		J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect)

VIII. LABORATORY CONTROL SAMPLES

LCS not required by SW846.

IX. REGIONAL QUALITY ASSURANCE AND QUALITY CONTROL

Not applicable.

X. INTERNAL STANDARDS

All internal standard areas and retention times met QC requirements.

XI. TARGET COMPOUND IDENTIFICATION

The RRT, mass spectra, and chromatograms of reported compounds were examined and evaluated. Target compound identification met QC requirements.

XII. COMPOUND QUANTITATION AND REPORTED CRQLs

All sample results were checked against raw data to verify the correct calculation. The CRQLs of all samples were checked to make sure that they reflected all sample dilution, concentrations, split, clean-up activities, and dry weight factors. Compound quantitation and reported CRQLs met QC requirements.

XIII. TENTATIVELY IDENTIFIED COMPOUNDS

The chromatograms and mass spectra in every sample and blank were examined to verify the reported TIC. Their quantitations were reported according to SW846. Tentatively identified compounds met QC requirements.

XIV. SYSTEM PERFORMANCE

The on-going data acquisition during the period following the Instrument Performance QC Checks (e.g. blanks, tuning, and calibration) was thoroughly evaluated. System performance met QC requirements.

XV. FIELD DUPLICATES

1 set of field duplicates was analyzed in this SDG. All detected analytes were within QC limit.

XVI. OVERALL ASSESSMENT OF DATA

Data flags have been summarized at the end of the report.

Volatile Data Qualification Summary - SDG Nº FD1345

SDG Nº	Sample ID	Parameter	Flag	Reason
FD1345	007GGM09MF 007GMW01LS 007GMW08LS	Chloromethane 2-Hexanone	J(detect)/UJ(non-detect)	CC %D
FD1345	003GGM06UF	Acetone	J(detect)/UJ(non-detect)	CC %D
FD1345	2BGGMW02LS 5BGGMW05LF 5BGGMW05LS	Acetone	17U 10U 10U	FB Contamination
FD1345	2BGGMW02LF	Trichloroethene Benzene Toluene	J(detect)/UJ(non-detect)	MS/MSD R%
FD1345	4BGGMW04LF 4BGGMW04LS 4BGGMW04UF	Chloromethane	J(detect)/UJ(non-detect)	CC %D

C K Y incorporated
Environmental Services

DATA VALIDATION REPORT (Revision 1)

Parameters:	SEMIVOLATILE
Project	NAS Millington 0094/09000
Client:	Ensafe/Allen & Hoshall
Laboratory:	NET Atlantic, Inc. Cambridge Division
NET Job Nº:	95.00912, 95.00914, and 95.00926 (Level III Validation)
Case Nº:	FD1345

Sample Identification	Matrix
003E032095	Water
003F032095	Water
003GGM06UF	Water
007GGM09MF	Water
007GMW08LS	Water
2BGE031795	Water
2BGF031795	Water
2BGGMW02LF	Water
2BGGMW02LS	Water
4BGF031695	Water
4BGGMW04LF	Water
4BGGMW04LS	Water
4BGGMW04UF	Water
5BGT031795	Water
5BGGMW05LF	Water
5BGGMW05LS	Water
5BGGMW05UF	Water
5BGHMW05LF	Water
2BGGMW02LFMS	Water
2BGGMW02LFMSD	Water

INTRODUCTION

This data review report covers 20 water samples listed on the cover page. The analyses were per EPA Method 8270 in SW846.

This review follows USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February, 1993). The subsections correlate to the above guidelines. In the event that the SW846 requirement is different from that of the guidelines, the guideline QC limit will be replaced by the SW846 QC limit.

Definition of Qualifiers:

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

NJ - The analysis indicates the presence of analyte that has been "tentatively identified: and the associated numerical value represents its approximate concentration.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

A table summarizing all data qualification flags is provided at the end of this report.

No raw data were checked for this SDG. The review was based on QC data.

I. TECHNICAL HOLDING TIME

All holding time requirements were met.

II. GC/MS INSTRUMENT PERFORMANCE CHECK

Instrument performance check was carried out at 12-hour intervals.

All ion abundance requirements were met.

III. INITIAL CALIBRATION

Initial calibrations were performed using required standard concentrations. QC methodology and criteria were applied.

For all compounds and surrogates, percent relative standard deviations (%RSD) for RRF and relative response factors (RRF) met QC requirements except for the following:

Date	Instrument	Compound	%RSD (SW846 QC Limit)	Associated Samples	Flag
02/21/95	HP5970F	Hexachlorocyclopentadiene	43.7 (<30)	All	J(detect)/UJ(non-detect)

IV. CONTINUING CALIBRATION

Continuing calibrations were run at the required frequency.

The percent difference (%D) between the initial calibration RRF and the continuing calibration RRF and all of the continuing calibration RRF values met QC requirements except for the following:

Date	Instrument	Compound	%D (SW846 QC Limit)	Associated Samples	Flag
03/28/95 14:13	HP5907F	2,4-Dinitrophenol 4-Nitrophenol Pentachlorophenol Benzo(k)fluoranthene Benzo(a)pyrene	32.9 (±25.0) 40.1 (±25.0) 30.2 (±25.0) -28.2 (±25.0) -27.6 (±25.0)	007GGM09MF 007GMW08LS	J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect)
03/29/95 13:43	HP5907F	2,4-Dinitrophenol 4-Nitrophenol Benzo(k)fluoranthene Benzo(a)pyrene	68.1 (±25.0) 40.6 (±25.0) 25.1 (±25.0) -27.1 (±25.0)	4BGGMW04LF 4BGGMW04LS 4BGGMW04UF 2BGGMW02LF 2BGGMW02LS 5BGGMW05LF 5BGGMW05LS 5BGGMW05UF	J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect)
04/04/95 10:42	HP5907F	2,2-Oxybis(1-Chlorpropane) 2,4-Dinitrophenol 4-Nitrophenol Benzo(k)fluoranthene	33.9 (±25.0) 33.5 (±25.0) 34.3 (±25.0) -30.6 (±25.0)	003GGM06UF	J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect)

V. BLANKS

The method blank analyses were performed at required frequencies. No contaminant was found in the method blank(s) that resulted in data qualifications.

The field blank analyses were performed at required frequencies. Contaminants found in the field blank(s) that resulted in data qualifications are listed as follow:

Date	Blank	Compound	Action Level (ug/L)		Samples Affected	Reported Concentration (x/x)	Modified Final Concentration (x/x)
			5 x	10 x			
03/29/95	2BGF031795	bis(2-ethylhexyl)phthalate	3J	30	5BGHMW05LF	3J	10U

VI. SURROGATE SPIKES

Surrogate spikes were added to all samples and blanks as required by the SW846.

All surrogate spike recoveries met QC requirements except for the following:

Sample	Surrogate Spike Compound	%R	QC Limit	Compounds Affected	Flag
2BGGMW02LF	2-Fluorophenol 2,4,6-Tribromophenol 2-Chlorophenol-d4	6 7 26	21-110 10-123 33-110	All acid compounds	J(detect)/UR(non-detect)

VII. MATRIX SPIKES/MATRIX SPIKE DUPLICATES

10 set of matrix spike (MS) and matrix spike duplicate (MSD) was analyzed at required frequencies. Spike recoveries and relative percent difference were within advisory limits except for the following:

Sample	Spiked Compound	MS %R (Limit)	MSD %R (Limit)	RPD (Limit)	Flag
2BGGMW02LF	2-Chlorophenol Pentachlorophenol	10 (27-123) 7 (9-103)	16 (27-123)	46 (<40)	J(detect)/UJ(non-detect)

VIII. LABORATORY CONTROL SAMPLES

LCS not required by SW846.

IX. REGIONAL QUALITY ASSURANCE AND QUALITY CONTROL

Not applicable.

X. INTERNAL STANDARDS

All internal standard areas and retention times met QC requirements.

XI. TARGET COMPOUND IDENTIFICATION

No raw data were reviewed.

XII. COMPOUND QUANTITATION AND REPORTED CRQLs

No raw data were reviewed.

XIII. TENTATIVELY IDENTIFIED COMPOUNDS

No raw data were reviewed.

XIV. SYSTEM PERFORMANCE

No raw data were reviewed.

XV. FIELD DUPLICATES

1 set of field duplicates was analyzed in this SDG. No target analytes were detected in any of the samples.

XVI. OVERALL ASSESSMENT OF DATA

Field QC samples were used only to assess blank cross-contamination in the investigative samples.

Data flags have been summarized at the end of the report.

Semivolatile Data Qualification Summary - SDG Nº FD1345

SDG Nº	Sample ID	Parameter	Flag	Reason
FD1345	All	Hexachlorocyclopentadiene	J(detect)/UJ(non-detect)	IC %RSD
FD1345	007GGM09MF 007GMW08LS	2,4-Dinitrophenol 4-Nitrophenol Pentachlorophenol Benzo(k)fluoranthene Benzo(a)pyrene	J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect)	CCV %D
FD1345	4BGGMW04LF 4BGGMW04LS 4BGGMW04UF 2BGGMW02LF 2BGGMW02LS 5BGGMW05LF 5BGHMW05LF 5BGGMW05LS 5BGGMW05UF	2,4-Dinitrophenol 4-Nitrophenol Pentachlorophenol Benzo(k)fluoranthene	J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect)	CCV %D
FD1345	003GGM06UF	2,2-Oxybis(1-chloropropane) 2,4-Dinitrophenol 4-Nitrophenol Benzo(k)fluoranthene	J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect)	CCV %D
FD1345	2BGGMW02LF	All acid compounds	J(detect)/UR(non-detect)	Surrogate %R
FD1345	2BGGMW02LF	2-Chlorophenol Pentachlorophenol	J(detect)/UJ(non-detect)	MS/MSD %R and RPD
FD1345	5BGHMW05LF	Bis(2ethylhexyl)phthalate	10U	Field Blank Contamination

C K Y incorporated
Environmental Services

DATA VALIDATION REPORT

Parameters: ORGANOCHLORINE PESTICIDES/PCBs

Project: NAS Millington 0094/09000

Client: Ensafe/Allen & Hoshall

Laboratory: NET Atlantic, Inc.
Cambridge Division

NET Job Nº: 95.00912, 95.00914, and 95.00926 (Level III Validation)

Case Nº: FD1345

Sample Identification	Matrix
003E032095	Water
003F032095	Water
003GGM06UF	Water
007GGM09MF	Water
007GGM08LS	Water
2BGE031795	Water
2BGF031795	Water
2BGGMW02LF	Water
2BGGMW02LS	Water
4BGF031695	Water
4BGGMW04LF	Water
4BGGMW04LS	Water
4BGGMW04UF	Water
5BGF031795	Water
5BGGMW05LF	Water
5BGGMW05LS	Water
5BGGMW05UF	Water
5BGHMW05LF	Water
2BGGMW02LFMS	Water
2BGGMW02LFMSD	Water

INTRODUCTION

This data review report covers 20 water samples listed on the cover page. The analyses were per EPA Method 8080 in SW846, November 1986.

This review follows the approach of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February, 1993).

Definition of Qualifiers:

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

NJ - The analysis indicates the presence of analyte that has been "tentatively identified: and the associated numerical value represents its approximate concentration.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

A table summarizing all data qualification flags is provided at the end of this report.

No raw data checks were carried out for this SDG, the review was based on QC data.

I. HOLDING TIME

All holding time requirements were met.

II. ANALYTICAL SEQUENCE

Standards, blanks, and sample extracts were analyzed according to the required analytical sequence and frequency.

The retention time of TCX and DCB were within the QC limit.

III. INITIAL CALIBRATION

Initial calibration of single and multi-component analytes were performed for both columns.

The retention time windows for both columns were established according to the SW846 (Form 6D).

Peaks for multi-component analytes were properly identified (Form 6F).

The %RSDs for calibration factors of single component analytes for the primary column were within QC limits (Form 6E).

IV. CALIBRATION VERIFICATION

Calibration verifications were performed at required frequencies and sequence for both columns. %Ds for the primary column were within QC limit except for the following:

Date/ Time	Standard	Compound	%D Primary Column (XT-15)	%D Secondary Column (RTX35)	QC Limit	Associated Samples	Flag
03/30/95 1:20	INDBM10	Endrin Aldehyde	-18.37		±15.0	4BGGMW04LS 4BGGMW04UF	J(detect)/UJ(non-detect)
03/31/95 15:29 17:59	1NDAM13 2NDBM13	Methoxychlor Endrin Aldehyde Endrin Ketone	-17.74 -21.53 -15.95		±15.0 ±15.0 ±15.0	5BGGMW05LF 5BGHMW05LF 5BGGMW05LS 5BGGMW05UF 003GGM06UF	J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect)
04/01/95 1:13	1NDBM14	Endrin Aldehyde	-18.73		±15.0	003GGM06UF	J(detect)/UJ(non-detect)

V. BLANKS

Instrument blank(s) was/were performed at the required frequency. RT windows were all within QC limit.

The method blank(s) was/were extracted and performed according to the SW846. No contaminant was found in the method blank(s) that resulted in data qualifications.

The field blank analyses were performed at required frequencies.

VI. SURROGATE SPIKES

Surrogate spikes were analyzed as required by the SW846. Surrogate spike recoveries were within QC limits.

VII. MATRIX SPIKES/MATRIX SPIKE DUPLICATES

1 set of matrix spike (MS) and matrix spike duplicate (MSD) was analyzed at required frequencies. Spike recoveries and relative percent difference were within advisory limits.

VIII. LABORATORY CONTROL SAMPLES

No laboratory control samples were reported for this SDG.

IX. COMPOUND IDENTIFICATION

Form I, and the identification summary (Form X) were reviewed and all compounds were properly identified.

X. FLORISIL CARTRIDGE CHECK

The %R for florisil cartridge check were within QC limits.

The florisil clean up was applied to all samples, blanks, MS, and MSD.

XI. COMPOUND QUANTITATION AND REPORTED CRQLs

No raw data were reviewed.

XII. FIELD DUPLICATES

1 set of field duplicates was analyzed in this SDG. No target analytes were detected in any of the samples.

XIII. OVERALL ASSESSMENT OF DATA

Field QC samples were used only to assess blank cross-contamination in the investigative samples.

Data flags have been summarized at the end of the report.

Organochlorine Pesticide/PCBs Data Qualification Summary - SDG N° FD1345

SDG N°	Sample ID	Parameter	Flag	Reason
FD1345	4BGGMW04LS 4BGGMW04UF	Endrin Aldehyde	J(detect)/UJ(non-detect)	CCV D%
FD1345	5BGGMW05LF 5BGHMW05LF 5BGGMW05LS 5BGGMW05UF 003GGM06UF	Methoxychlor Endrin Aldehyde Endrin Ketone	J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect)	CCV D%
FD1345	003GGM06UF	Endrin Aldehyde	J(detect)/UJ(non-detect)	CCV D%

C K Y incorporated
Environmental Services

DATA VALIDATION REPORT

Parameters:	ORGANOPHOSPHORUS PESTICIDES
Project	NAS Millington 0094/09000
Client:	Ensafe/Allen & Hoshall
Laboratory:	NET Atlantic, Inc. Cambridge Division
NET Job Nº:	95.00911, 95.00913, and 95.00925 (Level III Validation)
Case Nº:	FD1345

Sample Identification	Matrix
007GGM09MF	Water
4BGF031695	Water
4BGGMW04LF	Water
4BGGMW04LS	Water
4BGGMW04UF	Water
2BGE031795	Water
2BGF031795	Water
2BGGMW02LF	Water
2BGGMW02LS	Water
5BGF031795	Water
5BGGMW05LF	Water
5BGHMW05LF	Water
5BGGMW05LS	Water
5BGGMW05UF	Water
003E032095	Water
003F032095	Water
003GGM06UF	Water
007GMW08LSRE	Water
2BGGMW02LFMS	Water
2BGGMW02LFMSD	Water

INTRODUCTION

This data review report covers 20 water samples listed on the cover page. The analyses were per EPA Method 8140, SW846, November 1986.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February, 1993) as there are no current guidelines for evaluating chlorinated pesticides.

Definition of Qualifiers:

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

NJ - The analysis indicates the presence of analyte that has been "tentatively identified: and the associated numerical value represents its approximate concentration.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

A table summarizing all data qualification flags is provided at the end of this report.

No raw data checks were carried out for this SDG, the review was based on QC data.

I. TECHNICAL HOLDING TIME

All holding time requirements were met except for the following:

Sample	Matrix	Date of Collection	Date of Extraction	Date of Analysis	Extraction Holding Time (QC Limit/Days)	Flag
007GMW08LSRE	Water	03/16/95	03/31/95	04/10/95	15(7)	J(detect)/UJ(non-detect)

007GMW08LSRE is a re-extracted sample. The data of the original sample was not included in this package. Therefore, whether or not data for the re-extracted sample should be used cannot be evaluated.

II. ANALYTICAL SEQUENCE

Standards, blanks, and sample extracts were analyzed according to the required analytical sequence and frequency.

III. INITIAL CALIBRATION

Initial calibration of analytes were performed for both columns.

The %RSDs for calibration factors of single component analytes for the primary column were within QC limits (Form 6B) except for the following:

Date/ Time	Standard/ Column	Compounds	%RSD (RTX35) Primary Column	QC Limit	Samples Affected	Flag
03/23/95 00:05	RF250 RF500 RF1000 RF2000 RF4000	Naled Merphos Fensulfothion Guthion	20.2 48.7 23.6 34.1	±20.0 ±20.0 ±20.0 ±20.0	007GGM09MF 4BGGMW04LF 4BGGMW04LS 4BGGMW04UF 2BGGMW02LF 2BGGMW02LS 5BGGMW05LF 5BGHMW05LF 5BGGMW05LS 5BGGMW05UF 003GGM06UF	J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect)
04/04/95	RF250 RF500 RF1000 RF2000 RF4000	Mevinphos, Alpha Fensulfothion Guthion	28.3 31.9 26.5	±20.0 ±20.0 ±20.0	007GMW08LSRE	J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect)

IV. CALIBRATION VERIFICATION

Calibration verifications were performed at required frequencies and sequence for both columns. %Ds for the primary column were within QC limit (Form 7B) except for the following:

Date/ Time	Standard	Compound	%D Primary Column	QC Limit	Associated Samples	Flag

1/95	RF1000	Dichlorvos	-166.9 (RTX35)	±15.0	007GGM09MF	J(detect)/UJ(non-detect)
		Mevinphos, Alpha	-109.7 (RTX35)	±15.0	48GGMW04LF	J(detect)/UJ(non-detect)
		Demeton, O	29.6 (RTX35)	±15.0	48GGMW04LS	J(detect)/UJ(non-detect)
		Ethoprop	20.3 (RTX35)	±15.0	48GGMW04UF	J(detect)/UJ(non-detect)
		Naled	-34.9 (RTX35)	±15.0		J(detect)/UJ(non-detect)
		Trichloronate	46.4 (RTX35)	±15.0		J(detect)/UJ(non-detect)
		Merphos	-18.2 (RTX35)	±15.0		J(detect)/UJ(non-detect)
		Tokuthion	49.2 (RTX35)	±15.0		J(detect)/UJ(non-detect)
		Stirophos	-54.9 (RTX35)	±15.0		J(detect)/UJ(non-detect)
		Sulprofos	47.7 (RTX35)	±15.0		J(detect)/UJ(non-detect)
		Guthion	42.6 (RTX35)	±15.0		J(detect)/UJ(non-detect)
03/31/95 15:31	RF1000	Dichlorvos	-141.0 (RTX35)	±15.0	007GGM09MF	J(detect)/UJ(non-detect)
		Mevinphos, Alpha	-87.5 (RTX35)	±15.0	48GGMW04LF	J(detect)/UJ(non-detect)
		Demeton, O	47.2 (RTX35)	±15.0	48GGMW04LS	J(detect)/UJ(non-detect)
		Ethoprop	46.0 (RTX35)	±15.0	48GGMW04UF	J(detect)/UJ(non-detect)
		Naled	-28.4 (RTX35)	±15.0		J(detect)/UJ(non-detect)
		Methyl parathion	-20.1 (RTX35)	±15.0		J(detect)/UJ(non-detect)
		Ronnel	18.8 (RTX35)	±15.0		J(detect)/UJ(non-detect)
		Trichloronate	55.8 (RTX35)	±15.0		J(detect)/UJ(non-detect)
		Merphos	200.0 (RTX35)	±15.0		J(detect)/UJ(non-detect)
		Tokuthion	38.8 (RTX35)	±15.0		J(detect)/UJ(non-detect)
		Fensulfothion	32.0 (RTX35)	±15.0		J(detect)/UJ(non-detect)
		Stirophos	-153.7 (RTX35)	±15.0		J(detect)/UJ(non-detect)
		Sulprofos	56.6(RTX35)	±15.0		J(detect)/UJ(non-detect)
		Guthion	57.3(RTX35)	±15.0		J(detect)/UJ(non-detect)
		Coumophos	23.8(RTX35)	±15.0		J(detect)/UJ(non-detect)
03/31/95 16:51	RF1000	Dichlorvos	-127.8 (RTX35)	±15.0	28GGMW02LF	J(detect)/UJ(non-detect)
		Mevinphos, Alpha	-93.4 (RTX35)	±15.0	28GGMW02LS	J(detect)/UJ(non-detect)
		Demeton, O	43.5 (RTX35)	±15.0		J(detect)/UJ(non-detect)
		Ethoprop	38.4 (RTX35)	±15.0		J(detect)/UJ(non-detect)
		Naled	200.0 (RTX35)	±15.0		J(detect)/UJ(non-detect)
		Disulfoton	23.2 (RTX35)	±15.0		J(detect)/UJ(non-detect)
		Ronnel	21.4 (RTX35)	±15.0		J(detect)/UJ(non-detect)
		Trichloronate	58.1 (RTX35)	±15.0		J(detect)/UJ(non-detect)
		Merphos	26.8 (RTX35)	±15.0		J(detect)/UJ(non-detect)
		Tokuthion	55.1 (RTX35)	±15.0		J(detect)/UJ(non-detect)
		Fensulfothion	26.3 (RTX35)	±15.0		J(detect)/UJ(non-detect)
		Stirophos	-31.8 (RTX35)	±15.0		J(detect)/UJ(non-detect)
		Sulprofos	59.4(RTX35)	±15.0		J(detect)/UJ(non-detect)
		Guthion	63.1(RTX35)	±15.0		J(detect)/UJ(non-detect)
		Coumophos	23.2(RTX35)	±15.0		J(detect)/UJ(non-detect)
04/01/95 8:44	RF1000	Dichlorvos	-55.1 (RTX35)	±15.0	28GGMW02LF	J(detect)/UJ(non-detect)
		Mevinphos, Alpha	-25.0 (RTX35)	±15.0	28GGMW02LS	J(detect)/UJ(non-detect)
		Demeton, O	59.2 (RTX35)	±15.0	58GGMW05LF	J(detect)/UJ(non-detect)
		Ethoprop	62.8 (RTX35)	±15.0	58GHMW05LF	J(detect)/UJ(non-detect)
		Naled	200.0 (RTX35)	±15.0	58GGMW05LS	J(detect)/UJ(non-detect)
		Phorate	39.8 (RTX35)	±15.0	58GHMW05UF	J(detect)/UJ(non-detect)
		Demeton-S	46.7 (RTX35)	±15.0	003GGM06UF	J(detect)/UJ(non-detect)
		Diazinon	46.7 (RTX35)	±15.0		J(detect)/UJ(non-detect)
		Disulfoton	54.5 (RTX35)	±15.0		J(detect)/UJ(non-detect)
		Methyl parathion	30.8 (RTX35)	±15.0		J(detect)/UJ(non-detect)
		Ronnel	47.1 (RTX35)	±15.0		J(detect)/UJ(non-detect)
		Fenthion	42.3 (RTX35)	±15.0		J(detect)/UJ(non-detect)
		Chloropyritos	39.2 (RTX35)	±15.0		J(detect)/UJ(non-detect)
		Trichloronate	72.4 (RTX35)	±15.0		J(detect)/UJ(non-detect)
		Merphos	45.1 (RTX35)	±15.01		J(detect)/UJ(non-detect)
		Tokuthion	45.8 (RTX35)	±15.01		J(detect)/UJ(non-detect)
		Fensulfothion	58.3 (RTX35)	±15.01		J(detect)/UJ(non-detect)
		Sulprofos	73.9 (RTX35)	±15.01		J(detect)/UJ(non-detect)
		Guthion	75.2 (RTX35)	±15.01		J(detect)/UJ(non-detect)
		Coumophos	58.8 (RTX35)	±15.01		J(detect)/UJ(non-detect)

04/01/95 19:18	RF1000	Dichlorvos	-85.1 (RTX35)	±15.01	5BGGMW05LF	J(detect)/UJ(non-detect)
		Mevinphos, Alpha	-26.0 (RTX35)	±15.01	5BGHMW05LF	J(detect)/UJ(non-detect)
		Demeton, O	58.8 (RTX35)	±15.01	5BGHMW05LS	J(detect)/UJ(non-detect)
		Ethoprop	66.7 (RTX35)	±15.01	5BGHMW05UF	J(detect)/UJ(non-detect)
		Naled	200.0 (RTX35)	±15.01	003GGM06UF	J(detect)/UJ(non-detect)
		Phorate	48.7 (RTX35)	±15.01		J(detect)/UJ(non-detect)
		Demeton-S	51.8 (RTX35)	±15.01		J(detect)/UJ(non-detect)
		Diazinon	58.3 (RTX35)	±15.01		J(detect)/UJ(non-detect)
		Disulfonton	58.5 (RTX35)	±15.01		J(detect)/UJ(non-detect)
		Methyl parathion	50.2 (RTX35)	±15.01		J(detect)/UJ(non-detect)
		Ronnel	45.5 (RTX35)	±15.01		J(detect)/UJ(non-detect)
		Fenthion	48.3 (RTX35)	±15.01		J(detect)/UJ(non-detect)
		Chlorpyritos	57.4 (RTX35)	±15.01		J(detect)/UJ(non-detect)
		Trichloronate	72.5 (RTX35)	±15.01		J(detect)/UJ(non-detect)
		Merphos	53.2 (RTX35)	±15.01		J(detect)/UJ(non-detect)
		Tokuthion	68.1 (RTX35)	±15.01		J(detect)/UJ(non-detect)
		Fensulfothion	63.0 (RTX35)	±15.01		J(detect)/UJ(non-detect)
		Sulprofos	73.0 (RTX35)	±15.01		J(detect)/UJ(non-detect)
		Guthion	78.2 (RTX35)	±15.01		J(detect)/UJ(non-detect)
		Coumophos	61.6 (RTX35)	±15.01		J(detect)/UJ(non-detect)
04/10/95 9:05	RF1000	Dichlorvos	24.5 (RTX-5)	±15.01	007GMW08LSRE	J(detect)/UJ(non-detect)
		Ethoprop	-18.3 (RTX-5)	±15.01		J(detect)/UJ(non-detect)
		Phorate	-16.1 (RTX-5)	±15.01		J(detect)/UJ(non-detect)
		Disulfoton	-21.0 (RTX-5)	±15.01		J(detect)/UJ(non-detect)
		Merphos	21.9 (RTX-5)	±15.01		J(detect)/UJ(non-detect)
		Tokuthion	-28.6 (RTX-5)	±15.01		J(detect)/UJ(non-detect)
		Fensulfothion	-40.8 (RTX-5)	±15.01		J(detect)/UJ(non-detect)
		Sulprofos	-29.4 (RTX-5)	±15.01		J(detect)/UJ(non-detect)
		Guthion	-16.8 (RTX-5)	±15.01		J(detect)/UJ(non-detect)
		Coumophos	-117.8 (RTX-5)	±15.01		J(detect)/UJ(non-detect)
04/11/95 1:17	RF1000	Demeton, O	-22.3 (RTX-5)	±15.01	007GMW08LSRE	J(detect)/UJ(non-detect)
		Ethoprop	-35.3 (RTX-5)	±15.01		J(detect)/UJ(non-detect)
		Phorate	-26.9 (RTX-5)	±15.01		J(detect)/UJ(non-detect)
		Demeton-S	-20.7 (RTX-5)	±15.01		J(detect)/UJ(non-detect)
		Diazinon	-27.9 (RTX-5)	±15.01		J(detect)/UJ(non-detect)
		Methyl parathion	-25.0 (RTX-5)	±15.01		J(detect)/UJ(non-detect)
		Ronnel	-24.3 (RTX-5)	±15.01		J(detect)/UJ(non-detect)
		Fenthion	-41.1 (RTX-5)	±15.01		J(detect)/UJ(non-detect)
		Chlorpyritos	-25.8 (RTX-5)	±15.01		J(detect)/UJ(non-detect)
		Trichloronate	-25.9 (RTX-5)	±15.01		J(detect)/UJ(non-detect)
		Merphos	+37.0 (RTX-5)	±15.01		J(detect)/UJ(non-detect)
		Tokuthion	-33.8 (RTX-5)	±15.01		J(detect)/UJ(non-detect)
		Fensulfothion	-25.3 (RTX-5)	±15.01		J(detect)/UJ(non-detect)
		Sulprofos	-28.0 (RTX-5)	±15.01		J(detect)/UJ(non-detect)
		Coumophos	-126.7 (RTX-5)	±15.01		J(detect)/UJ(non-detect)

V. BLANKS

Instrument blank(s) was/were performed at the required frequency. No contaminant was found in the instrument blank(s) that resulted in data qualifications.

The method blank(s) was/were extracted and performed according to the SW846. No contaminant was found in the method blank(s) that resulted in data qualifications.

The field blank(s) was/were extracted and performed according to the SW846. No contaminant was found in the field blank(s) that resulted in data qualifications.

VI. SURROGATE SPIKES

Surrogate spikes were analyzed as required by the SW846. Surrogate spike recoveries were within QC limits.

VII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

1 set of matrix spike (MS) and matrix spike duplicate (MSD) was analyzed at required frequencies.

Spike recoveries and relative percent difference were within advisory limits except for the following:

Sample	Column	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limit)	Flag
2BGGMW02LF	RTX35	Dichlorvos	160 (50-150%)	44 (50-150%)	114 (±15%)	J(detect)/UJ(non-detect)
		Mevinphos, A		39 (50-150%)	117 (±15%)	J(detect)/UJ(non-detect)
		Demeton, O	28 (50-150%)	9 (50-150%)	103 (±15%)	J(detect)/UJ(non-detect)
		Ethoprop	33 (50-150%)	8 (50-150%)	122 (±15%)	J(detect)/UJ(non-detect)
		Naled	0 (50-150%)	0 (50-150%)		J(detect)/R(non-detect)
		Phorate	47 (50-150%)	11 (50-150%)	124 (±15%)	J(detect)/UJ(non-detect)
		Demeton-S		11 (50-150%)	129 (±15%)	J(detect)/UJ(non-detect)
		Diazinon	45 (50-150%)	12 (50-150%)	116 (±15%)	J(detect)/UJ(non-detect)
		Disulfonton	39 (50-150%)	9 (50-150%)	125 (±15%)	J(detect)/UJ(non-detect)
		Parathion, M		10 (50-150%)	144 (±15%)	J(detect)/UJ(non-detect)
		Ronnel	45 (50-150%)	11 (50-150%)	121 (±15%)	J(detect)/UJ(non-detect)
		Ferthion	42 (50-150%)	10 (50-150%)	123 (±15%)	J(detect)/UJ(non-detect)
		Chlorpyritos		15 (50-150%)	128 (±15%)	J(detect)/UJ(non-detect)
		Trichloronate	24 (50-150%)	6 (50-150%)	120 (±15%)	J(detect)/UJ(non-detect)
		Merphos		31 (50-150%)	112 (±15%)	J(detect)/UJ(non-detect)
		Tokuthion	38 (50-150%)	7 (50-150%)	138 (±15%)	J(detect)/UJ(non-detect)
		Fensulfothion		15 (50-150%)	131 (±15%)	J(detect)/UJ(non-detect)
		Stirophos		25 (50-150%)	126 (±15%)	J(detect)/UJ(non-detect)
		Sulprofos	24 (50-150%)	7 (50-150%)	110 (±15%)	J(detect)/UJ(non-detect)
		Guthion	33 (50-150%)	5 (50-150%)	147 (±15%)	J(detect)/UJ(non-detect)
		Coumophos	38 (50-150%)	10 (50-150%)	117 (±15%)	J(detect)/UJ(non-detect)

VIII. LABORATORY CONTROL SAMPLES

Laboratory control samples were analyzed and met QC requirements except for the following:

LCS	Column	LCS Spike	%R (QC Limit)	RT (QC Limit)	Associated Samples	Flag
NLCS10322A	RTX35	Dichlorvos	223.6 (50-150)		007GGM09MF	J(detect)/None(non-detect)
		Mevinphos, Alpha	225.8 (50-150)		4BGGMW04LF	J(detect)/None(non-detect)
		Demeton, O	35.7 (50-150)		4BGGMW04LS	J(detect)/UJ(non-detect)
		Naled		26.41 (26.44-26.64)	4BGGMW04UF	J(detect)/UJ(non-detect)
		Trichloronate	48.3 (50-150)			J(detect)/UJ(non-detect)
		Merphos	533.3 (50-150)			J(detect)/None(non-detect)
		Stirophos	160.8 (50-150)			J(detect)/None(non-detect)
		Coumophos		68.09 (66.83-67.86)		J(detect)/UJ(non-detect)
NLCS10324A	RTX35	Dichlorvos	165.4 (50-150)		2BGGMW02LF	J(detect)/None(non-detect)
		Mevinphos, Alpha	194.9 (50-150)		2BGGMW02LS	J(detect)/None(non-detect)
		Demeton, O	31.8 (50-150)		5BGGMW05LF	J(detect)/UJ(non-detect)
		Ethoprop	37.4 (50-150)		5BGHMW05LF	J(detect)/UJ(non-detect)
		Naled	0.0 (50-150)	0.00 (26.44-26.64)	5BGGMW05LS	J(detect)/UR(non-detect)
		Disulfoton	44.9 (50-150)		5BGGMW05UF	J(detect)/UJ(non-detect)
		Trichloronate	28.3 (50-150)		003GGM06UF	J(detect)/UJ(non-detect)
		Tokuthion	29.2 (50-150)			J(detect)/UJ(non-detect)
		Sulprofos	28.0 (50-150)			J(detect)/UJ(non-detect)
		Guthion	26.9 (50-150)			J(detect)/UJ(non-detect)
		Coumophos	47.4 (50-150)			J(detect)/UJ(non-detect)
NLCS10331A	RTX35	Demeton-S		20.89 (20.90-21.1)	007GMW08LSRE	J(detect)/UJ(non-detect)
		Fensulfothion	162.8 (50-150)			J(detect)/UJ(non-detect)
		Coumophos	217.6 (50-150)			J(detect)/None(non-detect)

IX. COMPOUND IDENTIFICATION

Form 1, the associated raw data, and the identification summary (Form 10) were reviewed and all compounds were non-detected.

X. COMPOUND QUANTITATION AND REPORTED CRQLs

No raw data were reviewed.

XI. FIELD DUPLICATES

1 set of field duplicates was analyzed in this SDG. No target analytes were detected in any of the samples.

XII. OVERALL ASSESSMENT OF DATA

Data flags have been summarized at the end of the report.

