



THE MEMPHIS DEPOT TENNESSEE

ADMINISTRATIVE RECORD COVER SHEET

AR File Number 377

Post Removal Report

Contaminated Soil Remediation Cafeteria Building Memphis Depot, Tennessee

***USACE Contract No. DACA45-96-D-0014
Delivery Order No. 0010***

***U.S. Army Corps of Engineers
Mobile District
Tennessee Area Office
Arnold AFB, Tennessee 37389-9102***

March 1999 • Project No. 920560



**OHM Remediation
Services Corp.**

A Member of The IT Group

**POST REMOVAL REPORT
CONTAMINATED SOIL REMEDIATION**

**CAFETERIA BUILDING
MEMPHIS DEPOT, TENNESSEE**

Submitted to:

U.S. Army Corps of Engineers
Mobile District, Tennessee Area Office
Contract No. DACA45-96-D-0014
Delivery Order No. 0010

Submitted by.

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Project No. 920560
March 25, 1999

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1.0

1.0 INTRODUCTION

This Post Removal Report presents the results of OHM Remediation Services Corp.'s (OHM) implementation of the PCB impacted surface soil remedial action (RA) at the Cafeteria Building at the Memphis Depot, Memphis, Tennessee (Depot). This work was performed under Federal Contract Number DACA45-96-D-0014, Delivery Order 0010 for the U.S. Army Corps of Engineers (USACE), Mobile District.

The design for this soil removal action was presented in the Addenda to Specifications from Contaminated Surface Soil Remediation, dated May 1998, prepared by CH2M HILL for the USACE. This is an addenda to the Technical Specification Package and Drawings, dated February 1998, prepared by CH2M HILL for the USACE, for the Family Housing Area. These specifications contained background data, design considerations, and assumptions for executing the project.

The pre-construction work plans that were developed and implemented for this delivery order, and that are to be considered as critical components to this RA at the Cafeteria, include the following:

- Sampling and Analysis Plan for the Family Housing Area, dated May 1998
- Site-Specific Health and Safety Plan for the Family Housing Area, dated June 1998
- Remedial Action Work Plan for the Family Housing Area, dated June 1998
- Amendment No. 1 for the Site-Specific Health and Safety Plan, dated October 1998
- Addenda to the Remedial Action Work Plan, dated October 1998

1.1 REPORT ORGANIZATION

This Post Removal Report describes and documents how OHM implemented the major tasks encompassing the remediation of the contaminated surface soil at the Cafeteria in conformance with the delivery order requirements. Section 1.0 of this report describes the remedial objective, scope of work, and site description. Section 2.0 details the chronology of events for the project. Section 3.0 describes the methodologies used for the environmental protection, excavation of soil, confirmation sampling and site restoration. The analytical results are also presented in this section. Section 4.0 documents the off-site disposal of the excavated soil.

1.2 REMEDIAL ACTION OBJECTIVE

The remedial objective for the surface soil at the Cafeteria was to remove and dispose of the contaminated surface soils (0 to 12-inches below land surface [bls]) which have contaminants of concern (PCBs) exceeding the established remediation goal. Under this time-critical approach of removal and off-site disposal, potential risks due to contaminated soil exposure would be reduced to acceptable levels.

The risk-based remediation goal for PCBs in the surface soil at the Cafeteria was 0.74 mg/kg, as defined in the Addenda to Specifications from Contaminated Surface Soil Remediation, dated May 1998. Contaminated soils (0 to 12 inches bls) exceeding the remedial goal were excavated and disposed off-site. Initially, the surficial 12-inches of soil were to be excavated from Area A based on historical analytical data. Concurrently, soil samples were to be collected within Area B (0-12" bls) to determine if the excavation of additional soil was required. As presented in this report, all of Area A and one grid in Area B were excavated to 12-inches bls. The risk-based screening criteria for compounds other than PCBs in the surface soil (0 to 12" bls) at the Cafeteria are defined in the U.S. EPA Region 3 Risk-Based Concentrations-Industrial Soil Ingestion, dated October 22, 1997 (included in *Appendix A*). Per the remedial approach for surface soil, no excavation was to be extended beyond 12-inches bls.

1.3 PROJECT SCOPE OF WORK

The following tasks were performed as part of the soil remedial action at the Cafeteria:

- Staked and surveyed 12 sampling grids in Areas A and B.
- Collected a total of nine surface soil samples (collected from 0-12 inches bls) in Area B for laboratory analyses for PCBs.
- Excavated all of Area A to 12-inches bls.
- Collected and analyzed three composite confirmation samples from the completed excavations (12-inches bls) in Area A.
- Collected and analyzed three composite confirmation samples from the non-excavated portions (land surface) of Area B.
- Excavated Grids B1-1-1 and B1-1-2 in Area B to 12-inches bls.

- Collected and analyzed one composite confirmation sample from the completed excavation (12-inches bls) in Area B.
- Collected and analyzed one soil sample of the clean backfill (top soil) used to restore the site.
- Placed approximately 440 loose cubic yards of clean backfill in Areas A and B as part of site restoration.
- Collected and analyzed one disposal characterization sample of the excavated soil.
- Transported and disposed of approximately 530 tons of excavated soil to an off-site RCRA Subtitle D landfill.

1.4 SITE DESCRIPTION AND BACKGROUND

The Depot covers 642 acres of land in Shelby County, Memphis, Tennessee, in the southwestern portion of the state. The facility is approximately four miles southeast of the central business district and one mile northwest of the Memphis International Airport. The Depot began operations in 1942 with the mission to inventory and supply materials for the United States Army. In 1964, its mission was expanded to serve as one of the principle distribution centers of a complete range of commodities. Past activities at the Depot include a wide range of storage, distribution, and maintenance practices. The Depot has been closed (since 1997) and is maintained by the Memphis Depot Caretaker Division, under the control of the Defense Depot Susquehanna, Pennsylvania/Defense Logistics Agency (DLA). The Depot is currently undergoing Base Realignment and Closure (BRAC) activities.

The Cafeteria (Building No. 274) is located on the southeast portion of the Depot, at the northeast corner of the intersection of 2nd Street and K Street, and occupies approximately 1.6 acres of land area (see Figure 1). One currently vacant cafeteria building is located on the site. Depot installation property abuts the site to the north, south, east and west. The site is bounded to the north by a parking lot, to east by a storage shed and parking lot, to the south (across K Street) by the golf course, and to the west (across 2nd Street) by the golf course and a warehouse building.

For the purposes of this project, the site was divided into two areas; Area A (approximately 6,000 ft²) and Area B (approximately 14,850 ft²). Each of the two areas is shown on Figure 2. The primary contaminant of concern at the site is PCBs, from PCB-containing materials once stored at the site. According to the Draft Parcel 5 Remedial Investigation Sampling

Program report, the Cafeteria site was a former storage location of at least two electrical transformers. The transformers were discovered during the Installation Assessment conducted in March 1981. Testing of the fluid from the transformers indicated <50 mg/Kg of PCBs. Previous soil sampling by CH2M HILL at the site prior to the soil removal action indicated PCB (aroclor-1260) concentrations in the range of 0.0259 mg/Kg to 1.39 mg/Kg.

TAB

2.0

2.0 CHRONOLOGY OF EVENTS

Delivery Order No. 0010 was awarded to OHM on May 29, 1998, for the soil removal action at the Family Housing Area. OHM mobilized to the site in June 1998 and began soil removal actions at the Family Housing Area in July 1998. Final excavation, off-site disposal and site restoration activities were completed in early October 1998. The scope of work for the subsequent soil removal action at the Cafeteria (a modification to Delivery Order No. 0010) was presented and approved at the October 15, 1998, BRAC Cleanup Team (BCT) meeting. Soil removal activities at the Cafeteria began on October 16, 1998, and final site restoration was completed on November 11, 1998.

The following chronology provides a summary of major events and/or activities associated with the soil removal actions at the Cafeteria:

DESCRIPTION OF ACTIVITY OR EVENT	DATE
<u>Contractual</u>	
Date of RFP from USACE for the Cafeteria Modification.....	30-Jun-98
OHM Submits Initial Proposal	13-Aug-98
Proposal Negotiation with USACE	01-Oct-98
OHM Submits Revised Final Proposal	05-Oct-98
Addenda to the Remedial Action Work Plan for the Cafeteria	
Is Presented at the October 1998 BCT.....	15-Oct-98
USACE and the BCT Give Authorization to Proceed	15-Oct-98
Receive Authorization from USACE to Proceed with the Excavation of	
Additional Soil from Area B per the Negotiated Unit Prices	29-Oct-98
<u>Field Activities for Area A of the Cafeteria</u>	
Site Set-up & Construction of Temporary Facilities	5-Oct-98 to 15-Oct-98
Installation of Erosion Control Measures for Area A	14-Oct-98 to 15-Oct-98
Excavation of Soil from all of Area A (0-12")	16-Oct-98 to 20-Oct-98
Excavation Confirmation Sampling in Area A	19-Oct-98 to 20-Oct-98
Backfill Area A with 311 Loose Cubic Yards of Top Soil.....	19-Oct-98 to 21-Oct-98
Off-site Disposal of 341 Tons of Excavated Soil from Area A	22-Oct-98 to 23-Oct-98
Hydroseed Area A (Final Site Restoration)	11-Nov-98

Field Activities for Area B of the Cafeteria

Collect Soil Screening Samples for PCBs in Area B.....	16-Oct-98
Collect Confirmation Soil Samples from the Grids in Area B with PCB Concentrations <0.740 mg/Kg (Non-Excavated Grids)	21-Oct-98
Install Erosion Control Measures for Area B.....	29-Oct-98
Excavation of Grids B1-1-1 and B1-1-2 in Area B (0-12").....	30-Oct-98
Collect Excavation Confirmation Sample in Area B (B1-C1).....	02-Nov-98
Backfill Area B with 145 Loose Cubic Yards of Top Soil	02-Nov-98
Off-site Disposal of 193 Tons of Excavated Soil from Area B	03-Nov-98 to 04-Nov-98
Hydroseed Area B (Final Site Restoration)	11-Nov-98

TAB

3.0

3.0 REMEDIAL ACTIONS

OHM mobilized to the site on October 5, 1998, and began construction of the temporary facilities required to support the planned soil removal action. Utility clearances were conducted at the Cafeteria prior to intrusive activities. Underground utility lines were identified and marked in the field. Site utility lines are shown on Figure 1.0. Field activities continued until early November 1998. Photo documentation of the field activities is included in *Appendix B*.

3.1 TEMPORARY FACILITIES

OHM utilized its office trailer located near the Family Housing Area as an administrative area and project management office. A personnel decontamination trailer was also located adjacent to the office trailer. A temporary soil stockpile staging area was constructed on the existing asphalt parking lot, abutting the north side of the Cafeteria Building (see Figure 1 0). It was constructed with a bermed 40-mil bottom liner, and was covered with 10-mil liner.

3.2 IMPLEMENTATION OF THE ENVIRONMENTAL PROTECTION PLAN

3.2.1 Stormwater and Sediment Control Measures

The installation of the erosion control measures for Area A began on October 14, 1998. The installation of the erosion control measures for Area B began on October 29, 1998. Stormwater run-off protection and sediment control were instituted by the use of straw bales, sediment logs and site grading. Prior to disturbance of soil, temporary erosion and sediment control was established on the down gradient side of each area of excavation. Special attention was given to the drainage swale on the south side of Area B. OHM protected the existing stormwater drains from silt and sediment; however, stormwater runoff was allowed to continue to flow off-site via its normal routes.

3.2.2 Dust and Air Pollution Control

Personnel and ambient air monitoring was conducted as necessary in order to determine airborne dust and contaminant levels per Addenda No. 1 to the Site Specific Health and Safety Plan. Ambient air monitoring was conducted with a real-time aerosol monitor (miniram) at working locations and at the perimeter of the project site. The miniram is used to measure airborne particulate in personnel breathing zones and along the work area perimeter to determine when dust control measures must be instituted. The action level for

the breathing zone and the site perimeter was $>1.0 \text{ mg/m}^3$. No exceedance of this action level was recorded during the monitoring.

Specific measures taken to minimize particle emissions for major activities during site construction included the following:

Soil Excavation, Handling, Site Grading and Transportation

- Sprayed water on the soil during excavation and load out, and on traffic areas as necessary to minimize dust emissions.
- Covered stockpiles with sheeting to minimize wind and/or stormwater erosion.
- Moved and loaded soil for transport within the site that limits free fall of material and was least likely to generate dust emissions.
- Halted dust-generating work when wind conditions exceeded 35 miles per hour.

Movement of Equipment

- Watered traffic areas as required to minimize dust emissions.
- Designated equipment traffic patterns to minimize travel distance and vehicular dust emissions.
- Limited vehicle speed to minimize dust emissions.

3.3 PRE-EXCAVATION FIELD SCREENING – AREA B

Soil screening samples were collected from Area B on October 16, 1998. A grid system was surveyed in Area B prior to sampling and is illustrated on Figure 3.0. One sample was collected for every 2,500 square feet area.

Area B was divided into 9, 2500 square foot grids, excluding the areas for the building footprints and sidewalks, and was sampled as described in Section 3.1.1.4 of the Sampling and Analysis Plan for Delivery Order No. 0010. Samples were collected at a depth of 0-12 inches bls. Each sample was analyzed for PCBs according to SW-846 Method 8082. The sampling locations are detailed on Figure 4.0.

The results of the screening of the Area B soil samples indicated the presence of PCBs (aroclor 1260) in eight of the nine samples. Concentrations of aroclor 1260 ranged from 0.0491 mg/Kg to 1.950 mg/Kg. Concentrations of aroclor 1260 (0.0491 mg/Kg to 357 mg/Kg) were below the remedial goal of 0.740 mg/Kg in six of the eight samples. Aroclor 1260 was detected at a concentration of 1.38 mg/Kg in sample B1-S1 and 1.95 mg/Kg in

sample B1-S2, which were above the remedial goal of 0 740 mg/Kg. Based on the results of the soil screening, Grids B1-1-1 and B1-1-2 were slated for excavation to 12-inches bls.

The analytical results of the soil screening analyses for the Area B samples are summarized in Table 1.0, and the lab reports are included in *Appendix C*.

3.4 SOIL EXCAVATION - AREA A

Tracked and rubber-tired excavators were used to carefully excavate the soil. In addition, hand excavation was required around buildings, sidewalks, trees and underground utilities. Excavation depths were manually monitored with grade stakes and a tape measure to document the depth of the excavated of soil. All excavated soil was transported to the temporary soil stockpile staging area for subsequent off-site disposal.

Excavation activities began in Area A on October 16, 1998, and were completed on October 20, 1998. Areas A1, A2 and A3 were excavated to a depth of 12-inches bls (see Figures 3.0 and 8.0). Approximately 340 tons of soil were excavated and for subsequent off-site disposal.

3.4.1 Post Excavation Confirmation Sampling - Area A

Following excavation activities, samples were collected at a frequency of not less than one composite sample for every 5,000 square foot area in the base of the completed excavations in Area A. These composite samples were made up of soil from four points in each area (see Figure 5.0). One discrete sample was collected from each of the three areas for volatile organics. An EnCore sampler was used to collect each discrete sample aliquot analyzed for volatile organics. Each composite sample was analyzed for TCL pesticides by SW-846 Method 8081A, TCL PCBs by SW-846 Method 8082, TCL semi-volatile organic compounds by SW-846 Method 8270C, and TAL Metals and Cyanide (by various SW-846 Methods). The discrete samples were analyzed for TCL volatile organics by SW-846 Method 8260B.

The results of the laboratory analyses are summarized in Table 2.0 and the laboratory reports are included in *Appendix C*. Based on the remedial objectives of excavating the surface soil (0 to 12-inches bls) in Area A and backfilling, the potential risks due to contaminated surface soil exposure were reduced in Area A to acceptable levels based on an industrial exposure scenario.

3.5 LAND SURFACE CONFIRMATION SAMPLING - AREA B

Based on the results of the soil screening for PCBs in Area B, three composite confirmation soil samples were collected from the seven grids not excavated in Area B. The samples were collected on October 21, 1998, at depths of 0 to 3-inches bls. Sample B1-C2 was collected from grids B1-1-3 and B1-1-4, sample B2-C1 was collected from grids B2-1 through B2-3, and sample B3-C1 was collected from grids B3-1 and B3-2. The locations of the three samples are detailed on Figure 6.0.

These composite confirmation samples were made up of soil from four point composites. One discrete sample was collected from each of the three areas (B1, B2 and B3) for VOCs. An EnCore sampler was used to collect each discrete sample aliquot analyzed for volatile organics. Each composite confirmation sample was analyzed for TCL pesticides by SW-846 Method 8081A, TCL semi-volatile organic compounds by SW-846 Method 8270C and TAL Metals (by various SW-846 Methods). The discrete samples were analyzed for TCL volatile organics by SW-846 Method 8260B. Based on the initial soil screening for PCBs conducted at these locations, PCB analyses were not included.

The results of the laboratory analyses indicated that no target analytes were detected in the three samples at concentrations exceeding the applicable industrial surface soil screening criteria (see *Appendix A*). The analytical results are summarized in Table 3.0 and the laboratory reports are included in *Appendix C*.

3.6 SOIL EXCAVATION - AREA B

Based on the soil screening for PCBs, grids B1-1-1 and B1-1-2 were excavated to a depth of 12-inches bls. Excavation activities were conducted in Area B on October 30, 1998 (see Figure 8.0). Approximately 193 tons of soil were excavated and staged for subsequent off-site disposal.

3.6.1 Post Excavation Confirmation Sampling - Area B

Following excavation activities, one composite confirmation sample was collected from the base of the completed excavation in Area B. The composite sample was made up of soil from four points in Area B1-1-1 and B1-1-2 (see Figure 7.0). One discrete sample was collected for VOCs. An EnCore sampler was used to collect the discrete sample aliquot analyzed for volatile organics. The composite sample was analyzed for TCL pesticides by

SW-846 Method 8081A, TCL PCBs by SW-846 Method 8082, TCL semi-volatile organic compounds by SW-846 Method 8270C, and TAL Metals and Cyanide (by various SW-846 Methods). The discrete sample was analyzed for TCL volatile organics by SW-846 Method 8260B.

The results of the laboratory analyses are summarized in Table 3.0 and the laboratory reports are included in *Appendix C*. Based on the remedial objectives of excavating the surface soil (0 to 12-inches bls) and backfilling, the potential risks due to contaminated surface soil exposure were reduced in Area B to acceptable levels based on an industrial exposure scenario.

3.7 BACKFILLING AND SITE RESTORATION

Once the contaminated soils had been removed to a depth of 12-inches or confirmation sampling verified concentrations of the target analytes below the remedial action goals or industrial screening criteria, OHM began site restoration activities. Figure 8.0 illustrates the depths of each of the excavations in Areas A and B. All backfill and site restoration activities were conducted in accordance with Sections 02222 and 02935 of the Technical Specifications.

One sample of the backfill soils was collected (representing one sample per every 1,000 cubic yards of general fill/topsoil delivered to the site) in accordance with Section 3.1.4 of the Sampling and Analysis Plan for Delivery Order No. 0010. The sample was collected on October 19, 1998. Each sample was composed of four grabs from the backfill material, except for the volatile aliquot. An EnCore sampler was used to collect each volatile aliquot. The backfill sample was submitted to the laboratory for the following analyses: TCL pesticides/PCBs/volatiles/semi-volatiles, TAL metals and cyanide. The analytical results are summarized in Table 4.0 and the laboratory reports are included in *Appendix C*.

The bottom of the excavations were prepared by removing any standing water, stabilizing any wet areas, and rolling the surface to provide a firm and stable surface. A total of approximately 455 loose cubic yards of backfill/top soil material was placed in Areas A and B between the dates of October 19, 1998, and November 2, 1998. Following backfill activities, the site was hydroseeded on November 11, 1998.

3.8 SITE-SPECIFIC HEALTH AND SAFETY SUMMARY

OHM and its subcontractors performed this project without: (1) an OSHA recordable; (2) a lost time accident; and (3) a near miss. Signs were placed in the work zones, not only stating the required personal protective equipment (PPE) and where emergency equipment was located, but also stating the location of the specific excavation area in which they were working. This proved to be good communication procedures, not only with the crew, but also with sub-contractors.

TAB

4.0

4.0 TRANSPORTATION AND DISPOSAL OF EXCAVATED SOIL

This section of the report presents the findings of the disposal characterization, and documents the transportation and off-site disposal of the excavated soil from Areas A and B of the Cafeteria at the Depot.

4.1 Disposal Characterization

In accordance with the Sampling and Analysis Plan (SAP) for Delivery Order No. 0010, one composite disposal characterization soil sample (designed C-A-001) was collected from *in situ* soil in Area A (Grids A1, A2 and A3) on October 16, 1998. Disposal characterization sample C-A-001 was submitted for TCLP analyses per 40 CFR 261.24 (full scan TCLP organics and inorganics), and for PCBs by SW-846 Method 8082. Disposal characterization sample collection was at the rate one sample for each 500 cubic yards of soil excavated. Based on the quantity of soil excavated at the Cafeteria, one sample was collected.

Soil analytical results were below: (1) the RCRA hazardous waste criteria listed in Table 1 of 40 CFR 261.23 for Maximum Concentration of Contaminants for the Toxicity Characteristic; and (2) the TSCA-regulated criteria of 50 mg/Kg for PCBs detailed in 40 CFR 761. The highest concentration of PCBs (aroclor-1260) detected in the soil at the Cafeteria was 1.95 mg/Kg. The disposal characterization sample laboratory analytical report is provided in *Appendix C* and the results are summarized in Table 5.0

4.2 Transportation and Off-Site Disposal

Based on analytical results of the disposal characterization samples, the soil excavated from the Cafeteria did not meet the criteria for hazardous or TSCA-regulated waste. The waste profiling permitted direct disposal at a RCRA Subtitle D landfill as a "non-TSCA regulated soil." On October 22 and 23, 1998, and November 3 and 4, 1998, approximately 534 tons (21 truck loads) of excavated soil were loaded into end dump tractor trailers by OHM for off-site disposal. Water collected from the bermed temporary soil stockpile and generated during the decontamination of excavating equipment, along with water from the Depot fire hydrant system, was sprayed on the stockpiled soil during load-out activities as a dust control measure.

The excavated soil and was transported off-site by Matthews Trucking of Nesbit, Mississippi to the Trash Hunters of Tunica (a Division of Waste Management) solid waste landfill facility, in Tunica County, Mississippi. The Trash Hunters of Tunica Landfill is a CERCLA approved, RCRA Subtitle D landfill. The OHM T&D tracking log and the non-hazardous waste disposal manifests are included in *Appendix D*.

TAB

Tables

Table No. 1: Area B PCB Screening Soil Sample Analytical Results
Cafeteria Building
Memphis Depot, TN

SAMPLE DESIGNATION	B1-S1	B1-S2	B1-S3	B1-S4	B2-S3	B2-S2	B2-S1	B2-S4-RE (Duplicate of B2-S1)	B3-S2	B3-S1	C-EQ-SS-A-001 (Equipment Blank)
LABORATORY ID NO	9810578-01	9810578-02	9810578-03	9810578-04	9810578-06	9810578-07	9810578-08	9810578-05	9810578-09	9810578-10	9810578-12
SAMPLE DEPTH	0-12 inches	0-12 inches	0-12 inches	0-12 inches	0-12 inches	0-12 inches	0-12 inches	0-12 inches	0-12 inches	0-12 inches	
DATE SAMPLED	16-Oct-98	16-Oct-98	16-Oct-98	16-Oct-98	16-Oct-98	16-Oct-98	16-Oct-98	16-Oct-98	16-Oct-98	16-Oct-98	16-Oct-98
LABORATORY ANALYSES	Units										
PCBs (SW-846 Method 8082)											
PCB - Aroclor 1016	ug/Kg										
PCB - Aroclor 1221	ug/Kg	<350	<350	<35	<35	<35	<35	<35	<35	<35	<0.5 ug/L
PCB - Aroclor 1232	ug/Kg	<350	<350	<35	<35	<35	<35	<35	<35	<35	<0.5 ug/L
PCB - Aroclor 1242	ug/Kg	<350	<350	<35	<35	<35	<35	<35	<35	<35	<0.5 ug/L
PCB - Aroclor 1248	ug/Kg	<350	<350	<35	<35	<35	<35	<35	<35	<35	<0.5 ug/L
PCB - Aroclor 1254	ug/Kg	<350	<350	<35	<35	<35	<35	<35	<35	<35	<0.5 ug/L
PCB - Aroclor 1260	ug/Kg	1380	1950	221	153	87.9	49.1	30.9J	88.9	357	<0.5 ug/L

NOTES

mg/Kg - milligrams per kilogram EQ = Equipment Blank PCB - polychlorinated biphenyl
ug/Kg - micrograms per kilogram J = Estimated value based on data evaluation - data is acceptable PAH - polynuclear aromatic hydrocarbon
mg/L - milligrams per liter TCL - Target compound list NA - not analyzed
ug/L - micrograms per liter TAL - Target analyte list RE = Re-extraction

**Table No. 2: Area A Composite Confirmation Soil Sample Analytical Results
at 12-inch Excavation Depths
Cafeteria Building
Memphis Depot, TN**

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SAMPLE DESIGNATION	A1-C1-001	A2-C1-001	A4-C1-001 (Duplicate of A2-C1-001)	A3-C1-001	C-EQ-CS-002 (Equipment Blank)
LABORATORY ID NO	9810646-01	9810618-02	9810618-03	9810618-04	9810618-05
GRID COMPOSITE	Area A1	Area A2		Area A3	EQ
DATE SAMPLED	10/20/98	19-Oct-98		19-Oct-98	19-Oct-98
SAMPLE DEPTH	12 - inches	12 - inches		12 - inches	
LABORATORY ANALYSES	Units				
TCL Organochlorine Pesticides (SW-846 Method 8081A)					
Aldrin	ug/Kg	<2	<2	<2J	<0.04 mg/L
Alpha-BHC	ug/Kg	<2	<2	<2J	<0.04J mg/L
Beta-BHC	ug/Kg	<2	<2	<2J	<0.04J mg/L
Delta-BHC	ug/Kg	<2	<2	<2J	<0.04J mg/L
Gamma-BHC (Lindane)	ug/Kg	<2	2.21	<2J	<0.04J mg/L
Alpha-Chlordane	ug/Kg	<2	15	<2J	<0.04 mg/L
Gamma-Chlordane	ug/Kg	14	8.74	5.57	12.8
Chlordane	ug/Kg	<20	73.1	43.5	87.3
4,4'-DDD	ug/Kg	57.4M	6.71	<2J	7
4,4'-DDE	ug/Kg	348	77	29	72.5
4,4'-DDT	ug/Kg	747M	214E	77.6	244E
Dieldrin	ug/Kg	152	8	5.3	<2J
Endosulfan I	ug/Kg	<2	<2	<2J	<0.04J mg/L
Endosulfan II	ug/Kg	<2	<2	<2J	<0.04J mg/L
Endosulfan Sulfate	ug/Kg	<2	<2	<2J	<0.04J mg/L
Endrin	ug/Kg	<2	<2	<2J	<0.04 mg/L
Endrin Aldehyde	ug/Kg	<2	<2	<2J	<0.04J mg/L
Endrin Ketone	ug/Kg	<2	<2	<2J	<0.04 mg/L
Heptachlor	ug/Kg	<2	<2	<2J	<0.04 mg/L
Heptachlor Epoxide	ug/Kg	<2	<2	<2J	<0.04 mg/L
Methoxychlor	ug/Kg	<2	<2	<2J	<0.04J mg/L
Toxaphene	ug/Kg	<200	<200	<200J	<3 mg/L
TCL PCBs (SW-846 Method 8082)					
PCB - Aroclor 1016	ug/Kg	<35	<35	<35	<0.5 mg/L
PCB - Aroclor 1221	ug/Kg	<35	<35	<35	<0.5 mg/L
PCB - Aroclor 1232	ug/Kg	<35	<35	<35	<0.5 mg/L
PCB - Aroclor 1242	ug/Kg	<35	<35	<35	<0.5 mg/L
PCB - Aroclor 1248	ug/Kg	<35	<35	<35	<0.5 mg/L
PCB - Aroclor 1254	ug/Kg	<35	<35	<35	<0.5 mg/L
PCB - Aroclor 1260	ug/Kg	473	30J	32.6J	49.7
TCL Volatiles (SW-846 Method 8260B)					
Acetone	ug/Kg	<100J	172	<50	<50
Benzene	ug/Kg	<4J	<2	<2	<1
Bromodichloromethane	ug/Kg	<4	<2	<2	<1
Bromoform	ug/Kg	<4J	<2	<2	<1
Bromomethane	ug/Kg	<4	<2	<2	<1
Carbon Disulfide	ug/Kg	<50	<25	<25	<25
Carbon Tetrachloride	ug/Kg	<4	<2	<2	<1
Chlorobenzene	ug/Kg	<4	<2	<2	<1
Chlorodibromomethane	ug/Kg	<4	<2	<2	<1
Chloroethane	ug/Kg	<4	<2	<2	<1
Chloroform	ug/Kg	<4J	<2	<2	<1
Chloromethane	ug/Kg	<4	<2	<2	<1J
1,1-Dichloroethane	ug/Kg	<4J	<2	<2	<1
1,2-Dichloroethane	ug/Kg	<4J	<2	<2	<1
1,1,1-Dichloroethene	ug/Kg	<4	<2	<2	<1
trans-1,2-Dichloroethene	ug/Kg	<4	<2	<2	<1
1,2-Dichloropropane	ug/Kg	<4	<2	<2	<1
cis-1,3-Dichloropropene	ug/Kg	<4	<2	<2	<1
trans-1,3-Dichloropropene	ug/Kg	<4	<2	<2	<1
Ethylbenzene	ug/Kg	<4	<2	<2	<1
2-Hexanone (MBK)	ug/Kg	<100	<50	<50	<5
4-Methyl-2-pentanone (MIBK)	ug/Kg	<100	<50	<50	<5
2-Butanone (MEK)	ug/Kg	<100J	<50	<50	<20
Methylene Chloride	ug/Kg	<100J	<50J	<50J	<20J
Styrene	ug/Kg	<4	<2	<2	<1
1,1,2,2-Tetrachloroethane	ug/Kg	<4	<2	<2	<1
Tetrachloroethene	ug/Kg	<4	<2	<2	<1
Toluene	ug/Kg	<4	<2	<2	<1
1,1,1-Trichloroethane	ug/Kg	<4	<2	<2	<1
1,1,2-Trichloroethane	ug/Kg	<4J	<2	<2	<1
Trichloroethene	ug/Kg	<4	<2	<2	<1
Vinyl Acetate	ug/Kg	<50	<25	<25	<20
Vinyl Chloride	ug/Kg	<4	<2	<2	<1J
o-Xylenes	ug/Kg	<4	<2	<2	<1
m-Xylenes	ug/Kg	<4	<2	<2	<1
p-Xylenes	ug/Kg	<4	<2	<2	<1
cis-1,2-Dichloroethene	ug/Kg	<4J	<2	<2	<1

**Table No. 2: Area A Composite Confirmation Soil Sample Analytical Results
at 12-inch Excavation Depths
Cafeteria Building
Memphis Depot, TN**

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SAMPLE DESIGNATION	A1-C1-001	A2-C1-001	A4-C1-001 (Duplicate of A2-C1-001)	A3-C1-001	C-EQ-CS-002 (Equipment Blank)
LABORATORY ID NO	9810646-01	9810618-02	9810618-03	9810618-04	9810618-05
GRID COMPOSITE	Area A1	Area A2		Area A3	EQ
DATE SAMPLED	10/20/98	19-Oct-98		19-Oct-98	19-Oct-98
SAMPLE DEPTH	12 - inches	12 - inches		12 - inches	
LABORATORY ANALYSES	Units				
TCL Semi-Volatiles (SW-846 Method 8270C)					
Acenaphthene	ug/Kg	72.2	<67	<67	<2 mg/L
Acenaphthylene	ug/Kg	<67	<67	<67	<2 mg/L
Anthracene	ug/Kg	139	<67	<67	<2 mg/L
Benzo (a) anthracene	ug/Kg	733J	<67	<67	<2 mg/L
Benzo (b) fluoroanthene	ug/Kg	1130J	109	106	<2J mg/L
Benzo (k) fluoranthene	ug/Kg	496J	<67	48J	<2J mg/L
Benzo (g,h,i) perylene	ug/Kg	502J	<67	<67	<2J mg/L
Benzo (a) pyrene	ug/Kg	785J	66J	75.4	<2J mg/L
Benzoic Acid	ug/Kg	<1670	<1670J	<1670J	<50J mg/L
Benzyl Alcohol	ug/Kg	<170	<170	<170	<10 mg/L
Bis (2-chloroethoxy) methane	ug/Kg	<170J	<170J	<170J	<5J mg/L
Bis (2-chloroethyl) ether	ug/Kg	<170	<170	<170	<5 mg/L
Bis (2-chloroisopropyl) ether	ug/Kg	<170	<170	<170	<5 mg/L
Bis (2-ethylhexyl) phthalate	ug/Kg	<170J	<170	<170	<10 mg/L
4-Bromophenyl phenyl ether	ug/Kg	<170J	<170J	<170J	<5J mg/L
Butyl benzyl phthalate	ug/Kg	<170J	<170	<170	<5 mg/L
4-Chloroaniline	ug/Kg	<170	<170J	<170J	<5J mg/L
2-Chloronaphthalene	ug/Kg	<170	<170	<170	<2 mg/L
4-Chloro-3-methylphenol	ug/Kg	<170	<170	<170	<5 mg/L
2-Chlorophenol	ug/Kg	<170	<170	<170	<5 mg/L
4-Chlorophenyl phenyl ether	ug/Kg	<170	<170	<170	<5 mg/L
Chrysene	ug/Kg	819J	75J	75J	<5 mg/L
Dibenzo (a,h) anthracene	ug/Kg	134J	<67	<67	<2J mg/L
Dibenzofuran	ug/Kg	<170	<170	<170	<5 mg/L
Di-n-butyl phthalate	ug/Kg	<170	<170	<170	<5 mg/L
1,2-Dichlorobenzene	ug/Kg	<170	<170	<170	<5 mg/L
1,3-Dichlorobenzene	ug/Kg	<170	<170	<170	<5 mg/L
1,4-Dichlorobenzene	ug/Kg	<170	<170	<170	<5 mg/L
3,3'-Dichlorobenzidine	ug/Kg	<170J	<170J	<170J	<10J mg/L
2,4-Dichlorophenol	ug/Kg	<170	<170	<170	<5 mg/L
2,6-Dichlorophenol	ug/Kg	<170	<170	<170	<5 mg/L
Diethyl phthalate	ug/Kg	<170	<170	<170	<5 mg/L
2,4-Dimethylphenol	ug/Kg	<170	<170	<170	<5 mg/L
Dimethyl phthalate	ug/Kg	<170	<170	<170	<5 mg/L
4,6-Dinitro-2-methylphenol	ug/Kg	<170J	<170J	<170J	<10J mg/L
2,4-Dinitrophenol	ug/Kg	<330J	<330J	<330J	<50J mg/L
2,4-Dinitrotoluene	ug/Kg	<170	<170	<170	<5 mg/L
2,6-Dinitrotoluene	ug/Kg	<170	<170	<170	<5 mg/L
Di-n-octyl phthalate	ug/Kg	<170J	<170	<170	<5J mg/L
Fluoranthene	ug/Kg	1470	194	156	<2J mg/L
Fluorene	ug/Kg	48J	<67	<67	<2J mg/L
Hexachlorobenzene	ug/Kg	<170	<170	<170	<5 mg/L
Hexachlorobutadiene	ug/Kg	<170	<170	<170	<5 mg/L
Hexachlorocyclopentadiene	ug/Kg	<170	<170	<170	<5 mg/L
Hexachloroethane	ug/Kg	<170	<170	<170	<5 mg/L
Indeno (1,2,3-cd) pyrene	ug/Kg	582J	<67	<67	<2J mg/L
Isophorone	ug/Kg	<170	<170	<170	<5 mg/L
2-Methylnaphthalene	ug/Kg	<170	<170	<170	<2 mg/L
2-Methylphenol (o-cresol)	ug/Kg	<170	<170	<170	<5 mg/L
3-Methylphenol (m-cresol)	ug/Kg	<170	<170	<170	<5 mg/L
4-Methylphenol (p-cresol)	ug/Kg	<170	<170	<170	<5 mg/L
Naphthalene	ug/Kg	<67	<67	<67	<5 mg/L
Nitrobenzene	ug/Kg	<170J	<170J	<170J	<5J mg/L
2-Nitroaniline	ug/Kg	<170	<170	<170	<5 mg/L
3-Nitroaniline	ug/Kg	<170	<170	<170	<10 mg/L
4-Nitroaniline	ug/Kg	<170J	<170J	<170J	<5J mg/L
2-Nitrophenol	ug/Kg	<170	<170	<170	<5 mg/L
4-Nitrophenol	ug/Kg	<170	<170	<170	<5 mg/L
N-Nitrosodiphenylamine	ug/Kg	<170	<170J	<170	<5 mg/L
N-Nitrosodipropylamine	ug/Kg	<170J	<170	<170J	<5J mg/L
Pentachlorophenol	ug/Kg	83J	<170	<170	<10 mg/L
Phenanthrene	ug/Kg	659	110	52J	<2 mg/L
Phenol	ug/Kg	<170	<170	<170	<5 mg/L
Pyrene	ug/Kg	1310	178	149	<2J mg/L
1,2,4-Trichlorobenzene	ug/Kg	<170	<170	<170	<5 mg/L
2,4,5-Trichlorophenol	ug/Kg	<170	<170	<170	<5 mg/L
2,4,6-Trichlorophenol	ug/Kg	<170	<170	<170	<5 mg/L

**Table No. 2. Area A Composite Confirmation Soil Sample Analytical Results
at 12-inch Excavation Depths
Cafeteria Building
Memphis Depot, TN**

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SAMPLE DESIGNATION	A1-C1-001	A2-C1-001	A4-C1-001 (Duplicate of A2-C1-001)	A3-C1-001	C-EQ-CS-002 (Equipment Blank)
LABORATORY ID NO	9810618-01	9810618-02	9810618-03	9810618-04	9810618-05
GRID COMPOSITE	Area A1	Area A2		Area A3	EQ
DATE SAMPLED	10/20/98	19-Oct-98		19-Oct-98	19-Oct-98
SAMPLE DEPTH	12 - inches	12 - inches		12 - inches	
LABORATORY ANALYSES	Units				
TAL Metals & Cyanide					
Silver (SW-846 Method 6010B)	mg/Kg	<0.7	<0.7	<0.7	<0.009 mg/L
Aluminum (SW-846 Method 6010B)	mg/Kg	8940	11600	7920	7770
Arsenic (SW-846 Method 7060A)	mg/Kg	11.2	10.3	5.99	7.94
Barium (SW-846 Method 6010B)	mg/Kg	84.6	85.6	48.2	50
Beryllium (SW-846 Method 6010B)	mg/Kg	0.472	0.488	0.325	0.393
Calcium (SW-846 Method 6010B)	mg/Kg	9880	5620	1910	2400
Cadmium (SW-846 Method 6010B)	mg/Kg	2.79	0.471	<0.4	0.803
Cobalt (SW-846 Method 6010B)	mg/Kg	5.75	5.32	4.27	4.74
Chromium (SW-846 Method 6010B)	mg/Kg	19.6	15.6	12.9	16.3
Copper (SW-846 Method 6010B)	mg/Kg	78.4	44.1	15.3	16.1
Iron (SW-846 Method 6010B)	mg/Kg	18500	17400	13500	17200
Mercury (SW-846 Method 7471A)	mg/Kg	0.117	0.065	0.065	0.159
Potassium (SW-846 Method 6010B)	mg/Kg	689	827	424	488
Magnesium (SW-846 Method 6010B)	mg/Kg	1670	1720	826	908
Manganese (SW-846 Method 6010B)	mg/Kg	380	318	226	260
Sodium (SW-846 Method 6010B)	mg/Kg	85	100	49.7	58.3
Nickel (SW-846 Method 6010B)	mg/Kg	15.5	12.6	7.57	8.49
Lead (SW-846 Method 7421)	mg/Kg	72.4	34	28.8	31.8
Antimony (SW-846 Method 6010B)	mg/Kg	<3.2	<3.2	<3.2	<3.2
Selenium (SW-846 Method 7740)	mg/Kg	0.219	<0.2	<0.2	<0.2
Thallium (SW-846 Method 7871)	mg/Kg	0.146	0.171	<0.1	0.12
Vanadium (SW-846 Method 6010B)	mg/Kg	21.8	22.3	17.5	19.6
Zinc (SW-846 Method 6010B)	mg/Kg	142	76.8	47.3	63.7
Cyanide (SW-846 Method 9010A)	mg/Kg	<1	<1	<1	<1

NOTES

mg/Kg - milligrams per kilogram

EQ = Equipment Blank

ug/Kg - micrograms per kilogram

J = Estimated value based on data evaluation - data is acceptable

mg/L - milligrams per liter

TCL - Target compound list

PCB - polychlorinated biphenyl

ug/L - micrograms per liter

TAL - Target analyte list

PAH - polynuclear aromatic hydrocarbon

M = Result reported represents a minimum value Refer to case narrative in lab report

NA - not analyzed NR - Not Reported

E = Conc. exceeds established method calibration range but is within the working range of the instrument

**Table No 3: Area B Composite Confirmation Soil Sample Analytical Results
at Land Surface and 12 - inches
Cafeteria Building
Memphis Depot, TN**

SAMPLE DESIGNATION		B1 - C1	B1 - C1 - DL	B1 - C1 - RX/RE	B1 - C2	B2 - C1	B4 - C1 (Duplicate of B2 - C1)	B3 - C1	C-EQ-CS-003 (Equipment Blank)
LABORATORY ID NO		9811024-01			9810751-01	9810751-02	9810751-04	9810751-03	9810751-05
DATE SAMPLED		02-Nov-98			22-Oct-98	22-Oct-98		22-Oct-98	22-Oct-98
GRID COMPOSITE		Areas B1-1-1 & B1-1-2			Areas B1-1-3 & B1-1-4	Areas B2-1, B2-2 & B2-3		Areas B3-1 & B3-2	EQ
SAMPLE DEPTH		12 - inch			Land Surface	Land Surface		Land Surface	
PERCENT SOLIDS		92%			79%	89%	86%	91%	AQUEOUS
LABORATORY ANALYSES		Units							
Organochlorine Pesticides (SW-846 Method 8061A)									
Aldrin	ug/Kg	<2	NA	<2	<2	<2	<2	<2	<0.04 ug/L
Alpha-BHC	ug/Kg	<2	NA	<2	<2J	<2	<2J	<2J	<0.04J ug/L
Beta-BHC	ug/Kg	<2	NA	<2	<2J	<2J	<2J	<2J	<0.04J ug/L
Delta-BHC	ug/Kg	<2	NA	<2	<2J	<2J	<2J	<2J	<0.04J ug/L
Gamma-BHC (Lindane)	ug/Kg	<2	NA	3.11	<2J	<2J	<2	<2	<0.04 ug/L
Alpha-Chlordane	ug/Kg	136	NA	88	<2	6	4.05	70.3	<0.04 ug/L
Gamma-Chlordane	ug/Kg	38.9	NA	46.5	8.57	<2	<2	25.2	<0.04 ug/L
Chlordane	ug/Kg	<20	NA	<20	96	40	30	162	<0.25 ug/L
4,4'-DDD	ug/Kg	201	NA	33.5	17.4J	22.6JE	23.3JE	21.1JE	<0.04J ug/L
4,4'-DDE	ug/Kg	1610	NA	1430	509M	126M	70.6M	272M	<0.04 ug/L
4,4'-DDT	ug/Kg	1970M	NA	1840	346JM	80.4JM	14.4JM	486JM	<0.04J ug/L
Dieldrin	ug/Kg	1630	NA	1250	112	4.72	3.14	40.3	<0.04 ug/L
Endosulfan I	ug/Kg	<2	NA	<2	<2	<2	<2	<2	<0.04 ug/L
Endosulfan II	ug/Kg	<2	NA	<2	<2	<2	<2	<2	<0.04 ug/L
Endosulfan Sulfate	ug/Kg	<2	NA	<2	<2J	<2J	<2J	<2J	<0.04J ug/L
Endrin	ug/Kg	<2	NA	<2	<2	<2	<2	<2	<0.04 ug/L
Endrin Aldehyde	ug/Kg	<2	NA	<2	<2	<2	<2	<2	<0.04 ug/L
Endrin Ketone	ug/Kg	<2	NA	<2	<2J	<2J	<2J	<2J	<0.04J ug/L
Heptachlor	ug/Kg	<2	NA	<2	<2J	<2J	<2J	<2J	<0.04J ug/L
Heptachlor Epoxide	ug/Kg	<2	NA	<2	2.7	<2	<2	5.07	<0.04 ug/L
Methoxychlor	ug/Kg	<2	NA	<2	<2J	<2J	<2J	<2J	<0.04J ug/L
Toxaphene	ug/Kg	<200	NA	<200	<200	<200	<200	200	<3 ug/L
PCBs (SW-846 Method 8082)									
PCB - Aroclor 1016	ug/Kg	<350	NA	<350	NA	NA	NA	NA	NA
PCB - Aroclor 1221	ug/Kg	<350	NA	<350	NA	NA	NA	NA	NA
PCB - Aroclor 1232	ug/Kg	<350	NA	<350	NA	NA	NA	NA	NA
PCB - Aroclor 1242	ug/Kg	<350	NA	<350	NA	NA	NA	NA	NA
PCB - Aroclor 1248	ug/Kg	<350	NA	<350	NA	NA	NA	NA	NA
PCB - Aroclor 1254	ug/Kg	<350	NA	<350	NA	NA	NA	NA	NA
PCB - Aroclor 1260	ug/Kg	1840	NA	1803	NA	NA	NA	NA	NA
VCL Volatiles (SW-846 Method 8260B)									
Acetone	ug/Kg	<100	NA	NA	<150J	<200J	<125J	<130J	<50 ug/L
Benzene	ug/Kg	<4	NA	NA	<6	<8	<5	<5.2	<1 ug/L
Bromodichloromethane	ug/Kg	<4	NA	NA	<6	<8	<5	<5.2	<1 ug/L
Bromoform	ug/Kg	<4J	NA	NA	<6J	<8J	<5J	<5.2J	<1J ug/L
Bromomethane	ug/Kg	<4	NA	NA	<6	<8	<5	<5.2	<1 ug/L
Carbon Disulfide	ug/Kg	<50	NA	NA	<75	<100	<62.5	<85	<1 ug/L
Carbon Tetrachloride	ug/Kg	<4	NA	NA	<6	<8	<5	<5.2	<1 ug/L
Chlorobenzene	ug/Kg	<4	NA	NA	<6	<8	<5	<5.2	<1 ug/L
Chlorodibromomethane	ug/Kg	<4	NA	NA	<6	<8	<5	<5.2	<1 ug/L
Chloroethane	ug/Kg	<4	NA	NA	<6	<8	<5	<5.2	<1J ug/L
Chloroform	ug/Kg	<4	NA	NA	<6	<8	<5	<5.2	<1 ug/L
Chloromethane	ug/Kg	<4	NA	NA	<6	<8	<5	<5.2	<1 ug/L
1,1-Dichloroethane	ug/Kg	<4	NA	NA	<6	<8	<5	<5.2	<1 ug/L
1,2-Dichloroethane	ug/Kg	<4	NA	NA	<6	<8	<5	<5.2	<1 ug/L
1,1-Dichloroethene	ug/Kg	<4	NA	NA	<6	<8	<5	<5.2	<1 ug/L
trans-1,2-Dichloroethene	ug/Kg	<4	NA	NA	<6	<8	<5	<5.2	<1 ug/L
1,2-Dichloropropane	ug/Kg	<4	NA	NA	<6	<8	<5	<5.2	<1 ug/L
cis-1,3-Dichloropropene	ug/Kg	<4	NA	NA	<6	<8	<5	<5.2	<1 ug/L
trans-1,3-Dichloropropene	ug/Kg	<4	NA	NA	<6	<8	<5	<5.2	<1 ug/L
Ethylbenzene	ug/Kg	<4J	NA	NA	<6	<8	<5	<5.2	<1 ug/L
2-Hexanone (MBK)	ug/Kg	<100	NA	NA	<150J	<200J	<125J	<130J	<50 ug/L
4-Methyl-2-pentanone (MIBK)	ug/Kg	<100	NA	NA	<150J	<200J	<125J	<130J	<50 ug/L
2-Butanone (MEK)	ug/Kg	<100	NA	NA	<150J	<200J	<125J	<130J	<50 ug/L
Methylene Chloride	ug/Kg	<100J	NA	NA	<150J	<200J	<125J	<130J	<20J ug/L
Styrene	ug/Kg	<4	NA	NA	<6	<8	<5	<5.2	<1 ug/L
1,1,2,2-Tetrachloroethane	ug/Kg	<4J	NA	NA	<6	<8	<5	<5.2	<1 ug/L
Tetrachloroethene	ug/Kg	<4	NA	NA	<6	<8	<5	<5.2	<1 ug/L
Toluene	ug/Kg	<4	NA	NA	<6	<8	<5	<5.2	<1 ug/L
1,1,1-Trichloroethane	ug/Kg	<4	NA	NA	<6	<8	<5	<5.2	<1 ug/L
1,1,2-Trichloroethane	ug/Kg	<4	NA	NA	<6	<8	<5	<5.2	<1 ug/L
Trichloroethene	ug/Kg	<4	NA	NA	<6	<8	<5	<5.2	<1 ug/L
Vinyl Acetate	ug/Kg	<50	NA	NA	<75	<100	<62.5	<85	<20 ug/L
Vinyl Chloride	ug/Kg	<4	NA	NA	<6	<8	<5	<5.2	<1J ug/L
o-Xylenes	ug/Kg	<4	NA	NA	<6	<8	<5	<5.2	<1 ug/L
m-Xylenes	ug/Kg	<4J	NA	NA	<6	<8	<5	<5.2	<1 ug/L
p-Xylenes	ug/Kg	<4J	NA	NA	<6	<8	<5	<5.2	<1 ug/L
cis-1,2-Dichloroethene	ug/Kg	<4	NA	NA	<6	<8	<5	<5.2	<1 ug/L

Table No. 3. Area B Composite Confirmation Soil Sample Analytical Results
at Land Surface and 12 - inches
Cafeteria Building
Memphis Depot, TN

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SAMPLE DESIGNATION		B1 - C1	B1 - C1 - DL	B1 - C1 - RX/RE	B1 - C2	B2 - C1	B4 - C1 (Duplicate of B2 - C1)	B3 - C1	C-EQ-CS-003 (Equipment Blank)
LABORATORY ID NO		9811024-01			9810751-01	9810751-02	9810751-04	9810751-03	9810751-05
DATE SAMPLED		02-Nov-98			22-Oct-98	22-Oct-98		22-Oct-98	22-Oct-98
GRID COMPOSITE		Areas B1-1-1 & B1-1-2			Areas B1-1-3 & B1-1-4	Areas B2-1, B2-2 & B2-3		Areas B3-1 & B3-2	EQ
SAMPLE DEPTH		12 - inch			Land Surface	Land Surface		Land Surface	
PERCENT SOLIDS		92%			79%	89%	86%	91%	AQUEOUS
LABORATORY ANALYSES		Units							
TCL Semi-Volatiles (SW-846 Method 8270C)									
Acenaphthene	ug/Kg	138	<670	524	<67	<67	<67	<67	<2 ug/L
Acenaphthylene	ug/Kg	<67	<670	<67	<67	<67	<67	<67	<2 ug/L
Anthracene	ug/Kg	289	1570	795	<67	<67	<67	<67	<2 ug/L
Benzo (a) anthracene	ug/Kg	1740	<670	3200J	398J	105J	227J	51J	<2J ug/L
Benzo (b) fluoranthene	ug/Kg	3010	3120	4020J	684J	197J	459J	410J	<2J ug/L
Benzo (k) fluoranthene	ug/Kg	996	<670	1470J	301J	67J	226J	741J	<2J ug/L
Benzo (g,h,i) perylene	ug/Kg	1650	3680	2960J	289J	<67	<67J	320J	<2J ug/L
Benzo (a) pyrene	ug/Kg	1980	<670	3300J	402J	<67	240J	348J	<2J ug/L
Benzoic Acid	ug/Kg	<1670	<16700	<1670J	<1670J	<1670J	<1670J	424J	<50J ug/L
Benzyl Alcohol	ug/Kg	<170	<1700	<170	<170	<170	<170	<170	<10 ug/L
Bis (2-chloroethoxy) methane	ug/Kg	<170	<1700	<170	<170J	<170J	<170J	<170J	<5J ug/L
Bis (2-chloroethyl) ether	ug/Kg	<170	<1700	<170	<170J	<170J	<170J	<170J	<5J ug/L
Bis (2-chloroisopropyl) ether	ug/Kg	<170	<1700	<170	<170	<170	<170	<170	<5 ug/L
Bis (2-ethylhexyl) phthalate	ug/Kg	296B	<1700	264JB	1008JB	<170J	210JB	175JB	41 6JB ug/L
4-Bromophenyl phenyl ether	ug/Kg	<170	<1700	<170	<170J	<170J	<170J	<170J	<5J ug/L
Butyl benzyl phthalate	ug/Kg	<170	<1700	<170J	182J	<170J	<170J	<170J	<5J ug/L
4-Chloroaniline	ug/Kg	<170	<1700	<170	<170J	<170J	<170J	<170J	<5J ug/L
2-Chloronaphthalene	ug/Kg	<170	<1700	<170	<170	<170	<170	<170	<2 ug/L
4-Chloro-3-methylphenol	ug/Kg	<170	<1700	<170	<170	<170	<170	<170	<5 ug/L
2-Chlorophenol	ug/Kg	<170	<1700	<170	<170	<170	<170	<170	<5 ug/L
4-Chlorophenyl phenyl ether	ug/Kg	<170	<1700	<170	<170	<170	<170	<170	<5 ug/L
Chrysene	ug/Kg	2230	2150	3740J	466J	104J	295J	561J	<2J ug/L
Dibenzo (a,h) anthracene	ug/Kg	<67	<670	733J	<67J	<67J	<67J	<67J	<2J ug/L
Dibenzofuran	ug/Kg	<170	<1700	146J	<170	<170	<170	<170	<5 ug/L
Di-n-butyl phthalate	ug/Kg	<170	<1700	<170	<170	<170	<170	<170	6 1 ug/L
1,2-Dichlorobenzene	ug/Kg	<170	<1700	<170	<170	<170	<170	<170	<5 ug/L
1,3-Dichlorobenzene	ug/Kg	<170	<1700	<170	<170	<170	<170	<170	<5 ug/L
1 4-Dichlorobenzene	ug/Kg	<170	<1700	<170	<170	<170	<170	<170	<5 ug/L
3,3'-Dichlorobenzidine	ug/Kg	<170	<1700	<170J	<170J	<170J	<170J	<170J	<10J ug/L
2 4-Dichlorophenol	ug/Kg	<170	<1700	<170	<170	<170	<170	<170	<5 ug/L
2,6-Dichlorophenol	ug/Kg	<170	<1700	<170	<170	<170	<170	<170	<5 ug/L
Diethyl phthalate	ug/Kg	<170	<1700	<170	<170J	<170J	<170J	<170J	<5J ug/L
2,4-Dimethylphenol	ug/Kg	<170	<1700	<170	<170	<170	<170	<170	<5 ug/L
Dimethyl phthalate	ug/Kg	<170	<1700	<170	<170	<170	<170	<170	<5 ug/L
4,6-Dinitro-2-methylphenol	ug/Kg	<170	<1700	<170	<170	<170	<170	<170	<10 ug/L
2,4-Dinitrophenol	ug/Kg	<3300	<3300	<330J	<330	<330	<330	<330	<50 ug/L
2,4-Dinitrotoluene	ug/Kg	<170	<1700	<170	<170	<170	<170	<170	<5 ug/L
2,6-Dinitrotoluene	ug/Kg	<170	<1700	<170	<170	<170	<170	<170	<5 ug/L
Di-n-octyl phthalate	ug/Kg	<170	<1700	<170J	<170J	<170J	<170J	<170J	<5J ug/L
Fluoranthene	ug/Kg	1780	3570	4550	581	173	314	598	<2 ug/L
Fluorene	ug/Kg	104	<670	264	<67	<67	<67	16J	<2 ug/L
Hexachlorobenzene	ug/Kg	<170	<1700	<170	<170J	<170J	<170J	<170J	<5J ug/L
Hexachlorobutadiene	ug/Kg	<170	<1700	<170	<170	<170	<170	<170	<5 ug/L
Hexachlorocyclopentadiene	ug/Kg	<170	<1700	<170	<170	<170	<170	<170	<5 ug/L
Hexachloroethane	ug/Kg	<170	<1700	<170	<170	<170	<170	<170	<5 ug/L
Indeno (1 2 3-cd) pyrene	ug/Kg	2760	<670	2620J	372J	<67J	67J	296J	<2J ug/L
Isophorone	ug/Kg	<170	<1700	<170	<170	<170	<170	<170	<5 ug/L
2-Methylnaphthalene	ug/Kg	<170	<1700	<170	<170J	<170J	<170J	<170J	<2J ug/L
2-Methylphenol (o-cresol)	ug/Kg	<170	<1700	<170	<170	<170	<170	<170	<5 ug/L
3-Methylphenol (m-cresol)	ug/Kg	<170	<1700J	<170	<170	<170	<170	<170	<5 ug/L
4-Methylphenol (p-cresol)	ug/Kg	<170	<1700J	<170	<170	<170	<170	<170	<5 ug/L
Naphthalene	ug/Kg	<67	<670	<67	<67	<67	<67	<67	<2 ug/L
Nitrobenzene	ug/Kg	<170	<1700	<170	<170	<170	<170	<170	<5 ug/L
2-Nitroaniline	ug/Kg	<170	<1700	<170	<170	<170	<170	<170	<5 ug/L
3-Nitroaniline	ug/Kg	<170	<1700	<170	<170	<170	<170	<170	<10 ug/L
4-Nitroaniline	ug/Kg	<170	<1700	<170J	<170J	<170J	<170J	<170J	<5J ug/L
2-Nitrophenol	ug/Kg	<170	<1700	<170	<170	<170	<170	<170	<5 ug/L
4-Nitrophenol	ug/Kg	<170	<1700	<170	<170	<170	<170	<170	<5 ug/L
N-Nitrosodiphenylamine	ug/Kg	<170	<1700	<170	<170	<170	<170	<170	<5 ug/L
N-Nitrosodipropylamine	ug/Kg	<170	<1700	<170	<170J	<170J	<170J	<170J	<5J ug/L
Pentachlorophenol	ug/Kg	<170	<1700	146J	<170	<170	<170	<170	<10 ug/L
Phenanthrene	ug/Kg	1540	1590	4460	342	106	202	321	<2 ug/L
Phenol	ug/Kg	<170	<1700	<170	<170	<170	<170	<170	<5 ug/L
Pyrene	ug/Kg	1300	2960	3720J	485J	147J	257	537J	<2J ug/L
1,2,4-Trichlorobenzene	ug/Kg	<170	<1700	<170	<170	<170	<170	<170	<5 ug/L
2 4,5-Trichlorophenol	ug/Kg	<170	<1700	<170J	<170	<170	<170	<170	<5 ug/L
2 4,6-Trichlorophenol	ug/Kg	<170	<1700	<170	<170	<170	<170	<170	<5 ug/L

**Table No. 3 Area B Composite Confirmation Soil Sample Analytical Results
at Land Surface and 12 - inches
Cafeteria Building
Memphis Depot, TN**

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SAMPLE DESIGNATION		B1 - C1	B1 - C1 - DL	B1 - C1 - RX/RE	B1 - C2	B2 - C1	B4 - C1 (Duplicate of B2 - C1)	B3 - C1	C-EQ-CS-003 (Equipment Blank)
LABORATORY ID NO		9811024-01			9810751-01	9810751-02	9810751-04	9810751-03	9810751-05
DATE SAMPLED		02-Nov-98			22-Oct-98	22-Oct-98		22-Oct-98	22-Oct-98
GRID COMPOSITE		Areas B1-1-1 & B1-1-2			Areas B1-1-3 & B1-1-4	Areas B2-1, B2-2 & B2-3		Areas B3-1 & B3-2	EQ
SAMPLE DEPTH		12 - inch			Land Surface	Land Surface		Land Surface	
PERCENT SOLIDS		92%			79%	89%	86%	91%	AQUEOUS
LABORATORY ANALYSES		Units							
TAL Metals & Cyanide									
Silver (SW-846 Method 6010B)	mg/Kg	<0.7	NA	NA	1.09	<0.7	<0.7	<0.7	<0.009 mg/L
Aluminum (SW-846 Method 6010B)	mg/Kg	10800	NA	NA	10300	6870	8890	9970	<0.06 mg/L
Arsenic (SW-846 Method 7060A)	mg/Kg	17.9	NA	NA	15.9	15.8	20.9	23.7	<0.003 mg/L
Barium (SW-846 Method 6010B)	mg/Kg	120	NA	NA	112	69.5	90.6	106	<0.003 mg/L
Beryllium (SW-846 Method 6010B)	mg/Kg	0.636	NA	NA	0.556	0.332	0.425	0.472	<0.002 mg/L
Calcium (SW-846 Method 6010B)	mg/Kg	4520	NA	NA	8980	120000	67600	36700	<0.015 mg/L
Cadmium (SW-846 Method 6010B)	mg/Kg	1.82	NA	NA	0.563	0.682	<0.4	0.85	<0.005 mg/L
Cobalt (SW-846 Method 6010B)	mg/Kg	8.02	NA	NA	7.98	3.72	5.09	5.89	<0.009 mg/L
Chromium (SW-846 Method 6010B)	mg/Kg	24.1	NA	NA	19.5	10.3	15.2	14.6	<0.009 mg/L
Copper (SW-846 Method 6010B)	mg/Kg	49.2	NA	NA	25.3	19.2	41.1	39.2	<0.008 mg/L
Iron (SW-846 Method 6010B)	mg/Kg	21400	NA	NA	15800	9980	17100	15300	<0.009 mg/L
Mercury (SW-846 Method 7471A)	mg/Kg	0.126	NA	NA	0.07	0.036	0.033	0.038	<0.0002 mg/L
Potassium (SW-846 Method 6010B)	mg/Kg	943	NA	NA	1290	1190	1210	1450	<0.250 mg/L
Magnesium (SW-846 Method 6010B)	mg/Kg	1930	NA	NA	1990	9870	10600	3450	<0.04 mg/L
Manganese (SW-846 Method 6010B)	mg/Kg	682	NA	NA	790	335	451	460	<0.003 mg/L
Sodium (SW-846 Method 6010B)	mg/Kg	86.6	NA	NA	70.7	141	129	120	0.109 mg/L
Nickel (SW-846 Method 6010B)	mg/Kg	20.6	NA	NA	14.8	9.56	13.3	14.7	<0.02 mg/L
Lead (SW-846 Method 7421)	mg/Kg	142	NA	NA	77.5	49.9	76.3	34.8	<0.002 mg/L
Antimony (SW-846 Method 6010B)	mg/Kg	<3.2	NA	NA	<3.2	<3.2	<3.2	<3.2	<0.04 mg/L
Selenium (SW-846 Method 7740)	mg/Kg	0.434	NA	NA	0.274	0.905	0.551	0.484	<0.003 mg/L
Thallium (SW-846 Method 7871)	mg/Kg	0.209	NA	NA	0.214	0.184	0.227	0.216	<0.002 mg/L
Vanadium (SW-846 Method 6010B)	mg/Kg	26.6	NA	NA	23.5	13.8	18.6	21	<0.01 mg/L
Zinc (SW-846 Method 6010B)	mg/Kg	210	NA	NA	140	146	112	252	<0.01 mg/L
Cyanide (SW-846 Method 9010A)	mg/Kg	<1	NA	NA	<1	<1	<1	<1	<0.010 mg/L

NOTES

mg/Kg - milligrams per kilogram

EQ = Equipment Blank

PCB - polychlorinated biphenyl

DL = Dilution Factor of 100

ug/Kg - micrograms per kilogram

J = Estimated value based on data evaluation - data is acceptable

PAH - polynuclear aromatic hydrocarbon

RXRE = Re-extraction

mg/L - milligrams per liter

TCL - Target compound list

NA - not analyzed

ug/L - micrograms per liter

TAL - Target analyte list

M = Result reported represents a minimum value. Refer to case narrative in lab report.

B = Analyte detected in the associated equipment blank.

E = Conc. exceeds established method calibration range but is within the working range of the instrument.

**Table No. 4: Clean Backfill (Top Soil) Analytical Results
Family Housing Area and Cafeteria Building
Memphis Depot, TN**

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SAMPLE DESIGNATION		RA-TS-001	RA-TS-004A	RA-TS-005	RA-TS-006	RA-TS-007	C-TS-008
PERCENT SOLIDS		83%	84%	87%	99%	87%	NR
LABORATORY ID NO.		9807737-01	9808526-01	9809235-01	9809581-01	9810042-01	9810618-01
DATE SAMPLED		22-Jul-98	17-Aug-98	08-Sep-98	18-Sep-99	01-Oct-98	19-Oct-98
LABORATORY ANALYSES		Units					
TCL Pesticides (SW-846 Method 8081A)							
Aldrin	ug/Kg	<2	<2	<2	<2	<2	<2
Alpha-BHC	ug/Kg	<2	<2	<2	<2	<2	<2
Beta-BHC	ug/Kg	<2	<2	<2	<2	<2	<2
Delta-BHC	ug/Kg	<2	<2	<2	<2	<2	<2
Gamma-BHC (Lindane)	ug/Kg	<2	<2	<2	<2	<2	<2
alpha-Chlordane	ug/Kg	<2	<2	<2	<2	<2	<2
gamma-Chlordane	ug/Kg	<2	<2	<2	<2	<2	<2
Chlordane	ug/Kg	<20	<20	<20	<20	<20	<20
4,4'-DDD	ug/Kg	<2	<2	<2	<2	<2	<2
4,4'-DDE	ug/Kg	<2	<2	<2	<2	<2	<2
4,4'-DDT	ug/Kg	<2	5 88	<2	<2	<2	<2
Dieldrin	ug/Kg	<2	<2	<2	<2	<2	<2
Endosulfan I	ug/Kg	<2	<2	<2	<2	<2	<2
Endosulfan II	ug/Kg	<2	<2	<2	<2	<2	<2
Endosulfan Sulfate	ug/Kg	<2	<2	<2	<2	<2	<2
Endrin	ug/Kg	<2	<2	<2	<2	<2	<2
Endrin Aldehyde	ug/Kg	<2	<2	<2	<2	<2	<2
Endrin Ketone	ug/Kg	<2	<2	<2	<2	<2	<2
Heptachlor	ug/Kg	<2	<2	<2	<2	<2	<2
Hepthachlor Epoxide	ug/Kg	<2	<2	<2	<2	<2	<2
Methoxychlor	ug/Kg	<25	<2	<2	<2	<2	<2
Toxaphene	ug/Kg	<35	<200	<200	<200	<200	<200
PCBs (SW-846 Method 8092)							
PCB - Aroclor 1016	ug/Kg	<35	<35	<350	<35	<35	<35
PCB - Aroclor 1221	ug/Kg	<35	<35	<350	<35	<35	<35
PCB - Aroclor 1232	ug/Kg	<35	<35	<350	<35	<35	<35
PCB - Aroclor 1242	ug/Kg	<35	<35	<350	<35	<35	<35
PCB - Aroclor 1248	ug/Kg	<35	<35	<350	<35	<35	<35
PCB - Aroclor 1254	ug/Kg	<35	<35	<350	<35	<35	<35
PCB - Aroclor 1260	ug/Kg	<35	<35	<350	<35	<35	<35
TCL Volatiles (SW-846 Method 8260B)							
Acetone	ug/Kg	<100	<50	<50	<50	<75	68 6
Benzene	ug/Kg	<4	<2	<2	<2	<3	<2
Bromodichloromethane	ug/Kg	<4	<2	<2	<2	<3	<2
Bromoform	ug/Kg	<4	<2	<2	<2	<3	<2
Bromomethane	ug/Kg	<4	<2	<2	<2	<3	<2
Carbon Disulfide	ug/Kg	<50	<25	<25	<25	<37 5	<25
Carbon Tetrachloride	ug/Kg	<4	<2	<2	<2	<3	<2
Chlorobenzene	ug/Kg	<4	<2	<2	<2	<3	<2
Chlorodibromomethane	ug/Kg	<4	<2	<2	<2	<3	<2
Chloroethane	ug/Kg	<4	<2	<2	<2	<3	<2
Chloroform	ug/Kg	<4	<2	<2	<2	<3	<2
Chloromethane	ug/Kg	<4	<2	<2	<2	<3	<2
1,1-Dichloroethane	ug/Kg	<4	<2	<2	<2	<3	<2
1,2-Dichloroethane	ug/Kg	<4	<2	<2	<2	<3	<2
1,1-Dichloroethene	ug/Kg	<4	<2	<2	<2	<3	<2
trans-1,2-Dichloroethene	ug/Kg	<4	<2	<2	<2	<3	<2
1,2-Dichloropropane	ug/Kg	<4	<2	<2	<2	<3	<2
cis-1,3-Dichloropropene	ug/Kg	<4	<2	<2	<2	<3	<2
trans-1,3-Dichloropropene	ug/Kg	<4	<2	<2	<2	<3	<2
Ethylbenzene	ug/Kg	<4	<2	<2	<2	<3	<2
2-Hexanone (MBK)	ug/Kg	<100	<50	<50	<50	<75	<50
4-Methyl-2-pentanone (MIBK)	ug/Kg	<100	<50	<50	<50	<75	<50
2-Butanone (MEK)	ug/Kg	<100	<50	<50	<50	<75	<50
Methylene Chloride	ug/Kg	<100	<50	<50	<50	<75	<50J

Table No. 4: Clean Backfill (Top Soil) Analytical Results
Family Housing Area and Cafeteria Building
Memphis Depot, TN

SAMPLE DESIGNATION		RA-TS-001	RA-TS-004A	RA-TS-005	RA-TS-006	RA-TS-007	C-TS-008
PERCENT SOLIDS		83%	84%	87%	99%	87%	NR
LABORATORY ID NO.		9807737-01	9808526-01	9809235-01	9809581-01	9810042-01	9810618-01
DATE SAMPLED		22-Jul-98	17-Aug-98	08-Sep-98	18-Sep-99	01-Oct-98	19-Oct-98
LABORATORY ANALYSES	Units						
Styrene	ug/Kg	<4	<2	<2	<2	<3	<2
1,1,2,2-Tetrachloroethane	ug/Kg	<4	<2	<2	<2	<3	<2
Tetrachloroethene	ug/Kg	<4	<2	<2	<2	<3	<2
Toluene	ug/Kg	<4	<2	<2	<2	3.71	<2
1,1,1-Trichloroethane	ug/Kg	<4	<2	<2	<2	<3	<2
1,1,2-Trichloroethane	ug/Kg	<4	<2	<2	<2	<3	<2
Trichloroethene	ug/Kg	<4	<2	<2	<2	<3	<2
Vinyl Acetate	ug/Kg	<50	<25	<25	<25	<37.5	<25
Vinyl Chloride	ug/Kg	<4	<2	<2	<2	<3	<2
o-Xylenes	ug/Kg	<4	<2	<2	<2	<3	<2
m-Xylenes	ug/Kg	<4	<2	<2	<2	<3	<2
p-Xylenes	ug/Kg	<4	<2	<2	<2	<3	<2
cis-1,2-Dichloroethene	ug/Kg	<4	<2	<2	<2	<3	<2
TCL Semi-Volatiles (SW-846 Method 8270C)							
Acenaphthene	ug/Kg	<67	<67	<67	<67	<67	<67
Acenaphthylene	ug/Kg	<67	<67	<67	<67	<67	<67
Anthracene	ug/Kg	<67	<67	<67	<67	<67	<67
Benzo (a) anthracene	ug/Kg	<67	58J	<67	<67	<67	<67
Benzo (b) fluoranthene	ug/Kg	<67	<67	<67	<67	<67	<67
Benzo (k) fluoranthene	ug/Kg	<67	<67	<67	<67	<67	<67
Benzo (g,h,i) perylene	ug/Kg	<67	<67	<67	<67	<67	<67
Benzo (a) pyrene	ug/Kg	<67	<67	<67	<67	<67	<67
Benzoic Acid	ug/Kg	<660	<1670	<1670	<1670	<1670	<1670J
Benzyl Alcohol	ug/Kg	<170	<170	<170	<170	<170	<170
Bis (2-chloroethoxy) methane	ug/Kg	<170	<170	<170	<170	<170	<170J
Bis (2-chloroethyl) ether	ug/Kg	<170	<170	<170	<170	<170	<170
Bis (2-chloroisopropyl) ether	ug/Kg	<170	<170	<170	<170	<170	<170
Bis (2-ethylhexyl) phthalate	ug/Kg	<170	<170	<170	<170	<170	<170
4-Bromophenyl phenyl ether	ug/Kg	<170	<170	<170	<170	<170	<170J
Butyl benzyl phthalate	ug/Kg	<170	<170	<170	<170	<170	<170
4-Chloroaniline	ug/Kg	<170	<170	<170	<170	<170	<170J
2-Chloronaphthalene	ug/Kg	<170	<170	<170	<170	<170	<170
4-Chloro-3-methylphenol	ug/Kg	<170	<170	<170	<170	<170	<170
2-Chlorophenol	ug/Kg	<170	<170	<170	<170	<170	<170
4-Chlorophenyl phenyl ether	ug/Kg	<170	<170	<170	<170	<170	<170
Chrysene	ug/Kg	<67	46J	<67	<67	<67	<170
Dibenzo (a,h) anthracene	ug/Kg	<67	<67	<67	<67	<67	<67
Dibenzofuran	ug/Kg	<170	<170	<170	<170	<170	<170
Di-n-butyl phthalate	ug/Kg	<170	<170	<170	<170	<170	<170
1,2-Dichlorobenzene	ug/Kg	<170	<170	<170	<170	<170	<170
1,3-Dichlorobenzene	ug/Kg	<170	<170	<170	<170	<170	<170
1,4-Dichlorobenzene	ug/Kg	<170	<170	<170	<170	<170	<170
3,3'-Dichlorobenzidine	ug/Kg	<170	<170	<170	<170	<170	<170J
2,4-Dichlorophenol	ug/Kg	<170	<170	<170	<170	<170	<170
2,6-Dichlorophenol	ug/Kg	<170	<170	<170	<170	<170	<170
Diethyl phthalate	ug/Kg	<170	<170	<170	<170	<170	<170
2,4-Dimethylphenol	ug/Kg	<170	<170	<170	<170	<170	<170
Dimethyl phthalate	ug/Kg	<170	<170	<170	<170	<170	<170
4,6-Dinitro-2-methylphenol	ug/Kg	<170	<170	<170	<170	<170	<170J
2,4-Dinitrophenol	ug/Kg	<330	<330	<330	<330	<330	<330J
2,4-Dinitrotoluene	ug/Kg	<170	<170	<170	<170	<170	<170
2,6-Dinitrotoluene	ug/Kg	<170	<170	<170	<170	<170	<170
Di-n-octyl phthalate	ug/Kg	<170	<170	<170	<170	<170	<170
Fluoranthene	ug/Kg	<67	81J	<67	<67	<67	<67
Fluorene	ug/Kg	<67	<67	<67	<67	<67	<67
Hexachlorobenzene	ug/Kg	<170	<170	<170	<170	<170	<170
Hexachlorobutadiene	ug/Kg	<170	<170	<170	<170	<170	<170
Hexachlorocyclopentadiene	ug/Kg	<170	<170	<170	<170	<170	<170
Hexachloroethane	ug/Kg	<170	<170	<170	<170	<170	<170
Indeno (1,2,3-cd) pyrene	ug/Kg	<67	<67	<67	<67	<67	<67

**Table No. 4: Clean Backfill (Top Soil) Analytical Results
Family Housing Area and Cafeteria Building
Memphis Depot, TN**

377 33

SAMPLE DESIGNATION		RA-TS-001	RA-TS-004A	RA-TS-005	RA-TS-006	RA-TS-007	C-TS-008
PERCENT SOLIDS		83%	84%	87%	99%	87%	NR
LABORATORY ID NO		9807737-01	9808526-01	9809235-01	9809581-01	9810042-01	9810618-01
DATE SAMPLED		22-Jul-98	17-Aug-98	08-Sep-98	18-Sep-99	01-Oct-98	19-Oct-98
LABORATORY ANALYSES	Units						
Isophorone	ug/Kg	<170	<170	<170	<170	<170	<170
2-Methylnaphthalene	ug/Kg	<67	<67	<67	<67	<67	<170
2-Methylphenol (o-cresol)	ug/Kg	<170	<170	<170	<170	<170	<170
3-Methylphenol (m-cresol)	ug/Kg	<170	<170	<170	<170	<170	<170
4-Methylphenol (p-cresol)	ug/Kg	<170	<170	<170	<170	<170	<170
Naphthalene	ug/Kg	<67	<67	<67	<67	<67	<67
Nitrobenzene	ug/Kg	<170	<170	<170	<170	<170	<170J
2-Nitroaniline	ug/Kg	<170	<170	<170	<170	<170	<170
3-Nitroaniline	ug/Kg	<170	<170	<170	<170	<170	<170
4-Nitroaniline	ug/Kg	<170	<170	<170	<170	<170	<170J
2-Nitrophenol	ug/Kg	<170	<170	<170	<170	<170	<170
4-Nitrophenol	ug/Kg	<170	<170	<170	<170	<170	<170
N-Nitrosodiphenylamine	ug/Kg	<170	<170	<170	<170	<170	<170
N-Nitrosodipropylamine	ug/Kg	<170	<170	<170	<170	<170	<170J
Pentachlorophenol	ug/Kg	<170	<170	<170	<170	<170	<170
Phenanthrene	ug/Kg	<67	72J	<67	<67	<67	<67
Phenol	ug/Kg	<170	<170	<170	<170	<170	<170
Pyrene	ug/Kg	<67	63J	<67	<67	<67	<67J
1,2,4-Trichlorobenzene	ug/Kg	<170	<170	<170	<170	<170	<170
2,4,5-Trichlorophenol	ug/Kg	<170	<170	<170	<170	<170	<170
2,4,6-Trichlorophenol	ug/Kg	<170	<170	<170	<170	<170	<170
TAL Metals & Cyanide							
Silver (SW-846 Method 6010B)	mg/Kg	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Aluminum (SW-846 Method 6010B)	mg/Kg	10700	17700	12700	11300	10800	15900
Arsenic (SW-846 Method 7060A)	mg/Kg	3.41	7.27	10.4	11.4	5.77	10.3
Barium (SW-846 Method 6010B)	mg/Kg	60.4	115	107	66	85	83.5
Beryllium (SW-846 Method 6010B)	mg/Kg	0.687	0.53	0.502	0.485	0.468	0.5
Calcium (SW-846 Method 6010B)	mg/Kg	1180	1940	1090	756	1250	684
Cadmium (SW-846 Method 6010B)	mg/Kg	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Cobalt (SW-846 Method 6010B)	mg/Kg	4.93	8.94	7.1	9.61	7.14	7.82
Chromium (SW-846 Method 6010B)	mg/Kg	22.5	20	15.9	15.7	16.5	19.7
Copper (SW-846 Method 6010B)	mg/Kg	9.76	12.7	17.3	15.9	12.1	13.2
Iron (SW-846 Method 6010B)	mg/Kg	16200	17800	21900	22200	16400	22900
Mercury (SW-846 Method 7471A)	mg/Kg	0.024	0.021	0.026	0.047	0.025	0.058
Potassium (SW-846 Method 6010B)	mg/Kg	415	1530	916	905	643	1140
Magnesium (SW-846 Method 6010B)	mg/Kg	1380	1960	2690	2310	1960	2260
Manganese (SW-846 Method 6010B)	mg/Kg	208	720	570	575	582	552
Sodium (SW-846 Method 6010B)	mg/Kg	252	81.5	227	58.3	253	104
Nickel (SW-846 Method 6010B)	mg/Kg	11.9	14.6	16.7	14.1	15	13.7
Lead (SW-846 Method 7421)	mg/Kg	6.99	16.2	11	17.9	7.6	13.5
Antimony (SW-846 Method 6010B)	mg/Kg	<3.2	<3.2	<3.2	6.05	<3.2	<3.2
Selenium (SW-846 Method 7740)	mg/Kg	<0.2	0.794	<0.2	0.32	<0.2	0.404
Thallium (SW-846 Method 7841)	mg/Kg	<0.1	0.242	0.222	0.261	0.172	0.312
Vanadium (SW-846 Method 6010B)	mg/Kg	21	31.1	24.3	24.7	22.7	30.4
Zinc (SW-846 Method 6010B)	mg/Kg	28	55.5	57.3	51.5	41.2	60.9
Cyanide (SW-846 Method 9010A)	mg/Kg	<1	<1	<1	<1	<1	<1

NOTES

mg/Kg - milligrams per kilogram
ug/Kg - micrograms per kilogram
mg/L - milligrams per liter
ug/L - micrograms per liter

EQ = Equipment Blank
J = Estimated value based on data evaluation - data is acceptable
TCL - Target compound list
TAL - Target analyte list

PCB - polychlorinated biphenyl
PAH - polynuclear aromatic hydrocarbon
NR - Not Reported
NA - not analyzed