Organophosphorus Pesticides Data Qualification Summary - SDG Nº FD1345

SDG Nº	Sample ID	Parameter	Flag	Reason
FD1345	007GMW08LSRE	All compounds	J(detect)/UJ(non-detect)	Holding time out of limit
FD1345	007GGM09MF 4BGGMW04LF 4BGGMW04LS 4BGGMW04UF 2BGGMW02LF 2BGGMW02LS 5BGGMW05LF 5BGHMW05LF 5BGGMW05LS 5BGGMW05UF 003GGM06UF	Naled Merphos Fensulfothion Guthion	J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect)	IC %RSD
FD1345	007GMW08LSRE	Mevinphos, Alpha Fensulfothion Guthion	J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect)	IC %RSD
FD1345	007GGM09MF 4BGGMW04LF 4BGGMW04LS 4BGGMW04UF	Dichlorvos Mevinphos, Alpha Demeton, O Ethoprop Naled Trichloronate Merphos Tokuthion Stirophos Sulprofos Guthion	J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect)	CCV D%
FD1345	007GGM09MF 4BGGMW04LF 4BGGMW04LS 4BGGMW02UF	Dichlorvos Mevinphos, Alpha Demeton, O Ethoprop Naled Methyl parathion Ronnel Trichloronate Merphos Tokuthion Fensulfothion Stirophos Sulprofos Guthion Coumophos	J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect)	CCV D%
FD1345	2BGGMW02LF 2BGGMW02LS	Dichlorvos Mevinphos, Alpha Demeton, O Ethoprop Naled Disulfoton Ronnel Trichloronate Merphos Tokuthion Fensulfothion Stirophos Sulprofos Guthion Coumophos	J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect)	CCV D%

SDG N°	Sample ID	Parameter	Flag	Reason
FD1345	2BGGMW02LF 2BGGMW02LS 5BGGMW05LF 5BGHMW05LF 5BGGMW05LS 5BGGMW05UF 003GGM06UF	Dichlorvos Mevinphos, Alpha Demeton, O Ethoprop Naled Phorate Demeton-S Diazinon Disulfonton Methyl parathion Ronnel Fenthion Chloropyritos Trichloronate Merphos Tokuthion Fensulfothion Sulprofos Guthion Coumophos	J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect)	CCV D%
FD1345	5BGGMW05LF 003GGM06UF 5BGHMW05LF 5BGGMW05LS 5BGGMW05UF	Dichlorvos Mevinphos, Alpha Demeton, O Ethoprop Naled Phorate Demeton-S Diazinon Disulfonton Methyl parathion Ronnel Fenthion Chloropyritos Trichloronate Merphos Tokuthion Fensulfothion Sulprofos Guthion Coumophos	J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect)	CCV D%
FD1345	007GMW08LSRE	Dichlorvos Ethoprop Phorate Disulfoton Merphos Tokuthion Fensulfothion Sulprofos Guthion Coumophos	J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect)	CCV D%
FD1345	007GMW08LSRE	Demeton, O Ethoprop Phorate Demeton-S Diazinon Methyl parathion Ronnel Fenthion Chlorpyritos Trichloronate Merphos Tokuthion Fensulfothion Sulprofos Coumophos	J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect)	CCV D%

SDG N°	Sample ID	Parameter	Flag	Reason
FD1345	2BGGMW02LF	Dichlorvos Mevinphos, Alpha Demeton, O Ethoprop Naled Phorate Demeton-S Diazinon Disulfonton Methyl parathion Ronnel Fenthion Chloropyritos Trichloronate Merphos Tokuthion Fensulfothion Stirophos Sulprofos Guthion Coumophos	J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UR(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect)	MS/MSD %R and RPD
FD1345	007GGM09MF 4BGGMW04LF 4BGGMW04LS 4BGGMW04UF	Dichlorvos Mevinphos, Alpha Demeton, O Naled Trichloronate Merphos Stirophos Coumophos	J(detect)/None(non-detect) J(detect)/None(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/None(non-detect) J(detect)/None(non-detect) J(detect)/UJ(non-detect)	LCS %R
FD1345	2BGGMW02LF 2BGGMW02LS 5BGGMW05LF 5BGHMW05LF 5BGGMW05LS 5BGGMW05UF 003GGM06UF	Dichlorvos Mevinphos, Alpha Demeton, O Ethoprop Naled Disulfoton Trichloronate Tokuthion Sulprofos Guthion Coumophos	J(detect)/None(non-detect) J(detect)/None(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UR(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect)	LCS %R
FD1345	007GMW08LSRE	Demethion Fensulfothion Coumophos	J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/None(non-detect)	LCS %R

C K Y incorporated
Environmental Services

DATA VALIDATION REPORT

Parameters:	ORGANOCHLORINE HERBICIDES
Project	NAS Millington 0094/09000
Client:	Ensafe/Allen & Hoshall
Laboratory:	NET Atlantic, Inc. Cambridge Division
NET Job Nº:	95.00911, 95.00913, and 95.00925 (Level IV Validation)
Case Nº:	FD1345

Sample Identification	Matrix
003E032095	Water
003F032095	Water
003GGM06UF	Water
007GGM09MF	Water
007GMW08LS	Water
2BGE031795	Water
2BGF031795	Water
2BGGMW02LF	Water
2BGGMW02LS	Water
4BGF031695	Water
4BGGMW04LF	Water
4BGGMW04LS	Water
4BGGMW04UF	Water
5BGF031795	Water
5BGGMW05LF	Water
5BGGMW05LS	Water
5BGGMW05UF	Water
5BGHMW05LF	Water
2BGGMW02LFMS	Water
2BGGMW02LFMSD	Water

INTRODUCTION

This data review report covers 20 water samples listed on the cover page. The analyses were per EPA Method 8150, SW846, November 1986.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February, 1993) as there are no current guidelines for evaluating chlorinated pesticides.

Definition of Qualifiers:

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

NJ - The analysis indicates the presence of analyte that has been "tentatively identified: and the associated numerical value represents its approximate concentration.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

A table summarizing all data qualification flags is provided at the end of this report.

Raw data checks were carried out for this SDG, the review was based on full documentation.

I. TECHNICAL HOLDING TIME

All holding time requirements were met.

II. ANALYTICAL SEQUENCE

Standards, blanks, and sample extracts were analyzed according to the required analytical sequence and frequency.

III. INITIAL CALIBRATION

Initial calibration of analytes were performed for both columns.

The %RSDs for calibration factors of single component analytes for the primary column were within QC limits (Form 6B) except for the following:

Date/ Time	Standard/ Column	Compounds	%RSD(RTX35)	QC Limit	Associated Samples	Flag
03/30/95 10:11	RF1X RF2X RF4X RF10X RF20X	MCPP DINOSEB	34.9 45.8	≤20.0%	All samples	J(detect)/UJ(non-detect)

IV. CALIBRATION VERIFICATION

Calibration verifications were performed at required frequencies and sequence for both columns. %Ds for the primary column were within QC limit (Form 7B) except for the following:

Date/ Time	Standard/ Column	Compound	%D Primary Column (RTX35)	QC Limits	Associated Samples	Flag
03/30/95 23:18	RF4X	MCPP MCPA	-26.3 -15.2	±15.0%	007GGM09MF 007GMW08LS 4BGGMW04LF 4BGGMW04LS 4BGGMW04UF 2BGGMW02LF 2BGGMW02LS 5BGGMW05LF 5BGHMW05LF	J(detect)/UJ(non-detect)
03/31/95 07:32	RF4X	MCPP	-21.3	±15.0%	2BGGMW02LF 2BGGMW02LS 5BGGMW05LF 5BGHMW05LF 5BGGMW05LS 5BGGMW05UF	J(detect)/UJ(non-detect)
03/31/95 11:41	RF4X	DINOSEB	15.2	±15.0%	5BGGMW05LS 5BGGMW05UF	J(detect)/UJ(non-detect)
04/01/95 04:19	RF4X	MCPP MCPA DINOSEB	-30.1 -16.8 -16.1	±15.0%	003GGM06UF	J(detect)/UJ(non-detect) J(detect)/UJ(non-detect) J(detect)/UJ(non-detect)

V. BLANKS

Instrument blank(s) was/were performed at the required frequency. No contaminant was found in the instrument blank(s) that resulted in data qualifications.

The method blank(s) was/were extracted and performed according to the SW846. No contaminant was found in the method blank(s) that resulted in data qualifications.

The field blank(s) was/were extracted and performed according to the SW846. No contaminant was found in the field blank(s) that resulted in data qualifications.

VI. SURROGATE SPIKES

Surrogate spikes were analyzed as required by the SW846. Surrogate spike recoveries were within QC limits.

VII. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

1 set of matrix spike (MS) and matrix spike duplicate (MSD) was analyzed at required frequencies. Spike recoveries and relative percent difference were within advisory limits except for the following:

mple	Column	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limit)	Flag
3GGMW02LF	RTX35	MCPP MCPA 2,4-DB 2,4-D	14 (20-150%) 16 (20-150%) 10 (20-150%)	12 (20-150%) 16 (20-150%) 7 (20-150%)	22 (≤20%) 22 (≤20%) 22 (≤20%)	J(detect)/UJ(non-detect)

VIII. LABORATORY CONTROL SAMPLES

Laboratory control samples were analyzed and met QC requirements.

IX. ESTERIFICATION SPIKE SAMPLE

Esterification spike samples were analyzed and met QC requirements.

X. COMPOUND IDENTIFICATION

Form 1, the associated raw data, and the identification summary (Form 10) were reviewed and all compounds were non-detects.

XI. COMPOUND QUANTITATION AND REPORTED CRQLs

All sample results were checked against raw data to verify the correct calculation. The CRQLs of all samples were checked to make sure that they reflected all sample dilution, concentrations, split, clean-up activities, and dry weight factors. Compound quantitation and reported CRQLs met QC requirements.

XII. FIELD DUPLICATES

1 set of field duplicates was analyzed in this SDG. No target analytes were detected in any of the samples.

XIII. OVERALL ASSESSMENT OF DATA

Field QC samples were used only to assess blank cross-contamination in the investigative samples.

Data flags have been summarized at the end of the report.

Organochlorine Herbicides Data Qualification Summary - SDG Nº FD1345

SDG Nº	Sample ID	Parameter	Flag	Reason
FD1345	*All samples*	MCPP DINOSEB	J(detect)/UJ(non-detect) J(detect)/UJ(non-detect)	Initial Calibration %RSD
FD1345	007GGM09MF 007GMW08LS 4BGGMW04LF 4BGGMW04LS 4BGGMW04UF 2BGGMW02LF 2BGGMW02LS 5BGGMW05LF 5BGHMW05LF	MCPP MCPA	J(detect)/UJ(non-detect)	Continuing Calibration %D
FD1345	2BGGMW02LF 2BGGMW02LS 5BGGMW05LF 5BGHMW05LF 5BGGMW05LS 5BGGMW05UF	MCPP	J(detect)/UJ(non-detect)	Continuing Calibration %D
FD1345	5BGGMW05LS 5BGGMW05UF	DINOSEB	J(detect)/UJ(non-detect)	Continuing Calibration %D
FD1345	003GGM06UF	MCPP MCPA DINOSEB	J(detect)/UJ(non-detect)	Continuing Calibration %D
FD1345	2BGGMW02LF	MCPP MCPA 2,4-DB 2,4-D	J(detect)/UJ(non-detect)	MS/MSD %R and RPD

C K Y incorporated
Environmental Services

DATA VALIDATION REPORT

Parameters:	TOTAL RECOVERABLE PETROLEUM HYDROCARBON BY IR METHOD 418.1
Project	NAS Millington 0094/09000
Client:	Ensafe/Allen & Hoshall
Laboratory:	NET Atlantic, Inc. Cambridge Division
NET Job Nº:	95.00914, 95.00913, and 95.00911 (Level III Validation)
Case Nº:	FD1345

Sample Identification	Matrix
007GGM09MF	Water
007GGM08LS	Water
4BGF031695	Water
4BGGMW04LF	Water
4BGGMW04LS	Water
4BGGMW04UF	Water
2BGE031795	Water
2BGF031795	Water
2BGGMW02LF	Water
2BGGMW02LFMS	Water
2BGGMW02LFMSD	Water
2BGGMW02LS	Water
5BGF031795	Water
5BGGMW05LF	Water
5BGHMW05LF	Water
5BGGMW05LS	Water
5BGGMW05UF	Water
003E032095	Water
003F032095	Water
003GGM06UF	Water

C K Y incorporated
Environmental Services

DATA VALIDATION REPORT

Parameters:	GENERAL INORGANIC
Project	NAS Millington 0094/09000
Client:	Ensafe/Allen & Hoshall
Laboratory:	NET Atlantic, Inc. Cambridge Division
NET Job Nº:	95.00911, 95.00913, and 95.00925 (Level III Validation)
Case Nº:	FD1345

Sample Identification	Matrix
007GMW03LS	Water
007GMW03LSMS	Water
007GMW03LSMSD	Water

INTRODUCTION

This data review report covers 20 water samples listed on the cover page. The analyses were per EPA 418.1 in "Method for Chemical Analysis of Water and Wastes" EPA 600/4-79/020.

This review follows the approach of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February, 1993).

Definition of Qualifiers:

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

NJ - The analysis indicates the presence of analyte that has been "tentatively identified: and the associated numerical value represents its approximate concentration.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

A table summarizing all data qualification flags is provided at the end of this report.

No raw data checks were carried out for this SDG, the review was based on QC data.

I. HOLDING TIME

All holding time requirements were met.

II. INITIAL CALIBRATION

Initial calibrations were performed using required standard concentrations. QC methodology and criteria were applied.

The correlation coefficients were greater than or equal to 0.995.

III. CONTINUING CALIBRATION

Not applicable because all analyses were done within the same day of initial calibration.

IV. BLANKS

The method blank analyses were performed at required frequencies. No contaminant was found in the method blank(s) that resulted in data qualifications.

The field blank analyses were performed at required frequencies. No contaminant was found in the field blank(s) that resulted in data qualifications.

V. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

1 set of matrix spike (MS) and matrix spike duplicate (MSD) was analyzed at required frequencies. Spike recoveries and relative percent difference were within advisory limits.

VI. LABORATORY CONTROL SAMPLES

Laboratory control samples were analyzed and met QC requirements.

VII. PARAMETER IDENTIFICATION

No raw data were reviewed.

VIII. QUANTITATION AND REPORTED CRQLs

No raw data were reviewed.

IX. FIELD DUPLICATES

1 set of field duplicates was analyzed in this SDG. No target analytes were detected in any of the samples.

X. OVERALL ASSESSMENT OF DATA

Field QC samples were used only to assess blank cross-contamination in the investigative samples.

Data flags have been summarized at the end of the report.

TRPH by IR Method 418.1 Data Qualification Summary - SDG Nº FD1345

No data were qualified for this SDG.

INTRODUCTION

This data review report covers 3 water samples listed on the cover page. The analyses were per EPA Method 351.2, Method 335.2, and Method 365.3 in "Method for Chemical Analysis of Water and Wastes," EPA 600/4-79/020, Revised March 1983.

This review follows the approach of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February, 1994).

Definition of Qualifiers:

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

N - The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."

NJ - The analysis indicates the presence of analyte that has been "tentatively identified: and the associated numerical value represents its approximate concentration.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

A table summarizing all data qualification flags is provided at the end of this report.

No raw data were checked for this SDG. The review was based on QC data.

I. TECHNICAL HOLDING TIME

All holding time requirements were met.

II. INITIAL CALIBRATION

Initial calibrations were performed using required standard concentrations. QC methodology and criteria were applied.

The correlation coefficients were greater than or equal to 0.995.

III. CONTINUING CALIBRATION

Continuing calibrations were run at the required frequency.

The percent difference (%D) between the initial calibration and the continuing calibration were within ±15.0 percent.

IV. BLANKS

The method blank(s) was/were extracted and performed according to the SW846. The blanks were free of contamination.

No field blank was analyzed.

V. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

1 set of matrix spike (MS) and matrix spike duplicate (MSD) was analyzed at required frequencies. Spike recoveries and relative percent difference were within advisory limits.

VI. LABORATORY CONTROL SAMPLES

Laboratory control samples were analyzed and met QC requirements.

VII. PARAMETER IDENTIFICATION

No raw data were reviewed.

VIII. QUANTITATION AND REPORTED CRQLs

No raw data were reviewed.

IX. SYSTEM PERFORMANCE

Not applicable.

X. FIELD DUPLICATES

No field duplicates were analyzed for this SDG.

XI. OVERALL ASSESSMENT OF DATA

Field QC samples were used only to assess blank cross-contamination in the investigative samples.

Data flags have been summarized at the end of the report.

General Inorganic Data Qualification Summary - SDG № FD1345

No data were qualified for this SDG.

NAS MEMPHIS

NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

1345 HERB													
	SAMPLE ID ------>	003-G-GM06-UF		007-G-GM09-MF		007-G-MW08-LS		2BG-G-MW02-LF		2BG-G-MW02-LS		4BG-G-MW04-LF	
	ORIGINAL ID ----->	003GGM06UF		007GGM09MF		007GMW08LS		2BGGMW02LF		2BGGMW02LS		4BGGMW04LF	
	LAB SAMPLE ID --->	120158		120080		120081		120099		120100		120083	
	SAMPLE DATE ----->	03/20/95		03/16/95		03/16/95		03/17/95		03/17/95		03/16/95	
	DATE EXTRACTED -->	03/31/95		03/28/95		03/28/95		03/28/95		03/28/95		03/28/95	
	DATE ANALYZED --->	04/01/95		03/30/95		03/30/95		03/31/95		03/31/95		03/30/95	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	ug/L	A	ug/L	A	ug/L	A	ug/L	A	ug/L	A	ug/L	A
CAS #	Parameter												
94-82-6	2,4-DB	0.47	U	0.47	U	0.47	U	0.47	UJ	0.47	U	0.47	U
88-85-7	Dinoseb	0.24	UJ	0.24	UJ	0.24	UJ	0.24	UJ	0.24	UJ	0.24	UJ
93-76-5	2,4,5-T	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
93-72-1	2,4,5-TP (Silvex)	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
75-99-0	Dalapon	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U
1918-00-9	Dicamba	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
120-36-5	Dichlorprop	0.47	U	0.47	U	0.47	U	0.47	U	0.47	U	0.47	U
94-74-6	MCPA	47.	UJ	47.	UJ	47.	UJ	47.	UJ	47.	UJ	47.	UJ
93-65-2	MCPP	47.	UJ	47.	UJ	47.	UJ	47.	UJ	47.	UJ	47.	UJ
94-75-7	2,4-D	0.47	U	0.47	U	0.47	U	0.47	UJ	0.47	U	0.47	U

*** Validation Complete ***

NAS MEMPHIS
NAS MEMPHIS, RFI, ASSEMBLY A
Primary Samples

1345 HERB												
	SAMPLE ID ------->	4BG-G-MW04-LS		4BG-G-MW04-UF		5BG-G-MW05-LF		5BG-H-MW05-LF		5BG-G-MW05-LS		5BG-G-MW05-UF	
	ORIGINAL ID ----->	4BGGMW04LS		4BGGMW04UF		5BGGMW05LF		5BGHMW05LF		5BGGMW05LS		5BGGMW05UF	
	LAB SAMPLE ID --->	120084		120085		120102		120103		120104		120105	
	SAMPLE DATE ----->	03/16/95		03/16/95		03/17/95		03/17/95		03/17/95		03/17/95	
	DATE EXTRACTED -->	03/28/95		03/28/95		03/28/95		03/28/95		03/28/95		03/28/95	
	DATE ANALYZED --->	03/30/95		03/30/95		03/31/95		03/31/95		03/31/95		03/31/95	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	ug/L	A	ug/L	A	ug/L	A	ug/L	A	ug/L	A	ug/L	A
CAS #	Parameter												
94-82-6	2,4-DB	0.47	U	0.47	U	0.47	U	0.47	U	0.47	U	0.47	U
88-85-7	Dinoseb	0.24	UJ	0.24	UJ	0.24	UJ	0.24	UJ	0.24	UJ	0.24	UJ
93-76-5	2,4,5-T	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
93-72-1	2,4,5-TP (Silvex)	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
75-99-0	Dalapon	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U
1918-00-9	Dicamba	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
120-36-5	Dichlorprop	0.47	U	0.47	U	0.47	U	0.47	U	0.47	U	0.47	U
94-74-6	MCPA	47.	UJ	47.	UJ	47.	UJ	47.	UJ	47.	U	47.	U
93-65-2	MCPP	47.	UJ	47.	UJ	47.	UJ	47.	UJ	47.	UJ	47.	UJ
94-75-7	2,4-D	0.47	U	0.47	U	0.47	U	0.47	U	0.47	U	0.47	U

NAS MEMPHIS
NAS MEMPHIS, RFI, ASSEMBLY A
Primary Samples

1345 **Hardness**	**SAMPLE ID ------->** **ORIGINAL ID ----->** **LAB SAMPLE ID --->** **SAMPLE DATE ----->** **DATE EXTRACTED -->** **DATE ANALYZED --->** **MATRIX ---------->** **UNITS ---------->**	007-G-MW03-LS 007GMW03LS 120086 03/15/95 03/26/95 04/13/95 Water mg/L A					
CAS #	Parameter						
99900-03-3	Hardness as CaCO3	328.					

*** Validation Complete ***

1345 KJELDAHL	SAMPLE ID ------->` ORIGINAL ID ----->` LAB SAMPLE ID --->` SAMPLE DATE ----->` DATE EXTRACTED -->` DATE ANALYZED --->` MATRIX ---------->` UNITS ---------->`	007-G-MW03-LS 007GMW03LS 120086 03/15/95 03/24/95 03/31/95 Water mg/L A					
CAS #	Parameter						
999-99-9	Kjeldahl Nitrogen-N	0.5 U					

*** Validation Complete ***

NAS MEMPHIS
NAS MEMPHIS, RFI, ASSEMBLY A
Primary Samples

ETAL													
		SAMPLE ID ------>	003-G-GM06-UF		007-G-GM09-MF		007-G-MW03-LS		007-G-MW03-LS		007-G-MW03-LS		007-G-MW08-LS	
		ORIGINAL ID ----->	003GGM06UF		007GGM09MF		007GMW03LS		007GMW03LS		007GMW03LS		007GMW08LS	
		LAB SAMPLE ID --->	6-120161S		2-120090S		1-120086S		120086		120096S		2-120091S	
		ID FROM REPORT -->	003GGM06UF		007GGM09MF		007GMW03LS		007GMW03LS		007GMW03LS		007GMW08LS	
		SAMPLE DATE ----->	03/20/95		03/16/95		03/16/95		03/15/95		03/15/95		03/16/95	
		DATE EXTRACTED -->							03/26/95					
		DATE ANALYZED --->							03/31/95		03/31/95			
		MATRIX ---------->	Water		Water		Water		Water		Water		Water	
		UNITS ---------->	UG/L		UG/L		UG/L		ug/L		UG/L		UG/L	
CAS #	Parameter		1345	VAL	1345	VAL	1345	VAL	1345	VAL	1345	VAL	1345	VAL
SB	Antimony		40.	U	40.	U	NR		NR		40.	U	40.	U
AS	Arsenic		2.	UJ	2.	U	NR		NR		2.9	J	2.	U
BA	Barium		193.	J	39.8	J	NR		NR		229.	J	53.8	J
BE	Beryllium		1.	U	1.	U	NR		NR		1.	U	1.	U
CD	Cadmium		3.	U	3.	U	NR		NR		3.	U	3.	U
CR	Chromium		5.	U	5.	U	NR		NR		11.8		5.	U
CO	Cobalt		5.	U	5.	U	NR		NR		8.1	J	5.	U
CU	Copper		5.	U	5.	U	NR		NR		19.9	J	5.	U
PB	Lead		5.1	U	2.3	J	NR		NR		8.8		2.	U
HG	Mercury		0.2	U	0.2	U	NR		NR		0.2	U	0.2	U
NI	Nickel		15.	U	15.	U	NR		NR		15.	U	15.	U
SE	Selenium		2.	U	2.	UJ	NR		NR		2.	U	4.7	J
AG	Silver		3.	U	3.	U	NR		NR		3.	U	3.	U
TL	Thallium		2.	UJ	2.	U	NR		NR		2.	UJ	2.	U
V	Vanadium		4.	U	4.	U	NR		NR		24.1	J	4.	U
ZN	Zinc		14.7	J	7.1	U	NR		NR		77.		5.	U
SN	Tin		15.	U	15.	U	NR		NR		15.	U	15.	U
AL	Aluminum		NR		NR		NR		NR		NR		NR	
CA	Calcium		NR		NR		67600.		NR		NR		NR	
FE	Iron		NR		NR		NR		17900.		NR		NR	
MG	Magnesium		NR		NR		38800.		NR		NR		NR	
MN	Manganese		NR		NR		NR		652.		NR		NR	
NA	Sodium		NR		NR		NR		NR		NR		NR	
K	Potassium		NR		NR		NR		NR		NR		NR	

*** Validation Complete ***

DATALCP3
08/31/95

NAS MEMPHIS
NAS MEMPHIS, RFI, ASSEMBLY A
Primary Samples

METAL													
	SAMPLE ID ------->	2BG-G-MW02-LF		2BG-G-MW02-LS		4BG-G-MW04-LF		4BG-G-MW04-LS		4BG-G-MW04-UF		5BG-G-MW05-LF	
	ORIGINAL ID ----->	2BGGMW02LF		2BGGMW02LS		4BGGMW04LF		4BGGMW04LS		4BGGMW04UF		5BGGMW05LF	
	LAB SAMPLE ID --->	4-120108S		4-120109S		2-120093S		2-120094S		2-120095S		4-120111S	
	ID FROM REPORT -->	2BGGMW02LF		2BGGMW02LS		4BGGMW04LF		4BGGMW04LS		4BGGGMW04UF		5BGGMW05LF	
	SAMPLE DATE ----->	03/17/95		03/17/95		03/16/95		03/16/95		03/16/95		03/17/95	
	MATRIX ----------->	Water		Water		Water		Water		Water		Water	
	UNITS ------------>	UG/L		UG/L		UG/L		UG/L		UG/L		UG/L	
CAS #	Parameter	1345	VAL	1345	VAL	1345	VAL	1345	VAL	1345	VAL	1345	VAL
SB	Antimony	40.	U	40.	U	40.	U	40.	U	40.	U	40.	U
AS	Arsenic	2.	UJ	9.3	J	2.	U	4.	J	2.	U	2.	U
BA	Barium	155.	J	556.	J	143.	J	186.	J	111.	J	46.7	J
BE	Beryllium	1.	U	1.7	J	1.	U	1.	U	1.	U	1.	U
CD	Cadmium	3.	U	5.	U	3.	U	3.	U	3.	U	3.	U
CR	Chromium	5.	U	167.		5.	U	213.		5.	U	5.	U
CO	Cobalt	7.6	J	16.5	J	5.	U	9.6	J	5.	U	5.2	J
CU	Copper	5.	U	45.8		5.	U	21.4	J	5.	U	5.	U
PB	Lead	2.	UJ	33.6		2.1	J	6.6	J	2.	J	2.	UJ
HG	Mercury	0.21		0.26		0.2	U	0.2	U	0.32		0.2	U
NI	Nickel	15.	U	143.		15.	U	165.		15.	U	15.	U
SE	Selenium	2.	UJ	3.2	J	2.	U	2.	U	2.	UJ	2.	UJ
AG	Silver	3.	U	3.	U	3.	U	3.	U	3.	U	3.	U
TL	Thallium	2.	U	2.	U	2.	U	2.	UJ	2.	U	2.	U
V	Vanadium	4.	U	51.		4.	U	26.9	J	4.	U	4.	U
ZN	Zinc	11.2	U	179.		5.	U	202.		5.4	U	5.1	U
SN	Tin	15.	U	15.	U	15.	U	15.	U	15.	U	15.	U
AL	Aluminum	NR		NR		NR		NR		NR		NR	
CA	Calcium	NR		NR		NR		NR		NR		NR	
FE	Iron	NR		NR		NR		NR		NR		NR	
MG	Magnesium	NR		NR		NR		NR		NR		NR	
MN	Manganese	NR		NR		NR		NR		NR		NR	
NA	Sodium	NR		NR		NR		NR		NR		NR	
K	Potassium	NR		NR		NR		NR		NR		NR	

*** Validation Complete ***

NAS MEMPHIS
NAS MEMPHIS, RFI, ASSEMBLY A
Primary Samples

:TAL		SAMPLE ID ------->	5BG-H-MW05-LF		5BG-G-MW05-LS		5BG-G-MW05-UF				
		ORIGINAL ID ----->	5BGHMW05LF		5BGGMW05LS		5BGGMW05UF				
		LAB SAMPLE ID --->	4-120112S		4-120113S		4-120114S				
		ID FROM REPORT -->	5BGHMW05LF		5BGGMW05LS		5BGGMW05UF				
		SAMPLE DATE ----->	03/17/95		03/17/95		03/17/95				
		MATRIX ---------->	Water		Water		Water				
		UNITS ----------->	UG/L		UG/L		UG/L				
CAS #	Parameter		1345	VAL	1345	VAL	1345	VAL			
SB	Antimony		40.	U	40.5	J	40.	U			
AS	Arsenic		2.	U	6.	J	2.	U			
BA	Barium		46.7	J	215.	J	50.3	J			
BE	Beryllium		1.	U	1.	U	1.	U			
CD	Cadmium		3.	U	3.	U	3.	U			
CR	Chromium		5.	U	160.		6.2	J			
CO	Cobalt		5.2	J	9.3	J	5.	U			
CU	Copper		5.	U	17.9	J	5.	U			
PB	Lead		2.	UJ	8.1		4.2	J			
HG	Mercury		0.2	U	0.2	U	0.2	U			
NI	Nickel		15.	U	114.		15.	U			
SE	Selenium		2.	U	2.7	J	2.	UJ			
AG	Silver		3.	U	3.	U	3.	U			
TL	Thallium		2.	U	2.	U	2.	U			
V	Vanadium		4.	U	23.9	J	14.7	J			
ZN	Zinc		5.	U	63.8		9.5	J			
SN	Tin		15.	U	15.	U	15.	U			
AL	Aluminum		NR		NR		NR				
CA	Calcium		NR		NR		NR				
FE	Iron		NR		NR		NR				
MG	Magnesium		NR		NR		NR				
MN	Manganese		NR		NR		NR				
NA	Sodium		NR		NR		NR				
K	Potassium		NR		NR		NR				

*** Validation Complete ***

NAS MEMPHIS

NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

1345 METAL-CN						
SAMPLE ID ------>	003-G-GM06-UF	007-G-GM09-MF	007-G-MW01-LS	007-G-MW08-LS	2BG-G-MW02-LF	2BG-G-MW02-LS
ORIGINAL ID ----->	003GGM06UF	007GGM09MF	007GMW01LS	007GMW08LS	2BGGMW02LF	2BGGMW02LS
LAB SAMPLE ID --->	120158	120080	120087	120081	120099	120100
SAMPLE DATE ----->	03/20/95	03/16/95	03/15/95	03/16/95	03/17/95	03/17/95
DATE EXTRACTED -->	03/27/95	03/20/95	03/20/95	03/20/95	03/20/95	03/20/95
DATE ANALYZED --->	03/29/95	03/21/95	03/21/95	03/21/95	03/22/95	03/22/95
MATRIX ---------->	Water	Water	Water	Water	Water	Water
UNITS ----------->	mg/L A	mg/L A	mg/L A	mg/L A	mg/L A	mg/L A
CAS # Parameter						
CN Cyanide	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U

*** Validation Complete ***

NAS MEMPHIS
NAS MEMPHIS, RFI, ASSEMBLY A
Primary Samples

1345 METAL-CN	SAMPLE ID ------->	4BG-G-MW04-LF	4BG-G-MW04-LS	4BG-G-MW04-UF	5BG-G-MW05-LF	5BG-H-MW05-LF	5BG-G-MW05-LS
	ORIGINAL ID ----->	4BGGMW04LF	4BGGMW04LS	4BGGMW04UF	5BGGMW05LF	5BGHMW05LF	5BGGMW05LS
	LAB SAMPLE ID --->	120083	120084	120085	120102	120103	120104
	SAMPLE DATE ----->	03/16/95	03/16/95	03/16/95	03/17/95	03/17/95	03/17/95
	DATE EXTRACTED -->	03/20/95	03/20/95	03/20/95	03/20/95	03/20/95	03/20/95
	DATE ANALYZED --->	03/21/95	03/21/95	03/21/95	03/22/95	03/22/95	03/22/95
	MATRIX ---------->	Water	Water	Water	Water	Water	Water
	UNITS ----------->	mg/L A	mg/L A	mg/L A	mg/L A	mg/L A	mg/L A
CAS #	Parameter						
CN	Cyanide	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U

*** Validation Complete ***

1345 METAL-CN	SAMPLE ID ------->` ORIGINAL ID ----->` LAB SAMPLE ID --->` SAMPLE DATE ----->` DATE EXTRACTED -->` DATE ANALYZED --->` MATRIX ---------->` UNITS ---------->`	5BG-G-MW05-UF 5BGGMW05UF 120105 03/17/95 03/20/95 03/22/95 Water mg/L A					
CAS # Parameter							
CN Cyanide		0.01 U					

*** Validation Complete ***

1345 PEST													
	SAMPLE ID ------->	003-G-GM06-UF		007-G-GM09-MF		007-G-MW08-LS		2BG-G-MW02-LF		2BG-G-MW02-LS		4BG-G-MW04-LF	
	ORIGINAL ID ----->	003GGM06UF		007GGM09MF		007GMW08LS		2BGGMW02LF		2BGGMW02LS		4BGGMW04LF	
	LAB SAMPLE ID --->	120161		120090		120091		120108		120109		120093	
	SAMPLE DATE ----->	03/20/95		03/16/95		03/16/95		03/17/95		03/17/95		03/16/95	
	DATE EXTRACTED -->	03/23/95		03/21/95		03/21/95		03/23/95		03/23/95		03/21/95	
	DATE ANALYZED --->	03/31/95		03/29/95		03/29/95		03/31/95		03/31/95		03/29/95	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ----------->	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A
CAS #	Parameter												
319-84-6	alpha-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
319-85-7	beta-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
319-86-8	delta-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
76-44-8	Heptachlor	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
309-00-2	Aldrin	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
959-98-8	Endosulfan I	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
60-57-1	Dieldrin	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
72-55-9	4,4'-DDE	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
72-20-8	Endrin	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
33213-65-9	Endosulfan II	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
72-54-8	4,4'-DDD	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
1031-07-8	Endosulfan sulfate	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
50-29-3	4,4'-DDT	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
72-43-5	Methoxychlor	0.5	UJ	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
53494-70-5	Endrin ketone	0.1	UJ	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
7421-36-3	Endrin aldehyde	0.1	UJ	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
5103-71-9	alpha-Chlordane	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
5103-74-2	gamma-Chlordane	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
8001-35-2	Toxaphene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
12674-11-2	Aroclor-1016	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
11104-28-2	Aroclor-1221	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
11141-16-5	Aroclor-1232	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
53469-21-9	Aroclor-1242	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
12672-29-6	Aroclor-1248	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
11097-69-1	Aroclor-1254	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
11096-82-5	Aroclor-1260	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U

*** Validation Complete ***

NAS MEMPHIS

NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

1345 PEST													
	SAMPLE ID ------->	4BG-G-MW04-LS		4BG-G-MW04-UF		5BG-G-MW05-LF		5BG-H-MW05-LF		5BG-G-MW05-LS		5BG-G-MW05-UF	
	ORIGINAL ID ----->	4BGGMW04LS		4BGGMW04UF		5BGGMW05LF		5BGHMW05LF		5BGGMW05LS		5BGGMW05UF	
	LAB SAMPLE ID --->	120094		120095		120111		120112		120113		120114	
	SAMPLE DATE ----->	03/16/95		03/16/95		03/17/95		03/17/95		03/17/95		03/17/95	
	DATE EXTRACTED -->	03/21/95		03/21/95		03/23/95		03/23/95		03/23/95		03/23/95	
	DATE ANALYZED --->	03/29/95		03/29/95		03/31/95		03/31/95		03/31/95		03/31/95	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A
CAS #	Parameter												
319-84-6	alpha-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
319-85-7	beta-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
319-86-8	delta-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
76-44-8	Heptachlor	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
309-00-2	Aldrin	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
959-98-8	Endosulfan I	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
60-57-1	Dieldrin	0.1	U	0.1	U	0.1	U	0.1	U	0.2		0.1	U
72-55-9	4,4'-DDE	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
72-20-8	Endrin	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
33213-65-9	Endosulfan II	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
72-54-8	4,4'-DDD	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
1031-07-8	Endosulfan sulfate	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
50-29-3	4,4'-DDT	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
72-43-5	Methoxychlor	0.5	U	0.5	U	0.5	UJ	0.5	UJ	0.5	UJ	0.5	UJ
53494-70-5	Endrin ketone	0.1	U	0.1	U	0.1	UJ	0.1	UJ	0.1	UJ	0.1	UJ
7421-36-3	Endrin aldehyde	0.1	UJ	0.1	UJ	0.1	UJ	0.1	UJ	0.1	UJ	0.1	UJ
5103-71-9	alpha-Chlordane	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
5103-74-2	gamma-Chlordane	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
8001-35-2	Toxaphene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
12674-11-2	Aroclor-1016	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
11104-28-2	Aroclor-1221	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
11141-16-5	Aroclor-1232	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
53469-21-9	Aroclor-1242	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
12672-29-6	Aroclor-1248	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
11097-69-1	Aroclor-1254	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
11096-82-5	Aroclor-1260	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U

*** Validation Complete ***

NAS MEMPHIS

NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

1345 OP PEST													
	SAMPLE ID ------->	003-G-GM06-UF		007-G-GM09-MF		007-G-MW08-LS		2BG-G-MW02-LF		2BG-G-MW02-LS		4BG-G-MW04-LF	
	ORIGINAL ID ----->	003GGM06UF		007GGM09MF		007GMW08LS		2BGGMW02LF		2BGGMW02LS		4BGGMW04LF	
	LAB SAMPLE ID --->	120158		120080		120081		120099		120100		120083	
	SAMPLE DATE ----->	03/20/95		03/16/95		03/16/95		03/17/95		03/17/95		03/16/95	
	DATE EXTRACTED -->	03/30/95		03/30/95		04/10/95		03/30/95		03/30/95		03/30/95	
	DATE ANALYZED --->	04/01/95		03/31/95		04/10/95		04/01/95		04/01/95		03/31/95	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	ug/L	A	ug/L	A	ug/L	A	ug/L	A	ug/L	A	ug/L	A
CAS #	Parameter												
86-50-0	Guthion	5.	UJ	5.	UJ	5.	UJ	0.46	UJ	5.	UJ	5.	UJ
35400-43-2	Sulprofos	2.5	UJ	2.5	UJ	2.5	UJ	0.67	UJ	2.5	UJ	2.5	UJ
2921-88-2	Chloropyrifos	2.5	UJ	2.5	U	2.5	UJ	1.5	UJ	2.5	UJ	2.5	U
56-72-4	Coumaphos	2.5	UJ	2.5	UJ	2.5	UJ	1.	UJ	2.5	UJ	2.5	UJ
8065-48-3	Demeton,O	2.5	UJ	2.5	UJ	2.5	UJ	0.92	UJ	2.5	UJ	2.5	UJ
333-41-5	Diazinon	2.5	UJ	2.5	U	2.5	UJ	1.2	UJ	2.5	UJ	2.5	U
62-73-7	Dichlorvos	2.5	UJ	2.5	UJ	2.5	UJ	4.4	UJ	2.5	UJ	2.5	UJ
298-04-4	Disulfoton	2.5	UJ	2.5	U	2.5	UJ	0.93	UJ	2.5	UJ	2.5	U
13194-48-4	Ethoprop	2.5	UJ	2.5	UJ	2.5	UJ	0.83	UJ	2.5	UJ	2.5	UJ
115-90-2	Fensulfothion	2.5	UJ	2.5	UJ	2.5	UJ	1.5	UJ	2.5	UJ	2.5	UJ
55-38-9	Fenthion	2.5	UJ	2.5	U	2.5	UJ	0.97	UJ	2.5	UJ	2.5	U
150-50-5	Merphos	2.5	UJ	2.5	UJ	2.5	UJ	3.1	UJ	2.5	UJ	2.5	UJ
7786-34-7	Mevinphos, Alpha	2.5	UJ	2.5	UJ	2.5	UJ	3.9	UJ	2.5	UJ	2.5	UJ
300-76-5	Naled	2.5	UR	2.5	UJ	2.5	UJ	1.	UR	2.5	UR	2.5	UJ
298-00-0	Methyl parathion	2.5	UJ	2.5	UJ	2.5	UJ	1.	UJ	2.5	UJ	2.5	UJ
298-02-2	Phorate	2.5	UJ	2.5	U	2.5	UJ	1.1	UJ	2.5	UJ	2.5	U
299-84-3	Ronnel	2.5	UJ	2.5	UJ	2.5	UJ	1.1	UJ	2.5	UJ	2.5	UJ
22248-79-9	Stirophos (Tetrachlorovinphos)	2.5		2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ
34643-46-4	Tokuthion	2.5	UJ	2.5	UJ	2.5	UJ	0.73	UJ	2.5	UJ	2.5	UJ
327-98-0	Trichloronate	2.5	UJ	2.5	UJ	2.5	UJ	0.64	UJ	2.5	UJ	2.5	UJ
126-75-0	Demeton,S	2.5	UJ	2.5	U	2.5	UJ	1.1	UJ	2.5	UJ	2.5	U

*** Validation Complete ***

NAS MEMPHIS

NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

1345 OP PEST	SAMPLE ID ------->	4BG-G-MW04-LS	4BG-G-MW04-UF	5BG-G-MW05-LF	5BG-H-MW05-LF	5BG-G-MW05-LS	5BG-G-MW05-UF
	ORIGINAL ID ----->	4BGGMW04LS	4BGGMW04UF	5BGGMW05LF	5BGHMW05LF	5BGGMW05LS	5BGGMW05UF
	LAB SAMPLE ID --->	120084	120085	120102	120103	120104	120105
	SAMPLE DATE ----->	03/16/95	03/16/95	03/17/95	03/17/95	03/17/95	03/17/95
	DATE EXTRACTED -->	03/30/95	03/30/95	03/30/95	03/30/95	03/30/95	03/30/95
	DATE ANALYZED --->	03/31/95	03/31/95	04/01/95	04/01/95	04/01/95	04/01/95
	MATRIX ---------->	Water	Water	Water	Water	Water	Water
	UNITS ----------->	ug/L A	ug/L A	ug/L A	ug/L A	ug/L A	ug/L A
CAS #	Parameter						
86-50-0	Guthion	5. UJ	5. UJ	5. UJ	5. UJ	5. UJ	5. UJ
35400-43-2	Sulprofos	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ
2921-88-2	Chloropyrifos	2.5 U	2.5 U	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ
56-72-4	Coumaphos	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ
8065-48-3	Demeton,O	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ
333-41-5	Diazinon	2.5 U	2.5 U	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ
62-73-7	Dichlorvos	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ
298-04-4	Disulfoton	2.5 U	2.5 U	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ
13194-48-4	Ethoprop	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ
115-90-2	Fensulfothion	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ
55-38-9	Fenthion	2.5 U	2.5 U	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ
150-50-5	Merphos	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ
7786-34-7	Mevinphos, Alpha	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ
300-76-5	Naled	2.5 UJ	2.5 UJ	2.5 UR	2.5 UR	2.5 UR	2.5 UR
298-00-0	Methyl parathion	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ
298-02-2	Phorate	2.5 U	2.5 U	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ
299-84-3	Ronnel	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ
22248-79-9	Stirophos (Tetrachlorovinphos)	2.5 UJ	2.5 UJ	2.5	2.5	2.5	2.5
34643-46-4	Tokuthion	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ
327-98-0	Trichloronate	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ
126-75-0	Demeton,S	2.5 U	2.5 U	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ

*** Validation Complete ***

1345 SVOA													
	SAMPLE ID ------->	003-G-GM06-UF		007-G-GM09-MF		007-G-MW08-LS		2BG-G-MW02-LF		2BG-G-MW02-LS		4BG-G-MW04-LF	
	ORIGINAL ID ----->	003GGM06UF		007GGM09MF		007GMW08LS		2BGGMW02LF		2BGGMW02LS		4BGGMW04LF	
	LAB SAMPLE ID --->	120161		120090		120091		120108		120109		120093	
	SAMPLE DATE ----->	03/20/95		03/16/95		03/16/95		03/17/95		03/17/95		03/16/95	
	DATE EXTRACTED -->	03/27/95		03/23/95		03/22/95		03/23/95		03/23/95		03/22/95	
	DATE ANALYZED --->	04/04/95		03/29/95		03/29/95		03/29/95		03/29/95		03/29/95	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ----------->	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A
CAS #	Parameter												
621-64-7	N-Nitroso-di-n-propylamine	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
67-72-1	Hexachloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
78-59-1	Isophorone	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
88-75-5	2-Nitrophenol	10.	U	10.	U	10.	U	10.	UR	10.	U	10.	U
105-67-9	2,4-Dimethylphenol	10.	U	10.	U	10.	U	10.	UR	10.	U	10.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
120-83-2	2,4-Dichlorophenol	10.	U	10.	U	10.	U	10.	UR	10.	U	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
91-20-3	Naphthalene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
106-47-8	4-Chloroaniline	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
87-68-3	Hexachlorobutadiene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U	10.	U	10.	U	10.	UR	10.	U	10.	U
91-57-6	2-Methylnaphthalene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	UJ	10.	UJ	10.	UJ	10.	UJ	10.	UJ	10.	UJ
88-06-2	2,4,6-Trichlorophenol	10.	U	10.	U	10.	U	10.	UR	10.	U	10.	U
95-95-4	2,4,5-Trichlorophenol	25.	U	25.	U	25.	U	25.	UR	25.	U	25.	U
91-58-7	2-Chloronaphthalene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
88-74-4	2-Nitroaniline	25.	U	25.	U	25.	U	25.	U	25.	U	25.	U
131-11-3	Dimethylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
208-96-8	Acenaphthylene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
99-09-2	3-Nitroaniline	25.	U	25.	U	25.	U	25.	U	25.	U	25.	U
83-32-9	Acenaphthene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
51-28-5	2,4-Dinitrophenol	25.	UJ	25.	UJ	25.	UJ	25.	UR	25.	UJ	25.	UJ
100-02-7	4-Nitrophenol	25.	UJ	25.	UJ	25.	UJ	25.	UR	25.	UJ	25.	UJ
132-64-9	Dibenzofuran	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
84-66-2	Diethylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
7005-72-3	4-Chlorophenylphenylether	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
86-73-7	Fluorene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
100-01-6	4-Nitroaniline	25.	U	25.	U	25.	U	25.	U	25.	U	25.	U
534-52-1	4,6-Dinitro-2-methylphenol	25.	U	25.	U	25.	U	25.	UR	25.	U	25.	U
86-30-6	N-Nitrosodiphenylamine	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
101-55-3	4-Bromophenylphenylether	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
118-74-1	Hexachlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
87-86-5	Pentachlorophenol	25.	U	25.	UJ	25.	UJ	25.	UR	25.	UJ	25.	UJ
85-01-8	Phenanthrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U

*** Validation Complete ***

NAS MEMPHIS
NAS MEMPHIS, RFI, ASSEMBLY A
Primary Samples

1345 SVOA	SAMPLE ID ------->	003-G-GM06-UF		007-G-GM09-MF		007-G-MW08-LS		2BG-G-MW02-LF		2BG-G-MW02-LS		4BG-G-MW04-LF	
	ORIGINAL ID ----->	003GGM06UF		007GGM09MF		007GMW08LS		2BGGMW02LF		2BGGMW02LS		4BGGMW04LF	
	LAB SAMPLE ID --->	120161		120090		120091		120108		120109		120093	
	SAMPLE DATE ----->	03/20/95		03/16/95		03/16/95		03/17/95		03/17/95		03/16/95	
	DATE EXTRACTED -->	03/27/95		03/23/95		03/22/95		03/23/95		03/23/95		03/22/95	
	DATE ANALYZED --->	04/04/95		03/29/95		03/29/95		03/29/95		03/29/95		03/29/95	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ----------->	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A
CAS #	Parameter												
120-12-7	Anthracene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
86-74-8	Carbazole	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
84-74-2	Di-n-butylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
206-44-0	Fluoranthene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
129-00-0	Pyrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
85-68-7	Butylbenzylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
91-94-1	3,3'-Dichlorobenzidine	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
56-55-3	Benzo(a)anthracene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
218-01-9	Chrysene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	5.	J	10.	U	10.	U	10.	U	10.	U	10.	U
117-84-0	Di-n-octylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
207-08-9	Benzo(k)fluoranthene	10.	UJ	10.	UJ	10.	UJ	10.	UJ	10.	UJ	10.	UJ
50-32-8	Benzo(a)pyrene	10.	U	10.	UJ	10.	UJ	10.	UJ	10.	UJ	10.	UJ
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
53-70-3	Dibenzo(a,h)anthracene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-95-2	Phenol	10.	U	10.	U	10.	U	10.	UR	10.	U	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
95-57-8	2-Chlorophenol	10.	U	10.	U	10.	U	10.	UR	10.	U	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
95-48-7	2-Methylphenol (o-Cresol)	10.	U	10.	U	10.	U	10.	UR	10.	U	10.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10.	UJ	10.	U	10.	U	10.	U	10.	U	10.	U
106-44-5	4-Methylphenol (p-Cresol)	10.	U	10.	U	10.	U	10.	UR	10.	U	10.	U
98-95-3	Nitrobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U

*** Validation Complete ***

1345 SVOA													
	SAMPLE ID ------>	4BG-G-MW04-LS		4BG-G-MW04-UF		5BG-G-MW05-LF		5BG-H-MW05-LF		5BG-G-MW05-LS		5BG-G-MW05-UF	
	ORIGINAL ID ----->	4BGGMW04LS		4BGGMW04UF		5BGGMW05LF		5BGHMW05LF		5BGGMW05LS		5BGGMW05UF	
	LAB SAMPLE ID --->	120094		120095		120111		120112		120113		120114	
	SAMPLE DATE ----->	03/16/95		03/16/95		03/17/95		03/17/95		03/17/95		03/17/95	
	DATE EXTRACTED -->	03/22/95		03/22/95		03/23/95		03/23/95		03/23/95		03/24/95	
	DATE ANALYZED --->	03/29/95		03/29/95		03/29/95		03/29/95		03/30/95		03/30/95	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A
CAS #	Parameter												
621-64-7	N-Nitroso-di-n-propylamine	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
67-72-1	Hexachloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
78-59-1	Isophorone	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
88-75-5	2-Nitrophenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
105-67-9	2,4-Dimethylphenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
120-83-2	2,4-Dichlorophenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
91-20-3	Naphthalene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
106-47-8	4-Chloroaniline	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
87-68-3	Hexachlorobutadiene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
91-57-6	2-Methylnaphthalene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	UJ	10.	UJ	10.	UJ	10.	UJ	10.	UJ	10.	UJ
88-06-2	2,4,6-Trichlorophenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
95-95-4	2,4,5-Trichlorophenol	25.	U	25.	U	25.	U	25.	U	25.	U	25.	U
91-58-7	2-Chloronaphthalene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
88-74-4	2-Nitroaniline	25.	U	25.	U	25.	U	25.	U	25.	U	25.	U
131-11-3	Dimethylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
208-96-8	Acenaphthylene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
99-09-2	3-Nitroaniline	25.	U	25.	U	25.	U	25.	U	25.	U	25.	U
83-32-9	Acenaphthene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
51-28-5	2,4-Dinitrophenol	25.	UJ	25.	UJ	25.	UJ	25.	UJ	25.	UJ	25.	UJ
100-02-7	4-Nitrophenol	25.	UJ	25.	UJ	25.	UJ	25.	UJ	25.	UJ	25.	UJ
132-64-9	Dibenzofuran	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
84-66-2	Diethylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
7005-72-3	4-Chlorophenylphenylether	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
86-73-7	Fluorene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
100-01-6	4-Nitroaniline	25.	U	25.	U	25.	U	25.	U	25.	U	25.	U
534-52-1	4,6-Dinitro-2-methylphenol	25.	U	25.	U	25.	U	25.	U	25.	U	25.	U
86-30-6	N-Nitrosodiphenylamine	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
101-55-3	4-Bromophenylphenylether	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
118-74-1	Hexachlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
87-86-5	Pentachlorophenol	25.	UJ	25.	UJ	25.	UJ	25.	UJ	25.	UJ	25.	UJ
85-01-8	Phenanthrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U

*** Validation Complete ***

NAS MEMPHIS

NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

1345 SVOA	SAMPLE ID ------->	4BG-G-MW04-LS		4BG-G-MW04-UF		5BG-G-MW05-LF		5BG-H-MW05-LF		5BG-G-MW05-LS		5BG-G-MW05-UF	
	ORIGINAL ID ----->	4BGGMW04LS		4BGGMW04UF		5BGGMW05LF		5BGHMW05LF		5BGGMW05LS		5BGGMW05UF	
	LAB SAMPLE ID --->	120094		120095		120111		120112		120113		120114	
	SAMPLE DATE ----->	03/16/95		03/16/95		03/17/95		03/17/95		03/17/95		03/17/95	
	DATE EXTRACTED -->	03/22/95		03/22/95		03/23/95		03/23/95		03/23/95		03/24/95	
	DATE ANALYZED --->	03/29/95		03/29/95		03/29/95		03/29/95		03/30/95		03/30/95	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ----------->	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A
CAS #	Parameter												
120-12-7	Anthracene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
86-74-8	Carbazole	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
84-74-2	Di-n-butylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
206-44-0	Fluoranthene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
129-00-0	Pyrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
85-68-7	Butylbenzylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
91-94-1	3,3'-Dichlorobenzidine	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
56-55-3	Benzo(a)anthracene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
218-01-9	Chrysene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
117-84-0	Di-n-octylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
207-08-9	Benzo(k)fluoranthene	10.	UJ	10.	UJ	10.	UJ	10.	UJ	10.	UJ	10.	UJ
50-32-8	Benzo(a)pyrene	10.	UJ	10.	UJ	10.	UJ	10.	U	10.	UJ	10.	UJ
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
53-70-3	Dibenzo(a,h)anthracene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-95-2	Phenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
95-57-8	2-Chlorophenol	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
95-48-7	2-Methylphenol (o-Cresol)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
106-44-5	4-Methylphenol (p-Cresol)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
98-95-3	Nitrobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U

1345 TOTAL PHOS	SAMPLE ID ------->` `ORIGINAL ID ----->` `LAB SAMPLE ID --->` `SAMPLE DATE ----->` `DATE EXTRACTED -->` `DATE ANALYZED --->` `MATRIX ---------->` `UNITS ---------->`	007-G-MW03-LS 007GMW03LS 120086 03/15/95 03/22/95 03/22/95 Water mg/L A					
CAS #	Parameter						
)99900-03-5	Phosphorus Total	0.02 U					

*** Validation Complete ***

NAS MEMPHIS
NAS MEMPHIS, RFI, ASSEMBLY A
Primary Samples

1345 TPH	SAMPLE ID ------->	003-G-GM06-UF	007-G-GM09-MF	007-G-MW08-LS	2BG-G-MW02-LF	2BG-G-MW02-LS	4BG-G-MW04-LF
	ORIGINAL ID ----->	003GGM06UF	007GGM09MF	007GMW08LS	2BGGMW02LF	2BGGMW02LS	4BGGMW04LF
	LAB SAMPLE ID --->	120158	120080	120081	120099	120100	120083
	SAMPLE DATE ----->	03/20/95	03/16/95	03/16/95	03/17/95	03/17/95	03/16/95
	DATE EXTRACTED -->	04/11/95	04/07/95	04/07/95	04/07/95	04/07/95	04/07/95
	DATE ANALYZED --->	04/12/95	04/10/95	04/10/95	04/10/95	04/10/95	04/10/95
	MATRIX ---------->	Water	Water	Water	Water	Water	Water
	UNITS ---------->	mg/L A	mg/L A	mg/L A	mg/L A	mg/L A	mg/L A
CAS #	Parameter						
9999900-02-4	Petroleum Hydrocarbons, TPH	2. U	2. U	2. U	23.4 U	2. U	2. U

*** Validation Complete ***

NAS MEMPHIS

NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

1345 TPH						
SAMPLE ID ------->	4BG-G-MW04-LS	4BG-G-MW04-UF	5BG-G-MW05-LF	5BG-H-MW05-LF	5BG-G-MW05-LS	5BG-G-MW05-UF
ORIGINAL ID ----->	4BGGMW04LS	4BGGMW04UF	5BGGMW05LF	5BGHMW05LF	5BGGMW05LS	5BGGMW05UF
LAB SAMPLE ID --->	120084	120085	120102	120103	120104	120105
SAMPLE DATE ----->	03/16/95	03/16/95	03/17/95	03/17/95	03/17/95	03/17/95
DATE EXTRACTED -->	04/07/95	04/07/95	04/10/95	04/10/95	04/10/95	04/10/95
DATE ANALYZED --->	04/10/95	04/10/95	04/12/95	04/12/95	04/12/95	04/12/95
MATRIX ---------->	Water	Water	Water	Water	Water	Water
UNITS ----------->	mg/L A	mg/L A	mg/L A	mg/L A	mg/L A	mg/L A
CAS # Parameter						
9900-02-4 Petroleum Hydrocarbons, TPH	2. U	2. U	2. U	2. U	2. U	2. U

*** Validation Complete ***

NAS MEMPHIS

NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

1345 VOA	SAMPLE ID ------->	003-G-GM06-UF		007-G-GM09-MF		007-G-MW01-LS		007-G-MW08-LS		2BG-G-MW02-LF		2BG-G-MW02-LS	
	ORIGINAL ID ----->	003GGM06UF		007GGM09MF		007GMW01LS		007GMW08LS		2BGGMW02LF		2BGGMW02LS	
	LAB SAMPLE ID --->	120161		120090		120089		120091		120108		120109	
	SAMPLE DATE ----->	03/20/95		03/16/95		03/16/95		03/16/95		03/17/95		03/17/95	
	DATE ANALYZED --->	03/27/95		03/25/95		03/25/95		03/25/95		03/26/95		03/26/95	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A
CAS #	Parameter												
74-87-3	Chloromethane	10.	U	10.	UJ	10.	UJ	10.	UJ	10.	U	10.	U
74-83-9	Bromomethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-01-4	Vinyl chloride	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-00-3	Chloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-09-2	Methylene chloride	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
67-64-1	Acetone	38.	J	10.	U	10.	U	10.	U	10.	U	17.	U
75-15-0	Carbon disulfide	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-35-4	1,1-Dichloroethene	10.	U	10.	U	1.	J	10.	U	10.	U	10.	U
75-34-3	1,1-Dichloroethane	10.	U	10.	U	46.		10.	U	10.	U	10.	U
540-59-0	1,2-Dichloroethene (total)	10.	U	10.	U	19.		10.	U	10.	U	10.	U
67-66-3	Chloroform	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
107-06-2	1,2-Dichloroethane	10.	U	10.	U	3.	J	10.	U	10.	U	10.	U
78-93-3	2-Butanone (MEK)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
71-55-6	1,1,1-Trichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
56-23-5	Carbon tetrachloride	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-27-4	Bromodichloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
78-87-5	1,2-Dichloropropane	10.	U	10.	U	1.	J	10.	U	10.	U	10.	U
10061-01-5	cis-1,3-Dichloropropene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
79-01-6	Trichloroethene	10.	U	4.	J	9.	J	10.	U	10.	UJ	10.	U
124-48-1	Dibromochloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
71-43-2	Benzene	10.	U	1.	J	7.	J	10.	U	10.	UJ	10.	U
10061-02-6	trans-1,3-Dichloropropene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-25-2	Bromoform	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
591-78-6	2-Hexanone	10.	U	10.	UJ	25.	J	10.	UJ	10.	U	10.	U
127-18-4	Tetrachloroethene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-88-3	Toluene	10.	U	1.	J	10.	U	10.	U	10.	UJ	10.	U
108-90-7	Chlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
100-41-4	Ethylbenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
100-42-5	Styrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
1330-20-7	Xylene (Total)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U

1345 VOA													
	SAMPLE ID ------>	4BG-G-MW04-LF		4BG-G-MW04-LS		4BG-G-MW04-UF		5BG-G-MW05-LF		5BG-H-MW05-LF		5BG-G-MW05-LS	
	ORIGINAL ID ----->	4BGGMW04LF		4BGGMW04LS		4BGGMW04UF		5BGGMW05LF		5BGHMW05LF		5BGGMW05LS	
	LAB SAMPLE ID --->	120093		120094		120095		120111		120112		120113	
	SAMPLE DATE ----->	03/16/95		03/16/95		03/16/95		03/17/95		03/17/95		03/17/95	
	DATE ANALYZED --->	03/24/95		03/24/95		03/24/95		03/26/95		03/26/95		03/26/95	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A
CAS #	Parameter												
74-87-3	Chloromethane	10.	UJ	10.	UJ	10.	UJ	10.	U	10.	U	10.	U
74-83-9	Bromomethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-01-4	Vinyl chloride	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-00-3	Chloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-09-2	Methylene chloride	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
67-64-1	Acetone	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-15-0	Carbon disulfide	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-35-4	1,1-Dichloroethene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-34-3	1,1-Dichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
540-59-0	1,2-Dichloroethene (total)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
67-66-3	Chloroform	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
107-06-2	1,2-Dichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
78-93-3	2-Butanone (MEK)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
71-55-6	1,1,1-Trichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
56-23-5	Carbon tetrachloride	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-27-4	Bromodichloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
78-87-5	1,2-Dichloropropane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
0061-01-5	cis-1,3-Dichloropropene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
79-01-6	Trichloroethene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
124-48-1	Dibromochloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
71-43-2	Benzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
0061-02-6	trans-1,3-Dichloropropene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-25-2	Bromoform	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
591-78-6	2-Hexanone	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
127-18-4	Tetrachloroethene	10.	U	10.	U	10.	U	24.		22.		10.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-88-3	Toluene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-90-7	Chlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
100-41-4	Ethylbenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
100-42-5	Styrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
1330-20-7	Xylene (Total)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U

1345	SAMPLE ID ------->	SBG-G-MW05-UF					
VOA	ORIGINAL ID ----->	SBGGMW05UF					
	LAB SAMPLE ID --->	120114					
	SAMPLE DATE ----->	03/17/95					
	DATE ANALYZED --->	03/26/95					
	MATRIX ---------->	Water					
	UNITS ----------->	UG/L	A				
CAS #	Parameter						
74-87-3	Chloromethane	10.	U				
74-83-9	Bromomethane	10.	U				
75-01-4	Vinyl chloride	10.	U				
75-00-3	Chloroethane	10.	U				
75-09-2	Methylene chloride	10.	U				
67-64-1	Acetone	10.	U				
75-15-0	Carbon disulfide	10.	U				
75-35-4	1,1-Dichloroethene	10.	U				
75-34-3	1,1-Dichloroethane	10.	U				
540-59-0	1,2-Dichloroethene (total)	10.	U				
67-66-3	Chloroform	10.	U				
107-06-2	1,2-Dichloroethane	10.	U				
78-93-3	2-Butanone (MEK)	10.	U				
71-55-6	1,1,1-Trichloroethane	10.	U				
56-23-5	Carbon tetrachloride	10.	U				
75-27-4	Bromodichloromethane	10.	U				
78-87-5	1,2-Dichloropropane	10.	U				
10061-01-5	cis-1,3-Dichloropropene	10.	U				
79-01-6	Trichloroethene	10.	U				
124-48-1	Dibromochloromethane	10.	U				
79-00-5	1,1,2-Trichloroethane	10.	U				
71-43-2	Benzene	10.	U				
10061-02-6	trans-1,3-Dichloropropene	10.	U				
75-25-2	Bromoform	10.	U				
108-10-1	4-Methyl-2-Pentanone (MIBK)	10.	U				
591-78-6	2-Hexanone	10.	U				
127-18-4	Tetrachloroethene	17.					
79-34-5	1,1,2,2-Tetrachloroethane	10.	U				
108-88-3	Toluene	10.	U				
108-90-7	Chlorobenzene	10.	U				
100-41-4	Ethylbenzene	10.	U				
100-42-5	Styrene	10.	U				
1330-20-7	Xylene (Total)	10.	U				

VALIDATA

Chemical Services, Inc.

P. O. Box 930422, Norcross, Ga 30093

DATA VALIDATION SUMMARY
REPORT

COMPANY:	Ensafe/Allen & Hoshall
SITE NAME:	NAS Memphis
PROJECT NUMBER:	8500.024
CONTRACTED LAB:	National Environmental Testing, Inc.
QA/QC LEVEL:	Level III
EPA SOW/METHOD:	EPA 1990 SOW
VALIDATION GUIDELINES:	*USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*, 1994; *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, 1994
SAMPLE MATRIX:	Water
TYPES OF ANALYSES:	Volatile Organics (VOA), Semivolatile Organics (SVOA), Pesticides/PCB's (P/PCB), Total Metals and Cyanide (Me/CN), Total Petroleum Hydrocarbons (TPH), Herbicides (HERB), Organophosphorus Pesticides (OPPE), Alkalinity (ALK), Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Total Kjeldahl Nitrogen (TKN), Total Phosphorus (P), Nitrate (N), Hardness (HD), Total Suspended Solids (TSS), Turbidity (TB)
SDG NUMBER:	1347

SAMPLES:

Client Sample #:	Lab Sample #:	Matrix	VOA	SVOA	P/PCB	HERB	TPH
003GGM01LS	120411/05	Water	X	X	X	X	X
003GGM07UF	120287/79	Water	X	X	X	X	X
003GGM08LS	120412/06	Water	X	X	X	X	X
003GMW03LS	120288/80	Water	X	X	X	X	X
003GMW03MF	120413/03	Water	X	X	X	X	X
003HMW03MF	120414/07	Water	X	X	X	X	X
003GMW03MFDL	120413DL	Water	X				
003HMW03MFDL	120414DL	Water	X				
003GMW03MFRE	120413RE	Water		X			
003HMW03MFRE	120414RE	Water		X			
003GMW04LF	120289/82	Water	X	X	X	X	X

Client Sample #:	Lab Sample #:	Matrix	VOA	SVOC	P/PCB	HERB	TPH
003GMW04LFRE	120289RE	Water		X			
003GMW04LS	120290/83	Water	X	X	X	X	X
003GMW04LSRE	120290RE	Water		X			
003GMW05MF	120415/08	Water	X	X	X	X	X
003GMW05MFRE	120415RE	Water		X			
007GMW03LS	120193/73	Water		X	X	X	X
007GMW01LS	120284	Water				X	X
008GMW001F	120416/04	Water	X	X	X	X	X
008GMW002F	120417/09	Water	X	X	X	X	X
008GMW002FRE	120417RE	Water		X			
1BGGMW01LF	120189/76	Water	X	X	X	X	X
1BGGMW01LFRE	120189RE	Water		X			
1BGHMW01LF	120190/77	Water	X	X	X	X	X
1BGHMW01LFRE	120190RE	Water		X			
1BGGMW01LS	120291/81	Water	X	X	X	X	X
1BGGMW01UF	120191/78	Water	X	X	X	X	X
2BGGMW02UF	120192/79	Water	X	X	X	X	X
1BGT032095	120186	Water	X				
1BGF032095	120188	Water	X	X	X	X	
003T032195	120286	Water	X				
003T032295	120410	Water	X				

H = FIELD DUPLICATE, RE = REANALYSIS, DL = DILUTION, T = TRIP BLANK,
F = FIELD BLANK (1BGF032095)

Client Sample #:	Lab Sample #:	Matrix	TB	TSS	N	P	TKN
003GMW03MF	120403	Water	X	X	X	X	X
003GMW04LF	120282	Water	X	X	X	X	X
003GMW04LS	120283	Water	X	X	X	X	X
008GMW001F	120404	Water	X	X	X	X	X

Client Sample #:	Lab Sample #:	Matrix	ALK	BOD	COD
003GMW03MF	120403	Water	X	X	X
003GMW04LF	120282	Water	X	X	X
003GMW04LS	120283	Water	X	X	X
008GMW001F	120404	Water	X	X	X

Client Sample #:	Lab Sample #:	Matrix	Me/CN	HD	OPPE
003GGM01LS	120405/11	Water	X		X
003GGM01LSMS	120411MS	Water	X		
003GGM07UF	120279/87	Water	X		X
003GGM08LS	120406/12	Water	X		X
003GGM08LSD	120412MD	Water	X		

Client Sample #:	Lab Sample #:	Matrix	Me/CN	HD	OPPE
003GMW03LS	120280/88	Water	X		X
003GMW03MF	120403*	Water	X	X	X
003GMW03MF	120413	Water	X		
003HMW03MF	120407/14	Water	X		X
003GMW04LF	120282*	Water	X	X	X
003GMW04LF	120289	Water	X		
003GMW04LS	120283*	Water	X	X	X
003GMW04LS	120290	Water	X		
003GMW05MF	120408/15	Water	X		X
007GMW01LS	120292	Water	X		
007GMW03LS	120173	Water			X
008GMW001F	120404	Water	X	X	X
008GMW001F	120416	Water	X		
008GMW002F	120409/17	Water	X		X
1BGGMW01LF	120176/89	Water	X		X
1BGHMW01LF	120177/90	Water	X		X
1BGGMW01LS	120281/91	Water	X		X
1BGGMW01UF	120178/91	Water	X		X
2BGGMW02UF	120179/92	Water	X		X
1BGF032095	120188	Water	X		X

H = FIELD DUPLICATE, MS = MATRIX SPIKE, MD = MATRIX DUPLICATE

DATA REVIEWER(S): Amy L. Hogan, Marvin L. Smith

RELEASE SIGNATURE: 

Data Qualifier Definitions:

J	-	The associated numerical value is an estimated quantity.
R	-	The data are unusable (the compound/analyte may or may not be present). Resampling and reanalysis are necessary for verification.
U	-	The compound/analyte was analyzed for, but not detected. The associated numerical value is the sample quantitation limit.
UJ	-	The compound/analyte was analyzed for, but not detected. The sample quantitation limit is an estimated quantity.

DATA QUALIFICATION SUMMARY

NET, Inc. - 1347 Organics and Inorganics

SAMPLES: 003GGM01LS, 003GGM07UF, 003GGM08LS, 003GMW03LS, 003GMW03MF, 003GMW03MFDL, 003GMW03MFRE, 003HMW03MF, 003HMW03MFDL, 003HMW03MFRE, 003GMW04LF, 003GMW04LFRE, 003GMW04LS, 003GMW04LSRE, 003GMW05MF, 003GMW05MFRE, 008GMW001F, 008GMW002F, 008GMW002FRE, 007GMW03LS, 007GMW01LS, 1BGGMW01LF, 1BGGMW01LFRE, 1BGHMW01LF, 1BGHMW01LFRE, 1BGGMW01LS, 1BGGMW01UF, 2BGGMW02UF, 003GMW01LSMS, 003GMW08LSD, 1BGT032095, 1BGF032095, 003T032195, 003T032295

VOLATILE ORGANICS

I.) Holding Times:

All Holding Time criteria were met. No action was required.

II.) GC/MS Tuning:

All Tuning criteria were met. No action was necessary.

III.) Calibration:

Initial Calibration:

The Percent Relative Standard Deviations (%RSD's) of the following compounds exceeded the 30% QC limit for the initial calibration run on 3/23/95 on instrument HP5970H:

acetone	35.5%
2-butanone	42.0%

The positive results for acetone in the associated samples (all samples for this SDG) were flagged as estimated (J). There were no positive results for 2-butanone in the associated samples. No further action was required.

Continuing Calibration:

The Percent Differences (%D's) of the following compounds exceeded the 25% QC limit for the continuing calibration run on 3/26/95 at 08:30 on instrument HP5970H:

chloromethane	46.7%
bromomethane	31.6%
vinyl chloride	30.3%
2-hexanone	27.3%

The results for these compounds in associated samples 003GGM01LS, 003GGM08LS, 003GMW03MF, 003HMW03MF, 003GMW05MF, 008GMW001F and 008GMW002F, which consisted entirely of non-detects, were flagged as estimated (UJ).

The Percent Differences (%D'S) of the following compounds exceeded the 25% QC limit for the continuing calibration run on 3/27/95 at 12:14 on instrument HP5970K:

chloromethane	38.8%
vinyl chloride	28.6%
acetone	30.3%
2-butanone	34.4%
4-methyl-2-pentanone	37.1%
2-hexanone	40.7%

The positive and non-detect results for these compounds in associated samples 1BGGMW01LF, 1BGHMW01LF, 1BGGMW01UF and 2BGGMW02UF were flagged as estimated (J) and (UJ).

IV.) Blanks:

Method Blanks:

Acetone was detected at 9.0 ug/L in water method blank VBLK032695H. The positive results for this compound in associated samples 003GGM01LS, 003GGM08LS, 003GMW03MF, 003GMW05MF, 003HMW03MF, 008GMW001F and 008GMW002F less than 10X the blank were flagged as undetected (U) with the detection limit being raised to the level of contamination in each sample.

Methylene chloride was detected at 2.0 ug/L in water method blank VBLK032795K. There were no positive results for this compound in the associated samples. No action was required.

Methylene chloride was detected at 1.0 ug/L in water method blank VBLK033095K. There were no positive results for this compound in the associated samples. No action was required.

Trip Blanks and Equipment Blanks:

Acetone was detected at 6 ug/L in trip blank 003T032295. The associated samples were previously qualified using the method blank. No further action was required.