Table No. 5: Area B Disposal and Characterization Analytical Results
Cafeteria Building
Memphis Depot, TN

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SAMPLE DESIGNATION		C-A-001
LABORATORY ID NO		9810578-11
DATE SAMPLED		16-Oct-98
LABORATORY ANALYSES	Units	
TAL Metals		
Silver (SW-846 Method 6010B)	mg/L	<0.5
Arsenic (SW-846 Method 7060A)	mg/L	<0.5
Barium (SW-846 Method 6010B)	mg/L	<5
Cadmium (SW-846 Method 6010B)	mg/L	<0.1
Chromium (SW-846 Method 6010B)	mg/L	<0.5
Mercury (SW-846 Method 7471A)	mg/L	<0.02
Lead (SW-846 Method 7421)	mg/L	<0.5
Selenium (SW-846 Method 7740)	mg/L	<0.5
TCLP Volatiles (SW-846 Method 8260B)		
Benzene	mg/L	<0.01
Carbon Tetrachloride	mg/L	<0.01
Chlorobenzene	mg/L	<0.01
Chloroform	mg/L	<0.01
1,4-Dichlorobenzene	mg/L	<0.01
1,2-Dichloroethane	mg/L	<0.01J
1,1-Dichloroethene	mg/L	<0.01
Methyl Ethyl Ketone	mg/L	<1J
Tetrachloroethene	mg/L	<0.01
Trichloroethene	mg/L	<0.01
Vinyl Chloride	mg/L	<0.01J
TCLP Semi-Volatiles (SW-846 Method 8270C)		
1,4-Dichlorobenzene	mg/L	<0.008
2,4-Dinitrotoluene	mg/L	<0.008
Hexachlorobenzene	mg/L	<0.008
Hexachlorobutadiene	mg/L	<0.008
Hexachloroethane	mg/L	<0.008
2-Methylphenol	mg/L	<0.008
3-Methylphenol	mg/L	<0.008
4-Methylphenol	mg/L	<0.008
Nitrobenzene	mg/L	<0.008
Pentachlorophenol	mg/L	<0.008
Pyridine	mg/L	<0.008
2,4,5-Trichlorophenol	mg/L	<0.008
2,4,6-Trichlorophenol	mg/L	<0.008
TCLP Pesticides (SW-846 Method 8081A)		
Gamma-BHC (Lindane)	mg/L	<0.001J
Chlordane	mg/L	<0.01
Endrin	mg/L	<0.001
Heptachlor	mg/L	<0.001J
Methoxychlor	mg/L	<0.04
Toxaphene	mg/L	<0.1
TCLP Herbicides (SW-846 Method 8161A)		
2,4-D	mg/L	<0.01
Silvex	mg/L	<0.001
PCBs (SW-846 Method 8082)		
PCB - Aroclor 1016	ug/Kg	<350
PCB - Aroclor 1221	ug/Kg	<350
PCB - Aroclor 1232	ug/Kg	<350
PCB - Aroclor 1242	ug/Kg	<350
PCB - Aroclor 1248	ug/Kg	<350
PCB - Aroclor 1254	ug/Kg	<350
PCB - Aroclor 1260	ug/Kg	1380

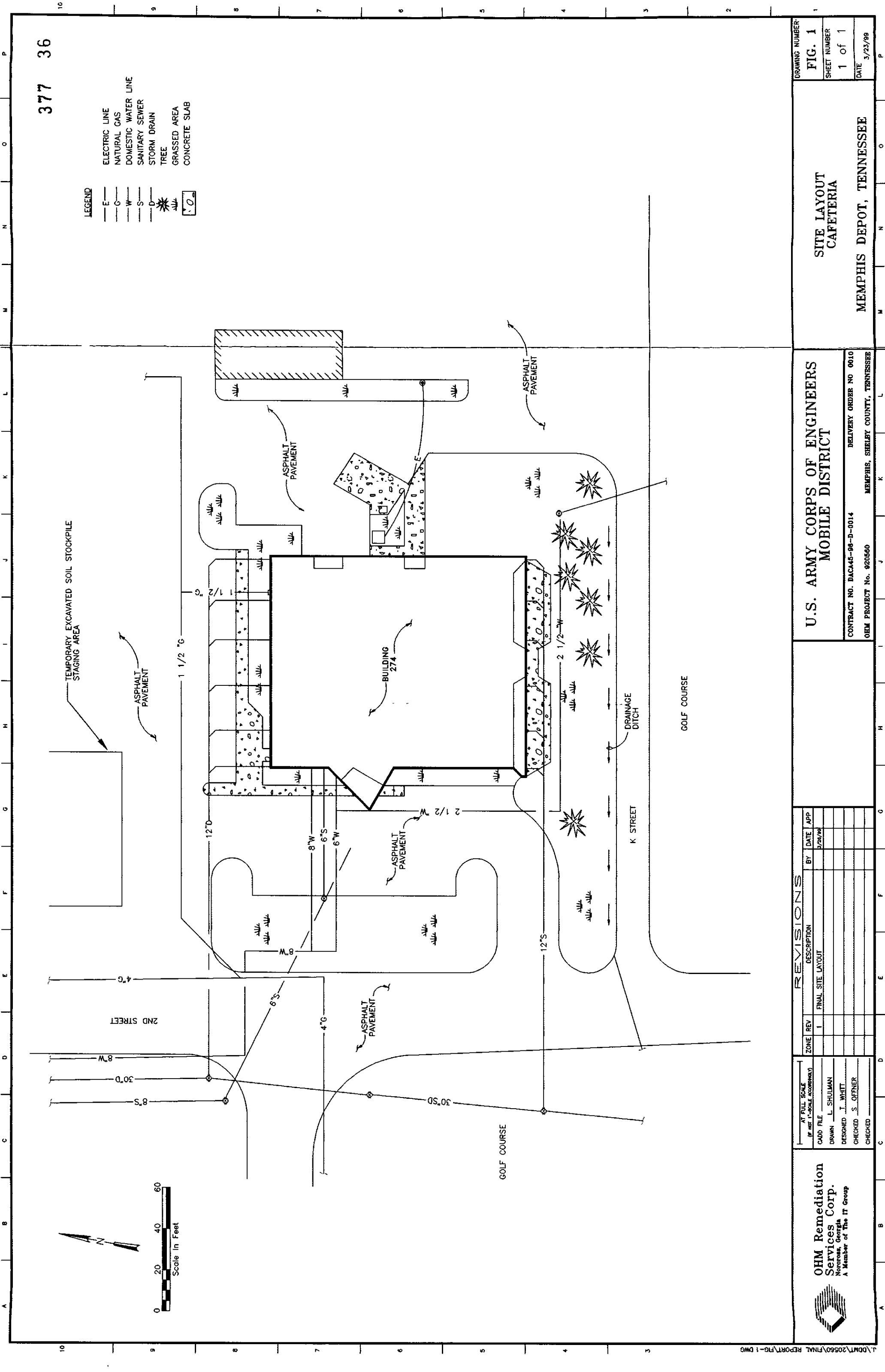
NOTES

mg/Kg - milligrams per kilogram
ug/Kg - micrograms per kilogram
mg/L - milligrams per liter
ug/L - micrograms per liter

J = Estimated value based on data evaluation - data is acceptable
EQ = Equipment Blank
TCL - Target compound list
TAL - Target analyte list
PCB - polychlorinated biphenyl
PAH - polynuclear aromatic hydrocarbon
NA - not anal NR - Not Reported

TAB

Figures



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LEGEND

- ELECTRIC LINE
- NATURAL GAS
- DOMESTIC WATER LINE
- SANITARY SEWER
- STORM DRAIN
- TREE
- GRASSED AREA
- CONCRETE SLAB



OHM Remediation Services Corp.
Norcross, Georgia
A Member of The IT Group

U.S. ARMY CORPS OF ENGINEERS
MOBILE DISTRICT

CONTRACT NO. DAC45-98-D-0014
OEM PROJECT No. 920560

DELIVERY ORDER NO 0010
MEMPHIS, SHELBY COUNTY, TENNESSEE

REVISIONS

ZONE	REV	DESCRIPTION	BY	DATE	APP
	1	FINAL SITE LAYOUT		3/24/99	

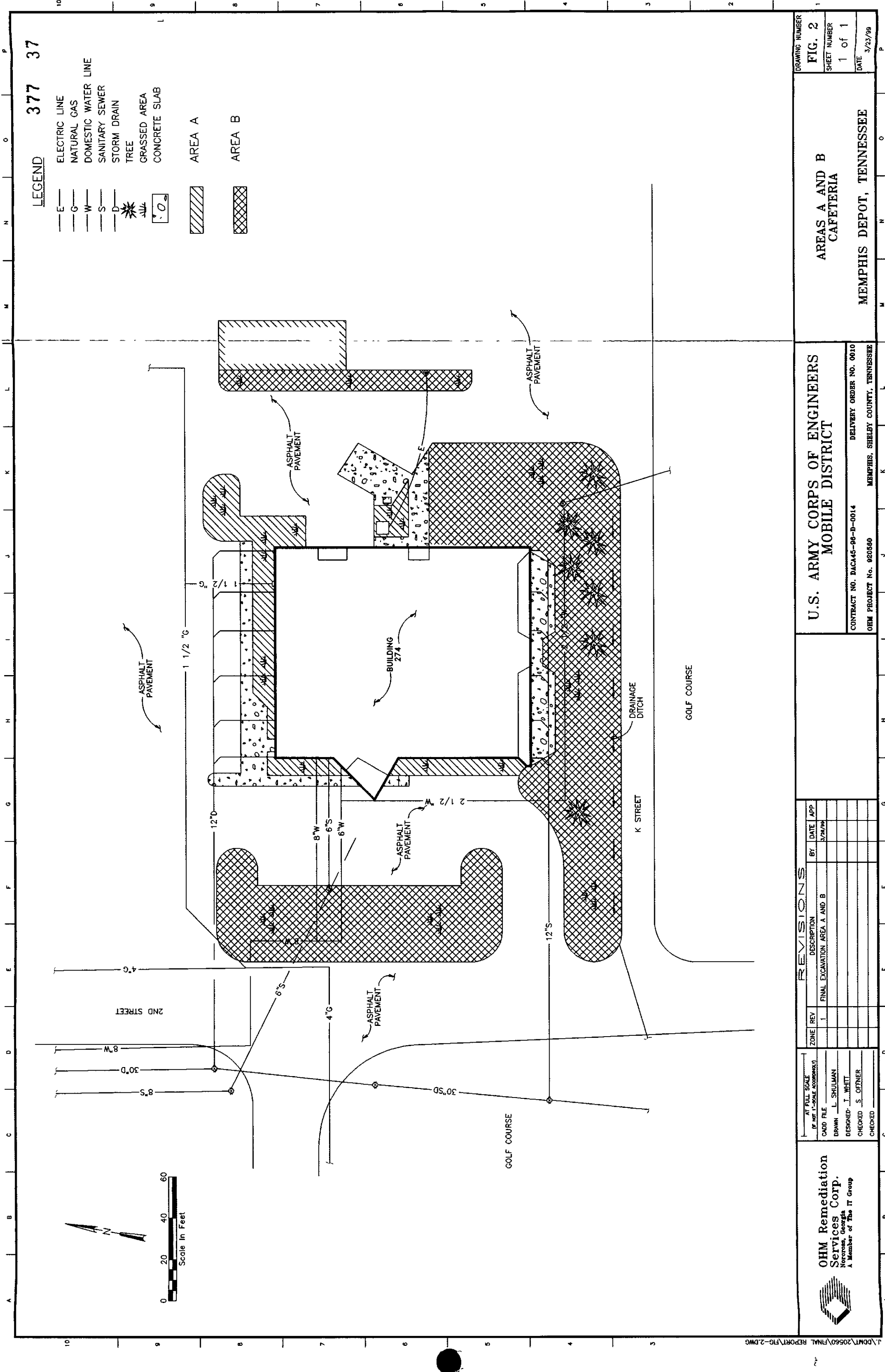
FIG. 1

SHEET NUMBER
1 of 1

DATE
3/23/99

SITE LAYOUT
CAFETERIA

MEMPHIS DEPOT, TENNESSEE



LEGEND 377 37

- E— ELECTRIC LINE
- G— NATURAL GAS
- W— DOMESTIC WATER LINE
- S— SANITARY SEWER
- D— STORM DRAIN
- TREE
- GRASSED AREA
- CONCRETE SLAB

AREA A

AREA B



OHM Remediation Services Corp.
Norcross, Georgia
A Member of The IT Group

REVISIONS

ZONE	REV	DESCRIPTION	BY	DATE	APP
	1	FINAL EXCAVATION AREA A AND B		3/29/99	

AT FULL SCALE
(IF NOT 1"=100' AS SHOWN)

CADD FILE _____
DRAWN L. SHULMAN
DESIGNED J. WHITT
CHECKED S. OFFNER
CHECKED _____

U.S. ARMY CORPS OF ENGINEERS
MOBILE DISTRICT

CONTRACT NO. DACA45-96-D-0014
OHM PROJECT NO. 920560

DELIVERY ORDER NO. 0010
MEMPHIS, SHELBY COUNTY, TENNESSEE

AREAS A AND B
CAFETERIA

MEMPHIS DEPOT, TENNESSEE

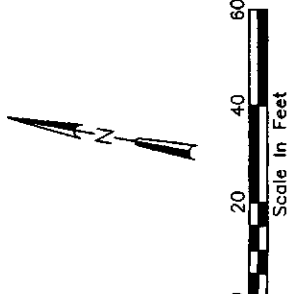
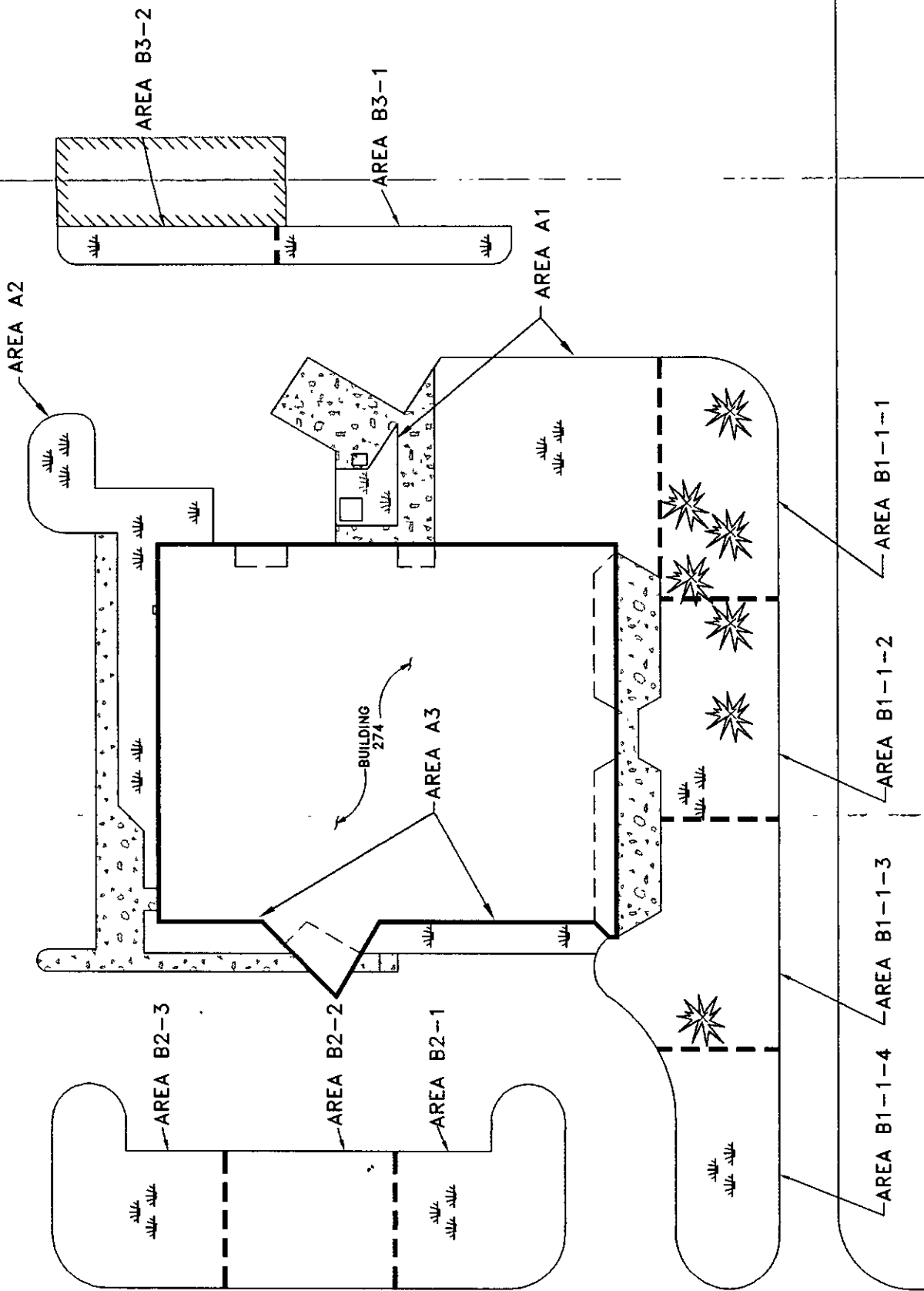
DRAWING NUMBER
FIG. 2

SHEET NUMBER
1 of 1

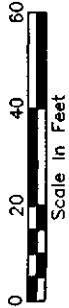
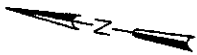
DATE
3/23/99

LEGEND

- E--- ELECTRIC LINE
- C--- NATURAL GAS
- W--- DOMESTIC WATER LINE
- S--- SANITARY SEWER
- D--- STORM DRAIN
- *--- TREE
- *--- GRASSED AREA
- *--- CONCRETE SLAB
- *--- GRID LINE BETWEEN AREAS

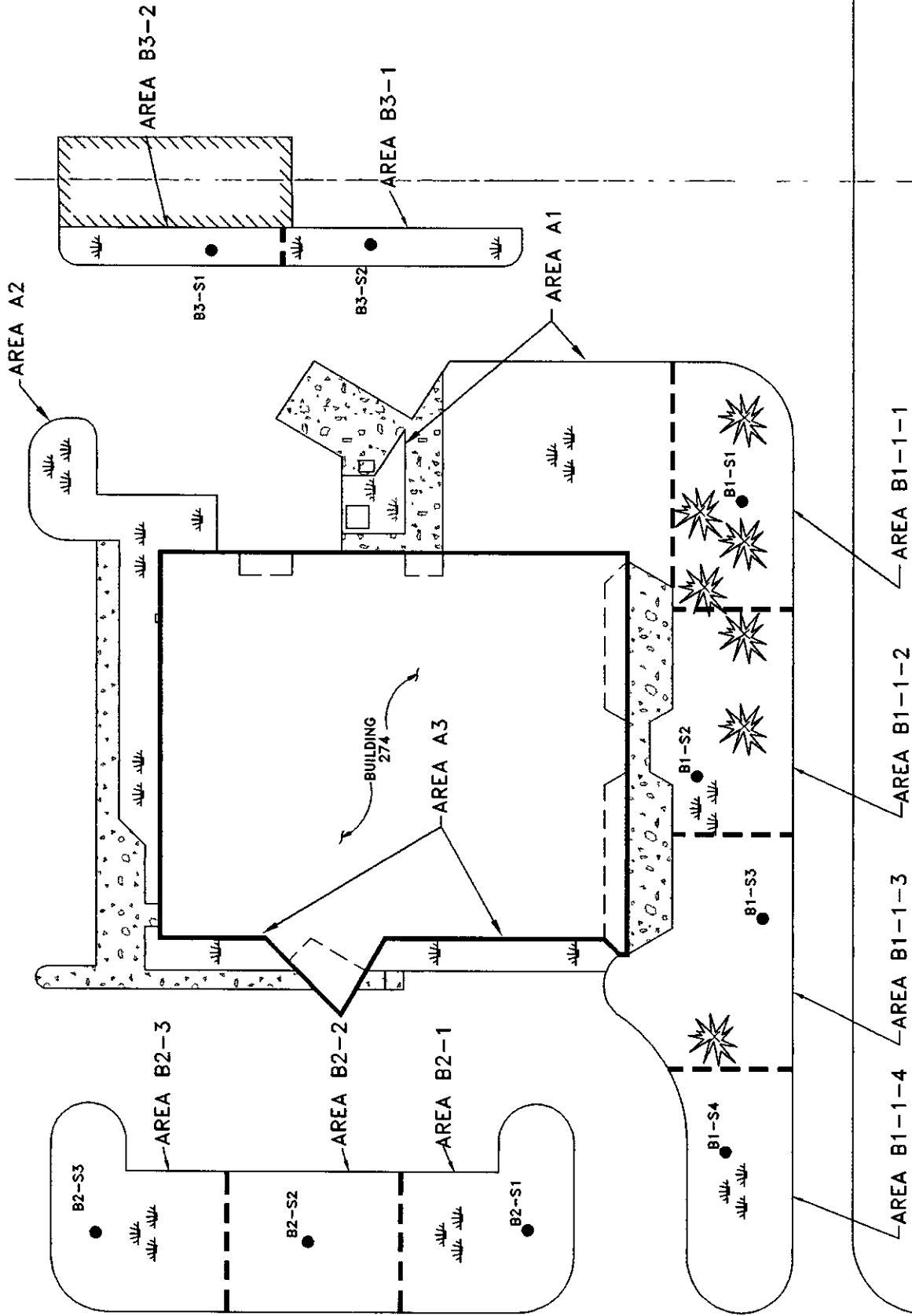


 OHM Remediation Services Corp. Norcross, Georgia A Member of The IT Group		REVISIONS		U.S. ARMY CORPS OF ENGINEERS MOBILE DISTRICT		SAMPLE GRID LOCATIONS CAFETERIA MEMPHIS DEPOT, TENNESSEE		FIG. 3 DRAWING NUMBER: SHEET NUMBER 1 of 1 DATE 3/24/99	
CADD FILE DRAWN L. SHULMAN DESIGNED J. WHITT CHECKED S. OFFNER CHECKED		ZONE REV 1 1		DESCRIPTION FINAL SAMPLE GRID LOCATION		BY DATE 3/24/99		CONTRACT NO. DAC445-98-D-0014 OEM PROJECT NO. 920560	
								DELIVERY ORDER NO. 0010 MEMPHIS, SHELBY COUNTY, TENNESSEE	



LEGEND

- E- - ELECTRIC LINE
- G- - NATURAL GAS
- W- - DOMESTIC WATER LINE
- S- - SANITARY SEWER
- D- - STORM DRAIN
- ☼ TREE
- ☼ GRASSED AREA
- ◻ CONCRETE SLAB
- - - GRID LINE BETWEEN AREAS
- B1-S3
- PCB SOIL SCREENING SAMPLE LOCATION (0-12" bis)



OHM Remediation
Services Corp.
Norcross, Georgia
A Member of the IT Group

AT FULL SCALE (IF NOT 1-Scale Reduced)	DATE	BY	DATE	APP
CADD FILE			5/29/04	
DRAWN	L. SHULMAN			
DESIGNED	J. WHITT			
CHECKED	S. OFFNER			
CHECKED				

ZONE	REV	DESCRIPTION	DATE	APP
1	1	FINAL PCB SCREENING LOCATIONS	5/29/04	

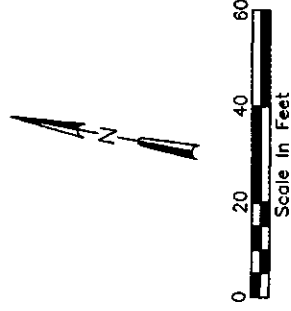
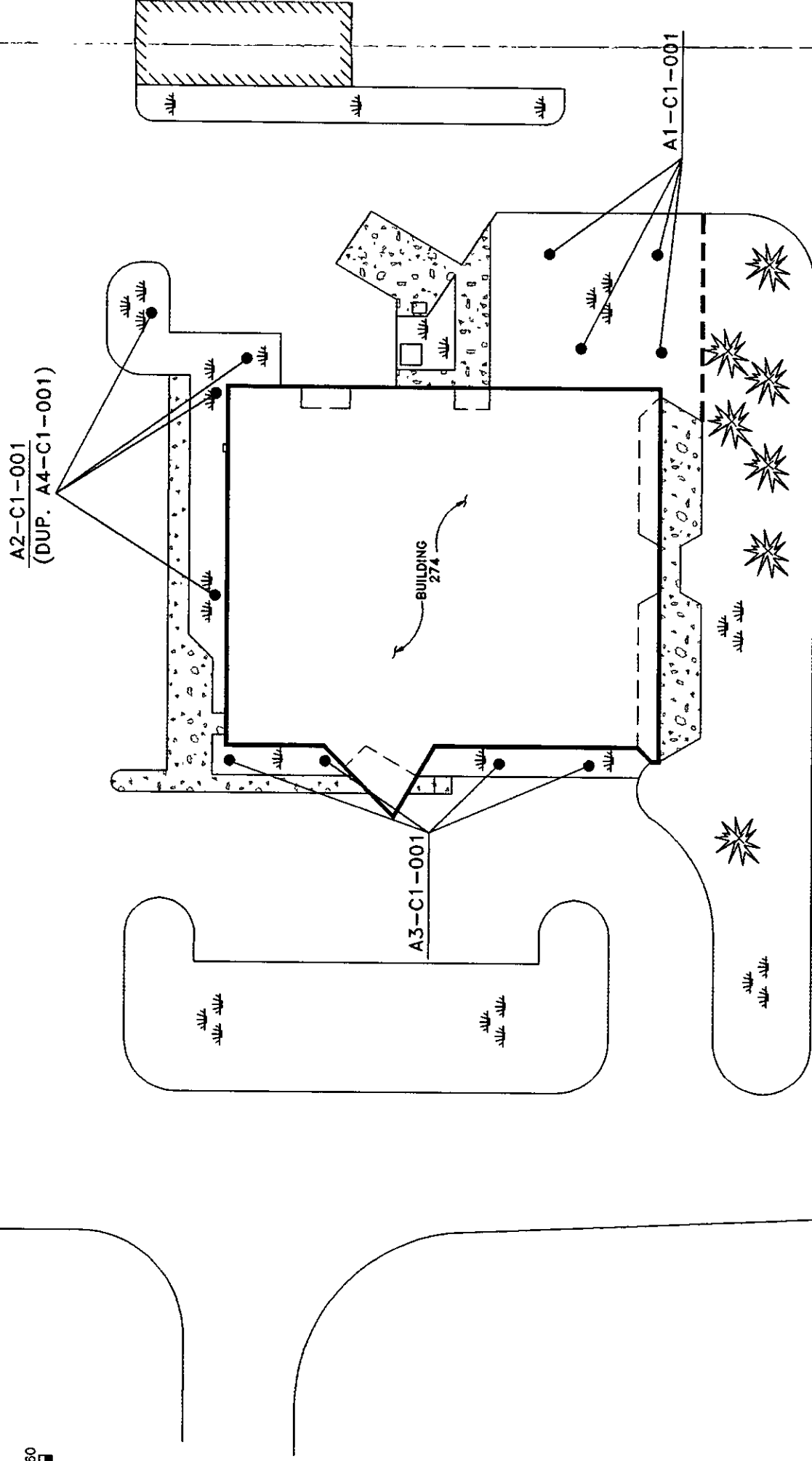
U.S. ARMY CORPS OF ENGINEERS MOBILE DISTRICT				
CONTRACT NO. DACA45-98-D-0014				
OEM PROJECT NO. 920560				
DELIVERY ORDER NO. 0010				
MEMPHIS, SHELBY COUNTY, TENNESSEE				

PCB SOIL SCREENING LOCATIONS - AREA B CAFETERIA				
MEMPHIS DEPOT, TENNESSEE				

DRAWING NUMBER	FIG. 4
SHEET NUMBER	1 of 1
DATE	3/26/99

LEGEND

- E--
--G--
--W--
--S--
--D--
- ELECTRIC LINE
NATURAL GAS
DOMESTIC WATER LINE
SANITARY SEWER
STORM DRAIN
-  TREE
-  GRASSED AREA
-  CONCRETE SLAB
- GRID LINE BETWEEN AREAS
- A2-C1--001
-
- COMPOSITE CONFIRMATION
SOIL SAMPLE LOCATION

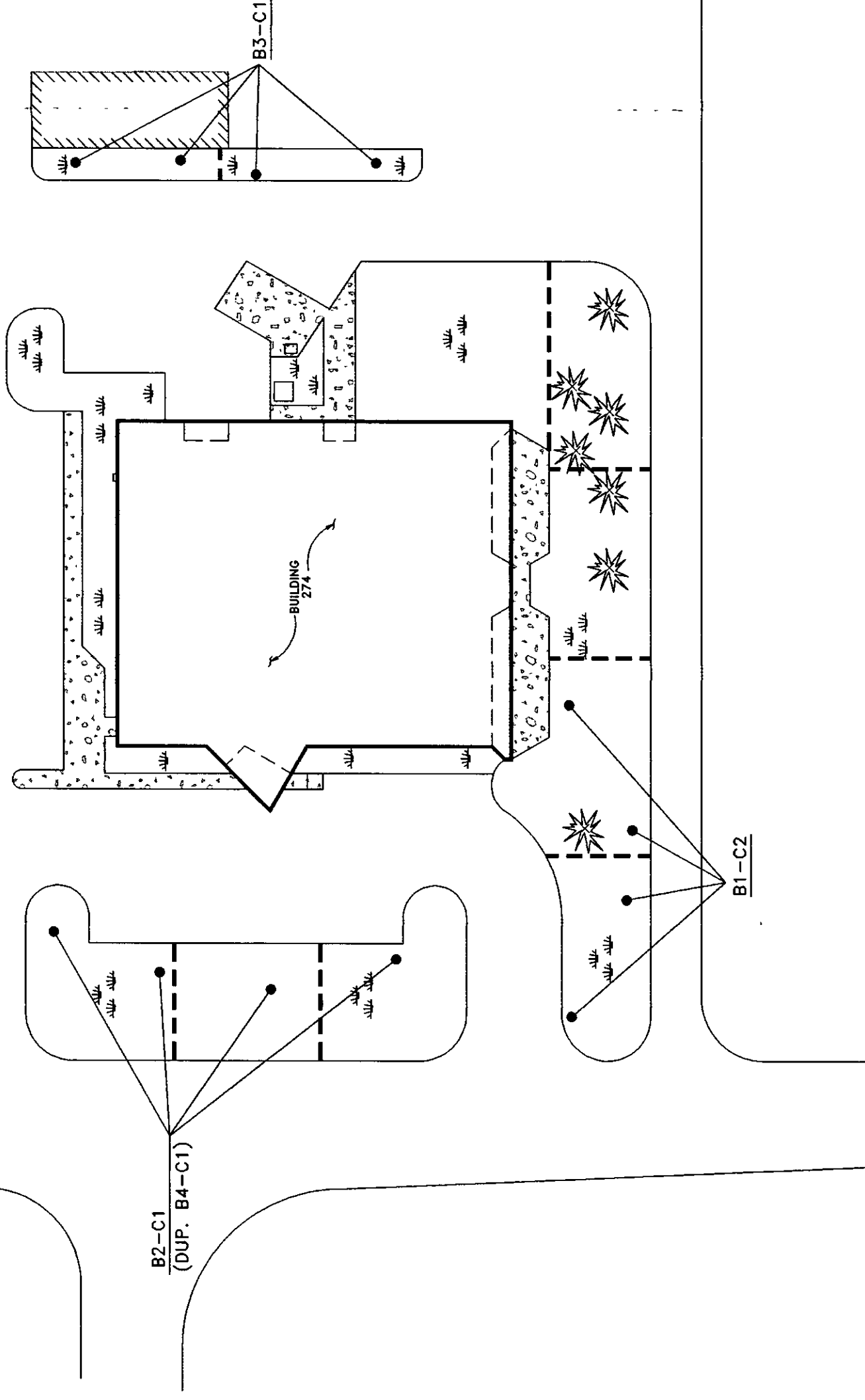


 OHM Remediation Services Corp. Norcross, Georgia A Member of The IT Group	REVISIONS				U.S. ARMY CORPS OF ENGINEERS MOBILE DISTRICT DELIVERY ORDER NO 0010 MEMPHIS, SHELBY COUNTY, TENNESSEE	AREA A-CONFIRMATION SOIL SAMPLES FOLLOWING 12 INCH EXCAVATION CAFETERIA MEMPHIS DEPOT, TENNESSEE	DRAWING NUMBER	FIG. 5
	CADD FILE _____	DESCRIPTION	BY	DATE			SHEET NUMBER	1 of 1
	DRAWN: L. SHULMAN	1 FINAL AREA A CONFIRMATION SOIL SAMPLES		3/26/99				
	DESIGNED: J. WHITT							
	CHECKED: S. OFFNER							
	CHECKED _____							

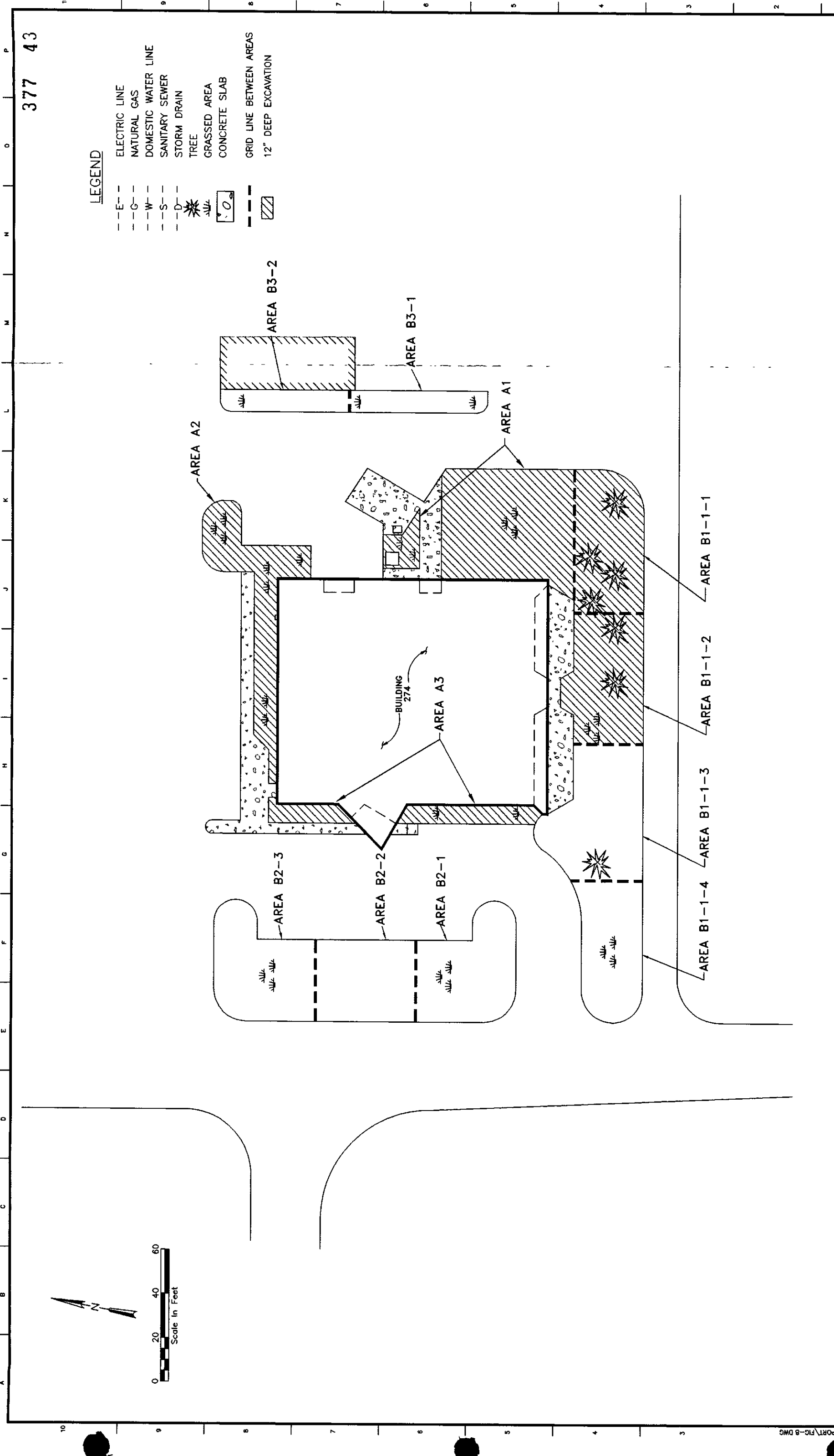


LEGEND

- - E - - ELECTRIC LINE
 - - G - - NATURAL GAS
 - - W - - DOMESTIC WATER LINE
 - - S - - SANITARY SEWER
 - - D - - STORM DRAIN
 TREE
 GRASSED AREA
 CONCRETE SLAB
 GRID LINE BETWEEN AREAS
 B3-C1
 COMPOSITE CONFIRMATION
 SOIL SAMPLE LOCATION



AT FULL SCALE (OR NOT ("SCALE AS SHOWN")		REVISIONS			
ZONE	REV	DESCRIPTION	BY	DATE	APP
	1	FINAL AREA B CONFIRMATION LAND SURFACE		3/26/98	
CADD FILE					
DRAWN	L. SHULMAN				
DESIGNED	T. WHITT				
CHECKED	S. OFFNER				
CHECKED					



LEGEND

- E- - ELECTRIC LINE
- G- - NATURAL GAS
- W- - DOMESTIC WATER LINE
- S- - SANITARY SEWER
- D- - STORM DRAIN
- * - TREE
- Grass Area
- Concrete Slab
- Grid Line Between Areas
- 12" Deep Excavation

 OHM Remediation Services Corp. Norcross, Georgia A Member of The IT Group	REVISIONS		U.S. ARMY CORPS OF ENGINEERS MOBILE DISTRICT		FINAL EXCAVATION DEPTHS CAFETERIA		FIG. 8		
	ZONE	REV	DESCRIPTION	BY	DATE	CONTRACT NO. DAC45-98-D-0014		DRAWING NUMBER	
CADD FILE: L. SHULMAN		1	FINAL EXCAVATION DEPTHS		5/29/98	DELIVERY ORDER NO. 0010		SHEET NUMBER	
DESIGNED: J. WHITT								1 of 1	
CHECKED: S. OFFNER						OBM PROJECT No. 920560		DATE: 3/24/99	
CHECKED:						MEMPHIS, SHELBY COUNTY, TENNESSEE		MEMPHIS DEPOT, TENNESSEE	

TAB

Appendix A

APPENDIX A**USEPA Region 3 Risk-Based Concentrations**

Sources										Basis									
I=IRIS H=HEAST A=HEAST alternate W=Withdrawn from IRIS or HEAST E=EPA-NCEA Regional Support provisional value O=Other EPA documents										C=carcinogenic effects N=non-carcinogenic effects									
Contaminant	CAS	RfD ₀ mg/kg/d	RfD ₁ mg/kg/d	CPS ₀ kg-d/mg	CPS ₁ kg-d/mg	Y	O	Risk-Based Concentrations				Soil Ingestion							
								Tap Water	Ambient Air	Fish	Industrial			Residential					
								µg/L	µg/m ³	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg					
Acetophate	30560191	4 00E-03	2 57E-03	8 70E-03	7 70E-03			7 7 c	0 72 c	0 36 c	660 c	73 c							
Acetaldehyde	75070							94 n	0 81 c	0	0	0							
Acetochlor	34256821	2 00E-02						730 n	73 n	27 n	41000 n	1600 n							
Acetone	67641	1 00E-01						3700 n	370 n	140 n	200000 n	7800 n							
**Acetone cyanohydrn	75865	8 00E-04	2 86E-03					29 n	10 n	11 n	1600 n	63 n							
Acetonitrile	75078	6 00E-03	1 43E-02					220 n	52 n	8 1 n	12000 n	470 n							
Acetophenone	98862	1 00E-01	5 71E-06			☒		0 042 n	0 021 n	140 n	200000 n	7800 n							
Acifluorfen	62476599	1 30E-02						470 n	47 n	18 n	27000 n	1000 n							
Acrolein	107028	2 00E-02	5 71E-06					730 n	0 021 n	27 n	41000 n	1600 n							
Acrylamide	79061	2 00E-04		4 50E+00	4 55E+00			0 015 c	0 0014 c	0 0007 c	1 3 c	0 14 c							
Acrylic acid	79107	5 00E-01	2 86E-04					18000 n	1 n	680 n	1000000 n	39000 n							
Acrylonitrile	107131	1 00E-03	5 71E-04	5 40E-01	2 38E-01			0 12 c	0 026 c	0 0058 c	11 c	1 2 c							
Alachlor	15972608	1 00E-02		8 00E-02				0 84 c	0 078 c	0 039 c	72 c	8 c							
Alar	1596845	1 50E-01						5500 n	550 n	200 n	310000 n	12000 n							
Aldicarb	116063	1 00E-03						37 n	37 n	1 4 n	2000 n	78 n							
Aldicarb sulfone	1646884	1 00E-03						37 n	37 n	1 4 n	2000 n	78 n							
Aldrin	309002	3 00E-05		1 70E+01	1 71E+01			0 004 c	0 00037 c	0 00019 c	0 34 c	0 038 c							
Allyl	74223646	2 50E-01						9100 n	910 n	340 n	510000 n	20000 n							
Allyl alcohol	107186	5 00E-03						180 n	18 n	6 8 n	10000 n	390 n							
Allyl chloride	107051	5 00E-02	2 86E-04					1800 n	1 n	68 n	100000 n	3900 n							
**Aluminum	7429905	1 00E+00	1 00E-03					37000 n	37 n	1400 n	1000000 n	78000 n							
Aluminum phosphide	20659738	4 00E-04						15 n	15 n	0 54 n	820 n	31 n							
Amro	67485294	3 00E-04						11 n	11 n	0 41 n	610 n	23 n							
Ametryn	834128	9 00E-03						330 n	33 n	12 n	18000 n	700 n							
**Aminodinitrotoluenes	0	6 00E-05						2 2 n	0 22 n	0 081 n	120 n	47 n							
m-Aminophenol	591275	7 00E-02						2600 n	260 n	95 n	140000 n	5500 n							
4-Aminopyridine	504245	2 00E-05						0 73 n	0 073 n	0 027 n	41 n	1 6 n							
Amtraz	33089611	2 50E-03						91 n	91 n	3 4 n	5100 n	200 n							
Ammonia	7664417	2 00E-01	2 86E-02					1000 n	100 n	0	0	0							
Ammonium sulfamate	7773060	2 00E-01						7300 n	730 n	270 n	410000 n	16000 n							
Aniline	62533	4 00E-04	2 86E-04	5 70E-03				10 n	1 n	0 55 c	1000 c	110 c							
Antimony and compounds	7440360	5 00E-04						15 n	15 n	0 54 n	820 n	31 n							
Antimony pentoxide	1314609	5 00E-04						18 n	18 n	0 68 n	1000 n	39 n							
Antimony potassium tartrate	304610	9 00E-04						33 n	33 n	1 2 n	1800 n	70 n							
Antimony tetroxide	1332316	4 00E-04						15 n	15 n	0 54 n	820 n	31 n							
**Antimony trioxide	1309644	4 00E-04	5 71E-05					15 n	0 21 n	0 54 n	820 n	31 n							
Apollo	74115245	1 30E-02						470 n	47 n	18 n	27000 n	1000 n							
Aramite	140578	5 00E-02		2 50E-02	2 49E-02			27 c	0 25 c	0 13 c	230 c	26 c							
Arsenic	7440382	3 00E-04						11 n	1 1 n	0 41 n	610 n	23 n							
Arsenic (as carcinogen)	7440382			1 50E+00	1 51E+01			0 045 c	0 00041 c	0 0021 c	3 8 c	0 43 c							
Arsine	7784421		1 43E-05					0 52 n	0 052 n	0	0	0							

Contaminant	CAS	RfD _o mg/kg/d	RfD _i mg/kg/d	CPS _o kg-d/mg	CPS _i kg-d/mg	V	Basis						Risk-Based Concentrations			
							C=carcinogenic effects			N=non-carcinogenic effects			Risk-Based Concentrations			
							Tap	Ambient	Fish	Soil Ingestion	Industrial	Residential	Tap	Ambient	Fish	Soil Ingestion
							Water µg/L	Air µg/m ³	mg/kg	mg/kg	mg/kg	mg/kg	Water µg/L	Air µg/m ³	mg/kg	mg/kg
Assure	76578148	9 00E-03					330 N	33 N	12 N	18000 N	700 N					
Asulam	3337711	5 00E-02					1800 N	180 N	68 N	100000 N	3900 N					
Atrazine	1912249	3 50E-02					0.3 C	0.028 C	0.014 C	26 C	2.9 C					
Avermectin B1	65195553	4 00E-04					15 N	1.5 N	0.54 N	820 N	31 N					
Azobenzene	103333						0.61 C	0.058 C	0.029 C	52 C	5.8 C					
Barium and compounds	7440393	7 00E-02	1.43E-04 A				2600 N	0.52 N	95 N	140000 N	5500 N					
Baygon	114261	4 00E-03					150 N	15 N	5.4 N	8200 N	310 N					
Bayleton	43121433	3 00E-02					1100 N	110 N	41 N	61000 N	2300 N					
Baythroid	58359375	2 50E-02					910 N	91 N	34 N	51000 N	2000 N					
Benefin	1861401	3 00E-01					11000 N	1100 N	410 N	610000 N	23000 N					
Benomyl	17804352	5 00E-02					1800 N	180 N	68 N	100000 N	3900 N					
Bentazon	25057890	2 50E-03					91 N	9.1 N	3.4 N	5100 N	200 N					
Benzaldehyde	100527	1 00E-01					610 N	370 N	140 N	200000 N	7800 N					
Benzene	71432	3 00E-03	1.71E-03 E				0.36 C	0.22 C	0.11 C	200 C	22 C					
Benzenethiol	108985	1 00E-05 H					0.37 N	0.037 N	0.014 N	20 N	0.78 N					
Benzidine	92875	3 00E-03					0.00029 C	0.00027 C	0.000014 C	0.025 C	0.0028 C					
Benzoic acid	65850	4 00E-00					150000 N	15000 N	5400 N	1000000 N	310000 N					
Benzotrichloride	98077						0.0052 C	0.00048 C	0.00024 C	0.44 C	0.049 C					
Benzyl alcohol	100516	3 00E-01 H					11000 N	1100 N	410 N	610000 N	23000 N					
Benzyl chloride	100447						0.062 C	0.037 C	0.019 C	34 C	3.8 C					
Beryllium and compounds	7440417	5 00E-03					0.016 C	0.00075 C	0.00073 C	1.3 C	0.15 C					
Biflur	141662	1 00E-04					3.7 N	0.37 N	0.14 N	200 N	7.8 N					
Biphenyl	82657043	1 50E-02					550 N	55 N	20 N	31000 N	1200 N					
1,1-Biphenyl	92524	5 00E-02					1800 N	180 N	68 N	100000 N	3900 N					
Bis(2-chloroethyl)ether	111444						0.0092 C	0.0054 C	0.0029 C	5.2 C	0.58 C					
Bis(2-chloroisopropyl)ether	39638329	4 00E-02					0.26 C	0.18 C	0.045 C	82 C	9.1 C					
Bis(chloromethyl)ether	542881						0.000049 C	0.000029 C	0.000014 C	0.026 C	0.0029 C					
**Bis(2-chloro-1-methylethyl)ether	0						0.96 C	0.18 C	0.045 C	82 C	9.1 C					
Bis(2-ethylhexyl)phthalate (DEHP)	117817	2 00E-02					4.8 C	0.45 C	0.23 C	410 C	46 C					
Bisphenol A	80057	5 00E-02					1800 N	180 N	68 N	100000 N	3900 N					
Boron (and borates)	7440428	9 00E-02	5.71E-03 H				3300 N	21 N	120 N	180000 N	7000 N					
Boron trifluoride	7637072						7.3 N	0.73 N	0	0	0					
Bromodichloromethane	75274	2 00E-02					0.17 C	0.1 C	0.051 C	92 C	10 C					
Bromoethene	593602						0.096 C	0.057 C	0	0	0					
Bromoform (tribromomethane)	75252	2 00E-02					2.4 C	1.6 C	0.4 C	720 C	81 C					
Bromomethane	74839	1 40E-03	1.43E-03				8.7 N	5.2 N	1.9 N	2900 N	110 N					
4-Bromophenyl phenyl ether	101553	5 80E-02					2100 N	210 N	78 N	120000 N	4500 N					
Bromophos	2104963	5 00E-03 H					180 N	18 N	6.8 N	10000 N	390 N					
Bromoxynil	1689845	2 00E-02					730 N	73 N	27 N	41000 N	1600 N					
Bromoxynil octanoate	1689992	2 00E-02					730 N	73 N	27 N	41000 N	1600 N					
1,3-Butadiene	106990						0.011 C	0.0064 C	0	0	0					

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Contaminant	CAS	RfD _o mg/kg/d	RfD _i mg/kg/d	CPS _o kg-d/mg	CPS _i kg-d/mg	Y	O	Risk-Based Concentrations				
								Tap Water µg/L	Ambient Air µg/m ³	Fish mg/kg	Soil Ingestion Industrial mg/kg Residential mg/kg	
1-Butanol	71363	1 00E-01 I						3700 N	370 N	140 N	20000 N	7800 N
Butyl benzyl phthalate	85687	2 00E-01 I						7300 N	730 N	270 N	41000 N	16000 N
Butylate	2008415	5 00E-02 I						1800 N	180 N	68 N	10000 N	3900 N
**n-Butylbenzene	104518	1 00E-02 E				☒		61 N	37 N	14 N	20000 N	780 N
sec-Butylbenzene	135988	1 00E-02 E				☒		61 N	37 N	14 N	20000 N	780 N
tert-Butylbenzene	104518	1 00E-02 E				☒		61 N	37 N	14 N	20000 N	780 N
Butylphthalyl butylglycolate	85701	1 00E+00 I						37000 N	3700 N	1400 N	1000000 N	78000 N
Cacodylic acid	75605	3 00E-03 H						110 N	11 N	41 N	6100 N	230 N
Cadmium and compounds	7440439	5 00E-04 I	5 71E-05 W		6 30E+00 I			18 N	0 00099 C	0 68 N	1000 N	39 N
Caprolactam	105602	5 00E-01 I		8 60E-03 H				18000 N	1800 N	680 N	1000000 N	39000 N
Captafol	2425061	2 00E-03 I						7 8 C	0 73 C	0 37 C	670 C	74 C
Captan	133062	1 30E-01 I		3 50E-03 H				19 C	1 8 C	0 9 C	1600 C	180 C
Carbaryl	63252	1 00E-01 I						3700 N	370 N	140 N	20000 N	7800 N
Carbofuran	1563662	5 00E-03 I						180 N	18 N	6 8 N	10000 N	390 N
Carbon disulfide	75150	1 00E-01 I	2 00E-01 I			☒		1000 N	730 N	140 N	20000 N	7800 N
Carbon tetrachloride	56235	7 00E-04 I	5 71E-04 E	1 30E-01 I	5 25E-02 I	☒		0 16 C	0 12 C	0 024 C	44 C	4 9 C
Carbosulfan	55285148	1 00E-02 I						370 N	37 N	14 N	20000 N	780 N
Carboxin	5234684	1 00E-01 I						3700 N	370 N	140 N	20000 N	7800 N
Chloral	75876	2 00E-03 I						73 N	7 3 N	2 7 N	4100 N	160 N
Chloramben	133904	1 50E-02 I						550 N	55 N	20 N	31000 N	1200 N
Chloranil	118752			4 03E-01 H				0 17 C	0 016 C	0 0078 C	14 C	1 6 C
**Chlordane	57749	5 00E-04 I		3 50E-01 I	3 50E-01 I			0 19 C	0 018 C	0 009 C	16 C	1 8 C
Chlorimuron-ethyl	90982324	2 00E-02 I						730 N	73 N	27 N	41000 N	1600 N
Chlorone	7782505	1 00E-01 I						3700 N	370 N	140 N	20000 N	7800 N
Chlorone dioxide	10049044		5 71E-05 I					21 N	0 21 N	0	0	0
Chloroacetaldehyde	107200	6 90E-03 O						250 N	25 N	9 3 N	14000 N	540 N
Chloroacetic acid	79118	2 00E-03 H						73 N	7 3 N	2 7 N	4100 N	160 N
2-Chloroacetophenone	532274		8 57E-06 I					0 31 N	0 031 N	0	0	0
4-Chloroaniline	106478	4 00E-03 I						150 N	15 N	5 4 N	8200 N	310 N
Chlorobenzene	108907	2 00E-02 I	5 71E-03 A			☒		39 N	21 N	27 N	41000 N	1600 N
Chlorobenzilate	510156	2 00E-02 I		2 70E-01 H	2 70E-01 H		H	0 25 C	0 023 C	0 012 C	21 C	2 4 C
p-Chlorobenzoic acid	74113	2 00E-01 H						7300 N	730 N	270 N	41000 N	16000 N
4-Chlorobenzotrifluoride	98566	2 00E-02 H						730 N	73 N	27 N	41000 N	1600 N
2-Chloro-1,3-butadiene (chloroprene)	126998	2 00E-02 A	2 00E-03 H			☒		14 N	7 3 N	27 N	41000 N	1600 N
1-Chlorobutane	109693	4 00E-01 H				☒		2400 N	1500 N	540 N	82000 N	31000 N
Chlorodibromomethane	124481	2 00E-02 I		8 40E-02 I		☒		0 13 C	0 075 C	0 038 C	68 C	7 6 C
1-Chloro-1,1-difluoroethane	75683		1 43E+01 I			☒		87000 N	52000 N	0	0	0
Chlorodifluoromethane	75456		1 43E+01 I			☒		87000 N	52000 N	0	0	0
**Chloroethane	75003	4 00E-01 E	2 86E+00 I	2 90E-03 E		☒		3 6 C	2 2 C	1 1 C	2000 C	220 C
2-Chloroethyl vinyl ether	110758	2 50E-02 O		6 10E-03 I	8 05E-02 I	☒		150 N	91 N	34 N	51000 N	2000 N
Chloroform	67663	1 00E-02 I				☒		0 15 C	0 078 C	0 52 C	940 C	100 C

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Contaminant	CAS	RfD _o mg/kg/d	RfD _i mg/kg/d	CPS _o kg-d/mg	CPS _i kg-d/mg	V	Basis C=carcinogenic effects N=non-carcinogenic effects				
							Risk-Based Concentrations				
							Tap Water µg/L	Ambient Air µg/m ³	Fish mg/kg	Industrial mg/kg	Residential mg/kg
Chloromethane	74873			1 30E-02 ^H	6 30E-03 ^H	☑	1 4 c	0 99 c	0 24 c	440 c	49 c
4-Chloro-2-methylaniline hydrochloride	3165933			4 60E-01 ^H			0 15 c	0 014 c	0 0069 c	12 c	1 4 c
4-Chloro-2-methylaniline	95692			5 80E-01 ^H			0 12 c	0 011 c	0 0054 c	9 9 c	1 1 c
beta-Chloronaphthalene	91587	8 00E-02 ^I		2 50E-02 ^H		☑	2900 N	290 N	110 N	16000 N	6300 N
o-Chloronitrobenzene	88733			1 80E-02 ^H		☑	0 42 c	0 25 c	0 13 c	230 c	26 c
p-Chloronitrobenzene	100005						0 59 c	0 35 c	0 18 c	320 c	35 c
2-Chlorophenol	95578	5 00E-03 ^I					180 N	18 N	6 8 N	10000 N	390 N
2-Chloropropane	75296	1 50E-02 ^I	2 86E-02 ^H	1 10E-02 ^H		☑	170 N	100 N	0	0	0
Chloroethanol	1897456						6 1 c	0 57 c	0 29 c	520 c	58 c
o-Chlorotoluene	95498	2 00E-02 ^I				☑	120 N	73 N	27 N	41000 N	1600 N
Chloropropane	101213	2 00E-01 ^I					7300 N	730 N	270 N	410000 N	16000 N
Chlorpyrifos	2921882	3 00E-03 ^I					110 N	11 N	4 1 N	6100 N	230 N
Chlorpyrifos-methyl	5598130	1 00E-02 ^H					370 N	37 N	14 N	20000 N	780 N
Chlorosulfuron	64902723	5 00E-02 ^I					1800 N	180 N	68 N	100000 N	3900 N
Chlorthionophos	60238564	8 00E-04 ^H					29 N	2 9 N	1 1 N	1600 N	63 N
Chromium III and compounds	16065831	1 00E-00 ^I	5 71E-07 ^W				37000 N	0 0021 N	1400 N	1000000 N	78000 N
Chromium VI and compounds	18540299	5 00E-03 ^I			4 20E+01 ^I		180 N	0 00015 c	6 8 N	10000 N	390 N
Coal tar	8001589				2 20E+00 ^W		0	0 0028 c	0	0	0
Cobalt	7440484	6 00E-02 ^E					2200 N	220 N	81 N	120000 N	4700 N
Coke Oven Emissions	8007452				2 17E+00 ^I		0	0 0029 c	0	0	0
**Copper and compounds	7440508	4 00E-02 ^E					1500 N	150 N	54 N	82000 N	3100 N
Crotonaldehyde	123739	1 00E-02 ^W		1 90E+00 ^H	1 90E+00 ^W		0 035 c	0 0033 c	0 0017 c	3 c	0 34 c
**Cumene	98828	1 00E-01 ^I	1 14E-01 ^I				3700 N	420 N	140 N	200000 N	7800 N
Cyanides	0						0	0	0	0	0
Barium cyanide	542621	1 00E-01 ^W					3700 N	370 N	140 N	200000 N	7800 N
Calcium cyanide	592018	4 00E-02 ^I					1500 N	150 N	54 N	82000 N	3100 N
Chlorine cyanide	506774	5 00E-02 ^I					1800 N	180 N	68 N	100000 N	3900 N
Copper cyanide	544923	5 00E-03 ^I					180 N	18 N	6 8 N	10000 N	390 N
Cyanazine	21725462	2 00E-03 ^H		8 40E-01 ^H			0 08 c	0 0075 c	0 0038 c	6 8 c	0 76 c
Cyanogen	460195	4 00E-02 ^I					1500 N	150 N	54 N	82000 N	3100 N
Cyanogen bromide	506683	9 00E-02 ^I					3300 N	330 N	120 N	180000 N	7000 N
Cyanogen chloride	506774	5 00E-02 ^I					1800 N	180 N	68 N	100000 N	3900 N
Free cyanide	57125	2 00E-02 ^I					730 N	73 N	27 N	41000 N	1600 N
Hydrogen cyanide	74908	2 00E-02 ^I	8 57E-04 ^I				730 N	3 1 N	27 N	41000 N	1600 N
Potassium cyanide	151508	5 00E-02 ^I					1800 N	180 N	68 N	100000 N	3900 N
Potassium silver cyanide	506616	2 00E-01 ^I					7300 N	730 N	270 N	410000 N	16000 N
Silver cyanide	506649	1 00E-01 ^I					3700 N	370 N	140 N	200000 N	7800 N
Sodium cyanide	143339	4 00E-02 ^I					1500 N	150 N	54 N	82000 N	3100 N
**Thiocyanate	0	1 00E-01 ^E					3700 N	370 N	140 N	200000 N	7800 N
Zinc cyanide	557211	5 00E-02 ^I				☑	1800 N	180 N	68 N	100000 N	3900 N
Cyclohexanone	108941	5 00E+00 ^I					30000 N	18000 N	6800 N	1000000 N	390000 N

Sources										Basis									
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Contaminant	CAS	RfD _o mg/kg/d	RfD _i mg/kg/d	CPS _o kg-d/mg	CPS _i kg-d/mg	V	O	Risk-Based Concentrations											
								Tap Water µg/L	Ambient Air µg/m ³	Fish mg/kg	Soil Ingestion								
											Industrial mg/kg	Residential mg/kg							
Cyclohexanone	108918	2 00E-01						7300 N	730 N	270 N	410000 N	16000 N							
Cyhalothrin/Karate	68085858	5 00E-03						180 N	18 N	68 N	10000 N	390 N							
Cypermethrin	52315078	1 00E-02						370 N	37 N	14 N	20000 N	780 N							
Cyromazine	66215278	7 50E-03						270 N	27 N	10 N	15000 N	590 N							
Dacthal	1861321	1 00E-02						370 N	37 N	14 N	20000 N	780 N							
Dalapon	75990	3 00E-02						1100 N	110 N	41 N	61000 N	2300 N							
Danitol	39515418	2 50E-02						910 N	91 N	34 N	51000 N	2000 N							
DDD	72548			2 40E-01				0 28 C	0 026 C	0 013 C	24 C	27 C							
DDE	72559			3 40E-01				0 2 C	0 018 C	0 0093 C	17 C	19 C							
DDT	50293	5 00E-04		3 40E-01				0 2 C	0 018 C	0 0093 C	17 C	19 C							
Decabromodiphenyl ether	1163195	1 00E-02						61 N	37 N	14 N	20000 N	780 N							
Demeton	8065483	4 00E-05						15 N	0 15 N	0 054 N	82 N	31 N							
Diallate	2303164			6 10E-02				0 17 C	0 1 C	0 052 C	94 C	10 C							
Diazinon	333415	9 00E-04						33 N	33 N	12 N	1800 N	70 N							
Dibenzofuran	132649	4 00E-03						150 N	15 N	54 N	8200 N	310 N							
1,4-Dibromobenzene	106376	1 00E-02						61 N	37 N	14 N	20000 N	780 N							
1,2-Dibromo-3-chloropropane	96128		5 71E-05	1 40E+00	2 42E-03			0 048 C	0 21 N	0 0023 C	41 C	0 46 C							
1,2-Dibromoethane	106934		5 71E-05	8 50E+01	7 70E-01			0 00075 C	0 0081 C	0 000037 C	0 067 C	0 0075 C							
Diethyl phthalate	84742	1 00E-01						3700 N	370 N	140 N	200000 N	7800 N							
Dicamba	1918009	3 00E-02						1100 N	110 N	41 N	61000 N	2300 N							
**1,2-Dichlorobenzene	95501	9 00E-02	9 00E-03					64 N	33 N	120 N	180000 N	7000 N							
1,3-Dichlorobenzene	541731	8 90E-02						540 N	320 N	120 N	180000 N	7000 N							
1,4-Dichlorobenzene	106467		2 29E-01	2 40E-02				0 44 C	0 26 C	0 13 C	240 C	27 C							
3,3'-Dichlorobenzidine	91941			4 50E-01				0 15 C	0 014 C	0 007 C	13 C	1 4 C							
1,4-Dichloro-2-butene	764410				9 30E+00			0 0011 C	0 00067 C	0	0	0							
Dichlorodifluoromethane	75718	2 00E-01	5 71E-02					390 N	210 N	270 N	410000 N	16000 N							
1,1-Dichloroethane	75343	1 00E-01	1 43E-01					810 N	520 N	140 N	200000 N	7800 N							
1,2-Dichloroethane (EDC)	107062	3 00E-02	1 40E-03	9 10E-02	9 10E-02			0 12 C	0 069 C	0 035 C	63 C	7 C							
1,1-Dichloroethylene	75354	9 00E-03		6 00E-01	1 75E-01			0 044 C	0 036 C	0 0053 C	9 5 C	11 C							
1,2-Dichloroethylene (cis)	156592	1 00E-02						61 N	37 N	14 N	20000 N	780 N							
1,2-Dichloroethylene (trans)	156605	2 00E-02						120 N	73 N	27 N	41000 N	1600 N							
1,2-Dichloroethylene (mixture)	540590	9 00E-03						55 N	33 N	12 N	18000 N	700 N							
2,4-Dichlorophenol	120832	3 00E-03						110 N	11 N	41 N	6100 N	230 N							
2,4-Dichlorophenoxyacetic Acid (2,4-D)	94757	1 00E-02						61 N	37 N	14 N	20000 N	780 N							
4-(2,4-Dichlorophenoxy)butyric Acid	94826	8 00E-03						290 N	29 N	11 N	16000 N	630 N							
1,2-Dichloropropane	78875		1 14E-03	6 80E-02				0 16 C	0 092 C	0 046 C	84 C	9 4 C							
2,3-Dichloropropanol	616239	3 00E-03						110 N	11 N	41 N	6100 N	230 N							
1,3-Dichloropropene	542756	3 00E-04	5 71E-03	1 80E-01	1 30E-01			0 077 C	0 048 C	0 018 C	32 C	3 5 C							
Dichlorvos	62737	5 00E-04	1 43E-04	2 90E-01				0 23 C	0 022 C	0 011 C	20 C	2 2 C							
Dicofol	115322			4 40E-01				0 15 C	0 014 C	0 0072 C	13 C	1 5 C							
Dicyclopentadiene	77736	3 00E-02	5 71E-05					0 42 N	0 21 N	41 N	61000 N	2300 N							

EPA Region III Risk-Based Concentrations, October 22, 1997

Sources										Basis									
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Contaminant	CAS	RfDo mg/kg/d	RfDi mg/kg/d	CPSo kg-d/mg	CPSi kg-d/mg	V	O	C	Risk-Based Concentrations					Tap Water µg/L	Ambient Air µg/m3	Fish mg/kg	Soil Ingestion		
									Industrial mg/kg	Residential mg/kg									
Dieldrin	60571	5 00E-05	1 43E-03	1 60E+01	1 61E+01								0 0042 c	0 00039 c	0 0002 c	0 36 c	0 04 c		
Diesel emissions	0												52 N	52 N	0	0	0		
Diethyl phthalate	84662	8 00E-01											29000 N	2900 N	1100 N	100000 N	63000 N		
Diethylene glycol, monobutyl ether	112345		5 71E-03										210 N	21 N	0	0	0		
Diethylene glycol, monoethyl ether	111900	2 00E+00											73000 N	7300 N	2700 N	100000 N	160000 N		
Diethylformamide	617845	1 10E-02											400 N	40 N	15 N	22000 N	860 N		
Di(2-ethylhexyl)adipate	103231	6 00E-01											56 c	52 c	26 c	4800 c	530 c		
Diethylstilbestrol	56531												0 000014 c	1 3E-06 c	7E-07 c	0 0012 c	0 00014 c		
Difenoquat (Avenge)	43222486	8 00E-02											2900 N	290 N	110 N	160000 N	6300 N		
Diflubenzuron	35367385	2 00E-02											730 N	73 N	27 N	41000 N	1600 N		
1,1-Difluoroethane	75376		1 14E+01										69000 N	42000 N	0	0	0		
Dusopropyl methylphosphonate (DIMP)	1445756	8 00E-02											2900 N	290 N	110 N	160000 N	6300 N		
Dimethupin	55290647	2 00E-02											730 N	73 N	27 N	41000 N	1600 N		
Dimethoate	60515	2 00E-04											73 N	0 73 N	0 27 N	410 N	16 N		
3,3'-Dimethoxybenzidine	119904												48 c	0 45 c	0 23 c	410 c	46 c		
Dimethylamine	124403		5 71E-06										0 21 N	0 021 N	0	0	0		
2,4-Dimethylaniline hydrochloride	21436964												0 12 c	0 011 c	0 0054 c	9 9 c	1 1 c		
2,4-Dimethylaniline	95681												0 09 c	0 0083 c	0 0042 c	7 6 c	0 85 c		
N-N-Dimethylaniline	121697	2 00E-03											73 N	7 3 N	2 7 N	4100 N	160 N		
3,3'-Dimethylbenzidine	119937												0 0073 c	0 00068 c	0 00034 c	0 62 c	0 069 c		
N,N-Dimethylformamide	68122	1 00E-01	8 57E-03										3700 N	31 N	140 N	200000 N	7800 N		
1,1-Dimethylhydrazine	57147												0 026 c	0 0018 c	0 0012 c	2 2 c	0 25 c		
1,2-Dimethylhydrazine	540738												0 0018 c	0 00017 c	0 000085 c	0 15 c	0 017 c		
2,4-Dimethylphenol	105679	2 00E-02											730 N	73 N	27 N	41000 N	1600 N		
2,6-Dimethylphenol	576261	6 00E-04											22 N	22 N	0 81 N	1200 N	47 N		
3,4-Dimethylphenol	95658	1 00E-03											37 N	37 N	14 N	2000 N	78 N		
Dimethyl phthalate	131113	1 00E+01											370000 N	37000 N	14000 N	1000000 N	780000 N		
Dimethyl terephthalate	120616	1 00E-01											3700 N	370 N	140 N	200000 N	7800 N		
1,2-Dinitrobenzene	528290	4 00E-04											15 N	15 N	0 54 N	820 N	31 N		
1,3-Dinitrobenzene	99650	1 00E-04											37 N	0 37 N	0 14 N	200 N	78 N		
1,4-Dinitrobenzene	100254	4 00E-04											15 N	15 N	0 54 N	820 N	31 N		
4,6-Dinitro-o-cyclohexyl phenol	131895	2 00E-03											73 N	7 3 N	2 7 N	4100 N	160 N		
**4,6-Dinitro-2-methylphenol	534521	1 00E-04											37 N	0 37 N	0 14 N	200 N	78 N		
2,4-Dinitrophenol	51285	2 00E-03											73 N	7 3 N	2 7 N	4100 N	160 N		
Dinitrotoluene mixture	0												0 099 c	0 0092 c	0 00046 c	8 4 c	0 94 c		
2,4-Dinitrotoluene	121142	2 00E-03											73 N	7 3 N	2 7 N	4100 N	160 N		
2,6-Dinitrotoluene	606202	1 00E-03											37 N	37 N	14 N	2000 N	78 N		
Dinoseb	88857	1 00E-03											37 N	37 N	14 N	2000 N	78 N		
di-n-Octyl phthalate	117840	2 00E-02											730 N	73 N	27 N	41000 N	1600 N		
1,4-Dioxane	123911												61 c	0 57 c	0 29 c	520 c	58 c		
Diphenamid	957517	3 00E-02											1100 N	110 N	41 N	61000 N	2300 N		

Contaminant	CAS	RfD _h mg/kg/d	RfD _i mg/kg/d	CPS _h kg-d/mg	CPS _i kg-d/mg	Y	Basis C=carcinogenic effects N=non-carcinogenic effects				
							Risk-Based Concentrations				
							Tap Water µg/L	Ambient Air µg/m ³	Fish mg/kg	Industrial mg/kg	Residential mg/kg
Diphenylamine	122394	2 50E-02					910 N	91 N	34 N	51000 N	2000 N
1,2-Diphenylhydrazine	122667						0 084 C	0 0081 C	0 0039 C	7 2 C	0 8 C
Diquat	85007	2 20E-03					80 N	8 N	3 N	4500 N	170 N
Direct black 38	1937377						0 0078 C	0 00073 C	0 00037 C	0 67 C	0 074 C
Direct blue 6	2602462						0 0083 C	0 00077 C	0 00039 C	0 71 C	0 079 C
Direct brown 95	16071866						0 0072 C	0 00067 C	0 00034 C	0 62 C	0 069 C
Disulfoton	298044	4 00E-05					1 5 N	0 15 N	0 054 N	82 N	3 1 N
1,4-Dithiane	505293	1 00E-02					370 N	37 N	14 N	20000 N	780 N
Duron	330541	2 00E-03					73 N	7 3 N	2 7 N	4100 N	160 N
Dodone	2439103	4 00E-03					150 N	15 N	5 4 N	8200 N	310 N
Endosulfan	115297	6 00E-03					220 N	22 N	8 1 N	12000 N	470 N
Endothall	145733	2 00E-02					730 N	73 N	27 N	41000 N	1600 N
Endrin	72208	3 00E-04					11 N	1 1 N	0 41 N	610 N	23 N
Epichlorohydrin	106898	2 00E-03	2 86E-04	9 90E-03	4 20E-03		6 8 C	1 N	0 32 C	580 C	65 C
1,2-Epoxybutane	106887		5 71E-03				210 N	21 N	0	0	0
Ethephon (2-chloroethyl phosphonic acid)	16672870	5 00E-03					180 N	18 N	6 8 N	10000 N	390 N
Ethion	563122	5 00E-04					18 N	1 8 N	0 68 N	1000 N	39 N
2-Ethoxyethanol acetate	111159	3 00E-01					11000 N	1100 N	410 N	61000 N	23000 N
2-Ethoxyethanol	110805	4 00E-01	5 71E-02				15000 N	210 N	540 N	82000 N	31000 N
Ethyl acrylate	140885			4 80E-02			1 4 C	0 13 C	0 066 C	120 C	13 C
EPTC (S-Ethyl dipropylthiocarbamate)	759944	2 50E-02					910 N	91 N	34 N	51000 N	2000 N
Ethyl acetate	141786	9 00E-01					33000 N	3300 N	1200 N	100000 N	70000 N
Ethylbenzene	100414	1 00E-01	2 86E-01				1300 N	100 N	140 N	20000 N	7800 N
Ethylene cyanohydrin	109784	3 00E-01					11000 N	1100 N	410 N	61000 N	23000 N
Ethylene diamine	107153	2 00E-02					730 N	73 N	27 N	41000 N	1600 N
Ethylene glycol	107211	2 00E+00					73000 N	7300 N	2700 N	100000 N	160000 N
Ethylene glycol, monobutyl ether	111762		5 71E-03				210 N	21 N	0	0	0
Ethylene oxide	75218			1 02E+00	3 50E-01		0 066 C	0 018 C	0 0031 C	5 6 C	0 63 C
Ethylene thiourea (ETU)	96457	8 00E-05		1 19E-01			0 57 C	0 053 C	0 027 C	48 C	5 4 C
Ethyl ether	60297	2 00E-01					1200 N	730 N	270 N	41000 N	16000 N
Ethyl methacrylate	97632	9 00E-02					3300 N	330 N	120 N	18000 N	7000 N
Ethyl p-nitrophenyl phenylphosphorothioate	2104645	1 00E-05					0 37 N	0 037 N	0 014 N	20 N	0 78 N
Ethylphthalyl ethyl glycolate	84720	3 00E+00					110000 N	11000 N	4100 N	100000 N	230000 N
Express	10120	8 00E-03					290 N	29 N	11 N	16000 N	630 N
Fenamphos	22224926	2 50E-04					9 1 N	0 91 N	0 34 N	510 N	20 N
Fluometuron	2164172	1 30E-02					470 N	47 N	18 N	27000 N	1000 N
Fluoride	7782414	6 00E-02					2200 N	220 N	81 N	120000 N	4700 N
Fluoridone	59756604	8 00E-02					2900 N	290 N	110 N	160000 N	6300 N
Flurprimidol	56425913	2 00E-02					730 N	73 N	27 N	41000 N	1600 N
Flutolanil	66332965	6 00E-02					2200 N	220 N	81 N	120000 N	4700 N
Fluvalinate	69409945	1 00E-02					370 N	37 N	14 N	20000 N	780 N

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E=EPA-NCEA Regional Support provisional value O=Other EPA documents										N=non-carcinogenic effects									
Contaminant	CAS	RfD ₀ mg/kg/d	RfD ₁ mg/kg/d	CPS ₀ kg-d/mg	CPS ₁ kg-d/mg	Y	Risk-Based Concentrations					mg/kg							
							Tap Water µg/L	Ambient Air µg/m ³	Fish mg/kg	Soil Ingestion									
										Industrial mg/kg	Residential mg/kg								
Folpet	133073	1 00E-01		3 50E-03			19 c	18 c	0.9 c	1600 c	180 c								
Fomesafen	72178020			1 90E-01			0.35 c	0.033 c	0.017 c	30 c	34 c								
Fonofos	944229	2 00E-03					73 N	7.3 N	27 N	4100 N	160 N								
Formaldehyde	50000	2 00E-01			4 55E-02		7300 N	0.14 c	270 N	410000 N	16000 N								
Formic Acid	64186	2 00E+00	H				73000 N	7300 N	2700 N	1000000 N	160000 N								
Fosetyl-al	39148248	3 00E+00	I				110000 N	11000 N	4100 N	1000000 N	230000 N								
Furan	110009	1 00E-03	I				37 N	3.7 N	1.4 N	2000 N	78 N								
Furazolidone	67458			3 80E+00	H		0.018 c	0.0016 c	0.00083 c	15 c	0.17 c								
Furfural	98011	3 00E-03	I	1 43E-02	A		110 N	52 N	4.1 N	6100 N	230 N								
Furium	531828			5 00E+01	H		0.0013 c	0.00013 c	0.000063 c	0.11 c	0.013 c								
Furmecycloz	60568050			3 00E-02	I		2.2 c	0.21 c	0.11 c	190 c	21 c								
Glufosinate-ammonium	77182822	4 00E-04	I				15 N	1.5 N	0.54 N	820 N	31 N								
Glycidaldehyde	765344	4 00E-04	I	2 86E-04	H		15 N	1 N	0.54 N	820 N	31 N								
Glyphosate	1071836	1 00E-01	I				3700 N	370 N	140 N	200000 N	7800 N								
Haloxifop-methyl	69806402	5 00E-05	I				18 N	0.18 N	0.068 N	100 N	3.9 N								
Harmony	79277273	1 30E-02	I				470 N	47 N	18 N	27000 N	1000 N								
HCH (alpha)	319846			6 30E+00	I		0.011 c	0.00099 c	0.0005 c	0.91 c	0.1 c								
HCH (beta)	319857			1 80E+00	I		0.037 c	0.0035 c	0.0018 c	3.2 c	0.35 c								
HCH (gamma) Lindane	58899	3 00E-04	I	1 30E+00	H		0.052 c	0.0048 c	0.0024 c	4.4 c	0.49 c								
HCH-technical	608731			1 80E+00	I		0.037 c	0.0035 c	0.0018 c	3.2 c	0.35 c								
Heptachlor	76448	5 00E-04	I	4 50E+00	I	☒	0.0023 c	0.0014 c	0.0007 c	1.3 c	0.14 c								
Heptachlor epoxide	1024573	1 30E-05	I	9 10E+00	I	☒	0.0012 c	0.00069 c	0.00035 c	0.63 c	0.07 c								
Hexabromobenzene	87821	2 00E-03	I			☒	12 N	7.3 N	27 N	4100 N	160 N								
Hexachlorobenzene	118741	8 00E-04	I	1 60E+00	I	☒	0.0066 c	0.0039 c	0.002 c	3.6 c	0.4 c								
Hexachlorobutadiene	87683	2 00E-04	H	7 80E-02	I	☒	0.14 c	0.081 c	0.04 c	73 c	8.2 c								
Hexachlorocyclopentadiene	77474	7 00E-03	I	2 00E-05	H	☒	0.15 N	0.073 N	9.5 N	14000 N	550 N								
Hexachlorodibenzo-p-dioxin mixture	19408743			6 20E+03	I	☒	0.000011 c	1 4E-06 c	5E-07 c	0.00092 c	0.0001 c								
Hexachloroethane	67721	1 00E-03	I	1 40E-02	I	☒	0.75 c	0.45 c	0.23 c	410 c	46 c								
Hexachlorophene	70304	3 00E-04	I				11 N	1.1 N	0.41 N	610 N	23 N								
Hexahydro-1,3,5-trinitro-1,3,5-triazine	121824	3 00E-03	I	1 10E-01	I		0.61 c	0.057 c	0.029 c	52 c	5.8 c								
1,6-Hexamethylene diisocyanate	822060			2 86E-06	I		0.1 N	0.01 N	0	0	0								
n-Hexane	110543	6 00E-02	H	5 71E-02	I	☒	350 N	210 N	81 N	120000 N	4700 N								
**2-Hexanone	73663715	4 00E-02					1500 N	150 N	54 N	82000 N	3100 N								
Hexazinone	51235042	3 30E-02	I				1200 N	120 N	45 N	67000 N	2600 N								
Hydrazine, hydrazine sulfate	302012			3 00E+00	I		0.022 c	0.00037 c	0.0011 c	1.9 c	0.21 c								
Hydrogen chloride	7647010			5 71E-03	I		210 N	21 N	0	0	0								
Hydrogen sulfide	7783064	3 00E-03	I	2 85E-04	I		110 N	1 N	4.1 N	6100 N	230 N								
Hydroquinone	123319	4 00E-02	H				1500 N	150 N	54 N	82000 N	3100 N								
Imazalil	35554440	1 30E-02	I				470 N	47 N	18 N	27000 N	1000 N								
Imazaquin	81335377	2 50E-01	I				9100 N	910 N	340 N	510000 N	20000 N								
Iprodione	36734197	4 00E-02	I				1500 N	150 N	54 N	82000 N	3100 N								

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Contaminant	CAS	RfD _o mg/kg/d	RfD _i mg/kg/d	CPS _o kg/d/mg	CPS _i kg/d/mg	V	O	C	Tap Water µg/L	Ambient Air µg/m ³	Fish mg/kg	Industrial mg/kg	Residential mg/kg
Iron	7439896	3 00E-01 E							11000 N	1100 N	410 N	610000 N	23000 N
Isobutanol	78831	3 00E-01 I							1800 N	1100 N	410 N	610000 N	23000 N
Isophorone	78591	2 00E-01 I							71 C	66 C	33 C	6000 C	670 C
Isopropalnl	33820530	1 50E-02 I							550 N	55 N	20 N	31000 N	1200 N
Isopropyl methyl phosphonic acid	1832548	1 00E-01 I							3700 N	370 N	140 N	200000 N	7800 N
Isoxaben	82558507	5 00E-02 I							1800 N	180 N	68 N	100000 N	3900 N
Kepone	143500								0 0037 C	0 00035 C	0 00018 C	0 32 C	0 035 C
Lactofen	77501634	2 00E-03 I							73 N	73 N	27 N	4100 N	160 N
Linuron	330552	2 00E-03 I							73 N	73 N	27 N	4100 N	160 N
Lithium	7439932	2 00E-02 E							730 N	73 N	27 N	41000 N	1600 N
Londax	83056996	2 00E-01 I							7300 N	730 N	270 N	410000 N	16000 N
Malathion	121755	2 00E-02 I							730 N	73 N	27 N	41000 N	1600 N
Maleic anhydride	108316	1 00E-01 I							3700 N	370 N	140 N	200000 N	7800 N
Maleic hydrazide	123331	5 00E-01 I							18000 N	1800 N	680 N	1000000 N	39000 N
Malononitrile	109773	2 00E-05 H							0 73 N	0 073 N	0 027 N	41 N	16 N
Mancozeb	8018017	3 00E-02 H							1100 N	110 N	41 N	61000 N	2300 N
Maneb	12427382	5 00E-03 I							180 N	18 N	68 N	10000 N	390 N
Manganese and compounds	7439965	2 30E-02 I	1 43E-05 I						840 N	0 052 N	31 N	47000 N	1800 N
Mephosfolan	950107	9 00E-05 H							33 N	0 33 N	0 12 N	180 N	7 N
Mepiquat chloride	24307264	3 00E-02 I							1100 N	110 N	41 N	61000 N	2300 N
Mercuric chloride	7487947	3 00E-04 I							11 N	11 N	0 41 N	610 N	23 N
Mercury (inorganic)	7439976	3 00E-04 W	8 57E-05 I						11 N	0 31 N	0 41 N	610 N	23 N
Mercury (methyl)	22967926	1 00E-04 I							37 N	0 37 N	0 14 N	200 N	78 N
Merphos	150505	3 00E-05 I							11 N	0 11 N	0 041 N	61 N	23 N
Merphos oxide	78488	3 00E-05 I							11 N	0 11 N	0 041 N	61 N	23 N
Metalaxyl	57837191	6 00E-02 I							2200 N	220 N	81 N	120000 N	4700 N
Methacrylonitrile	126987	1 00E-04 I	2 00E-04 A						37 N	0 73 N	0 14 N	200 N	78 N
Methamidophos	10265926	5 00E-05 I							18 N	0 18 N	0 068 N	100 N	39 N
Methanol	67561	5 00E-01 I							18000 N	1800 N	680 N	1000000 N	39000 N
Methidathion	950378	1 00E-03 I							37 N	37 N	14 N	2000 N	78 N
Methomyl	16752775	2 50E-02 I							910 N	91 N	34 N	51000 N	2000 N
Methoxychlor	72435	5 00E-03 I							180 N	18 N	68 N	10000 N	390 N
2-Methoxyethanol acetate	110496	2 00E-03 A							73 N	73 N	27 N	4100 N	160 N
2-Methoxyethanol	109864	1 00E-03 A	5 71E-03 I						37 N	21 N	14 N	2000 N	78 N
2-Methoxy-5-nitroaniline	99592			4 60E-02 H					15 C	0 14 C	0 069 C	120 C	14 C
Methyl acetate	79209	1 00E+00 H							37000 N	3700 N	1400 N	1000000 N	78000 N
Methyl acrylate	96333	3 00E-02 A							1100 N	110 N	41 N	61000 N	2300 N
2-Methylamine hydrochloride	636215			1 80E-01 H					0 37 C	0 035 C	0 018 C	32 C	35 C
2-Methylamine	95534			2 40E-01 H					0 28 C	0 026 C	0 013 C	24 C	27 C
Methyl chlorocarbonate	79221	1 00E+00 W							37000 N	3700 N	1400 N	1000000 N	78000 N
4-(2-Methyl-4-chlorophenoxy) butyric acid	94815	1 00E-02 I							370 N	37 N	14 N	2000 N	780 N

Contaminant	CAS	RfD _o mg/kg/d	RfD _i mg/kg/d	CPS _o kg-d/mg	CPS _i kg-d/mg	Y	Basis C=carcinogenic effects N=non-carcinogenic effects				
							Risk-Based Concentrations				
							Tap Water µg/L	Ambient Air µg/m ³	Fish mg/kg	Industrial mg/kg	Residential mg/kg
2-Methyl-4-chlorophenoxyacetic acid	94746	5 00E-04					18 N	1.8 N	0.68 N	1000 N	39 N
2-(2-Methyl-14-chlorophenoxy)propionic acid	93652	1 00E-03					37 N	3.7 N	1.4 N	2000 N	78 N
Methylcyclohexane	108872		8 57E-01				31000 N	3100 N	0	0	0
Methylene bromide	74953	1 00E-02					61 N	37 N	14 N	20000 N	780 N
Methylene chloride	75092	6 00E-02	8 57E-01	7 50E-03	1 64E-03		41 C	3.8 C	0.42 C	760 C	85 C
4,4'-Methylene bis(2-chloroaniline)	101144	7 00E-04		1 30E-01	1 30E-01		0.52 C	0.048 C	0.024 C	44 C	49 C
4,4'-Methylenebisbenzeneamine	101779			2 50E-01			0.27 C	0.025 C	0.013 C	23 C	26 C
4,4'-Methylene bis(N,N'-dimethyl)aniline	101611			4 60E-02			1.5 C	0.14 C	0.069 C	120 C	14 C
4,4'-Methylenediphenyl isocyanate	101688		5 71E-06				0.035 N	0.021 N	0	0	0
Methyl ethyl ketone	78933	6 00E-01	2 86E-01				1900 N	1000 N	810 N	100000 N	47000 N
Methyl hydrazine	60344			1 10E+00			0.061 C	0.0057 C	0.0029 C	5.2 C	0.58 C
Methyl isobutyl ketone	108101	8 00E-02	2 29E-02				2900 N	84 N	110 N	160000 N	6300 N
Methyl methacrylate	80626	8 00E-02		3 30E-02			2900 N	290 N	110 N	160000 N	6300 N
2-Methyl-5-nitroaniline	99558						2 C	0.19 C	0.096 C	170 C	19 C
Methyl parathion	298000	2 50E-04					91 N	0.91 N	0.34 N	510 N	20 N
2-Methylphenol (o-cresol)	95487	5 00E-02					1800 N	180 N	68 N	100000 N	3900 N
3-Methylphenol (m-cresol)	103394	5 00E-02					1800 N	180 N	68 N	100000 N	3900 N
4-Methylphenol (p-cresol)	106445	5 00E-03					180 N	18 N	6.8 N	10000 N	390 N
Methyl styrene (mixture)	25013154	6 00E-03	1.14E-02				60 N	42 N	8.1 N	12000 N	470 N
Methyl styrene (alpha)	98839	7 00E-02					430 N	260 N	95 N	140000 N	5500 N
Methyl tertbutyl ether (MTBE)	1634044	5 00E-03	8 57E-01				180 N	3100 N	6.8 N	10000 N	390 N
Metolacolor (Dual)	51218452	1 50E-01					5500 N	550 N	200 N	310000 N	12000 N
Metribuzin	21087649	2 50E-02					910 N	91 N	34 N	51000 N	2000 N
Mirex	2385855	2 00E-04		1 80E+00			0.037 C	0.0035 C	0.0018 C	3.2 C	0.35 C
Molinate	2212671	2 00E-03					73 N	7.3 N	2.7 N	4100 N	160 N
Molybdenum	7439987	5 00E-03					180 N	18 N	6.8 N	10000 N	390 N
Monochloramine	10599903	1 00E-01					3700 N	370 N	140 N	200000 N	7800 N
Naled	300765	2 00E-03					73 N	7.3 N	2.7 N	4100 N	160 N
2-Naphthylamine	91598			1 30E+02			0.00052 C	0.000048 C	0.000024 C	0.044 C	0.0049 C
Napropamide	15299997	1 00E-01					3700 N	370 N	140 N	200000 N	7800 N
Nickel refinery dust	0				8 40E-01		0	0.0075 C	0	0	0
Nickel and compounds	7440020	2 00E-02			1 70E+00		730 N	73 N	27 N	41000 N	1600 N
Nickel subsulfide	12035722						0	0.0037 C	0	0	0
Nitrapym	1929824	1 50E-03					55 N	5.5 N	2 N	3100 N	120 N
Nitrate	14797558	1 60E+00					58000 N	5800 N	2200 N	1000000 N	130000 N
Nitric oxide	10102439	1 00E-01					3700 N	370 N	140 N	200000 N	7800 N
Nitrite	14797650	1 00E-01					3700 N	370 N	140 N	200000 N	7800 N
2-Nitroaniline	88744	6 00E-05	5 71E-05				2.2 N	0.21 N	0.081 N	120 N	4.7 N
3-Nitroaniline	99092	3 00E-03					110 N	11 N	4.1 N	6100 N	230 N
4-Nitroaniline	100016	3 00E-03					110 N	11 N	4.1 N	6100 N	230 N
Nitrobenzene	98953	5 00E-04	5 71E-04				3.4 N	2.1 N	0.68 N	1000 N	39 N

Sources I=IRIS H=HEAST A=HEAST alternate W=Withdrawn from IRIS or HEAST E=EPA-NCEA Regional Support provisional value O=Other EPA documents													Basis		C=carcinogenic effects		N=non-carcinogenic effects	
Contaminant	CAS	RfD ₀ mg/kg/d	RfD ₁ mg/kg/d	CPS ₀ kg-d/mg	CPS ₁ kg-d/mg	Y	O	Risk-Based Concentrations										
								Tap Water µg/L	Ambient Air µg/m ³	Fish mg/kg	Soil Ingestion							
											Industrial mg/kg	Residential mg/kg						
Nitrofurantoin	67209	7 00E-02 ^H						2600 ^N	260 ^N	95 ^N	140000 ^N	5500 ^N						
Nitrofurazone	59870			1 50E+00 ^H				0.045 ^C	0 00067 ^C	0 0021 ^C	38 ^C	0 43 ^C						
Nitrogen dioxide	10102440	1 00E+00 ^W						37000 ^N	3700 ^N	1400 ^N	1000000 ^N	78000 ^N						
Nitroguanidine	556887	1 00E-01 ^I						3700 ^N	370 ^N	140 ^N	200000 ^N	7800 ^N						
**4-Nitrophenol	100027	8 00E-03 ^E						290 ^N	29 ^N	11 ^N	16000 ^N	630 ^N						
2-Nitropropane	79469							210 ^N	0 00067 ^C	0	0	0						
N-Nitrosodi-n-butylamine	924163		5 71E-03 ^I					0 012 ^C	0 0011 ^C	0 00058 ^C	1 1 ^C	0 12 ^C						
N-Nitrosodiethanolamine	1116547							0 024 ^C	0 0022 ^C	0 0011 ^C	2 ^C	0 23 ^C						
N-Nitrosodiethylamine	55185							0 00045 ^C	0 000041 ^C	0 000021 ^C	0 038 ^C	0 0043 ^C						
N-Nitrosodimethylamine	62759							0 0013 ^C	0 00013 ^C	0 000062 ^C	0 11 ^C	0 013 ^C						
N-Nitrosodiphenylamine	86306							14 ^C	1 3 ^C	0 64 ^C	1200 ^C	130 ^C						
N-Nitroso di-n-propylamine	621647							0 0096 ^C	0 00089 ^C	0 00045 ^C	0 82 ^C	0 091 ^C						
N-Nitroso-N-ethylurea	759739							0 00048 ^C	0 000045 ^C	0 000023 ^C	0 041 ^C	0 0046 ^C						
N-Nitroso-N-methylethylamine	10595956							0 0031 ^C	0 00028 ^C	0 00014 ^C	0 26 ^C	0 029 ^C						
N-Nitrosopyrrolidine	930552							0 032 ^C	0 0029 ^C	0 0015 ^C	2 7 ^C	0 3 ^C						
m-Nitrotoluene	99081	2 00E-02 ^H				☒		120 ^N	73 ^N	27 ^N	4100 ^N	1600 ^N						
o-Nitrotoluene	88722	1 00E-02 ^H				☒		61 ^N	37 ^N	14 ^N	20000 ^N	780 ^N						
p-Nitrotoluene	99990	1 00E-02 ^H				☒		61 ^N	37 ^N	14 ^N	20000 ^N	780 ^N						
Norflurazon	27314132	4 00E-02 ^I						1500 ^N	150 ^N	54 ^N	82000 ^N	3100 ^N						
NuStar	85509199	7 00E-04 ^I						26 ^N	2 6 ^N	0 95 ^N	1400 ^N	55 ^N						
Octabromodiphenyl ether	32536520	3 00E-03 ^I						110 ^N	11 ^N	4 1 ^N	6100 ^N	230 ^N						
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocin	2691410	5 00E-02 ^I						1800 ^N	180 ^N	68 ^N	100000 ^N	3900 ^N						
Octamethylpyrophosphoramide	152169	2 00E-03 ^H						73 ^N	7 3 ^N	2 7 ^N	4100 ^N	160 ^N						
Oryzalin	19044883	5 00E-02 ^I						1800 ^N	180 ^N	68 ^N	100000 ^N	3900 ^N						
Oxadiazon	19666309	5 00E-03 ^I						180 ^N	18 ^N	6 8 ^N	10000 ^N	390 ^N						
Oxamyl	23135220	2 50E-02 ^I						910 ^N	91 ^N	34 ^N	51000 ^N	2000 ^N						
Oxyfluorfen	42874033	3 00E-03 ^I						110 ^N	11 ^N	4 1 ^N	6100 ^N	230 ^N						
Paclobutrazol	76738620	1 30E-02 ^I						470 ^N	47 ^N	18 ^N	27000 ^N	1000 ^N						
Paraquat	1910425	4 50E-03 ^I						160 ^N	16 ^N	6 1 ^N	9200 ^N	350 ^N						
Parathion	56382	6 00E-03 ^H						220 ^N	22 ^N	8 1 ^N	12000 ^N	470 ^N						
Pebulate	1114712	5 00E-02 ^H						1800 ^N	180 ^N	68 ^N	100000 ^N	3900 ^N						
Pendimethalin	40487421	4 00E-02 ^I						1500 ^N	150 ^N	54 ^N	82000 ^N	3100 ^N						
Pentabromo-6-chlorocyclohexane	87843			2 30E-02 ^H				2 9 ^C	0 27 ^C	0 14 ^C	250 ^C	28 ^C						
Pentabromodiphenyl ether	32534819	2 00E-03 ^I						73 ^N	7 3 ^N	2 7 ^N	4100 ^N	160 ^N						
Pentachlorobenzene	608935	8 00E-04 ^I				☒		4 9 ^N	2 9 ^N	1 1 ^N	1600 ^N	63 ^N						
Pentachloronitrobenzene	82688	3 00E-03 ^I				☒		0 041 ^C	0 024 ^C	0 012 ^C	22 ^C	2 5 ^C						
Pentachlorophenol	87865	3 00E-02 ^I						0 56 ^C	0 052 ^C	0 026 ^C	48 ^C	5 3 ^C						
Permethrin	52645531	5 00E-02 ^I						1800 ^N	180 ^N	68 ^N	100000 ^N	3900 ^N						
Phenmedipham	13684634	2 50E-01 ^I						9100 ^N	910 ^N	340 ^N	510000 ^N	20000 ^N						
Phenol	108952	6 00E-01 ^I						22000 ^N	2200 ^N	810 ^N	1000000 ^N	47000 ^N						
m-Phenylenediamine	108452	6 00E-03 ^I						220 ^N	22 ^N	8 1 ^N	12000 ^N	470 ^N						

Contaminant	CAS	RfD ₀ mg/kg/d	RfD ₁ mg/kg/d	CPS ₀ kg/d/mg	CPS ₁ kg/d/mg	V	O	Basis				Risk-Based Concentrations			
								C-carcinogenic effects		N=non-carcinogenic effects		Tap Water		Ambient Air	
								μg/L	μg/m ³	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
**o-Phenylenediamine	95545	6 00E-03	E	4 70E-02	H			14 C	0 13 C	0 067 C	120 C	14 C			
p-Phenylenediamine	106503	1 90E-01	H					6900 N	690 N	260 N	390000 N	15000 N			
Phenylmercuric acetate	62384	8 00E-05	I	1 94E-03	H			29 N	0 29 N	0 11 N	160 N	63 N			
2-Phenylphenol	90437							35 C	3 2 C	1 6 C	3000 C	330 C			
Phorate	298022	2 00E-04	H					73 N	0 73 N	0 27 N	410 N	16 N			
Phosmet	732116	2 00E-02	I					730 N	73 N	27 N	41000 N	1600 N			
Phosphine	7803512	3 00E-04	I					11 N	0 31 N	0 41 N	610 N	23 N			
Phosphoric acid	7664382							100 N	10 N	0	0	0			
Phosphorus (white)	7723140	2 00E-05	I					0 73 N	0 073 N	0 027 N	41 N	16 N			
p-Phthalic acid	100210	1 00E+00	H					37000 N	3700 N	1400 N	1000000 N	78000 N			
Phthalic anhydride	85449	2 00E+00	I	3 43E-02	H			73000 N	130 N	2700 N	1000000 N	160000 N			
Picloram	1918021	7 00E-02	I					2600 N	260 N	95 N	140000 N	5500 N			
Pyrimphos-methyl	29232937	1 00E-02	I					370 N	37 N	14 N	20000 N	780 N			
Polybrominated biphenyls	0	7 00E-06	H	8 90E+00	H			0 0076 C	0 0007 C	0 00035 C	0 64 C	0 072 C			
**Polychlorinated biphenyls (PCBs)	1336363			2 00E+00	I			0 034 C	0 016 C	0 0016 C	2 9 C	0 32 C			
Aroclor 1016	12674112	7 00E-05	I					2 6 N	0 26 N	0 095 N	140 N	5 5 N			
Aroclor 1254	11097691	2 00E-05	I					0 73 N	0 073 N	0 027 N	41 N	1 6 N			
Polychlorinated terphenyls (PCTs)				4 50E+00	E			0 015 C	0 0014 C	0 0007 C	1 3 C	0 14 C			
Polynuclear aromatic hydrocarbons															
Acenaphthene	83329	6 00E-02	I					2200 N	220 N	81 N	120000 N	4700 N			
Anthracene	120127	3 00E-01	I					11000 N	1100 N	410 N	610000 N	23000 N			
**Benz[a]anthracene	56553			7 30E-01	E			0 092 C	0 02 C	0 0043 C	7 8 C	0 88 C			
**Benzo[b]fluoranthene	205992			7 30E-01	E			0 092 C	0 02 C	0 0043 C	7 8 C	0 88 C			
**Benzo[k]fluoranthene	207089			7 30E-02	E			0 92 C	0 2 C	0 043 C	7 8 C	8 8 C			
**Benzo[a]pyrene	50328			7 30E+00	I			0 0092 C	0 002 C	0 00043 C	0 78 C	0 088 C			
Carbazole	86748			2 00E-02	H			3 4 C	0 31 C	0 16 C	290 C	32 C			
**Chrysene	218019			7 30E-03	E			9 2 C	2 C	0 43 C	780 C	88 C			
**Dibenz[ah]anthracene	53703			7 30E+00	E			0 0092 C	0 002 C	0 00043 C	0 78 C	0 088 C			
Fluoranthene	206440	4 00E-02	I					1500 N	150 N	54 N	82000 N	3100 N			
Fluorene	86737	4 00E-02	I					1500 N	150 N	54 N	82000 N	3100 N			
**Indeno[1,2,3-cd]pyrene	193395			7 30E-01	E			0 092 C	0 02 C	0 0043 C	7 8 C	0 88 C			
**2-Methylnaphthalene	91576	4 00E-02	E					1500 N	150 N	54 N	82000 N	3100 N			
Naphthalene	91203	4 00E-02	W					1500 N	150 N	54 N	82000 N	3100 N			
Pyrene	129000	3 00E-02	I					1100 N	110 N	41 N	61000 N	2300 N			
Prochloraz	67747095	9 00E-03	I	1 50E-01	I			0 45 C	0 042 C	0 021 C	38 C	4 3 C			
Profluralin	26399360	6 00E-03	H					220 N	22 N	8 1 N	12000 N	470 N			
Prometon	1610180	1 50E-02	I					550 N	55 N	20 N	31000 N	1200 N			
Prometryn	7287196	4 00E-03	I					150 N	15 N	5 4 N	8200 N	310 N			
Pronamide	23950585	7 50E-02	I					2700 N	270 N	100 N	150000 N	5900 N			
Propachlor	1918167	1 30E-02	I					470 N	47 N	18 N	27000 N	1000 N			
Propanil	709988	5 00E-03	I					180 N	18 N	6 8 N	10000 N	390 N			

Sources										Basis									
I=IRIS H=HEAST A=HEAST alternate W=Withdrawn from IRIS or HEAST										C=carcinogenic effects									
E=EPA-NCEA Regional Support provisional value O=Other EPA documents										N=non-carcinogenic effects									
Contaminant	CAS	RfD ₀ mg/kg/d	RfD ₁ mg/kg/d	CPS ₀ kg-d/mg	CPS ₁ kg-d/mg	V	O	C	Risk-Based Concentrations										
									Tap Water µg/L	Ambient Air µg/m ³	Fish mg/kg	Soil Ingestion							
												Industrial mg/kg	Residential mg/kg						
Propargite	2312358	2 00E-02							730 N	73 N	27 N	41000 N	1600 N						
Propargyl alcohol	107197	2 00E-03							73 N	73 N	27 N	4100 N	160 N						
Propazine	139402	2 00E-02							730 N	73 N	27 N	41000 N	1600 N						
Propiam	122429	2 00E-02							730 N	73 N	27 N	41000 N	1600 N						
Propiconazole	60207901	1 30E-02							470 N	47 N	18 N	27000 N	1000 N						
**n-Propylbenzene	98066	1 00E-02	E					☑	61 N	37 N	14 N	20000 N	780 N						
Propylene glycol	57556	2 00E+01	H						730000 N	73000 N	27000 N	1000000 N	1000000 N						
Propylene glycol, monoethyl ether	52125538	7 00E-01	H						26000 N	2600 N	950 N	1000000 N	55000 N						
Propylene glycol, monomethyl ether	107982	7 00E-01	H	5 71E-01					26000 N	2100 N	950 N	1000000 N	55000 N						
Propylene oxide	75569			8 57E-03	2 40E-01	1 29E-02			0 28 C	0 49 C	0 013 C	24 C	2 7 C						
Pursuit	81335775	2 50E-01							9100 N	910 N	340 N	510000 N	20000 N						
Pydrin	51630581	2 50E-02							910 N	91 N	34 N	51000 N	2000 N						
Pyndne	110861	1 00E-03							37 N	37 N	14 N	2000 N	78 N						
Quinalphos	13593038	5 00E-04							18 N	18 N	0 68 N	1000 N	39 N						
Quinoline	91225			1 20E+01					0 0056 C	0 00052 C	0 00026 C	0 48 C	0 053 C						
Resmethrin	10463868	3 00E-02							1100 N	110 N	41 N	61000 N	2300 N						
Ronnel	299843	5 00E-02	H						1800 N	180 N	68 N	100000 N	3900 N						
Rotenone	83794	4 00E-03							150 N	15 N	5 4 N	8200 N	310 N						
Savey	78587050	2 50E-02							910 N	91 N	34 N	51000 N	2000 N						
Selenious Acid	7783008	5 00E-03							180 N	18 N	6 8 N	10000 N	390 N						
Selenium	7782492	5 00E-03							180 N	18 N	6 8 N	10000 N	390 N						
Selenourea	630104	5 00E-03	H						180 N	18 N	6 8 N	10000 N	390 N						
Sethoxydim	74051802	9 00E-02							3300 N	330 N	120 N	180000 N	7000 N						
Silver and compounds	7440224	5 00E-03							180 N	18 N	6 8 N	10000 N	390 N						
Simazine	122349	5 00E-03		1 20E-01					0 56 C	0 052 C	0 026 C	48 C	5 3 C						
Sodium azide	26628228	4 00E-03							150 N	15 N	5 4 N	8200 N	310 N						
Sodium diethyldithiocarbamate	148185	3 00E-02		2 70E-01					0 25 C	0 023 C	0 012 C	21 C	2 4 C						
Sodium fluoroacetate	62748	2 00E-05							0 73 N	0 073 N	0 027 N	41 N	1 6 N						
Sodium metavanadate	13718268	1 00E-03	H						37 N	37 N	1 4 N	2000 N	78 N						
Strontium, stable	7440246	6 00E-01							22000 N	2200 N	810 N	1000000 N	47000 N						
Strychnine	57249	3 00E-04							11 N	11 N	0 41 N	610 N	23 N						
Styrene	100425	2 00E-01		2 86E-01		☑			1600 N	1000 N	270 N	410000 N	16000 N						
Systhane	88671890	2 50E-02							910 N	91 N	34 N	51000 N	2000 N						
**2,3,7,8-TCDD (dioxin)	1746016			1 50E+05	1 50E+05				0 00000045 C	4 2E-08 C	0 C	0 000038 C	0 0000043 C						
Tebuthuon	34014181	7 00E-02							2600 N	260 N	95 N	140000 N	5500 N						
Temephos	3383968	2 00E-02	H						730 N	73 N	27 N	41000 N	1600 N						
Terbacil	5902512	1 30E-02							470 N	47 N	18 N	27000 N	1000 N						
Terbufos	13071799	2 50E-05	H						0 91 N	0 091 N	0 034 N	51 N	2 N						
Terbutryn	886500	1 00E-03							37 N	37 N	1 4 N	2000 N	78 N						
1,2,4,5-Tetrachlorobenzene	95943	3 00E-04				☑			1 8 N	1 1 N	0 41 N	610 N	23 N						
1,1,1,2-Tetrachloroethane	630206	3 00E-02		2 60E-02	2 59E-02	☑			0 41 C	0 24 C	0 12 C	220 C	25 C						

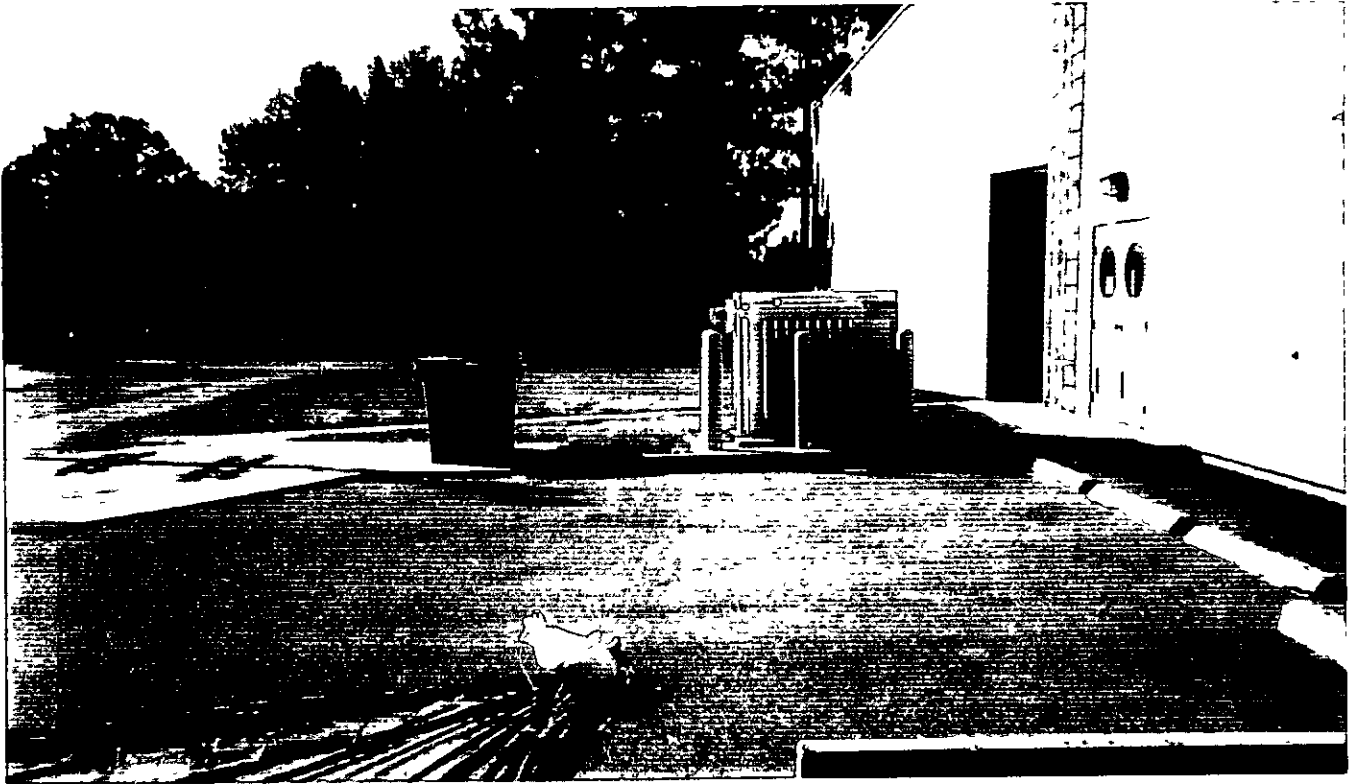
Sources	CAS	RfD ₀ mg/kg/d	RfD ₁ mg/kg/d	CPS ₀ kg-d/mg	CPS ₁ kg-d/mg	V	Basis C=carcinogenic effects N=non-carcinogenic effects				
							Risk-Based Concentrations				
							Tap Water µg/L	Ambient Air µg/m ³	Fish mg/kg	Soil Ingestion Industrial mg/kg	Residential mg/kg
1,1,2,2-Tetrachloroethane	79345						0.052 c	0.031 c	0.016 c	29 c	3.2 c
Tetrachloroethylene (PCE)	127184	1 00E-02 i					1.1 c	3.1 c	0.061 c	110 c	12 c
2,3,4,6-Tetrachlorophenol	58902	3 00E-02 i					1100 n	110 n	41 n	61000 n	2300 n
p,a,a-Tetrachlorotoluene	5216251			2.00E+01 h			0.00053 c	0.00031 c	0.00016 c	0.29 c	0.032 c
Tetrachlorovinylphos	961115	3 00E-02 i					2.8 c	0.26 c	0.13 c	240 c	27 c
Tetraethylthiopyrophosphate	3689245	5 00E-04 i					18 n	1.8 n	0.68 n	1000 n	39 n
Tetraethyl lead	78002	1 00E-07 i					0.0037 n	0.00037 n	0.00014 n	0.2 n	0.0078 n
1,1,1,2-Tetrafluoroethane	811972		2.29E+01				140000 n	84000 n	0	0	0
Thallic oxide	1314325	7 00E-05 w					26 n	0.26 n	0.095 n	140 n	5.5 n
Thallium	0						0	0	0	0	0
Thallium acetate	563688	9 00E-05 i					33 n	0.33 n	0.12 n	180 n	7 n
Thallium carbonate	6533739	8 00E-05 i					29 n	0.29 n	0.11 n	160 n	63 n
Thallium chloride	7791120	8 00E-05 i					29 n	0.29 n	0.11 n	160 n	63 n
Thallium nitrate	10102451	9 00E-05 i					33 n	0.33 n	0.12 n	180 n	7 n
Thallium selenite	12039520	9 00E-05 w					33 n	0.33 n	0.12 n	180 n	7 n
Thallium sulfate	7446186	8 00E-05 i					29 n	0.29 n	0.11 n	160 n	63 n
Thiobencarb	28249776	1 00E-02 i					370 n	37 n	14 n	20000 n	780 n
2-(Thiocyanomethylthio)-benzothiazole	21564170	3 00E-02 h					1100 n	110 n	41 n	61000 n	2300 n
Thiofanox	39196184	3 00E-04 h					11 n	1.1 n	0.41 n	610 n	23 n
Thiophanate-methyl	23564058	8 00E-02 i					2900 n	290 n	110 n	160000 n	6300 n
Thiram	137268	5 00E-03 i					180 n	18 n	6.8 n	10000 n	390 n
Tin and compounds	0	6 00E-01 h					22000 n	2200 n	810 n	1000000 n	47000 n
**Titanium	7440326	4 00E+00 e	8 60E-03 e				150000 n	31 n	5400 n	1000000 n	310000 n
**Titanium dioxide	13643677	4 00E+00 e	8 60E-03 e				150000 n	31 n	5400 n	1000000 n	310000 n
Toluene	108883	2 00E-01 i	1.14E-01 i				750 n	420 n	270 n	410000 n	16000 n
Toluene-2,4-diamine	95807			3.20E+00 h			0.021 c	0.002 c	0.00099 c	1.8 c	0.2 c
Toluene-2,5-diamine	95705	6 00E-01 h					22000 n	2200 n	810 n	1000000 n	47000 n
Toluene-2,6-diamine	823405	2 00E-01 h					7300 n	730 n	270 n	410000 n	16000 n
p-Toluidine	106490			1.90E-01 h			0.35 c	0.033 c	0.017 c	30 c	3.4 c
Toxaphene	8001352			1.10E+00 i	1.12E+00 i		0.061 c	0.0056 c	0.0029 c	5.2 c	0.58 c
Tralometrin	66841256	7 50E-03 i					270 n	27 n	10 n	15000 n	590 n
Triallate	2303175	1 30E-02 i					470 n	47 n	18 n	27000 n	1000 n
Triasulfuron	82097505	1 00E-02 i					370 n	37 n	14 n	20000 n	780 n
1,2,4-Tribromobenzene	615543	5 00E-03 i					30 n	18 n	6.8 n	10000 n	390 n
Tributyltin oxide (TBIO)	56359	3 00E-04 i					11 n	1.1 n	0.41 n	610 n	23 n
2,4,6-Trichloroaniline hydrochloride	33663502			2.90E-02 h			23 c	0.22 c	0.11 c	200 c	22 c
2,4,6-Trichloroaniline	634935			3.40E-02 h			2 c	0.18 c	0.093 c	170 c	19 c
1,2,4-Trichlorobenzene	120821	1 00E-02 i	5.71E-02 h				190 n	210 n	14 n	20000 n	780 n
**1,1,1-Trichloroethane	71556	2 00E-02 e	2.86E-01 w				540 n	1000 n	27 n	41000 n	1600 n
1,1,2-Trichloroethane	79005	4 00E-03 i		5.70E-02 i	5.60E-02 i		0.19 c	0.11 c	0.055 c	100 c	11 c
Trichloroethylene (TCE)	79016	6 00E-03 e		1.10E-02 w	6.00E-03 e		1.6 c	1 c	0.29 c	520 c	58 c

TAB

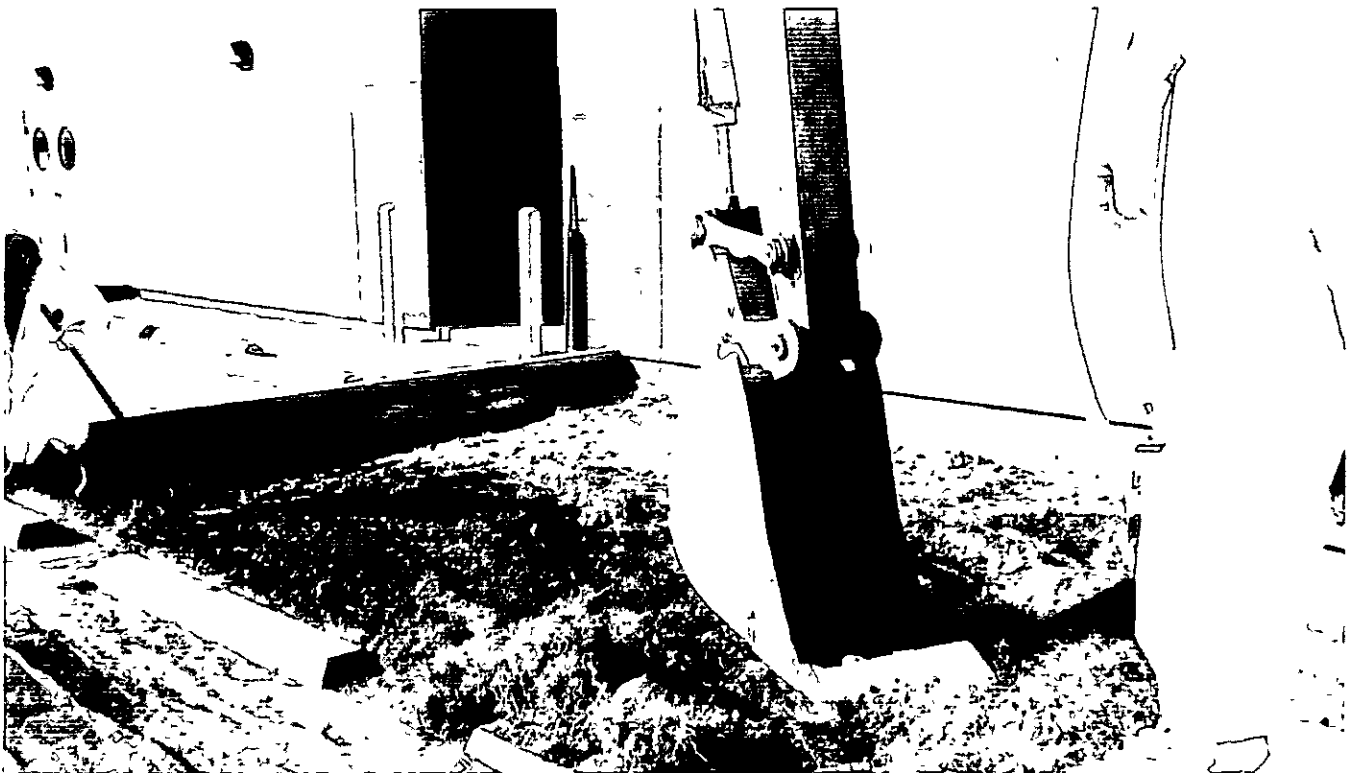
Appendix B

APPENDIX B

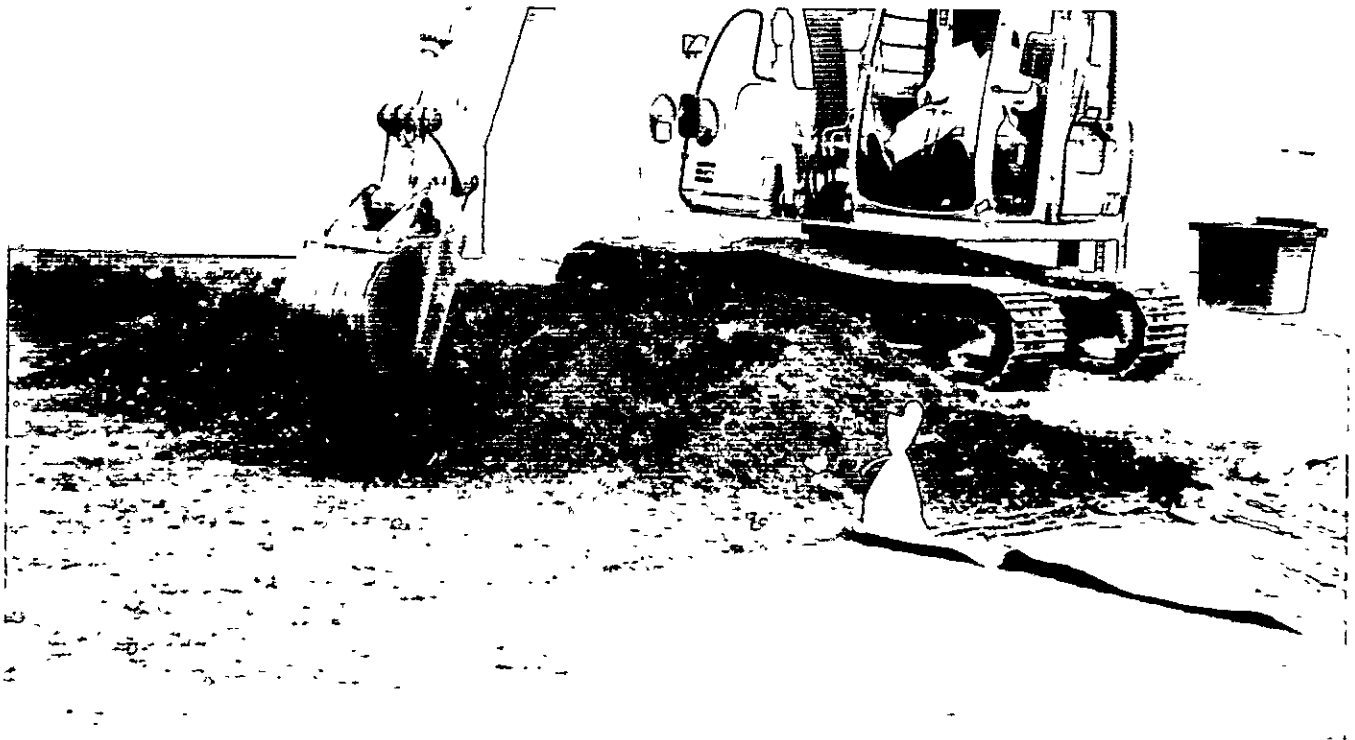
Photographic Documentation of Soil Removal Action



Date: 10/17/98
Description: PRELIMINARY, BEFORE EXCAVATION ACTIVITIES
View Direction: SOUTH



Date: 10/17/98
Description: EXCAVATION CONTAMINATED SOIL
View Direction: SOUTHWEST



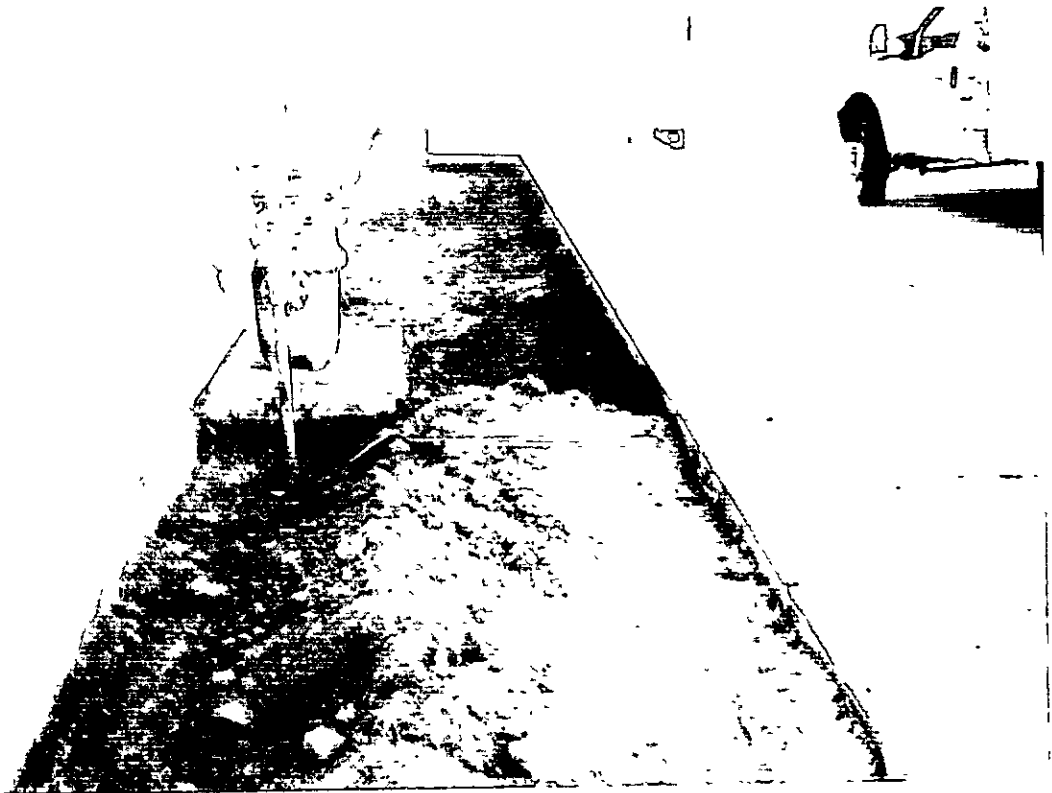
Date: 10/19/98
Description: EXCAVATING CONTAMINATED SOIL
View Direction: NORTHWEST



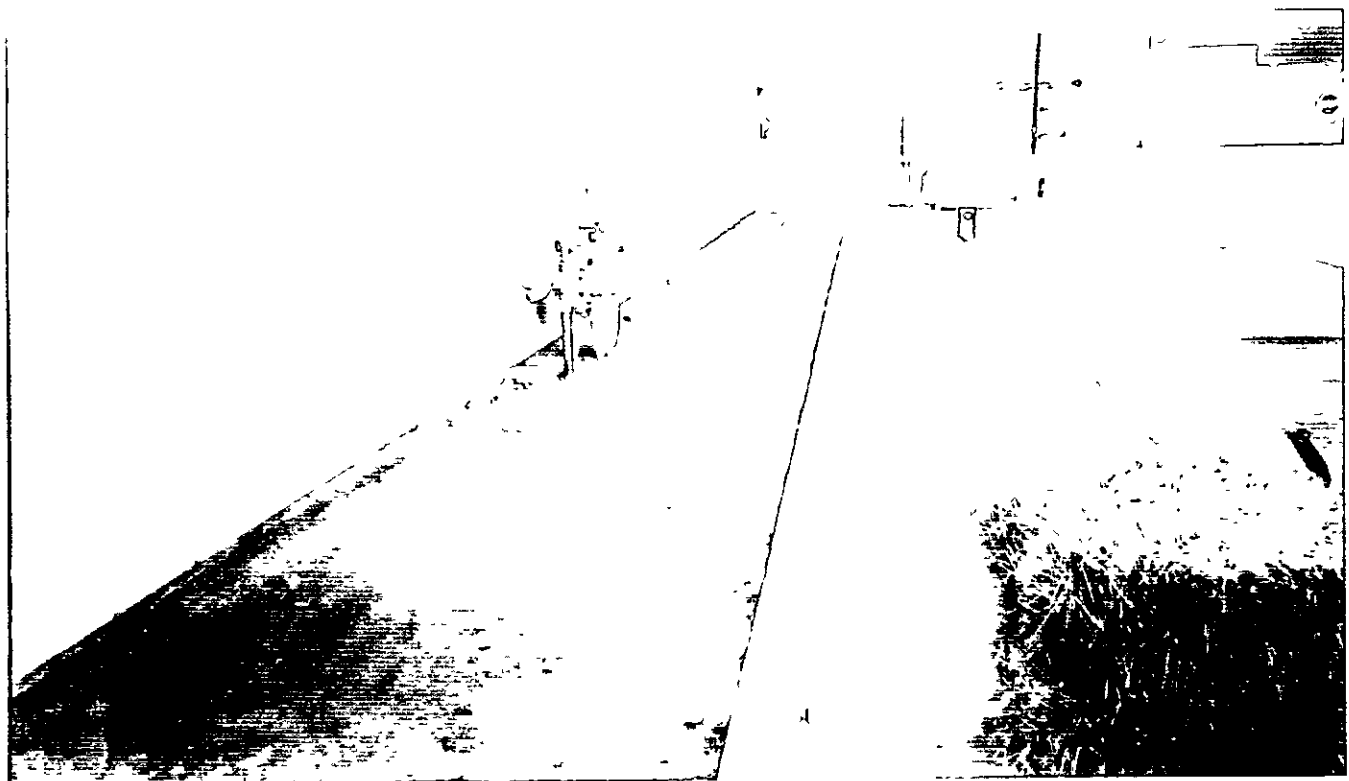
Date: 10/19/98
Description: AFTER EXCAVATION
View Direction: WEST

CAFETERIA BUILDING, SOIL REMOVAL ACTION

377 65



Date: 10/19/98
Description: EXCAVATION ALONG NORTH SIDE OF BUILDING
View Direction: WEST



Date: 10/20/98
Description: BACKFILLED EXCAVATION
View Direction: WEST



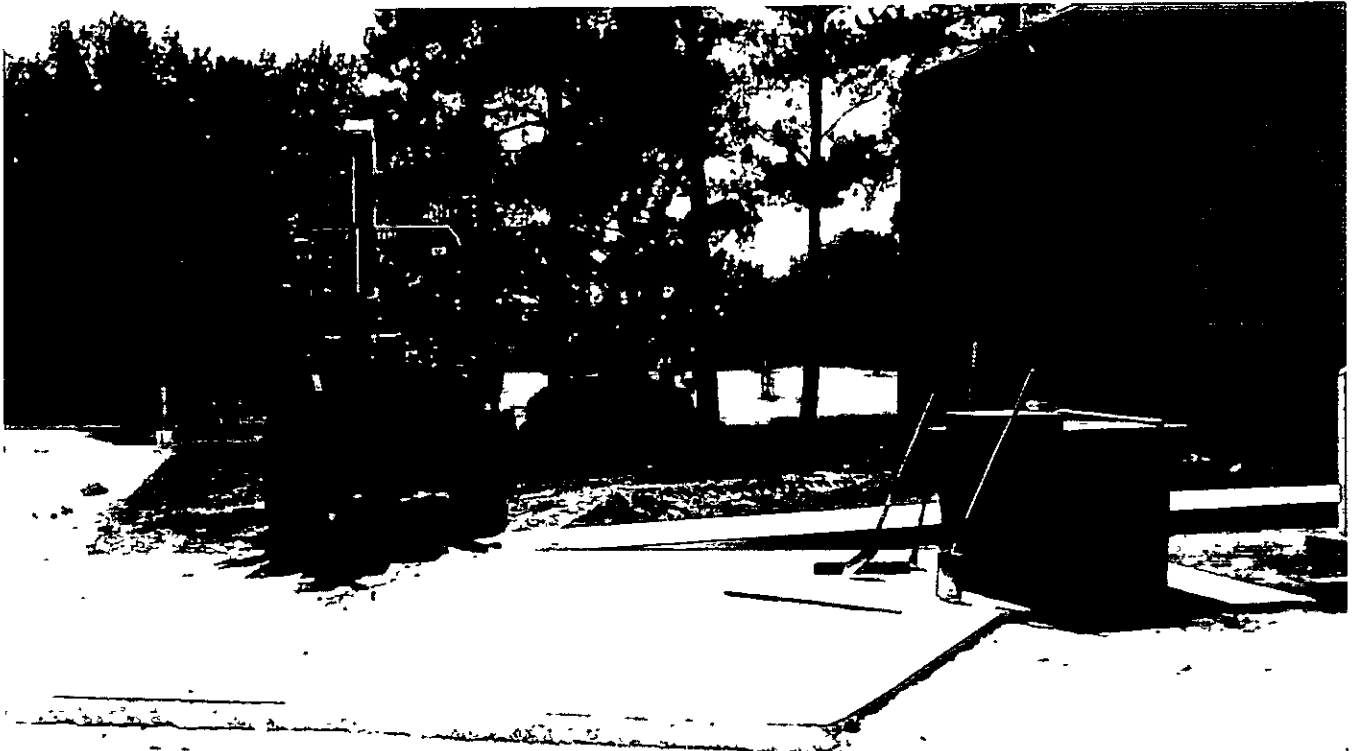
Date: 10/19/98
Description: BACKFILL OPERATIONS
View Direction: SOUTHWEST



Date: 10/19/98
Description: POST EXCAVATION
View Direction: NORTHEAST



Date: 10/20/98
Description: DURING BACKFILL ACTIVITIES
View Direction: NORTHWEST



Date: 10/19/98
Description: BACKFILL ACTIVITES
View Direction: SOUTH

CAFETERIA BUILDING, SOIL REMOVAL ACTION

Date: 10/19/98
Description: BACKFILL MATERIALS BEING STAGED
View Direction: SOUTHEAST



Date: 10/19/98
Description: CONTAMINATED SOIL STAGING AREA
View Direction: NORTHWEST

TAB

Appendix C.

APPENDIX C

Laboratory Analytical Reports with Chemical Analytical Data Evaluation Checklists and Chain of Custody Documentation

**PCB SOIL SCREENING SAMPLES FOR AREA B (0-12" bls)
& SOIL DISPOSAL CHARACTERIZATION SAMPLE**

Date Collected 10/16/98

B1-S1 (0-12")

B1-S2 (0-12")

B1-S3 (0-12")

B1-S4 (0-12")

B2-S4 (0-12") – duplicate of B2-S1

B2-S3 (0-12")

B2-S2 (0-12")

B2-S1 (0-12")

B3-S2 (0-12")

B3-S1 (0-12")

C-EQ-SS-A-001 (Equipment Blank)

&

C-A-001 (Soil Disposal Sample)



October 27, 1998

Ms. Elena Rodriguez
OHM Remediation Services
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Ref: Analytical Testing
ETC Order # 9810578
Project Description DDMT

Project # 20560 Defense Depot - Memphis, TN

The above referenced project has been analyzed per your instructions. The analyses were performed in our laboratory in accordance with Standard Methods 17th/18th Edition; The Solid Waste Manual SW-846; EPA Methods for the Analysis of Water and Wastes and/or 40 CFR part 136.

The results are shown on the attached analysis sheet(s).

Please do not hesitate to contact our office if you have any questions.

Sincerely,

A handwritten signature in dark ink, appearing to read 'N. Pera', with a stylized flourish at the end.

Nathan A. Pera, IV
Chief Executive Officer

rt
Attachment

OHM_DDMT

377 73

Chemical Analytical Data
Review/Evaluation/Validation

SOUTHERN REGION

Report Type: ☐ Preliminary ☒ Final Date Received: _____ Project Number: 20560

Project Name DDMT Analysis/Method: TCL PCBs, TCLP VOA13MA, PEST/Herb. Metals, etc.

Laboratory ETC Lab Project/Case Number: 4810578

Sample Number(s): B1-S1, B1-S2, B1-S3, B1-S4, B2-S4, B2-S3, B2-S2, B2-S1, B3-S2, B3-S1, C-A-001, C-EQ, SS-A-001

Evaluated By: S. Pournazeri Date Evaluated: 2/2/99

Data Package Deliverables Requirement: ☐ OHM Minimum ☒ OHM Standard ☐ OHM Maximum

☐ Other, please describe _____

Quality Control Deliverables	Required	Received	Passed	Failed
PQL, MDL, RL, etc meets DQOs	X		✓	
Comment:				
Holding Times			✓	
Comment:				
Sample Condition (preservatives, containers, temperature, etc) / Case Narrative	X		✓	
Comment:				
Surrogate Recoveries	X		✓	
Comment: <u>1740 on PCB B2-S4, trip logged J</u>				
Lab Control Sample Recoveries	X		✓	
Comment:				
Lab Control Sample Duplicate or Other Spike Recoveries	X		✓	
Comment:				
Lab Control Sample Duplicate or Other Laboratory Duplicate RPD	X		✓	
Comment:				
Matrix Spike Recoveries	X		✓	
Comment: <u>out for 17g, MSD. LCS & RPD OK, Data acceptable low on 1,4-DCB. LCS OK Data acceptable</u>				
Matrix Spike Duplicate Recoveries	X		✓	
Comment: <u>low on 1,4-DCB LCS OK, Data acceptable</u>				
Matrix Spike / Matrix Spike Duplicate RPD	X		✓	
Comment:				
Laboratory Blanks (daily, method, instrument)	X		✓	
Comment:				
Field Blanks (trip, eqpt rinsate, ambient, matrix)	X			
Comment: <u>N/A</u>				

Quality Control Deliverables		Required	Received	Passed	Failed
Field Duplicates RPD		X			
Comment:	N/A				
Second Source Check					
Comment:	N/A				
Second Column Confirmation		✓		✓	
Comment:					
Percent Moisture/Solids				✓	
Comment:					
Initial / Continuing Calibrations		✓		✓	
Comment:	out for VOA (cont. calib) Post Cont. calib) & PCB (cont. calib) Associated results flagged J, data accepted.				
Internal Standard Areas and Retention Times (Organics Only)		✓		✓	
Comment:					
Chromatograms		✓		✓	
Comment:					
Sample Prep Worksheets		✓		✓	
Comment:					
Raw Data Calculations					
Comment:	N/A				
Laboratory Duplicates					
Comment:					
Instrument Performance Checks (Organics Only)		✓		✓	
Comment:					
Tentatively Identified Compounds (TICs)		✓		✓	
Comment:					
Completeness	# Samples	# Analyses	Tot # Analyses	Tot # Accept Analyses	% Complete
Completeness = (Tot # Analyses / Tot # Accepted Analyses) x 100	10	1	10	10	100
General Comments:	1	7	7	7	100

Summary: [] See attached pages

Results flagged J for surrogate and calibrations All data reported are acceptable

Check Applicable:

- ☐ Lab contacted--Corrective actions in process Date Contacted: _____
☐ Corrective actions received and accepted Date Received/Accepted: _____
☐ The data, as reported by the laboratory, are acceptable.
☒ The data, with qualifiers as described in the "Summary" portion of this report, are acceptable.
☐ The data are unacceptable.
☐ Other _____

J. P. Papp
 Evaluator's Signature

2/2/94
 Date



**OHM Remediation
Services Corp.**

A Subsidiary of OHM Corporation

**Sushama Paranjape
Project Chemist**

TECHNICAL DEPARTMENT

Southern Regional Office
Fax: (770)453-7716
Direct line: (770)734-8062
Main Line: (770)729-3900
Sushama @ohm.com

5445 Triangle Parkway
Suite 400
Norcross, Georgia 30092

011 Number of Pages (including this cover)

To: Nation Inc

Company: ETC

Fax Number: C90. 327-6334

Date: 2/10/99 Time: _____

Reference: SDG 9810-578 Herbicides

Comments: Received user data I still need

cont calibration for herbicides for

10/20/99. The sample injection time is

10/20/99, 21:55, couldn't find corresponding

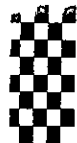
cont cal. The cont cal was sent me for

this SDG is for 10/20/98 21:19 please send

the information ASAP. Thanks for your time

Please contact the above if there are any problems concerning this facsimile.

Sushama



377 76



Environmental Testing & Consulting, Inc.
2924 Walnut Grove Road Memphis, TN 38111
Founded 1972

Transmittal Cover Sheet

To Sushma	From Nathan Pera
Fax Number 770-453-7716	
Date 02/16/99	For Information Call 901-327-2750
Subject SDG 9810-578	Fax Number 901-327-6334

This transmittal contains _____ pages including this cover

Sushma .
Review of the Herbicide analysis showed the following
1 Sequence H310201A was initiated on 10/20/98 at 17 12
2 Due to a computer problem (disk space full), the CVs did not acquire until the morning of 10/21/98 (H310201B-19R/20R pages 000295 and 000296).
3 The CVs showed high response which indicated that detection limits were not affected
No Target Analytes were identified in the associated project sample. This sample was
not re-analyzed. However, the associated Laboratory Control Sample and
Matrix Spikes should have been re-analyzed due to the fact that they contained Target
Analytes However, only the MSD was re-analyzed
This fact was not properly referenced within the Case Narrative.
The CVs provided are the correct reports

The information contained in this transmittal is confidential and is intended for the sole use of the addressee named above. The copying or distribution of any information contained herein by any party other than the addressee is prohibited. If you have received this document in error, please notify us by phone and return it by mail to the above address. Thank you.

Environmental Testing & Consulting, Inc.
Data Qualifiers for Organic Reporting

Within the attached report, some analytical data may be reported as "Qualified Data" as indicated by a "Data Qualifier" next to the result. This table summarizes the possible "Data Qualifiers" that may be associated with this report.

Q	Surrogate Recovery Outside QC Limits
J	Estimated Value. Presence of the compound was confirmed but less than the reported detection limit.
E	Concentration exceeds the established method calibration range but is within the working range of the instrument.
B	Analyte detected in the associated Method Blank.
U	Reported result was unconfirmed. Refer to Case Narrative.
N	Non-Compliance Report associated with this sample or project.
C	Result reported from GC/MS confirmation analysis.
M	Result reported represents a minimum value. Refer to Case Narrative.
NC	Result reported from Primary Column. Result did not confirm.
*	QC Data (percent recovery/RPD for a particular analyte was outside QC Limits)

000001

ANALYTICAL SUMMARY TABLE

Client Name OHM Remediation Services
 Site ID DDMT
 Memphis, TN

ETC Sample ID	Field ID	Matrix	Method	Method Description
981057801	B1-S1	SOIL	8082	PCBs
981057802	B1-S2	SOIL	8082	PCBs
981057803	B1-S3	SOIL	8082	PCBs
981057804	B1-S4	SOIL	8082	PCBs
981057805	B2-S4	SOIL	8082	PCBs
981057806	B2-S3	SOIL	8082	PCBs
981057807	B2-S2	SOIL	8082	PCBs
981057808	B2-S1	SOIL	8082	PCBs
981057809	B3-S2	SOIL	8082	PCBs
981057810	B3-S1	SOIL	8082	PCBs
981057811	C-A-001	SOIL	6010B	Silver - TCLP
981057811	C-A-001	SOIL	6010B	Arsenic - TCLP
981057811	C-A-001	SOIL	8270C	TCLP Semivolatiles
981057811	C-A-001	SOIL	6010B	Barium - TCLP
981057811	C-A-001	SOIL	6010B	Cadmium - TCLP
981057811	C-A-001	SOIL	6010B	Chromium - TCLP
981057811	C-A-001	SOIL	8151A	TCLP Herbicides
981057811	C-A-001	SOIL	7470A	Mercury - TCLP
981057811	C-A-001	SOIL	8081A	TCLP Pesticides
981057811	C-A-001	SOIL	6010B	Lead - TCLP
981057811	C-A-001	SOIL	8082	PCBs
981057811	C-A-001	SOIL	6010B	Selenium - TCLP
981057811	C-A-001	SOIL	8260B	TCLP Volatile Organics
981057812	C-EQ-SS-A-001	AQUEOUS	8082	PCBs

1012

980-578



OHM Remediation Services Corp
 Subsidiary of OHM Corporation
 U.S. Route 224 East • Findlay, Ohio 45840 • (419) 423-3526

CHAIN-OF-CUSTODY RECORD

LABORATORY COPY # **21802880**
 FORM 0019 REV 2-97

OHM's LAB COORDINATOR Elena Rodriguez		LAB COORDINATOR'S PHONE 770-734-8060		LAB COORDINATOR'S FAX 770-453-7716		LABORATORY CONTACT Nathan Pera		MAIL REPORT (COMPANY NAME) OHM Remediation Services Corp	
PROJECT NAME DDMT		PROJECT LOCATION Memphis, TN		PROJECT NUMBER 20560		LABORATORY PERS. ID 901-327-2750		RECIPIENT NAME Elena Rodriguez	
PROJECT CONTACT Steve Offner		PROJECT PHONE NUMBER 901-743-1117		PROJECT FAX 901-743-1048		LABORATORY FAX 901-327-6334		ADDRESS	
PROJECT ADDRESS 1708 Dunn Ave.		CITY, STATE AND ZIP CODE Memphis, TN 38114		CLIENT USACE		LABORATORY ADDRESS 2924 Walnut Grove Road		5445 Triangle Pkwy, #400	
PROJECT MANAGER Steve Offner		PROJECT MANAGER'S PHONE 770-326-2571		PROJECT MANAGER'S FAX 770-453-7716		CITY, STATE AND ZIP CODE Memphis TN 38111		Norcross, GA 30092	

Item	Sample Identifier	Matrix		Date	Time		# of Cont.	OC Level	TAT	Comments
		Soil	Water		Preserved	Analysis				
1	B1-S1	Soil	Water	10-16-82	10:15	NA	1X802	OHM	3day	✓
2	B1-S2	Soil	Water	10-16-82	10:25	NA	1X802	OHM	3day	✓
3	B1-S3	Soil	Water	10-16-82	10:35	NA	1X802	OHM	3day	✓
4	B1-S4	Soil	Water	10-16-82	10:45	NA	1X802	OHM	3day	✓
5	B2-S4	Soil	Water	10-16-82	10:55	NA	1X802	OHM	3day	✓
6	B2-S3	Soil	Water	10-16-82	11:05	NA	1X802	OHM	3day	✓
7	B2-S2	Soil	Water	10-16-82	11:15	NA	1X802	OHM	3day	✓
8	B2-S1	Soil	Water	10-16-82	11:25	NA	1X802	OHM	3day	✓
9	B3-S2	Soil	Water	10-16-82	11:35	NA	1X802	OHM	3day	✓
10	B3-S1	Soil	Water	10-16-82	11:45	NA	1X802	OHM	3day	✓

SAMPLES COLLECTED BY S. GRANT		COURIER AND AIR BILL NUMBER 08000000000000000000000000000000		RECEIVED BY [Signature]		DATE 10/16/82		TIME 11:00		COOLER TEMPERATURE UPON RECEIPT		SAMPLE'S CONDITION UPON RECEIPT	

Distribution		White - Laboratory (To be returned with Analytical Report), Goldendred - Project File, Yellow - Project Data Manager	



**OHM Remediation
Services Corp**

Subsidiary of OHM Corporation
U.S. Route 224 East • Findlay,

U.S. Route 224 East • Findlay, Ohio 45840 • (419) 423-3526

CHAIN-OF-CUSTODY RECORD

LABORATORY COPY, 6-1-68

217893

FORM 0019 REF V-97

OIRM & LAB COORDINATOR		LAB COORDINATOR'S PHONE		LAB COORDINATOR'S FAX		LABORATORY SERVICE ID		LABORATORY'S CONTACT		MAIL REPORT (COMPANY NAME)		FORM 0019 REV 02-97	
PROJECT NAME		PROJECT LOCATION		PROJECT NUMBER		ETC		Nathan Pera		OHM Remediation Services Corp			
PROJECT CONTACT		PROJECT PHONE NUMBER		PROJECT FAX		LABORATORY PHONE		LABORATORY FAX		RECIPIENT NAME			
Steve Offner		901-743-1117		901-743-1048		901-327-2750		901-327-6334		Elena Rodriguez			
PROJECT ADDRESS		CITY STATE AND ZIP CODE		CLIENT		LABORATORY ADDRESS		CITY STATE AND ZIP CODE		ADDRESS			
1708 Dunn Ave.		Memphis, TN 38114		USACE		2924 Walnut Grove Road		Memphis TN 38111		5445 Triangle Pkwy, #400			
PROJECT MANAGER'S PHONE		PROJECT MANAGER'S FAX		PROJECT MANAGER'S FAX		LABORATORY ADDRESS		CITY STATE AND ZIP CODE		Norcross, GA 30092			
Steve Offner		770-326-2571		770-453-7716									
Item	Sample Identifier	Matrix	Date	Time	Preserved	# of Cont	OC Level	TAT	Comments				
1	C-A-001	Soil	10-16-83	1230	N/A	4x2x2	0.1M	3d/24	Please fax results on DUE DATE to SITE and to Lab Coordinator				
2	C-EQ-SS-A-001	Liquid	10-16-83	1140	N/A	1x1x1	0.1M	3d/24					
3													
4													
5													
6													
7													
8													
9													
10													

SAMPLES COLLECTED BY: S. Offner

RELINQUISHED BY: Steve Offner

COURIER AND AIR BILL NUMBER: Delivered via Persa

RECEIVED BY: Steve Offner

DATE: 10/16/83

TIME: 11:10

COOLER TEMPERATURE UPON RECEIPT

SAMPLES CONDITION UPON RECEIPT

Distribution	White - Laboratory (To be returned with Analytical Report), Goldenrod - Project File, Yellow - Project Data Manager

COOLER RECEIPT FORM

Cooler Receipt Form
9810578 CRF p 1

LIMS # 9810-578 Number of Coolers 1
 Date Received 10/16/98
 VDTSR 10/16/98 16 10
 PROJECT DDMT/Memphis, TN

USE OTHER SIDE OF THIS FORM TO NOTE DETAILS CONCERNING CHECK-IN PROBLEMS

A PRELIMINARY EXAMINATION PHASE Date cooler was opened 10/16/98
 by (print) Lynette Bugg (sign) Lynette Bugg

1 Did cooler come with a shipping slip (airbill, etc)? NO
 If YES, enter carrier name & airbill number _____

2a Were custody seals on outside of cooler? NO
 2b Were custody seals on sample containers? NO

3 Were custody seals unbroken and intact at the date and time of arrival? NA

4 Did you screen samples for radioactivity using a Geiger Counter? NO

5 Were custody papers sealed in a plastic bag & taped inside to the lid? NO

6 Were custody papers filled out properly (ink, signed, etc)? YES

7 Did you sign custody papers in the appropriate place? YES

8 Was project identifiable from custody papers? If YES, enter project name at top of this form YES

9 If required, was enough ice used? cooler temp <4°C, Type of ice Crushed YES

10 Have designated person initial here to acknowledge receipt of cooler LB date 10/16/98

B LOG-IN PHASE Date samples were logged-in 10/16/98
 by (print) Lynette Bugg (sign) Lynette Bugg

11 Describe type of packing in cooler Bubble Wrap, Baggies and Ice

12 Were all bottles sealed in separate plastic bags? YES

13 Did all bottles arrive unbroken and were labels in good condition? YES

14 Were all bottle labels complete (ID, date, time, signature, preserved, etc)? YES

15 Did all bottle labels agree with custody papers? YES

16 Were correct containers used for the tests indicated? YES

17 Were correct preservatives added to samples? YES

18 Was a sufficient amount of sample sent for tests indicated? YES

19 Were bubbles absent in VOA samples? If NO, list by sample# NA

20 Was the project manager called and status discussed? If YES, give details on the back of this form NO

21 Who was called? _____ By whom? _____ (date) _____

VDTSR - Validated Date/Time of Sample Receipt (Date sample is logged into LIMS system)

000006

377. .82

Environmental Testing & Consulting, Inc.

Sample Reports

000007

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

INORGANIC ANALYSIS DATA SHEET

377 83

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

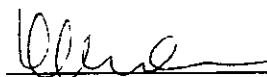
Project # 20560

Date Arrived 10/16/98
ETC Order Number 9810578

ETC Lab ID **9810578-11**
Sample ID: C-A-001

Matrix :SOIL
Sample Date :10/16/98

TEST	RESULT	UNITS	DETECTION LIMIT	TIME ANALYZED	DATE ANALYZED BY	METHOD
Silver - TCLP	ND	mg/L	0.500	15:31	10/20/98 TD	6010B
Arsenic - TCLP	ND	mg/L	0.500	15:31	10/20/98 TD	6010B
Barium - TCLP	ND	mg/L	5.00	15:31	10/20/98 TD	6010B
Cadmium - TCLP	ND	mg/L	0.100	15:31	10/20/98 TD	6010B
Chromium - TCLP	ND	mg/L	0.500	15:31	10/20/98 TD	6010B
Mercury - TCLP	ND	mg/L	0.020	14:50	10/21/98 RM	7470A
Lead - TCLP	ND	mg/L	0.500	15:31	10/20/98 TD	6010B
Selenium - TCLP	ND	mg/L	0.500	15:31	10/20/98 TD	6010B


LABORATORY MANAGER

000008

ENVIRONMENTAL TESTING & CONSULTING, INC.
 2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560
 FID # DACA45-96-D-0014

Site ID DDMT
 Memphis, TN

Date Arrived 10/16/98
 ETC Order Number 9810578

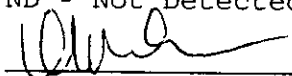
ETC Lab ID 9810578-11
Sample ID: C-A-001

Matrix :SOIL
 Sample Date :10/16/98

TEST	RESULT UNITS: (mg/L)	DL	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
TCLP Extraction ZHE	Leachate		10/19/98		TL	1311
TCLP Volatile Organics				10/20/98	LS	8260B
QC Batch	V110201					
Benzene	ND	0.010				
Carbon Tetrachloride	ND	0.010				
Chlorobenzene	ND	0.010				
Chloroform	ND	0.010				
1,4-Dichlorobenzene	ND	0.010				
1,2-Dichloroethane	ND	0.010				
1,1-Dichloroethene	ND	0.010				
Methyl Ethyl Ketone	ND	1.00				
Tetrachloroethene	ND	0.010				
Trichloroethene	ND	0.010				
Vinyl Chloride	ND	0.010				
Surrogate Standard	% Recovery	QC Limits				
S1 - Dibromofluoromethane	97	74 123				
S2 - Toluene-d8	101	86 112				
S3 - 4-Bromofluorobenzene	104	81 115				

ND - Not Detected

DL - Detection Limit


 LABORATORY MANAGER

000009

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

377 85

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560 /
FID # DACA45-96-D-0014

Site ID DDMT
Memphis, TN

Date Arrived 10/16/98
ETC Order Number 9810578

ETC Lab ID 9810578-11
Sample ID: C-A-001

Matrix :SOIL
Sample Date :10/16/98

TEST	RESULT UNITS: (mg/L)	DL	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
TCLP Extraction Organics	Leachate		10/19/98		TL	1311
TCLP Semivolatiles			10/20/98	10/20/98	RR	8270C
QC Batch	P05059					
1,4-Dichlorobenzene	ND	0.008				
2,4-Dinitrotoluene	ND	0.008				
Hexachlorobenzene	ND	0.008				
Hexachlorobutadiene	ND	0.008				
Hexachloroethane	ND	0.008				
2-Methylphenol	ND	0.008				
3-Methylphenol	ND	0.008				
4-Methylphenol	ND	0.008				
Nitrobenzene	ND	0.008				
Pentachlorophenol	ND	0.020				
Pyridine	ND	0.008				
2,4,5-Trichlorophenol	ND	0.008				
2,4,6-Trichlorophenol	ND	0.008				

Surrogate Standard	% Recovery	QC Limits
S1 - Nitrobenzene-d5	59	29 .110
S2 - 2-Fluorobiphenyl	61	38 107
S3 - 4-Terphenyl-d14	73	33 122
S4 - Phenol-d6	36	7 58
S5 - 2,4,6-Tribromophenol	86	16 138
S6 - 2-Fluorophenol	52	8 88

ND - Not Detected

DL - Detection Limit


LABORATORY MANAGER

000010

377 .86

ENVIRONMENTAL TESTING & CONSULTING, INC.
 2924 Walnut Grove Road - Memphis, TN 38111- (901)327-2750
ORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

Project # 20560
 FID # DACA45-96-D-0014

Date Arrived 10/16/98
 ETC Order Number 9810578

ETC Lab ID **9810578-11**
Sample ID: C-A-001

Matrix :SOIL
 Sample Date :10/16/98

TEST	RESULT UNITS: (mg/L)	DL	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
TCLP Extraction Organics	Leachate		10/19/98		TL	1311
TCLP Pesticides			10/20/98	10/21/98	RG	8081A
QC Batch	P07028					
Gamma-BHC (Lindane)	ND	0.001 J				
Chlordane	ND	0.010				
Endrin	ND	0.001				
Heptachlor	ND	0.001 J				
Methoxychlor	ND	0.040 J				
Toxaphene	ND	0.100				
Surrogate Standard	% Recovery	QC Limits				
S1 - Decachlorobiphenyl	112	34 115				
S2 - Tetrachloro-m-xylene	88	31 96				

ND - Not Detected

DL - Detection Limit


 LABORATORY MANAGER

000011

377 87

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560
FID # DACA45-96-D-0014

Site ID DDMT
Memphis, TN

Date Arrived 10/16/98
ETC Order Number 9810578

ETC Lab ID 9810578-11
Sample ID: C-A-001

Matrix :SOIL
Sample Date :10/16/98

TEST	RESULT UNITS: (mg/L)	DL	DATE	DATE	BY	METHOD
			EXTRACTED	ANALYZED		
TCLP Extraction Organics	Leachate		10/19/98		TL	1311
TCLP Herbicides			10/20/98	10/20/98	RG	8151A
QC Batch	P11011					
2,4-D	ND	0.010				
Silvex	ND	0.010				
<u>Surrogate Standard</u>		<u>% Recovery</u>	<u>QC Limits</u>			
S1 - 2,4,5-T		75	25	125		

ND - Not Detected

DL - Detection Limit


LABORATORY MANAGER

000012

377 88

ENVIRONMENTAL TESTING & CONSULTING, INC.
2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

Project # 20560
FID # DACA45-96-D-0014

Date Arrived 10/16/98
ETC Order Number 9810578

ETC Lab ID 9810578-01
Sample ID: B1-S1

Matrix :SOIL
Sample Date :10/16/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
PCBs							8082
QC Batch	P08021	ug/Kg		10/19/98	10/22/98	RG	
PCB-1016	ND	ug/Kg	350				
PCB-1221	ND	ug/Kg	350				
PCB-1232	ND	ug/Kg	350				
PCB-1242	ND	ug/Kg	350				
PCB-1248	ND	ug/Kg	350				
PCB-1254	ND	ug/Kg	350				
PCB-1260	1,380	ug/Kg	350				
Surrogate Standard							
	% Recovery		QC Limits				
S1 - Tetrachloro-m-xylene	104		20	122			
S2 - Decachlorobiphenyl	94		17	141			


LABORATORY MANAGER

ND - Not Detected

000013

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

377 89

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560
FID # DA45-96-D-0014

Site ID DDMT
Memphis, TN

Date Arrived 10/16/98
ETC Order Number 9810578

ETC Lab ID 9810578-02

Sample ID: B1-S2

Matrix :SOIL
Sample Date :10/16/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
PCBs				10/19/98	10/22/98	RG	8082
QC Batch	P08021	ug/Kg					
PCB-1016	ND	ug/Kg	350				
PCB-1221	ND	ug/Kg	350				
PCB-1232	ND	ug/Kg	350				
PCB-1242	ND	ug/Kg	350				
PCB-1248	ND	ug/Kg	350				
PCB-1254	ND	ug/Kg	350				
PCB-1260	1,950	ug/Kg	350				
Surrogate Standard	% Recovery		QC Limits				
S1 - Tetrachloro-m-xylene	49		20	122			
S2 - Decachlorobiphenyl	140		17	141			


LABORATORY MANAGER

ND - Not Detected

000014

377 90

ENVIRONMENTAL TESTING & CONSULTING, INC.
2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092
Site ID **DDMT**
Memphis, TN

Project # 20560
FID # DACA45-96-D-0014

Date Arrived 10/16/98
ETC Order Number 9810578

ETC Lab ID 9810578-03
Sample ID: B1-S3

Matrix :SOIL
Sample Date :10/16/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
PCBs							8082
QC Batch	P08021	ug/Kg		10/19/98	10/22/98	RG	
PCB-1016	ND	ug/Kg	35.0				
PCB-1221	ND	ug/Kg	35.0				
PCB-1232	ND	ug/Kg	35.0				
PCB-1242	ND	ug/Kg	35.0				
PCB-1248	ND	ug/Kg	35.0				
PCB-1254	ND	ug/Kg	35.0				
PCB-1260	221	ug/Kg	35.0				
Surrogate Standard			% Recovery	QC Limits			
S1 - Tetrachloro-m-xylene	103		20	122			
S2 - Decachlorobiphenyl	110		17	141			


LABORATORY MANAGER

ND - Not Detected

000015

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET**377 91**

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560
FID # DACA45-96-D-0014

Site ID DDMT
Memphis, TN

Date Arrived 10/16/98
ETC Order Number 9810578

ETC Lab ID **9810578-04**
Sample ID: B1-S4

Matrix :SOIL
Sample Date :10/16/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
PCBs				10/19/98	10/22/98	RG	8082
QC Batch	P08021	ug/Kg					
PCB-1016	ND	ug/Kg	35.0				
PCB-1221	ND	ug/Kg	35.0				
PCB-1232	ND	ug/Kg	35.0				
PCB-1242	ND	ug/Kg	35.0				
PCB-1248	ND	ug/Kg	35.0				
PCB-1254	ND	ug/Kg	35.0				
PCB-1260	153	ug/Kg	35.0				
Surrogate Standard	% Recovery		QC Limits				
S1 - Tetrachloro-m-xylene	109		20 122				
S2 - Decachlorobiphenyl	96		17 141				


LABORATORY MANAGER

ND - Not Detected

000016

377 92

ENVIRONMENTAL TESTING & CONSULTING, INC.
 2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

Project # 20560
 FID # DACA45-96-D-0014

Date Arrived 10/16/98
 ETC Order Number 9810578

ETC Lab ID 9810578-05
Sample ID: B2-S4

Matrix :SOIL
 Sample Date :10/16/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
PCBs				10/19/98	10/22/98	RG	8082
QC Batch	P08021	ug/Kg					
PCB-1016	ND	ug/Kg	35.0				
PCB-1221	ND	ug/Kg	35.0				
PCB-1232	ND	ug/Kg	35.0				
PCB-1242	ND	ug/Kg	35.0				
PCB-1248	ND	ug/Kg	35.0				
PCB-1254	ND	ug/Kg	35.0				
PCB-1260	95.4	ug/Kg	35.0				SP
Surrogate Standard	% Recovery		QC Limits				
S1 - Tetrachloro-m-xylene	337 Q		20		122		
S2 - Decachlorobiphenyl	79		17		141		


 LABORATORY MANAGER

ND - Not Detected

000017

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

377 93

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560
FID # DACA45-96-D-0014

Site ID DDMT
Memphis, TN

Date Arrived 10/16/98
ETC Order Number 9810578

ETC Lab ID 9810578-05
Sample ID: B2-S4-DL

Matrix :SOIL
Sample Date :10/16/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
PCBs				10/19/98	10/22/98	RG	8082
QC Batch	P08021	ug/Kg					
PCB-1016	ND	ug/Kg	350				
PCB-1221	ND	ug/Kg	350				
PCB-1232	ND	ug/Kg	350				
PCB-1242	ND	ug/Kg	350				
PCB-1248	ND	ug/Kg	350				
PCB-1254	ND	ug/Kg	350				
PCB-1260	ND	ug/Kg	350				
Surrogate Standard		% Recovery	QC Limits				
S1 - Tetrachloro-m-xylene	79		20	122			
S2 - Decachlorobiphenyl	132		17	141			


LABORATORY MANAGER

ND - Not Detected

000018

377 94

ENVIRONMENTAL TESTING & CONSULTING, INC.
2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

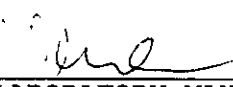
Project # 20560
FID # DACA45-96-D-0014

Date Arrived 10/16/98
ETC Order Number 9810578

ETC Lab ID **9810578-05**
Sample ID: B2-S4-RE

Matrix :SOIL
Sample Date :10/16/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
PCBs							8082
QC Batch	P08021	ug/Kg		10/19/98	10/23/98	RG	
PCB-1016	ND	ug/Kg	35.0				
PCB-1221	ND	ug/Kg	35.0				
PCB-1232	ND	ug/Kg	35.0				
PCB-1242	ND	ug/Kg	35.0				
PCB-1248	ND	ug/Kg	35.0				
PCB-1254	ND	ug/Kg	35.0				
PCB-1260	30 9J	ug/Kg	35.0				
<u>Surrogate Standard</u>	<u>% Recovery</u>		<u>QC Limits</u>				
S1 - Tetrachloro-m-xylene	88		20		122		
S2 - Decachlorobiphenyl	114		17		141		


LABORATORY MANAGER

ND - Not Detected

000019

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET**377 95**

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560
FID # DACA45-96-D-0014

Site ID DDMT
Memphis, TN

Date Arrived 10/16/98
ETC Order Number 9810578

ETC Lab ID **9810578-06**
Sample ID: B2-S3

Matrix :SOIL
Sample Date :10/16/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
PCBs							8082
QC Batch	P08021	ug/Kg		10/19/98	10/22/98	RG	
PCB-1016	ND	ug/Kg	35.0				
PCB-1221	ND	ug/Kg	35.0				
PCB-1232	ND	ug/Kg	35.0				
PCB-1242	ND	ug/Kg	35.0				
PCB-1248	ND	ug/Kg	35.0				
PCB-1254	ND	ug/Kg	35.0				
PCB-1260	ND	ug/Kg	35.0				
<u>Surrogate Standard</u>	<u>% Recovery</u>		<u>QC Limits</u>				
S1 - Tetrachloro-m-xylene	89		20 122				
S2 - Decachlorobiphenyl	114		17 141				


LABORATORY MANAGER

ND - Not Detected

000020

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

377 96

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560
FID # DACA45-96-D-0014

Site ID DDMT
Memphis, TN

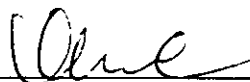
Date Arrived 10/16/98
ETC Order Number 9810578

ETC Lab ID 9810578-07

Sample ID: B2-S2

Matrix :SOIL
Sample Date :10/16/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
PCBs				10/19/98	10/22/98	RG	8082
QC Batch	P08021	ug/Kg					
PCB-1016	ND	ug/Kg	35.0				
PCB-1221	ND	ug/Kg	35.0				
PCB-1232	ND	ug/Kg	35.0				
PCB-1242	ND	ug/Kg	35.0				
PCB-1248	ND	ug/Kg	35.0				
PCB-1254	ND	ug/Kg	35.0				
PCB-1260	87.9	ug/Kg	35.0				
Surrogate Standard		% Recovery	QC Limits				
S1 - Tetrachloro-m-xylene	100		20	122			
S2 - Decachlorobiphenyl	81		17	141			


LABORATORY MANAGER

ND - Not Detected

000021

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

377 97

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560
FID # DACA45-96-D-0014

Site ID
DDMT
Memphis, TN

Date Arrived 10/16/98
ETC Order Number 9810578

ETC Lab ID **9810578-08**
Sample ID: B2-S1

Matrix :SOIL
Sample Date :10/16/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
PCBs				10/19/98	10/22/98	RG	8082
QC Batch	P08021	ug/Kg					
PCB-1016	ND	ug/Kg	35.0				
PCB-1221	ND	ug/Kg	35.0				
PCB-1232	ND	ug/Kg	35.0				
PCB-1242	ND	ug/Kg	35.0				
PCB-1248	ND	ug/Kg	35.0				
PCB-1254	ND	ug/Kg	35.0				
PCB-1260	49.1	ug/Kg	35.0				
Surrogate Standard	% Recovery		QC Limits				
S1 - Tetrachloro-m-xylene	76		20 122				
S2 - Decachlorobiphenyl	68		17 141				


LABORATORY MANAGER

ND - Not Detected

000022

377 98

ENVIRONMENTAL TESTING & CONSULTING, INC.
2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092
Site ID **DDMT**
Memphis, TN

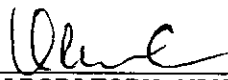
Project # 20560
FID # DACA45-96-D-0014

Date Arrived 10/16/98
ETC Order Number 9810578

ETC Lab ID **9810578-09**
Sample ID: B3-S2

Matrix :SOIL
Sample Date :10/16/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
PCBs				10/19/98	10/22/98	RG	8082
QC Batch	P08021	ug/Kg					
PCB-1016	ND	ug/Kg	35.0				
PCB-1221	ND	ug/Kg	35.0				
PCB-1232	ND	ug/Kg	35.0				
PCB-1242	ND	ug/Kg	35.0				
PCB-1248	ND	ug/Kg	35.0				
PCB-1254	ND	ug/Kg	35.0				
PCB-1260	88.9	ug/Kg	35.0				
Surrogate Standard	% Recovery		QC Limits				
S1 - Tetrachloro-m-xylene	78		20 122				
S2 - Decachlorobiphenyl	68		17 141				


LABORATORY MANAGER

ND - Not Detected

000023

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

377 99

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560
FID # DACA45-96-D-0014

Site ID DDMT
Memphis, TN

Date Arrived 10/16/98
ETC Order Number 9810578

ETC Lab ID 9810578-10
Sample ID: B3-S1

Matrix :SOIL
Sample Date :10/16/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
PCBs				10/19/98	10/22/98	RG	8082
QC Batch	P08021	ug/Kg					
PCB-1016	ND	ug/Kg	35.0				
PCB-1221	ND	ug/Kg	35.0				
PCB-1232	ND	ug/Kg	35.0				
PCB-1242	ND	ug/Kg	35.0				
PCB-1248	ND	ug/Kg	35.0				
PCB-1254	ND	ug/Kg	35.0				
PCB-1260	357	ug/Kg	35.0				
Surrogate Standard		% Recovery	QC Limits				
S1 - Tetrachloro-m-xylene	78		20	122			
S2 - Decachlorobiphenyl	70		17	141			


LABORATORY MANAGER

ND - Not Detected

000024

377 100

ENVIRONMENTAL TESTING & CONSULTING, INC.
2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092
Site ID **DDMT**
Memphis, TN

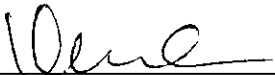
Project # 20560
FID # DACA45-96-D-0014

Date Arrived 10/16/98
ETC Order Number 9810578

ETC Lab ID 9810578-11
Sample ID: C-A-001

Matrix :SOIL
Sample Date :10/16/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
PCBs				10/19/98	10/21/98	RG	8082
QC Batch	P08021	ug/Kg					
PCB-1016	ND	ug/Kg	35.0	J			
PCB-1221	ND	ug/Kg	35.0				
PCB-1232	ND	ug/Kg	35.0				
PCB-1242	ND	ug/Kg	35.0				
PCB-1248	ND	ug/Kg	35.0				
PCB-1254	ND	ug/Kg	35.0				
PCB-1260	ND	ug/Kg	35.0	↓			
<u>Surrogate Standard</u>	<u>% Recovery</u>		<u>QC Limits</u>				
S1 - Tetrachloro-m-xylene	97		20	122			
S2 - Decachlorobiphenyl	74		17	141			


LABORATORY MANAGER

ND - Not Detected

000025

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

377 101

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560
FID # DACA45-96-D-0014

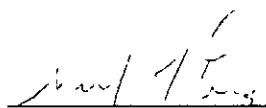
Site ID DDMT
Memphis, TN

Date Arrived 10/16/98
ETC Order Number 9810578

ETC Lab ID 9810578-12
Sample ID: C-EQ-SS-A-001

Matrix :AQUEOUS
Sample Date :10/16/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
PCBs				10/20/98	10/22/98	RG	8082
QC Batch	P09011	ug/L					
PCB-1016	ND	ug/L	0.500				
PCB-1221	ND	ug/L	0.500				
PCB-1232	ND	ug/L	0.500				
PCB-1242	ND	ug/L	0.500				
PCB-1248	ND	ug/L	0.500				
PCB-1254	ND	ug/L	0.500				
PCB-1260	ND	ug/L	0.500				
<u>Surrogate Standard</u>			<u>% Recovery</u>	<u>QC Limits</u>			
S1 - Tetrachloro-m-xylene	82		31	96			
S2 - Decachlorobiphenyl	67		34	115			


LABORATORY MANAGER

ND - Not Detected

000026

377 102

Environmental Testing & Consulting, Inc.