Acetone, 2-butanone and chlorobenzene were detected at 7 ug/L, 17 ug/L and 1 ug/L, respectively, in field blank 1BGF032095. The associated positive detections of acetone below 10X the blank contamination were flagged as undetected (U) with the detection limit being raised to the level of contamination in each sample. There were no associated positive sample results for the other compounds, so no further action was required. The associated samples were 1BGGMW01LS, 1BGHMW01LF and 1BGGMW01LF.

TIC's:

There were no TIC's reported in the method blanks for this SDG.

V.) Surrogate Recoveries:

All Surrogate Recovery criteria were met. No action was required.

VI.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

There were no MS / MSD analyses requested for this SDG. No action was required.

VII.) Field Duplicates:

The Relative Percent Differences (RPD's) of ethylbenzene (67%) and xylene (44%) exceeded the 30% QC limit for field duplicate samples 003GMW03MF and 003HMW03MF. The results for these compounds in the two samples were flagged as estimated (J).

The RPD of acetone (9.5%) was within the 30% QC limit for field duplicate samples 1BGGMW01LF and 1BGHMW01LF. No action was required.

VIII.) Internal Standards Performance:

All Internal Standards Performance criteria were met. No action was required.

IX.) TCL Compound Identification:

All TCL criteria were met, so no action was necessary.

X.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL's):

All CRQL criteria were met. No action was required.

XI.) Tentatively Identified Compounds (TIC's):

All TIC criteria were met, so no action was taken.

XII.) System Performance:

All criteria were met, so no action was necessary.

XIII.) Overall Assessment of Data/General:

All remaining laboratory data were acceptable with qualification.

SEMIVOLATILE ORGANICS

I.) Holding Times:

The number of days between sample date and extraction date exceeded the 14 day QC limit for the following samples:

003GGM07UF	20
003GMW03MFRE	29
003HMW03MFRE	29
003GMW04LFRE	30
003GMW04LSRE	30
003GMW05MFRE	29
008GMW002FRE	29
1BGGMW01LFRE	31
1BGHMW01LFRE	31

The results for sample 003GGM07UF, which consisted entirely of non-detects, were flagged as estimated (UJ). The results for the other samples were rejected (R) since the number of days exceeded the QC limit by more than 2X.

II.) GC/MS Tuning:

All GC/MS Tuning criteria were met, so no action was necessary.

III.) Calibration:

Initial Calibration:

The Percent Relative Standard Deviation (%RSD) of hexachlorocyclopentadiene (43.7%) exceeded the 30% QC limit for the initial calibration run on 2/21/95 on instrument HP5970F. There were no positive results for this compound in the associated samples. No action was required.

Continuing Calibration:

The Percent Differences (%D's) of the following compounds exceeded the 25% QC limit for the continuing calibration run on 4/10/95 at 17:01 on instrument HP5970F:

2,2'-oxybis(1-chloropropane)	28.2%
4-chloroaniline	70.1%
2-methylnaphthalene	38.4%
4-nitrophenol	29.0%
n-nitrosodiphenylamine	74.6%

All results for these compounds in associated samples 1BGGMW01LF, 1BGHMW01LF, 1BGGMW01UF, 2BGGMW02UF, 007GMW03LS, 003GMW03LS, 003GMW04LF, 003GMW04LS, 1BGGMW01LS, 003GGM01LS, 003GMW08LS, 003HMW03MF, 003GMW05MF and 008GMW001F, which consisted entirely of non-detects, were flagged as estimated (UJ).

The Percent Differences (%D's) of the following compounds exceeded the 25% QC limit for the continuing calibration run on 4/12/95 at 11:05 on instrument HP5970F:

2,2'-oxybis(1-chloropropane)	30.5%
n-nitroso-di-n-propylamine	25.3%
2,4-dimethylphenol	25.0%
4-chloroaniline	71.4%
2-nitroaniline	32.7%
4-nitrophenol	37.7%
n-nitrosodiphenylamine	75.9%

The results for these compounds in associated samples 008GMW002F and 003GMW03MF, which consisted entirely of non-detects, were flagged as estimated (UJ).

The Percent Difference (%D) of the following compounds exceeded the 25% QC limit for the continuing calibration run on 4/20/95 at 15:36 on instrument HP5970F:

2,4-dinitrophenol	26.1%
4-nitrophenol	26.1%

The results for these compounds in associated sample 003GGM07UF, which consisted entirely of non-detects, were flagged as estimated (UJ).

The Percent Differences (%D's) of the following compounds exceeded the 25% QC limit for the continuing calibration run on 4/26/95 at 11:09 on instrument HP5970J:

bis (2-chloroethyl)ether	25.9%
2,2'-oxybis(1-chloropropane)	67.4%
2,6-dinitrotoluene	29.4%
3-nitroaniline	25.8%
4-nitrophenol	28.6%
2,4-dinitrotoluene	32.0%
4-nitroaniline	25.2%

The results for these compounds in the associated samples were previously rejected based on holding times. No further action was necessary.

The Percent Differences (%D's) of the following compounds exceeded the 25% QC limit for the continuing calibration run on 4/24/95 at 13:57 on instrument HP5970J:

2,2'-oxybis(1-chloropropane)	50.4%
2,4-dinitrophenol	26.1%
4-nitrophenol	36.6%
4,6-dinitro-2-methylphenol	43.2%

The results for these compounds in the associated samples were previously rejected based on holding times. No further action was required.

IV.) Blanks:

Method Blanks:

All Method Blank criteria were met. No action was required.

Field Blanks:

There were no positive detections in the field blanks associated with this SDG. No action was required.

V.) Surrogate Recoveries:

The Percent Recoveries (%R's) of 2-fluorophenol (6%) and 2-chlorophenol (14%) were below their respective 21-110% and 33-110% QC limits in sample 003GMW03MFRE. All results for this sample were previously rejected. No further action was necessary.

The Percent Recoveries (%R's) of the following compounds were below their respective QC limits for sample 003GMW03MF:

Compound	%R	QC limits
2-fluorophenol	9	21-110
2,4,6-tribromophenol	7	10-123
2-chlorophenol	20	33-110

Since the %R's of two surrogates were less than 10%, the acid fraction results for this sample, which consisted entirely on non-detects, were rejected (R).

The Percent Recoveries (%R's) of the following compounds were below their respective QC limits for sample 003GMW04LF:

Compound	%R	QC limits
2-fluorophenol	8	21-110
2,4,6-tribromophenol	9	10-123
2-chlorophenol	20	33-110

Since the %R's of two surrogates were less than 10%, the acid fraction results for this sample, which consisted entirely of non-detects, were rejected (R).

The Percent Recoveries (%R's) of the following compounds were below their QC limits for sample 003GMW04LFRE:

Compound	%R	QC limits
2-fluorophenol	3	21-110
2,4,6-tribromophenol	5	10-123
2-chlorophenol	11	33-110

Since the %R's of two surrogates were less than 10%, the acid fraction results for this sample, which consisted entirely of non-detects, were rejected (R).

The Percent Recoveries (%R's) of the following compounds were below their respective QC limits for sample 003GMW04LS:

Compound	%R	QC limits
2-fluorophenol	5	21-110
2,4,6-tribromophenol	6	10-123
2-chlorophenol	21	33-110

Since the %R of two of the surrogates were less than 10%, the acid fraction results for this sample, which consisted entirely of non-detects, were rejected (R). The reanalysis passed all Surrogate Recovery criteria.

The Percent Recoveries (%R's) of the following compounds were below their QC limits for sample 003GMW05MF:

Compound	%R	QC limits
2-fluorophenol	1	21-110
2,4,6-tribromophenol	0	10-123
2-chlorophenol	6	33-110

Since the %R of three surrogates were less than 10%, the acid fraction results for this sample, which consisted entirely of non-detects, were rejected (R).

The Percent Recoveries (%R's) of the following compounds were below their QC limits for sample 003GMW05MFRE:

Compound	%R	QC limits
2-fluorophenol	1	21-110
2,4,6-tribromophenol	3	10-123
2-chlorophenol	6	33-110

Since the %R's of three surrogates were less than 10%, the acid fraction results for this sample, which consisted entirely of non-detects, would have been rejected (R). All results for this sample were previously rejected due to holding time exceedance. No further action was required.

The Percent Recoveries (%R's) of the following compounds were below their QC limits for sample 003HMW03MF:

Compound	%R	QC limits
2-fluorophenol	7	21-110
2,4,6-tribromophenol	4	10-123
2-chlorophenol	17	33-110

Since the %R's of two surrogates were less than 10%, the acid fraction results for this sample, which consisted entirely of non-detects, were rejected (R).

The Percent Recoveries (%R's) of the following compounds were below their QC limits for sample 003HMW03MFRE:

Compound	%R	QC limits
2-fluorophenol	1	21-110
2,4,6-tribromophenol	2	10-123
2-chlorophenol	4	33-110

Since the %R's of three surrogates were less than 10%, the acid fraction results for this sample, which consisted entirely of non-detects, would have been rejected (R). All results for this sample were previously rejected due to holding time exceedance. No further action was required.

The Percent Recoveries (%R's) of the following compounds were below their QC limits for sample 008GMW002F:

Compound	%R	QC limits
2-fluorophenol	9	21-110
2,4,6-tribromophenol	3	10-123
2-chlorophenol	22	33-110

Since the %R's of two surrogates were less than 10%, the acid fraction results for this sample, which consisted entirely of non-detects, were rejected (R).

The Percent Recoveries (%R's) of the following compounds were below their QC limits for sample 008GMW002FRE:

Compound	%R	QC limits
2-fluorophenol	1	21-110
2,4,6-tribromophenol	4	10-123
2-chlorophenol	6	33-110

Since the %R's of three surrogates were less than 10%, the acid fraction results for this sample, which consisted entirely of non-detects, would have been rejected (R). All results for this sample were previously rejected due to holding time exceedance. No further action was required.

The Percent Recovery (R) of terphenyl-d14 (20%) was below the 33-141% QC limits for sample 007GMW03LS. Since only one surrogate failed, no action was required.

The Percent Recoveries (%R's) of the following compounds were below their QC limits for sample 1BGGMW01LF:

Compound	%R	QC limits
2-fluorophenol	3	21-110
2,4,6-tribromophenol	0	10-123
2-chlorophenol	11	33-110

Since the %R of three surrogates were less than 10%, the acid fraction results for this sample, which consisted entirely of non-detects, were rejected (R).

The Percent Recoveries (%R's) of the following compounds were below their QC limits for sample 1BGGMW01LFRE:

Compound	%R	QC limits
2-fluorophenol	4	21-110
2,4,6-tribromophenol	8	10-123
2-chlorophenol	18	33-110

Since the %R's of two surrogates were less than 10%, the acid fraction results for this sample, which consisted entirely of non-detects, would have been rejected (R). All results for this sample were previously rejected due to holding time exceedance. No further action was required.

The Percent Recoveries (%R's) of the following compounds were below their QC limits for sample 1BGHMW01LF:

Compound	%R	QC limits
2-fluorophenol	2	21-110
2,4,6-tribromophenol	3	10-123
2-chlorophenol	9	33-110

Since the %R's of three surrogates were less than 10%, the results for this sample, which consisted entirely of non-detects, were rejected (R).

The Percent Recoveries (%R's) of the following compounds were below their QC limits for sample 1BGHMW01LFRE:

Compound	%R	QC limits
2-fluorophenol	5	21-110
2-chlorophenol	20	33-110

The results for this sample were previously rejected (R). No further action was taken.

VI.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

There were no MS / MSD analyses required for this SDG. No action was required.

VII.) Field Duplicates:

There were no calculable Relative Percent Differences (RPD's) for field duplicate pairs 003GMW03MF / 003HMW03MF and 1BGGMW01LF \ 1BGHMW01LF. No action was required.

VIII.) Internal Standards Performance:

All Internal Standard Performance criteria were met. No action was required.

IX.) TCL Compound Identification:

All TCL criteria were met, so no action was required.

X.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL's):

All CRQL criteria were met, so no action was required.

XI.) Tentatively Identified Compounds (TIC's):

All TIC criteria were met, so no action was taken.

XII.) System Performance:

All criteria were met, so no action was necessary.

XIII.) Overall Assessment of Data/General:

The results for the 7 reanalysis samples were rejected due to Holding Time exceedances. The results for 14 samples (original and reanalyses) were rejected due to two or more surrogate %R's in each sample being below the 10% QC limit. The results for the associated field blank were not reported on the database. All other data were acceptable with qualification.

PESTICIDES/PCB's

I.) Holding Times:

All Holding Time criteria were met. No action was required.

II.) Instrument Performance:

All Instrument Performance criteria were met. No action was required.

III.) Calibration:

All Calibration criteria were met. No action was required.

IV.) Blanks:

Method Blanks:

There were no positive detections in the method blanks, so no data qualification was necessary.

Field Blanks:

There were no positive detections in the field blanks associated with this SDG. No action was required.

V.) Surrogate Recoveries:

All Surrogate Recovery criteria were met. No action was required.

VI.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

There were no MS / MSD analyses requested for this SDG. No action was required.

VII.) TCL Compound Identification:

Pesticide/PCB Identification Summary (PIS):

All PIS criteria were met. No action was required.

VIII.) Field Duplicates:

There were no calculable Relative Percent Differences (RPD's) for field duplicate sample pairs 003GMW03MF / 003HMW03MF and 1BGGMW01LF / 1BGHMW01LF. No action was required.

IX.) Pesticide Cleanup Check:

Florisil Cartridge Check:

All criteria were met, so no action was taken.

Gel Permeation Chromatography (GPC):

All GPC criteria were met, so no action was necessary.

X.) Overall Assessment of Data/General:

The results for the field blank samples associated with this SDG were not on the database. All other data were acceptable without qualification.

ORGANOPHOSPHORUS PESTICIDES

I.) Holding Times:

All Holding Time criteria were met. No action was required.

II.) Instrument Performance:

All Instrument Performance criteria were met. No action was necessary.

III.) Calibration:

Initial Calibration:

The Percent Relative Standard Deviation (%RSD) of the following compounds exceeded the 20% QC limit for the initial calibration run on 4/05/95.

alpha mevinphos	28.3%
fensulfothion	31.9%
guthion	26.5%

The non-detect results for these compounds in all associated samples were flagged as estimated (UJ).

Continuing Calibration:

The Percent Differences (%D's) of the following compounds exceeded the 25% QC limit for the continuing calibration run on 4/06/95 at 03:35:

merphos	38.4
coumophos	80.4

The results for these compounds in associated samples 003GMW03MF, 008GMW001F, 007GMW03LS, 1BGGMW01LF, 1BGHMW01LF, 1BGGMW01LS, 1BGGMW01UF, 2BGGMW02UF and 003GMW04LF, which consisted entirely of non-detects, were flagged as estimated (UJ).

The Percent Differences (%D's) of the following compounds exceeded the 25% QC limit for the continuing calibration run on 4/07/95 at 12:20:

dichlorvos	44.2
alpha mevinphos	67.5
o,demeton	43.0
ethoprop	39.5
naled	38.8
phorate	37.5
s,demeton	45.3
diazinon	53.5
disulfoton	36.6
chlorpyrifos	57.0
trichloronate	29.7
merphos	94.0
tokuthion	34.8
sulprofos	28.9
methyl parathion	48.7
ronnel	46.1
fenthion	40.2
fensulfothion	53.6
stirophos	48.3
coumophos	159

The results for these compounds in associated samples 003GMW04LF, 003GMW04LS, 003GMW05MF, 008GMW001F, 008GMW002F, 003GMW01LS, 003GMW07UF, 003GMW08LS, 003GMW03LS, 003GMW03MF, 003HMW03MF, 1BGGMW01LS and 2BGGMW02UF, which consisted entirely of non-detects were flagged as estimated (UJ).

The Percent Differences (%D's) of the following compounds exceeded the 25% QC limit for the continuing calibration run on 4/07/95 at 15:13:

merphos	25.4
coumophos	73.1

The results for these compounds in associated samples 003GMW04LS, 003GMW01LS, 003GGM08LS, 003HMW03MF, 003GMW05MF and 008GMW002F, which consisted entirely of non-detects, were flagged as estimated (UJ).

IV.) Blanks:

Method Blanks:

All Method Blank criteria were met. No action was required.

Field Blanks:

There were no positive detections in the field blanks associated with this SDG. No action was required.

V.) Surrogate Recoveries:

All Surrogate Recovery criteria for the method was met. No action was required.

VI.) Laboratory Control Sample

The Percent Recoveries (%R's) of the following compounds were below the 40-150% QC limit for LCS0325A:

naled	21.3%
merphos	36.9%

All results for these compounds in the associated samples, which consisted entirely of non-detects, were previously flagged based on the associated continuing calibrations. No further action was necessary.

The Percent Recoveries of the following compounds were below the 40-150% QC limits for sample LCS0328A:

o,demeton	32.1%
naled	39.3%
merphos	32.7%

All results for these compounds in the associated samples, which consisted entirely of non-detects, were

previously flagged based on the associated continuing calibrations. No further action was necessary.

VII.) Matrix Spike/Matrix Spike Duplicate (MS / MSD):

There were no MS / MSD analyses was requested for this SDG. No action was required.

VIII.) TCL Compound Identification:

The column Percent Difference (%D) for naled (415%) for sample 003GMW04LS exceeded the 70% QC limit. Since the %D exceeded 300%, the result for this compound was rejected (R).

IX.) Field Duplicates:

There were no calculable Relative Percent Differences (RPD's) for field duplicate sample pairs 003GMW03MF / 003HMW03MF and 1BGGMW01LF / 1BGHMW01LF. No action was required.

X.) Overall Assessment of Data/General:

One result for naled was rejected due to a high PIS %D (>300%). All remaining data were acceptable with qualification.

HERBICIDES

I.) Holding Times:

All Holding Time criteria were met. No action was required.

II.) Instrument Performance:

All Instrument Performance criteria were met. No action was necessary.

III.) Calibration:

Initial Calibration:

The Percent Relative Standard Deviations (%RSD's) of the following compounds exceeded the 20% QC limit for the initial calibration run on 3/30/95:

MCPP	34.9%
dinoseb	45.8%

Since there were no positive results for these compounds in the associated samples, no action was taken.

Continuing Calibration:

The Percent Difference (%D) of MCPP (30.1%) exceeded the 25% QC limit for the continuing calibration run on 4/01/95 at 04:19. The results for this compound in associated samples 003GGM07UF,

003GMW04LF, 003GMW05MF, 003GMW04LS, 007GMW01LS, 007GMW03LS, 008GMW001F, 1BGGMW01LF, 1BGHMW01LF, 1BGGMW01LS, 1BGGMW01UF and 2BGGMW02UF, which consisted entirely of non-detects, were flagged as estimated (UJ).

IV.) Blanks:

Method Blanks:

All Method Blank criteria were met. No action was required.

Field Blanks:

There were no positive detections in the field blanks associated with this SDG. No action was required.

V.) Surrogate Recoveries:

All Surrogate Recovery criteria were met. No action was required.

VI.) Matrix Spike/Matrix Spike Duplicate (MS / MSD):

There were no MS / MSD analyses requested for this SDG. No action was required.

VII.) LCS Recoveries:

The Percent Recovery (%R) of MCPP (154%) exceeded the 10-150% QC limits for LCS sample ESTSPK0403. Since there were no positive results for this compound in the associated samples, no action was necessary.

The Percent Recovery (%R) of 2,4,5-T (160%) exceeded the 10-150% QC limits for LCS HLCS0329A. Since there were no positive detections of this compound in the associated samples, no action was required.

VIII.) TCL Compound Identification:

All Compound Identification criteria were met. No action was required.

IX.) Field Duplicates:

There were no calculable Relative Percent Differences (RPD's) for field duplicate sample pairs 003GMW03MF / 003HMW03MF and 1BGGMW01LF / 1BGHMW01LF. No action was required.

X.) Overall Assessment of Data/General:

All other data were acceptable with qualification.

TOTAL METALS and CYANIDE

I.) Holding Times:

All Holding Time criteria were met. No action was required.

II.) Calibration:

All Calibration criteria were met. No action was required.

III.) Blanks:

The following blank results represent the highest detections associated with the samples and were used for data qualification:

Blank Type/ID#	Element	Max. Conc.	Action Level ug/L
PB	calcium	150 ug/L	750
PB	iron	15.0 ug/L	75.0
PB	magnesium	55.5 ug/l	278
CCB2	selenium	2.20 ug/L	11.0

PB = Preparation Blank, CCB = Continuing Calibration Blank

All results greater than the IDL but less than 5X the blank amount (Action Level, ug/L for water samples) for which the contaminated blank is an associated calibration or preparation blank were flagged as undetected (U).

The following analyte had a negative result with absolute values greater than the IDL:

Blank Type/ID#	Analyte	Neg. Conc.	5X Conc. (ug/L)
CCB2	arsenic	-2.60 ug/L	13.0

CCB = Continuing Calibration Blank

All associated positive sample results less than 5X the absolute value of the negative blank result were flagged as estimated (J) and all non-detects were flagged as estimated (UJ).

IV.) ICP Interference Check Sample Results:

All Interference Check Sample criteria were met. No action was required.

V.) ICP Serial Dilution Analysis:

All Serial Dilution criteria were met, so no action was necessary.

VI.) Laboratory Control Samples (LCS):

All Laboratory Control Sample criteria were met. No action was required.

VII.) Duplicate Sample Analysis:

All Duplicate Sample criteria were met. No action was necessary.

VIII.) Matrix Spike Recoveries:

The Percent Recovery (%R) of iron (13.7%) was below the 75-125% QC limits for spiked sample 003GGM01LSS. Since the %R was below 30% and all iron results were positives, associated samples 003GMW03MF, 003GMW04LF, 003GMW04LS and 008GMW001F were flagged as estimated (J).

IX.) Field Duplicates:

There were no calculable Relative Percent Differences (RPD's) for field duplicate sample pairs 003GMW03MF / 003HMW03MF and 1BGGMW01LF / 1BGHMW01LF. No action was necessary.

X.) Furnace Atomic Absorption QC:

All GFAA criteria were met. No action was required.

XI.) Sample Result, Calculation/Transcription Verification:

All criteria were met, so no action was taken.

XII.) Quarterly Verification of Instrumental Parameters:

All criteria met, so no action was taken.

XIII.) Overall Assessment of Data/General:

All laboratory data were acceptable with qualification.

TOTAL PETROLEUM HYDROCARBONS

I.) Holding Times:

All samples were extracted and analyzed within required holding times. No action was required.

II.) Calibration:

All Calibration criteria were met. No action was necessary.

III.) Blanks:

Method Blanks:

There were no positive detections in the method blanks, so no data qualification was necessary.

IV.) Laboratory Control Samples (LCS):

All LCS Recovery criteria were met, so no action was necessary.

V.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

All MS / MSD criteria were met. No action was necessary.

VI.) TCL Compound Identification:

All Compound Identification criteria were met. No action was required.

VII.) Field Duplicates:

There were no calculable RPD's in the field duplicates associated with this SDG.

VIII.) Overall Assessment of Data/General:

All data were acceptable without qualification.

ALKALINITY

I.) Holding Times:

All samples were extracted and analyzed within required holding times. No action was required.

II.) Calibration:

All Calibration criteria were met. No action was necessary.

III.) Blanks:

Method Blanks:

There were no positive detections in the method blanks, so no data qualification was necessary.

IV.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

All MS / MSD criteria were met. No action was necessary.

V.) TCL Compound Identification:

All Compound Identification criteria were met. No action was required.

VI.) Field Duplicates:

There were no field duplicates associated with this SDG.

VII.) Overall Assessment of Data/General:

All data were acceptable without qualification.

BIOCHEMICAL OXYGEN DEMAND

I.) Holding Times:

All samples were extracted and analyzed within required holding times. No action was required.

II.) Calibration:

All Calibration criteria were met. No action was necessary.

III.) Blanks:

Method Blanks:

There were no positive detections in the method blanks, so no data qualification was necessary.

IV.) Laboratory Control Samples (LCS):

All LCS Recovery criteria were met, so no action was necessary.

V.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

All MS / MSD criteria were met. No action was necessary.

VI.) Field Duplicates:

There were no field duplicates associated with this SDG.

VII.) Overall Assessment of Data/General:

All data were acceptable without qualification.

CHEMICAL OXYGEN DEMAND

I.) Holding Times:

All samples were extracted and analyzed within required holding times. No action was required.

II.) Calibration:

All Calibration criteria were met. No action was necessary.

III.) Blanks:

Method Blanks:

There were no positive detections in the method blanks, so no data qualification was necessary.

IV.) Laboratory Control Samples (LCS):

All LCS Recovery criteria were met, so no action was necessary.

V.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

All MS / MSD criteria were met. No action was necessary.

VI.) TCL Compound Identification:

All Compound Identification criteria were met. No action was required.

VII.) Field Duplicates:

There were no field duplicates associated with this SDG.

VIII.) Overall Assessment of Data/General:

All data were acceptable without qualification.

TOTAL KJELDAHL NITROGEN

I.) Holding Times:

All samples were extracted and analyzed within required holding times. No action was required.

II.) Calibration:

All Calibration criteria were met. No action was necessary.

III.) Blanks:

Method Blanks:

There were no positive detections in the method blanks, so no data qualification was necessary.

IV.) Laboratory Control Samples (LCS):

All LCS Recovery criteria were met, so no action was necessary.

V.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

All MS / MSD criteria were met. No action was necessary.

VI.) TCL Compound Identification:

All Compound Identification criteria were met. No action was required.

VII.) Field Duplicates:

There were no field duplicates associated with this SDG.

VIII.) Overall Assessment of Data/General:

All data were acceptable without qualification.

TOTAL PHOSPHORUS

I.) Holding Times:

All samples were extracted and analyzed within required holding times. No action was required.

II.) Calibration:

All Calibration criteria were met. No action was necessary.

III.) Blanks:

Method Blanks:

There were no positive detections in the method blanks, so no data qualification was necessary.

IV.) Laboratory Control Samples (LCS):

All LCS Recovery criteria were met, so no action was necessary.

V.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

All MS / MSD criteria were met. No action was necessary.

VI.) TCL Compound Identification:

All Compound Identification criteria were met. No action was required.

VII.) Field Duplicates:

There were no field duplicates associated with this SDG.

VIII.) Overall Assessment of Data/General:

All data were acceptable without qualification.

TOTAL SUSPENDED SOLIDS

I.) Holding Times:

All samples were extracted and analyzed within required holding times. No action was required.

II.) Calibration:

All Calibration criteria were met. No action was necessary.

III.) Blanks:

Method Blanks:

There were no positive detections in the method blanks, so no data qualification was necessary.

IV.) Laboratory Control Samples (LCS):

All LCS Recovery criteria were met, so no action was necessary.

V.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

All MS / MSD criteria were met. No action was necessary.

VI.) TCL Compound Identification:

All Compound Identification criteria were met. No action was required.

VII.) Field Duplicates:

There were no field duplicates associated with this SDG.

VIII.) Overall Assessment of Data/General:

All data were acceptable without qualification.

HARDNESS

I.) Holding Times:

All samples were extracted and analyzed within required holding times. No action was required.

II.) Calibration:

All Calibration criteria were met. No action was necessary.

III.) Blanks:

Method Blanks:

There were no positive detections in the method blanks, so no data qualification was necessary.

IV.) Laboratory Control Samples (LCS):

All LCS Recovery criteria were met, so no action was necessary.

V.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

All MS / MSD criteria were met. No action was necessary.

VI.) TCL Compound Identification:

All Compound Identification criteria were met. No action was required.

VII.) Field Duplicates:

There were no field duplicates associated with this SDG.

VIII.) Overall Assessment of Data/General:

All data were acceptable without qualification.

NITRATE

I.) Holding Times:

All samples were extracted and analyzed within required holding times. No action was required.

II.) Calibration:

All Calibration criteria were met. No action was necessary.

III.) Blanks:

Method Blanks:

There were no positive detections in the method blanks, so no data qualification was necessary.

IV.) Laboratory Control Samples (LCS):

All LCS Recovery criteria were met, so no action was necessary.

V.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

All MS / MSD criteria were met. No action was necessary.

VI.) TCL Compound Identification:

All Compound Identification criteria were met. No action was required.

VII.) Field Duplicates:

There were no field duplicates associated with this SDG.

VIII.) Overall Assessment of Data/General:

All data were acceptable without qualification.

TURBIDITY

I.) Holding Times:

All samples were extracted and analyzed within required holding times. No action was required.

II.) Instrument Performance:

All Instrument Performance criteria were met. No action was necessary.

III.) Calibration:

All Calibration criteria were met. No action was necessary.

IV.) Blanks:

Method Blanks:

There were no positive detections in the method blanks, so no data qualification was necessary.

V.) Laboratory Control Samples (LCS):

All LCS Recovery criteria were met, so no action was necessary.

VI.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

All MS / MSD criteria were met. No action was necessary.

VII.) TCL Compound Identification:

All Compound Identification criteria were met. No action was required.

VIII.) Field Duplicates:

There were no field duplicates associated with this SDG.

IX.) Overall Assessment of Data/General:

All data were acceptable without qualification.

NAS MEMPHIS

NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

1347 ALKALINITY						
	SAMPLE ID ------->	003-G-MW03-MF	003-G-MW04-LF	003-G-MW04-LS	008-G-MW00-1F	
	ORIGINAL ID ----->	003GMW03MF	003GMW04LF	003GMW04LS	008GMW001F	
	LAB SAMPLE ID --->	120403	120282	120283	120404	
	SAMPLE DATE ----->	03/22/95	03/21/95	03/21/95	03/22/95	
	DATE ANALYZED --->	03/31/95	03/31/95	03/31/95	03/31/95	
	MATRIX ---------->	Water	Water	Water	Water	
	UNITS ----------->	ppmCa A	ppmCa A	ppmCa A	ppmCa A	
CAS #	Parameter					
9999900-03-9	Alkalinity as CaCO3	160.	140.	240.	90.	

*** Alkalinity complete ***

NAS MEMPHIS

NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

1347 BOD - 5 Da	SAMPLE ID ------->	003-G-MW03-MF	003-G-MW04-LF	003-G-MW04-LS	008-G-MW00-1F		
	ORIGINAL ID ----->	003GMW03MF	003GMW04LF	003GMW04LS	008GMW001F		
	LAB SAMPLE ID --->	120403	120282	120283	120404		
	SAMPLE DATE ----->	03/22/95	03/21/95	03/21/95	03/22/95		
	DATE ANALYZED --->	03/23/95	03/23/95	03/23/95	03/23/95		
	MATRIX ---------->	Water	Water	Water	Water		
	UNITS ----------->	mg/L A	mg/L A	mg/L A	mg/L A		
CAS #	Parameter						
9999900-03-8	Biochemical Oxygen Demand (5-day)	8.2	2. U	2. U	2. U		

*** Validation Complete ***

NAS MEMPHIS

NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

1347 COD	SAMPLE ID ------->	003-G-MW03-MF	003-G-MW04-LF	003-G-MW04-LS	008-G-MW00-1F		
	ORIGINAL ID ----->	003GMW03MF	003GMW04LF	003GMW04LS	008GMW001F		
	LAB SAMPLE ID --->	120403	120282	120283	120404		
	SAMPLE DATE ----->	03/22/95	03/21/95	03/21/95	03/22/95		
	DATE ANALYZED --->	03/27/95	03/27/95	03/27/95	03/27/95		
	MATRIX ---------->	Water	Water	Water	Water		
	UNITS ----------->	mg/L A	mg/L A	mg/L A	mg/L A		
CAS #	Parameter						
9999900-04-0	Chemical Oxygen Demand	46.	18.	32.	26.		

*** Validation Complete ***

NAS MEMPHIS

NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

1347 HERB						
SAMPLE ID ------>	003-G-GM01-LS	003-G-GM07-UF	003-G-GM08-LS	003-G-MW03-LS	003-G-MW03-MF	003-H-MW03-MF
ORIGINAL ID ----->	003GGM01LS	003GGM07UF	003GGM08LS	003GMW03LS	003GMW03MF	003HMW03MF
LAB SAMPLE ID --->	120405	120279	120406	120280	120403	120407
SAMPLE DATE ----->	03/22/95	03/21/95	03/22/95	03/21/95	03/22/95	03/22/95
DATE EXTRACTED -->	04/03/95	03/31/95	04/03/95	03/31/95	04/03/95	04/03/95
DATE ANALYZED --->	04/04/95	04/01/95	04/04/95	04/01/95	04/04/95	04/04/95
MATRIX ---------->	Water	Water	Water	Water	Water	Water
UNITS ---------->	ug/L A	ug/L A	ug/L A	ug/L A	ug/L A	ug/L A

CAS #	Parameter											
94-82-6	2,4-DB	0.47	U	0.47	U	0.47	U	0.47	U	0.47	U	0.47	U
88-85-7	Dinoseb	0.24	U	0.24	U	0.24	U	0.24	U	0.24	U	0.24	U
93-76-5	2,4,5-T	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
93-72-1	2,4,5-TP (Silvex)	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
75-99-0	Dalapon	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U
1918-00-9	Dicamba	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
120-36-5	Dichlorprop	0.47	U	0.47	U	0.47	U	0.47	U	0.47	U	0.47	U
94-74-6	MCPA	47.	U	47.	U	47.	U	47.	U	47.	U	47.	U
93-65-2	MCPP	47.	U	47.	UJ	47.	U	47.	UJ	47.	U	47.	U
94-75-7	2,4-D	0.47	U	0.47	U	0.47	U	0.47	U	0.47	U	0.47	U

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NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

1347 HERB													
	SAMPLE ID ------->	003-G-MW04-LF		003-G-MW04-LS		003-G-MW05-MF		007-G-MW01-LS		007-G-MW03-LS		008-G-MW00-1F	
	ORIGINAL ID ----->	003GMW04LF		003GMW04LS		003GMW05MF		007GMW01LS		007GMW03LS		008GMW001F	
	LAB SAMPLE ID --->	120282		120283		120408		120284		120173		120404	
	SAMPLE DATE ----->	03/21/95		03/21/95		03/22/95		03/21/95		03/20/95		03/22/95	
	DATE EXTRACTED -->	03/31/95		03/31/95		04/03/95		03/31/95		03/31/95		04/03/95	
	DATE ANALYZED --->	04/01/95		04/01/95		04/04/95		04/01/95		04/01/95		04/04/95	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	ug/L	A	ug/L	A	ug/L	A	ug/L	A	ug/L	A	ug/L	A
CAS #	Parameter												
94-82-6	2,4-DB	0.47	U	0.47	U	0.47	U	0.47	U	0.47	U	0.47	U
88-85-7	Dinoseb	0.24	U	0.24	U	0.24	U	0.24	U	0.24	U	0.24	U
93-76-5	2,4,5-T	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
93-72-1	2,4,5-TP (Silvex)	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
75-99-0	Dalapon	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U
1918-00-9	Dicamba	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
120-36-5	Dichlorprop	0.47	U	0.47	U	0.47	U	0.47	U	0.47	U	0.47	U
94-74-6	MCPA	47.	U	47.	U	47.	U	47.	U	47.	U	47.	U
93-65-2	MCPP	47.	UJ	47.	UJ	47.	UJ	47.	UJ	47.	UJ	47.	U
94-75-7	2,4-D	0.47	U	0.47	U	0.47	U	0.47	U	0.47	U	0.47	U

NAS MEMPHIS

NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

1347 HERB													
	SAMPLE ID ------>	008-G-MW00-2F		1BG-G-MW01-LF		1BG-H-MW01-LF		1BG-G-MW01-LS		1BG-G-MW01-UF		2BG-G-MW02-UF	
	ORIGINAL ID ----->	008GMW002F		1BGGMW01LF		1BGHMW01LF		1BGGMW01LS		1BGGMW01UF		2BGGMW02UF	
	LAB SAMPLE ID --->	120409		120176		120177		120281		120178		120179	
	SAMPLE DATE ----->	03/22/95		03/20/95		03/20/95		03/21/95		03/20/95		03/20/95	
	DATE EXTRACTED -->	04/03/95		03/31/95		03/31/95		03/31/95		03/31/95		03/31/95	
	DATE ANALYZED --->	04/04/95		04/01/95		04/01/95		04/01/95		04/01/95		04/01/95	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	ug/L	A	ug/L	A	ug/L	A	ug/L	A	ug/L	A	ug/L	A
CAS #	Parameter												
94-82-6	2,4-DB	0.47	U	0.47	U	0.47	U	0.47	U	0.47	U	0.47	U
88-85-7	Dinoseb	0.24	U	0.24	U	0.24	U	0.24	U	0.24	U	0.24	U
93-76-5	2,4,5-T	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
93-72-1	2,4,5-TP (Silvex)	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
75-99-0	Dalapon	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U
1918-00-9	Dicamba	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
120-36-5	Dichlorprop	0.47	U	0.47	U	0.47	U	0.47	U	0.47	U	0.47	U
94-74-6	MCPA	47.	U	47.	U	47.	U	47.	U	47.	U	47.	U
93-65-2	MCPP	47.	U	47.	UJ	47.	UJ	47.	UJ	47.	UJ	47.	UJ
94-75-7	2,4-D	0.47	U	0.47	U	0.47	U	0.47	U	0.47	U	0.47	U

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NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

1347 Hardness							
	SAMPLE ID ------->	003-G-MW03-MF	003-G-MW04-LF	003-G-MW04-LS	008-G-MW00-1F		
	ORIGINAL ID ----->	003GMW03MF	003GMW04LF	003GMW04LS	008GMW001F		
	LAB SAMPLE ID --->	120403	120282	120283	120404		
	SAMPLE DATE ----->	03/22/95	03/21/95	03/21/95	03/22/95		
	DATE EXTRACTED -->	04/04/95	04/04/95	04/04/95	04/04/95		
	DATE ANALYZED --->	04/04/95	04/04/95	04/04/95	04/04/95		
	MATRIX ---------->	Water	Water	Water	Water		
	UNITS ---------->	mg/L A	mg/L A	mg/L A	mg/L A		
CAS #	Parameter						
9999900-03-3	Hardness as CaCO3	75.	121.	591.	76.		