Quality Control Reports

Metals (ICP/GFAA/CV)

000027

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
METALS - TCLP

377 103

Client Name : OHM Remediation Services
Project Name : Defense Depot - Memphis, TN
ETC Order # : 9810-578

HOLDING TIMES

QC Batch(s) for this order : ICP Metals V6-TC-23
Mercury V3-TC-42

TCLP Extraction : All soils extracted within 180 days.
(28 days for Mercury)
Sample Preparation: All TCLP leachates prepared and analyzed
within 180 days. (28 days for Mercury)

CALIBRATION

Initial Calibration : All criteria met.
Continuing Calibration : All criteria met.

SAMPLE ANALYSIS

Instrumentation : Thermo Jarrell Ash Enviro-I ICP
CETAC M-6000A Mercury Analyzer

Dilutions Required : No dilutions required.

QUALITY CONTROL

9810-578.MQCBLANK

Method Blank

V6-TC-23BLK - ICP Metals
V3-TC-42BLK - Mercury

No analytes detected in the Method Blank.

9810-578.MQCLCS

Laboratory Control Sample(s)

V6-TC-23LCS - ICP Metals
V3-TC-42LCS - Mercury

All criteria met.

9810-578.MQCMSMSD

Matrix Spike / Matrix Spike Dup - ICP Metals

9810-578-11 RPD : All analytes within QC limits.
C-A-001 Spike Recovery : All analytes within QC limits.

Refer to Laboratory Control Sample(s) for system verification.

Matrix Spike / Matrix Spike Dup - Hg

9810-578-11 RPD : All analytes within QC limits.
C-A-001 Spike Recovery : All analytes within QC limits.

Refer to Laboratory Control Sample(s) for system verification.

000028

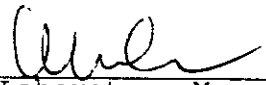
377 104

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
METALS - TCLP

Client Name : OHM Remediation Services
Project Name : Defense Depot - Memphis, TN
ETC Order # : 9810-578

Dilution Test - Dilution result must agree within 10% of original
result when sample is diluted by a factor of 5.

Post Digestion Spike - Recovery must be +/-15% of expected value.


Laboratory Manager

000029

TCLP METHOD BLANK
METALS

Lab Name	Environmental Testing and Consulting, Inc		
		QC Batch	
Laboratory ID ICP/GFAA Metals	<u>V6-TC-23</u>	BLK	<u>V6-TC-23</u>
Laboratory ID Mercury	<u>V3-TC-42</u>	BLK	<u>V3-TC-42</u>
Date Sample Prepared	<u>10/20/98</u>		ICP/GFAA Metals
	<u>10/21/98</u>		Mercury

Metals	Concentration mg/L	Detection Limit mg/L	Date Analyzed	Method
Silver	<0 500	0 500	10/20/98	6010B
Aluminum				6010B
Arsenic	<0 500	0 500	10/20/98	6010B
Barium	<5 00	5 00	10/20/98	6010B
Beryllium				6010B
Calcium				6010B
Cadmium	<0 100	0 100	10/20/98	6010B
Cobalt				6010B
Chromium	<0 500	0 500	10/20/98	6010B
Copper				6010B
Iron				6010B
Potassium				6010B
Magnesium				6010B
Manganese				6010B
Sodium				6010B
Nickel				6010B
Lead	<0 500	0 500	10/20/98	6010B
Antimony				6010B
Selenium	<0 500	0 500	10/20/98	6010B
Thallium				6010B
Vanadium				6010B
Zinc				6010B
Mercury	<0 020	0 020	10/21/98	7470A

Metals Blank

9810-578 mqcBLANK

000030

TCLP LABORATORY CONTROL SAMPLE
METALS

Lab Name Environmental Testing and Consulting, Inc

Laboratory Control ID	ICP/GFAA Metals	V6-TC-23	LCS	QC Batch
	Mercury	V3-TC-42	LCS	V6-TC-23
				V3-TC-42

Date Prepared	ICP/GFAA Metals	10/20/98
	Mercury	10/21/98

Metals	Spike Added mg/L	Found mg/L	% R	#	QC Limits	
Silver	0 250	0 264	106		80	120
Aluminum					80	120
Arsenic	1 25	1 34	107		80	120
Barium	2 50	2 54	102		80	120
Beryllium					80	120
Calcium					80	120
Cadmium	0 250	0 267	107		80	120
Cobalt					80	120
Chromium	0 500	0 543	109		80	120
Copper					80	120
Iron					80	120
Potassium					80	120
Magnesium					80	120
Manganese					80	120
Sodium					80	120
Nickel					80	120
Lead	1 25	1 32	106		80	120
Antimony					80	120
Selenium	1 25	1 37	110		80	120
Thallium					80	120
Vanadium					80	120
Zinc					80	120
Mercury	0 0050	0 0060	120		80	120

Column to be used to flag recovery values with an asterisk
* Values outside of QC limits

Metals Laboratory Control Sample

9810-578.mqcLCS

000031

377 107

TCLP MATRIX SPIKE
METALS

Lab Name Environmental Testing and Consulting, Inc

		QC Batch
Laboratory ID MS ICP/GFAA Metals	9810-578-11	V6-TC-23
Laboratory ID MS Mercury	9810-578-11	V3-TC-42

Date Sample Prepared	10/20/98	ICP/GFAA Metals
	10/21/98	Mercury

Metals	SPIKE Added mg/L	SAMPLE Conc mg/L	MS Conc mg/L	RPD <20% #	MS % Rec #	QC Limits	
Silver	0 250	ND	0 260	2	104	50	150
Aluminum						50	150
Arsenic	1 25	ND	1 38	1	110	50	150
Barium	2 50	1 14	3 65	1	100	50	150
Beryllium						50	150
Calcium						50	150
Cadmium	0 250	ND	0 244	3	98	50	150
Cobalt						50	150
Chromium	0 500	ND	0 514	2	103	50	150
Copper						50	150
Iron						50	150
Potassium						50	150
Magnesium						50	150
Manganese						50	150
Sodium						50	150
Nickel						50	150
Lead	1 25	ND	1 28	3	102	50	150
Antimony						50	150
Selenium	1 25	ND	1 56	1	125	50	150
Thallium						50	150
Vanadium						50	150
Zinc						50	150
Mercury	0 0050	ND	0 0075	21 *	150 *	50	150

Column to be used to flag recovery values with an asterisk

* Values outside of QC limits ND - Not Detected

Metals Matrix Spike

9810-578 mqcMSMSD

000032

TCLP MATRIX SPIKE DUPLICATE
METALS

Lab Name Environmental Testing and Consulting, Inc

Laboratory ID MS ICP/GFAA Metals	9810-578-11	QC Batch
Laboratory ID MS Mercury	9810-578-11	V6-TC-23
		V3-TC-42

Date Sample Prepared	10/20/98	ICP/GFAA Metals
	10/21/98	Mercury

Metals	SPIKE Added mg/L	SAMPLE Conc mg/L	MSD Conc mg/L	MSD % Rec	#	QC Limits	
Silver	0.250	ND	0.256	102		50	150
Aluminum						50	150
Arsenic	1.25	ND	1.39	111		50	150
Barium	2.50	1.14	3.63	100		50	150
Beryllium						50	150
Calcium						50	150
Cadmium	0.250	ND	0.251	100		50	150
Cobalt						50	150
Chromium	0.500	ND	0.506	101		50	150
Copper						50	150
Iron						50	150
Potassium						50	150
Magnesium						50	150
Manganese						50	150
Sodium						50	150
Nickel						50	150
Lead	1.25	ND	1.24	99		50	150
Antimony						50	150
Selenium	1.25	ND	1.57	126		50	150
Thallium						50	150
Vanadium						50	150
Zinc						50	150
Mercury	0.0050	ND	0.0061	122		50	150

Column to be used to flag recovery values with an asterisk

* Values outside of QC limits ND - Not Detected

Metals Matrix Spike Duplicate

9810-578 mqcMSMSD

000033

377 109

Environmental Testing & Consulting, Inc.

Quality Control Reports

GC/MS Volatiles

000034

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC/MS VOLATILE COMPOUNDS - TCLP

Client Name : OHM Remediation Services
Project Name : Defense Depot - Memphis, TN
ETC Order # : 9810-578
Method (SW-846) : 1311/8260B

HOLDING TIMES

TCLP Extraction : All samples extracted within 14 days.
Sample Analysis : All VOC extracts analyzed within 14 days.

QUALITY CONTROL

QC Batch Form 4 Summary
V1102001 V110201LB

System Monitoring Compounds FORM 2
Surrogate recoveries within QC limits.

Laboratory Control Sample FORM 3
V110201LCS

All criteria met.

Matrix Spike / Matrix Spike Dup FORM 3 - Water
9810-578-11 RPD : All analytes within QC limits.
C-A-001 Spike Recovery : All analytes within QC limits.*

*
Recoveries for 1,4-Dichlorobenzene were flagged outside QC Limits in the Matrix Spike and Matrix Spike Duplicate.

Refer to Laboratory Control Sample(s) for system verification.

Method Blank FORM 4
V110201LB

No Target Analytes detected above Practical Quantitation Limit.
Trace level is considered to be less than 2 times the detection limit.

CALIBRATION

BFB Daily 12 Hour Tune : All criteria met. FORM 5
Initial Calibration : All criteria met. FORM 6
Calibration Verification : All criteria met. FORM 7*

Calibration Verification(CV) : Date 10/20/98 Time: 14:30

Analyte	%Diff(30% Max)	Response
Isobutyl Alcohol	35.0	Low

Low response indicates that reported levels for this analyte may be biased low. This analyte was not a Target Analyte associated with this project. The data was not affected.

Volatile Internal Standard Area and RT FORM 8
Daily Check Standard(s) Internal Standard Areas and Retention Times within QC limits.

000035

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC/MS VOLATILE COMPOUNDS - TCLP

377 111

Client Name : OHM Remediation Services
Project Name : Defense Depot - Memphis, TN
ETC Order # : 9810-578
Method (SW-846) : 1311/8260B

SAMPLE ANALYSIS

Instrumentation : HP 5890 Series II GC, 5971MSD
Dilutions Required : No dilutions required.


Laboratory Manager

000036

377 112

FORM 2
WATER VOA-GCMS SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-578

	CLIENT SAMPLE NO.	SMC1 (DBF) #	SMC2 (TOL) #	SMC3 (BFB) #	OTHER	TOT OUT
01	V110201LCS	89	92	102		0
02	V110201LB	95	101	102		0
03	9810-578-11T	97	101	104		0
04	9810-578-11T	103	100	102		0
05	9810-578-11T	96	98	102		0
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QC LIMITS

SMC1 (DBF) = Dibromofluoromethane (74-123)
 SMC2 (TOL) = Toluene-d8 (86-112)
 SMC3 (BFB) = Bromofluorobenzene (81-115)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

000037

FORM 4
VOA-GCMS METHOD BLANK SUMMARY

377 113
CLIENT SAMPLE NO.

V110201LB

Lab Name: ETC, INC.

Lab Prep Batch: V1102001

SDG No.: 9810-578

Lab File ID: 0302003

Lab Prep Batch: V1102001

Date Analyzed: 10/20/98

Time Analyzed: 1410

GC Column: ID: 2 (mm)

Heated Purge: (Y/N) Y

Instrument ID: VOC1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	V110201LCS		0201002LCS	1205
02	9810-578-11T		0501005	1535
03	9810-578-11T		1301013	2112
04	9810-578-11T		1401014	2154
05				
06				
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COMMENTS:

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V110201LB

Lab Name: ETC, INC.

SDG No.: 9810-578

Matrix: (soil/water) WATER

Lab Prep Batch: V1102001

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0302003

Level: (low/med) LOW

Date Analyzed: 10/20/98

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
71-43-2-----	Benzene	1.00	U
56-23-5-----	Carbon Tetrachloride	1.00	U
108-90-7-----	Chlorobenzene	1.00	U
67-66-3-----	Chloroform	1.00	U
106-46-7-----	1,4-Dichlorobenzene	1.00	U
107-06-2-----	1,2-Dichloroethane	1.00	U
75-35-4-----	1,1-Dichloroethene	1.00	U
78-93-3-----	Methyl-Ethyl Ketone	100	U
127-18-4-----	Tetrachloroethene	1.00	U
108-88-3-----	Toluene	1.00	U
79-01-6-----	Trichloroethene	1.00	U
75-01-4-----	Vinyl Chloride	1.00	U

FORM I VOA-GCMS

000039

FORM 3
WATER VOA-GCMS LABORATORY CONTROL SAMPLE

377 115

Lab Name: ETC, INC.

Lab Prep Batch: V1102001

SDG No.: 9810-578

Matrix Spike - Sample No.: V110201LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Benzene	100		87.6	88	72-124
Carbon Tetrachloride	100		97.3	97	64-123
Chlorobenzene	100		94.2	94	77-112
Chloroform	100		88.0	88	70-115
1,4-Dichlorobenzene	100		89.8	90	78-116
1,2-Dichloroethane	100		84.7	85	62-124
1,1-Dichloroethene	100		92.6	93	69-121
Methyl-Ethyl Ketone	100		80.5	80	55-151
Tetrachloroethene	100		95.3	95	77-115
Trichloroethene	100		91.6	92	75-113
Vinyl Chloride	100		82.8	83	65-134

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits

Spike Recovery: 0 out of 11 outside limits

COMMENTS:

FORM III VOA-GCMS

000040

WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC, INC.

Lab Prep Batch: V1102001

SDG No.: 9810-578

Matrix Spike - Sample No.: 9810-578-11T

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Benzene	100	0.000	102	102	85-132
Carbon Tetrachloride	100	0.000	114	114	66-116
Chlorobenzene	100	0.000	95.8	96	86-108
Chloroform	100	0.000	100	100	68-132
1,4-Dichlorobenzene	100	0.000	87.3	87*	92-137
1,2-Dichloroethane	100	0.000	104	104	70-131
1,1-Dichloroethene	100	0.000	112	112	71-112
Methyl-Ethyl Ketone	100	0.000	93.6	94	70-130
Tetrachloroethene	100	0.000	99.2	99	88-126
Trichloroethene	100	0.000	101	101	80-118
Vinyl Chloride	100	0.000	122	122	48-145

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD REC.
Benzene	100	96.0	96	6	20 85-132
Carbon Tetrachloride	100	104	104	9	20 66-116
Chlorobenzene	100	94.2	94	2	20 86-108
Chloroform	100	94.5	94	6	20 68-132
1,4-Dichlorobenzene	100	83.8	84*	4	20 92-137
1,2-Dichloroethane	100	92.5	92	12	20 70-131
1,1-Dichloroethene	100	102	102	9	20 71-112
Methyl-Ethyl Ketone	100	83.4	83	12	20 70-130
Tetrachloroethene	100	93.8	94	5	20 88-126
Trichloroethene	100	97.4	97	4	20 80-118
Vinyl Chloride	100	109	109	11	20 48-145

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 11 outside limits

Spike Recovery: 2 out of 22 outside limits

COMMENTS:

Environmental Testing & Consulting, Inc.

Quality Control Reports

GC/MS Semi-Volatiles

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC/MS SEMI-VOLATILE COMPOUNDS - TCLP

Client Name : OHM Remediation Services
Project Name : Defense Depot - Memphis, TN
ETC Order # : 9810-578
Method (SW-846) : 1311/8270C

HOLDING TIMES

TCLP Extraction : All samples extracted within 14 days.
Sample Extraction : All TCLP leachate/filtrates extracted within 7 days.
Sample Analysis : All Non-VOC extracts analyzed within 40 days.

QUALITY CONTROL

QC Batch Form 4 Summary
P05059 P05059TLB

System Monitoring Compounds FORM 2
Surrogate recoveries within QC limits.

Laboratory Control Sample FORM 3
P05059TLCS

All criteria met.

Matrix Spike / Matrix Spike Dup FORM 3 - Water
9810-578-11T RPD : All analytes within QC limits.
C-A-001 Spike Recovery : All analytes within QC limits.

Refer to Laboratory Control Sample(s) for system verification.

Method Blank FORM 4
P05059TLB

No Target Analytes detected above Practical Quantitation Limit.
Trace level is considered to be less than 2 times the detection limit.

CALIBRATION

DFTPP Daily 12 Hour Tune : All criteria met. FORM 5
Initial Calibration : All criteria met. FORM 6
Calibration Verification : All criteria met. FORM 7*

Calibration Verification(CV) : Date 10/20/98 Time: 14:30

Analyte	%Diff(30% Max)	Response
Benzoic Acid	45.2	Low

Low response indicates that reported levels for this analyte may be biased low. This analyte was not a Target Analyte associated with this project. The data was not affected.

Semi-Volatile Internal Standard Area and RT FORM 8
Daily Check Standard(s) Internal Standard Areas and Retention Times within QC limits.

000043

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC/MS SEMI-VOLATILE COMPOUNDS - TCLP

377 119

Client Name : _OHM Remediation Services
Project Name : _Defense Depot - Memphis, TN

ETC Order # : _9810-578
Method (SW-846) : _1311/8270C

SAMPLE ANALYSIS

Instrumentation : HP 5890 Series II GC, 5971MSD
Dilutions Required : No dilutions required.


Laboratory Manager

000044

FORM 2
WATER BNA-GCMS SURROGATE RECOVERY

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-578

	CLIENT SAMPLE NO.	S1 (2FP) #	S2 (PHL) #	S3 (NBZ) #	S4 (FBP) #	S5 (TBP) #	S6 (TPH) #	S7 #	S8 #	TOT OUT
01	P05059TLB	45	32	53	56	79	74			0
02	P05059TLCS	53	39	56	57	86	76			0
03	9810-578-11T	52	36	59	61	86	73			0
04	9810-578-11T	50	36	56	55	87	73			0
05	9810-578-11T	52	37	55	57	91	77			0
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QC LIMITS

S1 (2FP) = 2-Fluorophenol (8- 88)
 S2 (PHL) = Phenol-d6 (7- 58)
 S3 (NBZ) = Nitrobenzene-d5 (29-110)
 S4 (FBP) = 2-Fluorobiphenyl (38-107)
 S5 (TBP) = 2,4,6-Tribromophenol (16-138)
 S6 (TPH) = Terphenyl-d14 (33-122)

Column to be used to flag recovery values
 * Values outside of contract required QC limits
 D Surrogate diluted out

FORM 4
BNA-GCMS METHOD BLANK SUMMARY

377 121
CLIENT SAMPLE NO

P05059TLB

Lab Name: ETC, INC.

Lab Prep Batch: P05059

Lab File ID: 0801008

Matrix: (soil/water) WATER

Level:(low/med) LOW

SDG No.: 9810-578

Instrument ID: BNA2

Date Analyzed: 10/20/98

Time Analyzed: 1733

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	P05059TLCS		0901009	10/20/98
02	9810-578-11T		1001010	10/20/98
03	9810-578-11T		1101011	10/20/98
04	9810-578-11T		1201012	10/20/98
05				
06				
07				
08				
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COMMENTS:

377 122

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

Lab Name: ETC, INC.

P05059TLB

SDG No.: 9810-578

Matrix: (soil/water) WATER

Lab Prep Batch: P05059

Sample wt/vol: 250.0 (g/mL) ML

Lab File ID: 0801008

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 1 (mL)

Date Analyzed: 10/20/98

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q
106-46-7-----	1,4-Dichlorobenzene	8.0	U	
121-14-2-----	2,4-Dinitrotoluene	8.0	U	
118-74-1-----	Hexachlorobenzene	8.0	U	
87-68-3-----	Hexachlorobutadiene	8.0	U	
67-72-1-----	Hexachloroethane	8.0	U	
95-48-7-----	2-Methylphenol	8.0	U	
106-44-5-----	3&4-Methylphenol	8.0	U	
98-95-3-----	Nitrobenzene	8.0	U	
87-86-5-----	Pentachlorophenol	20.0	U	
110-86-1-----	Pyridine	8.0	U	
95-95-4-----	2,4,5-Trichlorophenol	8.0	U	
88-06-2-----	2,4,6-Trichlorophenol	8.0	U	

FORM I BNA-GCMS

000047

FORM 3
WATER BNA-GCMS LABORATORY CONTROL SAMPLE

377 123

Lab Name: ETC, INC.

Lab Prep Batch: P05059

SDG No.: 9810-578

Matrix Spike - Sample No.: P05059tLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
1,4-Dichlorobenzene	100		65.1	65	31- 97
2,4-Dinitrotoluene	100		72.1	72	34-130
Hexachlorobenzene	100		89.5	90	65-133
Hexachlorobutadiene	100		65.2	65	50-112
Hexachloroethane	100		61.7	62	37-100
2-Methylphenol	160		105	66	40-117
3&4-Methylphenol	160		94.4	59	46- 99
Nitrobenzene	100		67.2	67	57-120
Pentachlorophenol	160		144	90	22-171
Pyridine	100		58.3	58	10- 82
2,4,5-Trichlorophenol	160		113	71	31-147
2,4,6-Trichlorophenol	160		117	73	30-163

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 12 outside limits

COMMENTS:

FORM III BNA-GCMS

000048

FORM 3
WATER BNA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC, INC.

Lab Prep Batch: P05059

SDG No.: 9810-578

Matrix Spike - Sample No.: 9810-578-11t

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
1,4-Dichlorobenzene	400	0.00	249	62	31- 97
2,4-Dinitrotoluene	400	0.00	277	69	34-130
Hexachlorobenzene	400	0.00	323	81	65-133
Hexachlorobutadiene	400	0.00	257	64	50-112
Hexachloroethane	400	0.00	235	59	37-100
2-Methylphenol	640	0.00	403	63	40-117
3&4-Methylphenol	640	0.00	361	56	46- 99
Nitrobenzene	400	0.00	252	63	57-120
Pentachlorophenol	640	0.00	558	87	22-171
Pyridine	400	0.00	229	57	10- 82
2,4,5-Trichlorophenol	640	0.00	444	69	31-147
2,4,6-Trichlorophenol	640	0.00	449	70	30-163

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD REC.
1,4-Dichlorobenzene	400	255	64	3	20 31- 97
2,4-Dinitrotoluene	400	298	74	7	20 34-130
Hexachlorobenzene	400	340	85	5	20 65-133
Hexachlorobutadiene	400	253	63	2	20 50-112
Hexachloroethane	400	245	61	3	20 37-100
2-Methylphenol	640	416	65	3	20 40-117
3&4-Methylphenol	640	363	57	2	20 46- 99
Nitrobenzene	400	258	64	2	20 57-120
Pentachlorophenol	640	610	95	9	20 22-171
Pyridine	400	236	59	3	20 10- 82
2,4,5-Trichlorophenol	640	471	74	7	20 31-147
2,4,6-Trichlorophenol	640	479	75	7	20 30-163

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 12 outside limits
Spike Recovery: 0 out of 24 outside limits

COMMENTS:

Environmental Testing & Consulting, Inc.

Quality Control Reports

GC Pesticides

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
PESTICIDE - TCLP

Client Name : OHM Remediation Services
Project Name : Defense Depot - Memphis, TN
ETC Order # : 9810-578
Method (SW-846) : 1311/8081A

HOLDING TIMES

TCLP Extraction : All samples extracted within 14 days.
Sample Extraction : All TCLP leachate/filtrates extracted within 7 days.
Sample Analysis : All Non-VOC extracts analyzed within 40 days.

QUALITY CONTROL

QC Batch Form 4 Summary
P07028 P07028LB

System Monitoring Compounds FORM 2
Surrogate recoveries within QC limits.*

*
Surrogate recovery for Decachlorobiphenyl was flagged for high recovery in P07028LB. Surrogate recovery for Tetrachloro-m-xylene was within QC Limits.

Laboratory Control Sample FORM 3
P07028BS

All criteria met.

Matrix Spike / Matrix Spike Dup FORM 3
9810-578-11 RPD : All analytes within QC limits.
C-A-001 Spike Recovery : All analytes within QC limits.

Refer to Laboratory Control Samples for system verification.

Method Blank FORM 4
P07028LB

No Target Analytes detected above Practical Quantitation Limit.

CALIBRATION

Initial Calibration : All criteria met. FORM 6
Calibration Verification : All criteria met. FORM 7*

*
Calibration Verification(CV) : P110201A.20R (Primary)

Several analytes were flagged for high responses in P110201A. High responses indicate that reported levels for these analytes may be biased high. These analytes were not identified in samples associated with this project. Surrogate recoveries for Tetrachloro-m-xylene were within QC Limits for all samples associated with this project. The data was not affected.

000051

ENVIRONMENTAL TESTING AND CONSULTING, INC. . 377 127
MEMPHIS, TN
CASE NARRATIVE
PESTICIDE - TCLP

Client Name : OHM Remediation Services
Project Name : Defense Depot - Memphis, TN
ETC Order # : 9810-578
Method (SW-846) : 1311/8081A

SAMPLE ANALYSIS

Instrumentation : HP 5890 Series II GC
Dilutions Required : No dilutions required.


Laboratory Manager

000052

FORM 2
WATER PESTICIDE SUPROGATE RECOVERY

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-578

	EPA GC SAMPLE NO.	S1 (TMX) #	S2 (DBC) #	S3 #	S4 #	S5 #	S6 #	S7 #	S8 #	TOT OUT
01	P07028LB	87	121*							1
02	P07028BS	40	55							0
03	9810-578-11	88	112							0
04	9810-578-11M	44	54							0
05	9810-578-11M	43	54							0
06										
07										
08										
09										
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QC LIMITS

S1 (TMX) = Tetrachloro-m-xylene (31- 96)

S2 (DBC) = Decachlorobiphenyl (34-115)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

377 129

FORM 4
PESTICIDE METHOD BLANK SUMMARY

EPA GC SAMPLE NO.

P07028LB

Lab Name: ETC, INC.

Lab Prep Batch: P07028

SDG No.: 9810-578

Lab File ID: P110201A-13R

Instrument ID: PEST1A

Matrix: (soil/water) WATER

Date Analyzed: 10/21/98

Level:(low/med) LOW

Time Analyzed: 0001

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA GC SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	P07028BS		P110201A-15R	10/21/98
02	9810-578-11		P110201A-16R	10/21/98
03	9810-578-11M		P110201A-18R	10/21/98
04	9810-578-11M		P110201A-19R	10/21/98
05				
06				
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08				
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COMMENTS:

377 130

FORM 1
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA GC SAMPLE NO.

P07028LB

Lab Name: ETC, INC.

SDG No.: 9810-578

Matrix: (soil/water) WATER

Lab Prep Batch: P07028

Sample wt/vol: 250.0 (ug/L)

Lab File ID: P110201A-13R

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 10 (mL)

Date Analyzed: 10/21/98

Injection Volume: 1.0 (uL)

Dilution Factor: 10.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
309-00-2-----	Aldrin	0.16000	U
319-84-6-----	alpha-BHC	0.16000	U
319-85-7-----	beta-BHC	0.16000	U
319-86-8-----	delta-BHC	0.16000	U
58-89-9-----	gamma-BHC (Lindane)	0.16000	U
5103-71-9-----	alpha-chlordane	0.16000	U
5103-74-2-----	gamma-chlordane	0.16000	U
72-54-8-----	4,4'-DDD	0.16000	U
72-55-9-----	4,4'-DDE	0.16000	U
50-29-3-----	4,4'-DDT	0.16000	U
60-57-1-----	Dieldrin	0.16000	U
959-98-8-----	Endosulfan I	0.16000	U
33213-65-9-----	Endosulfan II	0.16000	U
1031-07-8-----	Endosulfan sulfate	0.16000	U
72-20-8-----	Endrin	0.16000	U
7421-93-4-----	Endrin aldehyde	0.16000	U
53494-70-5-----	Endrin Ketone	0.16000	U
76-44-8-----	Heptachlor	0.16000	U
1024-57-3-----	Heptachlor epoxide	0.16000	U
72-43-5-----	Methoxychlor	0.16000	U

FORM I PESTICIDE

000055

FORM 3
WATER PESTICIDE LABORATORY CONTROL SAMPLE

377 131

Lab Name: ETC, INC.

Lab Prep Batch: P07028

SDG No.: 9810-578

Matrix Spike - Sample No.: P07028BS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
gamma-BHC (Lindane)	1.00000		0.85477	85	41-102
Endrin	1.00000		0.93499	93	45-117
Heptachlor	1.00000		0.91171	91	43-114
Methoxychlor	1.00000		1.12535	112	39-140

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 4 outside limits

COMMENTS:

FORM III PESTICIDE

000056

WATER PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC, INC.

Lab Prep Batch: P07028

SDG No.: 9810-578

Matrix Spike - Sample No.: 9810-578-11

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
gamma-BHC (Lindane)	4.00000	0.00000	3.84465	96	26-113
Endrin	4.00000	0.00000	4.17938	104	44-118
Heptachlor	4.00000	0.00000	4.11608	103	47-113
Methoxychlor	4.00000	0.00000	4.51974	113	39-147

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
gamma-BHC (Lindane)	4.00000	3.69669	92	4	20	26-113
Endrin	4.00000	3.82011	96	8	20	44-118
Heptachlor	4.00000	3.86118	96	7	20	47-113
Methoxychlor	4.00000	4.54272	114	1	20	39-147

Column to be used to flag recovery and RPD values with an asterisk
 * Values outside of QC limits

RPD: 0 out of 4 outside limits
 Spike Recovery: 0 out of 8 outside limits

COMMENTS:

Environmental Testing & Consulting, Inc.

Quality Control Reports

GC Herbicides

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
HERBICIDE - TCLP

Client Name : OHM Remediation Services
Project Name : Defense Depot - Memphis, TN
ETC Order # : 9810-578
Method (SW-846) : 1311/8151A

HOLDING TIMES

TCLP Extraction : All samples extracted within 14 days.
Sample Extraction : All TCLP leachate/filtrates extracted within 7 days.
Sample Analysis : All Non-VOC extracts analyzed within 40 days.

QUALITY CONTROL

QC Batch Form 4 Summary
P11011 P11011LB

System Monitoring Compounds FORM 2
Surrogate recoveries within QC limits.

Laboratory Control Sample FORM 3
P11011BS

All criteria met.

Matrix Spike / Matrix Spike Dup FORM 3 - Water
9810-578-11 RPD : All analytes within QC limits.*
C-A-001 Spike Recovery : All analytes within QC limits.
*

RPD for 2,4-D was flagged as outside QC Limits due to higher recovery in the Matrix Spike.

Refer to Laboratory Control Samples for system verification.

Method Blank FORM 4
P11011LB

No Target Analytes detected above Practical Quantitation Limit.

CALIBRATION

Initial Calibration : All criteria met. FORM 6
Calibration Verification : All criteria met. FORM 7*

Calibration Verification(CV) : H310201B.19R (Primary)

Analyte	%Diff(15% Max)	Response
2,4-D	55.7	High
Silvex	34.7	High
2,4,5-T	66.0	High

High responses indicate that reported levels for these analytes may be biased high. These analytes were not identified in samples associated with this project. The data was not affected.

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
HERBICIDE - TCLP

377 135

Client Name : OHM Remediation Services
Project Name : Defense Depot - Memphis, TN
ETC Order # : 9810-578
Method (SW-846) : 1311/8151A

CALIBRATION

Calibration Verification(CV) : H310201B.20R (Primary)

Analyte	%Diff(15% Max)	Response
2,4-D	51.3	High
Silvex	34.0	High
2,4,5-T	58.0	High

High responses indicate that reported levels for these analytes may be biased high. These analytes were not identified in samples associated with this project. The data was not affected.

SAMPLE ANALYSIS

Instrumentation : HP 5890 Series II GC
Dilutions Required : No dilutions required.


Laboratory Manager

000060

377 136

FORM 2
WATER HERBICIDE SURROGATE RECOVERY

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-578

	EPA GC SAMPLE NO.	S1 #	S2 #	S3 #	S4 #	S5 #	S6 #	S7 #	S8 #	TOT OUT
01	P11011LB	103								0
02	P11011BS	82								0
03	9810-578-11	75								0
04	9810-578-11M	99								0
05	9810-578-11M	116								0
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S1 = 2,4,5-T

QC LIMITS
(25-125)

Column to be used to flag recovery values
 * Values outside of contract required QC limits
 D Surrogate diluted out

000061

377 137

FORM 4
HERBICIDE METHOD BLANK SUMMARY

EPA GC SAMPLE NO.

P11011LB

Lab Name: ETC, INC.

Lab Prep Batch: P11011

SDG No.: 9810-578

Lab File ID: H310201B-08R

Instrument ID: PEST3B

Matrix: (soil/water) WATER

Date Analyzed: 10/20/98

Level:(low/med) LOW

Time Analyzed: 2002

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA GC SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	P11011BS		H310201B-11R	10/20/98
02	9810-578-11		H310201B-12R	10/20/98
03	9810-578-11M		H310201B-17R	10/21/98
04	9810-578-11M		H310261A-08R	10/26/98
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COMMENTS:

377 138

FORM 1
HERBICIDE ORGANICS ANALYSIS DATA SHEET

EPA GC SAMPLE NO.

P11011LB

Lab Name: ETC, INC.

SDG No.: 9810-578

Matrix: (soil/water) WATER

Lab Prep Batch: P11011

Sample wt/vol: _____ (g/mL) ML

Lab File ID: H310201B-08R

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 5 (mL)

Date Analyzed: 10/20/98

Injection Volume: 1.0 (uL)

Dilution Factor: 5.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
94-75-7-----	2,4-D	1.00	U
93-72-1-----	Silvex	0.100	U

FORM I HERBICIDE

000063

FORM 3
WATER HERBICIDE LABORATORY CONTROL SAMPLE

377 139

Lab Name: ETC, INC.

Lab Prep Batch: P11011

SDG No.: 9810-578

Matrix Spike - Sample No.: P11011BS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
2,4-D	10.00		8.82	88	25-125
Silvex	10.00		4.22	42	25-125

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 2 outside limits

COMMENTS:

FORM III HERBICIDE

000064

377 140

FORM 3

WATER HERBICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC, INC.

Lab Prep Batch: P11011

SDG No.: 9810-578

Matrix Spike - Sample No.: 9810-578-11

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
2,4-D	10.00	0.000	10.43	104	25-125
Silvex	10.00	0.338	4.43	44	25-125

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
2,4-D	10.00	7.85	78	29*	20	25-125
Silvex	10.00	3.86	39	12	20	25-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 2 outside limits

Spike Recovery: 0 out of 4 outside limits

COMMENTS:

FORM III HERBICIDE

000065

Environmental Testing & Consulting, Inc.

Quality Control Reports

GC PCBs

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC PCBS - SOIL

Client Name : OHM Remediation Services
Project Name : Defense Depot - Memphis, TN
ETC Order # : 9810-578
Method (SW-846) : 8082/3550B

HOLDING TIMES

Sample Extraction : All soil samples extracted within 14 days.
Sample Analysis : All samples analyzed within 40 days of
extraction.

QUALITY CONTROL

QC Batch Form 4 Summary
P08021 P08021LB

System Monitoring Compounds FORM 2
Surrogate recoveries within QC limits.*

*
Samples for this project were analyzed at multiple dilutions in order to ensure that final results were reported within calibration range. The Surrogate Recovery report (Form 2) shows some surrogate recoveries flagged as outside QC Limits for these dilutions. Final results were reported from the lowest dilution within calibration range.

Surrogate recovery for Tetrachloro-m-xylene was flagged as outside QC Limits in sample 9810-578-05(B2-S4). Review of raw data showed interference from Non-Target Analytes present in the samples. This sample was also analyzed at a 1:10 dilution with surrogate recovery within QC Limits. Both results were reported.

Laboratory Control Sample FORM 3
P08021LCS

All criteria met.

Matrix Spike / Matrix Spike Dup FORM 3
9810-578-11 RPD : All analytes within QC limits.
C-A-001 Spike Recovery : All analytes within QC limits.

Refer to Laboratory Control Sample(s) for system verification.

Method Blank FORM 4
P08021LB

No Target Analytes detected above Practical Quantitation Limit.

CALIBRATION

Initial Calibration : All criteria met. FORM 6
Calibration Verification : All criteria met. FORM 7*

Calibration Verification(CV) : C210201A.20R (Primary)

Analyte	%Diff(15% Max)	Response
Aroclor 1242	15.6	High
Aroclor 1260	40.8	High

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC PCBS - SOIL

377 143

Client Name : OHM Remediation Services
Project Name : Defense Depot - Memphis, TN
ETC Order # : 9810-578
Method (SW-846) : 8082/3550B

CALIBRATION

High responses indicate that reported levels for these analytes may be biased high. Final results for this project were not reported from this sequence. The data was not affected.

Calibration Verification(CV) : C210201A.21R (Primary)

Analyte	%Diff(15% Max)	Response
Aroclor 1242	16.0	High
Aroclor 1260	41.6	High

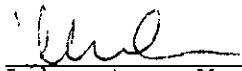
High responses indicate that reported levels for these analytes may be biased high. Final results for this project were not reported from this sequence. The data was not affected.

SAMPLE ANALYSIS

Instrumentation : HP 5890 Series II GC
Dilutions Required : No dilutions required.*

*
Dilutions were performed on samples associated with this project to bring the Target Analyte(s) within calibration range.

<u>Sample ID</u>	<u>Dilutions Performed</u>
9810-578-01	1:10
9810-578-02	1:10
9810-578-05	1:10


Laboratory Manager

000068

FORM 2
SOIL PCB SURROGATE RECOVERY

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-578

Level: (low/med) LOW

	EPA GC SAMPLE NO.	S1 (TMX) #	S2 (DBC) #	S3 #	S4 #	S5 #	S6 #	S7 #	S8 #	TOT OUT
01	9810-578-11	96	179D							
02	P08021LB	102	107							0
03	9810-578-1	90	101							0
04	P08021LCS	112	108							0
05	9810-578-1	104	94							0
06	9810-578-2	106	99							0
07	9810-578-3	103	110							0
08	9810-578-4	109	96							0
09	9810-578-2	49	140							0
10	9810-578-3	87	231D							0
11	9810-578-5	337*	79							0
12	9810-578-4	82	192D							1
13	9810-578-5	79	132							0
14	9810-578-6	89	114							0
15	9810-578-6	73	130							0
16	9810-578-7	100	81							0
17	9810-578-7	83	177D							0
18	9810-578-8	76	164D							0
19	9810-578-8	76	68							0
20	9810-578-9	75	197D							0
21	9810-578-9	78	68							0
22	9810-578-10	80	202D							0
23	9810-578-10	78	70							0
24	9810-578-11	97	74							0
25	9810-578-5	88	114							0
26	9810-578-11M	83	120							0
27	9810-578-11M	83	163*							0
28										1
29										
30										

QC LIMITS

S1 (TMX) = Tetrachloro-m-xylene (20-122)

S2 (DBC) = Decachlorobiphenyl (17-141)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

FORM 4
PCB METHOD BLANK SUMMARY

377 145
EPA GC SAMPLE NO.

P08021LB

Lab Name: ETC, INC.

Lab Prep Batch: P08021

Lab File ID: C210211B-11R

Matrix: (soil/water) SOIL

Level:(low/med) LOW

SDG No.: 9810-578

Instrument ID: PEST2B

Date Analyzed: 10/22/98

Time Analyzed: 0027

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA GC SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	9810-578-11		C210201A-17R	10/21/98
02	9810-578-1		C210211B-17R	10/22/98
03	P08021LCS		C210211B-18R	10/22/98
04	9810-578-1		C210211B-19R	10/22/98
05	9810-578-2		C210211B-20R	10/22/98
06	9810-578-3		C210211B-23R	10/22/98
07	9810-578-4		C210211B-24R	10/22/98
08	9810-578-2		C310221A-10R	10/22/98
09	9810-578-3		C310221A-11R	10/22/98
10	9810-578-5		C210211B-25R	10/22/98
11	9810-578-4		C310221A-12R	10/22/98
12	9810-578-5		C310221A-13R	10/22/98
13	9810-578-6		C210211B-27R	10/22/98
14	9810-578-6		C310221A-14R	10/22/98
15	9810-578-7		C210211B-28R	10/22/98
16	9810-578-7		C310221A-15R	10/22/98
17	9810-578-8		C310221A-16R	10/22/98
18	9810-578-8		C210211B-29R	10/22/98
19	9810-578-9		C310221A-17R	10/22/98
20	9810-578-9		C210211B-30R	10/22/98
21	9810-578-10		C310221A-18R	10/22/98
22	9810-578-10		C210211B-31R	10/22/98
23	9810-578-11		P110201A-17R	10/21/98
24	9810-578-11M		C310221A-20R	10/22/98
25	9810-578-11M		C310221A-21R	10/22/98
26				
27				
28				
29				
30				

COMMENTS:

377 146

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

EPA GC SAMPLE NO.

P08021LB

Lab Name: ETC, INC.

SDG No.: 9810-578

Matrix: (soil/water) SOIL

Lab Prep Batch: P08021

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C210211B-11R

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 10(mL)

Date Analyzed: 10/22/98

Injection Volume: 1.0(uL)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2-----	Aroclor 1016	16.67	U
11104-28-2-----	Aroclor 1221	16.67	U
11141-16-5-----	Aroclor 1232	16.67	U
53469-21-9-----	Aroclor 1242	16.67	U
11097-69-1-----	Aroclor 1254	16.67	U
11096-82-5-----	Aroclor 1260	16.67	U
12672-29-6-----	Aroclor 1248	16.67	U

FORM I PCB

000071

FORM 3
SOIL PCB LABORATORY CONTROL SAMPLE

377 147

Lab Name: ETC, INC.

Lab Prep Batch: P08021

SDG No.: 9810-578

Matrix Spike - Sample No.: p080211cs

Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Aroclor 1242	333.3		393.1	118	25-125
Aroclor 1260	333.3		330.4	99	25-125

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits

Spike Recovery: 0 out of 2 outside limits

COMMENTS:

FORM III PCB

000072

377-148

FORM 3
SOIL PCB MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC, INC.

Lab Prep Batch: P08021

SDG No.: 9810-578

Matrix Spike - Sample No.: 9810-578-11 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Aroclor 1242	332.2	0.000	305.7	92	25-125
Aroclor 1260	332.2	0.000	264.5	80	25-125

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD REC.
Aroclor 1242	328.9	355.1	108	16	20 25-125
Aroclor 1260	328.9	278.0	84	5	20 25-125

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 2 outside limits

Spike Recovery: 0 out of 4 outside limits

COMMENTS:

FORM III PCB

000073

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC PCBS - AQUEOUS

377 149

Client Name : OHM Remediation Services
Project Name : Defense Depot - Memphis, TN
ETC Order # : 9810-578
Method (SW-846) : 8082/3510C

HOLDING TIMES

Sample Extraction : All aqueous samples extracted within 7 days.
Sample Analysis : All samples analyzed within 40 days of
extraction.

QUALITY CONTROL

QC Batch Form 4 Summary
P09011 P09011LB

System Monitoring Compounds FORM 2
Surrogate recoveries within QC limits.*
*

Surrogate recovery for Decachlorobiphenyl was flagged as outside
QC Limits in the 1:10 dilution of sample 9810-578-12(C-EQ-SS-A-001).
Surrogate recoveries were reported from the undiluted analysis.

Laboratory Control Sample FORM 3
P09011LCS/LCSD

All criteria met.

Matrix Spike / Matrix Spike Dup FORM 3
RPD : NA*
Spike Recovery : NA*

*
Due to the limited amount of sample available, no MS/MSD were
extracted.

Refer to Laboratory Control Sample(s) for system verification.

Method Blank FORM 4
P09011LB

No Target Analytes detected above Practical Quantitation Limit.

CALIBRATION

Initial Calibration : All criteria met. FORM 6
Calibration Verification : All criteria met. FORM 7*
*

Calibration Verification(CV) : C210201A.20R (Primary)

Analyte	%Diff(15% Max)	Response
Aroclor 1242	15.6	High
Aroclor 1260	40.8	High

High responses indicate that reported levels for these analytes may
be biased high. Final results for this project were not reported from
this sequence. The data was not affected.

000074

377 150

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC PCBS - AQUEOUS

Client Name : OHM Remediation Services
Project Name : Defense Depot - Memphis, TN
ETC Order # : 9810-578
Method (SW-846) : 8082/3510C

CALIBRATION

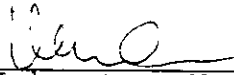
Calibration Verification(CV) : C210201A.21R (Primary)

Analyte	%Diff(15% Max)	Response
Aroclor 1242	16.0	High
Aroclor 1260	41.6	High

High responses indicate that reported levels for these analytes may be biased high. Final results for this project were not reported from this sequence. The data was not affected.

SAMPLE ANALYSIS

Instrumentation : HP 5890 Series II GC
Dilutions Required : No dilutions required.


Laboratory Manager

000075

FORM 2
WATER PCB SURROGATE RECOVERY

377 151

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-578

	EPA GC SAMPLE NO.	S1 (TMX) #	S2 (DBC) #	S3 #	S4 #	S5 #	S6 #	S7 #	S8 #	TOT OUT
01	P09011LB	73	88							0
02	P09011LCS	92	92							0
03	P09011LCSD	82	89							0
04	~~9810-578-12~~	76	118D	110(S) (P)						0
05	9810-578-12	82	67							0
06										
07										
08										
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QC LIMITS

S1 (TMX) = Tetrachloro-m-xylene (31- 96)
S2 (DBC) = Decachlorobiphenyl (34-115)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

377 152

FORM 4
PCB METHOD BLANK SUMMARY

EPA GC SAMPLE NO.

Lab Name: ETC, INC.

P09011LB

Lab Prep Batch: P09011

SDG No.: 9810-578

Lab File ID: C210211B-12R

Instrument ID: PEST2B

Matrix: (soil/water) WATER

Date Analyzed: 10/22/98

Level: (low/med) LOW

Time Analyzed: 0110

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA GC SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	P09011LCS		C210211B-15R	10/22/98
02	P09011LCSD		C210211B-16R	10/22/98
03	9810-578-12		C310221A-19R	10/22/98
04	9810-578-12		C210211B-32R	10/22/98
05				
06				
07				
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09				
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COMMENTS:

377 153

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

EPA GC SAMPLE NO.

P09011LB

Lab Name: ETC, INC.

SDG No.: 9810-578

Matrix: (soil/water) WATER

Lab Prep Batch: P09011

Sample wt/vol: _____ (g/mL) ML

Lab File ID: C210211B-12R

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 10 (mL)

Date Analyzed: 10/22/98

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

12674-11-2-----Aroclor 1016	0.500	U
11104-28-2-----Aroclor 1221	0.500	U
11141-16-5-----Aroclor 1232	0.500	U
53469-21-9-----Aroclor 1242	0.500	U
11097-69-1-----Aroclor 1254	0.500	U
11096-82-5-----Aroclor 1260	0.500	U
12672-29-6-----Aroclor 1248	0.500	U

FORM I PCB

000078

377 154

FORM 3
WATER PCB LABORATORY CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: P09011

SDG No.: 9810-578

Matrix Spike - Sample No.: P09011LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Aroclor 1242	10.00		10.25	102	25-125
Aroclor 1260	10.00		9.54	95	25-125

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD REC.
Aroclor 1242	10.00	9.50	95	7	20 25-125
Aroclor 1260	10.00	8.98	90	5	20 25-125

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 2 outside limits
Spike Recovery: 0 out of 4 outside limits

COMMENTS: _____

FORM III PCB

000079

**COMPOSITE CONFIRMATION SAMPLES COLLECTED
FOLLOWING EXCAVATION IN AREA A (12" bls)
& CLEAN BACKFILL (TOP SOIL) SAMPLE**

Date Collected 10/19/98

**A2-C1-001 (Composite of Grid A2)
A3-C1-001 (Composite of Grid A3)
A4-C1-001 (Duplicate of A2-C1-001)
C-EQ-CS-002 (Equipment Blank)
&
C-TS-008 (Top Soil Sample)**



ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road • Memphis, TN 38111 • (901) 327-2750 • FAX (901) 327-6331

Founded 1972

377 156

October 22, 1998

Ms. Elena Rodriguez
OHM Remediation Services
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Ref: Analytical Testing
ETC Order # 9810618
Project Description DDMT
Memphis, TN
Project # 20560
FID # DACA45-96-D-0014

The above referenced project has been analyzed per your instructions. The analyses were performed in our laboratory in accordance with Standard Methods 17th/18th Edition; The Solid Waste Manual SW-846; EPA Methods for the Analysis of Water and Wastes and/or 40 CFR part 136.

The results are shown on the attached analysis sheet(s).

Please do not hesitate to contact our office if you have any questions.

Sincerely,

Nathan A. Pera, IV
Chief Executive Officer

rt
Attachment

OHM_DDMT

Certifications

Tennessee #TN02027
Arkansas
Alabama #40730
Kentucky #90047
North Carolina #415
South Carolina #84002002

Mississippi
Oklahoma #9311
Virginia #00106
Washington #C248
US Army Corps of Engineers

Chemical Analytical Data
Review/Evaluation/Validation

SOUTHERN REGION

Report Type ☐ Preliminary ☒ Final Date Received _____ Project Number: 20560

Project Name: DDMT Analysis/Method: VOCs, SVOCs, Pest/PCBs
TNL metals, CN, org matter, PH

Laboratory: ETC Lab Project/Case Number: 9810618

Sample Number(s): C-TS-002, A2-~~C~~C1-001, A4-C1-001, A3-C1-001
C-EQ-CS-002, TB-101998

Evaluated By: S. Paranjape Date Evaluated: 2/3/99

Data Package Deliverables Requirement: ☐ OHM Minimum ☒ OHM Standard ☐ OHM Maximum

☐ Other, please describe _____

Quality Control Deliverables	Required	Received	Passed	Failed
PQL, MDL, RL, etc meets DQOs	✓		✓	
Comment:				
Holding Times			✓	
Comment:				
Sample Condition (preservatives, containers, temperature, etc) / Case Narrative	X		✓	
Comment:				
Surrogate Recoveries	X		✓	
Comment: out on C-TS-002 BNA, reanalysis ok. Data acceptable. w/o on pesticides, results flagged J and accepted.				
Lab Control Sample Recoveries	X		✓	
Comment: Low recoveries - data flagged J, high recoveries, results were 'ND' data accepted.				
Lab Control Sample Duplicate or Other Spike Recoveries	X		✓	
Comment: some out on Pest, LCS OK, data accepted.				
Lab Control Sample Duplicate or Other Laboratory Duplicate RPD	X		✓	
Comment: some out, data accepted with 'J' flag.				
Matrix Spike Recoveries	X		✓	
Comment: some out, LCS OK for those compounds. data accepted				
Matrix Spike Duplicate Recoveries	X		✓	
Comment: See note in MS recoveries				
Matrix Spike / Matrix Spike Duplicate RPD	X		✓	
Comment: See note in MS recoveries				
Laboratory Blanks (daily, method, instrument)	X		✓	
Comment:				
Field Blanks (trip, eqpt runrate, ambient, matrix)	X		✓	
Comment:				

Quality Control Deliverables		Required	Received	Passed	Failed
Field Duplicates RPD		X			
Comment:	<i>N/A</i>				
Second Source Check					
Comment:					
Second Column Confirmation		X		✓	
Comment:					
Percent Moisture/Solids				✓	
Comment:					
Initial / Continuing Calibrations		X		✓	
Comment:	<i>Some went back out for V.I.A., B.N.A., Post. Results flagged J and accepted.</i>				
Internal Standard Areas and Retention Times (Organics Only)		X		✓	
Comment:	<i>out for Perylene-d 12. Associated results flagged J and accepted.</i>				
Chromatograms		X		✓	
Comment:					
Sample Prep Worksheets		X		✓	
Comment:					
Raw Data Calculations					
Comment:	<i>N/A</i>				
Laboratory Duplicates					
Comment:					
Instrument Performance Checks (Organics Only)		X		✓	
Comment:					
Tentatively Identified Compounds (TICs)		X		✓	
Comment:					
Completeness	# Samples	# Analyses	Tot # Analyses	Tot # Accept Analyses	% Complete
Completeness = (Tot # Analyses / Tot # Accepted Analyses) x 100	5	8	40	40	100
General Comments:	1	1	1	1	100

Summary: ☐ See attached pages

Results flagged J for surrogate recoveries, LCS recoveries, RPDs, continuing calibrations and int standards. Data accepted as reported.

Check Applicable:

- ☐ Lab contacted--Corrective actions in process Date Contacted: _____
☐ Corrective actions received and accepted Date Received/Accepted: _____
☐ The data, as reported by the laboratory, are acceptable.
☒ The data, with qualifiers as described in the "Summary" portion of this report, are acceptable.
☐ The data are unacceptable.
☐ Other _____

S. Pasquini
 Evaluator's Signature

2/3/99
 Date

Environmental Testing & Consulting, Inc.
Data Qualifiers for Organic Reporting

Within the attached report, some analytical data may be reported as "Qualified Data" as indicated by a "Data Qualifier" next to the result. This table summarizes the possible "Data Qualifiers" that may be associated with this report

Q	Surrogate Recovery Outside QC Limits
J	Estimated Value. Presence of the compound was confirmed but less than the reported detection limit.
E	Concentration exceeds the established method calibration range but is within the working range of the instrument.
B	Analyte detected in the associated Method Blank.
U	Reported result was unconfirmed. Refer to Case Narrative.
N	Non-Compliance Report associated with this sample or project.
C	Result reported from GC/MS confirmation analysis.
NC	Result reported from Primary Column. Result did not confirm.
*	QC Data (percent recovery/RPD for a particular analyte was outside QC Limits)

ENVIRONMENTAL TESTING & CONSULTING, INC.
 2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ANALYTICAL SUMMARY TABLE

Client Name **OHM Remediation Services**
 Site ID **DDMT**
Memphis, TN

<u>ETC</u>				
<u>Sample ID</u>	<u>Field ID</u>	<u>Matrix</u>	<u>Method</u>	<u>Method Description</u>
981061801	C-TS-008	SOIL	6010B	Silver
981061801	C-TS-008	SOIL	6010B	Aluminum
981061801	C-TS-008	SOIL	7060A	Arsenic
981061801	C-TS-008	SOIL	8270C	GC/MS Base/Neutral & Acid
981061801	C-TS-008	SOIL	6010B	Barium
981061801	C-TS-008	SOIL	6010B	Beryllium
981061801	C-TS-008	SOIL	6010B	Calcium
981061801	C-TS-008	SOIL	6010B	Cadmium
981061801	C-TS-008	SOIL	9010A	Cyanide
981061801	C-TS-008	SOIL	6010B	Cobalt
981061801	C-TS-008	SOIL	6010B	Chromium
981061801	C-TS-008	SOIL	6010B	Copper
981061801	C-TS-008	SOIL	6010B	Iron
981061801	C-TS-008	SOIL	7471A	Mercury
981061801	C-TS-008	SOIL	6010B	Potassium
981061801	C-TS-008	SOIL	6010B	Magnesium
981061801	C-TS-008	SOIL	6010B	Manganese
981061801	C-TS-008	SOIL	6010B	Sodium
981061801	C-TS-008	SOIL	6010B	Nickel
981061801	C-TS-008	SOIL	D2974-87	Fractional Organic Matter
981061801	C-TS-008	SOIL	8081A	Organochlorine Pesticides
981061801	C-TS-008	SOIL	7421	Lead
981061801	C-TS-008	SOIL	8082	PCBs
981061801	C-TS-008	SOIL	9045C	pH - Corrosivity
981061801	C-TS-008	SOIL	6010B	Antimony
981061801	C-TS-008	SOIL	7740	Selenium
981061801	C-TS-008	SOIL		EnCore Sampler (5 gram)
981061801	C-TS-008	SOIL	7841	Thallium
981061801	C-TS-008	SOIL	8260B	GC/MS Volatile Organics
981061801	C-TS-008	SOIL	6010B	Vanadium
981061801	C-TS-008	SOIL	6010B	Zinc
981061802	A2-C1-001	SOIL	6010B	Silver
981061802	A2-C1-001	SOIL	6010B	Aluminum
981061802	A2-C1-001	SOIL	7060A	Arsenic
981061802	A2-C1-001	SOIL	8270C	GC/MS Base/Neutral & Acid
981061802	A2-C1-001	SOIL	6010B	Barium
981061802	A2-C1-001	SOIL	6010B	Beryllium
981061802	A2-C1-001	SOIL	6010B	Calcium
981061802	A2-C1-001	SOIL	6010B	Cadmium
981061802	A2-C1-001	SOIL	9010A	Cyanide
981061802	A2-C1-001	SOIL	6010B	Cobalt
981061802	A2-C1-001	SOIL	6010B	Chromium
981061802	A2-C1-001	SOIL	6010B	Copper
981061802	A2-C1-001	SOIL	6010B	Iron
981061802	A2-C1-001	SOIL	7471A	Mercury
981061802	A2-C1-001	SOIL	6010B	Potassium
981061802	A2-C1-001	SOIL	6010B	Magnesium
981061802	A2-C1-001	SOIL	6010B	Manganese
981061802	A2-C1-001	SOIL	6010B	Sodium
981061802	A2-C1-001	SOIL	6010B	Nickel
981061802	A2-C1-001	SOIL	8081A	Organochlorine Pesticides
981061802	A2-C1-001	SOIL	7421	Lead
981061802	A2-C1-001	SOIL	8082	PCBs
981061802	A2-C1-001	SOIL	6010B	Antimony
981061802	A2-C1-001	SOIL	7740	Selenium
981061802	A2-C1-001	SOIL		EnCore Sampler (5 gram)

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ANALYTICAL SUMMARY TABLE

377 161

Client Name **OHM Remediation Services**
Site ID **DDMT**
Memphis, TN

<u>ETC</u> <u>Sample ID</u>	<u>Field ID</u>	<u>Matrix</u>	<u>Method</u>	<u>Method Description</u>
981061802	A2-C1-001	SOIL	7841	Thallium
981061802	A2-C1-001	SOIL	8260B	GC/MS Volatile Organics
981061802	A2-C1-001	SOIL	6010B	Vanadium
981061802	A2-C1-001	SOIL	6010B	Zinc
981061803	A4-C1-001	SOIL	6010B	Silver
981061803	A4-C1-001	SOIL	6010B	Aluminum
981061803	A4-C1-001	SOIL	7060A	Arsenic
981061803	A4-C1-001	SOIL	8270C	GC/MS Base/Neutral & Acid
981061803	A4-C1-001	SOIL	6010B	Barium
981061803	A4-C1-001	SOIL	6010B	Beryllium
981061803	A4-C1-001	SOIL	6010B	Calcium
981061803	A4-C1-001	SOIL	6010B	Cadmium
981061803	A4-C1-001	SOIL	9010A	Cyanide
981061803	A4-C1-001	SOIL	6010B	Cobalt
981061803	A4-C1-001	SOIL	6010B	Chromium
981061803	A4-C1-001	SOIL	6010B	Copper
981061803	A4-C1-001	SOIL	6010B	Iron
981061803	A4-C1-001	SOIL	7471A	Mercury
981061803	A4-C1-001	SOIL	6010B	Potassium
981061803	A4-C1-001	SOIL	6010B	Magnesium
981061803	A4-C1-001	SOIL	6010B	Manganese
981061803	A4-C1-001	SOIL	6010B	Sodium
981061803	A4-C1-001	SOIL	6010B	Nickel
981061803	A4-C1-001	SOIL	8081A	Organochlorine Pesticides
981061803	A4-C1-001	SOIL	7421	Lead
981061803	A4-C1-001	SOIL	8082	PCBs
981061803	A4-C1-001	SOIL	6010B	Antimony
981061803	A4-C1-001	SOIL	7740	Selenium
981061803	A4-C1-001	SOIL		EnCore Sampler (5 gram)
981061803	A4-C1-001	SOIL	7841	Thallium
981061803	A4-C1-001	SOIL	8260B	GC/MS Volatile Organics
981061803	A4-C1-001	SOIL	6010B	Vanadium
981061803	A4-C1-001	SOIL	6010B	Zinc
981061804	A3-C1-001	SOIL	6010B	Silver
981061804	A3-C1-001	SOIL	6010B	Aluminum
981061804	A3-C1-001	SOIL	7060A	Arsenic
981061804	A3-C1-001	SOIL	8270C	GC/MS Base/Neutral & Acid
981061804	A3-C1-001	SOIL	6010B	Barium
981061804	A3-C1-001	SOIL	6010B	Beryllium
981061804	A3-C1-001	SOIL	6010B	Calcium
981061804	A3-C1-001	SOIL	6010B	Cadmium
981061804	A3-C1-001	SOIL	9010A	Cyanide
981061804	A3-C1-001	SOIL	6010B	Cobalt
981061804	A3-C1-001	SOIL	6010B	Chromium
981061804	A3-C1-001	SOIL	6010B	Copper
981061804	A3-C1-001	SOIL	6010B	Iron
981061804	A3-C1-001	SOIL	7471A	Mercury
981061804	A3-C1-001	SOIL	6010B	Potassium
981061804	A3-C1-001	SOIL	6010B	Magnesium
981061804	A3-C1-001	SOIL	6010B	Manganese
981061804	A3-C1-001	SOIL	6010B	Sodium
981061804	A3-C1-001	SOIL	6010B	Nickel
981061804	A3-C1-001	SOIL	8081A	Organochlorine Pesticides
981061804	A3-C1-001	SOIL	7421	Lead
981061804	A3-C1-001	SOIL	8082	PCBs
981061804	A3-C1-001	SOIL	6010B	Antimony

ENVIRONMENTAL TESTING & CONSULTING, INC.
 2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ANALYTICAL SUMMARY TABLE

Client Name OHM Remediation Services
 Site ID DDMT
 Memphis, TN

ETC	Sample ID	Field ID	Matrix	Method	Method Description
	981061804	A3-C1-001	SOIL	7740	Selenium
	981061804	A3-C1-001	SOIL		EnCore Sampler (5 gram)
	981061804	A3-C1-001	SOIL	7841	Thallium
	981061804	A3-C1-001	SOIL	8260B	GC/MS Volatile Organics
	981061804	A3-C1-001	SOIL	6010B	Vanadium
	981061804	A3-C1-001	SOIL	6010B	Zinc
	981061805	C-EQ-CS-002	AQUEOUS	6010B	Silver
	981061805	C-EQ-CS-002	AQUEOUS	6010B	Aluminum
	981061805	C-EQ-CS-002	AQUEOUS	7060A	Arsenic
	981061805	C-EQ-CS-002	AQUEOUS	8270C	GC/MS Base/Neutral & Acid
	981061805	C-EQ-CS-002	AQUEOUS	6010B	Barium
	981061805	C-EQ-CS-002	AQUEOUS	6010B	Beryllium
	981061805	C-EQ-CS-002	AQUEOUS	6010B	Calcium
	981061805	C-EQ-CS-002	AQUEOUS	6010B	Cadmium
	981061805	C-EQ-CS-002	AQUEOUS	9010A	Cyanide
	981061805	C-EQ-CS-002	AQUEOUS	6010B	Cobalt
	981061805	C-EQ-CS-002	AQUEOUS	6010B	Chromium
	981061805	C-EQ-CS-002	AQUEOUS	6010B	Copper
	981061805	C-EQ-CS-002	AQUEOUS	6010B	Iron
	981061805	C-EQ-CS-002	AQUEOUS	7470A	Mercury
	981061805	C-EQ-CS-002	AQUEOUS	6010B	Potassium
	981061805	C-EQ-CS-002	AQUEOUS	6010B	Magnesium
	981061805	C-EQ-CS-002	AQUEOUS	6010B	Manganese
	981061805	C-EQ-CS-002	AQUEOUS	6010B	Sodium
	981061805	C-EQ-CS-002	AQUEOUS	6010B	Nickel
	981061805	C-EQ-CS-002	AQUEOUS	8081A	Organochlorine Pesticides
	981061805	C-EQ-CS-002	AQUEOUS	7421	Lead
	981061805	C-EQ-CS-002	AQUEOUS	8082	PCBs
	981061805	C-EQ-CS-002	AQUEOUS	6010B	Antimony
	981061805	C-EQ-CS-002	AQUEOUS	7740	Selenium
	981061805	C-EQ-CS-002	AQUEOUS	7841	Thallium
	981061805	C-EQ-CS-002	AQUEOUS	8260B	GC/MS Volatile Organics
	981061805	C-EQ-CS-002	AQUEOUS	6010B	Vanadium
	981061805	C-EQ-CS-002	AQUEOUS	6010B	Zinc
	981061806	TB-101998	AQUEOUS	8260B	GC/MS Volatile Organics

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Environmental Testing & Consulting, Inc.

Login
Chain-of-Custody

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OHM ELAB COORDINATOR		LAB COORDINATOR'S PHONE		LAB COORDINATOR'S FAX		LABORATORY SERVICE ID		LABORATORY CONTACT		MAIL REPORT (COMPANY NAME)	
Elena Rodriguez		770-734-8060		770-453-7716		ETC		Nathan Pera		OHM Remediation Services Corp	
PROJECT NAME		PROJECT LOCATION		PROJECT NUMBER		LABORATORY PHONE		LABORATORY FAX		RECIPIENT NAME	
DDMT		Memphis, TN		20560		901-327-2750		901-327-6334		Elena Rodriguez	
PROJECT CONTACT		PROJECT PHONE NUMBER		PROJECT FAX		LABORATORY ADDRESS				ADDRESS	
Steve Offner		901-743-1117		901-743-1048		2924 Walnut Grove Road				5445 Triangle Pkwy., #400	
PROJECT ADDRESS		CITY STATE AND ZIP CODE		CLIENT		CITY STATE AND ZIP CODE				CITY STATE AND ZIP CODE	
1708 Dunn Ave.		Memphis, TN 38114		USACE		Memphis TN 38111				Norcross, GA 30092	
PROJECT MANAGER		PROJECT MANAGER'S PHONE		PROJECT MANAGER'S FAX							
Steve Offner		770-326-2571		770-453-7716							
Item	Sample Identifier	Matrix	Date	Time	Preserved	# of Cont	QC Level	TAT	Analytes	Comments	
1	C-TS-002		5/1/10	12:30	✓	4x802 31pgs	OHP	3day	UOC's Pesticides PCBS TAL Metals CNF Metals Organic Matter PFAS PAHs	Please fax results on DUE DATE to SITE and to Lab Coordinator	
2	A2-C1-001		5/1/10	09:00	N/A	4x802 31pgs	OHP	3day	✓		
3	A4-C1-001		5/1/10	09:05	N/A	4x802 31pgs	OHP	3day	✓		
4	A3-C1-001		5/1/10	10:30	N/A	4x802 31pgs	OHP	3day	✓		
5	C-EQ-CIS-002		10/9/10	10:10	N/A	4x802 31pgs	OHP	3day	✓		
6	TH-										
7	TB-101998								X		
8											
9											
10											

SAMPLES COLLECTED BY: S. Gendy T. McNeely

COOLING AND AIR BIL NUMBER:

RELINQUISHED BY: [Signature]

RECEIVED BY: [Signature]

DATE: 10/10/10

TIME: 11:15

COOLER TEMPERATURE UPON RECEIPT:

SAMPLE CONDITION UPON RECEIPT:

Distribution White - Laboratory (To be returned with Analytical Report), Goldendrod - Project File, Yellow - Project Data Manager

COOLER RECEIPT FORM

Cooler Receipt Form
9810618 CRF p 1

LIMS # 9810-618 Number of Coolers 3
 Date Received 10/19/98
 PROJECT DDMT/Memphis, TN VDTSR 10/19/98 16 15

USE OTHER SIDE OF THIS FORM TO NOTE DETAILS CONCERNING CHECK-IN PROBLEMS

A PRELIMINARY EXAMINATION PHASE Date cooler was opened 10/19/98
 by (print) Lynette Bugg (sign) Lynette Bugg

1 Did cooler come with a shipping slip (airbill, etc)? NO
 If YES, enter carrier name & airbill number _____

2a Were custody seals on outside of cooler? NO
 2b Were custody seals on sample containers? NO

3 Were custody seals unbroken and intact at the date and time of arrival? NA

4 Did you screen samples for radioactivity using a Geiger Counter? NO

5 Were custody papers sealed in a plastic bag & taped inside to the lid? NO

6 Were custody papers filled out properly (ink, signed, etc)? YES

7 Did you sign custody papers in the appropriate place? YES

8 Was project identifiable from custody papers? If YES, enter project name at top of this form YES

9 If required, was enough ice used? cooler temp <4°C, Type of ice Crushed YES

10 Have designated person initial here to acknowledge receipt of cooler LB date 10/19/98

B LOG-IN PHASE Date samples were logged-in 10/19/98
 by (print) Lynette Bugg (sign) Lynette Bugg

11 Describe type of packing in cooler Bubble Wrap, Baggies and Ice

12 Were all bottles sealed in separate plastic bags? YES

13 Did all bottles arrive unbroken and were labels in good condition? YES

14 Were all bottle labels complete (ID, date, time, signature, preserved, etc)? YES

15 Did all bottle labels agree with custody papers? YES

16 Were correct containers used for the tests indicated? YES

17 Were correct preservatives added to samples? YES

18 Was a sufficient amount of sample sent for tests indicated? YES

19 Were bubbles absent in VOA samples? If NO, list by sample# _____ YES

20 Was the project manager called and status discussed? If YES, give details on the back of this form NO

21 Who was called? _____ By whom ? _____ (date) _____

VDTSR - Validated Date/Time of Sample Receipt (Date sample is logged into LIMS system)

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Sample Reports

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ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

INORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560

Site ID **DDMT**
Memphis, TN

Date Arrived 10/19/98
ETC Order Number 9810618

ETC Lab ID **9810618-01**
Sample ID: C-TS-008

Matrix :SOIL
Sample Date :10/19/98

TEST	RESULT	UNITS	DETECTION LIMIT	TIME ANALYZED	DATE ANALYZED BY	METHOD
Cyanide	ND	mg/Kg	1.00		10/20/98 GD	9010A
Fractional Organic Matter	3.09	%	0		10/21/98 BA	D2974-87
pH - Corrosivity	5.2	SU			10/20/98 TL	9045C



LABORATORY MANAGER

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ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

INORGANIC ANALYSIS DATA SHEET

Client Name OHM Remediation Services
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560

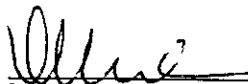
Site ID DDMT
Memphis, TN

Date Arrived 10/19/98
ETC Order Number 9810618

ETC Lab ID 9810618-02
Sample ID: A2-C1-001

Matrix :SOIL
Sample Date :10/19/98

TEST	RESULT	UNITS	DETECTION LIMIT	TIME ANALYZED	DATE ANALYZED BY	METHOD
Cyanide	ND	mg/Kg	1 00		10/20/98 GD	9010A


LABORATORY MANAGER

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ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

INORGANIC ANALYSIS DATA SHEET

Client Name OHM Remediation Services
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560

Site ID DDMT
Memphis, TN

Date Arrived 10/19/98
ETC Order Number 9810618

ETC Lab ID 9810618-03
Sample ID: A4-C1-001

Matrix :SOIL
Sample Date :10/19/98

TEST	RESULT	UNITS	DETECTION LIMIT	TIME ANALYZED	DATE ANALYZED BY	METHOD
Cyanide	ND	mg/Kg	1.00		10/20/98 GD	9010A


LABORATORY MANAGER

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ENVIRONMENTAL TESTING & CONSULTING, INC.
2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
INORGANIC ANALYSIS DATA SHEET

Client Name OHM Remediation Services
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560

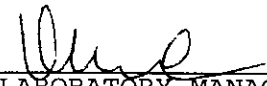
Site ID DDMT
Memphis, TN

Date Arrived 10/19/98
ETC Order Number 9810618

ETC Lab ID 9810618-04
Sample ID: A3-C1-001

Matrix :SOIL
Sample Date :10/19/98

TEST	RESULT	UNITS	DETECTION LIMIT	TIME ANALYZED	DATE ANALYZED BY	METHOD
Cyanide	ND	mg/Kg	1.00		10/20/98 GD	9010A


LABORATORY MANAGER

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ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

INORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400

Project # 20560

Site ID **Norcross, GA 30092**
DDMT
Memphis, TN

Date Arrived 10/19/98
ETC Order Number 9810618

ETC Lab ID 9810618-05
Sample ID: C-EQ-CS-002

Matrix :AQUEOUS
Sample Date :10/19/98

TEST	RESULT	UNITS	DETECTION LIMIT	TIME ANALYZED	DATE ANALYZED BY	METHOD
Cyanide	ND	mg/L	0.010		10/20/98 GD	9010A


LABORATORY MANAGER

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ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

INORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560

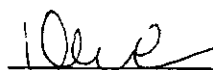
Site ID **DDMT**
Memphis, TN

Date Arrived 10/19/98
 ETC Order Number 9810618

ETC Lab ID **9810618-01**
Sample ID: C-TS-008

Matrix :SOIL
 Sample Date :10/19/98

TEST	RESULT	UNITS	DETECTION LIMIT	TIME ANALYZED	DATE ANALYZED BY	METHOD
Metals Digestion Batch	V8-SO-58				NR	3051
Mercury Digestion Batch	V4-SO-41				RM	7471A
Silver	ND	mg/Kg	0.700	13:30	10/21/98	TD 6010B
Aluminum	15,900	mg/Kg	4.00	14:54	10/21/98	TD 6010B
Arsenic	10.3	mg/Kg	0.200	11:44	10/21/98	TD 7060A
Barium	83.5	mg/Kg	0.200	13:30	10/21/98	TD 6010B
Beryllium	0.500	mg/Kg	0.100	13:30	10/21/98	TD 6010B
Calcium	684	mg/Kg	1.00	13:30	10/21/98	TD 6010B
Cadmium	ND	mg/Kg	0.400	13:30	10/21/98	TD 6010B
Cobalt	7.82	mg/Kg	0.700	13:30	10/21/98	TD 6010B
Chromium	19.7	mg/Kg	0.700	13:30	10/21/98	TD 6010B
Copper	13.2	mg/Kg	0.600	13:30	10/21/98	TD 6010B
Iron	22,900	mg/Kg	0.700	14:54	10/21/98	TD 6010B
Mercury	0.058	mg/Kg	0.020	15:00	10/22/98	RM 7471A
Potassium	1,140	mg/Kg	20.0	13:30	10/21/98	TD 6010B
Magnesium	2,260	mg/Kg	3.00	13:30	10/21/98	TD 6010B
Manganese	552	mg/Kg	0.200	13:30	10/21/98	TD 6010B
Sodium	104	mg/Kg	20.0	13:30	10/21/98	TD 6010B
Nickel	13.7	mg/Kg	1.50	13:30	10/21/98	TD 6010B
Lead	13.5	mg/Kg	0.100	10:39	10/21/98	TD 7421
Antimony	ND	mg/Kg	3.20	13:30	10/21/98	TD 6010B
Selenium	0.404	mg/Kg	0.200	15:15	10/21/98	JF 7740
Thallium	0.312	mg/Kg	0.100	13:57	10/22/98	JF 7841
Vanadium	30.4	mg/Kg	0.800	13:30	10/21/98	TD 6010B
Zinc	60.9	mg/Kg	1.00	13:30	10/21/98	TD 6010B


 LABORATORY MANAGER

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ENVIRONMENTAL TESTING & CONSULTING, INC.
2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
INORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

Project # 20560

Date Arrived 10/19/98
ETC Order Number 9810618

ETC Lab ID **9810618-02**
Sample ID: A2-C1-001

Matrix :SOIL
Sample Date :10/19/98

TEST	RESULT	UNITS	DETECTION LIMIT	TIME ANALYZED	DATE ANALYZED BY	METHOD
Metals Digestion Batch	V8-SO-58				NR	3051
Mercury Digestion Batch	V4-SO-41				RM	7471A
Silver	ND	mg/Kg	0.700	14:10	10/21/98	TD 6010B
Aluminum	11,600	mg/Kg	4.00	14:10	10/21/98	TD 6010B
Arsenic	10.3	mg/Kg	0.200	15:03	10/21/98	TD 7060A
Barium	85.6	mg/Kg	0.200	14:10	10/21/98	TD 6010B
Beryllium	0.488	mg/Kg	0.100	14:10	10/21/98	TD 6010B
Calcium	5,620	mg/Kg	1.00	14:10	10/21/98	TD 6010B
Cadmium	0.471	mg/Kg	0.400	14:10	10/21/98	TD 6010B
Cobalt	5.32	mg/Kg	0.700	14:10	10/21/98	TD 6010B
Chromium	15.6	mg/Kg	0.700	14:10	10/21/98	TD 6010B
Copper	44.1	mg/Kg	0.600	14:10	10/21/98	TD 6010B
Iron	17,400	mg/Kg	0.700	16:45	10/21/98	TD 6010B
Mercury	0.065	mg/Kg	0.020	15:07	10/22/98	RM 7471A
Potassium	827	mg/Kg	20.0	14:10	10/21/98	TD 6010B
Magnesium	1,720	mg/Kg	3.00	14:10	10/21/98	TD 6010B
Manganese	318	mg/Kg	0.200	14:10	10/21/98	TD 6010B
Sodium	100	mg/Kg	20.0	14:10	10/21/98	TD 6010B
Nickel	12.6	mg/Kg	1.50	14:10	10/21/98	TD 6010B
Lead	34.0	mg/Kg	0.100	13:37	10/21/98	TD 7421
Antimony	ND	mg/Kg	3.20	14:10	10/21/98	TD 6010B
Selenium	ND	mg/Kg	0.200	15:22	10/21/98	JF 7740
Thallium	0.171	mg/Kg	0.100	14:16	10/22/98	JF 7841
Vanadium	22.3	mg/Kg	0.800	14:10	10/21/98	TD 6010B
Zinc	76.8	mg/Kg	1.00	14:10	10/21/98	TD 6010B


LABORATORY MANAGER

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ENVIRONMENTAL TESTING & CONSULTING, INC.
 2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
INORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

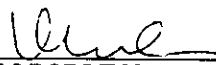
Project # 20560

Date Arrived 10/19/98
 ETC Order Number 9810618

ETC Lab ID 9810618-03
Sample ID: A4-C1-001

Matrix :SOIL
 Sample Date :10/19/98

TEST	RESULT	UNITS	DETECTION LIMIT	TIME ANALYZED	DATE ANALYZED BY	METHOD
Metals Digestion Batch	V8-SO-58				NR	3051
Mercury Digestion Batch	V4-SO-41				RM	7471A
Silver	ND	mg/Kg	0.700	14:16	10/21/98	TD 6010B
Aluminum	7,920	mg/Kg	4.00	14:16	10/21/98	TD 6010B
Arsenic	5.99	mg/Kg	0.200	15:06	10/21/98	TD 7060A
Barium	48.2	mg/Kg	0.200	14:16	10/21/98	TD 6010B
Beryllium	0.325	mg/Kg	0.100	14:16	10/21/98	TD 6010B
Calcium	1,910	mg/Kg	1.00	14:16	10/21/98	TD 6010B
Cadmium	ND	mg/Kg	0.400	14:16	10/21/98	TD 6010B
Cobalt	4.27	mg/Kg	0.700	14:16	10/21/98	TD 6010B
Chromium	12.9	mg/Kg	0.700	14:16	10/21/98	TD 6010B
Copper	15.3	mg/Kg	0.600	14:16	10/21/98	TD 6010B
Iron	13,500	mg/Kg	0.700	16:52	10/21/98	TD 6010B
Mercury	0.065	mg/Kg	0.020	15:08	10/22/98	RM 7471A
Potassium	424	mg/Kg	20.0	14:16	10/21/98	TD 6010B
Magnesium	826	mg/Kg	3.00	14:16	10/21/98	TD 6010B
Manganese	226	mg/Kg	0.200	14:16	10/21/98	TD 6010B
Sodium	49.7	mg/Kg	20.0	14:16	10/21/98	TD 6010B
Nickel	7.57	mg/Kg	1.50	14:16	10/21/98	TD 6010B
Lead	28.8	mg/Kg	0.100	13:39	10/21/98	TD 7421
Antimony	ND	mg/Kg	3.20	14:16	10/21/98	TD 6010B
Selenium	ND	mg/Kg	0.200	15:35	10/21/98	JF 7740
Thallium	ND	mg/Kg	0.100	14:18	10/22/98	JF 7841
Vanadium	17.5	mg/Kg	0.800	14:16	10/21/98	TD 6010B
Zinc	47.3	mg/Kg	1.00	14:16	10/21/98	TD 6010B


 LABORATORY MANAGER

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ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

INORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560

Site ID **DDMT**
Memphis, TN

Date Arrived 10/19/98
 ETC Order Number 9810618

ETC Lab ID **9810618-04**
Sample ID: A3-C1-001

Matrix :SOIL
 Sample Date :10/19/98

TEST	RESULT	UNITS	DETECTION LIMIT	TIME ANALYZED	DATE ANALYZED BY	METHOD
Metals Digestion Batch	V8-SO-58					NR 3051
Mercury Digestion Batch	V4-SO-41					RM 7471A
Silver	ND	mg/Kg	0.700	14:24	10/21/98	TD 6010B
Aluminum	7,770	mg/Kg	4.00	14:24	10/21/98	TD 6010B
Arsenic	7.94	mg/Kg	0.200	15:09	10/21/98	TD 7060A
Barium	50.0	mg/Kg	0.200	14:24	10/21/98	TD 6010B
Beryllium	0.393	mg/Kg	0.100	14:24	10/21/98	TD 6010B
Calcium	2,400	mg/Kg	1.00	14:24	10/21/98	TD 6010B
Cadmium	0.803	mg/Kg	0.400	14:24	10/21/98	TD 6010B
Cobalt	4.74	mg/Kg	0.700	14:24	10/21/98	TD 6010B
Chromium	16.3	mg/Kg	0.700	14:24	10/21/98	TD 6010B
Copper	16.1	mg/Kg	0.600	14:24	10/21/98	TD 6010B
Iron	17,200	mg/Kg	0.700	16:58	10/21/98	TD 6010B
Mercury	0.159	mg/Kg	0.020	15:09	10/22/98	RM 7471A
Potassium	488	mg/Kg	20.0	14:24	10/21/98	TD 6010B
Magnesium	908	mg/Kg	3.00	14:24	10/21/98	TD 6010B
Manganese	260	mg/Kg	0.200	14:24	10/21/98	TD 6010B
Sodium	58.3	mg/Kg	20.0	14:24	10/21/98	TD 6010B
Nickel	8.49	mg/Kg	1.50	14:24	10/21/98	TD 6010B
Lead	31.8	mg/Kg	0.100	13:41	10/21/98	TD 7421
Antimony	ND	mg/Kg	3.20	14:24	10/21/98	TD 6010B
Selenium	ND	mg/Kg	0.200	15:42	10/21/98	JF 7740
Thallium	0.120	mg/Kg	0.100	14:21	10/22/98	JF 7841
Vanadium	19.6	mg/Kg	0.800	14:24	10/21/98	TD 6010B
Zinc	63.7	mg/Kg	1.00	14:24	10/21/98	TD 6010B


 LABORATORY MANAGER

00001

377 176

ENVIRONMENTAL TESTING & CONSULTING, INC.
 2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
INORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560

Site ID **DDMT**
Memphis, TN

Date Arrived 10/19/98
 ETC Order Number 9810618

ETC Lab ID **9810618-05**
Sample ID: C-EQ-CS-002

Matrix :AQUEOUS
 Sample Date :10/19/98

TEST	RESULT	UNITS	DETECTION LIMIT	TIME ANALYZED	DATE ANALYZED BY	METHOD
Metals Digestion Batch	V12-AQ-29					
Mercury Digestion Batch	V4-AQ-51					NR 3015
Silver	ND	mg/L	0.009	13:16	10/21/98	TD 6010B
Aluminum	ND	mg/L	0.060	13:16	10/21/98	TD 6010B
Arsenic	ND	mg/L	0.003	15:00	10/21/98	JF 7060A
Barium	ND	mg/L	0.003	13:16	10/21/98	TD 6010B
Beryllium	ND	mg/L	0.002	13:16	10/21/98	TD 6010B
Calcium	ND	mg/L	0.015	13:16	10/21/98	TD 6010B
Cadmium	ND	mg/L	0.005	13:16	10/21/98	TD 6010B
Cobalt	ND	mg/L	0.009	13:16	10/21/98	TD 6010B
Chromium	ND	mg/L	0.009	13:16	10/21/98	TD 6010B
Copper	ND	mg/L	0.008	13:16	10/21/98	TD 6010B
Iron	ND	mg/L	0.009	13:16	10/21/98	TD 6010B
Mercury	ND	mg/L	0.0002	14:37	10/21/98	RM 7470A
Potassium	ND	mg/L	0.250	13:16	10/21/98	TD 6010B
Magnesium	ND	mg/L	0.040	13:16	10/21/98	TD 6010B
Manganese	ND	mg/L	0.003	13:16	10/21/98	TD 6010B
Sodium	ND	mg/L	0.050	13:16	10/21/98	TD 6010B
Nickel	ND	mg/L	0.020	13:16	10/21/98	TD 6010B
Lead	ND	mg/L	0.002	13:34	10/21/98	TD 7421
Antimony	ND	mg/L	0.040	13:16	10/21/98	TD 6010B
Selenium	ND	mg/L	0.003	15:00	10/21/98	JF 7740
Thallium	ND	mg/L	0.002	15:45	10/22/98	JF 7841
Vanadium	ND	mg/L	0.010	13:16	10/21/98	TD 6010B
Zinc	ND	mg/L	0.010	13:16	10/21/98	TD 6010B


 LABORATORY MANAGER

300018

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

377 177

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560
 FID # DACA45-96-D-0014

Site ID **DDMT**
Memphis, TN

Date Arrived 10/19/98
 ETC Order Number 9810618

ETC Lab ID **9810618-01**
Sample ID: C-TS-008

Matrix :SOIL
 Sample Date :10/19/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Volatile Organics							8260B
QC Batch	V2102001S	ug/Kg			10/20/98	LS	
Acetone	68.6	ug/Kg	50.0				
Benzene	ND	ug/Kg	2.00				
Bromodichloromethane	ND	ug/Kg	2.00				
Bromoform	ND	ug/Kg	2.00				
Bromomethane	ND	ug/Kg	2.00				
Carbon Disulfide	ND	ug/Kg	25.0				
Carbon Tetrachloride	ND	ug/Kg	2.00				
Chlorobenzene	ND	ug/Kg	2.00				
Chlorodibromomethane	ND	ug/Kg	2.00				
Chloroethane	ND	ug/Kg	2.00				
Chloroform	ND	ug/Kg	2.00				
Chloromethane	ND	ug/Kg	2.00				
1,1-Dichloroethane	ND	ug/Kg	2.00				
1,2-Dichloroethane	ND	ug/Kg	2.00				
1,1-Dichloroethene	ND	ug/Kg	2.00				
trans-1,2-Dichloroethene	ND	ug/Kg	2.00				
1,2-Dichloropropane	ND	ug/Kg	2.00				
cis-1,3-Dichloropropene	ND	ug/Kg	2.00				
trans-1,3-Dichloropropene	ND	ug/Kg	2.00				
Ethylbenzene	ND	ug/Kg	2.00				
2-Hexanone (MBK)	ND	ug/Kg	50.0				
4-Methyl-2-pentanone (MIBK)	ND	ug/Kg	50.0				
2-Butanone (MEK)	ND	ug/Kg	50.0				
Methylene Chloride	ND	ug/Kg	50.0				
Styrene	ND	ug/Kg	2.00				
1,1,2,2-Tetrachloroethane	ND	ug/Kg	2.00				
Tetrachloroethene	ND	ug/Kg	2.00				
Toluene	ND	ug/Kg	2.00				
1,1,1-Trichloroethane	ND	ug/Kg	2.00				
1,1,2-Trichloroethane	ND	ug/Kg	2.00				
Trichloroethene	ND	ug/Kg	2.00				
Vinyl Acetate	ND	ug/Kg	25.0				
Vinyl Chloride	ND	ug/Kg	2.00				
o-Xylenes	ND	ug/Kg	2.00				
m-Xylenes	ND	ug/Kg	2.00				
p-Xylenes	ND	ug/Kg	2.00				
cis-1,2-Dichloroethene	ND	ug/Kg	2.00				

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	108	70 134
S2 - Toluene-d8	99	85 111
S3 - 4-Bromofluorobenzene	105	81 117


 LABORATORY MANAGER

ND - Not Detected

000019

377 178

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

9810-618-1

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-618

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 3.6 (g/mL) G

Lab File ID: 0401003

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 10/20/98

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
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FORM I VOA-GCMS-TIC

000020

ENVIRONMENTAL TESTING & CONSULTING, INC.
2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ORGANIC ANALYSIS DATA SHEET

377 179

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

Project # 20560
FID # DACA45-96-D-0014

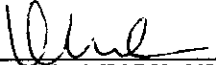
Date Arrived 10/19/98
ETC Order Number 9810618

ETC Lab ID **9810618-02**
Sample ID: A2-C1-001

Matrix :SOIL
Sample Date :10/19/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Volatile Organics							8260B
QC Batch	V2102001S	ug/Kg			10/20/98	LS	
Acetone	172	ug/Kg	50.0				
Benzene	ND	ug/Kg	2.00				
Bromodichloromethane	ND	ug/Kg	2.00				
Bromoform	ND	ug/Kg	2.00				
Bromomethane	ND	ug/Kg	2.00				
Carbon Disulfide	ND	ug/Kg	25.0				
Carbon Tetrachloride	ND	ug/Kg	2.00				
Chlorobenzene	ND	ug/Kg	2.00				
Chlorodibromomethane	ND	ug/Kg	2.00				
Chloroethane	ND	ug/Kg	2.00				
Chloroform	ND	ug/Kg	2.00				
Chloromethane	ND	ug/Kg	2.00				
1,1-Dichloroethane	ND	ug/Kg	2.00				
1,2-Dichloroethane	ND	ug/Kg	2.00				
1,1-Dichloroethene	ND	ug/Kg	2.00				
trans-1,2-Dichloroethene	ND	ug/Kg	2.00				
1,2-Dichloropropane	ND	ug/Kg	2.00				
cis-1,3-Dichloropropene	ND	ug/Kg	2.00				
trans-1,3-Dichloropropene	ND	ug/Kg	2.00				
Ethylbenzene	ND	ug/Kg	2.00				
2-Hexanone (MBK)	ND	ug/Kg	50.0				
4-Methyl-2-pentanone (MIBK)	ND	ug/Kg	50.0				
2-Butanone (MEK)	ND	ug/Kg	50.0				
Methylene Chloride	ND	ug/Kg	50.0				
Styrene	ND	ug/Kg	2.00				
1,1,2,2-Tetrachloroethane	ND	ug/Kg	2.00				
Tetrachloroethene	ND	ug/Kg	2.00				
Toluene	ND	ug/Kg	2.00				
1,1,1-Trichloroethane	ND	ug/Kg	2.00				
1,1,2-Trichloroethane	ND	ug/Kg	2.00				
Trichloroethene	ND	ug/Kg	2.00				
Vinyl Acetate	ND	ug/Kg	25.0				
Vinyl Chloride	ND	ug/Kg	2.00				
o-Xylenes	ND	ug/Kg	2.00				
m-Xylenes	ND	ug/Kg	2.00				
p-Xylenes	ND	ug/Kg	2.00				
cis-1,2-Dichloroethene	ND	ug/Kg	2.00				

Surrogate Standard	% Recovery	QC Limits	
S1 - Dibromofluoromethane	107	70	134
S2 - Toluene-d8	99	85	111
S3 - 4-Bromofluorobenzene	106	81	117


LABORATORY MANAGER

ND - Not Detected

000021

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

9810-618-2

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-618

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 5.6 (g/mL) G

Lab File ID: 0501004

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 10/20/98

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 556-67-2	CYCLOTETRASILOXANE, OCTAMETH	25.12	13.3	NJ
2.				
3.				
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FORM I VOA-GCMS-TIC

J00022

ENVIRONMENTAL TESTING & CONSULTING, INC.
2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ORGANIC ANALYSIS DATA SHEET

377 181

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

Project # 20560
FID # DACA45-96-D-0014

Date Arrived 10/19/98
ETC Order Number 9810618

ETC Lab ID **9810618-03**
Sample ID: A4-C1-001

Matrix :SOIL
Sample Date :10/19/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Volatile Organics							8260B
QC Batch	V2102001S	ug/Kg			10/20/98	LS	
Acetone	ND	ug/Kg	50.0				
Benzene	ND	ug/Kg	2.00				
Bromodichloromethane	ND	ug/Kg	2.00				
Bromoform	ND	ug/Kg	2.00				
Bromomethane	ND	ug/Kg	2.00				
Carbon Disulfide	ND	ug/Kg	25.0				
Carbon Tetrachloride	ND	ug/Kg	2.00				
Chlorobenzene	ND	ug/Kg	2.00				
Chlorodibromomethane	ND	ug/Kg	2.00				
Chloroethane	ND	ug/Kg	2.00				
Chloroform	ND	ug/Kg	2.00				
Chloromethane	ND	ug/Kg	2.00				
1,1-Dichloroethane	ND	ug/Kg	2.00				
1,2-Dichloroethane	ND	ug/Kg	2.00				
1,1-Dichloroethene	ND	ug/Kg	2.00				
trans-1,2-Dichloroethene	ND	ug/Kg	2.00				
1,2-Dichloropropane	ND	ug/Kg	2.00				
cis-1,3-Dichloropropene	ND	ug/Kg	2.00				
trans-1,3-Dichloropropene	ND	ug/Kg	2.00				
Ethylbenzene	ND	ug/Kg	2.00				
2-Hexanone (MBK)	ND	ug/Kg	50.0				
4-Methyl-2-pentanone (MIBK)	ND	ug/Kg	50.0				
2-Butanone (MEK)	ND	ug/Kg	50.0				
Methylene Chloride	ND	ug/Kg	50.0				
Styrene	ND	ug/Kg	2.00				
1,1,2,2-Tetrachloroethane	ND	ug/Kg	2.00				
Tetrachloroethene	ND	ug/Kg	2.00				
Toluene	ND	ug/Kg	2.00				
1,1,1-Trichloroethane	ND	ug/Kg	2.00				
1,1,2-Trichloroethane	ND	ug/Kg	2.00				
Trichloroethene	ND	ug/Kg	2.00				
Vinyl Acetate	ND	ug/Kg	25.0				
Vinyl Chloride	ND	ug/Kg	2.00				
o-Xylenes	ND	ug/Kg	2.00				
m-Xylenes	ND	ug/Kg	2.00				
p-Xylenes	ND	ug/Kg	2.00				
cis-1,2-Dichloroethene	ND	ug/Kg	2.00				

Surrogate Standard	% Recovery	QC Limits	
S1 - Dibromofluoromethane	108	70	134
S2 - Toluene-d8	97	85	111
S3 - 4-Bromofluorobenzene	108	81	117


LABORATORY MANAGER

ND - Not Detected

000021

377 182

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

9810-618-3

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-618

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 4.0 (g/mL) G

Lab File ID: 0601005

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 10/20/98

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 541-05-9	CYCLOTRISILOXANE, HEXAMETHYL	19.31	14.1	NJ
2. 556-67-2	CYCLOTETRAISILOXANE, OCTAMETH	25.13	17.8	NJ
3.				
4.				
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FORM I VOA-GCMS-TIC

000024

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

377 183

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560
 FID # DACA45-96-D-0014

Site ID DDMT
 Memphis, TN

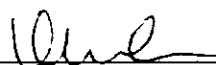
Date Arrived 10/19/98
 ETC Order Number 9810618

ETC Lab ID 9810618-04
Sample ID: A3-C1-001

Matrix :SOIL
 Sample Date :10/19/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Volatile Organics							8260B
QC Batch	V2102001S	ug/Kg			10/20/98	LS	
Acetone	ND	ug/Kg	50.0				
Benzene	ND	ug/Kg	2.00				
Bromodichloromethane	ND	ug/Kg	2.00				
Bromoform	ND	ug/Kg	2.00				
Bromomethane	ND	ug/Kg	2.00				
Carbon Disulfide	ND	ug/Kg	25.0				
Carbon Tetrachloride	ND	ug/Kg	2.00				
Chlorobenzene	ND	ug/Kg	2.00				
Chlorodibromomethane	ND	ug/Kg	2.00				
Chloroethane	ND	ug/Kg	2.00				
Chloroform	ND	ug/Kg	2.00				
Chloromethane	ND	ug/Kg	2.00				
1,1-Dichloroethane	ND	ug/Kg	2.00				
1,2-Dichloroethane	ND	ug/Kg	2.00				
1,1-Dichloroethene	ND	ug/Kg	2.00				
trans-1,2-Dichloroethene	ND	ug/Kg	2.00				
1,2-Dichloropropane	ND	ug/Kg	2.00				
cis-1,3-Dichloropropene	ND	ug/Kg	2.00				
trans-1,3-Dichloropropene	ND	ug/Kg	2.00				
Ethylbenzene	ND	ug/Kg	2.00				
2-Hexanone (MBK)	ND	ug/Kg	50.0				
4-Methyl-2-pentanone (MIBK)	ND	ug/Kg	50.0				
2-Butanone (MEK)	ND	ug/Kg	50.0				
Methylene Chloride	ND	ug/Kg	50.0 J				
Styrene	ND	ug/Kg	2.00				
1,1,2,2-Tetrachloroethane	ND	ug/Kg	2.00				
Tetrachloroethene	ND	ug/Kg	2.00				
Toluene	ND	ug/Kg	2.00				
1,1,1-Trichloroethane	ND	ug/Kg	2.00				
1,1,2-Trichloroethane	ND	ug/Kg	2.00				
Trichloroethene	ND	ug/Kg	2.00				
Vinyl Acetate	ND	ug/Kg	25.0				
Vinyl Chloride	ND	ug/Kg	2.00				
o-Xylenes	ND	ug/Kg	2.00				
m-Xylenes	ND	ug/Kg	2.00				
p-Xylenes	ND	ug/Kg	2.00				
cis-1,2-Dichloroethene	ND	ug/Kg	2.00				

Surrogate Standard	% Recovery	QC Limits	
S1 - Dibromofluoromethane	110	70	134
S2 - Toluene-d8	99	85	111
S3 - 4-Bromofluorobenzene	105	81	117


 LABORATORY MANAGER

ND - Not Detected

J00025

377 184

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

9810-618-4

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-618

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 5.2 (g/mL) G

Lab File ID: 0701006

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 10/20/98

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 556-67-2	CYCLOTETRASILOXANE, OCTAMETH	25.14	17.3	NJ
2.				
3.				
4.				
5.				
6.				
7.				
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FORM I VOA-GCMS-TIC

JUL 26

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

377 185

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560
FID # DACA45-96-D-0014

Site ID DDMT
Memphis, TN

Date Arrived 10/19/98
ETC Order Number 9810618

ETC Lab ID 9810618-05
Sample ID: C-EQ-CS-002

Matrix :AQUEOUS
Sample Date :10/19/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Volatile Organics							8260B
					10/21/98	LS	
QC Batch	V2102002A	ug/L					
Acetone	ND	ug/L	50.0				
Benzene	ND	ug/L	1.00				
Bromodichloromethane	ND	ug/L	1.00				
Bromoform	ND	ug/L	1.00				
Bromomethane	ND	ug/L	1.00				
Carbon Disulfide	ND	ug/L	1.00				
Carbon Tetrachloride	ND	ug/L	1.00				
Chlorobenzene	ND	ug/L	1.00				
Chlorodibromomethane	ND	ug/L	1.00				
Chloroethane	ND	ug/L	1.00				
Chloroform	ND	ug/L	1.00				
Chloromethane	ND	ug/L	1.00				
1,1-Dichloroethane	ND	ug/L	1.00				
1,2-Dichloroethane	ND	ug/L	1.00				
1,1-Dichloroethene	ND	ug/L	1.00				
trans-1,2-Dichloroethene	ND	ug/L	1.00				
1,2-Dichloropropane	ND	ug/L	1.00				
cis-1,3-Dichloropropene	ND	ug/L	1.00				
trans-1,3-Dichloropropene	ND	ug/L	1.00				
Ethylbenzene	ND	ug/L	1.00				
2-Hexanone (MBK)	ND	ug/L	5.00				
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00				
2-Butanone (MEK)	ND	ug/L	20.0				
Methylene Chloride	ND	ug/L	20.0				
Styrene	ND	ug/L	1.00				
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00				
Tetrachloroethene	ND	ug/L	1.00				
Toluene	ND	ug/L	1.00				
1,1,1-Trichloroethane	ND	ug/L	1.00				
1,1,2-Trichloroethane	ND	ug/L	1.00				
Trichloroethene	ND	ug/L	1.00				
Vinyl Acetate	ND	ug/L	20.0				
Vinyl Chloride	ND	ug/L	1.00				
o-Xylenes	ND	ug/L	1.00				
m-Xylenes	ND	ug/L	1.00				
p-Xylenes	ND	ug/L	1.00				
cis-1,2-Dichloroethene	ND	ug/L	1.00				

Surrogate Standard	% Recovery	QC Limits	
S1 - Dibromofluoromethane	103	74	123
S2 - Toluene-d8	102	86	112
S3 - 4-Bromofluorobenzene	104	81	115



LABORATORY MANAGER

ND - Not Detected

000027

377 186

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

9810-618-5

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-618

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 2501025

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 10/21/98

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000028

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

377 187

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560
FID # DACA45-96-D-0014

Site ID DDMT
Memphis, TN

Date Arrived 10/19/98
ETC Order Number 9810618

ETC Lab ID 9810618-06
Sample ID: TB-101998

Matrix :AQUEOUS
Sample Date :10/19/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Volatile Organics							8260B
					10/21/98	LS	
QC Batch	V2102002A	ug/L					
Acetone	ND	ug/L	50.0				
Benzene	ND	ug/L	1.00				
Bromodichloromethane	ND	ug/L	1.00				
Bromoform	ND	ug/L	1.00				
Bromomethane	ND	ug/L	1.00				
Carbon Disulfide	ND	ug/L	1.00				
Carbon Tetrachloride	ND	ug/L	1.00				
Chlorobenzene	ND	ug/L	1.00				
Chlorodibromomethane	ND	ug/L	1.00				
Chloroethane	ND	ug/L	1.00				
Chloroform	ND	ug/L	1.00				
Chloromethane	ND	ug/L	1.00				
1,1-Dichloroethane	ND	ug/L	1.00				
1,2-Dichloroethane	ND	ug/L	1.00				
1,1-Dichloroethene	ND	ug/L	1.00				
trans-1,2-Dichloroethene	ND	ug/L	1.00				
1,2-Dichloropropane	ND	ug/L	1.00				
cis-1,3-Dichloropropene	ND	ug/L	1.00				
trans-1,3-Dichloropropene	ND	ug/L	1.00				
Ethylbenzene	ND	ug/L	1.00				
2-Hexanone (MBK)	ND	ug/L	5.00				
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00				
2-Butanone (MEK)	ND	ug/L	20.0				
Methylene Chloride	ND	ug/L	20.0				
Styrene	ND	ug/L	1.00				
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00				
Tetrachloroethene	ND	ug/L	1.00				
Toluene	ND	ug/L	1.00				
1,1,1-Trichloroethane	ND	ug/L	1.00				
1,1,2-Trichloroethane	ND	ug/L	1.00				
Trichloroethene	ND	ug/L	1.00				
Vinyl Acetate	ND	ug/L	20.0				
Vinyl Chloride	ND	ug/L	1.00				
o-Xylenes	ND	ug/L	1.00				
m-Xylenes	ND	ug/L	1.00				
p-Xylenes	ND	ug/L	1.00				
cis-1,2-Dichloroethene	ND	ug/L	1.00				

Surrogate Standard	% Recovery	QC Limits	
S1 - Dibromofluoromethane	100	74	123
S2 - Toluene-d8	101	86	112
S3 - 4-Bromofluorobenzene	104	81	115



LABORATORY MANAGER

ND - Not Detected

000029

377 188

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

9810-618-6

Lab Name: ETC, INC.,

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-618

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 2601026

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 10/21/98

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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FORM I VOA-GCMS-TIC

00030

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET**377 189**

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

Project # 20560
FID # DACA45-96-D-0014

Date Arrived 10/19/98
ETC Order Number 9810618

ETC Lab ID **9810618-01**
Sample ID: C-TS-008

Matrix :SOIL
Sample Date :10/19/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Base/Neutral & Acid				10/21/98	10/21/98	RR	8270C
QC Batch	P04056	ug/Kg					
Acenaphthene	ND	ug/Kg	67 0				
Acenaphthylene	ND	ug/Kg	67 0				
Anthracene	ND	ug/Kg	67 0				
Benzo(a)anthracene	ND	ug/Kg	67 0				
Benzo(b)fluoranthene	ND	ug/Kg	67 0				
Benzo(k)fluoranthene	ND	ug/Kg	67 0				
Benzo(g,h,i)perylene	ND	ug/Kg	67.0				
Benzo(a)pyrene	ND	ug/Kg	67.0				
Benzoic Acid	ND	ug/Kg	1670 J				
Benzyl Alcohol	ND	ug/Kg	170				
Bis(2-chloroethoxy)methane	ND	ug/Kg	170 J				
Bis(2-chloroethyl)ether	ND	ug/Kg	170				
Bis(2-chloroisopropyl)ether	ND	ug/Kg	170				
Bis(2-ethylhexyl)phthalate	ND	ug/Kg	170				
4-Bromophenyl phenyl ether	ND	ug/Kg	170 J				
Butyl benzyl phthalate	ND	ug/Kg	170				
4-Chloroaniline	ND	ug/Kg	170 J				
2-Chloronaphthalene	ND	ug/Kg	170				
4-Chloro-3-methylphenol	ND	ug/Kg	170				
2-Chlorophenol	ND	ug/Kg	170				
4-Chlorophenyl phenyl ether	ND	ug/Kg	170				
Chrysene	ND	ug/Kg	170				
Dibenzo(a,h)anthracene	ND	ug/Kg	67.0				
Dibenzofuran	ND	ug/Kg	170				
Di-n-butyl phthalate	ND	ug/Kg	170				
1,2-Dichlorobenzene	ND	ug/Kg	170				
1,3-Dichlorobenzene	ND	ug/Kg	170				
1,4-Dichlorobenzene	ND	ug/Kg	170				
3,3'-Dichlorobenzidine	ND	ug/Kg	170 J				
2,4-Dichlorophenol	ND	ug/Kg	170				
2,6-Dichlorophenol	ND	ug/Kg	170				
Diethyl phthalate	ND	ug/Kg	170				
2,4-Dimethylphenol	ND	ug/Kg	170				
Dimethyl phthalate	ND	ug/Kg	170				
4,6-Dinitro-2-methylphenol	ND	ug/Kg	170 J				
2,4-Dinitrophenol	ND	ug/Kg	330 J				
2,4-Dinitrotoluene	ND	ug/Kg	170				
2,6-Dinitrotoluene	ND	ug/Kg	170				
Di-n-octyl phthalate	ND	ug/Kg	170				
Fluoranthene	ND	ug/Kg	67.0				
Fluorene	ND	ug/Kg	67 0				
Hexachlorobenzene	ND	ug/Kg	170				


LABORATORY MANAGER

ND - Not Detected

000031

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

Project # 20560
 FID # DACA45-96-D-0014

Date Arrived 10/19/98
 ETC Order Number 9810618

ETC Lab ID 9810618-01
Sample ID: C-TS-008

Matrix :SOIL
 Sample Date :10/19/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Base/Neutral & Acid				10/21/98	10/21/98	RR	8270C
Hexachlorobutadiene	ND	ug/Kg	170				
Hexachlorocyclopentadiene	ND	ug/Kg	170				
Hexachloroethane	ND	ug/Kg	170				
Indeno(1,2,3-cd)pyrene	ND	ug/Kg	67.0				
Isophorone	ND	ug/Kg	170				
2-Methylnaphthalene	ND	ug/Kg	170				
2-Methylphenol (o-cresol)	ND	ug/Kg	170				
3-Methylphenol (m-cresol)	ND	ug/Kg	170				
4-Methylphenol (p-cresol)	ND	ug/Kg	170				
Naphthalene	ND	ug/Kg	67.0				
Nitrobenzene	ND	ug/Kg	170 J				
2-Nitroaniline	ND	ug/Kg	170				
3-Nitroaniline	ND	ug/Kg	170				
4-Nitroaniline	ND	ug/Kg	170 J				
2-Nitrophenol	ND	ug/Kg	170				
4-Nitrophenol	ND	ug/Kg	170				
N-Nitrosodiphenylamine	ND	ug/Kg	170				
N-Nitrosodipropylamine	ND	ug/Kg	170 J				
Pentachlorophenol	ND	ug/Kg	170				
Phenanthrene	ND	ug/Kg	67.0				
Phenol	ND	ug/Kg	170				
Pyrene	ND	ug/Kg	67.0 J				
1,2,4-Trichlorobenzene	ND	ug/Kg	170				
2,4,5-Trichlorophenol	ND	ug/Kg	170				
2,4,6-Trichlorophenol	ND	ug/Kg	170				

Surrogate Standard	% Recovery	QC Limits
S1 - Nitrobenzene-d5	20 Q	25 110
S2 - 2-Fluorobiphenyl	25 Q	33 114
S3 - 4-Terphenyl-d14	91	37 115
S4 - Phenol-d6	15	11 125
S5 - 2,4,6-Tribromophenol	58	9 134
S6 - 2-Fluorophenol	8 Q	10 119


 LABORATORY MANAGER

ND - Not Detected

000032

377 191

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

9810-618-1

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-618

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 30.7 (g/mL) G

Lab File ID: 0501005

Level: (low/med) LOW

Date Received: _____

% Moisture: _____ decanted: (Y/N) _____

Date Extracted:

Concentrated Extract Volume: 1(mL)

Date Analyzed: 10/23/98

Injection Volume: 1.0(uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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FORM I BNA-GCMS-TIC

000033

377 192

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

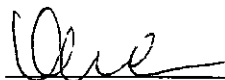
Project # 20560
 FID # DACA45-96-D-0014

Date Arrived 10/19/98
 ETC Order Number 9810618

ETC Lab ID 9810618-02
Sample ID: A2-C1-001

Matrix :SOIL
 Sample Date :10/19/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Base/Neutral & Acid							8270C
QC Batch	P04056	ug/Kg		10/21/98	10/21/98	RR	
Acenaphthene	ND	ug/Kg	67.0				
Acenaphthylene	ND	ug/Kg	67.0				
Anthracene	ND	ug/Kg	67.0				
Benzo(a)anthracene	ND	ug/Kg	67.0				
Benzo(b)fluoranthene	109	ug/Kg	67.0				
Benzo(k)fluoranthene	ND	ug/Kg	67.0				
Benzo(g,h,i)perylene	ND	ug/Kg	67.0				
Benzo(a)pyrene	66.0J	ug/Kg	67.0				
Benzoic Acid	ND	ug/Kg	1670J				
Benzyl Alcohol	ND	ug/Kg	170				
Bis(2-chloroethoxy)methane	ND	ug/Kg	170J				
Bis(2-chloroethyl)ether	ND	ug/Kg	170				
Bis(2-chloroisopropyl)ether	ND	ug/Kg	170				
Bis(2-ethylhexyl)phthalate	ND	ug/Kg	170				
4-Bromophenyl phenyl ether	ND	ug/Kg	170J				
Butyl benzyl phthalate	ND	ug/Kg	170				
4-Chloroaniline	ND	ug/Kg	170J				
2-Chloronaphthalene	ND	ug/Kg	170				
4-Chloro-3-methylphenol	ND	ug/Kg	170				
2-Chlorophenol	ND	ug/Kg	170				
4-Chlorophenyl phenyl ether	ND	ug/Kg	170				
Chrysene	75.0J	ug/Kg	170				
Dibenzo(a,h)anthracene	ND	ug/Kg	67.0				
Dibenzofuran	ND	ug/Kg	170				
Di-n-butyl phthalate	ND	ug/Kg	170				
1,2-Dichlorobenzene	ND	ug/Kg	170				
1,3-Dichlorobenzene	ND	ug/Kg	170				
1,4-Dichlorobenzene	ND	ug/Kg	170				
3,3'-Dichlorobenzidine	ND	ug/Kg	170J				
2,4-Dichlorophenol	ND	ug/Kg	170				
2,6-Dichlorophenol	ND	ug/Kg	170				
Diethyl phthalate	ND	ug/Kg	170				
2,4-Dimethylphenol	ND	ug/Kg	170				
Dimethyl phthalate	ND	ug/Kg	170				
4,6-Dinitro-2-methylphenol	ND	ug/Kg	170J				
2,4-Dinitrophenol	ND	ug/Kg	330J				
2,4-Dinitrotoluene	ND	ug/Kg	170				
2,6-Dinitrotoluene	ND	ug/Kg	170				
Di-n-octyl phthalate	ND	ug/Kg	170				
Fluoranthene	194	ug/Kg	67.0				
Fluorene	ND	ug/Kg	67.0				
Hexachlorobenzene	ND	ug/Kg	170				


 LABORATORY MANAGER

ND - Not Detected

000034

ENVIRONMENTAL TESTING & CONSULTING, INC.
2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ORGANIC ANALYSIS DATA SHEET

377 193

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

Project # 20560
FID # DACA45-96-D-0014

Date Arrived 10/19/98
ETC Order Number 9810618

ETC Lab ID **9810618-02**
Sample ID: A2-C1-001

Matrix :SOIL
Sample Date :10/19/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Base/Neutral & Acid							8270C
Hexachlorobutadiene	ND	ug/Kg	170	10/21/98	10/21/98	RR	
Hexachlorocyclopentadiene	ND	ug/Kg	170				
Hexachloroethane	ND	ug/Kg	170				
Indeno(1,2,3-cd)pyrene	ND	ug/Kg	67 0				
Isophorone	ND	ug/Kg	170				
2-Methylnaphthalene	ND	ug/Kg	170				
2-Methylphenol (o-cresol)	ND	ug/Kg	170				
3-Methylphenol (m-cresol)	ND	ug/Kg	170				
4-Methylphenol (p-cresol)	ND	ug/Kg	170				
Naphthalene	ND	ug/Kg	67 0				
Nitrobenzene	ND	ug/Kg	170 J				
2-Nitroaniline	ND	ug/Kg	170				
3-Nitroaniline	ND	ug/Kg	170				
4-Nitroaniline	ND	ug/Kg	170 J				
2-Nitrophenol	ND	ug/Kg	170				
4-Nitrophenol	ND	ug/Kg	170				
N-Nitrosodiphenylamine	ND	ug/Kg	170 J				
N-Nitrosodipropylamine	ND	ug/Kg	170				
Pentachlorophenol	ND	ug/Kg	170				
Phenanthrene	110	ug/Kg	67.0				
Phenol	ND	ug/Kg	170				
Pyrene	178	ug/Kg	67.0 J				
1,2,4-Trichlorobenzene	ND	ug/Kg	170				
2,4,5-Trichlorophenol	ND	ug/Kg	170				
2,4,6-Trichlorophenol	ND	ug/Kg	170				

Surrogate Standard	% Recovery	QC Limits	
S1 - Nitrobenzene-d5	63	25	110
S2 - 2-Fluorobiphenyl	62	33	114
S3 - 4-Terphenyl-d14	97	37	115
S4 - Phenol-d6	62	11	125
S5 - 2,4,6-Tribromophenol	82	9	134
S6 - 2-Fluorophenol	59	10	119


LABORATORY MANAGER

ND - Not Detected

000035

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

9810-618-2

Lab Name: ETC, INC. Contract: _____
Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 9810-618
Matrix: (soil/water) SOIL Lab Sample ID: _____
Sample wt/vol: 30.7 (g/mL) G Lab File ID: 0901011
Level: (low/med) LOW Date Received: _____
% Moisture: _____ decanted: (Y/N) _____ Date Extracted: _____
Concentrated Extract Volume: 1 (mL) Date Analyzed: 10/21/98
Injection Volume: 1.0 (uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 53-19-0	MITOTANE	14.97	256	NJ
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FORM I BNA-GCMS-TIC

000036

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

377 195

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560
 FID # DACA45-96-D-0014

Site ID **DDMT**
Memphis, TN

Date Arrived 10/19/98
 ETC Order Number 9810618

ETC Lab ID **9810618-03**
Sample ID: A4-C1-001

Matrix :SOIL
 Sample Date :10/19/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Base/Neutral & Acid				10/21/98	10/21/98	RR	8270C
QC Batch	P04056	ug/Kg					
Acenaphthene	ND	ug/Kg	67.0				
Acenaphthylene	ND	ug/Kg	67.0				
Anthracene	ND	ug/Kg	67.0				
Benzo(a)anthracene	ND	ug/Kg	67.0				
Benzo(b)fluoranthene	106	ug/Kg	67.0				
Benzo(k)fluoranthene	48.0J	ug/Kg	67.0				
Benzo(g,h,i)perylene	ND	ug/Kg	67.0				
Benzo(a)pyrene	75.4	ug/Kg	67.0				
Benzoic Acid	ND	ug/Kg	1670J				
Benzyl Alcohol	ND	ug/Kg	170				
Bis(2-chloroethoxy)methane	ND	ug/Kg	170J				
Bis(2-chloroethyl)ether	ND	ug/Kg	170				
Bis(2-chloroisopropyl)ether	ND	ug/Kg	170				
Bis(2-ethylhexyl)phthalate	ND	ug/Kg	170				
4-Bromophenyl phenyl ether	ND	ug/Kg	170J				
Butyl benzyl phthalate	ND	ug/Kg	170				
4-Chloroaniline	ND	ug/Kg	170J				
2-Chloronaphthalene	ND	ug/Kg	170				
4-Chloro-3-methylphenol	ND	ug/Kg	170				
2-Chlorophenol	ND	ug/Kg	170				
4-Chlorophenyl phenyl ether	ND	ug/Kg	170				
Chrysene	75.0J	ug/Kg	170				
Dibenzo(a,h)anthracene	ND	ug/Kg	67.0				
Dibenzofuran	ND	ug/Kg	170				
Di-n-butyl phthalate	ND	ug/Kg	170				
1,2-Dichlorobenzene	ND	ug/Kg	170				
1,3-Dichlorobenzene	ND	ug/Kg	170				
1,4-Dichlorobenzene	ND	ug/Kg	170				
3,3'-Dichlorobenzidine	ND	ug/Kg	170J				
2,4-Dichlorophenol	ND	ug/Kg	170				
2,6-Dichlorophenol	ND	ug/Kg	170				
Diethyl phthalate	ND	ug/Kg	170				
2,4-Dimethylphenol	ND	ug/Kg	170				
Dimethyl phthalate	ND	ug/Kg	170				
4,6-Dinitro-2-methylphenol	ND	ug/Kg	170J				
2,4-Dinitrophenol	ND	ug/Kg	330J				
2,4-Dinitrotoluene	ND	ug/Kg	170				
2,6-Dinitrotoluene	ND	ug/Kg	170				
Di-n-octyl phthalate	ND	ug/Kg	170				
Fluoranthene	156	ug/Kg	67.0				
Fluorene	ND	ug/Kg	67.0				
Hexachlorobenzene	ND	ug/Kg	170				


 LABORATORY MANAGER

ND - Not Detected

000037

ENVIRONMENTAL TESTING & CONSULTING, INC.
 2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

Project # 20560
 FID # DACA45-96-D-0014

Date Arrived 10/19/98
 ETC Order Number 9810618

ETC Lab ID 9810618-03
Sample ID: A4-C1-001

Matrix :SOIL
 Sample Date :10/19/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Base/Neutral & Acid				10/21/98	10/21/98	RR	8270C
Hexachlorobutadiene	ND	ug/Kg	170				
Hexachlorocyclopentadiene	ND	ug/Kg	170				
Hexachloroethane	ND	ug/Kg	170				
Indeno(1,2,3-cd)pyrene	ND	ug/Kg	67.0				
Isophorone	ND	ug/Kg	170				
2-Methylnaphthalene	ND	ug/Kg	170				
2-Methylphenol (o-cresol)	ND	ug/Kg	170				
3-Methylphenol (m-cresol)	ND	ug/Kg	170				
4-Methylphenol (p-cresol)	ND	ug/Kg	170				
Naphthalene	ND	ug/Kg	67.0				
Nitrobenzene	ND	ug/Kg	170				
2-Nitroaniline	ND	ug/Kg	170				
3-Nitroaniline	ND	ug/Kg	170				
4-Nitroaniline	ND	ug/Kg	170				
2-Nitrophenol	ND	ug/Kg	170				
4-Nitrophenol	ND	ug/Kg	170				
N-Nitrosodiphenylamine	ND	ug/Kg	170				
N-Nitrosodipropylamine	ND	ug/Kg	170				
Pentachlorophenol	ND	ug/Kg	170				
Phenanthrene	52.0J	ug/Kg	67.0				
Phenol	ND	ug/Kg	170				
Pyrene	149	ug/Kg	67.0				
1,2,4-Trichlorobenzene	ND	ug/Kg	170				
2,4,5-Trichlorophenol	ND	ug/Kg	170				
2,4,6-Trichlorophenol	ND	ug/Kg	170				

Surrogate Standard	% Recovery	QC Limits
S1 - Nitrobenzene-d5	51	25 110
S2 - 2-Fluorobiphenyl	53	33 114
S3 - 4-Terphenyl-di4	84	37 125
S4 - Phenol-d6	50	11 125
S5 - 2,4,6-Tribromophenol	73	9 134
S6 - 2-Fluorophenol	46	10 119


 LABORATORY MANAGER

ND - Not Detected

00003E

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

377 197
CLIENT SAMPLE NO.

9810-618-3

Lab Name: ETC, INC. Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: 9810-618

Matrix: (soil/water) SOIL Lab Sample ID: _____

Sample wt/vol: 30.0 (g/mL) G Lab File ID: 1001012

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N) _____ Date Extracted: _____

Concentrated Extract Volume: 1(mL) Date Analyzed: 10/21/98

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 629-62-9	PENTADECANE	12.32	162	NJ
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FORM I BNA-GCMS-TIC

000039

377 198

ENVIRONMENTAL TESTING & CONSULTING, INC.
 2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

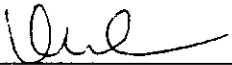
Project # 20560
 FID # DACA45-96-D-0014

Date Arrived 10/19/98
 ETC Order Number 9810618

ETC Lab ID **9810618-04**
Sample ID: A3-C1-001

Matrix :SOIL
 Sample Date :10/19/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Base/Neutral & Acid							8270C
QC Batch	P04056	ug/Kg		10/21/98	10/21/98	RR	
Acenaphthene	ND	ug/Kg	67.0				
Acenaphthylene	ND	ug/Kg	67.0				
Anthracene	83.0	ug/Kg	67.0				
Benzo(a)anthracene	281	ug/Kg	67.0				
Benzo(b)fluoranthene	335	ug/Kg	67.0				
Benzo(k)fluoranthene	159	ug/Kg	67.0				
Benzo(g,h,i)perylene	120	ug/Kg	67.0				
Benzo(a)pyrene	245	ug/Kg	67.0				
Benzoic Acid	ND	ug/Kg	1670				
Benzyl Alcohol	ND	ug/Kg	170				
Bis(2-chloroethoxy)methane	ND	ug/Kg	170				
Bis(2-chloroethyl)ether	ND	ug/Kg	170				
Bis(2-chloroisopropyl)ether	ND	ug/Kg	170				
Bis(2-ethylhexyl)phthalate	ND	ug/Kg	170				
4-Bromophenyl phenyl ether	ND	ug/Kg	170				
Butyl benzyl phthalate	ND	ug/Kg	170				
4-Chloroaniline	ND	ug/Kg	170				
2-Chloronaphthalene	ND	ug/Kg	170				
4-Chloro-3-methylphenol	ND	ug/Kg	170				
2-Chlorophenol	ND	ug/Kg	170				
4-Chlorophenyl phenyl ether	ND	ug/Kg	170				
Chrysene	290	ug/Kg	170				
Dibenzo(a,h)anthracene	ND	ug/Kg	67.0				
Dibenzofuran	ND	ug/Kg	170				
D1-n-butyl phthalate	ND	ug/Kg	170				
1,2-Dichlorobenzene	ND	ug/Kg	170				
1,3-Dichlorobenzene	ND	ug/Kg	170				
1,4-Dichlorobenzene	ND	ug/Kg	170				
3,3'-Dichlorobenzidine	ND	ug/Kg	170				
2,4-Dichlorophenol	ND	ug/Kg	170				
2,6-Dichlorophenol	ND	ug/Kg	170				
Diethyl phthalate	ND	ug/Kg	170				
2,4-Dimethylphenol	ND	ug/Kg	170				
Dimethyl phthalate	ND	ug/Kg	170				
4,6-Dinitro-2-methylphenol	ND	ug/Kg	170				
2,4-Dinitrophenol	ND	ug/Kg	330				
2,4-Dinitrotoluene	ND	ug/Kg	170				
2,6-Dinitrotoluene	ND	ug/Kg	170				
D1-n-octyl phthalate	ND	ug/Kg	170				
Fluoranthene	776	ug/Kg	67.0				
Fluorene	ND	ug/Kg	67.0				
Hexachlorobenzene	ND	ug/Kg	170				


 LABORATORY MANAGER

ND - Not Detected

000040

ENVIRONMENTAL TESTING & CONSULTING, INC. 377 199
 2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560
 FID # DACA45-96-D-0014

Site ID DDMT
 Memphis, TN

Date Arrived 10/19/98
 ETC Order Number 9810618

ETC Lab ID 9810618-04
Sample ID: A3-C1-001

Matrix :SOIL
 Sample Date :10/19/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Base/Neutral & Acid							8270C
				10/21/98	10/21/98	RR	
Hexachlorobutadiene	ND	ug/Kg	170				
Hexachlorocyclopentadiene	ND	ug/Kg	170				
Hexachloroethane	ND	ug/Kg	170				
Indeno(1,2,3-cd)pyrene	141	ug/Kg	67.0				
Isophorone	ND	ug/Kg	170				
2-Methylnaphthalene	ND	ug/Kg	170				
2-Methylphenol (o-cresol)	ND	ug/Kg	170				
3-Methylphenol (m-cresol)	ND	ug/Kg	170				
4-Methylphenol (p-cresol)	ND	ug/Kg	170				
Naphthalene	ND	ug/Kg	67.0				
Nitrobenzene	ND	ug/Kg	170				
2-Nitroaniline	ND	ug/Kg	170				
3-Nitroaniline	ND	ug/Kg	170				
4-Nitroaniline	ND	ug/Kg	170				
2-Nitrophenol	ND	ug/Kg	170				
4-Nitrophenol	ND	ug/Kg	170				
N-Nitrosodiphenylamine	ND	ug/Kg	170				
N-Nitrosodipropylamine	ND	ug/Kg	170				
Pentachlorophenol	ND	ug/Kg	170				
Phenanthrene	381	ug/Kg	67.0				
Phenol	ND	ug/Kg	170				
Pyrene	710	ug/Kg	67.0				
1,2,4-Trichlorobenzene	ND	ug/Kg	170				
2,4,5-Trichlorophenol	ND	ug/Kg	170				
2,4,6-Trichlorophenol	ND	ug/Kg	170				

Surrogate Standard	% Recovery	QC Limits
S1 - Nitrobenzene-d5	54	25 110
S2 - 2-Fluorobiphenyl	56	33 114
S3 - 4-Terphenyl-d14	76	37 115
S4 - Phenol-d6	53	11 125
S5 - 2,4,6-Tribromophenol	78	9 134
S6 - 2-Fluorophenol	49	10 119


 LABORATORY MANAGER

ND - Not Detected

000041

377 200

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

9810-618-4

Lab Name: ETC, INC. Contract:
Lab Code: Case No.: SAS No.: SDG No.: 9810-618
Matrix: (soil/water) SOIL Lab Sample ID:
Sample wt/vol: 30.6 (g/mL) G Lab File ID: 1101013
Level: (low/med) LOW Date Received:
% Moisture: decanted: (Y/N) Date Extracted:
Concentrated Extract Volume: 1(mL) Date Analyzed: 10/21/98
Injection Volume: 1.0(uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 5737-13-3	CYCLOPENTA (DEF) PHENANTHRENON	12.81	182	NJ
2. 243-17-4	11H-BENZO[B] FLUORENE	14.21	697	NJ
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FORM I BNA-GCMS-TIC

000042

ENVIRONMENTAL TESTING & CONSULTING, INC.
2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ORGANIC ANALYSIS DATA SHEET

377 201

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092
Site ID **DDMT**
Memphis, TN

Project # 20560
FID # DACA45-96-D-0014

Date Arrived 10/19/98
ETC Order Number 9810618

ETC Lab ID **9810618-05**
Sample ID: C-EQ-CS-002

Matrix :AQUEOUS
Sample Date :10/19/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Base/Neutral & Acid				10/21/98	10/22/98	RR	8270C
QC Batch	P05060	ug/L					
Acenaphthene	ND	ug/L	2.00				
Acenaphthylene	ND	ug/L	2.00				
Anthracene	ND	ug/L	2.00				
Benzo(a)anthracene	ND	ug/L	2.00				
Benzo(b)fluoranthene	ND	ug/L	2.00				
Benzo(k)fluoranthene	ND	ug/L	2.00				
Benzo(g,h,i)perylene	ND	ug/L	2.00				
Benzo(a)pyrene	ND	ug/L	2.00				
Benzoic Acid	ND	ug/L	50.0				
Benzyl Alcohol	ND	ug/L	10.0				
Bis(2-chloroethoxy)methane	ND	ug/L	5.00				
Bis(2-chloroethyl)ether	ND	ug/L	5.00				
Bis(2-chloroisopropyl)ether	ND	ug/L	5.00				
Bis(2-ethylhexyl)phthalate	ND	ug/L	10.0				
4-Bromophenyl phenyl ether	ND	ug/L	5.00				
Butyl benzyl phthalate	ND	ug/L	5.00				
4-Chloroaniline	ND	ug/L	5.00				
2-Chloronaphthalene	ND	ug/L	2.00				
4-Chloro-3-methylphenol	ND	ug/L	5.00				
2-Chlorophenol	ND	ug/L	5.00				
4-Chlorophenyl phenyl ether	ND	ug/L	5.00				
Chrysene	ND	ug/L	2.00				
Dibenzo(a,h)anthracene	ND	ug/L	2.00				
Dibenzofuran	ND	ug/L	5.00				
Di-n-butyl phthalate	ND	ug/L	5.00				
1,2-Dichlorobenzene	ND	ug/L	5.00				
1,3-Dichlorobenzene	ND	ug/L	5.00				
1,4-Dichlorobenzene	ND	ug/L	5.00				
3,3'-Dichlorobenzidine	ND	ug/L	10.0				
2,4-Dichlorophenol	ND	ug/L	5.00				
2,6-Dichlorophenol	ND	ug/L	5.00				
Diethyl phthalate	ND	ug/L	5.00				
2,4-Dimethylphenol	ND	ug/L	5.00				
Dimethyl phthalate	ND	ug/L	5.00				
4,6-Dinitro-2-methylphenol	ND	ug/L	10.0				
2,4-Dinitrophenol	ND	ug/L	50.0				
2,4-Dinitrotoluene	ND	ug/L	5.00				
2,6-Dinitrotoluene	ND	ug/L	5.00				
Di-n-octyl phthalate	ND	ug/L	5.00				
Fluoranthene	ND	ug/L	2.00				
Fluorene	ND	ug/L	2.00				
Hexachlorobenzene	ND	ug/L	5.00				


LABORATORY MANAGER

ND - Not Detected

000043

377 202

ENVIRONMENTAL TESTING & CONSULTING, INC.
 2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

Project # 20560
 FID # DACA45-96-D-0014

Date Arrived 10/19/98
 ETC Order Number 9810618

ETC Lab ID 9810618-05
Sample ID: C-EQ-CS-002

Matrix :AQUEOUS
 Sample Date :10/19/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Base/Neutral & Acid							8270C
Hexachlorobutadiene	ND	ug/L	5.00	10/21/98	10/22/98	RR	
Hexachlorocyclopentadiene	ND	ug/L	5.00				
Hexachloroethane	ND	ug/L	5.00				
Indeno(1,2,3-cd)pyrene	ND	ug/L	2.00				
Isophorone	ND	ug/L	5.00				
2-Methylnaphthalene	ND	ug/L	2.00				
2-Methylphenol (o-cresol)	ND	ug/L	5.00				
3-Methylphenol (m-cresol)	ND	ug/L	5.00				
4-Methylphenol (p-cresol)	ND	ug/L	5.00				
Naphthalene	ND	ug/L	2.00				
Nitrobenzene	ND	ug/L	5.00				
2-Nitroaniline	ND	ug/L	5.00				
3-Nitroaniline	ND	ug/L	10.0				
4-Nitroaniline	ND	ug/L	5.00				
2-Nitrophenol	ND	ug/L	5.00				
4-Nitrophenol	ND	ug/L	5.00				
N-Nitrosodiphenylamine	ND	ug/L	5.00				
N-Nitrosodipropylamine	ND	ug/L	5.00				
Pentachlorophenol	ND	ug/L	10.0				
Phenanthrene	ND	ug/L	2.00				
Phenol	ND	ug/L	5.00				
Pyrene	ND	ug/L	2.00				
1,2,4-Trichlorobenzene	ND	ug/L	5.00				
2,4,5-Trichlorophenol	ND	ug/L	5.00				
2,4,6-Trichlorophenol	ND	ug/L	5.00				

Surrogate Standard	% Recovery	QC Limits	
S1 - Nitrobenzene-d5	66	29	110
S2 - 2-Fluorobiphenyl	60	38	107
S3 - 4-Terphenyl-d14	85	33	122
S4 - Phenol-d6	32	7	58
S5 - 2,4,6-Tribromophenol	91	16	138
S6 - 2-Fluorophenol	47	8	88


 LABORATORY MANAGER

ND - Not Detected

000044

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

377 203
CLIENT SAMPLE NO.

9810-618-5

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-618

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: 1901021

Level: (low/med) LOW

Date Received: _____

% Moisture: _____ decanted: (Y/N) _____

Date Extracted:

Concentrated Extract Volume: 1(mL)

Date Analyzed: 10/22/98

Injection Volume: 1.0(uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

Number TICs found: 3

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 590-66-9	CYCLOHEXANE, 1,1-DIMETHYL-	4.32	13.8	NJ
2. 4169-04-4	1-PROPANOL, 2-PHENOXY-	6.16	4.6	NJ
3. 106-28-5	2,6,10-DODECATRIEN-1-OL, 3,7	17.85	6.6	NJ
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FORM I BNA-GCMS-TIC

000045

377 204

ENVIRONMENTAL TESTING & CONSULTING, INC.
2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

Project # 20560
FID # DACA45-96-D-0014

Date Arrived 10/19/98
ETC Order Number 9810618

ETC Lab ID **9810618-01**
Sample ID: C-TS-008

Matrix :SOIL
Sample Date :10/19/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
Organochlorine Pesticides							8081A
QC Batch	P06028	ug/Kg		10/21/98	10/22/98	RG	
Aldrin	ND	ug/Kg	2.00				
Alpha-BHC	ND	ug/Kg	2.00				
Beta-BHC	ND	ug/Kg	2.00				
Delta-BHC	ND	ug/Kg	2.00				
Gamma-BHC (Lindane)	ND	ug/Kg	2.00				
Alpha-Chlordane	ND	ug/Kg	2.00				
Gamma-Chlordane	ND	ug/Kg	2.00				
Chlordane	ND	ug/Kg	20.0				
4,4'-DDD	ND	ug/Kg	2.00				
4,4'-DDE	ND	ug/Kg	2.00				
4,4'-DDT	ND	ug/Kg	2.00				
Dieldrin	ND	ug/Kg	2.00				
Endosulfan I	ND	ug/Kg	2.00				
Endosulfan II	ND	ug/Kg	2.00				
Endosulfan Sulfate	ND	ug/Kg	2.00				
Endrin	ND	ug/Kg	2.00				
Endrin Aldehyde	ND	ug/Kg	2.00				
Endrin Ketone	ND	ug/Kg	2.00				
Heptachlor	ND	ug/Kg	2.00				
Heptachlor Epoxide	ND	ug/Kg	2.00				
Methoxychlor	ND	ug/Kg	2.00				
Toxaphene	ND	ug/Kg	200				
<u>Surrogate Standard</u>			<u>% Recovery</u>	<u>QC Limits</u>			
S1 - Decachlorobiphenyl	78			64	154		
S2 - Tetrachloro-m-xylene	82			39	130		


LABORATORY MANAGER

ND - Not Detected

000046

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

377 205

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560
FID # DACA45-96-D-0014

Site ID DDMT
Memphis, TN

Date Arrived 10/19/98
ETC Order Number 9810618

ETC Lab ID 9810618-02
Sample ID: A2-C1-001

Matrix :SOIL
Sample Date :10/19/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
Organochlorine Pesticides							8081A
				10/21/98	10/22/98	RG	
QC Batch	P06028	ug/Kg					
Aldrin	ND	ug/Kg	2.00				
Alpha-BHC	ND	ug/Kg	2.00				
Beta-BHC	ND	ug/Kg	2.00				
Delta-BHC	ND	ug/Kg	2.00				
Gamma-BHC (Lindane)	2.21	ug/Kg	2.00				
Alpha-Chlordane	15.0	ug/Kg	2.00				
Gamma-Chlordane	8.74	ug/Kg	2.00				
Chlordane	73.1	ug/Kg	20.0				
4,4'-DDD	6.71	ug/Kg	2.00				
4,4'-DDE	77.0	ug/Kg	2.00				
4,4'-DDT	214E	ug/Kg	2.00				
Dieldrin	8.00	ug/Kg	2.00				
Endosulfan I	ND	ug/Kg	2.00				
Endosulfan II	ND	ug/Kg	2.00				
Endosulfan Sulfate	ND	ug/Kg	2.00				
Endrin	ND	ug/Kg	2.00				
Endrin Aldehyde	ND	ug/Kg	2.00				
Endrin Ketone	ND	ug/Kg	2.00				
Heptachlor	ND	ug/Kg	2.00				
Heptachlor Epoxide	ND	ug/Kg	2.00				
Methoxychlor	ND	ug/Kg	2.00				
Toxaphene	ND	ug/Kg	200				
Surrogate Standard			% Recovery	QC Limits			
S1 - Decachlorobiphenyl			97	64	154		
S2 - Tetrachloro-m-xylene			77	39	130		


LABORATORY MANAGER

ND - Not Detected

000047

377 206

ENVIRONMENTAL TESTING & CONSULTING, INC.
 2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

Project # 20560
 FID # DACA45-96-D-0014

Date Arrived 10/19/98
 ETC Order Number 9810618

ETC Lab ID **9810618-03**
Sample ID: A4-C1-001

Matrix :SOIL
 Sample Date :10/19/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
Organochlorine Pesticides							8081A
QC Batch	P06028	ug/Kg		10/21/98	10/22/98	RG	
Aldrin	ND	ug/Kg	2.00				
Alpha-BHC	ND	ug/Kg	2.00				
Beta-BHC	ND	ug/Kg	2.00				
Delta-BHC	ND	ug/Kg	2.00				
Gamma-BHC (Lindane)	ND	ug/Kg	2.00				
Alpha-Chlordane	ND	ug/Kg	2.00				
Gamma-Chlordane	5 57	ug/Kg	2 00				
Chlordane	43.5	ug/Kg	20.0				
4,4'-DDD	ND	ug/Kg	2.00				
4,4'-DDE	29.0	ug/Kg	2 00				
4,4'-DDT	77 6	ug/Kg	2 00				
Dieldrin	5.30	ug/Kg	2.00				
Endosulfan I	ND	ug/Kg	2.00				
Endosulfan II	ND	ug/Kg	2 00				
Endosulfan Sulfate	ND	ug/Kg	2.00				
Endrin	ND	ug/Kg	2.00				
Endrin Aldehyde	ND	ug/Kg	2.00				
Endrin Ketone	ND	ug/Kg	2 00				
Heptachlor	ND	ug/Kg	2.00				
Heptachlor Epoxide	ND	ug/Kg	2.00				
Methoxychlor	ND	ug/Kg	2.00				
Toxaphene	ND	ug/Kg	200				
Surrogate Standard			% Recovery	QC Limits			
S1 - Decachlorobiphenyl	106			64	154		
S2 - Tetrachloro-m-xylene	88			39	130		

Michael K. Knapman
 LABORATORY MANAGER

ND - Not Detected

000048

ENVIRONMENTAL TESTING & CONSULTING, INC.
 2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ORGANIC ANALYSIS DATA SHEET

377 207

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092
 Site ID **DDMT**
Memphis, TN

Project # 20560
 FID # DACA45-96-D-0014

Date Arrived 10/19/98
 ETC Order Number 9810618

ETC Lab ID **9810618-04**
Sample ID: A3-C1-001

Matrix :SOIL
 Sample Date :10/19/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
Organochlorine Pesticides							8081A
				10/21/98	10/22/98	RG	
QC Batch	P06028	ug/Kg					
Aldrin	ND	ug/Kg	2.00				
Alpha-BHC	ND	ug/Kg	2.00				
Beta-BHC	ND	ug/Kg	2.00				
Delta-BHC	ND	ug/Kg	2.00				
Gamma-BHC (Lindane)	ND	ug/Kg	2.00				
Alpha-Chlordane	16.1	ug/Kg	2.00				
Gamma-Chlordane	12.8	ug/Kg	2.00				
Chlordane	87.3	ug/Kg	20.0				
4,4'-DDD	7.00	ug/Kg	2.00				
4,4'-DDE	72.5	ug/Kg	2.00				
4,4'-DDT	244E	ug/Kg	2.00				
Dieldrin	ND	ug/Kg	2.00				
Endosulfan I	ND	ug/Kg	2.00				
Endosulfan II	ND	ug/Kg	2.00				
Endosulfan Sulfate	ND	ug/Kg	2.00				
Endrin	ND	ug/Kg	2.00				
Endrin Aldehyde	ND	ug/Kg	2.00				
Endrin Ketone	ND	ug/Kg	2.00				
Heptachlor	ND	ug/Kg	2.00				
Heptachlor Epoxide	ND	ug/Kg	2.00				
Methoxychlor	ND	ug/Kg	2.00				
Toxaphene	ND	ug/Kg	200				
Surrogate Standard							
		% Recovery	QC Limits				
S1 - Decachlorobiphenyl	107		64	154			
S2 - Tetrachloro-m-xylene	88		39	130			


 LABORATORY MANAGER

ND - Not Detected

000049

ENVIRONMENTAL TESTING & CONSULTING, INC.
2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ORGANIC ANALYSIS DATA SHEET

377 208

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092
Site ID **DDMT**
Memphis, TN

Project # 20560
FID # DACA45-96-D-0014

Date Arrived 10/19/98
ETC Order Number 9810618

ETC Lab ID 9810618-05
Sample ID: C-EQ-CS-002

Matrix :AQUEOUS
Sample Date :10/19/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
Organochlorine Pesticides							8081A
QC Batch	P07029	ug/L		10/21/98	10/23/98	RG	
Aldrin	ND	ug/L	0.040				
Alpha-BHC	ND	ug/L	0.040				
Beta-BHC	ND	ug/L	0.040				
Delta-BHC	ND	ug/L	0.040				
Gamma-BHC (Lindane)	ND	ug/L	0.040				
Alpha-Chlordane	ND	ug/L	0.040				
Gamma-Chlordane	ND	ug/L	0.040				
Chlordane	ND	ug/L	0.250				
4,4'-DDD	ND	ug/L	0.040				
4,4'-DDE	ND	ug/L	0.040				
4,4'-DDT	ND	ug/L	0.040				
Dieldrin	ND	ug/L	0.040				
Endosulfan I	ND	ug/L	0.040				
Endosulfan II	ND	ug/L	0.040				
Endosulfan Sulfate	ND	ug/L	0.040				
Endrin	ND	ug/L	0.040				
Endrin Aldehyde	ND	ug/L	0.040				
Endrin Ketone	ND	ug/L	0.040				
Heptachlor	ND	ug/L	0.040				
Heptachlor Epoxide	ND	ug/L	0.040				
Methoxychlor	ND	ug/L	0.040				
Toxaphene	ND	ug/L	3.00				
Surrogate Standard			% Recovery	QC Limits			
S1 - Decachlorobiphenyl		52		34	115		
S2 - Tetrachloro-m-xylene		96		31	96		


LABORATORY MANAGER

ND - Not Detected

000050

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

377 209

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560
FID # DACA45-96-D-0014

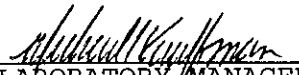
Site ID DDMT
Memphis, TN

Date Arrived 10/19/98
ETC Order Number 9810618

ETC Lab ID 9810618-01
Sample ID: C-TS-008

Matrix :SOIL
Sample Date :10/19/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
PCBs				10/21/98	10/23/98	RG	8082
QC Batch	P06028	ug/Kg					
PCB-1016	ND	ug/Kg	35.0				
PCB-1221	ND	ug/Kg	35.0				
PCB-1232	ND	ug/Kg	35.0				
PCB-1242	ND	ug/Kg	35.0				
PCB-1248	ND	ug/Kg	35.0				
PCB-1254	ND	ug/Kg	35.0				
PCB-1260	ND	ug/Kg	35.0				
Surrogate Standard	% Recovery		QC Limits				
S1 - Tetrachloro-m-xylene	77		20 122				
S2 - Decachlorobiphenyl	58		17 141				


LABORATORY MANAGER

ND - Not Detected

000051

377 210

ENVIRONMENTAL TESTING & CONSULTING, INC.
2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

Project # 20560
FID # DACA45-96-D-0014

Date Arrived 10/19/98
ETC Order Number 9810618

ETC Lab ID 9810618-02
Sample ID: A2-C1-001

Matrix :SOIL
Sample Date :10/19/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
PCBs				10/21/98	10/23/98	RG	8082
QC Batch	P06028	ug/Kg					
PCB-1016	ND	ug/Kg	35.0				
PCB-1221	ND	ug/Kg	35.0				
PCB-1232	ND	ug/Kg	35.0				
PCB-1242	ND	ug/Kg	35.0				
PCB-1248	ND	ug/Kg	35.0				
PCB-1254	ND	ug/Kg	35.0				
PCB-1260	30.0J	ug/Kg	35.0				
<u>Surrogate Standard</u>			<u>% Recovery</u>	<u>QC Limits</u>			
S1 - Tetrachloro-m-xylene	77		20	122			
S2 - Decachlorobiphenyl	61		17	141			


LABORATORY MANAGER

ND - Not Detected

000052

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

377 211

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560
FID # DACA45-96-D-0014

Site ID DDMT
Memphis, TN

Date Arrived 10/19/98
ETC Order Number 9810618

ETC Lab ID 9810618-03
Sample ID: A4-C1-001

Matrix :SOIL
Sample Date :10/19/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
PCBs				10/21/98	10/23/98	RG	8082
QC Batch	P06028	ug/Kg					
PCB-1016	ND	ug/Kg	35.0				
PCB-1221	ND	ug/Kg	35.0				
PCB-1232	ND	ug/Kg	35.0				
PCB-1242	ND	ug/Kg	35.0				
PCB-1248	ND	ug/Kg	35.0				
PCB-1254	ND	ug/Kg	35.0				
PCB-1260	32.6J	ug/Kg	35.0				
<u>Surrogate Standard</u>			<u>% Recovery</u>	<u>QC Limits</u>			
S1 - Tetrachloro-m-xylene	80		20	122			
S2 - Decachlorobiphenyl	61		17	141			


LABORATORY MANAGER

ND - Not Detected

000053

377 212

ENVIRONMENTAL TESTING & CONSULTING, INC.
2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092
Site ID **DDMT**
Memphis, TN

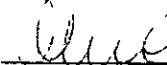
Project # 20560
FID # DACA45-96-D-0014

Date Arrived 10/19/98
ETC Order Number 9810618

ETC Lab ID 9810618-04
Sample ID: A3-C1-001

Matrix :SOIL
Sample Date :10/19/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
PCBs							8082
QC Batch	P06028	ug/Kg		10/21/98	10/23/98	RG	
PCB-1016	ND	ug/Kg	35 0				
PCB-1221	ND	ug/Kg	35.0				
PCB-1232	ND	ug/Kg	35 0				
PCB-1242	ND	ug/Kg	35.0				
PCB-1248	ND	ug/Kg	35 0				
PCB-1254	ND	ug/Kg	35 0				
PCB-1260	49.7	ug/Kg	35 0				
Surrogate Standard	% Recovery		QC Limits				
S1 - Tetrachloro-m-xylene	80		20	122			
S2 - Decachlorobiphenyl	49		17	141			


LABORATORY MANAGER

ND - Not Detected

00054

ENVIRONMENTAL TESTING & CONSULTING, INC.
2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ORGANIC ANALYSIS DATA SHEET

377 213

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560
FID # DACA45-96-D-0014

Site ID DDMT
Memphis, TN

Date Arrived 10/19/98
ETC Order Number 9810618

ETC Lab ID 9810618-05
Sample ID: C-EQ-CS-002

Matrix :AQUEOUS
Sample Date :10/19/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
PCBs				10/20/98	10/22/98	RG	8082
QC Batch	P09011	ug/L					
PCB-1016	ND	ug/L	0.500				
PCB-1221	ND	ug/L	0.500				
PCB-1232	ND	ug/L	0.500				
PCB-1242	ND	ug/L	0.500				
PCB-1248	ND	ug/L	0.500				
PCB-1254	ND	ug/L	0.500				
PCB-1260	ND	ug/L	0.500				
Surrogate Standard	% Recovery		QC Limits				
S1 - Tetrachloro-m-xylene	78		31 96				
S2 - Decachlorobiphenyl	55		34 115				


LABORATORY MANAGER

ND - Not Detected

000055

377 214

Environmental Testing & Consulting, Inc.

**Quality Control Reports
Inorganics**

000056

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
INORGANICS

377 215

Client Name : OHM Remediation Services
Project Name : Defense Depot Memphis, TN
ETC Order # : 9810-618

HOLDING TIMES

Sample Analysis : All samples analyzed within Method Specified
Holding Times.

CALIBRATION

Laboratory Control Sample : All criteria met.

QUALITY CONTROL

Matrix Spike

Spike Recovery : All analytes within QC limits

Duplicates

RPD : All analytes within QC limits

Method Blank

No Target Analytes detected above Detection Limit.


Laboratory Manager

000057

Environmental Testing & Consulting, Inc.
Inorganic QC Data Summary

Client Name OHM Remediation Services
Project DDMT-Memphis, TN

ETC Order Number 9810-618
File Name 9810-618 1

Method Blank

Analyte	Date Analyzed	Blank Concentration mg/Kg	QC Batch
Cyanide	10/20/98	<1 00	CY102098

Calibration Verification (CV)

Analyte	Date Analyzed	CV Conc mg/L	CV Conc Found	% Difference
Cyanide	10/20/98	0 200	0 213	6 5

Laboratory Control Sample (LCS)

Analyte	Date Analyzed	LCS Conc mg/Kg	LCS Conc Found	% Recovery
Cyanide	10/20/98	20 0	18 9	95

Matrix Spike/Matrix Spike Duplicate

Sample ID	Analyte	Spike mg/Kg	Sample mg/Kg	MS Conc Found	MS % Recovery	QC Limits	RPD
9810-618-01 MS	Cyanide	20 0	<1 00	18 0	90	70 - 130	
9810-618-01 MSD	Cyanide	20 0	<1 00	17 5	88	70 - 130	2 0

Duplicates

Sample ID	Analyte	Sample %	Duplicate %	RPD
9810-618-01	Organic Matter	3 09	3 16	2

Environmental Testing & Consulting, Inc.
Inorganic QC Data Summary

377 217

Client Name OHM Remediation Services
Project DDMT-Memphis, TN

ETC Order Number 9810-618
File Name 9810-618 2

Method Blank

Analyte	Date Analyzed	Blank Concentration mg/L	QC Batch
Cyanide	10/20/98	<0.010	CY102098

Calibration Verification (CV)

Analyte	Date Analyzed	CV Conc mg/L	CV Conc Found	% Difference
Cyanide	10/20/98	0.200	0.213	6.5

Laboratory Control Sample (LCS)

Analyte	Date Analyzed	LCS Conc mg/L	LCS Conc Found	% Recovery
Cyanide	10/20/98	0.200	0.199	100

Matrix Spike/Matrix Spike Duplicate

Sample ID	Analyte	Spike mg/L	Sample mg/L	MS Conc Found	MS % Recovery	QC Limits	RPD
9810-618-05 MS	Cyanide	0.200	<0.010	0.201	101	68 - 114	
9810-618-05 MSD	Cyanide	0.200	<0.010	0.192	96	68 - 114	5

000059

Environmental Testing & Consulting, Inc.

Quality Control Reports

Metals (ICP/GFAA/CV)

000060

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
METALS - SOIL

377 219

Client Name : OHM Remediation Services
Project Name : Defense Depot Memphis, TN
ETC Order # : 9810-618

HOLDING TIMES

QC Batch(s) for this order : ICP/GFAA V8-SO-58
Mercury V4-SO-41

Sample Analysis : All samples digested and analyzed within 180 days of collection.
Mercury Analysis : All samples analyzed within 28 days of collection.

CALIBRATION

Initial Calibration : All criteria met.
Continuing Calibration : All criteria met.

SAMPLE ANALYSIS

Instrumentation : Thermo Jarrell Ash Enviro-I ICP
Varian 640Z Zeeman Graphite Furnace
Perkin Elmer 5100ZL Graphite Furnace
Perkin Elmer 6000 Graphite Furnace
Thermo Jarrell Ash AA-Scan 4 Graphite Furnace
CETAC M-6000A Mercury Analyzer

Dilutions Required : No dilutions required.*

*

Due to low recoveries and failing Post Digestion Spike, all Selenium data was reported based on the Method of Standard Additions.

Dilutions were performed on several samples to bring the Target Analyte(s) within calibration range (C) or to remove spectral interference (I) as indicated.