*** Validation Complete ***

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Primary Samples

1347 KJELDAHL	SAMPLE ID ------->	003-G-MW03-MF	003-G-MW04-LF	003-G-MW04-LS	008-G-MW00-1F		
	ORIGINAL ID ----->	003GMW03MF	003GMW04LF	003GMW04LS	008GMW001F		
	LAB SAMPLE ID --->	120403	120282	120283	120404		
	SAMPLE DATE ----->	03/22/95	03/21/95	03/21/95	03/22/95		
	DATE EXTRACTED -->	03/24/95	03/24/95	03/24/95	03/24/95		
	DATE ANALYZED --->	03/31/95	03/31/95	03/31/95	03/31/95		
	MATRIX ---------->	Water	Water	Water	Water		
	UNITS ---------->	mg/L A	mg/L A	mg/L A	mg/L A		
CAS #	Parameter						
999-99-9	Kjeldahl Nitrogen-N	0.5 U	0.5 U	3.7	0.5 U		

*** Validation Complete ***

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Primary Samples

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METAL	SAMPLE ID -------->	003-G-GM01-LS		003-G-GM07-UF		003-G-GM08-LS		003-G-MW03-LS		003-G-MW03-MF		003-G-MW03-MF	
	ORIGINAL ID ------>	003GGM01LS		003GGM07UF		003GGM08LS		003GMW03LS		003GMW03MF		003GMW03MF	
	LAB SAMPLE ID --->	8-120411S		2-120287S		8-120412S		2-120288S		8-120413S		120403	
	ID FROM REPORT -->	003GGM01LS		003GGM07UF		003GGM08LS		003GMW03LS		003GMW03MF		003GMW03MF	
	SAMPLE DATE ------>	03/22/95		03/21/95		03/22/95		03/21/95		03/22/95		03/22/95	
	DATE EXTRACTED -->											04/04/95	
	DATE ANALYZED --->											04/04/95	
	MATRIX ----------->	Water		Water		Water		Water		Water		Water	
	UNITS ------------>	UG/L		UG/L		UG/L		UG/L		UG/L		ug/L	
CAS #	Parameter	1347	VAL	1347	VAL	1347	VAL	1347	VAL	1347	VAL	1347	VAL
SB	Antimony	40.	U	40.	U	40.	U	40.	U	40.	U	NR	
AS	Arsenic	2.5	J	2.	J	6.4	J	6.3	J	5.6	J	NR	
BA	Barium	200.		71.3	J	195.	J	742.		91.1	J	NR	
BE	Beryllium	1.	U	1.	U	1.	U	2.7	J	1.	U	NR	
CD	Cadmium	3.2	J	3.	U	3.	U	8.9		3.	U	NR	
CR	Chromium	12.1		6.	J	15.4		63.9		7.2	J	NR	
CO	Cobalt	5.	U	5.	U	6.5	J	23.2	J	5.	U	NR	
CU	Copper	15.2	J	5.	U	20.	J	54.4		5.	U	NR	
PB	Lead	5.9		5.8		11.4		7.4		3.3		NR	
HG	Mercury	0.2	U	0.2	U	0.2	U	0.55		0.2	U	NR	
NI	Nickel	15.	U	15.	U	15.	U	55.2		15.	U	NR	
SE	Selenium	2.7	U	2.	U	2.4	U	5.5	U	2.	U	NR	
AG	Silver	3.	U	3.	U	3.	U	3.2	J	3.2	J	NR	
TL	Thallium	2.	U	2.	U	2.	U	2.	U	2.	U	NR	
V	Vanadium	17.5	J	4.	U	23.4	J	86.6		4.	U	NR	
ZN	Zinc	55.6		18.1	J	74.8		183.		10.	J	NR	
SN	Tin	15.	U	15.	U	15.	U	15.	U	15.	U	NR	
AL	Aluminum	NR		NR		NR		NR		NR		NR	
CA	Calcium	NR		NR		NR		NR		NR		18200.	
FE	Iron	NR		NR		NR		NR		NR		1430.	J
MG	Magnesium	NR		NR		NR		NR		NR		7260.	
MN	Manganese	NR		NR		NR		NR		NR		930.	
NA	Sodium	NR		NR		NR		NR		NR		NR	
K	Potassium	NR		NR		NR		NR		NR		NR	

*** Validation Complete ***

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NAS MEMPHIS, RFI, ASSEMBLY A
Primary Samples

METAL	SAMPLE ID ------->	003-H-MW03-MF		003-G-MW04-LF		003-G-MW04-LF		003-G-MW04-LS		003-G-MW04-LS		003-G-MW05-MF	
	ORIGINAL ID ----->	003HMW03MF		003GMW04LF		003GMW04LF		003GMW04LS		003GMW04LS		003GMW05MF	
	LAB SAMPLE ID --->	8-120414S		2-120289S		120282		2-120290S		120283		8-120415S	
	ID FROM REPORT -->	003HMW03MF		003GMW04LF		003GMW04LF		003GMW04LS		003GMW04LS		003GMW05MF	
	SAMPLE DATE ----->	03/22/95		03/21/95		03/21/95		03/21/95		03/21/95		03/22/95	
	DATE EXTRACTED -->					04/04/95				04/04/95			
	DATE ANALYZED --->					04/04/95				04/04/95			
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ----------->	UG/L		UG/L		ug/L		UG/L		ug/L		UG/L	
CAS #	Parameter	1347	VAL	1347	VAL	1347	VAL	1347	VAL	1347	VAL	1347	VAL
SB	Antimony	40.	U	40.	U	NR		40.	U	NR		40.	U
AS	Arsenic	2.	UJ	2.	UJ	NR		9.3	J	NR		2.	UJ
BA	Barium	90.1	J	112.	J	NR		923.		NR		153.	J
BE	Beryllium	1.	U	1.	U	NR		3.9	J	NR		1.	U
CD	Cadmium	3.	U	3.	U	NR		15.		NR		3.	U
CR	Chromium	5.3	J	5.1	J	NR		112.		NR		5.	U
CO	Cobalt	5.	U	5.2	J	NR		32.9	J	NR		5.	U
CU	Copper	5.	U	5.	U	NR		119.		NR		5.	U
PB	Lead	2.2	J	2.	J	NR		45.5		NR		3.5	
HG	Mercury	0.2	U	0.2	U	NR		0.3		NR		0.2	U
NI	Nickel	15.	U	15.	U	NR		92.1		NR		15.	U
SE	Selenium	2.	U	2.	U	NR		3.6	U	NR		2.	U
AG	Silver	3.	U	3.	U	NR		3.	U	NR		3.	U
TL	Thallium	2.	U	2.	U	NR		2.	U	NR		2.	U
V	Vanadium	4.	U	4.	U	NR		128.		NR		4.	U
ZN	Zinc	5.	U	5.	U	NR		407.		NR		5.	U
SN	Tin	15.	U	15.	U	NR		15.	U	NR		15.	U
AL	Aluminum	NR		NR		NR		NR		NR		NR	
CA	Calcium	NR		NR		25300.		NR		119000.		NR	
FE	Iron	NR		NR		5520.	J	NR		55800.	J	NR	
MG	Magnesium	NR		NR		14200.		NR		71500.		NR	
MN	Manganese	NR		NR		734.		NR		1090.		NR	
NA	Sodium	NR		NR		NR		NR		NR		NR	
K	Potassium	NR		NR		NR		NR		NR		NR	

*** Validation Complete ***

NAS MEMPHIS
NAS MEMPHIS, RFI, ASSEMBLY A
Primary Samples

METAL																					
	SAMPLE ID ------->	007-G-MW01-LS			008-G-MW00-1F			008-G-MW00-1F			008-G-MW00-2F			1BG-G-MW01-LF			1BG-H-MW01-LF		
	ORIGINAL ID ----->	007GMW01LS			008GMW001F			008GMW001F			008GMW002F			1BGGMW01LF			1BGHMW01LF		
	LAB SAMPLE ID --->	2-120292S			8-120416S			120404			8-120417S			1-120189S			1-120190S		
	ID FROM REPORT -->	007GMW01LS			008GMW001F			008GMW001F			008GMW002F			1BGGMW01LF			1BGHMW01LF		
	SAMPLE DATE ----->	03/21/95			03/22/95			03/22/95			03/22/95			03/20/95			03/20/95		
	DATE EXTRACTED -->							04/04/95												
	DATE ANALYZED --->							04/04/95												
	MATRIX ---------->	Water			Water			Water			Water			Water			Water			
	UNITS ----------->	UG/L			UG/L			ug/L			UG/L			UG/L			UG/L			
CAS #	Parameter	1347		VAL	1347		VAL	1347		VAL	1347		VAL	1347		VAL	1347		VAL	
SB	Antimony	40.		U	40.		U	NR			40.		U	40.		U	40.		U	
AS	Arsenic	2.		UJ	2.		UJ	NR			2.		UJ	2.		UJ	2.		UJ	
BA	Barium	90.4		J	65.6		J	NR			74.3		J	192.		J	191.		J	
BE	Beryllium	1.		U	1.		U	NR			1.		U	1.		U	1.		U	
CD	Cadmium	3.		U	3.		U	NR			3.		U	3.7		J	3.		U	
CR	Chromium	10.4			5.		U	NR			5.		U	5.		U	5.		U	
CO	Cobalt	5.5		J	5.		U	NR			5.		U	5.		U	5.		U	
CU	Copper	7.4		J	5.		U	NR			5.		U	5.		U	5.		U	
PB	Lead	6.5			3.6			NR			3.8			4.			2.		U	
HG	Mercury	0.2		U	0.2		U	NR			0.2		U	0.2		U	0.2		U	
NI	Nickel	15.		U	15.		U	NR			15.		U	15.		U	15.		U	
SE	Selenium	2.		U	2.1		U	NR			2.2		U	2.		U	2.		U	
AG	Silver	3.		U	3.		U	NR			3.		U	3.		U	3.		U	
TL	Thallium	2.		U	2.		U	NR			2.		U	2.		U	2.		U	
V	Vanadium	11.7		J	4.		U	NR			4.		U	4.		U	4.		U	
ZN	Zinc	28.9			11.		J	NR			8.3		J	7.		J	9.		J	
SN	Tin	15.		U	15.		U	NR			15.		U	15.		U	15.		U	
AL	Aluminum	NR			NR			NR			NR			NR			NR			
CA	Calcium	NR			NR			16600.			NR			NR			NR			
FE	Iron	NR			NR			319.		J	NR			NR			NR			
MG	Magnesium	NR			NR			8500.			NR			NR			NR			
MN	Manganese	NR			NR			228.			NR			NR			NR			
NA	Sodium	NR			NR			NR			NR			NR			NR			
K	Potassium	NR			NR			NR			NR			NR			NR			

NAS MEMPHIS
NAS MEMPHIS, RFI, ASSEMBLY A
Primary Samples

METAL												
	SAMPLE ID ------>	1BG-G-MW01-LS		1BG-G-MW01-UF		2BG-G-MW02-UF						
	ORIGINAL ID ----->	1BGGMW01LS		1BGGMW01UF		2BGGMW02UF						
	LAB SAMPLE ID --->	2-120291S		1-120191S		1-120192S						
	ID FROM REPORT -->	1BGGMW01LS		1BGGMW01UF		2BGGMW02UF						
	SAMPLE DATE ----->	03/21/95		03/20/95		03/20/95						
	MATRIX ---------->	Water		Water		Water						
	UNITS ----------->	UG/L		UG/L		UG/L						
CAS #	Parameter	1347	VAL	1347	VAL	1347	VAL					
SB	Antimony	40.	U	40.	U	40.	U					
AS	Arsenic	4.4	J	3.9	J	2.	UJ					
BA	Barium	163.	J	18.4	J	89.1	J					
BE	Beryllium	1.	U	1.	U	1.	U					
CD	Cadmium	3.9	J	3.	U	3.	U					
CR	Chromium	20.5		15.4		5.	U					
CO	Cobalt	8.1	J	5.	U	5.	U					
CU	Copper	27.3		5.	U	5.	U					
PB	Lead	12.2		2.	U	3.6						
HG	Mercury	0.2	U	0.2	U	0.2	U					
NI	Nickel	15.	U	15.	U	15.	U					
SE	Selenium	3.	U	2.	U	2.	U					
AG	Silver	3.	U	3.	U	3.	U					
TL	Thallium	2.	U	2.	U	2.	U					
V	Vanadium	34.	J	24.1	J	4.	U					
ZN	Zinc	107.		5.	U	5.	U					
SN	Tin	15.	U	15.	U	15.	U					
AL	Aluminum	NR		NR		NR						
CA	Calcium	NR		NR		NR						
FE	Iron	NR		NR		NR						
MG	Magnesium	NR		NR		NR						
MN	Manganese	NR		NR		NR						
NA	Sodium	NR		NR		NR						
K	Potassium	NR		NR		NR						

NAS MEMPHIS

NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

1347 METAL-CN	SAMPLE ID ------->	003-G-GM01-LS	003-G-GM07-UF	003-G-GM08-LS	003-G-MW03-LS	003-G-MW03-MF	003-H-MW03-MF
	ORIGINAL ID ----->	003GGM01LS	003GGM07UF	003GGM08LS	003GMW03LS	003GMW03MF	003HMW03MF
	LAB SAMPLE ID --->	120405	120279	120406	120280	120403	120407
	SAMPLE DATE ----->	03/22/95	03/21/95	03/22/95	03/21/95	03/22/95	03/22/95
	DATE EXTRACTED -->	03/30/95	03/30/95	03/30/95	03/30/95	03/30/95	03/30/95
	DATE ANALYZED --->	04/03/95	03/29/95	04/03/95	03/29/95	04/03/95	04/03/95
	MATRIX ---------->	Water	Water	Water	Water	Water	Water
	UNITS ---------->	mg/L A	mg/L A	mg/L A	mg/L A	mg/L A	mg/L A
CAS #	Parameter						
CN	Cyanide	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U

*** Validation Complete ***

NAS MEMPHIS
NAS MEMPHIS, RFI, ASSEMBLY A
Primary Samples

1347 METAL-CN	SAMPLE ID ------->	003-G-MW04-LF	003-G-MW04-LS	003-G-MW05-MF	007-G-MW03-LS	008-G-MW00-1F	008-G-MW00-2F
	ORIGINAL ID ----->	003GMW04LF	003GMW04LS	003GMW05MF	007GMW03LS	008GMW001F	008GMW002F
	LAB SAMPLE ID --->	120282	120283	120408	120173	120404	120409
	SAMPLE DATE ----->	03/21/95	03/21/95	03/22/95	03/20/95	03/22/95	03/22/95
	DATE EXTRACTED -->	03/30/95	03/30/95	03/31/95	03/27/95	03/30/95	03/31/95
	DATE ANALYZED --->	03/29/95	03/29/95	04/03/95	03/29/95	04/03/95	04/03/95
	MATRIX ---------->	Water	Water	Water	Water	Water	Water
	UNITS ---------->	mg/L A	mg/L A	mg/L A	mg/L A	mg/L A	mg/L A
CAS #	Parameter						
CN	Cyanide	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U

*** Validation Complete ***

NAS MEMPHIS
NAS MEMPHIS, RFI, ASSEMBLY A
Primary Samples

1347 METAL-CN						
	SAMPLE ID ------->	1BG-G-MW01-LF	1BG-H-MW01-LF	1BG-G-MW01-LS	1BG-G-MW01-UF	2BG-G-MW02-UF	
	ORIGINAL ID ----->	1BGGMW01LF	1BGHMW01LF	1BGGMW01LS	1BGGMW01UF	2BGGMW02UF	
	LAB SAMPLE ID --->	120176	120177	120281	120178	120179	
	SAMPLE DATE ----->	03/20/95	03/20/95	03/21/95	03/20/95	03/20/95	
	DATE EXTRACTED -->	03/27/95	03/27/95	03/30/95	03/27/95	03/30/95	
	DATE ANALYZED --->	03/29/95	03/29/95	03/29/95	03/29/95	03/29/95	
	MATRIX ---------->	Water	Water	Water	Water	Water	
	UNITS ---------->	mg/L A	mg/L A	mg/L A	mg/L A	mg/L A	
CAS #	Parameter						
CN	Cyanide	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	

NAS MEMPHIS

NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

1347 NITRATE	SAMPLE ID ------->	003-G-MW03-MF	003-G-MW04-LF	003-G-MW04-LS	008-G-MW00-1F		
	ORIGINAL ID ----->	003GMW03MF	003GMW04LF	003GMW04LS	008GMW001F		
	LAB SAMPLE ID --->	120403	120282	120283	120404		
	SAMPLE DATE ----->	03/22/95	03/21/95	03/21/95	03/22/95		
	DATE ANALYZED --->	03/29/95	03/23/95	03/23/95	03/23/95		
	MATRIX ---------->	Water	Water	Water	Water		
	UNITS ---------->	mg/L A	mg/L A	mg/L A	mg/L A		
CAS #	Parameter						
9999900-03-4	Nitrate-N	0.1 U	0.85	0.1 U	1.4		

*** Validation Complete ***

NAS MEMPHIS

NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

1347 OP PEST													
	SAMPLE ID ------>	003-G-GM01-LS		003-G-GM07-UF		003-G-GM08-LS		003-G-MW03-LS		003-G-MW03-MF		003-H-MW03-MF	
	ORIGINAL ID ----->	003GGM01LS		003GGM07UF		003GGM08LS		003GMW03LS		003GMW03MF		003HMW03MF	
	LAB SAMPLE ID --->	120405		120279		120406		120280		120403		120407	
	SAMPLE DATE ----->	03/22/95		03/21/95		03/22/95		03/21/95		03/22/95		03/22/95	
	DATE EXTRACTED -->	04/03/95		04/03/95		04/03/95		04/03/95		04/03/95		04/03/95	
	DATE ANALYZED --->	04/07/95		04/06/95		04/07/95		04/06/95		04/06/95		04/07/95	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	ug/L	A	ug/L	A	ug/L	A	ug/L	A	ug/L	A	ug/L	A
CAS #	Parameter												
86-50-0	Guthion	5.	UJ	5.	UJ	5.	UJ	5.	UJ	5.	UJ	5.	UJ
35400-43-2	Sulprofos	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ
2921-88-2	Chloropyrifos	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ
56-72-4	Coumaphos	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ
8065-48-3	Demeton,O	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ
333-41-5	Diazinon	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ
62-73-7	Dichlorvos	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ
298-04-4	Disulfoton	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ
13194-48-4	Ethoprop	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ
115-90-2	Fensulfothion	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ
55-38-9	Fenthion	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ
150-50-5	Merphos	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ
7786-34-7	Mevinphos, Alpha	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ
300-76-5	Naled	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ
298-00-0	Methyl parathion	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ
298-02-2	Phorate	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ
299-84-3	Ronnel	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ
22248-79-9	Stirophos (Tetrachlorovinphos)	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ
34643-46-4	Tokuthion	2.5	UJ	2.5	U	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ
327-98-0	Trichloronate	2.5	UJ	2.5	U	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ
126-75-0	Demeton,S	2.5	UJ	2.5	U	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ

NAS MEMPHIS

NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

1347 OP PEST							
SAMPLE ID ------->	003-G-MW04-LF	003-G-MW04-LS	003-G-MW05-MF	007-G-MW03-LS	008-G-MW00-1F	008-G-MW00-2F
ORIGINAL ID ----->	003GMW04LF	003GMW04LS	003GMW05MF	007GMW03LS	008GMW001F	008GMW002F
LAB SAMPLE ID --->	120282	120283	120408	120173	120404	120409
SAMPLE DATE ----->	03/21/95	03/21/95	03/22/95	03/20/95	03/22/95	03/22/95
DATE EXTRACTED -->	04/03/95	04/03/95	04/03/95	04/03/95	04/03/95	04/03/95
DATE ANALYZED --->	04/06/95	04/07/95	04/07/95	04/05/95	04/06/95	04/08/95
MATRIX ---------->	Water	Water	Water	Water	Water	Water
UNITS ----------->	ug/L A	ug/L A	ug/L A	ug/L A	ug/L A	ug/L A
CAS # Parameter						
86-50-0 Guthion	5. UJ	5. UJ	5. UJ	5. UJ	5. UJ	5. UJ
35400-43-2 Sulprofos	2.5 UJ	2.5 UJ	2.5 UJ	2.5 U	2.5 UJ	2.5 UJ
2921-88-2 Chloropyrifos	2.5 UJ	2.5 UJ	2.5 UJ	2.5 U	2.5 UJ	2.5 UJ
56-72-4 Coumaphos	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ
8065-48-3 Demeton,O	2.5 UJ	2.5 UJ	2.5 UJ	2.5 U	2.5 UJ	2.5 UJ
333-41-5 Diazinon	2.5 UJ	2.5 UJ	2.5 UJ	2.5 U	2.5 UJ	2.5 UJ
62-73-7 Dichlorvos	2.5 UJ	2.5 UJ	2.5 UJ	2.5 U	2.5 UJ	2.5 UJ
298-04-4 Disulfoton	2.5 UJ	2.5 UJ	2.5 UJ	2.5 U	2.5 UJ	2.5 UJ
13194-48-4 Ethoprop	2.5 UJ	2.5 UJ	2.5 UJ	2.5 U	2.5 UJ	2.5 UJ
115-90-2 Fensulfothion	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ
55-38-9 Fenthion	2.5 UJ	2.5 UJ	2.5 UJ	2.5 U	2.5 UJ	2.5 UJ
150-50-5 Merphos	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ
7786-34-7 Mevinphos, Alpha	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ	2.5 UJ
300-76-5 Naled	2.5 UJ	3.5 R	2.5 UJ	2.5 U	2.5 UJ	2.5 UJ
298-00-0 Methyl parathion	2.5 UJ	2.5 UJ	2.5 UJ	2.5 U	2.5 UJ	2.5 UJ
298-02-2 Phorate	2.5 UJ	2.5 UJ	2.5 UJ	2.5 U	2.5 UJ	2.5 UJ
299-84-3 Ronnel	2.5 UJ	2.5 UJ	2.5 UJ	2.5 U	2.5 UJ	2.5 UJ
22248-79-9 Stirophos (Tetrachlorovinphos)	2.5 UJ	2.5 UJ	2.5 UJ	2.5 U	2.5 UJ	2.5 UJ
34643-46-4 Tokuthion	2.5 UJ	2.5 UJ	2.5 UJ	2.5 U	2.5 UJ	2.5 UJ
327-98-0 Trichloronate	2.5 UJ	2.5 UJ	2.5 UJ	2.5 U	2.5 UJ	2.5 UJ
126-75-0 Demeton,S	2.5 UJ	2.5 UJ	2.5 UJ	2.5 U	2.5 UJ	2.5 UJ

*** Validation Complete ***

NAS MEMPHIS

NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

1347 OP PEST											
	SAMPLE ID ------>	1BG-G-MW01-LF		1BG-H-MW01-LF		1BG-G-MW01-LS		1BG-G-MW01-UF		2BG-G-MW02-UF	
	ORIGINAL ID ----->	1BGGMW01LF		1BGHMW01LF		1BGGMW01LS		1BGGMW01UF		2BGGMW02UF	
	LAB SAMPLE ID --->	120176		120177		120281		120178		120179	
	SAMPLE DATE ----->	03/20/95		03/20/95		03/21/95		03/20/95		03/20/95	
	DATE EXTRACTED -->	04/03/95		04/03/95		04/03/95		04/03/95		04/03/95	
	DATE ANALYZED --->	04/05/95		04/05/95		04/06/95		04/06/95		04/06/95	
	MATRIX ---------->	Water		Water		Water		Water		Water	
	UNITS ---------->	ug/L	A	ug/L	A	ug/L	A	ug/L	A	ug/L	A
CAS #	Parameter										
86-50-0	Guthion	5.	UJ	5.	UJ	5.	UJ	5.	UJ	5.	UJ
35400-43-2	Sulprofos	2.5	UJ	2.5	U	2.5	U	2.5	U	2.5	UJ
2921-88-2	Chloropyrifos	2.5	UJ	2.5	U	2.5	U	2.5	U	2.5	UJ
56-72-4	Coumaphos	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ
8065-48-3	Demeton,O	2.5	UJ	2.5	U	2.5	U	2.5	U	2.5	UJ
333-41-5	Diazinon	2.5	UJ	2.5	U	2.5	U	2.5	U	2.5	UJ
62-73-7	Dichlorvos	2.5	UJ	2.5	U	2.5	U	2.5	U	2.5	UJ
298-04-4	Disulfoton	2.5	UJ	2.5	U	2.5	U	2.5	U	2.5	UJ
13194-48-4	Ethoprop	2.5	UJ	2.5	U	2.5	U	2.5	U	2.5	UJ
115-90-2	Fensulfothion	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ
55-38-9	Fenthion	2.5	UJ	2.5	U	2.5	U	2.5	U	2.5	UJ
150-50-5	Merphos	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ
7786-34-7	Mevinphos, Alpha	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ	2.5	UJ
300-76-5	Naled	2.5	UJ	2.5	U	2.5	U	2.5	U	2.5	UJ
298-00-0	Methyl parathion	2.5	UJ	2.5	U	2.5	U	2.5	U	2.5	UJ
298-02-2	Phorate	2.5	UJ	2.5	U	2.5	U	2.5	U	2.5	UJ
299-84-3	Ronnel	2.5	UJ	2.5	U	2.5	U	2.5	U	2.5	UJ
22248-79-9	Stirophos (Tetrachlorovinphos)	2.5	UJ	2.5	U	2.5	U	2.5	U	2.5	UJ
34643-46-4	Tokuthion	2.5	UJ	2.5	U	2.5	U	2.5	U	2.5	UJ
327-98-0	Trichloronate	2.5	UJ	2.5	U	2.5	U	2.5	U	2.5	UJ
126-75-0	Demeton,S	2.5	UJ	2.5	U	2.5	U	2.5	U	2.5	UJ

*** Validation Complete ***

NAS MEMPHIS

NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

1347 PEST													
	SAMPLE ID ------>	003-G-GM01-LS		003-G-GM07-UF		003-G-GM08-LS		003-G-MW03-LS		003-G-MW03-MF		003-H-MW03-MF	
	ORIGINAL ID ----->	003GGM01LS		003GGM07UF		003GGM08LS		003GMW03LS		003GMW03MF		003HMW03MF	
	LAB SAMPLE ID --->	120411		120287		120412		120288		120413		120414	
	SAMPLE DATE ----->	03/22/95		03/21/95		03/22/95		03/21/95		03/22/95		03/22/95	
	DATE EXTRACTED -->	03/29/95		03/25/95		03/29/95		03/25/95		03/29/95		03/29/95	
	DATE ANALYZED --->	04/06/95		04/08/95		04/06/95		04/08/95		04/07/95		04/07/95	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A
CAS #	Parameter												
319-84-6	alpha-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
319-85-7	beta-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
319-86-8	delta-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
76-44-8	Heptachlor	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
309-00-2	Aldrin	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
959-98-8	Endosulfan I	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
60-57-1	Dieldrin	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
72-55-9	4,4'-DDE	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
72-20-8	Endrin	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
33213-65-9	Endosulfan II	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
72-54-8	4,4'-DDD	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
1031-07-8	Endosulfan sulfate	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
50-29-3	4,4'-DDT	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
72-43-5	Methoxychlor	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
53494-70-5	Endrin ketone	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
7421-36-3	Endrin aldehyde	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
5103-71-9	alpha-Chlordane	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
5103-74-2	gamma-Chlordane	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
8001-35-2	Toxaphene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
12674-11-2	Aroclor-1016	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
11104-28-2	Aroclor-1221	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
11141-16-5	Aroclor-1232	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
53469-21-9	Aroclor-1242	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
12672-29-6	Aroclor-1248	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
11097-69-1	Aroclor-1254	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
11096-82-5	Aroclor-1260	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U

*** Validation Complete ***

NAS MEMPHIS

NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

1347 PEST						
SAMPLE ID ------->	003-G-MW04-LF	003-G-MW04-LS	003-G-MW05-MF	007-G-MW03-LS	008-G-MW00-1F	008-G-MW00-2F
ORIGINAL ID ----->	003GMW04LF	003GMW04LS	003GMW05MF	007GMW03LS	008GMW001F	008GMW002F
LAB SAMPLE ID --->	120289	120290	120415	120193	120416	120417
SAMPLE DATE ----->	03/21/95	03/21/95	03/22/95	03/20/95	03/22/95	03/22/95
DATE EXTRACTED -->	03/25/95	03/25/95	03/29/95	03/25/95	03/29/95	03/29/95
DATE ANALYZED --->	04/08/95	04/08/95	04/07/95	04/08/95	04/07/95	04/07/95
MATRIX ---------->	Water	Water	Water	Water	Water	Water
UNITS ---------->	UG/L A	UG/L A	UG/L A	UG/L A	UG/L A	UG/L A

CAS #	Parameter												
319-84-6	alpha-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
319-85-7	beta-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
319-86-8	delta-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
76-44-8	Heptachlor	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
309-00-2	Aldrin	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
959-98-8	Endosulfan I	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
60-57-1	Dieldrin	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
72-55-9	4,4'-DDE	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
72-20-8	Endrin	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
33213-65-9	Endosulfan II	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
72-54-8	4,4'-DDD	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
1031-07-8	Endosulfan sulfate	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
50-29-3	4,4'-DDT	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
72-43-5	Methoxychlor	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
53494-70-5	Endrin ketone	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
7421-36-3	Endrin aldehyde	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
5103-71-9	alpha-Chlordane	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
5103-74-2	gamma-Chlordane	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
8001-35-2	Toxaphene	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
12674-11-2	Aroclor-1016	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
11104-28-2	Aroclor-1221	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
11141-16-5	Aroclor-1232	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
53469-21-9	Aroclor-1242	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
12672-29-6	Aroclor-1248	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
11097-69-1	Aroclor-1254	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U
11096-82-5	Aroclor-1260	1.	U	1.	U	1.	U	1.	U	1.	U	1.	U

NAS MEMPHIS

NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

1347 PEST											
	SAMPLE ID ------->	1BG-G-MW01-LF		1BG-H-MW01-LF		1BG-G-MW01-LS		1BG-G-MW01-UF		2BG-G-MW02-UF	
	ORIGINAL ID ----->	1BGGMW01LF		1BGHMW01LF		1BGGMW01LS		1BGGMW01UF		2BGGMW02UF	
	LAB SAMPLE ID --->	120189		120190		120291		120191		120192	
	SAMPLE DATE ----->	03/20/95		03/20/95		03/21/95		03/20/95		03/20/95	
	DATE EXTRACTED -->	03/25/95		03/25/95		03/25/95		03/25/95		03/25/95	
	DATE ANALYZED --->	04/08/95		04/08/95		04/08/95		04/08/95		04/08/95	
	MATRIX ---------->	Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A
CAS #	Parameter										
319-84-6	alpha-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
319-85-7	beta-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
319-86-8	delta-BHC	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
76-44-8	Heptachlor	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
309-00-2	Aldrin	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
959-98-8	Endosulfan I	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
60-57-1	Dieldrin	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
72-55-9	4,4'-DDE	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
72-20-8	Endrin	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
33213-65-9	Endosulfan II	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
72-54-8	4,4'-DDD	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
1031-07-8	Endosulfan sulfate	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
50-29-3	4,4'-DDT	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
72-43-5	Methoxychlor	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
53494-70-5	Endrin ketone	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
7421-36-3	Endrin aldehyde	0.1	U	0.1	U	0.1	U	0.1	U	0.1	U
5103-71-9	alpha-Chlordane	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
5103-74-2	gamma-Chlordane	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
8001-35-2	Toxaphene	1.	U	1.	U	1.	U	1.	U	1.	U
12674-11-2	Aroclor-1016	1.	U	1.	U	1.	U	1.	U	1.	U
11104-28-2	Aroclor-1221	1.	U	1.	U	1.	U	1.	U	1.	U
11141-16-5	Aroclor-1232	1.	U	1.	U	1.	U	1.	U	1.	U
53469-21-9	Aroclor-1242	1.	U	1.	U	1.	U	1.	U	1.	U
12672-29-6	Aroclor-1248	1.	U	1.	U	1.	U	1.	U	1.	U
11097-69-1	Aroclor-1254	1.	U	1.	U	1.	U	1.	U	1.	U
11096-82-5	Aroclor-1260	1.	U	1.	U	1.	U	1.	U	1.	U