Sample ID	Metal	Dilution Factor	Sample ID	Metal	Dilution Factor
9810-618-01	Aluminum	1:5 (C)	9810-618-03	Lead	1:10 (C)
9810-618-01	Lead	1:3 (C)	9810-618-03	Iron	1:5 (C)
9810-618-01	Iron	1:5 (C)	9810-618-04	Lead	1:10 (C)
9810-618-02	Lead	1:10 (C)	9810-618-04	Iron	1:5 (C)
9810-618-02	Iron	1:5 (C)			

QUALITY CONTROL

9810-618.MQ1BLANK

Method Blank

V8-SO-58BLK - ICP/GFAA Metals
V4-SO-41BLK - Mercury

Calcium identified in V8-SO-58BLK at 4.10 mg/Kg.
Iron identified in V8-SO-58BLK at 1.30 mg/Kg.
Zinc identified in V8-SO-58BLK at 1.40 mg/Kg.

000061

ENVIRONMENTAL TESTING AND CONSULTING, INC
MEMPHIS, TN
CASE NARRATIVE
METALS - SOIL

Client Name : OHM Remediation Services
Project Name : Defense Depot Memphis, TN
ETC Order # : 9810-618

QUALITY CONTROL

9810-618.MQ1LCS

Laboratory Control Sample(s)
V8-SO-58LCS - ICP/GFAA Metals
V4-SO-41LCS - Mercury

All criteria met.

9810-618.MQ1MSMSD

Matrix Spike / Matrix Spike Dup - ICP Metals

9810-618-01 RPD : All analytes within QC limits.
C-TS-008 Spike Recovery : All analytes within QC limits.*
*

Recoveries for Antimony were flagged as outside QC Limits in the Matrix Spike and Matrix Spike Duplicate. A Post Digestion Spike was performed for verification :

	mg/L	mg/L	%	QA
<u>Analyte</u>	<u>Expected</u>	<u>Found</u>	<u>Recovery</u>	<u>Evaluation</u>
Antimony	0.500	0.493	99	Pass

Recoveries for multiple analytes were flagged as outside QC Limits due to the level of these analytes present in the sample relative to the spike amounts. In addition, concentrations of other analytes were high relative to the spike amounts. Dilution Tests were performed for verification :

<u>Analyte</u>	No <u>Dilution</u>	1:5 <u>Dilution</u>	1:25 <u>Dilution</u>	% <u>Difference</u>	QA <u>Evaluation</u>
Aluminum	-----	15900 mg/Kg	16000 mg/Kg	1	Pass
Iron	-----	22900	23200	1	Pass
Manganese	552	562	-----	2	Pass
Potassium	1140	1140	-----	0	Pass
Magnesium	2260	2300	-----	2	Pass
Zinc	60.9	62.1	-----	2	Pass

Refer to Laboratory Control Sample(s) for system verification.

Matrix Spike / Matrix Spike Dup - Graphite Metals

9810-618-01 RPD : All analytes within QC limits.
C-TS-008 Spike Recovery : All analytes within QC limits.*
*

Recoveries for Lead were flagged as outside QC Limits due to the level of this analyte present relative to the spike amount. A Dilution Test was performed for verification :

<u>Analyte</u>	1:3 <u>Dilution</u>	1:15 <u>Dilution</u>	% <u>Difference</u>	QA <u>Evaluation</u>
Lead	13.5 mg/Kg	13.1 mg/Kg	3	Pass

ENVIRONMENTAL TESTING AND CONSULTING, INC. 377 221
MEMPHIS, TN
CASE NARRATIVE
METALS - SOIL

Client Name : OHM Remediation Services
Project Name : Defense Depot Memphis, TN
ETC Order # : 9810-618

QUALITY CONTROL

Recoveries for Selenium were flagged as outside QC Limits in the Matrix Spike and Matrix Spike Duplicate. The Post Digestion Spike failed evaluation criteria. All data was reported based on MSA.

Refer to Laboratory Control Sample(s) for system verification.

Matrix Spike / Matrix Spike Dup - Hg

9810-618-01

RPD : All analytes within QC limits.

C-TS-008

Spike Recovery : All analytes within QC limits.

Refer to Laboratory Control Sample(s) for system verification.

Dilution Test - Dilution result must agree within 10% of original result when sample is diluted by a factor of 5.

Post Digestion Spike - Recovery must be +/-15% of expected value.


Laboratory Manager

000063

377 222

SOLID METHOD BLANK
METALS

Lab Name Environmental Testing and Consulting, Inc

Laboratory ID ICP/GFAA Metals V8-SO-58 BLK QC Batch V8-SO-58
Laboratory ID Mercury V4-SO-41 BLK V4-SO-41

Date Sample Prepared 10/20/98 ICP/GFAA Metals
10/22/98 Mercury

Metals	Concentration mg/Kg	Detection Limit mg/Kg	Date Analyzed	Method
Silver	<0 700	0.700	10/21/98	6010B
Aluminum	<4 00	4 00	10/21/98	6010B
Arsenic	<0 200	0 200	10/21/98	7060A
Barium	<0 200	0 200	10/21/98	6010B
Beryllium	<0 100	0 100	10/21/98	6010B
Calcium	4 10	1 00	10/21/98	6010B
Cadmium	<0 400	0 400	10/21/98	6010B
Cobalt	<0 700	0 700	10/21/98	6010B
Chromium	<0 700	0 700	10/21/98	6010B
Copper	<0 600	0 600	10/21/98	6010B
Iron	1 30	0 700	10/21/98	6010B
Potassium	<20 0	20 0	10/21/98	6010B
Magnesium	<3 00	3 00	10/21/98	6010B
Manganese	<0 200	0 200	10/21/98	6010B
Sodium	<20 0	20 0	10/21/98	6010B
Nickel	<1 50	1 50	10/21/98	6010B
Lead	<0 100	0 100	10/21/98	7421
Antimony	<3 20	3 20	10/21/98	6010B
Selenium	<0 200	0 200	10/21/98	7740
Thallium	<0 100	0 100	10/22/98	7841
Vanadium	<0 800	0 800	10/21/98	6010B
Zinc	1 40	1 00	10/21/98	6010B
Mercury	<0 020	0 020	10/22/98	7471A

Metals Blank

9810-618 Mq1BLANK

J00064

SOLID LABORATORY CONTROL SAMPLE
METALS

Lab Name Environmental Testing and Consulting, Inc

Laboratory Control ID	ICP/GFAA Metals	<u>V8-SO-58</u>	LCS	QC Batch
	Mercury	<u>V4-SO-41</u>	LCS	<u>V8-SO-58</u>
				<u>V4-SO-41</u>

Date Prepared	ICP/GFAA Metals	<u>10/20/98</u>	
	Mercury	<u>10/22/98</u>	

Metals	Spike Added mg/Kg	Found mg/Kg	% R	#	QC Limits
Silver	20 0	19 4	97		80 120
Aluminum	200	196	98		80 120
Arsenic	5 00	4 61	92		85 115
Barium	200	189	95		80 120
Beryllium	20 0	19 0	95		80 120
Calcium	400	402	101		80 120
Cadmium	20 0	19 7	99		80 120
Cobalt	100	98 7	99		80 120
Chromium	40 0	40 4	101		80 120
Copper	40 0	39 4	99		80 120
Iron	200	201	101		80 120
Potassium	400	410	103		80 120
Magnesium	400	390	98		80 120
Manganese	20 0	20 1	101		80 120
Sodium	400	424	106		80 120
Nickel	100	98 1	98		80 120
Lead	2 00	2 09	105		85 115
Antimony	200	193	97		80 120
Selenium	5 00	4 86	97		85 115
Thallium	2 00	2 01	101		85 115
Vanadium	100	98 7	99		80 120
Zinc	20 0	21 5	108		80 120
Mercury	0 167	0 154	92		80 120

Column to be used to flag recovery values with an asterisk

* Values outside of QC limits

Metals Laboratory Control Sample

9810-618 Mq1LCS

000065

SOLID MATRIX SPIKE METALS

Lab Name Environmental Testing and Consulting, Inc

Laboratory ID MS ICP/GFAA Metals 9810-618-01 QC Batch V8-SO-58
Laboratory ID MS Mercury 9810-618-01 V4-SO-41

Date Sample Prepared 10/20/98 ICP/GFAA Metals
10/22/98 Mercury

Metals	SPIKE Added mg/Kg	SAMPLE Conc mg/Kg	MS Conc mg/Kg	RPD <20% #	MS % Rec #	QC Limits	
Silver	22 6	ND	22 9	5	101	75	125
Aluminum	226	15900	16700	2	354 *	75	125
Arsenic	5 66	10 3	16 5	1	110	70	130
Barium	226	83 5	303	1	97	75	125
Beryllium	22 6	0 500	23 7	3	103	75	125
Calcium	452	684	1180	1	110	75	125
Cadmium	22 6	ND	23 8	5	105	75	125
Cobalt	113	7 82	125	2	104	75	125
Chromium	45 2	19 7	67 1	2	105	75	125
Copper	45 2	13 2	58 8	2	101	75	125
Iron	226	22900	22300	2	-266 *	75	125
Potassium	452	1140	1600	3	102	75	125
Magnesium	452	2260	2920	1	146 *	75	125
Manganese	22 6	552	546	12	-27 *	75	125
Sodium	452	104	589	2	107	75	125
Nickel	113	13 7	132	3	105	75	125
Lead	2 26	13 5	15 8	5	102	70	130
Antimony	226	ND	0		0 *	75	125
Selenium	5 66	0 560	4 36	4	67 *	70	130
Thallium	2 26	0 312	2 47	0	96	70	130
Vanadium	113	30 4	137	2	94	75	125
Zinc	22 6	60 9	83 1	4	98	75	125
Mercury	0 164	0 058	0 207	11	91	75	125

Column to be used to flag recovery values with an asterisk

* Values outside of QC limits ND - Not Detected

Metals Matrix Spike

9810-618 Mq1MSMSD

000068

SOIL MATRIX SPIKE DUPLICATE
METALS

Lab Name Environmental Testing and Consulting, Inc

		QC Batch
Laboratory ID MS ICP/GFAA Metals	9810-618-01	V8-SO-58
Laboratory ID MS Mercury	9810-618-01	V4-SO-41

Date Sample Prepared	10/20/98	ICP/GFAA Metals
	10/22/98	Mercury

Metals	SPIKE Added mg/Kg	SAMPLE Conc mg/Kg	MSD Conc mg/Kg		MSD % Rec	#	QC Limits	
Silver	21.8	ND	21.7		100		75	125
Aluminum	218	15900	17100		551	*	75	125
Arsenic	5.88	10.3	16.4		104		70	130
Barium	218	83.5	301		100		75	125
Beryllium	21.8	0.500	22.9		103		75	125
Calcium	436	684	1190		116		75	125
Cadmium	21.8	ND	22.6		104		75	125
Cobalt	109	7.82	123		106		75	125
Chromium	43.6	19.7	65.5		105		75	125
Copper	43.6	13.2	57.6		102		75	125
Iron	218	22900	21800		-505	*	75	125
Potassium	436	1140	1650		117		75	125
Magnesium	436	2260	2880		142	*	75	125
Manganese	21.8	552	618		303	*	75	125
Sodium	436	104	577		109		75	125
Nickel	109	13.7	128		105		75	125
Lead	2.35	13.5	15.1		68	*	70	130
Antimony	218	ND	0		0	*	75	125
Selenium	5.88	0.560	4.54		68	*	70	130
Thallium	2.35	0.312	2.47		92		70	130
Vanadium	109	30.4	134		95		75	125
Zinc	21.8	60.9	86.8		119		75	125
Mercury	0.185	0.058	0.230		93		75	125

Column to be used to flag recovery values with an asterisk

* Values outside of QC limits

ND - Not Detected

Metals Matrix Spike Duplicate

9810-618 Mq1MSMSD

J00067

377 226

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
METALS - AQUEOUS

Client Name : OHM Remediation Services
Project Name : Defense Depot Memphis, TN
ETC Order # : 9810-618

HOLDING TIMES

QC Batch(s) for this order : ICP/GFAA V12-AQ-29
Mercury V4-AQ-51

Sample Analysis : All samples digested and analyzed within 180
days of collection.
Mercury Analysis : All samples analyzed within 28 days of
collection.

CALIBRATION

Initial Calibration : All criteria met.
Continuing Calibration : All criteria met.

SAMPLE ANALYSIS

Instrumentation : Thermo Jarrell Ash Enviro-I ICP
Varian 640Z Zeeman Graphite Furnace
Perkin Elmer 5100ZL Graphite Furnace
Perkin Elmer 6000 Graphite Furnace
Thermo Jarrell Ash AA-Scan 4 Graphite Furnace
CETAC M-6000A Mercury Analyzer

Dilutions Required : No dilutions required.*

*
Due to low recoveries and failing Post Digestion Spike, all Thal
data was reported based on the Method of Standard Additions.

QUALITY CONTROL

9810-618.MQCBLANK

Method Blank

V12-AQ-29BLK - ICP/GFAA Metals
V4-AQ-51BLK - Mercury

No analytes detected in the Method Blank.

9810-618.MQCLCS

Laboratory Control Sample(s)

V12-AQ-29LCS - ICP/GFAA Metals
V4-AQ-51LCS - Mercury

All criteria met.

000068

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
METALS - AQUEOUS

377 227

Client Name : OHM Remediation Services
Project Name : Defense Depot Memphis, TN
ETC Order # : 9810-618

QUALITY CONTROL

9810-618.MQCMSMSD

Matrix Spike / Matrix Spike Dup - ICP Metals

9810-617-01 RPD : All analytes within QC limits.*
ST-EFF-001 Spike Recovery : All analytes within QC limits.*
*

Recoveries and RPD for Silver were flagged as outside QC Limits in the Matrix Spike and Matrix Spike Duplicate. A Post Digestion Spike was performed for verification :

Analyte	mg/L Expected	mg/L Found	% Recovery	QA Evaluation
Silver	0.250	0.247	99	Pass

Refer to Laboratory Control Sample(s) for system verification.

Matrix Spike / Matrix Spike Dup - Graphite Metals

9810-617-01 RPD : All analytes within QC limits.
ST-EFF-001 Spike Recovery : All analytes within QC limits.*
*

Recoveries for Thallium were flagged as outside QC Limits in the Matrix Spike and Matrix Spike Duplicate. The Post Digestion Spike failed evaluation criteria. All data was reported based on MSA.

Refer to Laboratory Control Sample(s) for system verification.

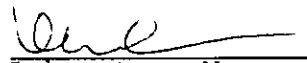
Matrix Spike / Matrix Spike Dup - Hg

9810-617-01 RPD : All analytes within QC limits.
ST-EFF-001 Spike Recovery : All analytes within QC limits.

Refer to Laboratory Control Sample(s) for system verification.

Dilution Test - Dilution result must agree within 10% of original result when sample is diluted by a factor of 5.

Post Digestion Spike - Recovery must be +/-15% of expected value.


Laboratory Manager

000069

WATER METHOD BLANK
METALS

Lab Name

Environmental Testing and Consulting, Inc

Laboratory ID ICP/GFAA Metals

V12-AQ-29 BLK

QC Batch

Laboratory ID Mercury

V4-AQ-51 BLK

V12-AQ-29

V4-AQ-51

Date Sample Prepared

10/20/98

ICP/GFAA Metals

10/21/98

Mercury

Metals	Concentration mg/L	Detection Limit mg/L	Date Analyzed	Method
Silver	<0 009	0 009	10/21/98	6010B
Aluminum	<0 060	0 060	10/21/98	6010B
Arsenic	<0 003	0 003	10/21/98	7060A
Barium	<0 003	0 003	10/21/98	6010B
Beryllium	<0 002	0 002	10/21/98	6010B
Calcium	<0 015	0 015	10/21/98	6010B
Cadmium	<0 005	0 005	10/21/98	6010B
Cobalt	<0 009	0 009	10/21/98	6010B
Chromium	<0 009	0 009	10/21/98	6010B
Copper	<0 008	0 008	10/21/98	6010B
Iron	<0 009	0 009	10/21/98	6010B
Potassium	<0 250	0 250	10/21/98	6010B
Magnesium	<0 040	0 040	10/21/98	6010B
Manganese	<0 003	0 003	10/21/98	6010B
Sodium	<0 050	0 050	10/21/98	6010B
Nickel	<0 020	0 020	10/21/98	6010B
Lead	<0 002	0 002	10/21/98	7421
Antimony	<0 040	0 040	10/21/98	6010B
Selenium	<0 003	0 003	10/21/98	7740
Thallium	<0 002	0 002	10/22/98	7841
Vanadium	<0 010	0 010	10/21/98	6010B
Zinc	<0 010	0 010	10/21/98	6010B
Mercury	<0 0002	0 0002	10/21/98	7470A

Metals Blank

9810-618 MqcBLANK

000070

WATER LABORATORY CONTROL SAMPLE
METALS

Lab Name Environmental Testing and Consulting, Inc

Laboratory Control ID ICP/GFAA Metals V12-AQ-29 LCS V4-AQ-51 LCS
Mercury V4-AQ-51 LCS

QC Batch

V12-AQ-29

V4-AQ-51

Date Prepared ICP/GFAA Metals 10/20/98
Mercury 10/21/98

Metals	Spike Added mg/L	Found mg/L	% R	#	QC Limits
Silver	0.250	0.261	104	80	120
Aluminum	2.50	2.65	106	80	120
Arsenic	0.063	0.062	98	85	115
Barium	2.50	2.56	102	80	120
Beryllium	0.250	0.259	104	80	120
Calcium	5.00	5.47	109	80	120
Cadmium	0.250	0.272	109	80	120
Cobalt	1.25	1.35	108	80	120
Chromium	0.500	0.551	110	80	120
Copper	0.500	0.529	106	80	120
Iron	2.50	2.73	109	80	120
Potassium	5.00	5.58	112	80	120
Magnesium	5.00	5.29	106	80	120
Manganese	0.250	0.273	109	80	120
Sodium	5.00	5.61	112	80	120
Nickel	1.25	1.35	108	80	120
Lead	0.025	0.026	104	85	115
Antimony	2.50	2.61	104	80	120
Selenium	0.063	0.067	106	85	115
Thallium	0.025	0.026	104	85	115
Vanadium	1.25	1.34	107	80	120
Zinc	0.250	0.291	116	80	120
Mercury	0.0050	0.0057	114	80	120

Column to be used to flag recovery values with an asterisk
* Values outside of QC limits

Metals Laboratory Control Sample

9810-618 MqcLCS

000071

WATER MATRIX SPIKE
METALS

Lab Name Environmental Testing and Consulting, Inc

	QC Batch	
Laboratory ID MS ICP/GFAA Metals	9810-617-01	V12-AQ-29
Laboratory ID MS Mercury	9810-617-01	V4-AQ-51

Date Sample Prepared	10/20/98	ICP/GFAA Metals
	10/21/98	Mercury

Metals	SPIKE Added mg/L	SAMPLE Conc mg/L	MS Conc mg/L	RPD <20% #	MS % Rec #	QC Limits	
Silver	0.250	ND	0.103	47 *	41 *	75	125
Aluminum	2.50	ND	2.75	1	110	75	125
Arsenic	0.063	ND	0.061	2	97	85	115
Barium	2.50	0.104	2.76	1	106	75	125
Beryllium	0.250	ND	0.262	2	105	75	125
Calcium	5.00	23.0	27.5	1	90	75	125
Cadmium	0.250	ND	0.268	2	107	75	125
Cobalt	1.25	ND	1.34	1	107	75	125
Chromium	0.500	ND	0.548	1	110	75	125
Copper	0.500	ND	0.543	2	109	75	125
Iron	2.50	0.070	2.81	1	110	75	125
Potassium	5.00	0.916	6.39	4	110	75	125
Magnesium	5.00	11.7	16.8	1	102	75	125
Manganese	0.250	ND	0.274	1	110	75	125
Sodium	5.00	27.8	33.0	1	104	75	125
Nickel	1.25	ND	1.34	1	107	75	125
Lead	0.025	ND	0.026	4	104	85	115
Antimony	2.50	ND	2.67	0	107	75	125
Selenium	0.063	ND	0.070	4	111	85	115
Thallium	0.025	ND	0.003	0	12 *	85	115
Vanadium	1.25	ND	1.36	1	109	75	125
Zinc	0.250	0.047	0.302	6	102	75	125
Mercury	0.0050	ND	0.0060	2	120	75	125

Column to be used to flag recovery values with an asterisk

* Values outside of QC limits ND - Not Detected

9810-618 MqcMSMSD

000072

Metals Matrix Spike

WATER MATRIX SPIKE DUPLICATE
METALS

Lab Name Environmental Testing and Consulting, Inc

Laboratory ID MS ICP/GFAA Metals	9810-617-01	QC Batch V12-AQ-29
Laboratory ID MS Mercury	9810-617-01	V4-AQ-51

Date Sample Prepared	10/20/98	ICP/GFAA Metals
	10/21/98	Mercury

Metals	SPIKE Added mg/L	SAMPLE Conc mg/L	MSD Conc mg/L		MSD % Rec	#	QC Limits	
Silver	0.250	ND	0.064		26	*	75	125
Aluminum	2.50	ND	2.77		111		75	125
Arsenic	0.063	ND	0.060		95		85	115
Barium	2.50	0.104	2.78		107		75	125
Beryllium	0.250	ND	0.266		106		75	125
Calcium	5.00	23.0	27.8		96		75	125
Cadmium	0.250	ND	0.273		109		75	125
Cobalt	1.25	ND	1.36		109		75	125
Chromium	0.500	ND	0.555		111		75	125
Copper	0.500	ND	0.556		111		75	125
Iron	2.50	0.070	2.85		111		75	125
Potassium	5.00	0.916	6.67		115		75	125
Magnesium	5.00	11.7	17.0		106		75	125
Manganese	0.250	ND	0.278		111		75	125
Sodium	5.00	27.8	33.2		108		75	125
Nickel	1.25	ND	1.35		108		75	125
Lead	0.025	ND	0.027		108		85	115
Antimony	2.50	ND	2.68		107		75	125
Selenium	0.063	ND	0.067		106		85	115
Thallium	0.025	ND	0.003		12	*	85	115
Vanadium	1.25	ND	1.38		110		75	125
Zinc	0.250	0.047	0.320		109		75	125
Mercury	0.0050	ND	0.0059		118		75	125

9810-618 MqcMSMSD

000073

Environmental Testing & Consulting, Inc.

Quality Control Reports

GC/MS Volatiles

ENVIRONMENTAL TESTING AND CONSULTING, INC. 377 233
MEMPHIS, TN
CASE NARRATIVE
GC/MS VOLATILE COMPOUNDS - SOIL

Client Name : OHM Remediation Services
Project Name : Defense Depot Memphis, TN
ETC Order # : 9810-618
Method (SW-846) : 8260B/5030B

HOLDING TIMES

Sample Analysis : All samples analyzed within 14 days of collection.

QUALITY CONTROL

QC Batch Form 4 Summary
V2102001S V210201LB

System Monitoring Compounds FORM 2
Surrogate recoveries within QC limits.

Laboratory Control Sample FORM 3
V210201LCS

All criteria met.

Matrix Spike / Matrix Spike Dup FORM 3
9810-618-03 RPD : All analytes within QC limits.
A4-C1-001 Spike Recovery : All analytes within QC limits.*
*

Recoveries for Chlorobenzene and Toluene were flagged as outside QC Limits in the Matrix Spike Duplicate. MS recoveries were within QC Limits.

Refer to Laboratory Control Sample(s) for system verification.

Method Blank FORM 4
V210201LB

No Target Analytes detected above the reporting limit.

CALIBRATION

BFB Daily 12 Hour Tune : All criteria met. FORM 5
Initial Calibration : All criteria met. FORM 6
Calibration Verification : All criteria met. FORM 7*

Calibration Verification(CV) : Date 10/20/98 Time: 10:20

Analyte	%Diff(30% Max)	Response
Methylene Chloride	31.8	Low

Low response indicates that reported levels for this analyte may be biased low. Recovery for Methylene Chloride was within QC Limits in V210201LCS. The data was not affected.

Volatile Internal Standard Area and RT FORM 8
Daily Check Standard(s) Internal Standard Areas and Retention Times within QC limits.

000075

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC/MS VOLATILE COMPOUNDS - SOIL

Client Name : OHM Remediation Services
Project Name : Defense Depot Memphis, TN
ETC Order # : 9810-618
Method (SW-846) : 8260B/5030B

SAMPLE ANALYSIS

Instrumentation : HP 5890 Series II GC, 5971MSD
Dilutions Required : No dilutions required.


Laboratory Manager

FORM 2
SOIL VOA-GCMS SYSTEM MONITORING COMPOUND RECOVERY

377 235

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-618

Level:(low/med) LOW

	CLIENT SAMPLE NO.	SMC1 (DBF) #	SMC2 (TOL) #	SMC3 (BFB) #	OTHER	TOT OUT
01	V210201LCS	101	102	94		0
02	V210201LB	104	99	103		0
03	9810-618-1	108	99	105		0
04	9810-618-2	107	99	106		0
05	9810-618-3	108	97	108		0
06	9810-618-4	110	99	105		0
07	9810-618-3MS	107	101	101		0
08	9810-618-3MS	105	101	102		0
09						
10						
11						
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30						

QC LIMITS

SMC1 (DBF) = Dibromofluoromethane (70-134)
 SMC2 (TOL) = Toluene-d8 (85-111)
 SMC3 (BFB) = Bromofluorobenzene (81-117)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

FORM 4
VOA-GCMS METHOD BLANK SUMMARY

377 236
CLIENT SAMPLE NO.

V210201LB

Lab Name: ETC, INC.

Lab Prep Batch: V2102001

SDG No.: 9810-618

Lab File ID: 0302002

Lab Prep Batch: V2102001S

Date Analyzed: 10/20/98

Time Analyzed: 1222

GC Column: ID: 2 (mm)

Heated Purge: (Y/N) Y

Instrument ID: VOC2

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	V210201LCS		0201001LCS	1020
02	9810-618-1		0401003	1305
03	9810-618-2		0501004	1347
04	9810-618-3		0601005	1431
05	9810-618-4		0701006	1513
06	9810-618-3MS		1501014	2058
07	9810-618-3MS		1601015	2141
08				
09				
10				
11				
12				
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29				
30				

COMMENTS:

377 237

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V210201LB

Lab Name: ETC, INC.

SDG No.: 9810-618

Matrix: (soil/water) SOIL

Lab Prep Batch: V2102001S

Sample wt/vol: 10.0 (g/mL) G

Lab File ID: 0302002

Level: (low/med) LOW

Date Analyzed: 10/20/98

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q

67-64-1-----	Acetone	50.0	U
71-43-2-----	Benzene	2.00	U
75-27-4-----	Bromodichloromethane	2.00	U
75-25-2-----	Bromoform	2.00	U
74-83-9-----	Bromomethane	2.00	U
75-15-0-----	Carbon Disulfide	25.0	U
56-23-5-----	Carbon Tetrachloride	2.00	U
108-90-7-----	Chlorobenzene	2.00	U
124-48-1-----	Chlorodibromomethane	2.00	U
75-00-3-----	Chloroethane	2.00	U
67-66-3-----	Chloroform	2.00	U
74-87-3-----	Chloromethane	2.00	U
75-34-3-----	1,1-Dichloroethane	2.00	U
107-06-2-----	1,2-Dichloroethane	2.00	U
75-35-4-----	1,1-Dichloroethene	2.00	U
156-59-4-----	cis-1,2-Dichloroethene	2.00	U
156-60-5-----	trans-1,2-Dichloroethene	2.00	U
78-87-5-----	1,2-Dichloropropane	2.00	U
10061-01-5-----	cis-1,3-Dichloropropene	2.00	U
10061-02-6-----	trans-1,3-Dichloropropene	2.00	U
100-41-4-----	Ethylbenzene	2.00	U
591-78-6-----	2-Hexanone	50.0	U
75-09-2-----	Methylene Chloride	50.0	U
78-93-3-----	Methyl-Ethyl Ketone	50.0	U
108-10-1-----	4-Methyl-2-Pentanone	50.0	U
100-42-5-----	Styrene	2.00	U
79-34-5-----	1,1,2,2-Tetrachloroethane	2.00	U
127-18-4-----	Tetrachloroethene	2.00	U
108-88-3-----	Toluene	2.00	U
71-55-6-----	1,1,1-Trichloroethane	2.00	U
79-00-5-----	1,1,2-Trichloroethane	2.00	U
79-01-6-----	Trichloroethene	2.00	U
108-05-4-----	Vinyl Acetate	25.0	U

FORM I VOA-GCMS

000079

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

377 238
CLIENT SAMPLE NO.

V210201LB

Lab Name: ETC, INC.

SDG No.: 9810-618

Matrix: (soil/water) SOIL

Lab Prep Batch: V2102001S

Sample wt/vol: 10.0 (g/mL) G

Lab File ID: 0302002

Level: (low/med) LOW

Date Analyzed: 10/20/98

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg) UG/KG	Q
75-01-4-----	Vinyl Chloride	2.00	U
1330-20-7-----	Xylene-mp	2.00	U
95-47-6-----	Xylene-o	2.00	U

FORM I VOA-GCMS

00080

377 239

FORM 3
SOIL VOA-GCMS LABORATORY CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: V2102001S

SDG No.: 9810-618

Matrix Spike - Sample No.: V210201LCS

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Acetone	100		85.6	86	59-151
Benzene	100		89.4	89	72-124
Bromodichloromethane	100		88.9	89	68-119
Bromoform	100		114	114	66-136
Bromomethane	100		94.8	95	40-134
Carbon Disulfide	100		87.2	87	60-133
Carbon Tetrachloride	100		99.3	99	64-123
Chlorobenzene	100		100	100	77-112
Chlorodibromomethane	100		90.8	91	72-118
Chloroethane	100		103	103	64-142
Chloroform	100		88.6	89	70-115
Chloromethane	100		103	103	58-139
1,1-Dichloroethane	100		89.4	89	76-118
1,2-Dichloroethane	100		90.0	90	62-124
1,1-Dichloroethene	100		86.3	86	69-121
cis-1,2-Dichloroethene	100		89.5	90	76-114
trans-1,2-Dichloroethene	100		88.9	89	72-121
1,2-Dichloropropane	100		91.3	91	64-133
cis-1,3-Dichloropropene	100		95.3	95	77-120
trans-1,3-Dichloroprope	100		93.9	94	73-124
Ethylbenzene	100		106	106	77-111
2-Hexanone	100		89.1	89	53-144
Methylene Chloride	100		68.2	68	67-111
Methyl-Ethyl Ketone	100		84.3	84	55-131
4-Methyl-2-Pentanone	100		88.2	88	42-144
Styrene	100		99.8	100	77-117
1,1,1,2-Tetrachloroetha	100		108	108	79-113
Tetrachloroethene	100		99.6	100	77-115

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS:

FORM 3
SOIL VOA-GCMS LABORATORY CONTROL SAMPLE

377 240

Lab Name: ETC, INC.

Lab Prep Batch: V2102001S

SDG No.: 9810-618

Matrix Spike - Sample No.: V210201LCS

Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Toluene	100		98.2	98	77-115
1,1,1-Trichloroethane	100		97.9	98	63-122
1,1,2-Trichloroethane	100		87.2	87	69-117
Trichloroethene	100		95.4	95	75-113
Vinyl Acetate	100		94.4	94	28-146
Vinyl Chloride	100		98.7	99	65-134
Xylene-mp	200		206	103	77-115
Xylene-o	100		102	102	77-115

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits

Spike Recovery: 0 out of 36 outside limits

COMMENTS:

377 241

FORM 3
SOIL VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC, INC.

Lab Prep Batch: V2102001S

SDG No.: 9810-618

Matrix Spike - Sample No.: 9810-618-3

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Benzene	178	0.000	148	83	72-124
Chlorobenzene	178	0.000	152	85	77-112
1,1-Dichloroethene	178	0.000	154	86	69-121
Toluene	178	0.000	156	88	77-115
Trichloroethene	178	0.000	159	89	75-113

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
Benzene	182	135	74	11	20	72-124
Chlorobenzene	182	129	71*	18	20	77-112
1,1-Dichloroethene	182	141	77	11	20	69-121
Toluene	182	135	74*	17	20	77-115
Trichloroethene	182	142	78	13	20	75-113

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 2 out of 10 outside limits

COMMENTS:

FORM III VOA-GCMS

00082

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC/MS VOLATILE COMPOUNDS - AQUEOUS

377 242

Client Name : OHM Remediation Services
Project Name : Defense Depot Memphis, TN
ETC Order # : 9810-618
Method (SW-846) : 8260B/5030B

HOLDING TIMES

Sample Analysis : All samples analyzed within 14 days of collection.

QUALITY CONTROL

QC Batch Form 4 Summary
V2102002A V210202LB

System Monitoring Compounds FORM 2
Surrogate recoveries within QC limits.

Laboratory Control Sample FORM 3
V210202LCS/LCSD

All criteria met.*

*

RPDs for Chloromethane and Vinyl Chloride were flagged as outside QC Limits due to higher recovery in V210202LCS. Recoveries were within QC Limits.

Matrix Spike / Matrix Spike Dup FORM 3
9810-587-02

RPD : All analytes within QC limits.

Spike Recovery : All analytes within QC limits.

Refer to Laboratory Control Sample(s) for system verification.

Method Blank FORM 4
V210201LB

No Target Analytes detected above the reporting limit.

CALIBRATION

BFB Daily 12 Hour Tune : All criteria met. FORM 5
Initial Calibration : All criteria met. FORM 6
Calibration Verification : All criteria met. FORM 7*

*

Calibration Verification(CV) : Date 10/21/98 Time: 00:11

Analyte	%Diff(30% Max)	Response
Bromofluorobenzene	32.0	High

High response indicates that reported levels for this analyte may be biased high. Surrogate recoveries for Bromofluorobenzene were within QC Limits in all samples associated with this project. The data was not affected.

Volatile Internal Standard Area and RT FORM 8
Daily Check Standard(s) Internal Standard Areas and Retention Times within QC limits.

000084

377 243

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC/MS VOLATILE COMPOUNDS - AQUEOUS

Client Name : OHM Remediation Services
Project Name : Defense Depot Memphis, TN
ETC Order # : 9810-618
Method (SW-846) : 8260B/5030B

SAMPLE ANALYSIS

Instrumentation : HP 5890 Series II GC, 5971MSD
Dilutions Required : No dilutions required.

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..S
121


Laboratory Manager

000085

FORM 2
WATER VOA-GCMS SYSTEM MONITORING COMPOUND RECOVERY

377 244

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-618

	CLIENT SAMPLE NO.	SMC1 (DBF) #	SMC2 (TOL) #	SMC3 (BFB) #	OTHER	TOT OUT
01	V210202LCS	103	102	99		0
02	V210202LCSD	104	101	98		0
03	V210202LB	104	101	104		0
04	9810-587-2	104	101	104		0
05	9810-618-5	103	102	104		0
06	9810-618-6	100	101	104		0
07	9810-587-2MS	101	99	98		0
08	9810-587-2MS	102	101	101		0
09						
10						
11						
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27						
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29						
30						

QC LIMITS

SMC1 (DBF) = Dibromofluoromethane (74-123)

SMC2 (TOL) = Toluene-d8 (86-112)

SMC3 (BFB) = Bromofluorobenzene (81-115)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

FORM 4
VOA-GCMS METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

V210202LB

Lab Name: ETC, INC.

Lab Prep Batch: V2102002

SDG No.: 9810-618

Lab File ID: 2201022

Lab Prep Batch: V2102002A

Date Analyzed: 10/21/98

Time Analyzed: 0220

GC Column: ID: 2 (mm)

Heated Purge: (Y/N) Y

Instrument ID: VOC2

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	V210202LCS		1901019LCS	0011
02	V210202LCSD		2001020	0054
03	9810-587-2		2301023	0303
04	9810-618-5		2501025	0429
05	9810-618-6		2601026	0512
06	9810-587-2MS		3201031	1030
07	9810-587-2MS		3301031	1143
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
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25				
26				
27				
28				
29				
30				

COMMENTS:

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

377 246
CLIENT SAMPLE NO.

V210202LB

Lab Name: ETC, INC.

SDG No.: 9810-618

Matrix: (soil/water) WATER

Lab Prep Batch: V2102002A

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 2201022

Level: (low/med) LOW

Date Analyzed: 10/21/98

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
67-64-1-----	Acetone	50.0	U
71-43-2-----	Benzene	1.00	U
75-27-4-----	Bromodichloromethane	1.00	U
75-25-2-----	Bromoform	1.00	U
74-83-9-----	Bromomethane	1.00	U
75-15-0-----	Carbon Disulfide	1.00	U
56-23-5-----	Carbon Tetrachloride	1.00	U
108-90-7-----	Chlorobenzene	1.00	U
124-48-1-----	Chlorodibromomethane	1.00	U
75-00-3-----	Chloroethane	1.00	U
67-66-3-----	Chloroform	1.00	U
74-87-3-----	Chloromethane	1.00	U
75-34-3-----	1,1-Dichloroethane	1.00	U
107-06-2-----	1,2-Dichloroethane	1.00	U
75-35-4-----	1,1-Dichloroethene	1.00	U
156-59-4-----	cis-1,2-Dichloroethene	1.00	U
156-60-5-----	trans-1,2-Dichloroethene	1.00	U
78-87-5-----	1,2-Dichloropropane	1.00	U
10061-01-5-----	cis-1,3-Dichloropropene	1.00	U
10061-02-6-----	trans-1,3-Dichloropropene	1.00	U
100-41-4-----	Ethylbenzene	1.00	U
591-78-6-----	2-Hexanone	5.00	U
75-09-2-----	Methylene Chloride	20.0	U
78-93-3-----	Methyl-Ethyl Ketone	20.0	U
108-10-1-----	4-Methyl-2-Pentanone	5.00	U
100-42-5-----	Styrene	1.00	U
79-34-5-----	1,1,2,2-Tetrachloroethane	1.00	U
127-18-4-----	Tetrachloroethene	1.00	U
108-88-3-----	Toluene	1.00	U
71-55-6-----	1,1,1-Trichloroethane	1.00	U
79-00-5-----	1,1,2-Trichloroethane	1.00	U
79-01-6-----	Trichloroethene	1.00	U
108-05-4-----	Vinyl Acetate	20.0	U

FORM I VOA-GCMS

000088

377 247

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V210202LB

Lab Name: ETC, INC.

SDG No.: 9810-618

Matrix: (soil/water) WATER

Lab Prep Batch: V2102002A

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 2201022

Level: (low/med) LOW

Date Analyzed: 10/21/98

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg) UG/L	Q
75-01-4-----	Vinyl Chloride	1.00	U
1330-20-7-----	Xylene-mp	1.00	U
95-47-6-----	Xylene-o	1.00	U

FORM I VOA-GCMS

000089

FORM 3
WATER VOA-GCMS LABORATORY CONTROL SAMPLE

377 248

Lab Name: ETC, INC.

Lab Prep Batch: V2102002A

SDG No.: 9810-618

Matrix Spike - Sample No.: V210202LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Acetone	100		88.8	89	59-151
Benzene	100		92.0	92	72-124
Bromodichloromethane	100		98.8	99	68-119
Bromoform	100		118	118	66-136
Bromomethane	100		106	106	40-134
Carbon Disulfide	100		89.3	89	60-133
Carbon Tetrachloride	100		95.8	96	64-123
Chlorobenzene	100		99.5	100	77-112
Chlorodibromomethane	100		98.4	98	72-118
Chloroethane	100		109	109	64-142
Chloroform	100		91.9	92	70-115
Chloromethane	100		120	120	58-139
1,1-Dichloroethane	100		93.0	93	76-118
1,2-Dichloroethane	100		98.8	99	62-124
1,1-Dichloroethene	100		86.5	86	69-121
cis-1,2-Dichloroethene	100		93.6	94	76-114
trans-1,2-Dichloroethene	100		89.7	90	72-121
1,2-Dichloropropane	100		96.1	96	64-133
cis-1,3-Dichloropropene	100		102	102	77-120
trans-1,3-Dichloropropene	100		99.0	99	73-124
Ethylbenzene	100		101	101	77-111
2-Hexanone	100		97.6	98	53-144
Methylene Chloride	100		76.6	77	67-115
Methyl-Ethyl Ketone	100		92.7	93	55-151
4-Methyl-2-Pentanone	100		97.2	97	42-144
Styrene	100		98.1	98	77-117
1,1,1,2-Tetrachloroethane	100		112	112	79-113
Tetrachloroethene	100		100	100	77-115

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS:

FORM 3
WATER VOA-GCMS LABORATORY CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: V2102002A

SDG No.: 9810-618

Matrix Spike - Sample No.: V210202LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Toluene	100		95.9	96	77-115
1,1,1-Trichloroethane	100		95.8	96	63-122
1,1,2-Trichloroethane	100		95.5	96	69-117
Trichloroethene	100		96.4	96	75-113
Vinyl Acetate	100		98.6	99	28-146
Vinyl Chloride	100		110	110	65-134
Xylene-mp	200		192	96	77-115
Xylene-o	100		99.1	99	77-115

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS:

FORM 3
WATER VOA-GCMS LABORATORY CONTROL SAMPLE

377 250

Lab Name: ETC, INC.

Lab Prep Batch: V2102002A

SDG No.: 9810-618

Matrix Spike - Sample No.: V210202LCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS	
					RPD	REC.
Acetone	100	86.5	86	3	20	59-151
Benzene	100	91.7	92	0	20	72-124
Bromodichloromethane	100	100	100	1	20	68-119
Bromoform	100	117	117	1	20	66-136
Bromomethane	100	86.9	87	20	20	40-134
Carbon Disulfide	100	79.2	79	12	20	60-133
Carbon Tetrachloride	100	96.0	96	0	20	64-123
Chlorobenzene	100	103	103	3	20	77-112
Chlorodibromomethane	100	100	100	2	20	72-118
Chloroethane	100	96.3	96	13	20	64-142
Chloroform	100	94.0	94	2	20	70-115
Chloromethane	100	89.8	90	28*	20	58-139
1,1-Dichloroethane	100	92.2	92	1	20	76-118
1,2-Dichloroethane	100	97.9	98	1	20	62-124
1,1-Dichloroethene	100	81.6	82	5	20	69-121
cis-1,2-Dichloroethene	100	94.4	94	0	20	76-114
trans-1,2-Dichloroethene	100	87.8	88	2	20	72-121
1,2-Dichloropropane	100	98.6	99	3	20	64-133
cis-1,3-Dichloropropene	100	101	101	1	20	77-120
trans-1,3-Dichloropropane	100	100	100	1	20	73-124
Ethylbenzene	100	104	104	3	20	77-111
2-Hexanone	100	94.6	95	3	20	53-144
Methylene Chloride	100	74.0	74	4	20	67-115
Methyl-Ethyl Ketone	100	87.3	87	7	20	55-151
4-Methyl-2-Pentanone	100	94.4	94	3	20	42-144
Styrene	100	103	103	5	20	77-117
1,1,1,2-Tetrachloroethane	100	113	113	1	20	79-113
Tetrachloroethene	100	104	104	4	20	77-115

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS:

377 251

FORM 3
WATER VOA-GCMS LABORATORY CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: V2102002A

SDG No.: 9810-618

Matrix Spike - Sample No.: V210202LCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS	
					RPD	REC.
Toluene	100	100	100	4	20	77-115
1,1,1-Trichloroethane	100	97.6	98	2	20	63-122
1,1,2-Trichloroethane	100	96.8	97	1	20	69-117
Trichloroethene	100	98.0	98	2	20	75-113
Vinyl Acetate	100	98.1	98	1	20	28-146
Vinyl Chloride	100	84.0	84	27*	20	65-134
Xylene-mp	200	203	102	6	20	77-115
Xylene-o	100	102	102	3	20	77-115

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 2 out of 36 outside limits

Spike Recovery: 0 out of 72 outside limits

COMMENTS:

FORM 3
WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

377 252

Lab Name: ETC, INC.

Lab Prep Batch: V2102002A

SDG No.: 9810-618

Matrix Spike - Sample No.: 9810-587-2

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Benzene	100	0.000	94.2	94	72-124
Chlorobenzene	100	0.000	105	105	77-112
1,1-Dichloroethene	100	0.000	86.0	86	69-121
Toluene	100	0.000	104	104	77-115
Trichloroethene	100	0.000	103	103	75-113

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
Benzene	100	97.5	98	4	20	72-124
Chlorobenzene	100	107	107	2	20	77-112
1,1-Dichloroethene	100	88.9	89	3	20	69-121
Toluene	100	104	104	0	20	77-115
Trichloroethene	100	105	105	2	20	75-113

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

COMMENTS:

FORM III VOA-GCMS

000094

Environmental Testing & Consulting, Inc.

Quality Control Reports

GC/MS Semi-Volatiles

000095

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC/MS SEMI-VOLATILE COMPOUNDS - SOIL,

377 254

Client Name : OHM Remediation Services
Project Name : Defense Depot Memphis, TN
ETC Order # : 9810-618
Method (SW-846) : 8270C/3550B

HOLDING TIMES

Sample Extraction : All soil samples extracted within 14 days.
Sample Analysis : All samples analyzed within 40 days of
extraction.

QUALITY CONTROL

QC Batch Form 4 Summary
P04056 P04056LB
P04057 P04057LB

System Monitoring Compounds FORM 2
Surrogate recoveries within QC limits.*

*

Surrogate recoveries for multiple analytes were flagged as outside QC Limits in sample 9810-618-01(C-TS-008). Review of the raw data showed no obvious matrix interference. This sample was re-analyzed for verification with recoveries within QC Limits.

Laboratory Control Sample FORM 3
P04056LCS
P04057LCS

All criteria met.*

*

4-Chloroaniline and 4-Nitrophenol were flagged outside QC Limits in P04057LCS. High recovery indicates that detection levels were not affected. These compounds were not identified in samples associated with this project. The data was not affected.

Matrix Spike / Matrix Spike Dup FORM 3

9810-622-01 RPD : All analytes within QC limits *
Spike Recovery : All analytes within QC limits.

*

RPDs for multiple analytes were flagged as outside QC Limits due to higher recovery in the Matrix Spike. MS/MSD recoveries were within QC Limits.

Refer to Laboratory Control Sample(s) for system verification.

Matrix Spike / Matrix Spike Dup FORM 3

9810-751-03 RPD : All analytes within QC limits.*
B3-C1 Spike Recovery : All analytes within QC limits.

*

RPDs for 4-Nitrophenol and Pyrene were flagged as outside QC Limits due to higher recovery in the Matrix Spike Duplicate. MS/MSD recoveries were within QC Limits.

Refer to Laboratory Control Sample(s) for system verification.

000096

ENVIRONMENTAL TESTING AND CONSULTING, INC.
 MEMPHIS, TN
 CASE NARRATIVE
 GC/MS SEMI-VOLATILE COMPOUNDS - SOIL

Client Name : OHM Remediation Services
 Project Name : Defense Depot Memphis, TN
 ETC Order # : 9810-618
 Method (SW-846) : 8270C/3550B

QUALITY CONTROL

Method Blank FORM 4
 P04056LB
 P04057LB

No Target Analytes detected above Practical Quantitation Limit.

CALIBRATION

DFTPP Daily 12 Hour Tune : All criteria met. FORM 5
 Initial Calibration : All criteria met. FORM 6
 Calibration Verification : All criteria met. FORM 7*

Calibration Verification(CV) : Date 10/21/98 Time: 17:08

Analyte	%Diff(30% Max)	Response
Benzidine	44.8	High
Benzoic Acid	46.6	Low
2,4-Dinitrophenol	66.4	High
4-Nitroaniline	58.8	High

High responses indicate that reported levels for these analytes may be biased high. Low response for Benzoic Acid indicates that reported level for this analyte may be biased low. Benzidine was not a Target Analyte associated with this project. Benzoic Acid, 2,4-Dinitrophenol and 4-Nitrophenol were not identified in samples associated with this project. The data was not affected.

Calibration Verification(CV) : Date 10/22/98 Time: 12:18

Analyte	%Diff(30% Max)	Response
Benzoic Acid	67.4	Low
2,4-Dinitrophenol	43.4	High
4-Nitroaniline	36.0	High

Low response for Benzoic Acid indicates that reported levels for this analyte may be biased low. High responses indicate reported levels for these analytes may be biased high. These analytes were not identified in samples associated with this project. The data was not affected.

Calibration Verification(CV) : Date 10/23/98 Time: 12:55

Analyte	%Diff(30% Max)	Response
Benzoic Acid	69.6	Low
4-Nitroaniline	45.6	High

Low response for Benzoic Acid indicates that reported levels for this analyte may be biased low. High response for 4-Nitroaniline indicates reported levels for this analyte may be biased high. These analytes were not identified in samples associated with this project. The data was not affected.

00097

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN

377 256

CASE NARRATIVE
GC/MS SEMI-VOLATILE COMPOUNDS - SOIL

Client Name : OHM Remediation Services
Project Name : Defense Depot Memphis, TN

ETC Order # : 9810-618
Method (SW-846) : 8270C/3550B

CALIBRATION

Semi-Volatile Internal Standard Area and RT FORM 8
Daily Check Standard(s) Internal Standard Areas and Retention Times
within QC limits.

SAMPLE ANALYSIS

Instrumentation : HP 5890 Series II GC, 5971MSD
Dilutions Required : No dilutions required.


Laboratory Manager

000098

FORM 2
SOIL BNA-GCMS SURROGATE RECOVERY

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-618

Level: (low/med) LOW

	CLIENT SAMPLE NO.	S1 (2FP) #	S2 (PHL) #	S3 (NBZ) #	S4 (FBP) #	S5 (TBP) #	S6 (TPH) #	S7 #	S8 #	TOT OUT
01	P04056LCS	76	78	78	74	102	110			0
02	9810-618-1	8*	15	20*	25*	58	91			3
03	9810-618-2	59	62	63	62	82	97			0
04	9810-618-3	46	50	51	53	73	84			0
05	9810-618-4	49	53	54	56	78	76			0
06	9810-622-1	65	68	62	61	85	78			0
07	9810-622-1MS	65	69	75	70	90	87			0
08	9810-622-1MS	50	54	62	60	78	85			0
09	P04056LB	65	70	73	74	89	107			0
10	P04057LB	70	75	73	70	85	89			0
11	P04057LCS	80	81	78	76	98	101			0
12	9810-618-1	68	71	73	69	76	86			0
13	9810-751-3	55	56	60	66	62	82			0
14	9810-751-3MS	61	63	65	67	72	82			0
15	9810-751-3MS	65	69	69	74	84	90			0
16										
17										
18										
19										
20										
21										
22										
23										
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25										
26										
27										
28										
29										
30										

QC LIMITS

S1 (2FP) = 2-Fluorophenol (10-119)
 S2 (PHL) = Phenol-d6 (11-125)
 S3 (NBZ) = Nitrobenzene-d5 (25-110)
 S4 (FBP) = 2-Fluorobiphenyl (33-114)
 S5 (TBP) = 2,4,6-Tribromophenol (9-134)
 S6 (TPH) = Terphenyl-d14 (37-115)

Column to be used to flag recovery values
 * Values outside of contract required QC limits
 D Surrogate diluted out

FORM 4
BNA-GCMS METHOD BLANK SUMMARY

377 258
CLIENT SAMPLE NO

P04056LB

Lab Name: ETC, INC.

Lab Prep Batch: P04056

Lab File ID: 0301003

Matrix: (soil/water) SOIL

Level:(low/med) LOW

SDG No.: 9810-618

Instrument ID: BNA2

Date Analyzed: 10/22/98

Time Analyzed: 1248

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	P04056LCS		0401006	10/21/98
02	9810-618-1		0801010	10/21/98
03	9810-618-2		0901011	10/21/98
04	9810-618-3		1001012	10/21/98
05	9810-618-4		1101013	10/21/98
06	9810-622-1		1401016	10/21/98
07	9810-622-1MS		1501017	10/21/98
08	9810-622-1MS		1601018	10/22/98
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COMMENTS:

377 259

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

P04056LB

Lab Name: ETC, INC.

SDG No.: 9810-618

Matrix: (soil/water) SOIL

Lab Prep Batch: P04056

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: 0301003

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 1(mL)

Date Analyzed: 10/22/98

Injection Volume: 1.0(uL)

Dilution Factor: 1.0

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

83-32-9-----	Acenaphthene	66.7	U
208-96-8-----	Acenaphthylene	66.7	U
120-12-7-----	Anthracene	66.7	U
56-55-3-----	Benzo(a)Anthracene	66.7	U
205-99-2-----	Benzo(b)fluoranthene	66.7	U
207-08-9-----	Benzo(k)fluoranthene	66.7	U
191-24-2-----	Benzo(g,h,i)perylene	66.7	U
50-32-8-----	Benzo(a)pyrene	66.7	U
65-85-0-----	Benzoic Acid	1670	U
100-51-6-----	Benzyl Alcohol	167	U
111-44-4-----	bis(2-Chloroethyl)ether	167	U
111-91-1-----	Bis(2-chloroethoxy)methane	167	U
39638-32-9-----	bis(2-Chloroisopropyl)ether	167	U
117-81-7-----	bis(2-ethylhexyl)Phthalate	167	U
101-55-3-----	4-Bromophenyl-phenylether	167	U
85-68-7-----	Butylbenzylphthalate	167	U
106-47-8-----	4-Chloroaniline	167	U
59-50-7-----	4-Chloro-3-Methylphenol	167	U
91-58-7-----	2-Chloronaphthalene	167	U
95-57-8-----	2-Chlorophenol	167	U
7005-72-3-----	4-Chlorophenyl-phenylether	167	U
218-01-9-----	Chrysene	167	U
53-70-3-----	Dibenzo(a,h)anthracene	66.7	U
132-64-9-----	Dibenzofuran	167	U
84-74-2-----	Di-n-Butylphthalate	167	U
95-50-1-----	1,2-Dichlorobenzene	167	U
541-73-1-----	1,3-Dichlorobenzene	167	U
106-46-7-----	1,4-Dichlorobenzene	167	U
91-94-1-----	3,3'-Dichlorobenzidine	167	U
120-83-2-----	2,4-Dichlorophenol	167	U
84-66-2-----	Diethylphthalate	167	U

FORM I BNA-GCMS

000101

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET

377 260
CLIENT SAMPLE NO.

P04056LB

Lab Name: ETC, INC.

SDG No.: 9810-618

Matrix: (soil/water) SOIL

Lab Prep Batch: P04056

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: 0301003

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 1 (mL)

Date Analyzed: 10/22/98

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
105-67-9-----	2,4-Dimethyphenol	167 U	
131-11-3-----	Dimethylphthalate	167 U	
534-52-1-----	4,6-Dinitro-2-methylphenol	167 U	
51-28-5-----	2,4-Dinitrophenol	333 U	
121-14-2-----	2,4-Dinitrotoluene	167 U	
606-20-2-----	2,6-Dinitrotoluene	167 U	
117-84-0-----	Di-n-octylphthalate	167 U	
86-30-6-----	Diphenylamine/n-NDPA	167 U	
206-44-0-----	Fluoranthene	66.7 U	
86-73-7-----	Fluorene	66.7 U	
118-74-1-----	Hexachlorobenzene	167 U	
87-68-3-----	Hexachlorobutadiene	167 U	
77-47-4-----	Hexachlorocyclopentadiene	167 U	
67-72-1-----	Hexachloroethane	167 U	
193-39-5-----	Indeno(1,2,3-cd)pyrene	66.7 U	
78-59-1-----	Isophorone	167 U	
91-57-6-----	2-Methylnaphthalene	167 U	
95-48-7-----	2-Methylphenol	167 U	
106-44-5-----	3&4-Methylphenol	167 U	
91-20-3-----	Naphthalene	66.7 U	
88-74-4-----	2-Nitroaniline	167 U	
99-09-2-----	3-Nitroaniline	167 U	
100-01-6-----	4-Nitroaniline	167 U	
98-95-3-----	Nitrobenzene	167 U	
88-75-5-----	2-Nitrophenol	167 U	
100-02-7-----	4-Nitrophenol	167 U	
621-64-7-----	N-Nitrosodinpropylamine	167 U	
87-86-5-----	Pentachlorophenol	167 U	
85-01-8-----	Phenanthrene	66.7 U	
108-95-2-----	Phenol	167 U	
129-00-0-----	Pyrene	66.7 U	
110-86-1-----	Pyridine	167 U	
120-82-1-----	1,2,4-Trichlorobenzene	167 U	

FORM I BNA-GCMS

000102

377 261

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

P04056LB

Lab Name: ETC, INC.

SDG No.: 9810-618

Matrix: (soil/water) SOIL

Lab Prep Batch: P04056

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: 0301003

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 1(mL)

Date Analyzed: 10/22/98

Injection Volume: 1.0(uL)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	UG/KG	
95-95-4-----	2,4,5-Trichlorophenol	167	U	
88-06-2-----	2,4,6-Trichlorophenol	167	U	

FORM I BNA-GCMS

000103

FORM 3
SOIL BNA-GCMS LABORATORY CONTROL SAMPLE

377 262

Lab Name: ETC, INC.

Lab Prep Batch: P04056

SDG No.: 9810-618

Matrix Spike - Sample No.: P04056LCS

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Acenaphthene	1670		1320	79	34-126
Acenaphthylene	1670		1500	90	62-123
Anthracene	1670		1430	86	68-124
Benzo(a)Anthracene	1670		1420	85	60-133
Benzo(b)fluoranthene	1670		1590	95	67-126
Benzo(k)fluoranthene	1670		1460	87	75-131
Benzo(g,h,i)perylene	1670		1370	82	53-137
Benzo(a)pyrene	1670		1470	88	68-129
Benzoic Acid	3330		3690	111	37-251
Benzyl Alcohol	1670		1340	80	20-159
bis(2-Chloroethyl)ether	1670		1520	91	25-147
Bis(2-chloroethoxy)meth	1670		1140	68	37-153
bis(2-Chloroisopropyl)e	1670		1250	75	35-138
bis(2-ethylhexyl)Phthal	1670		1560	93	60-150
4-Bromophenyl-phenyleth	1670		1310	78	59-130
Butylbenzylphthalate	1670		1450	87	71-137
4-Chloroaniline	1670		547	33	27-106
4-Chloro-3-Methylphenol	3330		2800	84	33-147
2-Chloronaphthalene	1670		1420	85	62-126
2-Chlorophenol	3330		2570	77	35-138
4-Chlorophenyl-phenylet	1670		1370	82	60-128
Chrysene	1670		1360	81	67-131
Dibenzo(a,h)anthracene	1670		1350	81	51-138
Dibenzofuran	1670		1330	80	57-131
Di-n-Butylphthalate	1670		1340	80	39-179
1,2-Dichlorobenzene	1670		1250	75	58-110
1,3-Dichlorobenzene	1670		1220	73	55-109
1,4-Dichlorobenzene	1670		1250	75	26-121

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS:

FORM 3
SOIL BNA-GCMS LABORATORY CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: P04056

SDG No.: 9810-618

Matrix Spike - Sample No.: P04056LCS

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
3,3'-Dichlorobenzidine	3330		2970	89	18-191
2,4-Dichlorophenol	3330		2640	79	68-123
2,6-Dichlorophenol	3330		2708	81	45-157
Diethylphthalate	1670		1400	84	72-133
2,4-Dimethyphenol	3330		2270	68	53-121
Dimethylphthalate	1670		1360	81	64-132
4,6-Dinitro-2-methylphe	3330		4080	122	70-158
2,4-Dinitrophenol	3330		5820	175	31-186
2,4-Dinitrotoluene	1670		1640	98	22-139
2,6-Dinitrotoluene	1670		1380	83	64-142
Di-n-octylphthalate	1670		1290	77	42-172
Diphenylamine/n-NDPA	1670		1450	87	72-118
Fluoranthene	1670		1710	102	71-132
Fluorene	1670		1410	84	65-126
Hexachlorobenzene	1670		1320	79	64-130
Hexachlorobutadiene	1670		1280	77	62-116
Hexachlorocyclopentadie	1670		1230	74	16-160
Hexachloroethane	1670		1260	75	58-110
Indeno(1,2,3-cd)pyrene	1670		1420	85	34-170
Isophorone	1670		1330	80	35-135
2-Methylnaphthalene	1670		1260	75	57-123
2-Methylphenol	3330		2620	79	56-122
3&4-Methylphenol	3330		2590	78	68-134
Naphthalene	1670		1290	77	62-113
2-Nitroaniline	1670		1500	90	63-138
3-Nitroaniline	1670		1530	92	53-128
4-Nitroaniline	1670		2340	140	60-140
Nitrobenzene	1670		1200	72	59-123
2-Nitrophenol	3330		2630	79	52-145

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS:

FORM 3
SOIL BNA-GCMS LABORATORY CONTROL SAMPLE

377 264

Lab Name: ETC, INC.

Lab Prep Batch: P04056

SDG No.: 9810-618

Matrix Spike - Sample No.: P04056LCS

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
4-Nitrophenol	3330		3390	102	12-105
N-Nitrosodipropylamine	1670		979	59	24-141
Pentachlorophenol	3330		3800	114	6-164
Phenanthrene	1670		1470	88	66-128
Phenol	3330		2580	77	22-127
Pyrene	1670		1890	113	33-155
1,2,4-Trichlorobenzene	1670		1280	77	30-127
2,4,5-Trichlorophenol	3330		3036	91	50-173
2,4,6-Trichlorophenol	3330		2800	86	46-161

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits

Spike Recovery: 0 out of 66 outside limits

COMMENTS:

FORM 3
SOIL BNA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC, INC.

Lab Prep Batch: P04056

SDG No.: 9810-618

Matrix Spike - Sample No.: 9810-622-1

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Acenaphthene	3280	0.00	2390	73	34-126
4-Chloro-3-Methylphenol	5240	0.00	4170	80	33-147
2-Chlorophenol	5240	0.00	3710	71	35-138
1,4-Dichlorobenzene	3280	0.00	2340	71	26-121
2,4-Dinitrotoluene	3280	0.00	2790	85	22-139
4-Nitrophenol	5240	0.00	5520	105	12-105
N-Nitrosodipropylamine	3280	0.00	2300	70	24-141
Pentachlorophenol	5240	0.00	5180	99	6-164
Phenol	5240	0.00	3340	64	22-127
Pyrene	3280	67.3	3140	94	33-155
1,2,4-Trichlorobenzene	3280	0.00	2310	70	30-127

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
Acenaphthene	3280	2090	64	13	20	34-126
4-Chloro-3-Methylphenol	5240	3540	68	16	20	33-147
2-Chlorophenol	5240	2880	55	25*	20	35-138
1,4-Dichlorobenzene	3280	1800	55	25*	20	26-121
2,4-Dinitrotoluene	3280	2560	78	8	20	22-139
4-Nitrophenol	5240	5130	98	7	20	12-105
N-Nitrosodipropylamine	3280	2000	61	14	20	24-141
Pentachlorophenol	5240	4540	87	13	20	6-164
Phenol	5240	2750	52	21*	20	22-127
Pyrene	3280	2920	87	8	20	33-155
1,2,4-Trichlorobenzene	3280	1930	59	17	20	30-127

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 3 out of 11 outside limits

Spike Recovery: 0 out of 22 outside limits

COMMENTS:

FORM III BNA-GCMS

000107

FORM 4
BNA-GCMS METHOD BLANK SUMMARY

377 266
CLIENT SAMPLE NO

P04057LB

Lab Name: ETC, INC.

Lab Prep Batch: P04057

Lab File ID: 0301003

Matrix: (soil/water) SOIL

Level: (low/med) LOW

SDG No.: 9810-618

Instrument ID: BNA2

Date Analyzed: 10/23/98

Time Analyzed: 1326

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	P04057LCS		0401004	10/23/98
02	9810-618-1		0501005	10/23/98
03	9810-751-3		0801008	10/23/98
04	9810-751-3MS		0901009	10/23/98
05	9810-751-3MS		1001010	10/23/98
06				
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COMMENTS:

377 267

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

P04057LB

Lab Name: ETC, INC.

SDG No.: 9810-618

Matrix: (soil/water) SOIL

Lab Prep Batch: P04057

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: 0301003

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 1 (mL)

Date Analyzed: 10/23/98

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9	Acenaphthene	66.7	U
208-96-8	Acenaphthylene	66.7	U
120-12-7	Anthracene	66.7	U
56-55-3	Benzo(a)Anthracene	66.7	U
205-99-2	Benzo(b)fluoranthene	66.7	U
207-08-9	Benzo(k)fluoranthene	66.7	U
191-24-2	Benzo(g,h,i)perylene	66.7	U
50-32-8	Benzo(a)pyrene	66.7	U
65-85-0	Benzoic Acid	1670	U
100-51-6	Benzyl Alcohol	167	U
111-44-4	bis(2-Chloroethyl)ether	167	U
111-91-1	Bis(2-chloroethoxy)methane	167	U
39638-32-9	bis(2-Chloroisopropyl)ether	167	U
117-81-7	bis(2-ethylhexyl)Phthalate	167	U
101-55-3	4-Bromophenyl-phenylether	167	U
85-68-7	Butylbenzylphthalate	167	U
106-47-8	4-Chloroaniline	167	U
59-50-7	4-Chloro-3-Methylphenol	167	U
91-58-7	2-Chloronaphthalene	167	U
95-57-8	2-Chlorophenol	167	U
7005-72-3	4-Chlorophenyl-phenylether	167	U
218-01-9	Chrysene	167	U
53-70-3	Dibenzo(a,h)anthracene	66.7	U
132-64-9	Dibenzofuran	167	U
84-74-2	Di-n-Butylphthalate	167	U
95-50-1	1,2-Dichlorobenzene	167	U
541-73-1	1,3-Dichlorobenzene	167	U
106-46-7	1,4-Dichlorobenzene	167	U
91-94-1	3,3'-Dichlorobenzidine	167	U

FORM I BNA-GCMS

000109

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

P04057LB

Lab Name: ETC, INC.

SDG No.: 9810-618

Matrix: (soil/water) SOIL

Lab Prep Batch: P04057

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: 0301003

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 1 (mL)

Date Analyzed: 10/23/98

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
120-83-2-----	2,4-Dichlorophenol	167	U
87-65-0-----	2,6-Dichlorophenol	167	U
84-66-2-----	Diethylphthalate	167	U
105-67-9-----	2,4-Dimethyphenol	167	U
131-11-3-----	Dimethylphthalate	167	U
534-52-1-----	4,6-Dinitro-2-methylphenol	167	U
51-28-5-----	2,4-Dinitrophenol	333	U
121-14-2-----	2,4-Dinitrotoluene	167	U
606-20-2-----	2,6-Dinitrotoluene	167	U
117-84-0-----	Di-n-octylphthalate	167	U
86-30-6-----	Diphenylamine/n-NDPA	167	U
206-44-0-----	Fluoranthene	66.7	U
86-73-7-----	Fluorene	66.7	U
118-74-1-----	Hexachlorobenzene	167	U
87-68-3-----	Hexachlorobutadiene	167	U
77-47-4-----	Hexachlorocyclopentadiene	167	U
67-72-1-----	Hexachloroethane	167	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	66.7	U
78-59-1-----	Isophorone	167	U
91-57-6-----	2-Methylnaphthalene	167	U
95-48-7-----	2-Methylphenol	167	U
106-44-5-----	3&4-Methylphenol	167	U
91-20-3-----	Naphthalene	66.7	U
88-74-4-----	2-Nitroaniline	167	U
99-09-2-----	3-Nitroaniline	167	U
100-01-6-----	4-Nitroaniline	167	U
98-95-3-----	Nitrobenzene	167	U
88-75-5-----	2-Nitrophenol	167	U
100-02-7-----	4-Nitrophenol	167	U
62-75-9-----	N-Nitrosodimethylamine	167	U
621-64-7-----	N-Nitrosodinpropylamine	167	U
87-86-5-----	Pentachlorophenol	167	U
85-01-8-----	Phenanthrene	66.7	U

FORM I BNA-GCMS

000110

377 269

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

P04057LB

Lab Name: ETC, INC.

SDG No.: 9810-618

Matrix: (soil/water) SOIL

Lab Prep Batch: P04057

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: 0301003

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 1 (mL)

Date Analyzed: 10/23/98

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg)	UG/KG Q
108-95-2-----	Phenol	167	U
129-00-0-----	Pyrene	66.7	U
120-82-1-----	1,2,4-Trichlorobenzene	167	U
95-95-4-----	2,4,5-Trichlorophenol	167	U
88-06-2-----	2,4,6-Trichlorophenol	167	U

FORM I BNA-GCMS

000111

FORM 3
SOIL BNA-GCMS LABORATORY CONTROL SAMPLE

377 270

Lab Name: ETC, INC.

Lab Prep Batch: P04057

SDG No.: 9810-618

Matrix Spike - Sample No.: P04057LCS

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Acenaphthene	1670		1420	85	34-126
Acenaphthylene	1670		1540	92	62-123
Anthracene	1670		1410	84	68-124
Benzo(a)Anthracene	1670		1420	85	60-133
Benzo(b)fluoranthene	1670		1500	90	67-126
Benzo(k)fluoranthene	1670		1420	85	75-131
Benzo(g,h,i)perylene	1670		1390	83	53-137
Benzo(a)pyrene	1670		1430	86	68-129
Benzoic Acid	1670		3280	196	37-251
Benzyl Alcohol	1670		1340	80	20-159
bis(2-Chloroethyl) ether	1670		1500	90	25-147
Bis(2-chloroethoxy) meth	1670		1310	78	37-153
bis(2-Chloroisopropyl) e	1670		1280	77	35-138
bis(2-ethylhexyl) Phthal	1670		1430	86	60-150
4-Bromophenyl-phenyleth	1670		1320	79	59-130
Butylbenzylphthalate	1670		1370	82	71-137
4-Chloroaniline	1670		179	11*	27-106
4-Chloro-3-Methylphenol	3330		2430	73	33-147
2-Chloronaphthalene	1670		1500	90	62-126
2-Chlorophenol	3330		2670	80	34-126
4-Chlorophenyl-phenylet	1670		1360	81	60-128
Chrysene	1670		1370	82	67-131
Dibenzo(a,h)anthracene	1670		1400	84	51-138
Dibenzofuran	1670		1340	80	57-131
Di-n-Butylphthalate	1670		1310	78	39-179
1,2-Dichlorobenzene	1670		1280	77	58-110

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS:

377 271

FORM 3
SOIL BNA-GCMS LABORATORY CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: P04057

SDG No.: 9810-618

Matrix Spike - Sample No.: P04057LCS

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
1,3-Dichlorobenzene	1670		1270	76	55-109
1,4-Dichlorobenzene	1670		1290	77	26-121
3,3'-Dichlorobenzidine	3330		3140	94	18-191
2,4-Dichlorophenol	3330		2660	80	68-123
2,6-Dichlorophenol	3330		2690	81	45-157
Diethylphthalate	1670		1320	79	72-133
2,4-Dimethyphenol	3330		2300	69	53-121
Dimethylphthalate	1670		1320	79	64-132
4,6-Dinitro-2-methylphe	3330		3510	105	70-158
2,4-Dinitrophenol	3330		4950	149	31-186
2,4-Dinitrotoluene	1670		1530	92	22-139
2,6-Dinitrotoluene	1670		1350	81	64-142
Di-n-octylphthalate	1670		1510	90	42-172
Diphenylamine/n-NDPA	1670		1420	85	55-140
Fluoranthene	1670		1670	100	71-132
Fluorene	1670		1410	84	65-126
Hexachlorobenzene	1670		1340	80	64-130
Hexachlorobutadiene	1670		1310	78	62-116
Hexachlorocyclopentadie	1670		1450	87	16-160
Hexachloroethane	1670		1280	77	58-110
Indeno(1,2,3-cd)pyrene	1670		1480	89	34-170
Isophorone	1670		1290	77	35-115
2-Methylnaphthalene	1670		1230	74	57-112
2-Methylphenol	3330		2670	80	56-132
3&4-Methylphenol	3330		2590	78	68-111
Naphthalene	1670		1340	80	62-113
2-Nitroaniline	1670		1430	86	63-138
3-Nitroaniline	1670		1460	87	53-128

Column to be used to flag recovery and RPD values with an asterisk
 * Values outside of QC limits

COMMENTS:

FORM 3
SOIL BNA-GCMS LABORATORY CONTROL SAMPLE

377 272

Lab Name: ETC, INC.

Lab Prep Batch: P04057

SDG No.: 9810-618

Matrix Spike - Sample No.: P04057LCS

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
4-Nitroaniline	1670		2190	131	60-140
Nitrobenzene	1670		1240	74	59-123
2-Nitrophenol	3330		2690	81	52-145
4-Nitrophenol	3330		3780	114*	12-105
N-Nitrosodipropylamine	1670		1220	73	24-141
Pentachlorophenol	3330		3500	105	6-164
Phenanthrene	1670		1460	87	66-128
Phenol	3330		2620	79	22-127
Pyrene	1670		1850	111	33-155
1,2,4-Trichlorobenzene	1670		1300	78	30-127
2,4,5-Trichlorophenol	3330		2950	88	50-173
2,4,6-Trichlorophenol	3330		2950	88	46-161

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 2 out of 66 outside limits

COMMENTS:

FORM 3
SOIL BNA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC, INC.

Lab Prep Batch: P04057

SDG No.: 9810-618

Matrix Spike - Sample No.: 9810-751-3

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Acenaphthene	3320	0.00	2160	65	34-126
4-Chloro-3-Methylphenol	5320	0.00	3440	65	33-147
2-Chlorophenol	5320	0.00	3140	59	35-138
1,4-Dichlorobenzene	3320	0.00	1990	60	26-121
2,4-Dinitrotoluene	3320	0.00	1770	53	22-139
4-Nitrophenol	5320	0.00	1950	37	12-105
N-Nitrosodipropylamine	3320	0.00	2010	60	24-141
Pentachlorophenol	5320	0.00	2180	41	6-164
Phenol	5320	0.00	3170	60	22-127
Pyrene	3320	952	3790	85	33-155
1,2,4-Trichlorobenzene	3320	0.00	2440	73	30-127

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD REC.
Acenaphthene	3270	2420	74	13	20 34-126
4-Chloro-3-Methylphenol	5230	3990	76	16	20 33-147
2-Chlorophenol	5230	3460	66	11	20 35-138
1,4-Dichlorobenzene	3270	2130	65	8	20 26-121
2,4-Dinitrotoluene	3270	2000	61	14	20 22-139
4-Nitrophenol	5230	2730	52	34*	20 12-105
N-Nitrosodipropylamine	3270	2100	64	6	20 24-141
Pentachlorophenol	5230	2560	49	18	20 6-164
Phenol	5230	3350	64	6	20 22-127
Pyrene	3270	4930	122	36*	20 33-155
1,2,4-Trichlorobenzene	3270	2550	78	7	20 30-127

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 2 out of 11 outside limits
Spike Recovery: 0 out of 22 outside limits

COMMENTS:

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC/MS SEMI-VOLATILE COMPOUNDS - AQUEOUS

377 274

Client Name : OHM Remediation Services
Project Name : Defense Depot Memphis, TN
ETC Order # : 9810-618
Method (SW-846) : 8270C/3510C

HOLDING TIMES

Sample Extraction : All aqueous samples extracted within 7 days.
Sample Analysis : All samples analyzed within 40 days of
extraction.

QUALITY CONTROL

QC Batch Form 4 Summary
P05060 P05060LB

System Monitoring Compounds FORM 2
Surrogate recoveries within QC limits.

Laboratory Control Sample FORM 3
P05060LCS/LCSD

All criteria met.*

*

Di-n-Butylphthalate was flagged for high recovery in P05060LCS and LCSD. High recovery indicates that detection levels were not affected. This compound was not identified in aqueous sample associated with this project. The data was not affected.

4-Nitroaniline was flagged for high recovery in P05060LCSD. High recovery indicates that detection levels were not affected. Recovery was within QC Limits in P05060LCS. The data was not affected.

RPD for 4-Chloroaniline was flagged as outside QC Limits due to higher recovery in P05060LCSD. Recoveries were within QC Limits.

Matrix Spike / Matrix Spike Dup FORM 3
RPD : NA*
Spike Recovery : NA*

*

Due to the limited amount of sample available, no MS/MSD were extracted.

Refer to Laboratory Control Sample(s) for system verification.

Method Blank FORM 4
P05060LB

No Target Analytes detected above Practical Quantitation Limit.

CALIBRATION

DFTPP Daily 12 Hour Tune : All criteria met. FORM 5
Initial Calibration : All criteria met. FORM 6
Calibration Verification : All criteria met. FORM 7*

000116

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC/MS SEMI-VOLATILE COMPOUNDS - AQUEOUS

Client Name : OHM Remediation Services
Project Name : Defense Depot - Memphis, TN
ETC Order # : 9810-618
Method (SW-846) : 8270C/3550B

CALIBRATION

*

Calibration Verification(CV) : Date 10/21/98 Time: 17:08

Analyte	%Diff(30% Max)	Response
Benzidine	44.8	High
Benzoic Acid	46.6	Low
2,4-Dinitrophenol	66.4	High
4-Nitroaniline	58.8	High

High responses indicate that reported levels for these analytes may be biased high. Low response for Benzoic Acid indicates that reported level for this analyte may be biased low. Benzidine was not a Target Analyte associated with this project. Benzoic Acid, 2,4-Dinitrophenol and 4-Nitrophenol were not identified in samples associated with this project. The data was not affected.

Calibration Verification(CV) : Date 10/22/98 Time: 12:18

Analyte	%Diff(30% Max)	Response
Benzoic Acid	67.4	Low
2,4-Dinitrophenol	43.4	High
4-Nitroaniline	36.0	High

Low response for Benzoic Acid indicates that reported levels for this analyte may be biased low. High responses indicate reported levels for these analytes may be biased high. These analytes were not identified in samples associated with this project. The data was not affected.

Calibration Verification(CV) : Date 10/23/98 Time: 12:55

Analyte	%Diff(30% Max)	Response
Benzoic Acid	69.6	Low
4-Nitroaniline	45.6	High

Low response for Benzoic Acid indicates that reported levels for this analyte may be biased low. High response for 4-Nitroaniline indicates reported levels for this analyte may be biased high. These analytes were not identified in samples associated with this project. The data was not affected.

Semi-Volatile Internal Standard Area and RT FORM 8

Daily Check Standard(s) Internal Standard Areas and Retention Times within QC limits.

SAMPLE ANALYSIS

Instrumentation : HP 5890 Series II GC, 5971MSD
Dilutions Required : No dilutions required.


Laboratory Manager

000117

FORM 2
WATER BNA-GCMS SURROGATE RECOVERY

377 276

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-618

	CLIENT SAMPLE NO.	S1 (2FP) #	S2 (PHL) #	S3 (NBZ) #	S4 (FBP) #	S5 (TBP) #	S6 (TPH) #	S7 #	S8 #	TOT OUT
01	P05060LB	48	33	73	69	94	107			0
02	P05060LCSD	45	31	67	61	96	101			0
03	9810-618-5	47	32	66	60	91	85			0
04	P05060LCS	45	31	65	61	87	98			0
05										
06										
07										
08										
09										
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30										

QC LIMITS

S1 (2FP) = 2-Fluorophenol (8- 88)
 S2 (PHL) = Phenol-d6 (7- 58)
 S3 (NBZ) = Nitrobenzene-d5 (29-110)
 S4 (FBP) = 2-Fluorobiphenyl (38-107)
 S5 (TBP) = 2,4,6-Tribromophenol (16-138)
 S6 (TPH) = Terphenyl-d14 (33-122)

Column to be used to flag recovery values
 * Values outside of contract required QC limits
 D Surrogate diluted out

377 277

FORM 4
BNA-GCMS METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

P05060LB

Lab Name: ETC, INC.

Lab Prep Batch: P05060

SDG No.: 9810-618

Lab File ID: 0501007

Instrument ID: BNA2

Matrix: (soil/water) WATER

Date Analyzed: 10/21/98

Level: (low/med) LOW

Time Analyzed: 1840

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	P05060LCSD		0701009	10/21/98
02	9810-618-5		1901021	10/22/98
03	P05060LCS		0401004	10/22/98
04				
05				
06				
07				
08				
09				
10				
11				
12				
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27				
28				
29				
30				

COMMENTS:

377 278

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

P05060LB

Lab Name: ETC, INC.

SDG No.: 9810-618

Matrix: (soil/water) WATER

Lab Prep Batch: P05060

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: 0501007

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 1 (mL)

Date Analyzed: 10/21/98

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
83-32-9	Acenaphthene	2.0	U
208-96-8	Acenaphthylene	2.0	U
120-12-7	Anthracene	2.0	U
56-55-3	Benzo(a) Anthracene	2.0	U
205-99-2	Benzo(b) fluoranthene	2.0	U
207-08-9	Benzo(k) fluoranthene	2.0	U
191-24-2	Benzo(g,h,i) perylene	2.0	U
50-32-8	Benzo(a) pyrene	2.0	U
65-85-0	Benzoic Acid	50.0	U
100-51-6	Benzyl Alcohol	10.0	U
111-44-4	bis(2-Chloroethyl) ether	5.0	U
111-91-1	Bis(2-chloroethoxy) methane	5.0	U
39638-32-9	bis(2-Chloroisopropyl) ether	5.0	U
117-81-7	bis(2-ethylhexyl) Phthalate	10.0	U
101-55-3	4-Bromophenyl-phenylether	5.0	U
85-68-7	Butylbenzylphthalate	5.0	U
106-47-8	4-Chloroaniline	5.0	U
59-50-7	4-Chloro-3-Methylphenol	5.0	U
91-58-7	2-Chloronaphthalene	5.0	U
95-57-8	2-Chlorophenol	5.0	U
7005-72-3	4-Chlorophenyl-phenylether	5.0	U
218-01-9	Chrysene	2.0	U
53-70-3	Dibenzo(a,h) anthracene	2.0	U
132-64-9	Dibenzofuran	5.0	U
84-74-2	Di-n-Butylphthalate	5.0	U
95-50-1	1,2-Dichlorobenzene	5.0	U
541-73-1	1,3-Dichlorobenzene	5.0	U
106-46-7	1,4-Dichlorobenzene	5.0	U
91-94-1	3,3'-Dichlorobenzidine	10.0	U
120-83-2	2,4-Dichlorophenol	5.0	U
84-66-2	Diethylphthalate	5.0	U

FORM I BNA-GCMS

000120

377 279

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

P05060LB

Lab Name: ETC, INC.

SDG No.: 9810-618

Matrix: (soil/water) WATER

Lab Prep Batch: P05060

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: 0501007

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 1 (mL)

Date Analyzed: 10/21/98

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
105-67-9-----	2,4-Dimethyphenol	5.0 U	
131-11-3-----	Dimethylphthalate	5.0 U	
534-52-1-----	4,6-Dinitro-2-methylphenol	10.0 U	
51-28-5-----	2,4-Dinitrophenol	50.0 U	
121-14-2-----	2,4-Dinitrotoluene	5.0 U	
606-20-2-----	2,6-Dinitrotoluene	5.0 U	
117-84-0-----	Di-n-octylphthalate	5.0 U	
86-30-6-----	Diphenylamine/n-NDPA	5.0 U	
206-44-0-----	Fluoranthene	2.0 U	
86-73-7-----	Fluorene	2.0 U	
118-74-1-----	Hexachlorobenzene	5.0 U	
87-68-3-----	Hexachlorobutadiene	5.0 U	
77-47-4-----	Hexachlorocyclopentadiene	5.0 U	
67-72-1-----	Hexachloroethane	5.0 U	
193-39-5-----	Indeno(1,2,3-cd)pyrene	2.0 U	
78-59-1-----	Isophorone	5.0 U	
91-57-6-----	2-Methylnaphthalene	5.0 U	
95-48-7-----	2-Methylphenol	5.0 U	
106-44-5-----	3&4-Methylphenol	5.0 U	
91-20-3-----	Naphthalene	2.0 U	
88-74-4-----	2-Nitroaniline	5.0 U	
99-09-2-----	3-Nitroaniline	10.0 U	
100-01-6-----	4-Nitroaniline	5.0 U	
98-95-3-----	Nitrobenzene	5.0 U	
88-75-5-----	2-Nitrophenol	5.0 U	
100-02-7-----	4-Nitrophenol	5.0 U	
621-64-7-----	N-Nitrosodipropylamine	5.0 U	
87-86-5-----	Pentachlorophenol	10.0 U	
85-01-8-----	Phenanthrene	2.0 U	
108-95-2-----	Phenol	5.0 U	
129-00-0-----	Pyrene	2.0 U	
120-82-1-----	1,2,4-Trichlorobenzene	5.0 U	

FORM I BNA-GCMS

000121

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET

377 280
CLIENT SAMPLE NO.

P05060LB

Lab Name: ETC, INC.

SDG No.: 9810-618

Matrix: (soil/water) WATER

Lab Prep Batch: P05060

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: 0501007

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 1(mL)

Date Analyzed: 10/21/98

Injection Volume: 1.0(uL)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
95-95-4-----	2,4,5-Trichlorophenol	5.0	U
88-06-2-----	2,4,6-Trichlorophenol	5.0	U

FORM I BNA-GCMS

000122

377 281

FORM 3
WATER BNA-GCMS LABORATORY CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: P05060

SDG No.: 9810-618

Matrix Spike - Sample No.: P05060LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Acenaphthene	50.0		35.3	71	37-123
Acenaphthylene	50.0		38.6	77	67-118
Anthracene	50.0		39.7	79	68-124
Benzo(a)Anthracene	50.0		42.7	85	69-125
Benzo(b)fluoranthene	50.0		45.4	91	68-127
Benzo(k)fluoranthene	50.0		44.6	89	73-128
Benzo(g,h,i)perylene	50.0		41.8	84	53-138
Benzo(a)pyrene	50.0		43.2	86	73-125
Benzoic Acid	100		39.2	39	2-144
Benzyl Alcohol	50.0		31.6	63	23-142
bis(2-Chloroethyl)ether	50.0		31.7	63	51-120
Bis(2-chloroethoxy)meth	50.0		33.4	67	45-135
bis(2-Chloroisopropyl)e	50.0		31.1	62	34-137
bis(2-ethylhexyl)Phthal	50.0		43.8	88	61-151
4-Bromophenyl-phenyleth	50.0		36.6	73	61-131
Butylbenzylphthalate	50.0		43.6	87	65-138
4-Chloroaniline	50.0		24.6	49	20-120
4-Chloro-3-Methylphenol	100		72.2	72	33-134
2-Chloronaphthalene	50.0		35.2	70	63-121
2-Chlorophenol	100		62.5	62	17-134
4-Chlorophenyl-phenylet	50.0		36.8	74	58-126
Chrysene	50.0		42.0	84	70-124
Dibenzo(a,h)anthracene	50.0		40.5	81	57-122
Dibenzofuran	50.0		35.0	70	64-122
Di-n-Butylphthalate	50.0		150	300*	63-140
1,2-Dichlorobenzene	50.0		27.1	54	39-101

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS:

FORM 3
WATER BNA-GCMS LABORATORY CONTROL SAMPLE

377 282

Lab Name: ETC, INC.

Lab Prep Batch: P05060

SDG No.: 9810-618

Matrix Spike - Sample No.: P05060LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
1,3-Dichlorobenzene	50.0		26.0	52	38- 98
1,4-Dichlorobenzene	50.0		26.6	53	31- 97
3,3'-Dichlorobenzidine	100		88.4	88	35-165
2,4-Dichlorophenol	100		66.2	66	13-146
Diethylphthalate	50.0		38.3	77	52-135
2,4-Dimethyphenol	100		57.0	57	51-118
Dimethylphthalate	50.0		37.2	74	8-166
4,6-Dinitro-2-methylphe	100		111	111	26-205
2,4-Dinitrophenol	100		148	148	12-182
2,4-Dinitrotoluene	50.0		44.6	89	34-130
2,6-Dinitrotoluene	50.0		37.0	74	62-135
Di-n-octylphthalate	50.0		36.4	73	46-148
Diphenylamine/n-NDPA	50.0		42.4	85	73-132
Fluoranthene	50.0		47.7	95	55-135
Fluorene	50.0		37.2	74	66-121
Hexachlorobenzene	50.0		38.8	78	65-133
Hexachlorobutadiene	50.0		27.9	56	50-112
Hexachlorocyclopentadie	50.0		33.4	67	21-141
Hexachloroethane	50.0		24.6	49	37-100
Indeno(1,2,3-cd)pyrene	50.0		43.4	87	57-140
Isophorone	50.0		32.9	66	13-146
2-Methylnaphthalene	50.0		31.9	64	50-124
2-Methylphenol	100		60.2	60	48-117
3&4-Methylphenol	100		53.9	54	46- 99
Naphthalene	50.0		31.3	63	55-113
2-Nitroaniline	50.0		38.8	78	63-129
3-Nitroaniline	50.0		40.3	81	61-120
4-Nitroaniline	50.0		58.9	118	60-126

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

377 283

FORM 3
WATER BNA-GCMS LABORATORY CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: P05060

SDG No.: 9810-618

Matrix Spike - Sample No.: P05060LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Nitrobenzene	50.0		29.3	59	57-120
2-Nitrophenol	100		66.8	67	27-137
4-Nitrophenol	100		59.6	60	20- 75
N-Nitrosodipropylamine	50.0		29.6	59	30-131
Pentachlorophenol	100		105	105	22-171
Phenanthrene	50.0		41.6	83	65-126
Phenol	100		34.0	34	12- 57
Pyrene	50.0		51.2	102	40-149
1,2,4-Trichlorobenzene	50.0		29.8	60	29-116
2,4,5-Trichlorophenol	100		79.4	79	31-147
2,4,6-Trichlorophenol	100		76.7	77	4-163

-SI-
-SI-# Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS:

FORM 3
WATER BNA-GCMS LABORATORY CONTROL SAMPLE

377 284

Lab Name: ETC, INC.

Lab Prep Batch: P05060

SDG No.: 9810-618

Matrix Spike - Sample No.: P05060LCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS	
					RPD	REC.
Acenaphthene	50.0	36.2	72	1	20	37-123
Acenaphthylene	50.0	39.1	78	1	20	67-118
Anthracene	50.0	41.0	82	4	20	68-124
Benzo(a)Anthracene	50.0	41.9	84	1	20	69-125
Benzo(b)fluoranthene	50.0	47.4	95	4	20	68-127
Benzo(k)fluoranthene	50.0	42.8	86	3	20	73-128
Benzo(g,h,i)perylene	50.0	40.7	81	4	20	53-138
Benzo(a)pyrene	50.0	44.0	88	2	20	73-125
Benzoic Acid	100	45.9	46	16	20	2-144
Benzyl Alcohol	50.0	33.1	66	5	20	23-142
bis(2-Chloroethyl) ether	50.0	31.0	62	2	20	51-120
Bis(2-chloroethoxy) meth	50.0	34.4	69	3	20	45-135
bis(2-Chloroisopropyl) e	50.0	32.0	64	3	20	34-137
bis(2-ethylhexyl) Phthal	50.0	41.7	83	6	20	61-151
4-Bromophenyl-phenyleth	50.0	36.6	73	0	20	61-131
Butylbenzylphthalate	50.0	43.4	87	0	20	65-138
4-Chloroaniline	50.0	30.3	61	22*	20	20-120
4-Chloro-3-Methylphenol	100	74.7	75	4	20	33-134
2-Chloronaphthalene	50.0	35.8	72	3	20	63-121
2-Chlorophenol	100	63.1	63	2	20	17-134
4-Chlorophenyl-phenylet	50.0	37.8	76	3	20	58-126
Chrysene	50.0	40.3	81	4	20	70-124
Dibenzo(a,h)anthracene	50.0	37.7	75	8	20	57-136
Dibenzofuran	50.0	35.9	72	3	20	64-122
Di-n-Butylphthalate	50.0	151	302*	1	20	63-140
1,2-Dichlorobenzene	50.0	27.3	55	2	20	39-101

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER BNA-GCMS LABORATORY CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: P05060

SDG No.: 9810-618

Matrix Spike - Sample No.: P05060LCS

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	% RPD #	QC LIMITS RPD	REC.
1,3-Dichlorobenzene	50.0	25.9	52	0	20	38- 98
1,4-Dichlorobenzene	50.0	25.7	51	4	20	31- 97
3,3'-Dichlorobenzidine	100	86.4	86	2	20	35-165
2,4-Dichlorophenol	100	69.3	69	4	20	13-146
Diethylphthalate	50.0	40.0	80	4	20	52-135
2,4-Dimethyphenol	100	58.9	59	3	20	51-118
Dimethylphthalate	50.0	37.4	75	1	20	8-166
4,6-Dinitro-2-methylphe	100	117	117	5	20	26-205
2,4-Dinitrophenol	100	158	158	6	20	12-182
2,4-Dinitrotoluene	50.0	47.3	95	6	20	34-130
2,6-Dinitrotoluene	50.0	38.3	77	4	20	62-135
Di-n-octylphthalate	50.0	34.0	68	7	20	46-148
Diphenylamine/n-NDPA	50.0	42.2	84	1	20	73-132
Fluoranthene	50.0	49.2	98	3	20	55-135
Fluorene	50.0	37.8	76	3	20	66-121
Hexachlorobenzene	50.0	38.2	76	2	20	65-133
Hexachlorobutadiene	50.0	28.0	56	0	20	50-112
Hexachlorocyclopentadie	50.0	34.8	70	4	20	21-141
Hexachloroethane	50.0	24.1	48	2	20	37-100
Indeno(1,2,3-cd)pyrene	50.0	40.2	80	8	20	57-140
Isophorone	50.0	34.0	68	3	20	13-146
2-Methylnaphthalene	50.0	30.8	62	3	20	50-112
2-Methylphenol	100	61.8	62	3	20	48-117
3&4-Methylphenol	100	56.3	56	4	20	46- 99
Naphthalene	50.0	32.9	66	5	20	55-113
2-Nitroaniline	50.0	40.9	82	5	20	63-129
3-Nitroaniline	50.0	41.9	84	4	20	61-120
4-Nitroaniline	50.0	69.4	139*	16	20	60-126

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS:

FORM 3
WATER BNA-GCMS LABORATORY CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: P05060

SDG No.: 9810-618

Matrix Spike - Sample No.: P05060LCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS	
					RPD	REC.
Nitrobenzene	50.0	30.9	62	5	20	57-120
2-Nitrophenol	100	69.0	69	3	20	27-137
4-Nitrophenol	100	57.7	58	3	20	20- 75
N-Nitrosodipropylamine	50.0	31.4	63	6	20	30-131
Pentachlorophenol	100	110	110	5	20	22-171
Phenanthrene	50.0	42.4	85	2	20	65-126
Phenol	100	32.8	33	3	20	12- 57
Pyrene	50.0	53.2	106	4	20	40-149
1,2,4-Trichlorobenzene	50.0	30.4	61	2	20	29-116
2,4,6-Trichlorophenol	100	81.2	81	3	20	31-147
2,4,6-Trichlorophenol	100	75.6	76	1	20	4-163

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 1 out of 68 outside limits

Spike Recovery: 3 out of 136 outside limits

COMMENTS:

Environmental Testing & Consulting, Inc.

Quality Control Reports

GC Pesticides

01

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC PESTICIDES - SOIL

377 288

Client Name : OHM Remediation Services
Project Name : Defense Depot - Memphis, TN
ETC Order # : 9810-618
Method (SW-846) : 8081A/3550B

HOLDING TIMES

Sample Extraction : All soil samples extracted within 14 days.
Sample Analysis : All samples analyzed within 40 days of
extraction.

QUALITY CONTROL

QC Batch Form 4 Summary
P06028 P06028LB

System Monitoring Compounds FORM 2
Surrogate recoveries within QC limits.*
*

Surrogate Decachlorobiphenyl was flagged for low recovery in samples
9810-618-01MS/MSD(C-TS-008). Surrogate recovery for sample
9810-618-01 was within QC Limits.

Surrogate Decachlorobiphenyl was flagged for low recovery in
the un-diluted analysis of samples 9810-618-03(A4-C1-001) and
9810-618-04(A3-C1-001). These samples were also analyzed at a
1:10 dilution to bring some of the analytes within calibration
range. Recoveries were reported from the 1:10 dilution.

Laboratory Control Sample FORM 3
P06028BS

All criteria met.

Matrix Spike / Matrix Spike Dup FORM 3
9810-618-01 RPD : All analytes within QC limits.*
C-TS-008 Spike Recovery : All analytes within QC limits.*
*

Recoveries and RPD for 4,4'-DDT were flagged outside QC Limits in the
Matrix Spike and Matrix Spike Duplicate.

Recoveries for delta-BHC were flagged outside QC Limits in the Matrix
Spike and Matrix Spike Duplicate.

RPD for Methoxychlor was flagged as outside QC Limits due to low
recovery in the Matrix Spike Duplicate. MS recovery was within QC
Limits.

Refer to Laboratory Control Sample(s) for system verification.

Method Blank FORM 4
P06028LB

No Target Analytes detected above Practical Quantitation Limit.

000130

377 289

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC PESTICIDES - SOIL

Client Name : OHM Remediation Services
Project Name : Defense Depot - Memphis, TN
ETC Order # : 9810-618
Method (SW-846) : 8081A/3550B

CALIBRATION

Initial Calibration : All criteria met. FORM 6
Calibration Verification : All criteria met. FORM 7*
Endrin/Breakdown : All criteria met. FORM 7A
*

Calibration Verification(CV) : P110221A.32R (Primary)

Analyte	%Diff(15% Max)	Response
alpha-BHC	22.8	High
beta-BHC	21.1	High
delta-BHC	58.0	High
gamma-BHC	22.6	High
4,4'-DDD	26.0	High
4,4'-DDT	54.2	Low
Endosulfan I	18.8	High
Endosulfan II	19.7	High
Endosulfan sulfate	22.2	High
Endrin aldehyde	32.6	High
Methoxychlor	50.5	Low
Tetrachloro-m-xylene	21.0	High
Decachlorobiphenyl	29.1	Low

High responses indicate that reported levels for these analytes may be biased high. Low responses indicate that reported levels for these analyte may be biased low. DDT showed significant breakdown in this CV due to contamination from project samples. DDT results should be considered minimum values.

Calibration Verification(CV) : P110221A.33R (Primary)

Analyte	%Diff(15% Max)	Response
alpha-BHC	22.4	High
beta-BHC	21.5	High
delta-BHC	56.0	High
gamma-BHC	23.2	High
4,4'-DDD	26.6	High
4,4'-DDT	54.4	Low
Endosulfan I	17.7	High
Endosulfan II	19.8	High
Endosulfan sulfate	19.0	High
Endrin aldehyde	30.8	High
Methoxychlor	49.5	Low
Tetrachloro-m-xylene	21.6	High
Decachlorobiphenyl	30.0	Low

High responses indicate that reported levels for these analytes may be biased high. Low responses indicate that reported levels for these analyte may be biased low. DDT showed significant breakdown in this CV due to contamination from project samples. DDT results should be considered minimum values.

J00131

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC PESTICIDES - SOIL

377 290

Client Name : OHM Remediation Services
Project Name : Defense Depot - Memphis, TN

ETC Order # : 9810-618
Method (SW-846) : 8081A/3550B

CALIBRATION

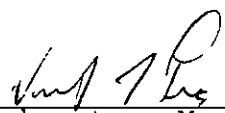
Calibration Verification(CV) : P110221A.34R (Primary)

Analyte	%Diff(15% Max)	Response
Chlordane	90.1	Low
Tetrachloro-m-xylene	21.6	Low
Decachlorobiphenyl	30.0	Low

Low responses for Chlordane, Tetrachloro-m-xylene and Decachlorobiphenyl indicate that reported levels for these analytes may be biased low. Surrogate recoveries for final report were within QC Limits for all samples associated with this project. The data was not affected. Final results for Chlordane were reported from the Confirmation analysis (%Difference=8).

SAMPLE ANALYSIS

Instrumentation : HP 5890 Series II GC
Dilutions Required : No dilutions required.


Laboratory Manager

000132

FORM 2
SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-618

Level:(low/med) LOW

	EPA GC SAMPLE NO.	S1 (TMX) #	S2 (DBC) #	S3 #	S4 #	S5 #	S6 #	S7 #	S8 #	TOT OUT
01	P06028LB	90	96							0
02	P06028BS	97	120							0
03	9810-618-2	77	97							0
04	9810-618-3	88	106							0
05	9810-618-4	88	107							0
06	9810-618-1	82	78							0
07	9810-618-2	83	65							0
08	9810-618-3	83	60*							1
09	9810-618-4	90	45*							1
10	9810-618-1MS	100	63*							1
11	9810-618-1MS	90	58*							1
12										
13										
14										
15										
16										
17										
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26										
27										
28										
29										
30										

QC LIMITS

S1 (TMX) = Tetrachloro-m-xylene (39-130)

S2 (DBC) = Decachlorobiphenyl (64-154)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

FORM 4
PESTICIDE METHOD BLANK SUMMARY

377 292
EPA GC SAMPLE NO.

P06028LB

Lab Name: ETC, INC.

Lab Prep Batch: P06028

SDG No.: 9810-618

Lab File ID: P110221A-11R

Instrument ID: PEST1A

Matrix: (soil/water) SOIL

Date Analyzed: 10/22/98

Level:(low/med) LOW

Time Analyzed: 1543

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA GC SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	P06028BS		P110221A-13R	10/22/98
02	9810-618-2		P110221A-19R	10/22/98
03	9810-618-3		P110221A-20R	10/22/98
04	9810-618-4		P110221A-21R	10/22/98
05	9810-618-1		P110221A-23R	10/22/98
06	9810-618-2		P110221A-24R	10/22/98
07	9810-618-3		P110221A-25R	10/22/98
08	9810-618-4		P110221A-26R	10/23/98
09	9810-618-1MS		P110221A-30R	10/23/98
10	9810-618-1MS		P110221A-31R	10/23/98
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

COMMENTS:

377 293

FORM 1
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA GC SAMPLE NO.

P06028LB

Lab Name: ETC, INC.

SDG No.: 9810-618

Matrix: (soil/water) SOIL

Lab Prep Batch: P06028

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: P110221A-11R

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 10(mL)

Date Analyzed: 10/22/98

Injection Volume: 1.0(uL)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q

309-00-2-----	Aldrin	1.33333	U
319-84-6-----	alpha-BHC	1.33333	U
319-85-7-----	beta-BHC	1.33333	U
319-86-8-----	delta-BHC	1.33333	U
58-89-9-----	gamma-BHC (Lindane)	1.33333	U
5103-71-9-----	alpha-chlordane	1.33333	U
5103-74-2-----	gamma-chlordane	1.33333	U
72-54-8-----	4,4'-DDD	1.33333	U
72-55-9-----	4,4'-DDE	1.33333	U
50-29-3-----	4,4'-DDT	1.33333	U
60-57-1-----	Dieldrin	1.33333	U
959-98-8-----	Endosulfan I	1.33333	U
33213-65-9-----	Endosulfan II	1.33333	U
1031-07-8-----	Endosulfan sulfate	1.33333	U
72-20-8-----	Endrin	1.33333	U
7421-93-4-----	Endrin aldehyde	1.33333	U
53494-70-5-----	Endrin Ketone	1.33333	U
76-44-8-----	Heptachlor	1.33333	U
1024-57-3-----	Heptachlor epoxide	1.33333	U
72-43-5-----	Methoxychlor	1.33333	U

FORM I PESTICIDE

000135

FORM 3
SOIL PESTICIDE LABORATORY CONTROL SAMPLE

377 294

Lab Name: ETC, INC.

Lab Prep Batch: P06028

SDG No.: 9810-618

Matrix Spike - Sample No.: P06028BS

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Aldrin	33.33333		29.73038	89	31-111
alpha-BHC	33.33333		31.00287	93	22-112
beta-BHC	33.33333		32.09872	96	54-120
delta-BHC	33.33333		30.78517	92	10- 96
gamma-BHC (Lindane)	33.33333		30.29180	91	26-113
alpha-chlordane	33.33333		31.70888	95	49-103
gamma-chlordane	33.33333		31.66888	95	50-106
4,4'-DDD	33.33333		30.00100	90	47-112
4,4'-DDE	33.33333		29.37270	88	36-117
4,4'-DDT	33.33333		32.02871	96	49-124
Dieldrin	33.33333		29.46789	88	44-108
Endosulfan I	33.33333		33.09489	99	49-103
Endosulfan II	33.33333		36.40757	109	53-115
Endosulfan sulfate	33.33333		30.72723	92	51-110
Endrin	33.33333		29.99402	90	44-118
Endrin aldehyde	33.33333		38.51914	116	48-128
Endrin Ketone	33.33333		35.39395	106	38-130
Heptachlor	33.33333		31.76719	95	47-113
Heptachlor epoxide	33.33333		30.96252	93	47-112
Methoxychlor	33.33333		32.69580	98	39-147

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 20 outside limits

COMMENTS:

FORM 3
SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC, INC.

Lab Prep Batch: P06028

SDG No.: 9810-618

Matrix Spike - Sample No.: 9810-618-1

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Aldrin	33.33333	0.00000	29.97821	90	31-111
alpha-BHC	33.33333	0.00000	33.33939	100	22-112
beta-BHC	33.33333	0.00000	35.04185	105	54-120
delta-BHC	33.33333	0.98960	44.43164	130*	10- 96
gamma-BHC (Lindane)	33.33333	0.00000	34.50321	104	26-113
alpha-chlordane	33.33333	0.00000	30.66310	92	49-103
gamma-chlordane	33.33333	0.00000	31.34393	94	50-106
4,4'-DDD	33.33333	0.00000	33.53420	101	47-112
4,4'-DDE	33.33333	0.00000	27.32675	82	36-117
4,4'-DDT	33.33333	2.67066	16.83855	42*	49-124
Dieldrin	33.33333	0.00000	28.88424	87	44-108
Endosulfan I	33.33333	0.00000	33.28453	100	49-103
Endosulfan II	33.33333	0.00000	34.35256	103	53-115
Endosulfan sulfate	33.33333	0.00000	33.21908	100	51-110
Endrin	33.33333	0.00000	28.29932	85	44-118
Endrin aldehyde	33.33333	0.00000	40.64407	122	48-128
Endrin Ketone	33.33333	0.00000	29.09523	87	38-130
Heptachlor	33.33333	0.00000	27.68380	83	47-111
Heptachlor epoxide	33.33333	0.00000	30.71590	92	47-111
Methoxychlor	33.33333	0.00000	15.23592	46	39-147

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS:

FORM 3
SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

377 296

Lab Name: ETC, INC.

Lab Prep Batch: P06028

SDG No.: 9810-618

Matrix Spike - Sample No.: 9810-618-1

Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS	
					RPD	REC.
Aldrin	32.67973	26.52977	81	10	20	31-111
alpha-BHC	32.67973	29.61942	91	9	20	22-112
beta-BHC	32.67973	31.19384	95	10	20	54-120
delta-BHC	32.67973	39.10241	117*	10	20	10- 96
gamma-BHC (Lindane)	32.67973	30.07065	92	12	20	26-113
alpha-chlordane	32.67973	26.71262	82	11	20	49-103
gamma-chlordane	32.67973	27.05623	83	12	20	50-106
4,4'-DDD	32.67973	29.77358	91	10	20	47-112
4,4'-DDE	32.67973	24.04882	74	10	20	36-117
4,4'-DDT	32.67973	13.09709	32*	27*	20	49-124
Dieldrin	32.67973	24.62303	75	15	20	44-108
Endosulfan I	32.67973	29.41493	90	10	20	49-103
Endosulfan II	32.67973	31.33562	96	7	20	53-115
Endosulfan sulfate	32.67973	29.40625	90	10	20	51-110
Endrin	32.67973	23.53722	72	16	20	44-118
Endrin aldehyde	32.67973	36.73165	112	8	20	48-128
Endrin Ketone	32.67973	26.50775	81	7	20	38-130
Heptachlor	32.67973	23.73679	73	13	20	47-113
Heptachlor epoxide	32.67973	26.95457	82	11	20	47-112
Methoxychlor	32.67973	11.35121	35*	27*	20	39-147

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 2 out of 20 outside limits

Spike Recovery: 5 out of 40 outside limits

COMMENTS:

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC PESTICIDES - AQUEOUS

Client Name : OHM Remediation Services
Project Name : Defense Depot - Memphis, TN
ETC Order # : 9810-618
Method (SW-846) : 8081A/3510C

HOLDING TIMES

Sample Extraction : All aqueous samples extracted within 7 days.
Sample Analysis : All samples analyzed within 40 days of
extraction.

QUALITY CONTROL

QC Batch Form 4 Summary
P07029 P07029LB

System Monitoring Compounds FORM 2
Surrogate recoveries within QC limits.*
*

Surrogate recoveries for Decachlorobiphenyl were flagged as outside QC Limits in P07029LCS/LCSD associated with this project. Surrogate recoveries for Tetrachloro-m-xylene were within QC Limits.

Laboratory Control Sample FORM 3
P07029LCS/LCSD

All criteria met.*
*

Recovery for delta-BHC was flagged outside QC Limits in P07029LCSD. LCS recovery was within QC Limits.

RPD for gamma-chlordane was flagged as outside QC Limits due to high recovery in P07029LCSD. LCS recovery was within QC Limits.

RPDs for Endrin aldehyde and Methoxychlor were flagged as outside QC Limits due to higher recovery in P07029LCSD. LCS/LCSD recoveries were within QC Limits.

Matrix Spike / Matrix Spike Dup FORM 3
RPD : NA*
Spike Recovery : NA*

*
Due to the limited amount of sample available, no MS/MSD were extracted.

Refer to Laboratory Control Sample(s) for system verification.

Method Blank FORM 4
P07029LB

No Target Analytes detected above Practical Quantitation Limit.

CALIBRATION

Initial Calibration : All criteria met. FORM 6
Calibration Verification : All criteria met. FORM 7*
Endrin/Breakdown : All criteria met. FORM 7A

000139

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC PESTICIDES - AQUEOUS

377 298

Client Name : OHM Remediation Services
Project Name : Defense Depot - Memphis, TN
ETC Order # : 9810-618
Method (SW-846) : 8081A/3510C

CALIBRATION

*

Calibration Verification(CV) : P110221A.32R (Primary)

Analyte	%Diff(15% Max)	Response
alpha-BHC	22.8	High
beta-BHC	21.1	High
delta-BHC	58.0	High
gamma-BHC	22.6	High
4,4'-DDD	26.0	High
4,4'-DDT	54.2	Low
Endosulfan I	18.8	High
Endosulfan II	19.7	High
Endosulfan sulfate	22.2	High
Endrin aldehyde	32.6	High
Methoxychlor	50.5	Low
Tetrachloro-m-xylene	21.0	High
Decachlorobiphenyl	29.1	Low

High responses indicate that reported levels for these analytes may be biased high. Low responses indicate that reported levels for these analyte may be biased low. DDT showed significant breakdown in this CV due to contamination from project samples. DDT results should be considered minimum values.

Calibration Verification(CV) : P110221A.33R (Primary)

Analyte	%Diff(15% Max)	Response
alpha-BHC	22.4	High
beta-BHC	21.5	High
delta-BHC	56.0	High
gamma-BHC	23.2	High
4,4'-DDD	26.6	High
4,4'-DDT	54.4	Low
Endosulfan I	17.7	High
Endosulfan II	19.8	High
Endosulfan sulfate	19.0	High
Endrin aldehyde	30.8	High
Methoxychlor	49.5	Low
Tetrachloro-m-xylene	21.6	High
Decachlorobiphenyl	30.0	Low

High responses indicate that reported levels for these analytes may be biased high. Low responses indicate that reported levels for these analyte may be biased low. DDT showed significant breakdown in this CV due to contamination from project samples. DDT results should be considered minimum values.

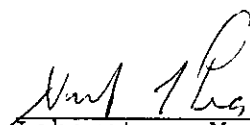
000140

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC PESTICIDES - AQUEOUS

Client Name : OHM Remediation Services
Project Name : Defense Depot - Memphis, TN
ETC Order # : 9810-618
Method (SW-846) : 8081A/3510C

SAMPLE ANALYSIS

Instrumentation : HP 5890 Series II GC
Dilutions Required : No dilutions required.


Laboratory Manager

FORM 2
WATER PESTICIDE SURROGATE RECOVERY

377 300

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-618

	EPA GC SAMPLE NO.	S1 (TMX) #	S2 (DBC) #	S3 #	S4 #	S5 #	S6 #	S7 #	S8 #	TOT OUT
01	P07029LB	87	86							0
02	P07029LCS	91	120D							0
03	P07029LCSD	81	212D							0
04	9810-618-5	96	52							0
05										
06										
07										
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QC LIMITS

S1 (TMX) = Tetrachloro-m-xylene (31- 96)

S2 (DBC) = Decachlorobiphenyl (34-115)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

FORM 4
PESTICIDE METHOD BLANK SUMMARY

EPA GC SAMPLE NO.

P07029LB

Lab Name: ETC, INC.

Lab Prep Batch: P07029

SDG No.: 9810-618

Lab File ID: P110221A-12R

Instrument ID: PEST1A

Matrix: (soil/water) WATER

Date Analyzed: 10/22/98

Level:(low/med) LOW

Time Analyzed: 1619

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA GC SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	P07029LCS		P110221A-14R	10/22/98
02	P07029LCSD		P110221A-16R	10/22/98
03	9810-618-5		P110221A-27R	10/23/98
04				
05				
06				
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COMMENTS:

FORM 1
PESTICIDE ORGANICS ANALYSIS DATA SHEET

377 302
EPA GC SAMPLE NO.

P07029LB

Lab Name: ETC, INC.

SDG No.: 9810-618

Matrix: (soil/water) WATER

Lab Prep Batch: P07029

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: P110221A-12R

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 10 (mL)

Date Analyzed: 10/22/98

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

309-00-2-----	Aldrin	0.04000	U
319-84-6-----	alpha-BHC	0.04000	U
319-85-7-----	beta-BHC	0.04000	U
319-86-8-----	delta-BHC	0.04000	U
58-89-9-----	gamma-BHC (Lindane)	0.04000	U
5103-71-9-----	alpha-chlordane	0.04000	U
5103-74-2-----	gamma-chlordane	0.04000	U
72-54-8-----	4,4'-DDD	0.04000	U
72-55-9-----	4,4'-DDE	0.04000	U
50-29-3-----	4,4'-DDT	0.04000	U
60-57-1-----	Dieldrin	0.04000	U
959-98-8-----	Endosulfan I	0.04000	U
33213-65-9-----	Endosulfan II	0.04000	U
1031-07-8-----	Endosulfan sulfate	0.04000	U
72-20-8-----	Endrin	0.04000	U
7421-93-4-----	Endrin aldehyde	0.04000	U
53494-70-5-----	Endrin Ketone	0.04000	U
76-44-8-----	Heptachlor	0.04000	U
1024-57-3-----	Heptachlor epoxide	0.04000	U
72-43-5-----	Methoxychlor	0.04000	U

FORM I PESTICIDE

000144

377 303

FORM 3
WATER PESTICIDE LABORATORY CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: P07029

SDG No.: 9810-618

Matrix Spike - Sample No.: P07029LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Aldrin	1.00000		0.82742	83	34-105
alpha-BHC	1.00000		0.85193	85	41-102
beta-BHC	1.00000		0.92538	92	26-151
delta-BHC	1.00000		0.82541	82	21- 92
gamma-BHC (Lindane)	1.00000		0.86881	87	41-102
alpha-chlordane	1.00000		0.88401	88	48-117
gamma-chlordane	1.00000		0.89650	90	51-108
4,4'-DDD	1.00000		0.86204	86	39-124
4,4'-DDE	1.00000		0.84960	85	41-111
4,4'-DDT	1.00000		0.98475	98	39-123
Dieldrin	1.00000		0.86058	86	42-111
Endosulfan I	1.00000		0.93418	93	48-117
Endosulfan II	1.00000		1.00726	101	52-114
Endosulfan sulfate	1.00000		0.85547	86	46-111
Endrin	1.00000		0.85172	85	45-117
Endrin aldehyde	1.00000		0.93835	94	48-125
Endrin Ketone	1.00000		0.96898	97	51-112
Heptachlor	1.00000		0.86918	87	43-111
Heptachlor epoxide	1.00000		0.89250	89	42-111
Methoxychlor	1.00000		0.92776	93	39-140

Column to be used to flag recovery and RPD values with an asterisk
 * Values outside of QC limits

COMMENTS:

FORM 3
WATER PESTICIDE LABORATORY CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: P07029

SDG No.: 9810-618

Matrix Spike - Sample No.: P07029LCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS	
					RPD	REC.
Aldrin	1.00000	0.80406	80	4	20	34-105
alpha-BHC	1.00000	0.85705	86	1	20	41-102
beta-BHC	1.00000	0.77224	77	18	20	26-151
delta-BHC	1.00000	0.99090	99*	19	20	21- 92
gamma-BHC (Lindane)	1.00000	0.72578	72	19	20	41-102
alpha-chlordane	1.00000	0.91256	91	3	20	48-117
gamma-chlordane	1.00000	1.18667	119*	28*	20	51-108
4,4'-DDD	1.00000	0.86812	87	1	20	39-124
4,4'-DDE	1.00000	0.75516	76	11	20	41-111
4,4'-DDT	1.00000	0.97863	98	0	20	39-123
Dieldrin	1.00000	0.87411	87	1	20	42-111
Endosulfan I	1.00000	0.97781	98	5	20	48-117
Endosulfan II	1.00000	1.07535	108	7	20	52-114
Endosulfan sulfate	1.00000	0.90925	91	6	20	46-111
Endrin	1.00000	0.90890	91	7	20	45-117
Endrin aldehyde	1.00000	1.16733	117	22*	20	48-125
Endrin Ketone	1.00000	1.11908	112	14	20	51-112
Heptachlor	1.00000	0.81409	81	7	20	43-114
Heptachlor epoxide	1.00000	0.90063	90	1	20	42-115
Methoxychlor	1.00000	1.32462	132	35*	20	39-140

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 3 out of 20 outside limits
Spike Recovery: 2 out of 40 outside limits

COMMENTS:

377 305

Environmental Testing & Consulting, Inc.

Quality Control Reports

GC PCBs

MI
21

000147

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC PCBS - SOIL

377 306

Client Name : OHM Remediation Services
Project Name : Defense Depot - Memphis, TN
ETC Order # : 9810-618
Method (SW-846) : 8082/3550B

HOLDING TIMES

Sample Extraction : All soil samples extracted within 14 days.
Sample Analysis : All samples analyzed within 40 days of
extraction.

QUALITY CONTROL

QC Batch Form 4 Summary
P06028 P06028LB

System Monitoring Compounds FORM 2
Surrogate recoveries within QC limits.

Laboratory Control Sample FORM 3
P06028BS

All criteria met.

Matrix Spike / Matrix Spike Dup FORM 3
9810-618-01 RPD : All analytes within QC limits.
C-TS-008 Spike Recovery : All analytes within QC limits.

Refer to Laboratory Control Sample(s) for system verification.

Method Blank FORM 4
P06028LB

No Target Analytes detected above Practical Quantitation Limit.

CALIBRATION

Initial Calibration : All criteria met. FORM 6
Calibration Verification : All criteria met. FORM 7*

Calibration Verification(CV) : C210211B.45R (Primary)

Analyte	%Diff(15% Max)	Response
Decachlorobiphenyl	43.6	Low

Low response indicates that reported levels for this analyte may be biased low. Surrogate recoveries were within QC Limits for all samples associated with this project. The data was not affected.

SAMPLE ANALYSIS

Instrumentation : HP 5890 Series II GC
Dilutions Required : No dilutions required.


Laboratory Manager

000148

377 307

FORM 2
SOIL PCB SURROGATE RECOVERY

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-618

Level: (low/med) LOW

	EPA GC SAMPLE NO.	S1 (TMX) #	S2 (DBC) #	S3 #	S4 #	S5 #	S6 #	S7 #	S8 #	TOT OUT
01	P06028LB	85	99							0
02	P06028BS	89	90							0
03	9810-618-1	77	58							0
04	9810-618-2	77	61							0
05	9810-618-3	80	61							0
06	9810-618-4	80	49							0
07	9810-618-1MS	78	49							0
08	9810-618-1MS	78	42							0
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QC LIMITS

S1 (TMX) = Tetrachloro-m-xylene (20-122)

S2 (DBC) = Decachlorobiphenyl (17-141)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

FORM 4
PCB METHOD BLANK SUMMARY

377 308
EPA GC SAMPLE NO.

P06028LB

Lab Name: ETC, INC.

Lab Prep Batch: P06028

Lab File ID: C210211B-10R

Matrix: (soil/water) SOIL

Level: (low/med) LOW

SDG No.: 9810-618

Instrument ID: PEST2B

Date Analyzed: 10/21/98

Time Analyzed: 2343

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA GC SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	P06028BS		C210211B-14R	10/22/98
02	9810-618-1		C210211B-38R	10/23/98
03	9810-618-2		C210211B-39R	10/23/98
04	9810-618-3		C210211B-40R	10/23/98
05	9810-618-4		C210211B-41R	10/23/98
06	9810-618-1MS		C210211B-42R	10/23/98
07	9810-618-1MS		C210211B-43R	10/23/98
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COMMENTS:

377 309

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

EPA GC SAMPLE NO.

Lab Name: ETC, INC.

P06028LB

SDG No.: 9810-618

Matrix: (soil/water) SOIL

Lab Prep Batch: P06028

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C210211B-10R

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 10 (mL)

Date Analyzed: 10/21/98

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg) UG/KG	Q
53469-21-9-----	Aroclor 1242	16.67	U
11096-82-5-----	Aroclor 1260	16.67	U

FORM I PCB

000151

FORM 3
SOIL PCB LABORATORY CONTROL SAMPLE

377 310

Lab Name: ETC, INC.

Lab Prep Batch: P06028

SDG No.: 9810-618

Matrix Spike - Sample No.: P06028BS

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Aroclor 1242	333.3		331.7	100	25-125
Aroclor 1260	333.3		274.8	82	25-125

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits

Spike Recovery: 0 out of 2 outside limits

COMMENTS:

FORM III PCB

000152

377 311

FORM 3
SOIL PCB MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC, INC.

Lab Prep Batch: P06028

SDG No.: 9810-618

Matrix Spike - Sample No.: 9810-618-1

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Aroclor 1242	333.3	0.000	304.9	91	25-125
Aroclor 1260	333.3	0.000	200.0	60	25-125

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
Aroclor 1242	326.8	301.1	92	1	20	25-125
Aroclor 1260	326.8	193.9	59	2	20	25-125

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 2 outside limits

Spike Recovery: 0 out of 4 outside limits

COMMENTS:

FORM III PCB

000150

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC PCBS - AQUEOUS

377 312

Client Name : OHM Remediation Services
Project Name : Defense Depot - Memphis, TN
ETC Order # : 9810-618
Method (SW-846) : 8082/3510C

HOLDING TIMES

Sample Extraction : All aqueous samples extracted within 7 days.
Sample Analysis : All samples analyzed within 40 days of
extraction.

QUALITY CONTROL

QC Batch Form 4 Summary
P09011 P09011LB

System Monitoring Compounds FORM 2
Surrogate recoveries within QC limits.

Laboratory Control Sample FORM 3
P09011LCS/LCSD

All criteria met.

Matrix Spike / Matrix Spike Dup FORM 3
RPD : NA*
Spike Recovery : NA*

*

Due to the limited amount of sample available, no MS/MSD were
extracted.

Refer to Laboratory Control Sample(s) for system verification.

Method Blank FORM 4
P09011LB

No Target Analytes detected above Practical Quantitation Limit.

CALIBRATION

Initial Calibration : All criteria met. FORM 6
Calibration Verification : All criteria met. FORM 7*

*

Calibration Verification(CV) : C210211B.45R (Primary)

Analyte	%Diff(15% Max)	Response
Decachlorobiphenyl	43.6	Low

Low response indicates that reported levels for this analyte
may be biased low. Surrogate recoveries were within QC Limits for
all samples associated with this project. The data was not affected.

SAMPLE ANALYSIS

Instrumentation : HP 5890 Series II GC
Dilutions Required : No dilutions required.


Laboratory Manager

000154

FORM 2
WATER PCB SURROGATE RECOVERY

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-618

	EPA GC SAMPLE NO.	S1 (TMX) #	S2 (DBC) #	S3 #	S4 #	S5 #	S6 #	S7 #	S8 #	TOT OUT
01	P09011LB	73	88							0
02	P09011LCS	92	92							0
03	P09011LCSD	82	89							0
04	9810-618-5	78	55							0
05										
06										
07										
08										
09										
10										
11										
12										
13										
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S1 (TMX) = Tetrachloro-m-xylene (31- 96)
S2 (DBC) = Decachlorobiphenyl (34-115)

QC LIMITS

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

FORM 4
PCB METHOD BLANK SUMMARY

377 314
EPA GC SAMPLE NO.

P09011LB

Lab Name: ETC, INC.

Lab Prep Batch: P09011

SDG No.: 9810-618

Lab File ID: C210211B-12R

Instrument ID: PEST2B

Matrix: (soil/water) WATER

Date Analyzed: 10/22/98

Level:(low/med) LOW

Time Analyzed: 0110

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA GC SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	P09011LCS		C210211B-15R	10/22/98
02	P09011LCSD		C210211B-16R	10/22/98
03	9810-618-5		C210211B-33R	10/22/98
04				
05				
06				
07				
08				
09				
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COMMENTS:

377 315

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

EPA GC SAMPLE NO.

P09011LB

Lab Name: ETC, INC.

SDG No.: 9810-618

Matrix: (soil/water) WATER

Lab Prep Batch: P09011

Sample wt/vol: _____ (g/mL) ML

Lab File ID: C210211B-12R

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 10 (mL)

Date Analyzed: 10/22/98

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg) UG/L	Q
53469-21-9-----	Aroclor 1242	0.500	U
11096-82-5-----	Aroclor 1260	0.500	U

FORM I PCB

00157

37.7 316

**COMPOSITE CONFIRMATION SAMPLE COLLECTED
FOLLOWING EXCAVATION OF AREA A**

Date Collected 10/20/98

A1-C1-001 (Composite of Grid A1)



ENVIRONMENTAL TESTING & CONSULTING, INC.

2921 Walnut Grove Road • Memphis TN 38111 • (901) 327-2750 • FAX (901) 327-0331

Founded 1972

October 22, 1998

Ms. Elena Rodriguez
 OHM Remediation Services
 5445 Triangle Parkway
 Suite 400
 Norcross, GA 30092

Ref: Analytical Testing
 ETC Order # 9810646
 Project Description DDMT
 Memphis, TN
 Project # 20560
 FID # DACA45-96-D-0014

The above referenced project has been analyzed per your instructions. The analyses were performed in our laboratory in accordance with Standard Methods 17th/18th Edition; The Solid Waste Manual SW-846; EPA Methods for the Analysis of Water and Wastes and/or 40 CFR part 136.

The results are shown on the attached analysis sheet(s).

Please do not hesitate to contact our office if you have any questions.

Sincerely,


 Nathan A. Pera, IV
 Chief Executive Officer

rt
 Attachment

OHM_DDMT

Certifications

Tennessee #TN02027
 Arkansas
 Alabama #40730
 Kentucky #90047
 North Carolina #415
 South Carolina #84002002

Mississippi
 Oklahoma #9311
 Virginia #00106
 Washington #C248
 US Army Corps of Engineers

377 318

Chemical Analytical Data
Review/Evaluation/Validation

SOUTHERN REGION

Report Type: ☐ Preliminary ☒ Final Date Received: _____ Project Number: 20560

Project Name: DDOT Analysis/Method: TEL-VOC, SVOC, PCB, PCB
TEL-metals, CN

Laboratory ETC Lab Project/Case Number: 9810646

Sample Number(s): A1-C1-001

Evaluated By: S. Pravinjaya Date Evaluated: 2/8/99

Data Package Deliverables Requirement: ☐ OHM Minimum ☒ OHM Standard ☐ OHM Maximum

☐ Other, please describe _____

Quality Control Deliverables	Required	Received	Passed	Failed
PQL, MDL, RL, etc meets DQOs	X		✓	
Comment:				
Holding Times			✓	
Comment:				
Sample Condition (preservatives, containers, temperature, etc) / Case Narrative	X		✓	
Comment:				
Surrogate Recoveries	X		✓	
Comment: out for Pest, PCBs matrix interference documented. data accepted.				
Lab Control Sample Recoveries	X			
Comment: out for VOA - results flagged J and accepted				
Lab Control Sample Duplicate or Other Spike Recoveries	X			
Comment:	N/A			
Lab Control Sample Duplicate or Other Laboratory Duplicate RPD	X			
Comment:				
Matrix Spike Recoveries	X		✓	
Comment: out for metals, VOA, Pest - LCS OK; RPD OK on metals, VOA - LCS OK for Pest. Data not qualified - data accepted - RPD OK on VOA.				
Matrix Spike Duplicate Recoveries	X		✓	
Comment: out for metals, VOA, Pest - LCS OK on metals, VOA, Pest, RPD OK on metals - matrix interference. data accepted without qualification. RPD OK on VOA.				
Matrix Spike / Matrix Spike Duplicate RPD	X		✓	
Comment: out for BNA, Pest, LCS OK on BNA Pest mslmsd OK in BNA. Data accepted without qualification.				
Laboratory Blanks (daily, method, instrument)	X		✓	
Comment:				
Field Blanks (trip, eqpt rinsate, ambient, matrix)	X			
Comment:	N/A			

Quality Control Deliverables		Required	Received	Passed	Failed
Field Duplicates RPD		X			
Comment:	~~N/A~~				
Second Source Check					
Comment:					
Second Column Confirmation		X		✓	
Comment:					
Percent Moisture/Solids				✓	
Comment:					
Initial / Continuing Calibrations		X		✓	
Comment:	Cont. calib out for VOA, BNA, Results flagged J and accepted				
Internal Standard Areas and Retention Times (Organics Only)		X		✓	
Comment:	O.D. for BNA. Results flagged J and accepted				
Chromatograms		X		✓	
Comment:	Missing VOA chromatogram				
Sample Prep Worksheets		X		✓	
Comment:					
Raw Data Calculations					
Comment:	~~N/A~~				
Laboratory Duplicates					
Comment:					
Instrument Performance Checks (Organics Only)		X		✓	
Comment:					
Tentatively Identified Compounds (TICs)		X		✓	
Comment:					
Completeness	# Samples	# Analyses	Tot # Analyses	Tot # Accept Analyses	% Complete
Completeness = (Tot # Analyses / Tot # Accepted Analyses) x 100	1	6	6	6	100
General Comments:					

Summary: ☐ See attached pages

Results flagged for LCS, cont. calibration. Data acceptable

Check Applicable:

☐ Lab contacted—Corrective actions in process

Date Contacted: _____

☐ Corrective actions received and accepted

Date Received/Accepted: _____

☐ The data, as reported by the laboratory, are acceptable.

☒ The data, with qualifiers as described in the "Summary" portion of this report, are acceptable.

☐ The data are unacceptable.

☐ Other _____

S. Pasanigape
Evaluator's Signature

2/8/99
Date

Environmental Testing & Consulting, Inc.
Data Qualifiers for Organic Reporting

Within the attached report, some analytical data may be reported as "Qualified Data" as indicated by a "Data Qualifier" next to the result. This table summarizes the possible "Data Qualifiers" that may be associated with this report.

Q	Surrogate Recovery Outside QC Limits
J	Estimated Value. Presence of the compound was confirmed but less than the reported detection limit
E	Concentration exceeds the established method calibration range but is within the working range of the instrument
B	Analyte detected in the associated Method Blank.
U	Reported result was unconfirmed. Refer to Case Narrative.
N	Non-Compliance Report associated with this sample or project.
C	Result reported from GC/MS confirmation analysis.
M	Result reported represents a minimum value. Refer to Case Narrative.
NC	Result reported from Primary Column. Result did not confirm.
*	QC Data (percent recovery/RPD for a particular analyte was outside QC Limits)

ANALYTICAL SUMMARY TABLE

Client Name OHM Remediation Services
 Site ID DDMT
 Memphis, TN

ETC Sample ID	Field ID	Matrix	Method	Method Description
981064601	A1-C1-001	SOIL	6010B	Silver
981064601	A1-C1-001	SOIL	6010B	Aluminum
981064601	A1-C1-001	SOIL	7060A	Arsenic
981064601	A1-C1-001	SOIL	8270C	GC/MS Base/Neutral & Acid
981064601	A1-C1-001	SOIL	6010B	Barium
981064601	A1-C1-001	SOIL	6010B	Beryllium
981064601	A1-C1-001	SOIL	6010B	Calcium
981064601	A1-C1-001	SOIL	6010B	Cadmium
981064601	A1-C1-001	SOIL	9010A	Cyanide
981064601	A1-C1-001	SOIL	6010B	Cobalt
981064601	A1-C1-001	SOIL	6010B	Chromium
981064601	A1-C1-001	SOIL	6010B	Copper
981064601	A1-C1-001	SOIL	6010B	Iron
981064601	A1-C1-001	SOIL	7471A	Mercury
981064601	A1-C1-001	SOIL	6010B	Potassium
981064601	A1-C1-001	SOIL	6010B	Magnesium
981064601	A1-C1-001	SOIL	6010B	Manganese
981064601	A1-C1-001	SOIL	6010B	Sodium
981064601	A1-C1-001	SOIL	6010B	Nickel
981064601	A1-C1-001	SOIL	8081A	Organochlorine Pesticides
981064601	A1-C1-001	SOIL	7421	Lead
981064601	A1-C1-001	SOIL	8082	PCBs
981064601	A1-C1-001	SOIL	6010B	Antimony
981064601	A1-C1-001	SOIL	7740	Selenium
981064601	A1-C1-001	SOIL		EnCore Sampler (5 gram)
981064601	A1-C1-001	SOIL	7841	Thallium
981064601	A1-C1-001	SOIL	8260B	GC/MS Volatile Organics
981064601	A1-C1-001	SOIL	6010B	Vanadium
981064601	A1-C1-001	SOIL	6010B	Zinc

Environmental Testing & Consulting, Inc.

Login
Chain-of-Custody



**OHM Remediation
Services Corp**

Subsidiary of OHM Corporation
U/S Route 224 East • Findlay,

Ohio 45840 • (419) 423-3526

CHAIN-OF-CUSTODY RECORD

LABORATORY COPY

217898

FORM 1019 REV 2-97

OHM LAB COORDINATOR		LAB COORDINATOR PHONE		LAB COORDINATOR FAX		LABORATORY SERVICE ID		LABORATORY CONTACT		MAIL REPORT (COMPANY NAME)	
Elena Rodriguez		770-734-8060		770-453-7716		ETC		Nathan Pera		OHM Remediation Services Corp	
PROJECT NAME		PROJECT LOCATION		PROJECT NUMBER		LABORATORY PHONE		LABORATORY FAX		RECIPIENT NAME	
DDMT		Memphis, TN		20560		901-327-2750		901-327-6334		Elena Rodriguez	
PROJECT CONTACT		PROJECT PHONE NUMBER		PROJECT FAX		LABORATORY ADDRESS		ADDRESS			
Steve Offner		901-743-1117		901-743-1048		2924 Walnut Grove Road		5445 Triangle Pkwy, #400			
PROJECT ADDRESS		CITY, STATE AND/OR CODE		CITY, STATE AND/OR CODE		(CITY, STATE AND/OR CODE)		CITY, STATE AND/OR CODE			
1708 Dunn Ave.		Memphis, TN 38114		USACE		Memphis, TN 38111		Norcross, GA 30092			
PROJECT MANAGER		PROJECT MANAGER'S PHONE		PROJECT MANAGER'S FAX							
Steve Offner		770-326-2571		770-453-7716							
Item	Sample Identifier	Matrix	Date	Time	Preserved	# of Cont	QC Level	Analyses	Comments		
1	11-CI-001	Soil	10/20/98	10:00	4/25/99	1	3d4p	UOCs, PCBs, PAHs, Metals	Please fax results on DUE DATE to SITE and to Lab Coordinator		
2											
3											
4											
5											
6											
7											
8											
9											
10											
SAMPLES COLLECTED BY		CONTROL AND AIR DIRT NUMBER		DELIVERED BY		DATE		COOLING TEMPERATURE (TEMPERATURE)			
Steve Offner		Delivered by		24°C							
RECEIVED BY		RECEIVED BY		DATE		TIME		SAMPLE CONDITION (UPON RECEIPT)			
Steve Offner		Steve Offner		10/20/98		10:00					

COOLER RECEIPT FORM

377 324

Cooler Receipt Form
9810646 CRF p 1

LIMS # 980-646 Number of Coolers 1
Date Received 10/20/98
VDTSR 10/20/98 14 48
PROJECT DDMT/Memphis, TN

USE OTHER SIDE OF THIS FORM TO NOTE DETAILS CONCERNING CHECK-IN PROBLEMS

A PRELIMINARY EXAMINATION PHASE Date cooler was opened 10/20/98
by (print) Rebekah Barger (sign) [Signature]

1 Did cooler come with a shipping slip (airbill, etc)? NO
If YES, enter carrier name & airbill number _____

2a Were custody seals on outside of cooler? NO
2b Were custody seals on sample containers? NO

3 Were custody seals unbroken and intact at the date and time of arrival? NA

4 Did you screen samples for radioactivity using a Geiger Counter? NO

5 Were custody papers sealed in a plastic bag & taped inside to the lid? NO

6 Were custody papers filled out properly (ink, signed, etc)? YES

7 Did you sign custody papers in the appropriate place? YES

8 Was project identifiable from custody papers? If YES, enter project name at top of this form YES

9 If required, was enough ice used? cooler temp <4°C, Type of ice Crushed YES

10 Have designated person initial here to acknowledge receipt of cooler RB date 10/20/98

B LOG-IN PHASE Date samples were logged-in 10/20/98
by (print) Lynette Bugg (sign) [Signature]

11 Describe type of packing in cooler Baggies and Ice

12 Were all bottles sealed in separate plastic bags? YES

13 Did all bottles arrive unbroken and were labels in good condition? YES

14 Were all bottle labels complete (ID, date, time, signature, preserved, etc)? YES

15 Did all bottle labels agree with custody papers? YES

16 Were correct containers used for the tests indicated? YES

17 Were correct preservatives added to samples? YES

18 Was a sufficient amount of sample sent for tests indicated? YES

19 Were bubbles absent in VOA samples? If NO, list by sample# _____ NA

20 Was the project manager called and status discussed? If YES, give details on the back of this form NO

21 Who was called? _____ By whom? _____ (date) _____

VDTSR - Validated Date/Time of Sample Receipt (Date sample is logged into LIMS system)

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377 325

Environmental Testing & Consulting, Inc.

Sample Reports

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377 326

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

INORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560

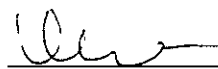
Site ID **DDMT**
Memphis, TN

Date Arrived 10/20/98
ETC Order Number 9810646

ETC Lab ID **9810646-01**
Sample ID: A1-C1-001

Matrix :SOIL
Sample Date :10/20/98

TEST	RESULT	UNITS	DETECTION LIMIT	TIME ANALYZED	DATE ANALYZED BY	METHOD
Cyanide	ND	mg/Kg	1.00	09:00	10/21/98 GD	9010A


LABORATORY MANAGER

000007

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

INORGANIC ANALYSIS DATA SHEET

377 327

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560

Site ID **DDMT**
Memphis, TN

Date Arrived 10/20/98
ETC Order Number 9810646

ETC Lab ID **9810646-01**
Sample ID: A1-C1-001

Matrix :SOIL
Sample Date :10/20/98

TEST	RESULT	UNITS	DETECTION LIMIT	TIME ANALYZED	DATE ANALYZED BY	METHOD
Metals Digestion Batch	V8-SO-58					NR 3051
Mercury Digestion Batch	V4-SO-41					RM 7471A
Silver	ND	mg/Kg	0.700	14:30	10/21/98	TD 6010B
Aluminum	8,940	mg/Kg	4.00	14:30	10/21/98	TD 6010B
Arsenic	11.2	mg/Kg	0.200	11:26	10/23/98	JF 7060A
Barium	84.6	mg/Kg	0.200	14:30	10/21/98	TD 6010B
Beryllium	0.472	mg/Kg	0.100	14:30	10/21/98	TD 6010B
Calcium	9,880	mg/Kg	1.00	17:04	10/21/98	TD 6010B
Cadmium	2.79	mg/Kg	0.400	14:30	10/21/98	TD 6010B
Cobalt	5.75	mg/Kg	0.700	14:30	10/21/98	TD 6010B
Chromium	19.6	mg/Kg	0.700	14:30	10/21/98	TD 6010B
Copper	78.4	mg/Kg	0.600	14:30	10/21/98	TD 6010B
Iron	18,500	mg/Kg	0.700	17:04	10/21/98	TD 6010B
Mercury	0.117	mg/Kg	0.020	15:22	10/22/98	RM 7471A
Potassium	689	mg/Kg	20.0	14:30	10/21/98	TD 6010B
Magnesium	1,670	mg/Kg	3.00	14:30	10/21/98	TD 6010B
Manganese	380	mg/Kg	0.200	14:30	10/21/98	TD 6010B
Sodium	85.0	mg/Kg	20.0	14:30	10/21/98	TD 6010B
Nickel	15.5	mg/Kg	1.50	14:30	10/21/98	TD 6010B
Lead	72.4	mg/Kg	0.100	13:51	10/22/98	TD 7421
Antimony	ND	mg/Kg	3.20	14:30	10/21/98	TD 6010B
Selenium	0.219	mg/Kg	0.200	15:49	10/21/98	JF 7740
Thallium	0.146	mg/Kg	0.100	15:21	10/22/98	JF 7841
Vanadium	21.8	mg/Kg	0.800	14:30	10/21/98	TD 6010B
Zinc	142	mg/Kg	1.00	14:30	10/21/98	TD 6010B


LABORATORY MANAGER

000308

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

377 328

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

Project # 20560
FID # DACA45-96-D-0014

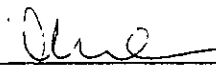
Date Arrived 10/20/98
ETC Order Number 9810646

ETC Lab ID 9810646-01
Sample ID: A1-C1-001

Matrix :SOIL
Sample Date :10/20/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Volatile Organics							8260B
QC Batch	V2102201	ug/Kg		10/22/98	10/22/98	LS	
Acetone	ND	ug/Kg	100				
Benzene	ND	ug/Kg	4.00				
Bromodichloromethane	ND	ug/Kg	4.00				
Bromoform	ND	ug/Kg	4.00				
Bromomethane	ND	ug/Kg	4.00				
Carbon Disulfide	ND	ug/Kg	50.0				
Carbon Tetrachloride	ND	ug/Kg	4.00				
Chlorobenzene	ND	ug/Kg	4.00				
Chlorodibromomethane	ND	ug/Kg	4.00				
Chloroethane	ND	ug/Kg	4.00				
Chloroform	ND	ug/Kg	4.00				
Chloromethane	ND	ug/Kg	4.00				
1,1-Dichloroethane	ND	ug/Kg	4.00				
1,2-Dichloroethane	ND	ug/Kg	4.00				
1,1-Dichloroethene	ND	ug/Kg	4.00				
trans-1,2-Dichloroethene	ND	ug/Kg	4.00				
1,2-Dichloropropane	ND	ug/Kg	4.00				
cis-1,3-Dichloropropene	ND	ug/Kg	4.00				
trans-1,3-Dichloropropene	ND	ug/Kg	4.00				
Ethylbenzene	ND	ug/Kg	4.00				
2-Hexanone (MBK)	ND	ug/Kg	100				
4-Methyl-2-pentanone (MIBK)	ND	ug/Kg	100				
2-Butanone (MEK)	ND	ug/Kg	100				
Methylene Chloride	ND	ug/Kg	100				
Styrene	ND	ug/Kg	4.00				
1,1,2,2-Tetrachloroethane	ND	ug/Kg	4.00				
Tetrachloroethene	ND	ug/Kg	4.00				
Toluene	ND	ug/Kg	4.00				
1,1,1-Trichloroethane	ND	ug/Kg	4.00				
1,1,2-Trichloroethane	ND	ug/Kg	4.00				
Trichloroethene	ND	ug/Kg	4.00				
Vinyl Acetate	ND	ug/Kg	50.0				
Vinyl Chloride	ND	ug/Kg	4.00				
o-Xylenes	ND	ug/Kg	4.00				
m-Xylenes	ND	ug/Kg	4.00				
p-Xylenes	ND	ug/Kg	4.00				
cis-1,2-Dichloroethene	ND	ug/Kg	4.00				

Surrogate Standard	% Recovery	QC Limits	
S1 - Dibromofluoromethane	103	70	134
S2 - Toluene-d8	97	85	111
S3 - 4-Bromofluorobenzene	104	81	117


LABORATORY MANAGER

ND - Not Detected

000009

377 329

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

9810-646-1

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-646

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 5.5 (g/mL) G

Lab File ID: 0701006

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 10/22/98

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 556-67-2	CYCLOTETRASILOXANE, OCTAMETH	25.10	26.6	NJ
2.				
3.				
4.				
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FORM I VOA-GCMS-TIC

000010

ENVIRONMENTAL TESTING & CONSULTING, INC.
2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ORGANIC ANALYSIS DATA SHEET

377 330

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

Project # 20560
FID # DACA45-96-D-0014

Date Arrived 10/20/98
ETC Order Number 9810646

ETC Lab ID **9810646-01**
Sample ID: A1-C1-001

Matrix :SOIL
Sample Date :10/20/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Base/Neutral & Acid							8270C
QC Batch	P04056	ug/Kg		10/21/98	10/21/98	RR	
Acenaphthene	72.2	ug/Kg	67.0				
Acenaphthylene	ND	ug/Kg	67.0				
Anthracene	139	ug/Kg	67.0				
Benzo(a)anthracene	733	ug/Kg	67.0				
Benzo(b)fluoranthene	1,130	ug/Kg	67.0				
Benzo(k)fluoranthene	496	ug/Kg	67.0				
Benzo(g,h,i)perylene	502	ug/Kg	67.0				
Benzo(a)pyrene	785	ug/Kg	67.0				
Benzoic Acid	ND	ug/Kg	1670				
Benzyl Alcohol	ND	ug/Kg	170				
Bis(2-chloroethoxy)methane	ND	ug/Kg	170				
Bis(2-chloroethyl)ether	ND	ug/Kg	170				
Bis(2-chloroisopropyl)ether	ND	ug/Kg	170				
Bis(2-ethylhexyl)phthalate	ND	ug/Kg	170				
4-Bromophenyl phenyl ether	ND	ug/Kg	170				
Butyl benzyl phthalate	ND	ug/Kg	170				
4-Chloroaniline	ND	ug/Kg	170				
2-Chloronaphthalene	ND	ug/Kg	170				
4-Chloro-3-methylphenol	ND	ug/Kg	170				
2-Chlorophenol	ND	ug/Kg	170				
4-Chlorophenyl phenyl ether	ND	ug/Kg	170				
Chrysene	819	ug/Kg	170				
Dibenzo(a,h)anthracene	134	ug/Kg	67.0				
Dibenzofuran	ND	ug/Kg	170				
Di-n-butyl phthalate	ND	ug/Kg	170				
1,2-Dichlorobenzene	ND	ug/Kg	170				
1,3-Dichlorobenzene	ND	ug/Kg	170				
1,4-Dichlorobenzene	ND	ug/Kg	170				
3,3'-Dichlorobenzidine	ND	ug/Kg	170				
2,4-Dichlorophenol	ND	ug/Kg	170				
2,6-Dichlorophenol	ND	ug/Kg	170				
Diethyl phthalate	ND	ug/Kg	170				
2,4-Dimethylphenol	ND	ug/Kg	170				
Dimethyl phthalate	ND	ug/Kg	170				
4,6-Dinitro-2-methylphenol	ND	ug/Kg	170				
2,4-Dinitrophenol	ND	ug/Kg	330				
2,4-Dinitrotoluene	ND	ug/Kg	170				
2,6-Dinitrotoluene	ND	ug/Kg	170				
Di-n-octyl phthalate	ND	ug/Kg	170				
Fluoranthene	1,470	ug/Kg	67.0				
Fluorene	48.0	ug/Kg	67.0				
Hexachlorobenzene	ND	ug/Kg	170				


LABORATORY MANAGER

ND - Not Detected

000011

ENVIRONMENTAL TESTING & CONSULTING, INC.
 2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

Project # 20560
 FID # DACA45-96-D-0014

Date Arrived 10/20/98
 ETC Order Number 9810646

ETC Lab ID **9810646-01**
Sample ID: A1-C1-001

Matrix :SOIL
 Sample Date :10/20/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Base/Neutral & Acid							8270C
Hexachlorobutadiene	ND	ug/Kg	170	10/21/98	10/21/98	RR	
Hexachlorocyclopentadiene	ND	ug/Kg	170				
Hexachloroethane	ND	ug/Kg	170				
Indeno(1,2,3-cd)pyrene	582	ug/Kg	67.0				
Isophorone	ND	ug/Kg	170				
2-Methylnaphthalene	ND	ug/Kg	170				
2-Methylphenol (o-cresol)	ND	ug/Kg	170				
3-Methylphenol (m-cresol)	ND	ug/Kg	170				
4-Methylphenol (p-cresol)	ND	ug/Kg	170				
Naphthalene	ND	ug/Kg	67.0				
Nitrobenzene	ND	ug/Kg	170				
2-Nitroaniline	ND	ug/Kg	170				
3-Nitroaniline	ND	ug/Kg	170				
4-Nitroaniline	ND	ug/Kg	170				
2-Nitrophenol	ND	ug/Kg	170				
4-Nitrophenol	ND	ug/Kg	170				
N-Nitrosodiphenylamine	ND	ug/Kg	170				
N-Nitrosodipropylamine	ND	ug/Kg	170				
Pentachlorophenol	83.0	ug/Kg	170				
Phenanthrene	659	ug/Kg	67.0				
Phenol	ND	ug/Kg	170				
Pyrene	1,310	ug/Kg	67.0				
1,2,4-Trichlorobenzene	ND	ug/Kg	170				
2,4,5-Trichlorophenol	ND	ug/Kg	170				
2,4,6-Trichlorophenol	ND	ug/Kg	170				

Surrogate Standard	% Recovery	QC Limits
S1 - Nitrobenzene-d5	37	25 110
S2 - 2-Fluorobiphenyl	37	33 114
S3 - 4-Terphenyl-d14	37	37 115
S4 - Phenol-d6	34	11 125
S5 - 2,4,6-Tribromophenol	44	9 134
S6 - 2-Fluorophenol	32	10 119


 LABORATORY MANAGER

ND - Not Detected

000012

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

377 332
CLIENT SAMPLE NO.

9810-646-1

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-646

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 30.4 (g/mL) G

Lab File ID: 1201014

Level: (low/med) LOW

Date Received: _____

% Moisture: _____ decanted: (Y/N) _____

Date Extracted:

Concentrated Extract Volume: 1(mL)

Date Analyzed: 10/21/98

Injection Volume: 1.0(uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 203-64-5	4H-CYCLOPENTA[DEF]PHENANTHRE	11.81	149	NJ
2. 243-17-4	11H-BENZO[B]FLUORENE	14.21	230	NJ
3. _____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____
6. _____	_____	_____	_____	_____
7. _____	_____	_____	_____	_____
8. _____	_____	_____	_____	_____
9. _____	_____	_____	_____	_____
10. _____	_____	_____	_____	_____
11. _____	_____	_____	_____	_____
12. _____	_____	_____	_____	_____
13. _____	_____	_____	_____	_____
14. _____	_____	_____	_____	_____
15. _____	_____	_____	_____	_____
16. _____	_____	_____	_____	_____
17. _____	_____	_____	_____	_____
18. _____	_____	_____	_____	_____
19. _____	_____	_____	_____	_____
20. _____	_____	_____	_____	_____
21. _____	_____	_____	_____	_____
22. _____	_____	_____	_____	_____
23. _____	_____	_____	_____	_____
24. _____	_____	_____	_____	_____
25. _____	_____	_____	_____	_____
26. _____	_____	_____	_____	_____
27. _____	_____	_____	_____	_____
28. _____	_____	_____	_____	_____
29. _____	_____	_____	_____	_____
30. _____	_____	_____	_____	_____

FORM I BNA-GCMS-TIC

000013

377 333

ENVIRONMENTAL TESTING & CONSULTING, INC.
 2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

Project # 20560
 FID # DACA45-96-D-0014

Date Arrived 10/20/98
 ETC Order Number 9810646

ETC Lab ID 9810646-01
Sample ID: A1-C1-001

Matrix :SOIL
 Sample Date :10/20/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
Organochlorine Pesticides							8081A
QC Batch	P06028	ug/Kg		10/21/98	10/22/98	RG	
Aldrin	ND	ug/Kg	2.00				
Alpha-BHC	ND	ug/Kg	2.00				
Beta-BHC	ND	ug/Kg	2.00				
Delta-BHC	ND	ug/Kg	2.00				
Gamma-BHC (Lindane)	ND	ug/Kg	2.00				
Alpha-Chlordane	ND	ug/Kg	2.00				
Gamma-Chlordane	14.0	ug/Kg	2.00				
Chlordane	ND	ug/Kg	20.0				
4,4'-DDD	57.4M	ug/Kg	2.00				
4,4'-DDE	348	ug/Kg	2.00				
4,4'-DDT	747M	ug/Kg	2.00				
Dieldrin	152	ug/Kg	2.00				
Endosulfan I	ND	ug/Kg	2.00				
Endosulfan II	ND	ug/Kg	2.00				
Endosulfan Sulfate	ND	ug/Kg	2.00				
Endrin	ND	ug/Kg	2.00				
Endrin Aldehyde	ND	ug/Kg	2.00				
Endrin Ketone	ND	ug/Kg	2.00				
Heptachlor	ND	ug/Kg	2.00				
Heptachlor Epoxide	ND	ug/Kg	2.00				
Methoxychlor	ND	ug/Kg	2.00				
Toxaphene	ND	ug/Kg	200				
Surrogate Standard							
	% Recovery		QC Limits				
S1 - Decachlorobiphenyl	50 Q		64				154
S2 - Tetrachloro-m-xylene	96		39				130


 LABORATORY MANAGER

ND - Not Detected

000014

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

377 334

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560
FID # DACA45-96-D-0014

Site ID DDMT
Memphis, TN

Date Arrived 10/20/98
ETC Order Number 9810646

ETC Lab ID 9810646-01
Sample ID: A1-C1-001

Matrix :SOIL
Sample Date :10/20/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
PCBs							8082
				10/21/98	10/23/98	RG	
QC Batch	P06028	ug/Kg					
PCB-1016	ND	ug/Kg	35 0				
PCB-1221	ND	ug/Kg	35 0				
PCB-1232	ND	ug/Kg	35 0				
PCB-1242	ND	ug/Kg	35 0				
PCB-1248	ND	ug/Kg	35 0				
PCB-1254	ND	ug/Kg	35.0				
PCB-1260	473	ug/Kg	35 0				
Surrogate Standard							
	% Recovery		QC Limits				
S1 - Tetrachloro-m-xylene	82		20	122			
S2 - Decachlorobiphenyl	240 Q		17	141			


LABORATORY MANAGER

ND - Not Detected

33315

377 335

Environmental Testing & Consulting, Inc.

**Quality Control Reports
Inorganics**

000016

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
INORGANICS

377 336

Client Name : OHM Remediation Services
Project Name : Defense Depot Memphis, TN
ETC Order # : 9810-646

HOLDING TIMES

Sample Analysis : All samples analyzed within Method Specified
Holding Times.

CALIBRATION

Laboratory Control Sample : All criteria met.

QUALITY CONTROL

Matrix Spike

Spike Recovery : All analytes within QC limits

Method Blank

No Target Analytes detected above Detection Limit.


Laboratory Manager

000017

377 337

Environmental Testing & Consulting, Inc.
Inorganic QC Data Summary

Client Name OHM Remediation Services
Project DDMT-Memphis, TN

ETC Order Number 9810-646
File Name 9810-646 1

Method Blank

Analyte	Date Analyzed	Blank Concentration mg/Kg	QC Batch
Cyanide	10/21/98	<1 00	CY102198

Calibration Verification (CV)

Analyte	Date Analyzed	CV Conc mg/L	CV Conc Found	% Difference
Cyanide	10/21/98	0 200	0 209	4 5

Laboratory Control Sample (LCS)

Analyte	Date Analyzed	LCS Conc mg/Kg	LCS Conc Found	% Recovery
Cyanide	10/21/98	20 0	19 2	96

Matrix Spike/Matrix Spike Duplicate

Sample ID	Analyte	Spike mg/Kg	Sample mg/Kg	MS Conc Found	MS % Recovery	QC Limits	RPD
9810-646-01 MS	Cyanide	18 9	<1 00	18 4	97	70 - 130	
9810-646-01 MSD	Cyanide	18 9	<1 00	19 1	101	70 - 130	4 0

000018

Environmental Testing & Consulting, Inc.

Quality Control Reports

Metals (ICP/GFAA/CV)

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
METALS - SOIL

Client Name : OHM Remediation Services
Project Name : Defense Depot Memphis, TN
ETC Order # : 9810-646

HOLDING TIMES

QC Batch(s) for this order : ICP/GFAA V8-SO-58
Mercury V4-SO-41

Sample Analysis : All samples digested and analyzed within 180 days of collection.
Mercury Analysis : All samples analyzed within 28 days of collection.

CALIBRATION

Initial Calibration : All criteria met.
Continuing Calibration : All criteria met.

SAMPLE ANALYSIS

Instrumentation : Thermo Jarrell Ash Enviro-I ICP
Varian 640Z Zeeman Graphite Furnace
Perkin Elmer 5100ZL Graphite Furnace
Perkin Elmer 6000 Graphite Furnace
Thermo Jarrell Ash AA-Scan 4 Graphite Furnace
CETAC M-6000A Mercury Analyzer

Dilutions Required : No dilutions required.*

*
Due to low recoveries and failing Post Digestion Spike, all Selenium data was reported based on the Method of Standard Additions.

Dilutions were performed on several samples to bring the Target Analyte(s) within calibration range (C) or to remove spectral interference (I) as indicated.

Sample ID	Metal	Dilution Factor	Sample ID	Metal	Dilution Factor
9810-646-01	Arsenic	1:2 (C)	9810-646-01	Lead	1:20 (C)
9810-646-01	Calcium	1:5 (C)	9810-646-01	Iron	1:5 (C)

QUALITY CONTROL**9810-646.MQCBLANK**Method Blank

V8-SO-58BLK - ICP/GFAA Metals

V4-SO-41BLK - Mercury

Calcium identified in V8-SO-58BLK at 4.10 mg/Kg.
Iron identified in V8-SO-58BLK at 1.30 mg/Kg.
Zinc identified in V8-SO-58BLK at 1.40 mg/Kg.

9810-646.MQCLCSLaboratory Control Sample(s)

V8-SO-58LCS - ICP/GFAA Metals

V4-SO-41LCS - Mercury

All criteria met.

000020

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
METALS - SOIL

377 340

Client Name : OHM Remediation Services
Project Name : Defense Depot Memphis, TN
ETC Order # : 9810-646

QUALITY CONTROL

9810-646.MQCMSMSD

Matrix Spike / Matrix Spike Dup - ICP Metals

9810-618-01 RPD : All analytes within QC limits.
C-TS-008 Spike Recovery : All analytes within QC limits.*
*

Recoveries for Antimony were flagged as outside QC Limits in the Matrix Spike and Matrix Spike Duplicate. A Post Digestion Spike was performed for verification :

	mg/L	mg/L	%	QA
<u>Analyte</u>	<u>Expected</u>	<u>Found</u>	<u>Recovery</u>	<u>Evaluation</u>
Antimony	0.500	0.493	99	Pass

Recoveries for multiple analytes were flagged as outside QC Limits due to the level of these analytes present in the sample relative to the spike amounts. In addition, concentrations of other analytes were high relative to the spike amounts. Dilution Tests were performed for verification :

<u>Analyte</u>	No <u>Dilution</u>	1:5 <u>Dilution</u>	1:25 <u>Dilution</u>	% <u>Difference</u>	QA <u>Evaluation</u>
Aluminum	-----	15900 mg/Kg	16000 mg/Kg	1	Pass
Iron	-----	22900	23200	1	Pass
Manganese	552	562	-----	2	Pass
Potassium	1140	1140	-----	0	Pass
Magnesium	2260	2300	-----	2	Pass
Zinc	60.9	62.1	-----	2	Pass

Refer to Laboratory Control Sample(s) for system verification.

Matrix Spike / Matrix Spike Dup - Graphite Metals

9810-618-01 RPD : All analytes within QC limits.
C-TS-008 Spike Recovery : All analytes within QC limits.*
*

Recoveries for Lead were flagged as outside QC Limits due to the level of this analyte present relative to the spike amount. A Dilution Test was performed for verification :

<u>Analyte</u>	1:3 <u>Dilution</u>	1:15 <u>Dilution</u>	% <u>Difference</u>	QA <u>Evaluation</u>
Lead	13.5 mg/Kg	13.1 mg/Kg	3	Pass

Recoveries for Selenium were flagged as outside QC Limits in the Matrix Spike and Matrix Spike Duplicate. The Post Digestion Spike failed evaluation criteria. All data was reported based on MSA.

Refer to Laboratory Control Sample(s) for system verification.

000021

377 341

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
METALS - SOIL

Client Name : OHM Remediation Services
Project Name : Defense Depot Memphis, TN
ETC Order # : 9810-646

QUALITY CONTROL

Matrix Spike / Matrix Spike Dup - Hg

9810-618-01

RPD : All analytes within QC limits.

C-TS-008

Spike Recovery : All analytes within QC limits.

Refer to Laboratory Control Sample(s) for system verification.

Dilution Test - Dilution result must agree within 10% of original
result when sample is diluted by a factor of 5.

Post Digestion Spike - Recovery must be +/-15% of expected value.