*** Validation Complete ***

NAS MEMPHIS

NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

1347 SVOA	SAMPLE ID ------->	003-G-GM01-LS	003-G-GM07-UF	003-G-GM08-LS	003-G-MW03-LS	003-G-MW03-MF	003-H-MW03-MF
	ORIGINAL ID ----->	003GGM01LS	003GGM07UF	003GGM08LS	003GMW03LS	003GMW03MF	003HMW03MF
	LAB SAMPLE ID --->	120411	120287	120412	120288	120413	120414
	SAMPLE DATE ----->	03/22/95	03/21/95	03/22/95	03/21/95	03/22/95	03/22/95
	DATE EXTRACTED -->	03/29/95	04/10/95	03/29/95	03/27/95	03/30/95	03/29/95
	DATE ANALYZED --->	04/11/95	04/20/95	04/11/95	04/10/95	04/12/95	04/11/95
	MATRIX ---------->	Water	Water	Water	Water	Water	Water
	UNITS ----------->	UG/L A	UG/L A	UG/L A	UG/L A	UG/L A	UG/L A
CAS #	Parameter						
621-64-7	N-Nitroso-di-n-propylamine	10. U	10. UJ	10. U	10. U	10. UJ	10. U
67-72-1	Hexachloroethane	10. U	10. UJ	10. U	10. U	10. U	10. U
78-59-1	Isophorone	10. U	10. UJ	10. U	10. U	10. U	10. U
88-75-5	2-Nitrophenol	10. U	10. UJ	10. U	10. U	10. UR	10. UR
105-67-9	2,4-Dimethylphenol	10. U	10. UJ	10. U	10. U	10. UR	10. UR
111-91-1	bis(2-Chloroethoxy)methane	10. U	10. UJ	10. U	10. U	10. U	10. U
120-83-2	2,4-Dichlorophenol	10. U	10. UJ	10. U	10. U	10. UR	10. UR
120-82-1	1,2,4-Trichlorobenzene	10. U	10. UJ	10. U	10. U	10. U	10. U
91-20-3	Naphthalene	10. U	10. UJ	10. U	10. U	10. U	10. U
106-47-8	4-Chloroaniline	10. UJ	10. UJ	10. UJ	10. UJ	10. UJ	10. UJ
87-68-3	Hexachlorobutadiene	10. U	10. UJ	10. U	10. U	10. U	10. U
59-50-7	4-Chloro-3-methylphenol	10. U	10. UJ	10. U	10. U	10. UR	10. UR
91-57-6	2-Methylnaphthalene	10. UJ	10. UJ	10. UJ	10. UJ	10. U	10. UJ
77-47-4	Hexachlorocyclopentadiene	10. U	10. UJ	10. U	10. U	10. U	10. U
88-06-2	2,4,6-Trichlorophenol	10. U	10. UJ	10. U	10. U	10. UR	10. UR
95-95-4	2,4,5-Trichlorophenol	25. U	25. UJ	25. U	25. U	25. UR	25. UR
91-58-7	2-Chloronaphthalene	10. U	10. UJ	10. U	10. U	10. U	10. U
88-74-4	2-Nitroaniline	25. U	25. UJ	25. U	25. U	25. UJ	25. U
131-11-3	Dimethylphthalate	10. U	10. UJ	10. U	10. U	10. U	10. U
208-96-8	Acenaphthylene	10. U	10. UJ	10. U	10. U	10. U	10. U
606-20-2	2,6-Dinitrotoluene	10. U	10. UJ	10. U	10. U	10. U	10. U
99-09-2	3-Nitroaniline	25. U	25. UJ	25. U	25. U	25. U	25. U
83-32-9	Acenaphthene	10. U	10. UJ	10. U	10. U	10. U	10. U
51-28-5	2,4-Dinitrophenol	25. U	25. UJ	25. U	25. U	25. UR	25. UR
100-02-7	4-Nitrophenol	25. UJ	25. UJ	25. UJ	25. UJ	25. UR	25. UR
132-64-9	Dibenzofuran	10. U	10. UJ	10. U	10. U	10. U	10. U
121-14-2	2,4-Dinitrotoluene	10. U	10. UJ	10. U	10. U	10. U	10. U
84-66-2	Diethylphthalate	10. U	10. UJ	10. U	10. U	10. U	10. U
7005-72-3	4-Chlorophenylphenylether	10. U	10. UJ	10. U	10. U	10. U	10. U
86-73-7	Fluorene	10. U	10. UJ	10. U	10. U	10. U	10. U
100-01-6	4-Nitroaniline	25. U	25. UJ	25. U	25. U	25. U	25. U
534-52-1	4,6-Dinitro-2-methylphenol	25. U	25. UJ	25. UJ	25. U	25. UR	25. UR
86-30-6	N-Nitrosodiphenylamine	10. UJ	10. UJ	10. U	10. UJ	10. UJ	10. UJ
101-55-3	4-Bromophenylphenylether	10. U	10. UJ	10. U	10. U	10. U	10. U
118-74-1	Hexachlorobenzene	10. U	10. UJ	10. U	10. U	10. U	10. U
87-[illegible]-5	Pentachlorophenol	25. U	25. UJ	25. U	25. U	25. UR	25. UR
8[illegible]	nthrene	10. U	10.	10. U	10. U	10. U	10. U

*** Validati[illegible] Complete ***

NAS MEMPHIS
NAS MEMPHIS, RFI, ASSEMBLY A
Primary Samples

1347 SVOA	SAMPLE ID ------->	003-G-GM01-LS	003-G-GM07-UF	003-G-GM08-LS	003-G-MW03-LS	003-G-MW03-MF	003-H-MW03-MF
	ORIGINAL ID ----->	003GGM01LS	003GGM07UF	003GGM08LS	003GMW03LS	003GMW03MF	003HMW03MF
	LAB SAMPLE ID --->	120411	120287	120412	120288	120413	120414
	SAMPLE DATE ----->	03/22/95	03/21/95	03/22/95	03/21/95	03/22/95	03/22/95
	DATE EXTRACTED -->	03/29/95	04/10/95	03/29/95	03/27/95	03/30/95	03/29/95
	DATE ANALYZED' --->	04/11/95	04/20/95	04/11/95	04/10/95	04/12/95	04/11/95
	MATRIX ---------->	Water	Water	Water	Water	Water	Water
	UNITS ----------->	UG/L A	UG/L A	UG/L A	UG/L A	UG/L A	UG/L A
CAS #	Parameter						
120-12-7	Anthracene	10. U	10. UJ	10. U	10. U	10. U	10. U
86-74-8	Carbazole	10. U	10. UJ	10. U	10. U	10. U	10. U
84-74-2	Di-n-butylphthalate	10. U	10. UJ	10. U	10. U	10. U	10. U
206-44-0	Fluoranthene	10. U	10. UJ	10. U	10. U	10. U	10. U
129-00-0	Pyrene	10. U	10. UJ	10. U	10. U	10. U	10. U
85-68-7	Butylbenzylphthalate	10. U	10. UJ	10. U	10. U	10. U	10. U
91-94-1	3,3'-Dichlorobenzidine	10. U	10. UJ	10. U	10. U	10. U	10. U
56-55-3	Benzo(a)anthracene	10. U	10. UJ	10. U	10. U	10. U	10. U
218-01-9	Chrysene	10. U	10. UJ	10. U	10. U	10. U	10. U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	10. U	10. UJ	2. J	10. U	10. U	10. U
117-84-0	Di-n-octylphthalate	10. U	10. UJ	10. U	10. U	10. U	10. U
205-99-2	Benzo(b)fluoranthene	10. U	10. UJ	10. U	10. U	10. U	10. U
207-08-9	Benzo(k)fluoranthene	10. U	10. UJ	10. U	10. U	10. U	10. U
50-32-8	Benzo(a)pyrene	10. U	10. UJ	10. U	10. U	10. U	10. U
193-39-5	Indeno(1,2,3-cd)pyrene	10. U	10. UJ	10. U	10. U	10. U	10. U
53-70-3	Dibenzo(a,h)anthracene	10. U	10. UJ	10. U	10. U	10. U	10. U
191-24-2	Benzo(g,h,i)perylene	10. U	10. UJ	10. U	10. U	10. U	10. U
108-95-2	Phenol	10. U	10. UJ	10. U	10. U	10. UR	10. UR
111-44-4	bis(2-Chloroethyl)ether	10. U	10. UJ	10. U	10. U	10. U	10. U
95-57-8	2-Chlorophenol	10. U	10. UJ	10. U	10. U	10. UR	10. UR
541-73-1	1,3-Dichlorobenzene	10. U	10. UJ	10. U	10. U	10. U	10. U
106-46-7	1,4-Dichlorobenzene	10. U	10. UJ	10. U	10. U	10. U	10. U
95-50-1	1,2-Dichlorobenzene	10. U	10. UJ	10. U	10. U	10. U	10. U
95-48-7	2-Methylphenol (o-Cresol)	10. U	10. UJ	10. U	10. U	10. UR	10. UR
108-60-1	2,2'-oxybis(1-Chloropropane)	10. UJ	10. UJ	10. UJ	10. UJ	10. UJ	10. U
106-44-5	4-Methylphenol (p-Cresol)	10. U	10. UJ	10. U	10. U	10. UR	10. UR
98-95-3	Nitrobenzene	10. U	10. UJ	10. U	10. U	10. U	10. U

NAS MEMPHIS

NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

1347 SVOA																							
	SAMPLE ID ------>	003-G-MW04-LF			003-G-MW04-LS			003-G-MW05-MF			007-G-MW03-LS			008-G-MW00-1F			008-G-MW00-2F		
	ORIGINAL ID ----->	003GMW04LF			003GMW04LS			003GMW05MF			007GMW03LS			008GMW001F			008GMW002F		
	LAB SAMPLE ID --->	120289			120290			120415			120193			120416			120417		
	SAMPLE DATE ----->	03/21/95			03/21/95			03/22/95			03/20/95			03/22/95			03/22/95		
	DATE EXTRACTED -->	03/27/95			03/27/95			03/29/95			03/27/95			03/29/95			03/29/95		
	DATE ANALYZED --->	04/10/95			04/10/95			04/11/95			04/10/95			04/11/95			04/12/95		
	MATRIX ---------->	Water			Water			Water			Water			Water			Water		
	UNITS ---------->	UG/L		A	UG/L		A	UG/L		A	UG/L		A	UG/L		A	UG/L		A
CAS #	Parameter																			
621-64-7	N-Nitroso-di-n-propylamine	10.	U		10.	U		10.	U		10.	U		10.	U		10.	UJ	
67-72-1	Hexachloroethane	10.	U		10.	U		10.	U		10.	U		10.	U		10.	U	
78-59-1	Isophorone	10.	U		10.	U		10.	U		10.	U		10.	U		10.	U	
88-75-5	2-Nitrophenol	10.	UR		10.	UR		10.	UR		10.	U		10.	U		10.	UR	
105-67-9	2,4-Dimethylphenol	10.	UR		10.	UR		10.	UR		10.	U		10.	U		10.	UR	
111-91-1	bis(2-Chloroethoxy)methane	10.	U		10.	U		10.	U		10.	U		10.	U		10.	U	
120-83-2	2,4-Dichlorophenol	10.	UR		10.	UR		10.	UR		10.	U		10.	U		10.	UR	
120-82-1	1,2,4-Trichlorobenzene	10.	U		10.	U		10.	U		10.	U		10.	U		10.	U	
91-20-3	Naphthalene	10.	U		10.	U		10.	U		10.	U		10.	U		10.	U	
106-47-8	4-Chloroaniline	10.	UJ		10.	UJ		10.	UJ		10.	UJ		10.	UJ		10.	UJ	
87-68-3	Hexachlorobutadiene	10.	U		10.	U		10.	U		10.	U		10.	U		10.	U	
59-50-7	4-Chloro-3-methylphenol	10.	UR		10.	UR		10.	UR		10.	U		10.	U		10.	UR	
91-57-6	2-Methylnaphthalene	10.	UJ		10.	UJ		10.	UJ		10.	UJ		10.	UJ		10.	U	
77-47-4	Hexachlorocyclopentadiene	10.	U		10.	U		10.	U		10.	U		10.	U		10.	U	
88-06-2	2,4,6-Trichlorophenol	10.	UR		10.	UR		10.	UR		10.	U		10.	U		10.	UR	
95-95-4	2,4,5-Trichlorophenol	25.	UR		25.	UR		25.	UR		25.	U		25.	U		25.	UR	
91-58-7	2-Chloronaphthalene	10.	U		10.	U		10.	U		10.	U		10.	U		10.	U	
88-74-4	2-Nitroaniline	25.	U		25.	U		25.	U		25.	U		25.	U		25.	UJ	
131-11-3	Dimethylphthalate	10.	U		10.	U		10.	U		10.	U		10.	U		10.	U	
208-96-8	Acenaphthylene	10.	U		10.	U		10.	U		10.	U		10.	U		10.	U	
606-20-2	2,6-Dinitrotoluene	10.	U		10.	U		10.	U		10.	U		10.	U		10.	U	
99-09-2	3-Nitroaniline	25.	U		25.	U		25.	U		25.	U		25.	U		25.	U	
83-32-9	Acenaphthene	10.	U		10.	U		10.	U		10.	U		10.	U		10.	U	
51-28-5	2,4-Dinitrophenol	25.	UR		25.	UR		25.	UR		25.	U		25.	U		25.	UR	
100-02-7	4-Nitrophenol	25.	UR		25.	UR		25.	UR		25.	UJ		25.	UJ		25.	UR	
132-64-9	Dibenzofuran	10.	U		10.	U		10.	U		10.	U		10.	U		10.	U	
121-14-2	2,4-Dinitrotoluene	10.	U		10.	U		10.	U		10.	U		10.	U		10.	U	
84-66-2	Diethylphthalate	10.	U		10.	U		10.	U		10.	U		10.	U		10.	U	
7005-72-3	4-Chlorophenylphenylether	10.	U		10.	U		10.	U		10.	U		10.	U		10.	U	
86-73-7	Fluorene	10.	U		10.	U		10.	U		10.	U		10.	U		10.	U	
100-01-6	4-Nitroaniline	25.	U		25.	U		25.	U		25.	U		25.	U		25.	U	
534-52-1	4,6-Dinitro-2-methylphenol	25.	UR		25.	UR		25.	UR		25.	U		25.	U		25.	UR	
86-30-6	N-Nitrosodiphenylamine	10.	UJ		10.	UJ		10.	UJ		10.	UJ		10.	UJ		10.	UJ	
101-55-3	4-Bromophenylphenylether	10.	U		10.	U		10.	U		10.	U		10.	U		10.	U	
118-74-1	Hexachlorobenzene	10.	U		10.	U		10.	U		10.	U		10.	U		10.	U	
87-86-5	Pentachlorophenol	25.	UR		25.	UR		25.	UR		25.	U		25.	U		25.	UR	
85-01-8	Phenanthrene	10.	U		10.			10.	U		10.	U		10.	U		10.	U	

NAS MEMPHIS
NAS MEMPHIS, RFI, ASSEMBLY A
Primary Samples

1347 SVOA	SAMPLE ID ------>	003-G-MW04-LF		003-G-MW04-LS		003-G-MW05-MF		007-G-MW03-LS		008-G-MW00-1F		008-G-MW00-2F	
	ORIGINAL ID ----->	003GMW04LF		003GMW04LS		003GMW05MF		007GMW03LS		008GMW001F		008GMW002F	
	LAB SAMPLE ID --->	120289		120290		120415		120193		120416		120417	
	SAMPLE DATE ----->	03/21/95		03/21/95		03/22/95		03/20/95		03/22/95		03/22/95	
	DATE EXTRACTED -->	03/27/95		03/27/95		03/29/95		03/27/95		03/29/95		03/29/95	
	DATE ANALYZED --->	04/10/95		04/10/95		04/11/95		04/10/95		04/11/95		04/12/95	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A
CAS #	Parameter												
120-12-7	Anthracene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
86-74-8	Carbazole	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
84-74-2	Di-n-butylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
206-44-0	Fluoranthene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
129-00-0	Pyrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
85-68-7	Butylbenzylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
91-94-1	3,3'-Dichlorobenzidine	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
56-55-3	Benzo(a)anthracene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
218-01-9	Chrysene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	10.	U	2.	J	1.	J	2.	J	8.	J	10.	U
117-84-0	Di-n-octylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
50-32-8	Benzo(a)pyrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
53-70-3	Dibenzo(a,h)anthracene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-95-2	Phenol	10.	UR	10.	UR	10.	UR	10.	U	10.	U	10.	UR
111-44-4	bis(2-Chloroethyl)ether	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
95-57-8	2-Chlorophenol	10.	UR	10.	UR	10.	UR	10.	U	10.	U	10.	UR
541-73-1	1,3-Dichlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
95-48-7	2-Methylphenol (o-Cresol)	10.	UR	10.	UR	10.	UR	10.	U	10.	U	10.	UR
108-60-1	2,2'-oxybis(1-Chloropropane)	10.	UJ	10.	UJ	10.	UJ	10.	UJ	10.	UJ	10.	UJ
106-44-5	4-Methylphenol (p-Cresol)	10.	UR	10.	UR	10.	UR	10.	U	10.	U	10.	UR
98-95-3	Nitrobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U

NAS MEMPHIS

NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

1347 SVOA	SAMPLE ID ------->	1BG-G-MW01-LF		1BG-H-MW01-LF		1BG-G-MW01-LS		1BG-G-MW01-UF		2BG-G-MW02-UF	
	ORIGINAL ID ----->	1BGGMW01LF		1BGHMW01LF		1BGGMW01LS		1BGGMW01UF		2BGGMW02UF	
	LAB SAMPLE ID --->	120189		120190		120291		120191		120192	
	SAMPLE DATE ----->	03/20/95		03/20/95		03/21/95		03/20/95		03/20/95	
	DATE EXTRACTED -->	03/27/95		03/27/95		03/27/95		03/27/95		03/27/95	
	DATE ANALYZED --->	04/10/95		04/10/95		04/11/95		04/10/95		04/10/95	
	MATRIX ---------->	Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A
CAS #	Parameter										
621-64-7	N-Nitroso-di-n-propylamine	10.	U	10.	U	10.	U	10.	U	10.	U
67-72-1	Hexachloroethane	10.	U	10.	U	10.	U	10.	U	10.	U
78-59-1	Isophorone	10.	U	10.	U	10.	U	10.	U	10.	U
88-75-5	2-Nitrophenol	10.	UR	10.	UR	10.	U	10.	U	10.	U
105-67-9	2,4-Dimethylphenol	10.	UR	10.	UR	10.	U	10.	U	10.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U	10.	U	10.	U	10.	U	10.	U
120-83-2	2,4-Dichlorophenol	10.	UR	10.	UR	10.	U	10.	U	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U
91-20-3	Naphthalene	10.	U	10.	U	10.	U	10.	U	10.	U
106-47-8	4-Chloroaniline	10.	UJ	10.	UJ	10.	UJ	10.	UJ	10.	UJ
87-68-3	Hexachlorobutadiene	10.	U	10.	U	10.	U	10.	U	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	UR	10.	UR	10.	U	10.	U	10.	U
91-57-6	2-Methylnaphthalene	10.	UJ	10.	UJ	10.	UJ	10.	UJ	10.	UJ
77-47-4	Hexachlorocyclopentadiene	10.	U	10.	U	10.	U	10.	U	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	UR	10.	UR	10.	U	10.	U	10.	U
95-95-4	2,4,5-Trichlorophenol	25.	UR	25.	UR	25.	U	25.	U	25.	U
91-58-7	2-Chloronaphthalene	10.	U	10.	U	10.	U	10.	U	10.	U
88-74-4	2-Nitroaniline	25.	U	25.	U	25.	U	25.	U	25.	U
131-11-3	Dimethylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U
208-96-8	Acenaphthylene	10.	U	10.	U	10.	U	10.	U	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U	10.	U	10.	U	10.	U	10.	U
99-09-2	3-Nitroaniline	25.	U	25.	U	25.	U	25.	U	25.	U
83-32-9	Acenaphthene	10.	U	10.	U	10.	U	10.	U	10.	U
51-28-5	2,4-Dinitrophenol	25.	UR	25.	UR	25.	U	25.	U	25.	U
100-02-7	4-Nitrophenol	25.	UR	25.	UR	25.	UJ	25.	UJ	25.	UJ
132-64-9	Dibenzofuran	10.	U	10.	U	10.	U	10.	U	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U	10.	U	10.	U	10.	U	10.	U
84-66-2	Diethylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U
7005-72-3	4-Chlorophenylphenylether	10.	U	10.	U	10.	U	10.	U	10.	U
86-73-7	Fluorene	10.	U	10.	U	10.	U	10.	U	10.	U
100-01-6	4-Nitroaniline	25.	U	25.	U	25.	U	25.	U	25.	U
534-52-1	4,6-Dinitro-2-methylphenol	25.	UR	25.	UR	25.	U	25.	U	25.	U
86-30-6	N-Nitrosodiphenylamine	10.	UJ	10.	UJ	10.	UJ	10.	UJ	10.	UJ
101-55-3	4-Bromophenylphenylether	10.	U	10.	U	10.	U	10.	U	10.	U
118-74-1	Hexachlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U
87-86-5	Pentachlorophenol	25.	UR	25.	UR	25.	U	25.	U	25.	U
85-[illegible]	nthrene	10.	U	10.	[illegible]	10.	U	10.	U	10.	U

*** Validation Complete ***

NAS MEMPHIS

NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

1347 SVOA	SAMPLE ID ------->	1BG-G-MW01-LF		1BG-H-MW01-LF		1BG-G-MW01-LS		1BG-G-MW01-UF		2BG-G-MW02-UF	
	ORIGINAL ID ----->	1BGGMW01LF		1BGHMW01LF		1BGGMW01LS		1BGGMW01UF		2BGGMW02UF	
	LAB SAMPLE ID --->	120189		120190		120291		120191		120192	
	SAMPLE DATE ----->	03/20/95		03/20/95		03/21/95		03/20/95		03/20/95	
	DATE EXTRACTED -->	03/27/95		03/27/95		03/27/95		03/27/95		03/27/95	
	DATE ANALYZED --->	04/10/95		04/10/95		04/11/95		04/10/95		04/10/95	
	MATRIX ---------->	Water		Water		Water		Water		Water	
	UNITS ----------->	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A
CAS #	Parameter										
120-12-7	Anthracene	10.	U	10.	U	10.	U	10.	U	10.	U
86-74-8	Carbazole	10.	U	10.	U	10.	U	10.	U	10.	U
84-74-2	Di-n-butylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U
206-44-0	Fluoranthene	10.	U	10.	U	10.	U	10.	U	10.	U
129-00-0	Pyrene	10.	U	10.	U	10.	U	10.	U	10.	U
85-68-7	Butylbenzylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U
91-94-1	3,3'-Dichlorobenzidine	10.	U	10.	U	10.	U	10.	U	10.	U
56-55-3	Benzo(a)anthracene	10.	U	10.	U	10.	U	10.	U	10.	U
218-01-9	Chrysene	10.	U	10.	U	10.	U	10.	U	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	10.	U	10.	U	10.	U	10.	U	10.	U
117-84-0	Di-n-octylphthalate	10.	U	10.	U	10.	U	10.	U	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U	10.	U	10.	U	10.	U	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U	10.	U	10.	U	10.	U	10.	U
50-32-8	Benzo(a)pyrene	10.	U	10.	U	10.	U	10.	U	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U	10.	U	10.	U	10.	U	10.	U
53-70-3	Dibenzo(a,h)anthracene	10.	U	10.	U	10.	U	10.	U	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U	10.	U	10.	U	10.	U	10.	U
108-95-2	Phenol	10.	UR	10.	UR	10.	U	10.	U	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U	10.	U	10.	U	10.	U	10.	U
95-57-8	2-Chlorophenol	10.	UR	10.	UR	10.	U	10.	U	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U
95-48-7	2-Methylphenol (o-Cresol)	10.	UR	10.	UR	10.	U	10.	U	10.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10.	UJ	10.	UJ	10.	UJ	10.	UJ	10.	UJ
106-44-5	4-Methylphenol (p-Cresol)	10.	UR	10.	UR	10.	U	10.	U	10.	U
98-95-3	Nitrobenzene	10.	U	10.	U	10.	U	10.	U	10.	U

*** Validation Complete ***

NAS MEMPHIS

NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

1347 TOTAL PHOS							
	SAMPLE ID ------->	003-G-MW03-MF	003-G-MW04-LF	003-G-MW04-LS	008-G-MW00-1F		
	ORIGINAL ID ----->	003GMW03MF	003GMW04LF	003GMW04LS	008GMW001F		
	LAB SAMPLE ID --->	120403	120282	120283	120404		
	SAMPLE DATE ----->	03/22/95	03/21/95	03/21/95	03/22/95		
	DATE EXTRACTED -->	04/17/95	04/17/95	04/17/95	04/17/95		
	DATE ANALYZED --->	04/17/95	04/17/95	04/17/95	04/17/95		
	MATRIX ---------->	Water	Water	Water	Water		
	UNITS ---------->	mg/L A	mg/L A	mg/L A	mg/L A		
CAS #	Parameter						
9999900-03-5	Phosphorus Total	0.27	0.022	0.022	0.022		

NAS MEMPHIS

NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

1347 TPH						
SAMPLE ID ------>	003-G-GM01-LS	003-G-GM07-UF	003-G-GM08-LS	003-G-MW03-LS	003-G-MW03-MF	003-H-MW03-MF
ORIGINAL ID ----->	003GGM01LS	003GGM07UF	003GGM08LS	003GMW03LS	003GMW03MF	003HMW03MF
LAB SAMPLE ID --->	120405	120279	120406	120280	120403	120407
SAMPLE DATE ----->	03/22/95	03/21/95	03/22/95	03/21/95	03/22/95	03/22/95
DATE EXTRACTED -->	04/13/95	04/19/95	04/13/95	04/19/95	04/13/95	04/13/95
DATE ANALYZED --->	04/13/95	04/19/95	04/13/95	04/19/95	04/13/95	04/13/95
MATRIX ---------->	Water	Water	Water	Water	Water	Water
UNITS ---------->	mg/L A	mg/L A	mg/L A	mg/L A	mg/L A	mg/L A
CAS # Parameter						
9999900-02-4 Petroleum Hydrocarbons, TPH	2. U	2. U	2. U	2. U	2. U	2. U

NAS MEMPHIS

NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

1347 TPH						
	SAMPLE ID ------->	003-G-MW04-LF	003-G-MW04-LS	003-G-MW05-MF	007-G-MW01-LS	007-G-MW03-LS	008-G-MW00-1F
	ORIGINAL ID ----->	003GMW04LF	003GMW04LS	003GMW05MF	007GMW01LS	007GMW03LS	008GMW001F
	LAB SAMPLE ID --->	120282	120283	120408	120284	120173	120404
	SAMPLE DATE ----->	03/21/95	03/21/95	03/22/95	03/21/95	03/20/95	03/22/95
	DATE EXTRACTED -->	04/19/95	04/19/95	04/13/95	04/19/95	04/11/95	04/13/95
	DATE ANALYZED --->	04/19/95	04/19/95	04/13/95	04/19/95	04/12/95	04/13/95
	MATRIX ---------->	Water	Water	Water	Water	Water	Water
	UNITS ---------->	mg/L A	mg/L A	mg/L A	mg/L A	mg/L A	mg/L A
CAS #	Parameter						
9999900-02-4	Petroleum Hydrocarbons, TPH	2. U	2. U	2. U	2. U	2. U	2. U

*** Validation Complete ***

NAS MEMPHIS

NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

1347 TPH						
SAMPLE ID ------->	008-G-MW00-2F	1BG-G-MW01-LF	1BG-H-MW01-LF	1BG-G-MW01-LS	1BG-G-MW01-UF	2BG-G-MW02-UF
ORIGINAL ID ----->	008GMW002F	1BGGMW01LF	1BGHMW01LF	1BGGMW01LS	1BGGMW01UF	2BGGMW02UF
LAB SAMPLE ID --->	120409	120176	120177	120281	120178	120179
SAMPLE DATE ----->	03/22/95	03/20/95	03/20/95	03/21/95	03/20/95	03/20/95
DATE EXTRACTED -->	04/13/95	04/11/95	04/11/95	04/19/95	04/11/95	04/11/95
DATE ANALYZED --->	04/13/95	04/12/95	04/12/95	04/19/95	04/12/95	04/12/95
MATRIX ---------->	Water	Water	Water	Water	Water	Water
UNITS ---------->	mg/L A	mg/L A	mg/L A	mg/L A	mg/L A	mg/L A
CAS # Parameter						
9999900-02-4 Petroleum Hydrocarbons, TPH	2. U	2. U	2. U	2. U	2. U	2. U

NAS MEMPHIS
NAS MEMPHIS, RFI, ASSEMBLY A
Primary Samples

1347 TSS					
SAMPLE ID ------>	003-G-MW03-MF	003-G-MW04-LF	003-G-MW04-LS	008-G-MW00-1F	
ORIGINAL ID ----->	003GMW03MF	003GMW04LF	003GMW04LS	008GMW001F	
LAB SAMPLE ID --->	120403	120282	120283	120404	
SAMPLE DATE ----->	03/22/95	03/21/95	03/21/95	03/22/95	
DATE ANALYZED --->	03/24/95	03/24/95	03/24/95	03/24/95	
MATRIX ---------->	Water	Water	Water	Water	
UNITS ---------->	mg/L A	mg/L A	mg/L A	mg/L A	
CAS # Parameter					
9999900-03-7 Total Suspended Solids (TSS)	17.	11.	4900.	149.	

NAS MEMPHIS

NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

1347 Turbidity	SAMPLE ID ------->: ORIGINAL ID ----->: LAB SAMPLE ID --->: SAMPLE DATE ----->: DATE ANALYZED --->: MATRIX ----------->: UNITS ----------->:	003-G-MW03-MF 003GMW03MF 120403 03/22/95 03/23/95 Water NTU A	003-G-MW04-LF 003GMW04LF 120282 03/21/95 03/23/95 Water NTU A	003-G-MW04-LS 003GMW04LS 120283 03/21/95 03/23/95 Water NTU A	008-G-MW00-1F 008GMW001F 120404 03/22/95 03/23/95 Water NTU A		
CAS #	Parameter						
9999900-04-4	Turbidity	23.	15.	1500.	22.		

*** Validation Complete ***

NAS MEMPHIS

NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

1347 VOA	SAMPLE ID ------->	003-G-GM01-LS		003-G-GM07-UF		003-G-GM08-LS		003-G-MW03-LS		003-G-MW03-MF		003-H-MW03-MF	
	ORIGINAL ID ----->	003GGM01LS		003GGM07UF		003GGM08LS		003GMW03LS		003GMW03MF		003HMW03MF	
	LAB SAMPLE ID --->	120411		120287		120412		120288		120413		120414	
	SAMPLE DATE ----->	03/22/95		03/21/95		03/22/95		03/21/95		03/22/95		03/22/95	
	DATE ANALYZED --->	03/26/95		03/30/95		03/26/95		03/30/95		03/26/95		03/26/95	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A
CAS #	Parameter												
74-87-3	Chloromethane	10.	UJ	10.	U	10.	UJ	10.	U	10.	UJ	10.	UJ
74-83-9	Bromomethane	10.	UJ	10.	U	10.	UJ	10.	U	10.	UJ	10.	UJ
75-01-4	Vinyl chloride	10.	UJ	10.	U	10.	UJ	10.	U	10.	UJ	10.	UJ
75-00-3	Chloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-09-2	Methylene chloride	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
67-64-1	Acetone	10.	U	34.	J	10.	U	7.	J	1000.	D	1300.	D
75-15-0	Carbon disulfide	10.	U	10.	U	10.	U	10.	U	1.	J	10.	U
75-35-4	1,1-Dichloroethene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-34-3	1,1-Dichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
540-59-0	1,2-Dichloroethene (total)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
67-66-3	Chloroform	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
107-06-2	1,2-Dichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
78-93-3	2-Butanone (MEK)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
71-55-6	1,1,1-Trichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
56-23-5	Carbon tetrachloride	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-27-4	Bromodichloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
78-87-5	1,2-Dichloropropane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
10061-01-5	cis-1,3-Dichloropropene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
79-01-6	Trichloroethene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
124-48-1	Dibromochloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
71-43-2	Benzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
10061-02-6	trans-1,3-Dichloropropene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-25-2	Bromoform	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
591-78-6	2-Hexanone	10.	UJ	10.	U	10.	UJ	10.	U	10.	UJ	10.	UJ
127-18-4	Tetrachloroethene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-88-3	Toluene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-90-7	Chlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
100-41-4	Ethylbenzene	10.	U	10.	U	10.	U.	10.	U	2.	J	1.	J
100-42-5	Styrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
1330-20-7	Xylene (Total)	10.	U	10.	U	10.	U	10.	U	22.	J	14.	J

NAS MEMPHIS
NAS MEMPHIS, RFI, ASSEMBLY A
Primary Samples

1347 VOA	SAMPLE ID ------->	003-G-MW04-LF		003-G-MW04-LS		003-G-MW05-MF		008-G-MW00-1F		008-G-MW00-2F		1BG-G-MW01-LF	
	ORIGINAL ID ----->	003GMW04LF		003GMW04LS		003GMW05MF		008GMW001F		008GMW002F		1BGGMW01LF	
	LAB SAMPLE ID --->	120289		120290		120415		120416		120417		120189	
	SAMPLE DATE ----->	03/21/95		03/21/95		03/22/95		03/22/95		03/22/95		03/20/95	
	DATE ANALYZED --->	03/30/95		03/30/95		03/26/95		03/26/95		03/26/95		03/27/95	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ----------->	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A
CAS #	Parameter												
74-87-3	Chloromethane	10.	U	10.	U	10.	UJ	10.	UJ	10.	UJ	10.	UJ
74-83-9	Bromomethane	10.	U	10.	U	10.	UJ	10.	UJ	10.	UJ	10.	U
75-01-4	Vinyl chloride	10.	U	10.	U	10.	UJ	10.	UJ	10.	UJ	10.	UJ
75-00-3	Chloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-09-2	Methylene chloride	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
67-64-1	Acetone	10.	U	10.	U	24.	U	10.	U	10.	U	11.	UJ
75-15-0	Carbon disulfide	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-35-4	1,1-Dichloroethene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-34-3	1,1-Dichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
540-59-0	1,2-Dichloroethene (total)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
67-66-3	Chloroform	10.	U	10.	U	1.	J	10.	U	10.	U	10.	U
107-06-2	1,2-Dichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
78-93-3	2-Butanone (MEK)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	UJ
71-55-6	1,1,1-Trichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
56-23-5	Carbon tetrachloride	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-27-4	Bromodichloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
78-87-5	1,2-Dichloropropane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
10061-01-5	cis-1,3-Dichloropropene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
79-01-6	Trichloroethene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
124-48-1	Dibromochloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
71-43-2	Benzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
10061-02-6	trans-1,3-Dichloropropene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-25-2	Bromoform	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	UJ
591-78-6	2-Hexanone	10.	U	10.	U	10.	UJ	10.	UJ	10.	UJ	10.	UJ
127-18-4	Tetrachloroethene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-88-3	Toluene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-90-7	Chlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
100-41-4	Ethylbenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
100-42-5	Styrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
1330-20-7	Xylene (Total)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U

NAS MEMPHIS

NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

1347 VOA					
SAMPLE ID ------->	1BG-H-MW01-LF	1BG-G-MW01-LS	1BG-G-MW01-UF	2BG-G-MW02-UF	
ORIGINAL ID ----->	1BGHMW01LF	1BGGMW01LS	1BGGMW01UF	2BGGMW02UF	
LAB SAMPLE ID --->	120190	120291	120191	120192	
SAMPLE DATE ----->	03/20/95	03/21/95	03/20/95	03/20/95	
DATE ANALYZED --->	03/27/95	03/30/95	03/27/95	03/27/95	
MATRIX ---------->	Water	Water	Water	Water	
UNITS ----------->	UG/L A	UG/L A	UG/L A	UG/L A	

CAS #	Parameter										
74-87-3	Chloromethane	10.	UJ	10.	U	10.	UJ	10.	UJ		
74-83-9	Bromomethane	10.	U	10.	U	10.	U	10.	U		
75-01-4	Vinyl chloride	10.	UJ	10.	U	10.	UJ	10.	UJ		
75-00-3	Chloroethane	10.	U	10.	U	10.	U	10.	U		
75-09-2	Methylene chloride	10.	U	10.	U	10.	U	10.	U		
67-64-1	Acetone	10.	UJ	13.	U	10.	UJ	10.	UJ		
75-15-0	Carbon disulfide	10.	U	10.	U	10.	U	10.	U		
75-35-4	1,1-Dichloroethene	10.	U	10.	U	10.	U	10.	U		
75-34-3	1,1-Dichloroethane	10.	U	10.	U	10.	U	10.	U		
540-59-0	1,2-Dichloroethene (total)	10.	U	10.	U	10.	U	10.	U		
67-66-3	Chloroform	10.	U	10.	U	10.	U	10.	U		
107-06-2	1,2-Dichloroethane	10.	U	10.	U	10.	U	10.	U		
78-93-3	2-Butanone (MEK)	10.	UJ	10.	U	10.	UJ	10.	UJ		
71-55-6	1,1,1-Trichloroethane	10.	U	10.	U	10.	U	10.	U		
56-23-5	Carbon tetrachloride	10.	U	10.	U	10.	U	10.	U		
75-27-4	Bromodichloromethane	10.	U	10.	U	10.	U	10.	U		
78-87-5	1,2-Dichloropropane	10.	U	10.	U	10.	U	10.	U		
10061-01-5	cis-1,3-Dichloropropene	10.	U	10.	U	10.	U	10.	U		
79-01-6	Trichloroethene	10.	U	10.	U	10.	U	10.	U		
124-48-1	Dibromochloromethane	10.	U	10.	U	10.	U	10.	U		
79-00-5	1,1,2-Trichloroethane	10.	U	10.	U	10.	U	10.	U		
71-43-2	Benzene	10.	U	10.	U	10.	U	10.	U		
10061-02-6	trans-1,3-Dichloropropene	10.	U	10.	U	10.	U	10.	U		
75-25-2	Bromoform	10.	U	10.	U	10.	U	10.	U		
108-10-1	4-Methyl-2-Pentanone (MIBK)	10.	UJ	10.	U	10.	UJ	10.	UJ		
591-78-6	2-Hexanone	10.	UJ	10.	U	10.	UJ	10.	UJ		
127-18-4	Tetrachloroethene	10.	U	10.	U	10.	U	10.	U		
79-34-5	1,1,2,2-Tetrachloroethane	10.	U	10.	U	10.	U	10.	U		
108-88-3	Toluene	10.	U	10.	U	10.	U	10.	U		
108-90-7	Chlorobenzene	10.	U	10.	U	10.	U	10.	U		
100-41-4	Ethylbenzene	10.	U	10.	U	10.	U	10.	U		
100-42-5	Styrene	10.	U	10.	U	10.	U	10.	U		
1330-20-7	Xylene (Total)	10.	U	10.	U	2.	J	10.	U		

*** Validation Complete ***

VALIDATA

Chemical Services, Inc.

P. O. Box 930422 Norcross, Ga. 30093

DATA VALIDATION SUMMARY REPORT

COMPANY:	Ensafe/Allen & Hoshall
SITE NAME:	NAS Memphis
PROJECT NUMBER:	8500.024
CONTRACTED LAB:	National Environmental Testing, Inc.
QA/QC LEVEL:	Level IV
EPA SOW/METHOD:	EPA 1990 SOW
VALIDATION GUIDELINES:	*USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*, 1994
SAMPLE MATRIX:	Water
TYPES OF ANALYSES:	Volatile Organics (VOA)
SDG NUMBERS:	1394, 1397, 1399

SAMPLES:

SDG NUMBER: 1394

Client Sample #:	Lab Sample #:	Matrix	VOA
007GMW04LF	122834	Water	X
007GMW04UC	122835	Water	X
007GMW04UF	122836	Water	X
007GMW05LF	122837	Water	X
007GMW05LS	122838	Water	X
007GMW05UC	122839	Water	X
007HMW05UC	122840	Water	X
007GMW05UF	122841	Water	X
006T050395	122842	Water	X
007GMW07LF	122843	Water	X
007GMW07LS	122844	Water	X
007GMW07UC	122845	Water	X
007GMW07UF	122846	Water	X
007GMW08LF	122847	Water	X
007GMW08UC	122848	Water	X

Client Sample #:	Lab Sample #:	Matrix	VOA
007GMW08UF	122849	Water	X
007GMW09LF	122850	Water	X
007GMW09LS	122851	Water	X
007GMW09UC	122852	Water	X
007GMW09UF	122853	Water	X
007T050295	122854	Water	X
007GMW05UFMS	122841MS	Water	X
007GMW05UFMSD	122841MSD	Water	X
007GMW08LFMS	122850MS	Water	X
007GMW08LFMSD	122850MSD	Water	X

H = FIELD DUPLICATE, T = TRIP BLANK, MS = MATRIX SPIKE, MSD = MATRIX SPIKE DUPLICATE

SDG NUMBER: 1397

Client Sample #:	Lab Sample #:	Matrix	VOA
001E050495	122936	Water	X
002E050495	122937	Water	X
007GMW01LF	122938	Water	X
007GMW01LS	122939	Water	X
007GMW01UC	122940	Water	X
007GMW01UF	122941	Water	X
007GMW02UC	122942	Water	X
007GMW03LS	122943	Water	X
007GMW69LF	122944	Water	X
BG5GMW05LF	122945	Water	X
BGHMW05LF	122946	Water	X
BG5GMW05LS	122947	Water	X
BG5GMW05UF	122948	Water	X
007GMW01UFMS	122941MS	Water	X
007GMW01UFMSD	122941MSD	Water	X
FIELD BLANK	122949	Water	X
TRIP BLANK	122950	Water	X

E = EQUIPMENT BLANK, H = FIELD DUPLICATE, MS = MATRIX SPIKE, MSD = MATRIX SPIKE DUPLICATE

SDG NUMBER: 1399

Client Sample #:	Lab Sample #:	Matrix	VOA
007GMW03UC	122996	Water	X
0007GMW03UF	122997	Water	X
007GMW08GM	122998	Water	X

Client Sample #:	Lab Sample #:	Matrix	VOA
007GMW02GM	122999	Water	X
007GMW03LF	123000	Water	X
007GMW06LF	123001	Water	X
007GMW06UF	123002	Water	X
007GMW06UC	123003	Water	X
007GMW06LS	123004	Water	X
007HMW06UC	123005	Water	X
007T050595	123006	Water	X

H = FIELD DUPLICATE, T =TRIP BLANK

DATA REVIEWER(S): Amy L. Hogan, Marvin L. Smith

RELEASE SIGNATURE: 

Data Qualifier Definitions:

J	-	The associated numerical value is an estimated quantity.
R	-	The data are unusable (the compound/analyte may or may not be present). Resampling and reanalysis are necessary for verification.
U	-	The compound/analyte was analyzed for, but not detected. The associated numerical value is the sample quantitation limit.
UJ	-	The compound/analyte was analyzed for, but not detected. The sample quantitation limit is an estimated quantity.

DATA QUALIFICATION SUMMARY

NET, Inc. - 1394 Organics

SAMPLES: 007GMW04LF, 007GMW04UC, 007GMW04UF, 007GMW05LF, 007GMW05LS, 007GMW05UC, 007HMW05UC, 007GMW05UF, 006T050395, 007GMW07LF, 007GMW07LS, 007GMW07UC, 007GMW07UF, 007GMW08LF, 007GMW08UC, 007GMW08UF, 007GMW09LF, 007GMW09LS, 007GMW09UC, 007GMM09UF, 007T050295, 007GMW05UFMS, 007GMW05UFMSD, 007GMW08LFMS, 007GMW08LFMSD

VOLATILE ORGANICS

I.) Holding Times:

All Holding Time criteria were met. No action was required.

II.) GC/MS Tuning:

All Tuning criteria were met. No action was necessary.

III.) Calibration:

Initial Calibration:

The Percent Relative Standard Deviation (%RSD) for acetone (67.5%) exceeded the 30% QC limit for the initial calibration run on 5/04/95. The positive results for this compound in associated samples 007GMW07LF, 007GMW07LS, 007GMW07UF, 007GMW08LF, 007GMW08UC, 007GMW08UF, 007GMW09LF, 007GMW09UC, 007GMW09UF, 007GMW04UC, 007GMW04UF, 007GMW05LF, 007GMW05UC and 007GMW07UC were flagged as estimated (J). The result for this compound in associated sample 007T050295 was a non-detect. No further action was required.

Continuing Calibration:

The Percent Difference (%D) of acetone (55.5%) exceeded the 25% QC limit for the continuing calibration run on 5/06/95 at 09:05. The non-detect results for this compound in associated samples 007GMW07LF, 007GMW07LS, 007GMW07UF, 007GMW08LF, 007GMW08UC, 007GMW08UF, 007GMW09LF, 007GMW09UC and 007GMW09UF were flagged as estimated (UJ). The positive results for this compound in the associated samples were previously flagged based on the initial calibration. The results for associated blank 007T050295 were not present on the spreadsheet for this SDG. No further action was necessary.

The Percent Difference (%D) of acetone (52.4%) exceeded the 25% QC limit for the continuing calibration run on 5/07/95 at 07:13. The non-detect results for this compound in associated samples 007GMW04UC, 007GMW04UF, 007GMW05LF, 007GMW05UC and 007GMW07UC were flagged as estimated (UJ). The positive results for this compound in the associated samples were previously flagged based on the initial calibration.

IV.) Blanks:

Method Blanks:

Acetone was detected at 10.0 ug/L in water method blank VBLK051295K. There were no positive results for this compound in associated samples 007GMW04LF and 007GMW05LS. No action was required.

Trip Blanks and Equipment Blanks:

Methylene chloride was detected at 2.0 ug/L in trip blank 006T050395. All positive results for this compound in associated samples 007GMW04LF, 007GMW04UC, 007GMW04UF, 007GMW05LF, 007GMW05LS, 007GMW05UC, 007HMW05UC and 007GMW05UF less than 10X the blank amount were flagged as undetected (U) with the detection limit being raised to the level of contamination in each sample.

There were no positive detections in trip blank 007T050295. No further action was required.

TIC's:

There were no TIC's reported in the method blanks for this SDG.

V.) Surrogate Recoveries:

The Percent Recovery (%R) of bromofluorobenzene (80%) in sample 007GMW05UFMS was below the 86-115% QC limits. Since the sample was a matrix spike and all other QC criteria were met, no action was taken.

VI.) Matrix Spike / Matrix Spike Duplicate (MS / MSD):

All MS / MSD criteria were met. No action was required.

VII.) Field Duplicates:

There were no calculable Relative Percent Differences (RPD's) for field duplicate samples 007GMW05UC and 007HMW05UC. No action was required.

VIII.) Internal Standards Performance:

All Internal Standards Performance criteria were met. No action was required.

IX.) TCL Compound Identification:

All TCL criteria were met, so no action was necessary.

X.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL's):

All CRQL criteria were met. No action was required.

XI.) Tentatively Identified Compounds (TIC's):

All TIC criteria were met, so no action was taken.

XII.) System Performance:

All criteria were met, so no action was necessary.

XIII.) Overall Assessment of Data/General:

The results for 006T050395 and 007T050295 were not in the spreadsheet for this SDG. All laboratory data were acceptable with qualification.

DATA QUALIFICATION SUMMARY

NET, Inc. - 1397 Organics

SAMPLES: 001E050495, 002E050495, 007GMW01LF, 007GMW01LS, 007GMW01UC, 007GMW01UF, 007GMW02UC, 007GMW03LS, 007GMW69LF, BG5GMW05LF, BG5HMW05LF, BG5GMW05LS, BG5GMW05UF, FIELD BLANK, TRIP BLANK, 007GMW01UFMS, 007GMWO1UFMSD

VOLATILE ORGANICS

I.) Holding Times:

All Holding Time criteria were met. No action was required.

II.) GC/MS Tuning:

All Tuning criteria were met. No action was necessary.

III.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No action was required.

Continuing Calibration:

The Percent Difference (%D) of chloromethane (30.1%) exceeded the 25% QC limit for the continuing calibration run on 5/13/95 at 10:20. The results for this compound in associated samples BG5GMW05LF, BG5HMW05LF, BG5GMW05UF, 007GMW01UF, 007GMW02UC, 007GMW03LS and 007GMW69LF, which consisted entirely of non-detects, were flagged as estimated (UJ).

The Percent Difference (%D) of chloromethane (25.6%) exceeded the 25% QC limit for the continuing calibration run on 5/15/95 at 10:48. The results for the associated blanks 002E050495 and TRIP BLANK were not on the spreadsheet for this SDG. No action was taken.

IV.) Blanks:

Method Blanks:

Acetone was detected at 10.0 ug/L in water method blank VBLK051295K. There were no positive results for this compound in associated samples 007GMW01LS and 007GMW01LF. No action was required.

Trip Blanks and Equipment Blanks:

Methylene chloride was detected at 1.0 ug/L in the trip blank. There were no positive results for this compound in the associated samples. No action was necessary.

Acetone and methylene chloride were detected at 190 ug/L and 1.0 ug/L, respectively, in equipment blank 001E050495. All positive results for these compounds in the samples in this SDG less than 10X the blank amounts were flagged as undetected (U) with the detection limit being raised to the level of contamination in each sample.

There were no positive detections in blanks 002E050495 and FIELD BLANK. No further action was required.

TIC's:

There were no TIC's reported in the method blanks for this SDG.

V.) Surrogate Recoveries:

All Surrogate Recovery criteria were met, so no action was taken.

VI.) Matrix Spike / Matrix Spike Duplicate (MS/MSD):

All MS / MSD criteria were met. No action was required.

VII.) Field Duplicates:

The Relative Percent Difference (RPD) for tetrachloroethene (3.6%) was within the 60% QC limit for soil field duplicate samples BG5GMW05LF and BG5HMW05LF. No action was required.

VIII.) Internal Standards Performance:

All Internal Standards Performance criteria were met. No action was required.

IX.) TCL Compound Identification:

All TCL criteria were met, so no action was necessary.

X.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL's):

All CRQL criteria were met. No action was required.

XI.) Tentatively Identified Compounds (TIC's):

All TIC criteria were met, so no action was taken.

XII.) System Performance:

All criteria were met, so no action was necessary.

XIII.) Overall Assessment of Data/General:

The results for 001E050495, 002E050495, FIELD BLANK and TRIP BLANK were not in the spreadsheet for this SDG. All remaining laboratory data were acceptable with qualification.

DATA QUALIFICATION SUMMARY

NET, Inc. - 1399 Organics

SAMPLES: 007GMW02GM, 007GMW03LF, 007GMW03UC, 007GMW03UF, 007GMW06LF, 007GMW06LS, 007GMW06UC, 007HMW06UC, 007GMW06UF, 007GMW08GM, 007T050595

VOLATILE ORGANICS

I.) Holding Times:

All Holding Time criteria were met. No action was required.

II.) GC/MS Tuning:

All Tuning criteria were met. No action was necessary.

III.) Calibration:

Initial Calibration:

All Initial Calibration criteria were met. No action was required.

Continuing Calibration:

The Percent Difference (%D) of chloromethane (25.6%) exceeded the 25% QC limit for the continuing calibration run on 5/15/95 at 10:48. The non-detect result for this compound in associated sample 007GMW06UF, was flagged as estimated (UJ).

IV.) Blanks:

Method Blanks:

All Method Blank criteria were met. No action was required.

Trip Blanks and Equipment Blanks:

There were no positive detections in trip blank 007T050595 for this SDG. No action was required.

TIC's:

There were no TIC's reported in the method blanks for this SDG. no action was required.

V.) Surrogate Recoveries:

All Surrogate Recovery criteria were met, so no action was taken.

VI.) Matrix Spike / Matrix Spike Duplicate (MS/MSD):

No MS / MSD analysis was performed for this SDG. No action was required.

VII.) Field Duplicates:

There were no calculable Relative Percent Differences (RPD's) for field duplicate samples 007GMW06UC and 007HMW06UC. No action was required.

VIII.) Internal Standards Performance:

All Internal Standards Performance criteria were met. No action was required.

IX.) TCL Compound Identification:

All TCL criteria were met, so no action was necessary.

X.) Compound Quantitation and Reported Contract Required Quantitation Limits (CRQL's):

All CRQL criteria were met. No action was required.

XI.) Tentatively Identified Compounds (TIC's):

All TIC criteria were met, so no action was taken.

XII.) System Performance:

All criteria were met, so no action was necessary.

XIII.) Overall Assessment of Data/General:

The results for trip blank 007T050595 were not on the spreadsheet for this SDG. All remaining laboratory data were acceptable with qualification.

NAS MEMPHIS
NAS MEMPHIS, RFI, ASSEMBLY A
Primary Samples

1394 VOA	SAMPLE ID ------->	007-G-MW04-LF		007-G-MW04-UC		007-G-MW04-UF		007-G-MW05-LF		007-G-MW05-LS		007-G-MW05-UC	
	ORIGINAL ID ----->	007GMW04LF		007GMW04UC		007GMW04UF		007GMW05LF		007GMW05LS		007GMW05UC	
	LAB SAMPLE ID --->	122834		122835		122836		122837		122838		122839	
	SAMPLE DATE ----->	05/03/95		05/03/95		05/03/95		05/03/95		05/03/95		05/03/95	
	DATE ANALYZED --->	05/12/95		05/07/95		05/07/95		05/07/95		05/12/95		05/07/95	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ----------->	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A
CAS #	Parameter												
74-87-3	Chloromethane	50.	U	10.	U	10.	U	10.	U	10.	U	10.	U
74-83-9	Bromomethane	50.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-01-4	Vinyl chloride	50.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-00-3	Chloroethane	50.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-09-2	Methylene chloride	50.	U	10.	U	10.	U	10.	U	10.	U	10.	U
67-64-1	Acetone	50.	U	10.	J	18.	J	11.	J	10.	U	10.	UJ
75-15-0	Carbon disulfide	50.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-35-4	1,1-Dichloroethene	50.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-34-3	1,1-Dichloroethane	50.	U	10.	U	10.	U	10.	U	10.	U	10.	U
540-59-0	1,2-Dichloroethene (total)	50.	U	10.	U	10.	U	10.	U	10.	U	10.	U
67-66-3	Chloroform	50.	U	10.	U	10.	U	5.	J	10.	U	10.	U
107-06-2	1,2-Dichloroethane	50.	U	10.	U	10.	U	4.	J	10.	U	10.	U
78-93-3	2-Butanone (MEK)	50.	U	10.	U	10.	U	10.	U	10.	U	10.	U
71-55-6	1,1,1-Trichloroethane	50.	U	10.	U	10.	U	10.	U	10.	U	10.	U
56-23-5	Carbon tetrachloride	9.	J	10.	U	10.	U	8.	J	10.	U	10.	U
75-27-4	Bromodichloromethane	50.	U	10.	U	10.	U	10.	U	10.	U	10.	U
78-87-5	1,2-Dichloropropane	50.	U	10.	U	10.	U	10.	U	10.	U	10.	U
10061-01-5	cis-1,3-Dichloropropene	50.	U	10.	U	10.	U	10.	U	10.	U	10.	U
79-01-6	Trichloroethene	390.		10.	U	1.	J	28.		10.	U	10.	U
124-48-1	Dibromochloromethane	50.	U	10.	U	10.	U	10.	U	10.	U	10.	U
79-00-5	1,1,2-Trichloroethane	50.	U	10.	U	10.	U	10.	U	10.	U	10.	U
71-43-2	Benzene	50.	U	10.	U	10.	U	10.	U	10.	U	10.	U
10061-02-6	trans-1,3-Dichloropropene	50.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-25-2	Bromoform	50.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	50.	U	10.	U	10.	U	10.	U	10.	U	10.	U
591-78-6	2-Hexanone	50.	U	10.	U	10.	U	10.	U	10.	U	10.	U
127-18-4	Tetrachloroethene	26.	J	10.	U	10.	U	1.	J	10.	U	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	50.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-88-3	Toluene	50.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-90-7	Chlorobenzene	50.	U	10.	U	10.	U	10.	U	10.	U	10.	U
100-41-4	Ethylbenzene	50.	U	10.	U	10.	U	10.	U	1.	J	10.	U
100-42-5	Styrene	50.	U	10.	U	10.	U	10.	U	10.	U	10.	U
1330-20-7	Xylene (Total)	50.	U	10.	U	10.	U	10.	U	10.	U	10.	U

*** Validation Complete ***

NAS MEMPHIS

NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

1394 VOA	SAMPLE ID ------->	007-H-MW05-UC		007-G-MW05-UF		007-G-MW07-LF		007-G-MW07-LS		007-G-MW07-UC		007-G-MW07-UF	
	ORIGINAL ID ----->	007HMW05UC		007GMW05UF		007GMW07LF		007GMW07LS		007GMW07UC		007GMW07UF	
	LAB SAMPLE ID --->	122840		122841		122843		122844		122845		122846	
	SAMPLE DATE ----->	05/03/95		05/03/95		05/02/95		05/02/95		05/02/95		05/02/95	
	DATE ANALYZED --->	05/11/95		05/11/95		05/06/95		05/06/95		05/07/95		05/06/95	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ----------->	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A
CAS #	Parameter												
74-87-3	Chloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
74-83-9	Bromomethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-01-4	Vinyl chloride	10.	U	10.	U	10.	U	10.	U	10.	U	2.	J
75-00-3	Chloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-09-2	Methylene chloride	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
67-64-1	Acetone	6.	J	98.		10.	UJ	40.	J	21.	J	25.	J
75-15-0	Carbon disulfide	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-35-4	1,1-Dichloroethene	10.	U	10.	U	1.	J	10.	U	10.	U	10.	U
75-34-3	1,1-Dichloroethane	10.	U	10.	U	1.	J	10.	U	10.	U	10.	U
540-59-0	1,2-Dichloroethene (total)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
67-66-3	Chloroform	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
107-06-2	1,2-Dichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
78-93-3	2-Butanone (MEK)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
71-55-6	1,1,1-Trichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
56-23-5	Carbon tetrachloride	10.	U	10.	U	1.	J	10.	U	10.	U	10.	U
75-27-4	Bromodichloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
78-87-5	1,2-Dichloropropane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
10061-01-5	cis-1,3-Dichloropropene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
79-01-6	Trichloroethene	10.	U	10.	U	6.	J	10.	U	10.	U	10.	U
124-48-1	Dibromochloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
71-43-2	Benzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
10061-02-6	trans-1,3-Dichloropropene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-25-2	Bromoform	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
591-78-6	2-Hexanone	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
127-18-4	Tetrachloroethene	10.	U	10.	U	3.	J	10.	U	10.	U	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-88-3	Toluene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-90-7	Chlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
100-41-4	Ethylbenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
100-42-5	Styrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
1330-20-7	Xylene (Total)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U

*** Validation Complete ***

1394 VOA	SAMPLE ID ------->	007-G-MW08-LF		007-G-MW08-UC		007-G-MW08-UF		007-G-MW09-LF		007-G-MW09-LS		007-G-MW09-UC	
	ORIGINAL ID ----->	007GMW08LF		007GMW08UC		007GMW08UF		007GMW09LF		007GMW09LS		007GMW09UC	
	LAB SAMPLE ID --->	122847		122848		122849		122850		122851		122852	
	SAMPLE DATE ----->	05/02/95		05/01/95		05/02/95		05/02/95		05/02/95		05/02/95	
	DATE ANALYZED --->	05/06/95		05/06/95		05/06/95		05/06/95		05/11/95		05/06/95	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A
CAS #	Parameter												
74-87-3	Chloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
74-83-9	Bromomethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-01-4	Vinyl chloride	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-00-3	Chloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-09-2	Methylene chloride	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
67-64-1	Acetone	10.	UJ	10.	UJ	10.	UJ	10.	UJ	14.		10.	UJ
75-15-0	Carbon disulfide	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-35-4	1,1-Dichloroethene	6.	J	10.	U	10.	U	10.	U	10.	U	10.	U
75-34-3	1,1-Dichloroethane	4.	J	10.	U	10.	U	10.	U	10.	U	10.	U
540-59-0	1,2-Dichloroethene (total)	1.	J	10.	U	10.	U	10.		10.	U	10.	U
67-66-3	Chloroform	10.	U	10.	U	10.	U	2.	J	3.	J	10.	U
107-06-2	1,2-Dichloroethane	10.	U	10.	U	3.	J	2.	J	10.	U	10.	U
78-93-3	2-Butanone (MEK)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
71-55-6	1,1,1-Trichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
56-23-5	Carbon tetrachloride	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-27-4	Bromodichloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
78-87-5	1,2-Dichloropropane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
10061-01-5	cis-1,3-Dichloropropene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
79-01-6	Trichloroethene	8.	J	10.	U	1.	J	4.	J	10.	U	10.	U
124-48-1	Dibromochloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
71-43-2	Benzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
10061-02-6	trans-1,3-Dichloropropene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-25-2	Bromoform	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
591-78-6	2-Hexanone	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
127-18-4	Tetrachloroethene	10.	U	10.	U	10.	U	6.	J	10.	U	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-88-3	Toluene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-90-7	Chlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
100-41-4	Ethylbenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
100-42-5	Styrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
1330-20-7	Xylene (Total)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U

*** Validation Complete ***

NAS MEMPHIS
NAS MEMPHIS, RFI, ASSEMBLY A
Primary Samples

1394	SAMPLE ID ------->	007-G-MW09-UF					
VOA	ORIGINAL ID ----->	007GMW09UF					
	LAB SAMPLE ID --->	122853					
	SAMPLE DATE ----->	05/02/95					
	DATE ANALYZED --->	05/06/95					
	MATRIX ---------->	Water					
	UNITS ----------->	UG/L	A				
CAS #	Parameter						
74-87-3	Chloromethane	10.	U				
74-83-9	Bromomethane	10.	U				
75-01-4	Vinyl chloride	10.	U				
75-00-3	Chloroethane	10.	U				
75-09-2	Methylene chloride	10.	U				
67-64-1	Acetone	10.	UJ				
75-15-0	Carbon disulfide	10.	U				
75-35-4	1,1-Dichloroethene	10.	U				
75-34-3	1,1-Dichloroethane	10.	U				
540-59-0	1,2-Dichloroethene (total)	10.	U				
67-66-3	Chloroform	10.	U				
107-06-2	1,2-Dichloroethane	10.	U				
78-93-3	2-Butanone (MEK)	10.	U				
71-55-6	1,1,1-Trichloroethane	10.	U				
56-23-5	Carbon tetrachloride	10.	U				
75-27-4	Bromodichloromethane	10.	U				
78-87-5	1,2-Dichloropropane	10.	U				
10061-01-5	cis-1,3-Dichloropropene	10.	U				
79-01-6	Trichloroethene	10.	U				
124-48-1	Dibromochloromethane	10.	U				
79-00-5	1,1,2-Trichloroethane	10.	U				
71-43-2	Benzene	10.	U				
10061-02-6	trans-1,3-Dichloropropene	10.	U				
75-25-2	Bromoform	10.	U				
108-10-1	4-Methyl-2-Pentanone (MIBK)	10.	U				
591-78-6	2-Hexanone	10.	U				
127-18-4	Tetrachloroethene	10.	U				
79-34-5	1,1,2,2-Tetrachloroethane	10.	U				
108-88-3	Toluene	10.	U				
108-90-7	Chlorobenzene	10.	U				
100-41-4	Ethylbenzene	10.	U				
100-42-5	Styrene	10.	U				
1330-20-7	Xylene (Total)	10.	U				

NAS MEMPHIS

NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

1397 VOA	SAMPLE ID ------>	007-G-MW01-LF		007-G-MW01-LS		007-G-MW01-UC		007-G-MW01-UF		007-G-MW02-UC		007-G-MW03-LS	
	ORIGINAL ID ----->	007GMW01LF		007GMW01LS		007GMW01UC		007GMW01UF		007GMW02UC		007GMW03LS	
	LAB SAMPLE ID --->	122938		122939		122940		122941		122942		122943	
	SAMPLE DATE ----->	05/04/95		05/04/95		05/04/95		05/04/95		05/04/95		05/04/95	
	DATE ANALYZED --->	05/12/95		05/12/95		05/14/95		05/13/95		05/13/95		05/13/95	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ---------->	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A
CAS #	Parameter												
74-87-3	Chloromethane	10.	U	10.	U	10.	U	10.	UJ	10.	UJ	10.	UJ
74-83-9	Bromomethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-01-4	Vinyl chloride	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-00-3	Chloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-09-2	Methylene chloride	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
67-64-1	Acetone	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-15-0	Carbon disulfide	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-35-4	1,1-Dichloroethene	4.	J	4.	J	10.	U	4.	J	10.	U	10.	U
75-34-3	1,1-Dichloroethane	3.	J	79.		10.	U	26.		10.	U	10.	U
540-59-0	1,2-Dichloroethene (total)	2.	J	34.		10.	U	6.	J	10.	U	10.	U
67-66-3	Chloroform	2.	J	10.	U	10.	U	10.	U	10.	U	10.	U
107-06-2	1,2-Dichloroethane	10.	U	4.	J	10.	U	10.	U	10.	U	10.	U
78-93-3	2-Butanone (MEK)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
71-55-6	1,1,1-Trichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
56-23-5	Carbon tetrachloride	10.		10.	U	10.	U	10.	U	10.	U	10.	U
75-27-4	Bromodichloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
78-87-5	1,2-Dichloropropane	10.	U	2.	J	10.	U	10.	U	10.	U	10.	U
10061-01-5	cis-1,3-Dichloropropene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
79-01-6	Trichloroethene	8.	J	19.		10.	U	11.		10.	U	10.	U
124-48-1	Dibromochloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
71-43-2	Benzene	10.	U	8.	J	10.	U	10.	U	10.	U	10.	U
10061-02-6	trans-1,3-Dichloropropene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-25-2	Bromoform	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
591-78-6	2-Hexanone	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
127-18-4	Tetrachloroethene	10.	U	2.	J	10.	U	9.	J	10.	U	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-88-3	Toluene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-90-7	Chlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
100-41-4	Ethylbenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
100-42-5	Styrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
1330-20-7	Xylene (Total)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U

*** Validation Complete ***

NAS MEMPHIS

NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

1397 VOA	SAMPLE ID ------->	007-G-MW69-LF		BG5-G-MW05-LF		BG5-H-MW05-LF		BG5-G-MW05-LS		BG5-G-MW05-UF	
	ORIGINAL ID ----->	007GMW69LF		BG5GMW05LF		BG5HMW05LF		BG5GMW05LS		BG5GMW05UF	
	LAB SAMPLE ID --->	122944		122945		122946		122947		122948	
	SAMPLE DATE ----->	05/04/95		05/04/95		05/04/95		05/04/95		05/04/95	
	DATE ANALYZED --->	05/13/95		05/13/95		05/13/95		05/14/95		05/13/95	
	MATRIX ---------->	Water		Water		Water		Water		Water	
	UNITS -----+----->	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A
CAS #	Parameter										
74-87-3	Chloromethane	10.	UJ	10.	UJ	10.	UJ	10.	U	10.	UJ
74-83-9	Bromomethane	10.	U	10.	U	10.	U	10.	U	10.	U
75-01-4	Vinyl chloride	10.	U	10.	U	10.	U	10.	U	10.	U
75-00-3	Chloroethane	10.	U	10.	U	10.	U	10.	U	10.	U
75-09-2	Methylene chloride	10.	U	10.	U	10.	U	10.	U	10.	U
67-64-1	Acetone	10.	U	10.	U	10.	U	10.	U	10.	U
75-15-0	Carbon disulfide	10.	U	10.	U	10.	U	10.	U	10.	U
75-35-4	1,1-Dichloroethene	3.	J	10.	U	10.	U	10.	U	10.	U
75-34-3	1,1-Dichloroethane	2.	J	10.	U	10.	U	10.	U	10.	U
540-59-0	1,2-Dichloroethene (total)	2.	J	10.	U	10.	U	10.	U	10.	U
67-66-3	Chloroform	2.	J	10.	U	10.	U	10.	U	10.	U
107-06-2	1,2-Dichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U
78-93-3	2-Butanone (MEK)	10.	U	10.	U	10.	U	10.	U	10.	U
71-55-6	1,1,1-Trichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U
56-23-5	Carbon tetrachloride	11.		10.	U	10.	U	10.	U	10.	U
75-27-4	Bromodichloromethane	10.	U	10.	U	10.	U	10.	U	10.	U
78-87-5	1,2-Dichloropropane	10.	U	10.	U	10.	U	10.	U	10.	U
10061-01-5	cis-1,3-Dichloropropene	10.	U	10.	U	10.	U	10.	U	10.	U
79-01-6	Trichloroethene	9.	J	10.	U	10.	U	10.	U	10.	U
124-48-1	Dibromochloromethane	10.	U	10.	U	10.	U	10.	U	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U
71-43-2	Benzene	10.	U	10.	U	10.	U	10.	U	10.	U
10061-02-6	trans-1,3-Dichloropropene	10.	U	10.	U	10.	U	10.	U	10.	U
75-25-2	Bromoform	10.	U	10.	U	10.	U	10.	U	10.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	10.	U	10.	U	10.	U	10.	U	10.	U
591-78-6	2-Hexanone	10.	U	10.	U	10.	U	10.	U	10.	U
127-18-4	Tetrachloroethene	10.	U	27.		28.		10.	U	19.	
79-34-5	1,1,2,2-Tetrachloroethane	10.	U	10.	U	10.	U	10.	U	10.	U
108-88-3	Toluene	10.	U	10.	U	10.	U	10.	U	10.	U
108-90-7	Chlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U
100-41-4	Ethylbenzene	10.	U	10.	U	10.	U	10.	U	10.	U
100-42-5	Styrene	10.	U	10.	U	10.	U	10.	U	10.	U
1330-20-7	Xylene (Total)	10.	U	10.	U	10.	U	10.	U	10.	U

*** Validation Complete ***

NAS MEMPHIS
NAS MEMPHIS, RFI, ASSEMBLY A
Primary Samples

1399 VOA	SAMPLE ID ------->	007-G-MW02-GM		007-G-MW03-LF		007-G-MW03-UC		007-G-MW03-UF		007-G-MW06-LF		007-G-MW06-LS	
	ORIGINAL ID ----->	007GMW02GM		007GMW03LF		007GMW03UC		007GMW03UF		007GMW06LF		007GMW06LS	
	LAB SAMPLE ID --->	122999		123000		122996		122997		123001		123004	
	SAMPLE DATE ----->	05/05/95		05/05/95		05/05/95		05/05/95		05/05/95		05/05/95	
	DATE ANALYZED --->	05/14/95		05/14/95		05/14/95		05/14/95		05/14/95		05/14/95	
	MATRIX ---------->	Water		Water		Water		Water		Water		Water	
	UNITS ------>	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A	UG/L	A
CAS #	Parameter												
74-87-3	Chloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
74-83-9	Bromomethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-01-4	Vinyl chloride	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-00-3	Chloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-09-2	Methylene chloride	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
67-64-1	Acetone	10.	U	10.	U	16.		39.		5.	J	10.	U
75-15-0	Carbon disulfide	10.	U	10.	U	10.	U	3.	J	10.	U	10.	U
75-35-4	1,1-Dichloroethene	1.	J	10.	U	10.	U	10.	U	10.	U	10.	U
75-34-3	1,1-Dichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
540-59-0	1,2-Dichloroethene (total)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
67-66-3	Chloroform	10.	U	8.	J	10.	U	10.	U	10.	U	10.	U
107-06-2	1,2-Dichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
78-93-3	2-Butanone (MEK)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
71-55-6	1,1,1-Trichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
56-23-5	Carbon tetrachloride	10.	U	16.		10.	U	10.	U	10.	U	10.	U
75-27-4	Bromodichloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
78-87-5	1,2-Dichloropropane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
10061-01-5	cis-1,3-Dichloropropene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
79-01-6	Trichloroethene	7.	J	73.		10.	U	10.	U	2.	J	10.	U
124-48-1	Dibromochloromethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
71-43-2	Benzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
10061-02-6	trans-1,3-Dichloropropene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
75-25-2	Bromoform	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
591-78-6	2-Hexanone	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
127-18-4	Tetrachloroethene	10.	U	2.	J	10.	U	10.	U	1.	J	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-88-3	Toluene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
108-90-7	Chlorobenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
100-41-4	Ethylbenzene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
100-42-5	Styrene	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U
1330-20-7	Xylene (Total)	10.	U	10.	U	10.	U	10.	U	10.	U	10.	U

*** Validation Complete ***

NAS MEMPHIS
NAS MEMPHIS, RFI, ASSEMBLY A
Primary Samples

1399 VOA	SAMPLE ID ------>	007-G-MW06-UC		007-H-MW06-UC		007-G-MW06-UF		007-G-MW08-GM			
	ORIGINAL ID ----->	007GMW06UC		007HMW06UC		007GMW06UF		007GMW08GM			
	LAB SAMPLE ID --->	123003		123005		123002		122998			
	SAMPLE DATE ----->	05/05/95		05/05/95		05/05/95		05/05/95			
	DATE ANALYZED --->	05/14/95		05/14/95		05/15/95		05/14/95			
	MATRIX ---------->	Water		Water		Water		Water			
	UNITS ----------->	UG/L	A	UG/L	A	UG/L	A	UG/L	A		
CAS #	Parameter										
74-87-3	Chloromethane	10.	U	10.	U	20.	UJ	10.	U		
74-83-9	Bromomethane	10.	U	10.	U	20.	U	10.	U		
75-01-4	Vinyl chloride	10.	U	10.	U	20.	U	10.	U		
75-00-3	Chloroethane	10.	U	10.	U	20.	U	10.	U		
75-09-2	Methylene chloride	10.	U	10.	U	20.	U	10.	U		
67-64-1	Acetone	10.	U	10.	U	320.		10.	U		
75-15-0	Carbon disulfide	10.	U	10.	U	20.	U	10.	U		
75-35-4	1,1-Dichloroethene	10.	U	10.	U	20.	U	10.	U		
75-34-3	1,1-Dichloroethane	10.	U	10.	U	20.	U	10.	U		
540-59-0	1,2-Dichloroethene (total)	10.	U	10.	U	20.	U	10.	U		
67-66-3	Chloroform	10.	U	10.	U	20.	U	10.	U		
107-06-2	1,2-Dichloroethane	10.	U	10.	U	20.	U	10.	U		
78-93-3	2-Butanone (MEK)	10.	U	10.	U	20.	U	10.	U		
71-55-6	1,1,1-Trichloroethane	10.	U	10.	U	20.	U	10.	U		
56-23-5	Carbon tetrachloride	10.	U	10.	U	20.	U	10.	U		
75-27-4	Bromodichloromethane	10.	U	10.	U	20.	U	10.	U		
78-87-5	1,2-Dichloropropane	10.	U	10.	U	20.	U	10.	U		
10061-01-5	cis-1,3-Dichloropropene	10.	U	10.	U	20.	U	10.	U		
79-01-6	Trichloroethene	10.	U	10.	U	20.	U	10.	U		
124-48-1	Dibromochloromethane	10.	U	10.	U	20.	U	10.	U		
79-00-5	1,1,2-Trichloroethane	10.	U	10.	U	20.	U	10.	U		
71-43-2	Benzene	10.	U	10.	U	20.	U	10.	U		
10061-02-6	trans-1,3-Dichloropropene	10.	U	10.	U	20.	U	10.	U		
75-25-2	Bromoform	10.	U	10.	U	20.	U	10.	U		
108-10-1	4-Methyl-2-Pentanone (MIBK)	10.	U	10.	U	20.	U	10.	U		
591-78-6	2-Hexanone	10.	U	10.	U	20.	U	10.	U		
127-18-4	Tetrachloroethene	10.	U	10.	U	20.	U	10.	U		
79-34-5	1,1,2,2-Tetrachloroethane	10.	U	10.	U	20.	U	10.	U		
108-88-3	Toluene	10.	U	10.	U	20.	U	10.	U		
108-90-7	Chlorobenzene	10.	U	10.	U	20.	U	10.	U		
100-41-4	Ethylbenzene	10.	U	10.	U	20.	U	10.	U		
100-42-5	Styrene	10.	U	10.	U	20.	U	10.	U		
1330-20-7	Xylene (Total)	10.	U	10.	U	20.	U	10.	U		

E/A&H VALIDATION SUMMARY REPORT

Site Name: NAS Memphis, Millington, Tennessee
CTO and Subtask No.: 0094-04730
Laboratory: NET Atlantic, Inc.
Sample Delivery Group: 1436
Matrix: Soil and Water

Samples and Analysis:

Sample ID	VOA
007C002812	X
007C002712	X
007C002512	X
007H002437	X
007H002544	X
007H002936	X

VALIDATION RESULTS

All samples were received by the laboratory intact and with the proper documentation on June 3, 1995. The following section summarizes the data validation results. Tentatively identified compounds have not been discussed in great detail, because most compounds are quantitatively uncertain (many TICs are unidentifiable and are reported as unknowns).

Volatile Organic Compound Fraction

1. All holding times were acceptable. A matrix spike/matrix spike duplicate, and field duplicate were not analyzed for this SDG. No problems were encountered during review of sample result verification.

2. Sample 007C002812 was analyzed outside the 12-hour QC requirements for the bromofluorobenzene (BFB) GC/MS instrument performance check. The sample was reanalyzed within the 12-hour QC requirements. Sample 007C002812RE will be used for investigative interpretation.

3. In the initial calibration, acetone had a %RSD outside acceptable criteria but no positive results were affected. The undetected results were not flagged because the %Ds were less than 50%.

4. In the continuing calibrations, several compounds had %Ds outside acceptable criteria, but no positive results were affected. The undetected results were not flagged because the %D was less than 50%.

5. Five method blanks were analyzed with this SDG. Methylene chloride was detected in the blanks at concentrations ranging from 10 μg/kg to 40 μg/kg and 20 μg/l. 4-Methyl-2-pentanone and bromomethane were detected in one blank each at concentrations of 10 μg/Kg and 10 μg/l, respectively. 2-Hexanone was detected in one blank at a concentration on 30 μg/Kg. As a result, methylene chloride, bromomethane, 4-methyl-2-pentanone, and 2-hexanone detected in all investigative samples were negated due to laboratory contamination.

6. The surrogate 1,2-dichloroethane-d_4 exceeded the upper QC requirements in samples 007C002712 and 007C002812RE. All positive results in these two samples were qualified at estimated (J). Sample 007C002712 was re-analyzed and the surrogate was within the QC requirements. Sample 007C002712RE was used for investigative interpretation.

7. The internal standards bromochloromethane, 1,4-difluorobenzene, and chlorobenzene-d_5 exceeded the QC requirements in samples 007C002512 and 007C002712 while 1,4-difluorobenzene and chlorobenzene-d_5 exceeded the QC requirements in sample 007C002812. The samples were re-analyzed, with the only improvement appearing in bromomethane. Because only two internal standards exceeded the QC requirements in the re-analyses, the re-analyzed samples were used for investigative interpretation.

NAS MEMPHIS

NAS MEMPHIS, RFI, ASSEMBLY A

Primary Samples

1436 VOA	SAMPLE ID ------->	007-H-0024-37		007-C-0025-12RE		007-H-0025-44		007-C-0027-12RE		007-C-0028-12RE		007-H-0029-36	
	ORIGINAL ID ----->	007H002437		007C002512RE		007H002544		007C002712RE		007C002812RE		007H002936	
	LAB SAMPLE ID --->	124507		124503RE		124506		124504RE		124505RE		124508	
	SAMPLE DATE ----->	06/02/95		06/02/95		06/02/95		06/02/95		06/02/95		06/02/95	
	DATE ANALYZED --->	06/15/95		06/08/95		06/09/95		06/08/95		06/08/95		06/11/95	
	MATRIX ---------->	Water		Soil		Water		Soil		Soil		Water	
	UNITS ----------->	UG/L	A	UG/KG	A	UG/L	A	UG/KG	A	UG/KG	A	UG/L	A
CAS #	Parameter												
74-87-3	Chloromethane	10.	U	13.	U	10.	U	13.	U	16.	U	10.	U
74-83-9	Bromomethane	10.	U	13.	U	10.	U	13.	U	16.	U	10.	U
75-01-4	Vinyl chloride	10.	U	13.	U	10.	U	13.	U	16.	U	10.	U
75-00-3	Chloroethane	10.	U	13.	U	10.	U	13.	U	16.	U	10.	U
75-09-2	Methylene chloride	1.	J	13.	U	10.	U	13.	U	16.	U	10.	U
67-64-1	Acetone	10.	U	13.	U	10.	U	13.	U	16.	U	10.	U
75-15-0	Carbon disulfide	10.	U	13.	U	10.	U	13.	U	16.	U	10.	U
75-35-4	1,1-Dichloroethene	1.	J	13.	U	10.	U	13.	U	16.	U	10.	U
75-34-3	1,1-Dichloroethane	4.	J	13.	U	10.	U	13.	U	16.	U	10.	U
540-59-0	1,2-Dichloroethene (total)	10.	U	13.	U	10.	U	13.	U	16.	U	10.	U
67-66-3	Chloroform	10.	U	13.	U	10.	U	13.	U	16.	U	10.	U
107-06-2	1,2-Dichloroethane	10.	U	13.	U	10.	U	13.	U	16.	U	10.	U
78-93-3	2-Butanone (MEK)	10.	U	13.	U	10.	U	13.	U	16.	U	10.	U
71-55-6	1,1,1-Trichloroethane	10.	U	13.	UJ	10.	U	13.	UJ	16.	UJ	10.	U
56-23-5	Carbon tetrachloride	10.	U	13.	UJ	10.	U	13.	UJ	16.	UJ	10.	U
75-27-4	Bromodichloromethane	10.	U	13.	UJ	10.	U	13.	UJ	16.	UJ	10.	U
78-87-5	1,2-Dichloropropane	10.	U	13.	UJ	10.	U	13.	UJ	16.	UJ	10.	U
10061-01-5	cis-1,3-Dichloropropene	10.	U	13.	UJ	10.	U	13.	UJ	16.	UJ	10.	U
79-01-6	Trichloroethene	10.	U	13.	UJ	10.	U	13.	UJ	16.	UJ	17.	
124-48-1	Dibromochloromethane	10.	U	13.	UJ	10.	U	13.	UJ	16.	UJ	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U	13.	UJ	10.	U	13.	UJ	16.	UJ	10.	U
71-43-2	Benzene	10.	U	13.	UJ	10.	U	13.	UJ	16.	UJ	10.	U
10061-02-6	trans-1,3-Dichloropropene	10.	U	13.	UJ	10.	U	13.	UJ	16.	UJ	10.	U
75-25-2	Bromoform	10.	U	13.	UJ	10.	U	13.	UJ	16.	UJ	10.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	10.	U	13.	UJ	10.	U	13.	UJ	16.	UJ	10.	U
591-78-6	2-Hexanone	10.	U	13.	UJ	10.	U	13.	UJ	16.	UJ	10.	U
127-18-4	Tetrachloroethene	10.	U	13.	UJ	10.	U	13.	UJ	16.	UJ	7.	J
79-34-5	1,1,2,2-Tetrachloroethane	10.	U	13.	UJ	10.	U	13.	UJ	16.	UJ	10.	U
108-88-3	Toluene	1.	J	1.	J	1.	J	13.	UJ	2.	J	2.	J
108-90-7	Chlorobenzene	10.	U	13.	UJ	10.	U	13.	UJ	16.	UJ	10.	U
100-41-4	Ethylbenzene	10.	U	13.	UJ	10.	U	13.	UJ	16.	UJ	10.	U
100-42-5	Styrene	10.	U	13.	UJ	10.	U	13.	UJ	16.	UJ	10.	U
1330-20-7	Xylene (Total)	10.	U	13.	UJ	10.	U	13.	UJ	16.	UJ	10.	U

*** Validation Complete ***

ATTACHMENT 2

DISCUSSION OF DIELDRIN RISK MANAGEMENT ISSUES

DISCUSSION OF DIELDRIN RISK MANAGEMENT ISSUES

Chlorinated pesticides (specifically dieldrin) were used extensively in the 1950s and 1960s during a white fringed beetle quarantine. NAS Memphis has record that the agents were applied aerially for their intended purpose over the majority of the base. During the RCRA Facility Investigation, dieldrin and other chlorinated pesticides were detected in most surface soil and some vadose soil samples collected at specific SWMUs and background locations. Due to the ubiquitous presence of dieldrin in site soils, the following assessment was performed to support risk management decisions to be made by the BCT.

Figure 1 shows reported surface (0-1 ft.) soil dieldrin concentrations across the northern portion of the base. As shown in the figure, levels at SWMUs ranged from below quantitation limits to 609 μg/kg (average of duplicate results at SWMU 5, boring 4). At background locations, concentrations ranged from below quantitation limits to 311 μg/kg with a mean of 131 μg/kg.
In order to provide an evaluation of the significance of the reported levels, standard risk assessment methods were employed. Default assumptions for residential and occupational exposure scenarios were used to project dieldrin-related carcinogenic risk through incidental ingestion and dermal contact soil pathways. For each exposure scenario, risk was computed using the maximum and mean SWMU-specific dieldrin concentrations. The results of this process are provided in the attached table.

As shown in the table, SWMU 5 had the highest projected soil pathway risk associated with dieldrin at maximum concentrations (2.2E-5). The SWMU 5 risk estimate was approximately twice that of the corresponding background. When mean concentrations were used as the exposure point concentration, SWMU 8 dieldrin risk was found to be the highest although it did not differ appreciably from background. In no instance (onsite or background) did dieldrin risk projections exceed 1E-4. This finding indicates that dieldrin levels found at each SWMU do not necessitate remedial action in the absence of other significant carcinogenic risk contributors. USEPA's generally acceptable range for carcinogenic risk is 1E-4 to 1E-6.

Soil dieldrin is not expected to pose a substantial threat to shallow groundwater at any SWMU or background location. This conclusion is based on the strong soil binding properties of the compound as well as empirical data for vadose soils which show no significant vertical migration has occurred.

A historical use discussion is also helpful to provide a frame of reference for evaluating reported soil dieldrin (and other chlorinated pesticide) concentrations. Information provided by NAS Memphis states that chlorinated pesticides (primarily chlordane) were previously used until the late 1980's for termite control around buildings. Although chlordane was used as a single active ingredient application, mixtures including dieldrin, aldrin and heptachlor

NAS-Memphis Dieldrin Risk Projections

Location	Maximum Dieldrin (mg/kg)	Mean Dieldrin (mg/kg)	Residential @ Max	Residential @Mean	Industrial @ Max	Industrial @Mean
SWMU 1	0.192	NA	7.04E-06	NA	1.12E-06	NA
SWMU 3	0.023	0.0072	8.43E-07	2.64E-07	1.34E-07	4.19E-08
SWMU 5	0.609	0.126	2.23E-05	4.62E-06	3.54E-06	7.33E-07
SWMU 7	0.055	0.0095	2.02E-06	3.48E-07	3.2E-07	5.52E-08
SWMU 8	0.471	0.144	1.73E-05	5.28E-06	2.74E-06	8.37E-07
SWMU 60	0.069	0.0155	2.53E-06	5.68E-07	4.01E-07	9.01E-08
Background	0.311	0.131	1.14E-05	4.8E-06	1.81E-06	7.62E-07

Oral Slope Factor (mg/kg-d)-1	16

Appendix F

Discussion of Dieldrin Risk Management Issues

DISCUSSION OF DIELDRIN RISK MANAGEMENT ISSUES

Chlorinated pesticides (specifically dieldrin) were used extensively in the 1950s and 1960s during a white fringed beetle quarantine. NAS Memphis has record that the agents were applied aerially for their intended purpose over the majority of the base. During the RCRA Facility Investigation, dieldrin and other chlorinated pesticides were detected in most surface soil and some vadose soil samples collected at specific SWMUs and background locations. Due to the ubiquitous presence of dieldrin in site soils, the following assessment was performed to support risk management decisions to be made by the BCT.

Figure 1 shows reported surface (0-1 ft.) soil dieldrin concentrations across the northern portion of the base. As shown in the figure, levels at SWMUs ranged from below quantitation limits to 609 μg/kg (average of duplicate results at SWMU 5, boring 4). At background locations, concentrations ranged from below quantitation limits to 311 μg/kg with a mean of 131 μg/kg.
In order to provide an evaluation of the significance of the reported levels, standard risk assessment methods were employed. Default assumptions for residential and occupational exposure scenarios were used to project dieldrin-related carcinogenic risk through incidental ingestion and dermal contact soil pathways. For each exposure scenario, risk was computed using the maximum and mean SWMU-specific dieldrin concentrations. The results of this process are provided in the attached table.

As shown in the table, SWMU 5 had the highest projected soil pathway risk associated with dieldrin at maximum concentrations (2.2E-5). The SWMU 5 risk estimate was approximately twice that of the corresponding background. When mean concentrations were used as the exposure point concentration, SWMU 8 dieldrin risk was found to be the highest although it did not differ appreciably from background. In no instance (onsite or background) did dieldrin risk projections exceed 1E-4. This finding indicates that dieldrin levels found at each SWMU do not necessitate remedial action in the absence of other significant carcinogenic risk contributors. USEPA's generally acceptable range for carcinogenic risk is 1E-4 to 1E-6.

Soil dieldrin is not expected to pose a substantial threat to shallow groundwater at any SWMU or background location. This conclusion is based on the strong soil binding properties of the compound as well as empirical data for vadose soils which show no significant vertical migration has occurred.

A historical use discussion is also helpful to provide a frame of reference for evaluating reported soil dieldrin (and other chlorinated pesticide) concentrations. Information provided by NAS Memphis states that chlorinated pesticides (primarily chlordane) were previously used until the late 1980's for termite control around buildings. Although chlordane was used as a single active ingredient application, mixtures including dieldrin, aldrin and heptachlor

NAS-Memphis Dieldrin Risk Projections

Location	Maximum Dieldrin (mg/kg)	Mean Dieldrin (mg/kg)	Residential @ Max	@Mean	Industrial @ Max	@Mean
SWMU 1	0.192	NA	7.04E-06	NA	1.12E-06	NA
SWMU 3	0.023	0.0072	8.43E-07	2.64E-07	1.34E-07	4.19E-08
SWMU 5	0.609	0.126	2.23E-05	4.62E-06	3.54E-06	7.33E-07
SWMU 7	0.055	0.0095	2.02E-06	3.48E-07	3.2E-07	5.52E-08
SWMU 8	0.471	0.144	1.73E-05	5.28E-06	2.74E-06	8.37E-07
SWMU 60	0.069	0.0155	2.53E-06	5.68E-07	4.01E-07	9.01E-08
Background	0.311	0.131	1.14E-05	4.8E-06	1.81E-06	7.62E-07

Oral Slope Factor (mg/kg-d)-1	16

Appendix G

Stockpiled Soil Samples Analytical Results

DATALCP3
09/16/96

NSA MEMPHIS
NSA MEMPHIS, RFI, ASSEMBLY A, SWMU 1
Stockpiled Soil Analytical Results

APX9-METAL

SAMPLE ID ------->	001-S-0001-01
ORIGINAL ID ----->	001S000101
LAB SAMPLE ID --->	9-116987S
ID FROM REPORT -->	001S000101
SAMPLE DATE ----->	02/15/95 *
MATRIX ---------->	Soil
UNITS ----------->	MG/KG

CAS #	Parameter	FD1329	VAL
7440-36-0	Antimony (Sb)	9.5	UJ
7440-38-2	Arsenic (As)	4.5	
7440-39-3	Barium (Ba)	276.	J
7440-41-7	Beryllium (Be)	0.36	J
7440-43-9	Cadmium (Cd)	2.	
7440-47-3	Chromium (Cr)	23.1	J
7440-48-4	Cobalt (Co)	6.1	J
7440-50-8	Copper (Cu)	10.8	
7439-92-1	Lead (Pb)	380.	J
7439-97-6	Mercury (Hg)	0.1	U
7440-02-0	Nickel (Ni)	10.	
7782-49-2	Selenium (Se)	0.69	UJ
7440-22-4	Silver (Ag)	0.71	UJ
7440-28-0	Thallium (Tl)	0.47	UJ
7440-62-2	Vanadium (V)	18.2	
7440-66-6	Zinc (Zn)	97.9	
7440-31-5	Tin (Sn)	3.6	U

*** Validation Complete ***

NSA MEMPHIS
NSA MEMPHIS, RFI, ASSEMBLY A, SWMU 1
Stockpiled Soil Analytical Results

METAL-CN							
SAMPLE ID ------->	001-S-0001-01						
ORIGINAL ID ----->	001S000101						
LAB SAMPLE ID --->	116978						
ID FROM REPORT -->	001S000101						
SAMPLE DATE ----->	02/15/95						
DATE EXTRACTED -->	02/20/95						
DATE ANALYZED --->	02/27/95						
MATRIX ---------->	Soil						
UNITS ----------->	mg/Kg						
CAS #	Parameter	FD1329 VAL					
57-12-5	Cyanide (CN)	0.51 U					

*** Validation Complete ***

NSA MEMPHIS
NSA MEMPHIS, RFI, ASSEMBLY A, SWMU 1
Stockpiled Soil Analytical Results

SW846-HERB

SAMPLE ID ------->	001-S-0001-01
ORIGINAL ID ----->	001S000101
LAB SAMPLE ID --->	116978
ID FROM REPORT -->	001S000101
SAMPLE DATE ----->	02/15/95
DATE EXTRACTED -->	03/03/95
DATE ANALYZED --->	03/15/95
MATRIX ---------->	Soil
UNITS ----------->	ug/Kg

CAS #	Parameter	FD1329	VAL
94-82-6	2,4-DB	9.2	UJ
88-85-7	Dinoseb	4.6	UR
93-76-5	2,4,5-T	0.92	UJ
93-72-1	2,4,5-TP (Silvex)	19.	J
75-99-0	Dalapon	22.	UJ
1918-00-9	Dicamba	9.1	UJ
120-36-5	Dichlorprop	49.	J
94-74-6	MCPA	910.	UJ
93-65-2	MCPP	12000.	J
94-75-7	2,4-D	9.1	UJ

*** Validation Complete ***

NSA MEMPHIS
NSA MEMPHIS, RFI, ASSEMBLY A, SWMU 1
Stockpiled Soil Analytical Results

SW846-OP P

SAMPLE ID ------->	001-S-0001-01
ORIGINAL ID ----->	001S000101
LAB SAMPLE ID --->	116978
ID FROM REPORT -->	001S000101
SAMPLE DATE ----->	02/15/95
DATE EXTRACTED -->	03/01/95
DATE ANALYZED --->	03/05/95
MATRIX ---------->	Soil
UNITS ----------->	ug/Kg

CAS #	Parameter	FD1329	VAL
86-50-0	Guthion	190.	UJ
35400-43-2	Sulprofos	97.	UJ
2921-88-2	Chloropyrifos	97.	U
56-72-4	Coumaphos	97.	UJ
8065-48-3	Demeton,O	97.	UJ
333-41-5	Diazinon	97.	U
62-73-7	Dichlorvos	97.	UJ
298-04-4	Disulfoton	97.	U
13194-48-4	Ethoprop	97.	U
115-90-2	Fensulfothion	97.	UJ
55-38-9	Fenthion	97.	U
150-50-5	Merphos	97.	UR
7786-34-7	Mevinphos, Alpha	97.	UJ
300-76-5	Naled	97.	U
298-00-0	Methyl parathion	97.	U
298-02-2	Phorate	97.	UJ
299-84-3	Ronnel	97.	U
22248-79-9	Stirophos (Tetrachlorovinphos)	97.	UJ
34643-46-4	Tokuthion	97.	UJ
327-98-0	Trichloronate	97.	UJ
126-75-0	Demeton,S	97.	U

*** Validation Complete ***

NSA MEMPHIS
NSA MEMPHIS, RFI, ASSEMBLY A, SWMU 1
Stockpiled Soil Analytical Results

SW846-PEST

SAMPLE ID ------->	001-S-0001-01
ORIGINAL ID ----->	001S000101
LAB SAMPLE ID --->	116987
ID FROM REPORT -->	001S000101
SAMPLE DATE ----->	02/15/95
DATE EXTRACTED -->	02/27/95
DATE ANALYZED --->	03/16/95
MATRIX ---------->	Soil
UNITS ----------->	UG/KG

CAS #	Parameter	FD1329	VAL
319-84-6	alpha-BHC	2.	U
319-85-7	beta-BHC	2.	U
319-86-8	delta-BHC	2.	U
58-89-9	gamma-BHC (Lindane)	2.	U
76-44-8	Heptachlor	2.	U
309-00-2	Aldrin	2.	U
1024-57-3	Heptachlor epoxide	3.6	J
959-98-8	Endosulfan I	2.	U
60-57-1	Dieldrin	178.	JD
72-55-9	4,4'-DDE	12.	J
72-20-8	Endrin	3.9	U
33213-65-9	Endosulfan II	3.9	U
72-54-8	4,4'-DDD	12.	
1031-07-8	Endosulfan sulfate	3.9	U
50-29-3	4,4'-DDT	27.	J
72-43-5	Methoxychlor	20.	U
53494-70-5	Endrin ketone	3.9	U
7421-93-4	Endrin aldehyde	3.9	UJ
5103-71-9	alpha-Chlordane	2.	U
5103-74-2	gamma-Chlordane	2.	U
8001-35-2	Toxaphene	39.	U
12674-11-2	Aroclor-1016	39.	U
11104-28-2	Aroclor-1221	39.	U
53469-21-9	Aroclor-1242	39.	U
12672-29-6	Aroclor-1248	39.	U
11097-69-1	Aroclor-1254	39.	U
11096-82-5	Aroclor-1260	39.	U
11141-16-5	Aroclor-1232	39.	U

*** Validation Complete ***

NSA MEMPHIS
NSA MEMPHIS, RFI, ASSEMBLY A, SWMU 1
Stockpiled Soil Analytical Results

SW846-SVOA		
	SAMPLE ID ------->	001-S-0001-01
	ORIGINAL ID ----->	001S000101
	LAB SAMPLE ID --->	116987
	ID FROM REPORT -->	001S000101
	SAMPLE DATE ----->	02/15/95
	DATE EXTRACTED -->	02/26/95
	DATE ANALYZED --->	03/03/95
	MATRIX ---------->	Soil
	UNITS ---------->	UG/KG

CAS #	Parameter	FD1329	VAL
108-95-2	Phenol	2000.	U
111-44-4	bis(2-Chloroethyl)ether	2000.	U
95-57-8	2-Chlorophenol	2000.	U
541-73-1	1,3-Dichlorobenzene	2000.	U
106-46-7	1,4-Dichlorobenzene	2000.	U
95-50-1	1,2-Dichlorobenzene	2000.	U
95-48-7	2-Methylphenol (o-Cresol)	2000.	U
108-60-1	2,2'-oxybis(1-Chloropropane)	2000.	U
106-44-5	4-Methylphenol (p-Cresol)	2000.	U
621-64-7	N-Nitroso-di-n-propylamine	2000.	U
67-72-1	Hexachloroethane	2000.	U
98-95-3	Nitrobenzene	2000.	U
78-59-1	Isophorone	2000.	U
88-75-5	2-Nitrophenol	2000.	U
105-67-9	2,4-Dimethylphenol	2000.	U
120-83-2	2,4-Dichlorophenol	2000.	U
120-82-1	1,2,4-Trichlorobenzene	2000.	U
91-20-3	Naphthalene	2000.	U
106-47-8	4-Chloroaniline	2000.	U
87-68-3	Hexachlorobutadiene	2000.	U
111-91-1	bis(2-Chloroethoxy)methane	2000.	U
59-50-7	4-Chloro-3-methylphenol	2000.	U
91-57-6	2-Methylnaphthalene	2000.	U
77-47-4	Hexachlorocyclopentadiene	2000.	UJ
88-06-2	2,4,6-Trichlorophenol	2000.	U
95-95-4	2,4,5-Trichlorophenol	4800.	U
91-58-7	2-Chloronaphthalene	2000.	U
88-74-4	2-Nitroaniline	4800.	U
131-11-3	Dimethyl phthalate	2000.	U
208-96-8	Acenaphthylene	2000.	U
606-20-2	2,6-Dinitrotoluene	2000.	U
99-09-2	3-Nitroaniline	4800.	U
83-32-9	Acenaphthene	2000.	U
51-28-5	2,4-Dinitrophenol	4800.	U
100-02-7	4-Nitrophenol	4800.	U
132-64-9	Dibenzofuran	2000.	U

*** Validation Complete ***

NSA MEMPHIS
NSA MEMPHIS, RFI, ASSEMBLY A, SWMU 1
Stockpiled Soil Analytical Results

SW846-SVOA

SAMPLE ID ------->	001-S-0001-01
ORIGINAL ID ----->	001S000101
LAB SAMPLE ID --->	116987
ID FROM REPORT -->	001S000101
SAMPLE DATE ----->	02/15/95
DATE EXTRACTED -->	02/26/95
DATE ANALYZED --->	03/03/95
MATRIX ---------->	Soil
UNITS ----------->	UG/KG

CAS #	Parameter	FD1329	VAL
121-14-2	2,4-Dinitrotoluene	2000.	U
84-66-2	Diethylphthalate	2000.	U
7005-72-3	4-Chlorophenylphenylether	2000.	U
86-73-7	Fluorene	2000.	U
100-01-6	4-Nitroaniline	4800.	U
534-52-1	2-Methyl-4,6-Dinitrophenol	4800.	U
86-30-6	N-Nitrosodiphenylamine	2000.	U
101-55-3	4-Bromophenyl-phenylether	2000.	U
118-74-1	Hexachlorobenzene	2000.	U
87-86-5	Pentachlorophenol	4800.	U
85-01-8	Phenanthrene	2000.	U
120-12-7	Anthracene	2000.	U
86-74-8	Carbazole	2000.	U
84-74-2	Di-n-butylphthalate	2000.	U
206-44-0	Fluoranthene	2000.	U
129-00-0	Pyrene	2000.	U
85-68-7	Butylbenzylphthalate	2000.	U
91-94-1	3,3'-Dichlorobenzidine	2000.	U
56-55-3	Benzo(a)anthracene	2000.	U
218-01-9	Chrysene	2000.	U
117-81-7	bis(2-Ethylhexyl)phthalate (BEHP)	2000.	U
117-84-0	Di-n-octyl phthalate	2000.	U
205-99-2	Benzo(b)fluoranthene	2000.	U
207-08-9	Benzo(k)fluoranthene	2000.	U
50-32-8	Benzo(a)pyrene	2000.	U
193-39-5	Indeno(1,2,3-cd)pyrene	2000.	U
53-70-3	Dibenz(a,h)anthracene	2000.	U
191-24-2	Benzo(g,h,i)perylene	2000.	U

*** Validation Complete ***

NSA MEMPHIS
NSA MEMPHIS, RFI, ASSEMBLY A, SWMU 1
Stockpiled Soil Analytical Results

TPH							
	SAMPLE ID ------->	001-S-0001-01					
	ORIGINAL ID ----->	001S000101					
	LAB SAMPLE ID --->	116978					
	ID FROM REPORT -->	001S000101					
	SAMPLE DATE ----->	02/15/95					
	DATE EXTRACTED -->	03/15/95					
	DATE ANALYZED --->	03/16/95					
	MATRIX ---------->	Soil					
	UNITS ----------->	mg/Kg					
CAS #	Parameter	FD1329	VAL				
9999900-02-4	Petroleum Hydrocarbons, TPH	1300.					

*** Validation Complete ***

NSA MEMPHIS
NSA MEMPHIS, RFI, ASSEMBLY A, SWMU 1
Stockpiled Soil Analytical Results

SW846-VOA

SAMPLE ID ------->	001-S-0001-01
ORIGINAL ID ----->	001S000101
LAB SAMPLE ID --->	116987
ID FROM REPORT -->	001S000101
SAMPLE DATE ----->	02/15/95
DATE ANALYZED --->	02/25/95
MATRIX ---------->	Soil
UNITS ----------->	UG/KG

CAS #	Parameter	FD1329	VAL
74-87-3	Chloromethane	12.	U
74-83-9	Bromomethane	12.	U
75-01-4	Vinyl chloride	12.	U
75-00-3	Chloroethane	12.	U
75-09-2	Methylene chloride	12.	U
67-64-1	Acetone	12.	U
75-15-0	Carbon disulfide	12.	U
75-35-4	1,1-Dichloroethene	12.	U
75-34-3	1,1-Dichloroethane	12.	U
540-59-0	1,2-Dichloroethene (total)	12.	U
67-66-3	Chloroform	12.	U
107-06-2	1,2-Dichloroethane	12.	U
78-93-3	2-Butanone (MEK)	12.	U
71-55-6	1,1,1-Trichloroethane	12.	U
56-23-5	Carbon tetrachloride	12.	U
75-27-4	Bromodichloromethane	12.	U
78-87-5	1,2-Dichloropropane	12.	U
10061-01-5	cis-1,3-Dichloropropene	12.	U
79-01-6	Trichloroethene	12.	U
124-48-1	Dibromochloromethane	12.	U
79-00-5	1,1,2-Trichloroethane	12.	U
71-43-2	Benzene	12.	U
10061-02-6	trans-1,3-Dichloropropene	12.	U
75-25-2	Bromoform	12.	U
108-10-1	4-Methyl-2-Pentanone (MIBK)	12.	UJ
591-78-6	2-Hexanone	12.	UJ
127-18-4	Tetrachloroethene	12.	UJ
79-34-5	1,1,2,2-Tetrachloroethane	12.	UJ
108-88-3	Toluene	4.	J
108-90-7	Chlorobenzene	12.	UJ
100-41-4	Ethylbenzene	12.	UJ
100-42-5	Styrene	12.	UJ
1330-20-7	Xylene (Total)	12.	UJ

*** Validation Complete ***

NSA MEMPHIS
NSA MEMPHIS, RFI, ASSEMBLY A, SWMU 1
Stockpiled Soil Analytical Results

TCLP-METAL							
SAMPLE ID ------->	001-V-0001-01						
ORIGINAL ID ----->	001V000101						
LAB SAMPLE ID --->	138591						
ID FROM REPORT -->	001V000101						
SAMPLE DATE ----->	11/06/95						
DATE EXTRACTED -->	11/15/95						
DATE ANALYZED --->	12/01/95						
MATRIX ---------->	Soil						
UNITS ----------->	MG/L						

CAS #	Parameter	1612	VAL				
7439-92-1	Lead (Pb)	0.3	U				
7440-38-2	Arsenic (As)	0.5	U				
7440-39-3	Barium (Ba)	0.92					
7440-43-9	Cadmium (Cd)	0.05	U				
7440-47-3	Chromium (Cr)	0.025	U				
7439-97-6	Mercury (Hg)	0.002	U				
7782-49-2	Selenium (Se)	0.2	U				
7440-22-4	Silver (Ag)	0.05	UJ				

*** Validation Complete ***

NSA MEMPHIS
NSA MEMPHIS, RFI, ASSEMBLY A, SWMU 1
Stockpiled Soil Analytical Results

TCLP-PEST							
	SAMPLE ID ------->	001-V-0001-01					
	ORIGINAL ID ----->	001V000101					
	LAB SAMPLE ID --->	138591					
	ID FROM REPORT -->	001V000101					
	SAMPLE DATE ----->	11/06/95					
	DATE EXTRACTED -->	11/20/95					
	DATE ANALYZED --->	12/01/95					
	MATRIX ---------->	Soil					
	UNITS ----------->	UG/L					

CAS #	Parameter	1612	VAL				
57-74-9	Chlordane	20.	U				
72-20-8	Endrin	2.	U				
1024-57-3	Heptachlor epoxide	2.	U				
58-89-9	gamma-BHC (Lindane)	2.	U				
72-43-5	Methoxychlor	20.	U				
8001-35-2	Toxaphene	20.	U				
76-44-8	Heptachlor	2.	U				

*** Validation Complete ***

NSA MEMPHIS
NSA MEMPHIS, RFI, ASSEMBLY A, SWMU 1
Stockpiled Soil Analytical Results

TCLP-SVOA

SAMPLE ID ------->	001-V-0001-01
ORIGINAL ID ----->	001V000101
LAB SAMPLE ID --->	138591
ID FROM REPORT -->	001V000101
SAMPLE DATE ----->	11/06/95
DATE EXTRACTED -->	11/17/95
DATE ANALYZED --->	11/20/95
MATRIX ---------->	Soil
UNITS ----------->	ug/L

CAS #	Parameter	1612	VAL
106-46-7	1,4-Dichlorobenzene	200.	U
95-48-7	2-Methylphenol (o-Cresol)	200.	U
9999900-32-2	3-Methylphenol/4-Methylphenol	200.	U
9999900-00-1	Methylphenol (Total Cresol)	200.	U
67-72-1	Hexachloroethane	200.	U
98-95-3	Nitrobenzene	200.	U
87-68-3	Hexachlorobutadiene	200.	U
88-06-2	2,4,6-Trichlorophenol	200.	U
95-95-4	2,4,5-Trichlorophenol	200.	U
121-14-2	2,4-Dinitrotoluene	200.	U
118-74-1	Hexachlorobenzene	200.	U
87-86-5	Pentachlorophenol	200.	U
110-86-1	Pyridine	200.	U

NSA MEMPHIS
NSA MEMPHIS, RFI, ASSEMBLY A, SWMU 1
Stockpiled Soil Analytical Results

TCLP-TPH							
	SAMPLE ID ------->	001-V-0001-01					
	ORIGINAL ID ----->	001V000101					
	LAB SAMPLE ID --->	138591					
	ID FROM REPORT -->	001V000101					
	SAMPLE DATE ----->	11/06/95					
	DATE EXTRACTED -->	11/21/95					
	DATE ANALYZED --->	11/21/95					
	MATRIX ---------->	Soil					
	UNITS ----------->	MG/L					
CAS #	Parameter	1612	VAL				
9999900-02-4	Petroleum Hydrocarbons, TPH	2.	U				

*** Validation Complete ***

NSA MEMPHIS
NSA MEMPHIS, RFI, ASSEMBLY A, SWMU 1
Stockpiled Soil Analytical Results

TCLP-VOA

SAMPLE ID ------->	001-V-0001-01
ORIGINAL ID ----->	001V000101
LAB SAMPLE ID --->	138591
ID FROM REPORT -->	001V000101
SAMPLE DATE ----->	11/06/95
DATE EXTRACTED -->	11/16/95
DATE ANALYZED --->	11/27/95
MATRIX ---------->	Soil
UNITS ----------->	UG/L

CAS #	Parameter	1612	VAL
71-43-2	Benzene	25.	U
56-23-5	Carbon tetrachloride	25.	U
108-90-7	Chlorobenzene	25.	U
67-66-3	Chloroform	25.	U
107-06-2	1,2-Dichloroethane	25.	U
78-93-3	2-Butanone (MEK)	100.	U
75-35-4	1,1-Dichloroethene	25.	U
127-18-4	Tetrachloroethene	25.	U
79-01-6	Trichloroethene	25.	U
75-01-4	Vinyl chloride	100.	U

*** Validation Complete ***