Laboratory Manager

000022

SOLID METHOD BLANK
METALS

Lab Name Environmental Testing and Consulting, Inc

Laboratory ID ICP/GFAA Metals	<u>V8-SO-58</u> BLK	QC Batch <u>V8-SO-58</u>
Laboratory ID Mercury	<u>V4-SO-41</u> BLK	<u>V4-SO-41</u>

Date Sample Prepared	<u>10/20/98</u>	ICP/GFAA Metals
	<u>10/22/98</u>	Mercury

Metals	Concentration mg/Kg	Detection Limit mg/Kg	Date Analyzed	Method
Silver	<0 700	0 700	10/21/98	6010B
Aluminum	<4 00	4 00	10/21/98	6010B
Arsenic	<0 200	0 200	10/21/98	7060A
Barium	<0 200	0 200	10/21/98	6010B
Beryllium	<0 100	0 100	10/21/98	6010B
Calcium	4 10	1 00	10/21/98	6010B
Cadmium	<0 400	0 400	10/21/98	6010B
Cobalt	<0 700	0 700	10/21/98	6010B
Chromium	<0 700	0 700	10/21/98	6010B
Copper	<0 600	0 600	10/21/98	6010B
Iron	1 30	0 700	10/21/98	6010B
Potassium	<20 0	20 0	10/21/98	6010B
Magnesium	<3 00	3 00	10/21/98	6010B
Manganese	<0 200	0 200	10/21/98	6010B
Sodium	<20 0	20 0	10/21/98	6010B
Nickel	<1 50	1 50	10/21/98	6010B
Lead	<0 100	0 100	10/21/98	7421
Antimony	<3 20	3 20	10/21/98	6010B
Selenium	<0 200	0 200	10/21/98	7740
Thallium	<0 100	0 100	10/22/98	7841
Vanadium	<0 800	0 800	10/21/98	6010B
Zinc	1 40	1 00	10/21/98	6010B
Mercury	<0 020	0 020	10/22/98	7471A

Metals Blank

9810-646 mqcBLANK

000023

SOLID LABORATORY CONTROL SAMPLE
METALS

Lab Name Environmental Testing and Consulting, Inc

Laboratory Control ID	ICP/GFAA Metals	V8-SO-58	LCS	QC Batch
	Mercury	V4-SO-41	LCS	V8-SO-58
				V4-SO-41

Date Prepared	ICP/GFAA Metals	10/20/98	
	Mercury	10/22/98	

Metals	Spike Added mg/Kg	Found mg/Kg	% R	#	QC Limits
Silver	20 0	19 4	97	80	120
Aluminum	200	196	98	80	120
Arsenic	5 00	4 61	92	85	115
Barium	200	189	95	80	120
Beryllium	20 0	19 0	95	80	120
Calcium	400	402	101	80	120
Cadmium	20 0	19 7	99	80	120
Cobalt	100	98 7	99	80	120
Chromium	40 0	40 4	101	80	120
Copper	40 0	39 4	99	80	120
Iron	200	201	101	80	120
Potassium	400	410	103	80	120
Magnesium	400	390	98	80	120
Manganese	20 0	20 1	101	80	120
Sodium	400	424	106	80	120
Nickel	100	98 1	98	80	120
Lead	2 00	2 09	105	85	115
Antimony	200	193	97	80	120
Selenium	5 00	4 86	97	85	115
Thallium	2 00	2 01	101	85	115
Vanadium	100	98 7	99	80	120
Zinc	20 0	21 5	108	80	120
Mercury	0 167	0 154	92	80	120

Column to be used to flag recovery values with an asterisk
 * Values outside of QC limits

Metals Laboratory Control Sample

9810-646 mqcLCS

000024

SOLID MATRIX SPIKE
METALS

Lab Name Environmental Testing and Consulting, Inc

	QC Batch
Laboratory ID MS ICP/GFAA Metals	9810-618-01 V8-SO-58
Laboratory ID MS Mercury	9810-618-01 V4-SO-41

Date Sample Prepared	10/20/98	ICP/GFAA Metals
	10/22/98	Mercury

Metals	SPIKE Added mg/Kg	SAMPLE Conc mg/Kg	MS Conc mg/Kg	RPD <20% #	MS % Rec #	QC Limits	
Silver	22.6	ND	22.9	5	101	75	125
Aluminum	226	15900	16700	2	354 *	75	125
Arsenic	5.66	10.3	16.5	1	110	70	130
Barium	226	83.5	303	1	97	75	125
Beryllium	22.6	0.500	23.7	3	103	75	125
Calcium	452	684	1180	1	110	75	125
Cadmium	22.6	ND	23.8	5	105	75	125
Cobalt	113	7.82	125	2	104	75	125
Chromium	45.2	19.7	67.1	2	105	75	125
Copper	45.2	13.2	58.8	2	101	75	125
Iron	226	22900	22300	2	-266 *	75	125
Potassium	452	1140	1600	3	102	75	125
Magnesium	452	2260	2920	1	146 *	75	125
Manganese	22.6	552	546	12	-27 *	75	125
Sodium	452	104	589	2	107	75	125
Nickel	113	13.7	132	3	105	75	125
Lead	2.26	13.5	15.8	5	102	70	130
Antimony	226	ND	0		0 *	75	125
Selenium	5.66	0.560	4.36	4	67 *	70	130
Thallium	2.26	0.312	2.47	0	96	70	130
Vanadium	113	30.4	137	2	94	75	125
Zinc	22.6	60.9	83.1	4	98	75	125
Mercury	0.164	0.058	0.207	11	91	75	125

Column to be used to flag recovery values with an asterisk

* Values outside of QC limits ND - Not Detected

Metals Matrix Spike

9810-646 mqcMSMSD

000025

377 345

SOIL MATRIX SPIKE DUPLICATE
METALS

Lab Name Environmental Testing and Consulting, Inc

Laboratory ID MS ICP/GFAA Metals	9810-618-01	QC Batch V8-SO-58
Laboratory ID MS Mercury	9810-618-01	V4-SO-41

Date Sample Prepared	10/20/98	ICP/GFAA Metals
	10/22/98	Mercury

Metals	SPIKE Added mg/Kg	SAMPLE Conc mg/Kg	MSD Conc mg/Kg		MSD % Rec	#	QC Limits	
Silver	21.8	ND	21.7		100		75	125
Aluminum	218	15900	17100		551	*	75	125
Arsenic	5.88	10.3	16.4		104		70	130
Barium	218	83.5	301		100		75	125
Beryllium	21.8	0.500	22.9		103		75	125
Calcium	436	684	1190		116		75	125
Cadmium	21.8	ND	22.6		104		75	125
Cobalt	109	7.82	123		106		75	125
Chromium	43.6	19.7	65.5		105		75	125
Copper	43.6	13.2	57.6		102		75	125
Iron	218	22900	21800		-505	*	75	125
Potassium	436	1140	1650		117		75	125
Magnesium	436	2260	2880		142	*	75	125
Manganese	21.8	552	618		303	*	75	125
Sodium	436	104	577		109		75	125
Nickel	109	13.7	128		105		75	125
Lead	2.35	13.5	15.1		68	*	70	130
Antimony	218	ND	0		0	*	75	125
Selenium	5.88	0.560	4.54		68	*	70	130
Thallium	2.35	0.312	2.47		92		70	130
Vanadium	109	30.4	134		95		75	125
Zinc	21.8	60.9	86.8		119		75	125
Mercury	0.185	0.058	0.230		93		75	125

Column to be used to flag recovery values with an asterisk

* Values outside of QC limits ND - Not Detected

Metals Matrix Spike Duplicate

9810-646 mqcMSMSD

J00026

Environmental Testing & Consulting, Inc.

Quality Control Reports

GC/MS Volatiles

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC/MS VOLATILE COMPOUNDS - SOIL

Client Name : OHM Remediation Services
Project Name : Defense Depot Memphis, TN

ETC Order # : 9810-646
Method (SW-846) : 8260B/5030B

HOLDING TIMES

Sample Analysis : All samples analyzed within 14 days of collection.

QUALITY CONTROL

QC Batch Form 4 Summary
V2102201 V210221LB

System Monitoring Compounds FORM 2
Surrogate recoveries within QC limits.

Laboratory Control Sample FORM 3
V210221LCS

All criteria met.*
*

Methylene Chloride was flagged outside QC limits in V210221LCS.
This compound was not identified in samples associated with this project. The data was not affected.

Matrix Spike / Matrix Spike Dup FORM 3
9810-646-01 RPD : All analytes within QC limits.
A1-C1-001 Spike Recovery : All analytes within QC limits.*
*

Recoveries for multiple analytes were flagged outside QC Limits in the Matrix Spike and Matrix Spike Duplicate.

Refer to Laboratory Control Sample(s) for system verification.

Method Blank FORM 4
V210221LB

No Target Analytes detected above the reporting limit.

CALIBRATION

BFB Daily 12 Hour Tune : All criteria met. FORM 5
Initial Calibration : All criteria met. FORM 6
Calibration Verification : All criteria met. FORM 7*

*
Calibration Verification(CV) : Date 10/22/98 Time: 12:12

Analyte	%Diff(30% Max)	Response
Methylene Chloride	45.2	Low

Low response indicates that reported levels for this analyte may be biased low. This analyte was not identified in sample associated with this project. The data was not affected.

Volatile Internal Standard Area and RT FORM 8
Daily Check Standard(s) Internal Standard Areas and Retention Times within QC limits.

000028

ENVIRONMENTAL TESTING AND CONSULTING, INC. 377 348
MEMPHIS, TN
CASE NARRATIVE
GC/MS VOLATILE COMPOUNDS - SOIL

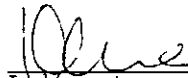
Client Name : OHM Remediation Services
Project Name : Defense Depot Memphis, TN
ETC Order # : 9810-646
Method (SW-846) : 8260B/5030B

SAMPLE ANALYSIS

Instrumentation : HP 5890 Series II GC, 5971MSD
Dilutions Required : No dilutions required.*

*

Sample size for 9810-646-01(A1-C1-001) was 5.5 grams due to
Encore Sampler. Detection Limits were adjusted by a factor of
1:2 to account for lower sample size


Laboratory Manager

000029

377 349

FORM 2
SOIL VOA-GCMS SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-646

Level: (low/med) LOW

	CLIENT SAMPLE NO.	SMC1 (DBF) #	SMC2 (TOL) #	SMC3 (BFB) #	OTHER	TOT OUT
01	V210221LCS	96	99	92		0
02	V210221LB	98	96	98		0
03	9810-646-1	103	97	104		0
04	9810-646-1MS	101	98	97		0
05	9810-646-1MS	104	98	98		0
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QC LIMITS

SMC1 (DBF) = Dibromofluoromethane (70-134)
 SMC2 (TOL) = Toluene-d8 (85-111)
 SMC3 (BFB) = Bromofluorobenzene (81-117)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

000030

FORM 4
VOA-GCMS METHOD BLANK SUMMARY

377 350
CLIENT SAMPLE NO.

V210221LB

Lab Name: ETC, INC.

Lab Prep Batch: V2102201

SDG No.: 9810-646

Lab File ID: 0302002

Lab Prep Batch: V2102201

Date Analyzed: 10/22/98

Time Analyzed: 1413

GC Column: ID: 2 (mm)

Heated Purge: (Y/N) Y

Instrument ID: VOC2

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	V210221LCS		0201001LCS	1212
02	9810-646-1		0701006	1707
03	9810-646-1MS		1501014	2257
04	9810-646-1MS		1601015	2340
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COMMENTS:

377 351

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V210221LB

Lab Name: ETC, INC.

SDG No.: 9810-646

Matrix: (soil/water) SOIL

Lab Prep Batch: V2102201

Sample wt/vol: 10.0 (g/mL) G

Lab File ID: 0302002

Level: (low/med) LOW

Date Analyzed: 10/22/98

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
67-64-1-----	Acetone	50.0	U
71-43-2-----	Benzene	2.00	U
75-27-4-----	Bromodichloromethane	2.00	U
75-25-2-----	Bromoform	2.00	U
74-83-9-----	Bromomethane	2.00	U
75-15-0-----	Carbon Disulfide	25.0	U
56-23-5-----	Carbon Tetrachloride	2.00	U
108-90-7-----	Chlorobenzene	2.00	U
124-48-1-----	Chlorodibromomethane	2.00	U
75-00-3-----	Chloroethane	2.00	U
67-66-3-----	Chloroform	2.00	U
74-87-3-----	Chloromethane	2.00	U
75-34-3-----	1,1-Dichloroethane	2.00	U
107-06-2-----	1,2-Dichloroethane	2.00	U
75-35-4-----	1,1-Dichloroethene	2.00	U
156-59-4-----	cis-1,2-Dichloroethene	2.00	U
156-60-5-----	trans-1,2-Dichloroethene	2.00	U
78-87-5-----	1,2-Dichloropropane	2.00	U
10061-01-5-----	cis-1,3-Dichloropropene	2.00	U
10061-02-6-----	trans-1,3-Dichloropropene	2.00	U
100-41-4-----	Ethylbenzene	2.00	U
591-78-6-----	2-Hexanone	50.0	U
75-09-2-----	Methylene Chloride	50.0	U
78-93-3-----	Methyl-Ethyl Ketone	50.0	U
108-10-1-----	4-Methyl-2-Pentanone	50.0	U
100-42-5-----	Styrene	2.00	U
79-34-5-----	1,1,2,2-Tetrachloroethane	2.00	U
127-18-4-----	Tetrachloroethene	2.00	U
108-88-3-----	Toluene	2.00	U
71-55-6-----	1,1,1-Trichloroethane	2.00	U
79-00-5-----	1,1,2-Trichloroethane	2.00	U
79-01-6-----	Trichloroethene	2.00	U
108-05-4-----	Vinyl Acetate	25.0	U

FORM I VOA-GCMS

000032

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

377 352
CLIENT SAMPLE NO.

V210221LB

Lab Name: ETC, INC.

SDG No.: 9810-646

Matrix: (soil/water) SOIL

Lab Prep Batch: V2102201

Sample wt/vol: 10.0 (g/mL) G

Lab File ID: 0302002

Level: (low/med) LOW

Date Analyzed: 10/22/98

Dilution Factor: 1.0

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

75-01-4-----	Vinyl Chloride	2.00	U
1330-20-7-----	Xylene-mp	2.00	U
95-47-6-----	Xylene-o	2.00	U

FORM I VOA-GCMS

000033

377 353

FORM 3
SOIL VOA-GCMS LABORATORY CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: V2102201

SDG No.: 9810-646

Matrix Spike - Sample No.: V210221LCS

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Acetone	100		80.0	80	59-151
Benzene	100		82.1	82	72-124
Bromodichloromethane	100		85.0	85	68-119
Bromoform	100		120	120	66-136
Bromomethane	100		95.9	96	40-134
Carbon Disulfide	100		85.8	86	60-133
Carbon Tetrachloride	100		91.4	91	64-123
Chlorobenzene	100		101	101	77-112
Chlorodibromomethane	100		86.4	86	72-118
Chloroethane	100		99.9	100	64-142
Chloroform	100		81.3	81	70-115
Chloromethane	100		107	107	58-139
1,1-Dichloroethane	100		82.7	83	76-118
1,2-Dichloroethane	100		78.5	78	62-124
1,1-Dichloroethene	100		85.7	86	69-121
cis-1,2-Dichloroethene	100		83.7	84	76-114
trans-1,2-Dichloroethene	100		84.9	85	72-121
1,2-Dichloropropane	100		86.3	86	64-133
cis-1,3-Dichloropropene	100		89.2	89	77-120
trans-1,3-Dichloropropene	100		89.0	89	73-124
Ethylbenzene	100		106	106	77-111
2-Hexanone	100		87.7	88	53-144
Methylene Chloride	100		63.1	63*	67-115
Methyl-Ethyl Ketone	100		78.2	78	55-151
4-Methyl-2-Pentanone	100		85.5	86	42-144
Styrene	100		102	102	77-117
1,1,1,2-Tetrachloroethane	100		108	108	79-113
Tetrachloroethene	100		94.2	94	77-115

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS:

FORM 3
SOIL VOA-GCMS LABORATORY CONTROL SAMPLE

377 354

Lab Name: ETC, INC.

Lab Prep Batch: V2102201

SDG No.: 9810-646

Matrix Spike - Sample No.: V210221LCS Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Toluene	100		93.1	93	77-115
1,1,1-Trichloroethane	100		88.2	88	63-122
1,1,2-Trichloroethane	100		83.6	84	69-117
Trichloroethene	100		91.9	92	75-113
Vinyl Acetate	100		87.4	87	28-146
Vinyl Chloride	100		103	103	65-134
Xylene-mp	200		209	104	77-115
Xylene-o	100		102	102	77-115

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits

Spike Recovery: 1 out of 36 outside limits

COMMENTS:

377 355

FORM 3
SOIL VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC, INC.

Lab Prep Batch: V2102201

SDG No.: 9810-646

Matrix Spike - Sample No.: 9810-646-1

Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Benzene	200	0.000	130	65*	72-124
Chlorobenzene	200	0.000	136	68*	77-112
1,1-Dichloroethene	200	0.000	139	70	69-121
Toluene	200	0.000	130	65*	77-115
Trichloroethene	200	0.000	135	68*	75-113

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD REC.
Benzene	192	124	64*	2	20 72-124
Chlorobenzene	192	121	63*	8	20 77-112
1,1-Dichloroethene	192	132	69	1	20 69-121
Toluene	192	118	61*	6	20 77-115
Trichloroethene	192	126	66*	3	20 75-113

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 8 out of 10 outside limits

COMMENTS:

FORM III VOA-GCMS

000036

Environmental Testing & Consulting, Inc.,

Quality Control Reports

GC/MS Semi-Volatiles

377 357

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC/MS SEMI-VOLATILE COMPOUNDS - SOIL

Client Name : OHM Remediation Services
Project Name : Defense Depot Memphis, TN
ETC Order # : 9810-646
Method (SW-846) : 8270C/3550B

HOLDING TIMES

Sample Extraction : All soil samples extracted within 14 days.
Sample Analysis : All samples analyzed within 40 days of
extraction.

QUALITY CONTROL

QC Batch Form 4 Summary
P04056 P04056LB

System Monitoring Compounds FORM 2
Surrogate recoveries within QC limits.

Laboratory Control Sample FORM 3
P04056LCS

All criteria met.

Matrix Spike / Matrix Spike Dup FORM 3
9810-622-01 RPD : All analytes within QC limits.*
FTCA05-VT80-129-01 Spike Recovery : All analytes within QC limits.
*
RPDs for multiple analytes were flagged as outside QC Limits due to
higher recovery in the Matrix Spike.

Refer to Laboratory Control Sample(s) for system verification.

Method Blank FORM 4
P04056LB

No Target Analytes detected above Practical Quantitation Limit.

CALIBRATION

DFTPP Daily 12 Hour Tune : All criteria met. FORM 5
Initial Calibration : All criteria met. FORM 6
Calibration Verification : All criteria met. FORM 7*

Calibration Verification(CV) : Date 10/21/98 Time: 17:08

Analyte	%Diff(30% Max)	Response
Benzidine	44.8	High
2,4-Dinitrophenol	66.4	High
4-Nitrophenol	58.8	High

High responses indicate that reported levels for these analytes may be biased high. Benzidine was not a Target Analyte associated with this project. 2,4-Dinitrophenol and 4-Nitrophenol were not identified in samples associated with this project. The data was not affected.

000038

CASE NARRATIVE

GC/MS SEMI-VOLATILE COMPOUNDS.- SOIL

Client Name : OHM Remediation Services
Project Name : Defense Depot Memphis, TN

ETC Order # : 9810-646
Method (SW-846) : 8270C/3550B

CALIBRATION

Calibration Verification(CV) : Date 10/22/98 Time: 12:18

Analyte	%Diff(30% Max)	Response
Benzoic Acid	67.4	Low
2,4-Dinitrophenol	43.4	High
4-Nitrophenol	36.0	High

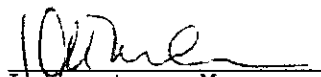
Low response for Benzoic Acid indicates reported level for this analyte may be biased low. High responses indicate that reported levels for these analytes may be biased high. These compounds were not identified in samples associated with this project. The data was not affected.

Semi-Volatile Internal Standard Area and RT FORM 8

Daily Check Standard(s) Internal Standard Areas and Retention Times within QC limits.

SAMPLE ANALYSIS

Instrumentation : HP 5890 Series II GC, 5971MSD
Dilutions Required : No dilutions required.


Laboratory Manager

000039

FORM 2
SOIL BNA-GCMS SURROGATE RECOVERY

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-646

Level: (low/med) LOW

	CLIENT SAMPLE NO.	S1 (2FP) #	S2 (PHL) #	S3 (NBZ) #	S4 (FBP) #	S5 (TBP) #	S6 (TPH) #	S7 #	S8 #	TOT OUT
01	P04056LCS	76	78	78	74	102	110			0
02	9810-646-1	32	34	37	37	44	37			0
03	9810-622-1	65	68	62	61	85	78			0
04	9810-622-1MS	65	69	75	70	90	87			0
05	9810-622-1MS	50	54	62	60	78	85			0
06	P04056LB	65	70	73	74	89	107			0
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QC LIMITS

S1 (2FP) = 2-Fluorophenol (10-119)
 S2 (PHL) = Phenol-d6 (11-125)
 S3 (NBZ) = Nitrobenzene-d5 (25-110)
 S4 (FBP) = 2-Fluorobiphenyl (33-114)
 S5 (TBP) = 2,4,6-Tribromophenol (9-134)
 S6 (TPH) = Terphenyl-d14 (37-115)

Column to be used to flag recovery values
 * Values outside of contract required QC limits
 D Surrogate diluted out

377 360

FORM 4
BNA-GCMS METHOD BLANK SUMMARY

CLIENT SAMPLE NO

P04056LB

Lab Name: ETC, INC.

Lab Prep Batch: P04056

SDG No.: 9810-646

Lab File ID: 0301003

Instrument ID: BNA2

Matrix: (soil/water) SOIL

Date Analyzed: 10/22/98

Level:(low/med) LOW

Time Analyzed: 1248

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	P04056LCS		0401006	10/21/98
02	9810-646-1		1201014	10/21/98
03	9810-622-1		1401016	10/21/98
04	9810-622-1MS		1501017	10/21/98
05	9810-622-1MS		1601018	10/22/98
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COMMENTS:

000041

377 361

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

P04056LB

Lab Name: ETC, INC.

SDG No.: 9810-646

Matrix: (soil/water) SOIL

Lab Prep Batch: P04056

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: 0301003

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 1(mL)

Date Analyzed: 10/22/98

Injection Volume: 1.0(uL)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9-----	Acenaphthene	66.7	U
208-96-8-----	Acenaphthylene	66.7	U
120-12-7-----	Anthracene	66.7	U
56-55-3-----	Benzo(a) Anthracene	66.7	U
205-99-2-----	Benzo(b) fluoranthene	66.7	U
207-08-9-----	Benzo(k) fluoranthene	66.7	U
191-24-2-----	Benzo(g,h,i) perylene	66.7	U
50-32-8-----	Benzo(a) pyrene	66.7	U
65-85-0-----	Benzoic Acid	1670	U
100-51-6-----	Benzyl Alcohol	167	U
111-44-4-----	bis(2-Chloroethyl) ether	167	U
111-91-1-----	Bis(2-chloroethoxy) methane	167	U
39638-32-9-----	bis(2-Chloroisopropyl) ether	167	U
117-81-7-----	bis(2-ethylhexyl) Phthalate	167	U
101-55-3-----	4-Bromophenyl-phenylether	167	U
85-68-7-----	Butylbenzylphthalate	167	U
106-47-8-----	4-Chloroaniline	167	U
59-50-7-----	4-Chloro-3-Methylphenol	167	U
91-58-7-----	2-Chloronaphthalene	167	U
95-57-8-----	2-Chlorophenol	167	U
7005-72-3-----	4-Chlorophenyl-phenylether	167	U
218-01-9-----	Chrysene	167	U
53-70-3-----	Dibenzo(a,h) anthracene	66.7	U
132-64-9-----	Dibenzofuran	167	U
84-74-2-----	Di-n-Butylphthalate	167	U
95-50-1-----	1,2-Dichlorobenzene	167	U
541-73-1-----	1,3-Dichlorobenzene	167	U
106-46-7-----	1,4-Dichlorobenzene	167	U
91-94-1-----	3,3'-Dichlorobenzidine	167	U
120-83-2-----	2,4-Dichlorophenol	167	U
84-66-2-----	Diethylphthalate	167	U

FORM I BNA-GCMS

000042

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET

377 362
CLIENT SAMPLE NO.

P04056LB

Lab Name: ETC, INC.

SDG No.: 9810-646

Matrix: (soil/water) SOIL

Lab Prep Batch: P04056

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: 0301003

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 1 (mL)

Date Analyzed: 10/22/98

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

105-67-9	2,4-Dimethyphenol	167	U
131-11-3	Dimethylphthalate	167	U
534-52-1	4,6-Dinitro-2-methylphenol	167	U
51-28-5	2,4-Dinitrophenol	330	U
121-14-2	2,4-Dinitrotoluene	167	U
606-20-2	2,6-Dinitrotoluene	167	U
117-84-0	Di-n-octylphthalate	167	U
86-30-6	Diphenylamine/n-NDPA	167	U
206-44-0	Fluoranthene	66.7	U
86-73-7	Fluorene	66.7	U
118-74-1	Hexachlorobenzene	167	U
87-68-3	Hexachlorobutadiene	167	U
77-47-4	Hexachlorocyclopentadiene	167	U
67-72-1	Hexachloroethane	167	U
193-39-5	Indeno(1,2,3-cd)pyrene	66.7	U
78-59-1	Isophorone	167	U
91-57-6	2-Methylnaphthalene	167	U
95-48-7	2-Methylphenol	167	U
106-44-5	3&4-Methylphenol	167	U
91-20-3	Naphthalene	66.7	U
88-74-4	2-Nitroaniline	167	U
99-09-2	3-Nitroaniline	167	U
100-01-6	4-Nitroaniline	167	U
98-95-3	Nitrobenzene	167	U
88-75-5	2-Nitrophenol	167	U
100-02-7	4-Nitrophenol	167	U
621-64-7	N-Nitrosodipropylamine	167	U
87-86-5	Pentachlorophenol	167	U
85-01-8	Phenanthrene	66.7	U
108-95-2	Phenol	167	U
129-00-0	Pyrene	66.7	U
110-86-1	Pyridine	167	U
120-82-1	1,2,4-Trichlorobenzene	167	U

FORM I BNA-GCMS

000043

377 363

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

P04056LB

Lab Name: ETC, INC.

SDG No.: 9810-646

Matrix: (soil/water) SOIL

Lab Prep Batch: P04056

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: 0301003

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 1(mL)

Date Analyzed: 10/22/98

Injection Volume: 1.0(uL)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg) UG/KG	Q
95-95-4-----	2,4,5-Trichlorophenol	167	U
88-06-2-----	2,4,6-Trichlorophenol	167	U

FORM I BNA-GCMS

000044

FORM 3
SOIL BNA-GCMS LABORATORY CONTROL SAMPLE

377 364

Lab Name: ETC, INC.

Lab Prep Batch: P04056

SDG No.: 9810-646

Matrix Spike - Sample No.: P04056LCS

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Acenaphthene	1670		1320	79	34-126
Acenaphthylene	1670		1500	90	62-123
Anthracene	1670		1430	86	68-124
Benzo(a)Anthracene	1670		1420	85	60-133
Benzo(b)fluoranthene	1670		1590	95	67-126
Benzo(k)fluoranthene	1670		1470	88	75-131
Benzo(g,h,i)perylene	1670		1370	82	53-137
Benzo(a)pyrene	1670		1470	88	68-129
Benzoic Acid	1670		3690	221	37-251
Benzyl Alcohol	1670		1340	80	20-159
bis(2-Chloroethyl)ether	1670		1520	91	25-147
Bis(2-chloroethoxy)meth	1670		1140	68	37-153
bis(2-Chloroisopropyl)e	1670		1250	75	35-138
bis(2-ethylhexyl)Phthal	1670		1560	93	60-150
4-Bromophenyl-phenyleth	1670		1310	78	59-130
Butylbenzylphthalate	1670		1450	87	71-137
4-Chloroaniline	1670		547	33	27-106
4-Chloro-3-Methylphenol	3330		2800	84	33-147
2-Chloronaphthalene	1670		1420	85	62-126
2-Chlorophenol	3330		2570	77	34-126
4-Chlorophenyl-phenylet	1670		1370	82	60-128
Chrysene	1670		1360	81	67-131
Dibenzo(a,h)anthracene	1670		1350	81	51-138
Dibenzofuran	1670		1330	80	57-131
Di-n-Butylphthalate	1670		1340	80	39-179
1,2-Dichlorobenzene	1670		1250	75	58-110

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS:

377 365

FORM 3
SOIL BNA-GCMS LABORATORY CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: P04056

SDG No.: 9810-646

Matrix Spike - Sample No.: P04056LCS

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
1,3-Dichlorobenzene	1670		1220	73	55-109
1,4-Dichlorobenzene	1670		1250	75	26-121
3,3'-Dichlorobenzidine	3330		2970	89	18-191
2,4-Dichlorophenol	3330		2640	79	68-123
2,6-Dichlorophenol	3330		2710	81	45-157
Diethylphthalate	1670		1400	84	72-133
2,4-Dimethyphenol	3330		2270	68	53-121
Dimethylphthalate	1670		1360	81	64-132
4,6-Dinitro-2-methylphe	3330		4080	122	70-158
2,4-Dinitrophenol	3330		5820	175	31-186
2,4-Dinitrotoluene	1670		1640	98	22-139
2,6-Dinitrotoluene	1670		1380	83	64-142
Di-n-octylphthalate	1670		1290	77	42-172
Diphenylamine/n-NDPA	1670		1450	87	55-140
Fluoranthene	1670		1710	102	71-132
Fluorene	1670		1410	84	65-126
Hexachlorobenzene	1670		1320	79	64-130
Hexachlorobutadiene	1670		1280	77	62-116
Hexachlorocyclopentadie	1670		1230	74	16-160
Hexachloroethane	1670		1260	75	58-110
Indeno(1,2,3-cd)pyrene	1670		1420	85	34-170
Isophorone	1670		1330	80	35-135
2-Methylnaphthalene	1670		1260	75	57-123
2-Methylphenol	3330		2620	79	56-132
3&4-Methylphenol	3330		2590	78	68-111
Naphthalene	1670		1290	77	62-113
2-Nitroaniline	1670		1500	90	63-138
3-Nitroaniline	1670		1530	92	53-128

Column to be used to flag recovery and RPD values with an asterisk
 * Values outside of QC limits

COMMENTS:

FORM 3
SOIL BNA-GCMS LABORATORY CONTROL SAMPLE

377 366

Lab Name: ETC, INC.

Lab Prep Batch: P04056

SDG No.: 9810-646

Matrix Spike - Sample No.: P04056LCS

Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
4-Nitroaniline	1670		2340	140	60-140
Nitrobenzene	1670		1200	72	59-123
2-Nitrophenol	3330		2630	79	52-145
4-Nitrophenol	3330		3390	102	12-105
N-Nitrosodipropylamine	1670		979	59	24-141
Pentachlorophenol	3330		3800	114	6-164
Phenanthrene	1670		1470	88	66-128
Phenol	3330		2580	77	22-127
Pyrene	1670		1890	113	33-155
Pyridine	1670		1230	74	41- 94
1,2,4-Trichlorobenzene	1670		1280	77	30-127
2,4,5-Trichlorophenol	3330		3060	92	50-173
2,4,6-Trichlorophenol	3330		2880	86	46-161

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 67 outside limits

COMMENTS:

377 367

FORM 3
SOIL BNA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC, INC.

Lab Prep Batch: P04056

SDG No.: 9810-646

Matrix Spike - Sample No.: 9810-622-1

Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Acenaphthene	3280	0.00	2390	73	34-126
4-Chloro-3-Methylphenol	5240	0.00	4170	80	33-147
2-Chlorophenol	5240	0.00	3710	71	35-138
1,4-Dichlorobenzene	3280	0.00	2340	71	26-121
2,4-Dinitrotoluene	3280	0.00	2790	85	22-139
4-Nitrophenol	5240	0.00	5520	105	12-105
N-Nitrosodinpropylamine	3280	0.00	2300	70	24-141
Pentachlorophenol	5240	0.00	5180	99	6-164
Phenol	5240	0.00	3340	64	22-127
Pyrene	3280	67.3	3140	94	33-155
1,2,4-Trichlorobenzene	3280	0.00	2310	70	30-127

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
Acenaphthene	3280	2090	64	13	20	34-126
4-Chloro-3-Methylphenol	5240	3540	68	16	20	33-147
2-Chlorophenol	5240	2880	55	25*	20	35-138
1,4-Dichlorobenzene	3280	1800	55	25*	20	26-121
2,4-Dinitrotoluene	3280	2560	78	8	20	22-139
4-Nitrophenol	5240	5130	98	7	20	12-105
N-Nitrosodinpropylamine	3280	2000	61	14	20	24-141
Pentachlorophenol	5240	4540	87	13	20	6-164
Phenol	5240	2750	52	21*	20	22-127
Pyrene	3280	2920	87	8	20	33-155
1,2,4-Trichlorobenzene	3280	1930	59	17	20	30-127

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 3 out of 11 outside limits

Spike Recovery: 0 out of 22 outside limits

COMMENTS:

FORM III BNA-GCMS

000048

Environmental Testing & Consulting, Inc.

Quality Control Reports

GC Pesticides

377 369

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC PESTICIDES - SOIL

Client Name : OHM Remediation Services
Project Name : Defense Depot Memphis, TN
ETC Order # : 9810-646
Method (SW-846) : 8081A/3550B

HOLDING TIMES

Sample Extraction : All soil samples extracted within 14 days.
Sample Analysis : All samples analyzed within 40 days of
extraction.

QUALITY CONTROL

QC Batch Form 4 Summary
P06028 P06028LB

System Monitoring Compounds FORM 2
Surrogate recoveries within QC limits.*
*

Surrogate recoveries for Decachlorobiphenyl were flagged as outside QC Limits in samples 9810-646-01(A1-C1-001) and 9810-618-01MS/MSD (C-TS-008) associated with this project. Review of the extraction information and the raw data showed no obvious matrix interference. Sample 9810-646-01 was re-analyzed for verification with recoveries within QC Limits.

Laboratory Control Sample FORM 3
P06028BS

All criteria met.

Matrix Spike / Matrix Spike Dup FORM 3
9810-618-01 RPD : All analytes within QC limits.*
C-TS-008 Spike Recovery : All analytes within QC limits.*
*
RPD for Methoxychlor was flagged as outside QC Limits due to low recovery in the Matrix Spike Duplicate. MS recovery was within QC Limits.

Recoveries and RPD for 4,4'-DDT were flagged outside QC Limits in the Matrix Spike and Matrix Spike Duplicate.

Recoveries for delta-BHC were flagged outside QC Limits in the Matrix Spike and Matrix Spike Duplicate.

Refer to Laboratory Control Sample(s) for system verification.

Method Blank FORM 4
P06028LB

No Target Analytes detected above Practical Quantitation Limit.

CALIBRATION

Initial Calibration : All criteria met. FORM 6
Calibration Verification : All criteria met. FORM 7*
Endrin/Breakdown : All criteria met. FORM 7A

000050

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC PESTICIDES - SOIL

377 370

Client Name : OHM Remediation Services
Project Name : Defense Depot Memphis, TN

ETC Order # : 9810-646
Method (SW-846) : 8081A/3550B

CALIBRATION

*

Calibration Verification(CV) : P310251A.30R (Primary)

Analyte	%Diff(15% Max)	Response
alpha-BHC	26.4	High
beta-BHC	15.4	High
delta-BHC	32.0	High
4,4'-DDD	48.1	High
4,4'-DDT	94.5	Low
Endosulfan sulfate	21.8	High
Endrin ketone	42.1	Low
Heptachlor	29.5	Low
Methoxychlor	98.2	Low
Tetrachloro-m-xylene	28.6	High
Decachlorobiphenyl	23.2	Low

Low responses indicates that reported levels for these analytes may be biased low. High responses indicates that reported levels for these analytes may be biased high. Recoveries for these analytes were within QC Limits in P06028BS. Surrogate recoveries for Tetrachloro-m-xylene were within QC Limits for all samples associated with this project. The data was not affected.

Calibration Verification(CV) : P110221A.32R (Primary)

Analyte	%Diff(15% Max)	Response
alpha-BHC	22.8	High
beta-BHC	21.1	High
delta-BHC	58.0	High
gamma-BHC	22.6	High
4,4'-DDD	26.0	High
4,4'-DDT	54.2	Low
Endosulfan I	18.8	High
Endosulfan II	19.7	High
Endosulfan sulfate	22.2	High
Endrin aldehyde	32.6	High
Methoxychlor	50.5	Low
Tetrachloro-m-xylene	21.0	High
Decachlorobiphenyl	29.1	Low

Low responses indicates that reported levels for these analytes may be biased low. High responses indicates that reported levels for these analytes may be biased high. Recoveries for these analytes were within QC Limits in P06028BS. Surrogate recoveries for Tetrachloro-m-xylene were within QC Limits for all samples associated with this project. The data was not affected.

000051

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC PESTICIDES - SOIL

Client Name : OHM Remediation Services
Project Name : Defense Depot Memphis, TN
ETC Order # : 9810-646
Method (SW-846) : 8081A/3550B

CALIBRATION

*

Calibration Verification(CV) : P110221A.33R (Primary)

Analyte	%Diff(15% Max)	Response
alpha-BHC	22.4	High
beta-BHC	21.5	High
delta-BHC	56.0	High
gamma-BHC	23.2	High
4,4'-DDD	26.6	High
4,4'-DDT	54.4	Low
Endosulfan I	17.7	High
Endosulfan II	19.8	High
Endosulfan sulfate	19.0	High
Endrin aldehyde	30.8	High
Methoxychlor	49.5	Low
Tetrachloro-m-xylene	21.6	High
Decachlorobiphenyl	30.0	Low

Low responses indicates that reported levels for these analytes may be biased low. High responses indicates that reported levels for these analytes may be biased high. Recoveries for these analytes were within QC Limits in P06028BS. Surrogate recoveries for Tetrachloro-m-xylene were within QC Limits for all samples associated with this project. The data was not affected.

SAMPLE ANALYSIS

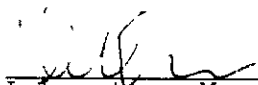
Instrumentation : HP 5890 Series II GC
Dilutions Required : No dilutions required.*

*

Final results for 4,4'-DDD and 4,4'-DDT were flagged with M-value due to breakdown in the Ending Check Standard. These results represent a minimum value found in sample 9810-646-01(A1-C1-001) for these analytes.

Dilutions of 1:10 were performed on sample 9810-646-01 associated with this project to bring 4,4'-DDD and Dieldrin within calibration range.

Dilutions of 1:100 were performed on sample 9810-646-01 associated with this project to bring 4,4'-DDE and 4,4'-DDT within calibration range.


Laboratory Manager

000052

FORM 2
SOIL PESTICIDE SURROGATE RECOVERY

377 372

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-646

Level: (low/med) LOW

	EPA GC SAMPLE NO.	S1 (TMX) #	S2 (DBC) #	S3 #	S4 #	S5 #	S6 #	S7 #	S8 #	TOT OUT
01	P06028LB	90	96							0
02	P06028BS	97	120							0
03	9810-646-1	95	113							0
04	9810-618-1	82	78							0
05	9810-646-1	96	50*							1
06	9810-618-1MS	100	63*							1
07	9810-618-1MS	90	58*							1
08										0
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QC LIMITS

S1 (TMX) = Tetrachloro-m-xylene (39-130)

S2 (DBC) = Decachlorobiphenyl (64-154)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

000053

377 373

FORM 4
PESTICIDE METHOD BLANK SUMMARY

EPA GC SAMPLE NO

P06028LB

Lab Name: ETC, INC.

Lab Prep Batch: P06028

SDG No.: 9810-646

Lab File ID: P110221A-11R

Instrument ID: PEST1A

Matrix: (soil/water) SOIL

Date Analyzed: 10/22/98

Level: (low/med) LOW

Time Analyzed: 1543

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA GC SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	P06028BS		P110221A-13R	10/22/98
02	9810-618-1		P110221A-23R	10/22/98
03	9810-646-1		P110221A-28R	10/23/98
04	9810-618-1MS		P110221A-30R	10/23/98
05	9810-618-1MS		P110221A-31R	10/23/98
06	9810-646-1		P102221A-22R	10/22/98
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COMMENTS:

000054

FORM 1
PESTICIDE ORGANICS ANALYSIS DATA SHEET

377 374
EPA GC SAMPLE NO.

P06028LB

Lab Name: ETC, INC.

SDG No.: 9810-646

Matrix: (soil/water) SOIL

Lab Prep Batch: P06028

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: P110221A-11R

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 10(mL)

Date Analyzed: 10/22/98

Injection Volume: 1.0(uL)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
309-00-2-----	Aldrin	1.33333	U
319-84-6-----	alpha-BHC	1.33333	U
319-85-7-----	beta-BHC	1.33333	U
319-86-8-----	delta-BHC	1.33333	U
58-89-9-----	gamma-BHC (Lindane)	1.33333	U
5103-71-9-----	alpha-chlordane	1.33333	U
5103-74-2-----	gamma-chlordane	1.33333	U
72-54-8-----	4,4'-DDD	1.33333	U
72-55-9-----	4,4'-DDE	1.33333	U
50-29-3-----	4,4'-DDT	1.33333	U
60-57-1-----	Dieldrin	1.33333	U
959-98-8-----	Endosulfan I	1.33333	U
33213-65-9-----	Endosulfan II	1.33333	U
1031-07-8-----	Endosulfan sulfate	1.33333	U
72-20-8-----	Endrin	1.33333	U
7421-93-4-----	Endrin aldehyde	1.33333	U
53494-70-5-----	Endrin Ketone	1.33333	U
76-44-8-----	Heptachlor	1.33333	U
1024-57-3-----	Heptachlor epoxide	1.33333	U
72-43-5-----	Methoxychlor	1.33333	U

FORM I PESTICIDE

000055

377 375

FORM 3
SOIL PESTICIDE LABORATORY CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: P06028

SDG No.: 9810-646

Matrix Spike - Sample No.: P06028BS

Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Aldrin	33.33333		29.73038	89	31-111
alpha-BHC	33.33333		31.00287	93	22-112
beta-BHC	33.33333		32.09872	96	54-120
delta-BHC	33.33333		30.78517	92	10- 96
gamma-BHC (Lindane)	33.33333		30.29180	91	26-113
alpha-chlordane	33.33333		31.70888	95	49-103
gamma-chlordane	33.33333		31.66888	95	50-106
4,4'-DDD	33.33333		30.00100	90	47-112
4,4'-DDE	33.33333		29.37270	88	36-117
4,4'-DDT	33.33333		32.02871	96	49-124
Dieldrin	33.33333		29.46789	88	44-108
Endosulfan I	33.33333		33.09489	99	49-103
Endosulfan II	33.33333		36.40757	109	53-115
Endosulfan sulfate	33.33333		30.72723	92	51-110
Endrin	33.33333		29.99402	90	44-118
Endrin aldehyde	33.33333		38.51914	116	48-128
Endrin Ketone	33.33333		35.39395	106	38-130
Heptachlor	33.33333		31.76719	95	47-113
Heptachlor epoxide	33.33333		30.96252	93	47-112
Methoxychlor	33.33333		32.69580	98	39-147

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 20 outside limits

COMMENTS:

FORM 3
SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

377 376

Lab Name: ETC, INC.

Lab Prep Batch: P06028

SDG No.: 9810-646

Matrix Spike - Sample No.: 9810-618-1

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Aldrin	33.33333	0.00000	29.97821	90	31-111
alpha-BHC	33.33333	0.63000	33.33939	98	22-112
beta-BHC	33.33333	0.00000	35.04185	105	54-120
delta-BHC	33.33333	0.00000	44.43164	133*	10- 96
gamma-BHC (Lindane)	33.33333	0.00000	34.50321	104	26-113
alpha-chlordane	33.33333	0.00000	30.66310	92	49-103
gamma-chlordane	33.33333	0.00000	31.34393	94	50-106
4,4'-DDD	33.33333	0.00000	33.53420	101	47-112
4,4'-DDE	33.33333	0.00000	27.32675	82	36-117
4,4'-DDT	33.33333	2.67066	16.83855	42*	49-124
Dieldrin	33.33333	0.00000	28.88424	87	44-108
Endosulfan I	33.33333	0.00000	33.28453	100	49-103
Endosulfan II	33.33333	0.00000	34.35256	103	53-115
Endosulfan sulfate	33.33333	0.00000	33.21908	100	51-110
Endrin	33.33333	0.71415	28.29932	83	44-118
Endrin aldehyde	33.33333	0.50418	40.64407	120	48-128
Endrin Ketone	33.33333	0.00000	29.09523	87	38-130
Heptachlor	33.33333	0.00000	27.68380	83	47-113
Heptachlor epoxide	33.33333	0.00000	30.71590	92	47-112
Methoxychlor	33.33333	0.00000	15.23592	46	39-147

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS:

000057

FORM 3
SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC, INC.

Lab Prep Batch: P06028

SDG No.: 9810-646

Matrix Spike - Sample No.: 9810-618-1

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS	
					RPD	REC.
Aldrin	32.67973	26.52977	81	10	20	31-111
alpha-BHC	32.67973	29.61942	89	10	20	22-112
beta-BHC	32.67973	31.19384	95	10	20	54-120
delta-BHC	32.67973	39.10241	120*	10	20	10- 96
gamma-BHC (Lindane)	32.67973	30.07065	92	12	20	26-113
alpha-chlordane	32.67973	26.71262	82	11	20	49-103
gamma-chlordane	32.67973	27.05623	83	12	20	50-106
4,4'-DDD	32.67973	29.77358	91	10	20	47-112
4,4'-DDE	32.67973	24.04882	74	10	20	36-117
4,4'-DDT	32.67973	13.09709	32*	27*	20	49-124
Dieldrin	32.67973	24.62303	75	15	20	44-108
Endosulfan I	32.67973	29.41493	90	10	20	49-103
Endosulfan II	32.67973	31.33562	96	7	20	53-115
Endosulfan sulfate	32.67973	29.40625	90	10	20	51-110
Endrin	32.67973	23.53722	70	17	20	44-118
Endrin aldehyde	32.67973	36.73165	111	8	20	48-128
Endrin Ketone	32.67973	26.50775	81	7	20	38-130
Heptachlor	32.67973	23.73679	73	13	20	47-113
Heptachlor epoxide	32.67973	26.95457	82	11	20	47-112
Methoxychlor	32.67973	11.35121	35*	27*	20	39-147

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 2 out of 20 outside limits

Spike Recovery: 5 out of 40 outside limits

COMMENTS:

Environmental Testing & Consulting, Inc.

Quality Control Reports

GC PCBs

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC PCBS - SOIL

Client Name : OHM Remediation Services
Project Name : Defense Depot Memphis, TN
ETC Order # : 9810-646
Method (SW-846) : 8082/3550B

HOLDING TIMES

Sample Extraction : All soil samples extracted within 14 days.
Sample Analysis : All samples analyzed within 40 days of
extraction.

QUALITY CONTROL

QC Batch Form 4 Summary
P06028 P06028LB

System Monitoring Compounds FORM 2
Surrogate recoveries within QC limits.*
*

Surrogate recovery for Decachlorobiphenyl was flagged as outside QC Limits in sample 9810-646-01(A1-C1-001). Review of the raw data showed interference from Non-Target Analytes present in the sample. This sample was re-analyzed for verification with similar recoveries

Laboratory Control Sample FORM 3
P06028BS

All criteria met.

Matrix Spike / Matrix Spike Dup FORM 3
9810-618-01 RPD : All analytes within QC limits.
Spike Recovery : All analytes within QC limits.

Refer to Laboratory Control Sample(s) for system verification.

Method Blank FORM 4
P06028LB

No Target Analytes detected above Practical Quantitation Limit.

CALIBRATION

Initial Calibration : All criteria met. FORM 6
Calibration Verification : All criteria met. FORM 7*
*

Calibration Verification(CV) : C2102111B.45R (Primary)

Analyte	%Diff(15% Max)	Response
Decachlorobiphenyl	43.6	Low

Low response indicates that reported levels for this analyte may be biased low. Surrogate recoveries for Tetrachloro-m-xylene were within QC Limits for all samples associated with this project. The data was not affected.

000060

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC PCBS - SOIL

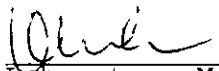
377 380

Client Name : OHM Remediation Services
Project Name : Defense Depot Memphis, TN

ETC Order # : 9810-646
Method (SW-846) : 8082/3550B

SAMPLE ANALYSIS

Instrumentation : HP 5890 Series II GC
Dilutions Required : No dilutions required.


Laboratory Manager

000061

FORM 2
SOIL PCB SURROGATE RECOVERY

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-646

Level:(low/med) LOW

	EPA GC SAMPLE NO.	S1 (TMX) #	S2 (DBC) #	S3 #	S4 #	S5 #	S6 #	S7 #	S8 #	TOT OUT
01	P06028LB	85	99							0
02	P06028BS	89	90							0
03	9810-646-1	76	320D							1
04	9810-618-1	77	58							0
05	9810-646-1	82	240*							1
06	9810-618-1MS	78	49							0
07	9810-618-1MS	78	42							0
08										
09										
10										
11										
12										
13										
14										
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27										
28										
29										
30										

QC LIMITS

S1 (TMX) = Tetrachloro-m-xylene (20-122)

S2 (DBC) = Decachlorobiphenyl (17-141)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

FORM 4
PCB METHOD BLANK SUMMARY

EPA GC SAMPLE NO.

P06028LB

Lab Name: ETC, INC.

Lab Prep Batch: P06028

SDG No.: 9810-646

Lab File ID: C210211B-10R

Instrument ID: PEST2B

Matrix: (soil/water) SOIL

Date Analyzed: 10/21/98

Level: (low/med) LOW

Time Analyzed: 2343

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA GC SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	P06028BS		C210211B-14R	10/22/98
02	9810-646-1		C310221A-27R	10/23/98
03	9810-618-1		C210211B-38R	10/23/98
04	9810-646-1		C310221A-28R	10/23/98
05	9810-618-1MS		C210211B-42R	10/23/98
06	9810-618-1MS		C210211B-43R	10/23/98
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

COMMENTS:

377 383

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

EPA GC SAMPLE NO.

Lab Name: ETC, INC.

P06028LB

SDG No.: 9810-646

Matrix: (soil/water) SOIL

Lab Prep Batch: P06028

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C210211B-10R

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 10(mL)

Date Analyzed: 10/21/98

Injection Volume: 1.0(uL)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2-----	Aroclor 1016	16.67	U
11104-28-2-----	Aroclor 1221	16.67	U
11141-16-5-----	Aroclor 1232	16.67	U
53469-21-9-----	Aroclor 1242	16.67	U
11097-69-1-----	Aroclor 1254	16.67	U
11096-82-5-----	Aroclor 1260	16.67	U
12672-29-6-----	Aroclor 1248	16.67	U

FORM I PCB

000064

FORM 3
SOIL PCB LABORATORY CONTROL SAMPLE

377 384

Lab Name: ETC, INC.

Lab Prep Batch: P06028

SDG No.: 9810-646

Matrix Spike - Sample No.: P06028BS

Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Aroclor 1242	333.3		331.7	100	25-125
Aroclor 1260	333.3		292.4	88	25-125

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits

Spike Recovery: 0 out of 2 outside limits

COMMENTS:

FORM III PCB

000065

377 385

FORM 3
SOIL PCB MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC, INC.

Lab Prep Batch: P06028

SDG No.: 9810-646

Matrix Spike - Sample No.: 9810-618-1

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Aroclor 1242	333.3	0.000	304.9	91	25-125
Aroclor 1260	333.3	0.000	236.2	71	25-125

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	LIMITS REC.
Aroclor 1242	326.8	301.1	92	1	20	25-125
Aroclor 1260	326.8	235.6	72	1	20	25-125

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 2 outside limits

Spike Recovery: 0 out of 4 outside limits

COMMENTS:

FORM III PCB

J00066

**COMPOSITE CONFIRMATION SAMPLES COLLECTED
FOLLOWING PCB FIELD SCREENING
(NON-EXCAVATED GRIDS IN AREA B – AT LAND SURFACE)**

Date Collected 10/22/98

**B1-C2 (Composite of Grids B1-1-3 & B1-1-4)
B2-C1 (Composite of Grids B2-1, B2-2 & B2-3)
B3-C1 (Composite of Grids B3-1 & B3-2)
B4-C1 (Duplicate of B2-C1)
C-EQ-CS-003 (Equipment Blank)**



ENVIRONMENTAL TESTING & CONSULTING, INC.

2921 Walnut Grove Road • Memphis, TN 38111 • (901) 327-2750 • FAX (901) 327-6334

Founded 1972

377 387

October 26, 1998

Ms. Elena Rodriguez
OHM Remediation Services
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Ref: Analytical Testing
ETC Order # 9810751
Project Description DDMT
Memphis, TN
Project # 20560
FID # DACA45-96-D-0014

The above referenced project has been analyzed per your instructions. The analyses were performed in our laboratory in accordance with Standard Methods 17th/18th Edition; The Solid Waste Manual SW-846; EPA Methods for the Analysis of Water and Wastes and/or 40 CFR part 136.

The results are shown on the attached analysis sheet(s).

Please do not hesitate to contact our office if you have any questions.

Sincerely,

Nathan A. Pera, IV
Chief Executive Officer

rt
Attachment

OHM_DDMT

Certifications

Tennessee #TN02027
Arkansas
Alabama #40730
Kentucky #90047
North Carolina #415
South Carolina #84002002

Mississippi
Oklahoma #9311
Virginia #00106
Washington #C248
US Army Corps of Engineers

377 388

Chemical Analytical Data Review/Evaluation/Validation

SOUTHERN REGION

Report Type: ☐ Preliminary ☒ Final Date Received: _____ Project Number: 20560
 Project Name: DDMT Analysis/Method: VOCs, SVOCs, Pest, HAL
 Laboratory: ETC Lab Project/Case Number: meals, CN 9810751
 Sample Number(s): B1-C2, B2-C1, B3-C1, B4-C1, C-EQ-CS-003

Evaluated By: S Pasanjape Date Evaluated: 2/15/99
 Data Package Deliverables Requirement: ☐ OHM Minimum ☒ OHM Standard ☐ OHM Maximum
☐ Other, please describe _____

Quality Control Deliverables	Required	Received	Passed	Failed
PQL, MDL, RL, etc meets DQOs	☒		☒	
Comment:				
Holding Times			☒	
Comment:				
Sample Condition (preservatives, containers, temperature, etc) / Case Narrative	☒		☒	
Comment:				
Surrogate Recoveries	☒		☒	
Comment: one out for BNA, acceptable data OK. Pest, out for non-OHM samples, and high for EQ-CS-003, Results ND. Data OK, within QAPP limits				
Lab Control Sample Recoveries	☒		☒	
Comment: high for van, results ND. Low for non long term comp out for BNA, results flagged. High for Pest, results ND. Data acceptable				
Lab Control Sample Duplicate or Other Spike Recoveries	☒		☒	
Comment: see ml				
Lab Control Sample Duplicate or Other Laboratory Duplicate RPD	☒		☒	
Comment:				
Matrix Spike Recoveries	☒		☒	
Comment: out for metals, BNA, Pest, LCS OK, Data accepted				
Matrix Spike Duplicate Recoveries	☒		☒	
Comment: out for metals, BNA, Pest, LCS OK Data accepted				
Matrix Spike / Matrix Spike Duplicate RPD	☒		☒	
Comment: out for metals, BNA, Pest, LCS OK Data accepted				
Laboratory Blanks (daily, method, instrument)	☒		☒	
Comment:				
Field Blanks (trip, eqpt rinsate, ambient, matrix)	☒		☒	
Comment:				

Quality Control Deliverables		Required	Received	Passed	Failed
Field Duplicates RPD		X			
Comment:	<i>N/A</i>				
Second Source Check					
Comment:					
Second Column Confirmation		✓		✓	
Comment:					
Percent Moisture/Solids				✓	
Comment:					
Initial / Continuing Calibrations		✓		✓	
Comment:	<i>out for VOA Results flagged J and accepted.</i>				
Internal Standard Areas and Retention Times (Organics Only)		✓		✓	
Comment:	<i>out for BVA. Results flagged J and accepted.</i>				
Chromatograms		✓		✓	
Comment:					
Sample Prep Worksheets		✓		✓	
Comment:					
Raw Data Calculations					
Comment:	<i>N/A</i>				
Laboratory Duplicates					
Comment:					
Instrument Performance Checks (Organics Only)		✓		✓	
Comment:					
Tentatively Identified Compounds (TICs)		✓		✓	
Comment:					
Completeness	# Samples	# Analyses	Tot # Analyses	Tot # Accept Analyses	% Complete
Completeness = (Tot # Analyses / Tot # Accepted Analyses) x 100	5	5	25	25	100

General Comments:

Summary: ☐ See attached pages

Date flagged for LCS recovered continuing calibration and internal standard area counts. All data accepted as reported

Check Applicable:

- ☐ Lab contacted—Corrective actions in process Date Contacted: _____
☐ Corrective actions received and accepted Date Received/Accepted: _____
☐ The data, as reported by the laboratory, are acceptable.
☒ The data, with qualifiers as described in the "Summary" portion of this report, are acceptable.
☐ The data are unacceptable.
☐ Other _____

S. Pasanape

 Evaluator's Signature

2/5/99

 Date

Environmental Testing & Consulting, Inc.
Data Qualifiers for Organic Reporting

Within the attached report, some analytical data may be reported as "Qualified Data" as indicated by a "Data Qualifier" next to the result. This table summarizes the possible "Data Qualifiers" that may be associated with this report.

Q	Surrogate Recovery Outside QC Limits
J	Estimated Value. Presence of the compound was confirmed but less than the reported detection limit.
E	Concentration exceeds the established method calibration range but is within the working range of the instrument.
B	Analyte detected in the associated Method Blank.
U	Reported result was unconfirmed. Refer to Case Narrative.
N	Non-Compliance Report associated with this sample or project.
C	Result reported from GC/MS confirmation analysis.
M	Result reported represents a minimum value. Refer to Case Narrative.
NC	Result reported from Primary Column. Result did not confirm.
*	QC Data (percent recovery/RPD for a particular analyte was outside QC Limits)

377 391

Environmental Testing & Consulting, Inc.

Login
Chain-of-Custody

000002

Subsidiary of OHM Corporation
US Route 224 East • Findlay,

(419) 423-3526

EJB-0019 REV 09

377 392

OHM's LAB COORDINATOR		LAB COORDINATOR'S PHONE		LAB COORDINATOR'S FAX		LABORATORY SERVICE ID		LABORATORY CONTACT		MAIL REPORT (COMPANY NAME)		
Elena Rodriguez		770-734-8060		770-453-7716		ETC		Nathan Pera		OHM Remediation Services Corp		
PROJECT NAME		PROJECT LOCATION		PROJECT NUMBER		LABORATORY PROJECT		LABORATORY FAX		RECIPIENT NAME		
DDMT		Memphis TN		20560		901-327-2750		901-327-6334		Elena Rodriguez		
PROJECT CONTACT		PROJECT PHONE NUMBER		PROJECT FAX		LABORATORY ADDRESS		LABORATORY PHONE		ADDRESS		
Steve Offner		901-743-1117		901-743-1048		2924 Walnut Grove Road		5445 Triangle Pkwy, #400		Norcross, GA 30092		
PROJECT ADDRESS		CITY STATE AND ZIP CODE		CLIENT		CITY STATE AND ZIP CODE		CITY STATE AND ZIP CODE		CITY STATE AND ZIP CODE		
1708 Dunn Ave.		Memphis, TN 38114		USACE		Memphis TN 38111						
PROJECT MANAGER		PROJECT MANAGER'S FAX		PROJECT MANAGER'S PHONE								
Steve Offner		770-453-7716										
Item	Sample Identifier	Matrix	Date	Time	Preserved	# of Cont.	QC Level	TAT	Analyses			Comments
1	B1-C1		5/1/02	1300	3x402 4x59	0111 0111	3d4p	7	✓	✓	✓	Please fax results on DUE DATE to SUE and to Lab Coordinator Samples on field Circuit function notice
2	B1-C2		5/1/02	1315	3x402 4x59	0111 0111	3d4p	7	✓	✓	✓	
3	B2-C1		5/1/02	1330	3x402 4x59	0111 0111	3d4p	7	✓	✓	✓	
4	B3-C1		5/1/02	1400	3x402 4x59	0111 0111	3d4p	7	✓	✓	✓	
5	B4-C1		5/1/02	315	3x402 4x59	0111 0111	3d4p	7	✓	✓	✓	
6	C-ECRCS-003		1/19/02	1320	5x111 5x111	0111 0111	3d4p	7	✓	✓	✓	
7												
8												
9												
10												
SAMPLES COLLECTED BY: Steve Grand/SKH/MA		COORR AND AIR BIL NUMBER		DELIVERED TO: PERSON		COOLR TEMPERATURE UPON RETURN		2100013				
REQUISITION BY: John J. Vite		RECEIVED BY: [Signature]		DATE: 10/29/02		TITLE: 1029/02						
Distribution White - Laboratory (To be returned with Analytical Report), Goldenrod - Project File, Yellow - Project Data Manager												

377 393

COOLER RECEIPT FORM

Cooler Receipt Form
9810751 CRF p 1

LIMS # 9810-751 Number of Coolers 2
 Date Received 10/22/98
 VDTSR 10/23/98 08 30
 PROJECT DDMT/Memphis, TN

USE OTHER SIDE OF THIS FORM TO NOTE DETAILS CONCERNING CHECK-IN PROBLEMS

A PRELIMINARY EXAMINATION PHASE Date cooler was opened 10/22/98
 by (print) Lynette Bugg (sign) Lynette Bugg

1 Did cooler come with a shipping slip (airbill, etc)? NO
 If YES, enter carrier name & airbill number _____

2a Were custody seals on outside of cooler? NO
 2b Were custody seals on sample containers? NO

3 Were custody seals unbroken and intact at the date and time of arrival? NA

4 Did you screen samples for radioactivity using a Geiger Counter? NO

5 Were custody papers sealed in a plastic bag & taped inside to the lid? NO

6 Were custody papers filled out properly (ink, signed, etc)? YES

7 Did you sign custody papers in the appropriate place? YES

8 Was project identifiable from custody papers? If YES, enter project name at top of this form YES

9 If required, was enough ice used? cooler temp <4°C, Type of ice Crushed YES

10 Have designated person initial here to acknowledge receipt of cooler LB date 10/22/98

B LOG-IN PHASE Date samples were logged-in 10/23/98
 by (print) Lynette Bugg (sign) Lynette Bugg

11 Describe type of packing in cooler Bubble Wrap, Baggies and Ice

12 Were all bottles sealed in separate plastic bags? YES

13 Did all bottles arrive unbroken and were labels in good condition? YES

14 Were all bottle labels complete (ID, date, time, signature, preserved, etc)? YES

15 Did all bottle labels agree with custody papers? YES

16 Were correct containers used for the tests indicated? YES

17 Were correct preservatives added to samples? YES

18 Was a sufficient amount of sample sent for tests indicated? YES

19 Were bubbles absent in VOA samples? If NO, list by sample# _____ YES

20 Was the project manager called and status discussed? If YES, give details on the back of this form NO

21 Who was called? _____ By whom? _____ (date) _____

VDTSR - Validated Date/Time of Sample Receipt (Date sample is logged into LIMS system)

000004

377 394

COOLER RECEIPT FORM

✓ Cooler Receipt Form
✓ 9810751 CRF p 2
✓

Samples were originally received on an ON HOLD basis

Mr Steve Offner phoned on 10/23/98 and stated to analyze all samples except for B1-C1

LB 10/23/98

000005

377 395

ENVIRONMENTAL TESTING & CONSULTING, INC.
 2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ANALYTICAL SUMMARY TABLE

Client Name OHM Remediation Services
 Site ID DDMT
 Memphis, TN

<u>ETC</u>				
<u>Sample ID</u>	<u>Field ID</u>	<u>Matrix</u>	<u>Method</u>	<u>Method Description</u>
981075101	B1-C2	SOIL	6010B	Silver
981075101	B1-C2	SOIL	6010B	Aluminum
981075101	B1-C2	SOIL	7060A	Arsenic
981075101	B1-C2	SOIL	8270C	GC/MS Base/Neutral & Acid
981075101	B1-C2	SOIL	6010B	Barium
981075101	B1-C2	SOIL	6010B	Beryllium
981075101	B1-C2	SOIL	6010B	Calcium
981075101	B1-C2	SOIL	6010B	Cadmium
981075101	B1-C2	SOIL	9010A	Cyanide
981075101	B1-C2	SOIL	6010B	Cobalt
981075101	B1-C2	SOIL	6010B	Chromium
981075101	B1-C2	SOIL	6010B	Copper
981075101	B1-C2	SOIL	6010B	Iron
981075101	B1-C2	SOIL	7471A	Mercury
981075101	B1-C2	SOIL	6010B	Potassium
981075101	B1-C2	SOIL	6010B	Magnesium
981075101	B1-C2	SOIL	6010B	Manganese
981075101	B1-C2	SOIL	6010B	Sodium
981075101	B1-C2	SOIL	6010B	Nickel
981075101	B1-C2	SOIL	8081A	Organochlorine Pesticides
981075101	B1-C2	SOIL	7421	Lead
981075101	B1-C2	SOIL	6010B	Antimony
981075101	B1-C2	SOIL	7740	Selenium
981075101	B1-C2	SOIL		EnCore Sampler (5 gram)
981075101	B1-C2	SOIL	7841	Thallium
981075101	B1-C2	SOIL	8260B	GC/MS Volatile Organics
981075101	B1-C2	SOIL	6010B	Vanadium
981075101	B1-C2	SOIL	6010B	Zinc
981075102	B2-C1	SOIL	6010B	Silver
981075102	B2-C1	SOIL	6010B	Aluminum
981075102	B2-C1	SOIL	7060A	Arsenic
981075102	B2-C1	SOIL	8270C	GC/MS Base/Neutral & Acid
981075102	B2-C1	SOIL	6010B	Barium
981075102	B2-C1	SOIL	6010B	Beryllium
981075102	B2-C1	SOIL	6010B	Calcium
981075102	B2-C1	SOIL	6010B	Cadmium
981075102	B2-C1	SOIL	9010A	Cyanide
981075102	B2-C1	SOIL	6010B	Cobalt
981075102	B2-C1	SOIL	6010B	Chromium
981075102	B2-C1	SOIL	6010B	Copper
981075102	B2-C1	SOIL	6010B	Iron
981075102	B2-C1	SOIL	7471A	Mercury
981075102	B2-C1	SOIL	6010B	Potassium
981075102	B2-C1	SOIL	6010B	Magnesium
981075102	B2-C1	SOIL	6010B	Manganese
981075102	B2-C1	SOIL	6010B	Sodium
981075102	B2-C1	SOIL	6010B	Nickel
981075102	B2-C1	SOIL	8081A	Organochlorine Pesticides
981075102	B2-C1	SOIL	7421	Lead
981075102	B2-C1	SOIL	6010B	Antimony
981075102	B2-C1	SOIL	7740	Selenium
981075102	B2-C1	SOIL		EnCore Sampler (5 gram)
981075102	B2-C1	SOIL	7841	Thallium
981075102	B2-C1	SOIL	8260B	GC/MS Volatile Organics
981075102	B2-C1	SOIL	6010B	Vanadium
981075102	B2-C1	SOIL	6010B	Zinc

ENVIRONMENTAL TESTING & CONSULTING, INC.
 2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ANALYTICAL SUMMARY TABLE

377 396

Client Name OHM Remediation Services
 Site ID DDMT
 Memphis, TN

ETC Sample ID	Field ID	Matrix	Method	Method Description
981075103	B3-C1	SOIL	6010B	Silver
981075103	B3-C1	SOIL	6010B	Aluminum
981075103	B3-C1	SOIL	7060A	Arsenic
981075103	B3-C1	SOIL	8270C	GC/MS Base/Neutral & Acid
981075103	B3-C1	SOIL	6010B	Barium
981075103	B3-C1	SOIL	6010B	Beryllium
981075103	B3-C1	SOIL	6010B	Calcium
981075103	B3-C1	SOIL	6010B	Cadmium
981075103	B3-C1	SOIL	9010A	Cyanide
981075103	B3-C1	SOIL	6010B	Cobalt
981075103	B3-C1	SOIL	6010B	Chromium
981075103	B3-C1	SOIL	6010B	Copper
981075103	B3-C1	SOIL	6010B	Iron
981075103	B3-C1	SOIL	7471A	Mercury
981075103	B3-C1	SOIL	6010B	Potassium
981075103	B3-C1	SOIL	6010B	Magnesium
981075103	B3-C1	SOIL	6010B	Manganese
981075103	B3-C1	SOIL	6010B	Sodium
981075103	B3-C1	SOIL	6010B	Nickel
981075103	B3-C1	SOIL	8081A	Organochlorine Pesticides
981075103	B3-C1	SOIL	7421	Lead
981075103	B3-C1	SOIL	6010B	Antimony
981075103	B3-C1	SOIL	7740	Selenium
981075103	B3-C1	SOIL		EnCore Sampler (5 gram)
981075103	B3-C1	SOIL	7841	Thallium
981075103	B3-C1	SOIL	8260B	GC/MS Volatile Organics
981075103	B3-C1	SOIL	6010B	Vanadium
981075103	B3-C1	SOIL	6010B	Zinc
981075104	B4-C1	SOIL	6010B	Silver
981075104	B4-C1	SOIL	6010B	Aluminum
981075104	B4-C1	SOIL	7060A	Arsenic
981075104	B4-C1	SOIL	8270C	GC/MS Base/Neutral & Acid
981075104	B4-C1	SOIL	6010B	Barium
981075104	B4-C1	SOIL	6010B	Beryllium
981075104	B4-C1	SOIL	6010B	Calcium
981075104	B4-C1	SOIL	6010B	Cadmium
981075104	B4-C1	SOIL	9010A	Cyanide
981075104	B4-C1	SOIL	6010B	Cobalt
981075104	B4-C1	SOIL	6010B	Chromium
981075104	B4-C1	SOIL	6010B	Copper
981075104	B4-C1	SOIL	6010B	Iron
981075104	B4-C1	SOIL	7471A	Mercury
981075104	B4-C1	SOIL	6010B	Potassium
981075104	B4-C1	SOIL	6010B	Magnesium
981075104	B4-C1	SOIL	6010B	Manganese
981075104	B4-C1	SOIL	6010B	Sodium
981075104	B4-C1	SOIL	6010B	Nickel
981075104	B4-C1	SOIL	8081A	Organochlorine Pesticides
981075104	B4-C1	SOIL	7421	Lead
981075104	B4-C1	SOIL	6010B	Antimony
981075104	B4-C1	SOIL	7740	Selenium
981075104	B4-C1	SOIL		EnCore Sampler (5 gram)
981075104	B4-C1	SOIL	7841	Thallium
981075104	B4-C1	SOIL	8260B	GC/MS Volatile Organics
981075104	B4-C1	SOIL	6010B	Vanadium
981075104	B4-C1	SOIL	6010B	Zinc

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ANALYTICAL SUMMARY TABLE

Client Name OHM Remediation Services
 Site ID DDMT
 Memphis, TN

ETC <u>Sample ID</u>	<u>Field ID</u>	<u>Matrix</u>	<u>Method</u>	<u>Method Description</u>
981075105	C-EQ-CS-003	AQUEOUS	6010B	Silver
981075105	C-EQ-CS-003	AQUEOUS	6010B	Aluminum
981075105	C-EQ-CS-003	AQUEOUS	7060A	Arsenic
981075105	C-EQ-CS-003	AQUEOUS	8270C	GC/MS Base/Neutral & Acid
981075105	C-EQ-CS-003	AQUEOUS	6010B	Barium
981075105	C-EQ-CS-003	AQUEOUS	6010B	Beryllium
981075105	C-EQ-CS-003	AQUEOUS	6010B	Calcium
981075105	C-EQ-CS-003	AQUEOUS	6010B	Cadmium
981075105	C-EQ-CS-003	AQUEOUS	335 2	Cyanide
981075105	C-EQ-CS-003	AQUEOUS	6010B	Cobalt
981075105	C-EQ-CS-003	AQUEOUS	6010B	Chromium
981075105	C-EQ-CS-003	AQUEOUS	6010B	Copper
981075105	C-EQ-CS-003	AQUEOUS	6010B	Iron
981075105	C-EQ-CS-003	AQUEOUS	7470A	Mercury
981075105	C-EQ-CS-003	AQUEOUS	6010B	Potassium
981075105	C-EQ-CS-003	AQUEOUS	6010B	Magnesium
981075105	C-EQ-CS-003	AQUEOUS	6010B	Manganese
981075105	C-EQ-CS-003	AQUEOUS	6010B	Sodium
981075105	C-EQ-CS-003	AQUEOUS	6010B	Nickel
981075105	C-EQ-CS-003	AQUEOUS	8081A	Organochlorine Pesticides
981075105	C-EQ-CS-003	AQUEOUS	7421	Lead
981075105	C-EQ-CS-003	AQUEOUS	6010B	Antimony
981075105	C-EQ-CS-003	AQUEOUS	7740	Selenium
981075105	C-EQ-CS-003	AQUEOUS	7841	Thallium
981075105	C-EQ-CS-003	AQUEOUS	8260B	GC/MS Volatile Organics
981075105	C-EQ-CS-003	AQUEOUS	6010B	Vanadium
981075105	C-EQ-CS-003	AQUEOUS	6010B	Zinc

Environmental Testing & Consulting, Inc.

Sample Reports

377 399

ENVIRONMENTAL TESTING & CONSULTING, INC.

Memphis, TN

INORGANIC ANALYSIS DATA SHEET

PERCENT SOLIDS

Client Name :OHM Remediation Services
Project Name :DDMT
Memphis, TN

Matrix :SOIL

Date Sample Received :10/22/98

Contract Laboratory Order Number :9810-751

<u>Contract Lab</u> <u>Sample No</u>	<u>Client Sample</u> <u>ID</u>	<u>Date</u> <u>Sampled</u>	<u>Result</u> <u>Units : (%)</u>	<u>Date</u> <u>Analyzed</u>	<u>Method</u>	<u>By</u>
9810-751-01	B1-C2	10/22/98	79	10/23/98	160.3	MC
9810-751-02	B2-C1	10/22/98	89	10/23/98	160.3	MC
9810-751-03	B3-C1	10/22/98	91	10/23/98	160.3	MC
9810-751-04	B4-C1	10/22/98	86	10/23/98	160.3	MC


LABORATORY MANAGER

000010

377 400

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

INORGANIC ANALYSIS DATA SHEET

Client Name OHM Remediation Services
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560

Site ID DDMT
Memphis, TN

Date Arrived 10/22/98
ETC Order Number 9810751

ETC Lab ID 9810751-01

Sample ID: B1-C2

Matrix :SOIL

Sample Date :10/22/98

TEST	RESULT	UNITS	DETECTION LIMIT	TIME ANALYZED	DATE ANALYZED BY	METHOD
Cyanide	ND	mg/Kg	1.00	09:00	10/23/98 GD	9010A


LABORATORY MANAGER

000011

377 401

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

INORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560

Site ID **DDMT**
Memphis, TN

Date Arrived 10/22/98
ETC Order Number 9810751

ETC Lab ID **9810751-02**
Sample ID: B2-C1

Matrix :SOIL
Sample Date :10/22/98

TEST	RESULT	UNITS	DETECTION LIMIT	TIME ANALYZED	DATE ANALYZED BY	METHOD
Cyanide	ND	mg/Kg	1 00	09:00	10/23/98 GD	9010A


LABORATORY MANAGER

000012

377 402

ENVIRONMENTAL TESTING & CONSULTING, INC.
2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
INORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

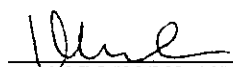
Project # 20560

Date Arrived 10/22/98
ETC Order Number 9810751

ETC Lab ID **9810751-03**
Sample ID: B3-C1

Matrix :SOIL
Sample Date :10/22/98

TEST	RESULT	UNITS	DETECTION LIMIT	TIME ANALYZED	DATE ANALYZED BY	METHOD
Cyanide	ND	mg/Kg	1.00	09:00	10/23/98 GD	9010A


LABORATORY MANAGER

000013

377 403

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

INORGANIC ANALYSIS DATA SHEET

Client Name OHM Remediation Services
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560

Site ID DDMT
Memphis, TN

Date Arrived 10/22/98

ETC Order Number 9810751

ETC Lab ID 9810751-04

Sample ID: B4-C1

Matrix :SOIL

Sample Date :10/22/98

TEST	RESULT	UNITS	DETECTION LIMIT	TIME ANALYZED	DATE ANALYZED BY	METHOD
Cyanide	ND	mg/Kg	1 00	09 00	10/23/98 GD	9010A


LABORATORY MANAGER

000014

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

INORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400

Project # 20560

Site ID **Norcross, GA 30092**

DDMT

Memphis, TN

Date Arrived 10/22/98

ETC Order Number 9810751

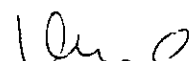
ETC Lab ID 9810751-05

Sample ID: C-EQ-CS-003

Matrix :AQUEOUS

Sample Date :10/22/98

TEST	RESULT	UNITS	DETECTION LIMIT	TIME ANALYZED	DATE ANALYZED BY	METHOD
Cyanide	ND	mg/L	0.010	09:00	10/23/98 GD	335.2


LABORATORY MANAGER

J000015

377 405

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

INORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560

Site ID **DDMT**
Memphis, TN

Date Arrived 10/22/98

ETC Order Number 9810751

ETC Lab ID **9810751-01****Sample ID: B1-C2**

Matrix :SOIL

Sample Date :10/22/98

TEST	RESULT	UNITS	DETECTION LIMIT	TIME ANALYZED	DATE ANALYZED BY	METHOD
Metals Digestion Batch	V8-SO-63				10/23/98	NR 3051
Mercury Digestion Batch	V4-SO-42				10/26/98	RM 7471A
Silver	1.09	mg/Kg	0.700	14:28	10/23/98	TD 6010B
Aluminum	10,300	mg/Kg	4.00	14:28	10/23/98	TD 6010B
Arsenic	15.9	mg/Kg	0.200	10:47	10/26/98	JF 7060A
Barium	112	mg/Kg	0.200	14:28	10/23/98	TD 6010B
Beryllium	0.556	mg/Kg	0.100	14:28	10/23/98	TD 6010B
Calcium	8,980	mg/Kg	1.00	14:28	10/23/98	TD 6010B
Cadmium	0.563	mg/Kg	0.400	14:28	10/23/98	TD 6010B
Cobalt	7.98	mg/Kg	0.700	14:28	10/23/98	TD 6010B
Chromium	19.5	mg/Kg	0.700	14:28	10/23/98	TD 6010B
Copper	25.3	mg/Kg	0.600	14:28	10/23/98	TD 6010B
Iron	15,800	mg/Kg	0.700	17:25	10/23/98	TD 6010B
Mercury	0.070	mg/Kg	0.020	15:32	10/26/98	RM 7471A
Potassium	1,290	mg/Kg	20.0	14:28	10/23/98	TD 6010B
Magnesium	1,990	mg/Kg	3.00	14:28	10/23/98	TD 6010B
Manganese	790	mg/Kg	0.200	14:28	10/23/98	TD 6010B
Sodium	70.7	mg/Kg	20.0	14:28	10/23/98	TD 6010B
Nickel	14.8	mg/Kg	1.50	14:28	10/23/98	TD 6010B
Lead	77.5	mg/Kg	0.100	15:57	10/23/98	TD 7421
Antimony	ND	mg/Kg	3.20	14:28	10/23/98	TD 6010B
Selenium	0.274	mg/Kg	0.200	10:44	10/26/98	JF 7740
Thallium	0.214	mg/Kg	0.100	16:01	10/26/98	JF 7841
Vanadium	23.5	mg/Kg	0.800	14:28	10/23/98	TD 6010B
Zinc	140	mg/Kg	1.00	14:28	10/23/98	TD 6010B


 LABORATORY MANAGER

J00016

377 406

ENVIRONMENTAL TESTING & CONSULTING, INC.
2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
INORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560

Site ID **DDMT**
Memphis, TN

Date Arrived 10/22/98
ETC Order Number 9810751

ETC Lab ID **9810751-02**
Sample ID: B2-C1

Matrix :SOIL
Sample Date :10/22/98

TEST	RESULT	UNITS	DETECTION LIMIT	TIME ANALYZED	DATE ANALYZED BY	METHOD
Metals Digestion Batch	V8-SO-63				10/23/98	NR 3051
Mercury Digestion Batch	V4-SO-42				10/26/98	RM 7471A
Silver	ND	mg/Kg	0.700	14.38	10/23/98	TD 6010B
Aluminum	6,870	mg/Kg	4.00	14.38	10/23/98	TD 6010B
Arsenic	15.8	mg/Kg	0.200	10.52	10/26/98	JF 7060A
Barium	69.5	mg/Kg	0.200	14.38	10/23/98	TD 6010B
Beryllium	0.332	mg/Kg	0.100	14.38	10/23/98	TD 6010B
Calcium	120,000	mg/Kg	1.00	17.32	10/23/98	TD 6010B
Cadmium	0.682	mg/Kg	0.400	14.38	10/23/98	TD 6010B
Cobalt	3.72	mg/Kg	0.700	14.38	10/23/98	TD 6010B
Chromium	10.3	mg/Kg	0.700	14.38	10/23/98	TD 6010B
Copper	19.2	mg/Kg	0.600	14.38	10/23/98	TD 6010B
Iron	9,980	mg/Kg	0.700	14.38	10/23/98	TD 6010B
Mercury	0.036	mg/Kg	0.020	15.33	10/26/98	RM 7471A
Potassium	1,190	mg/Kg	20.0	14.38	10/23/98	TD 6010B
Magnesium	9,870	mg/Kg	3.00	14.38	10/23/98	TD 6010B
Manganese	335	mg/Kg	0.200	14.38	10/23/98	TD 6010B
Sodium	141	mg/Kg	20.0	14.38	10/23/98	TD 6010B
Nickel	9.56	mg/Kg	1.50	14.38	10/23/98	TD 6010B
Lead	49.9	mg/Kg	0.100	15.59	10/23/98	TD 7421
Antimony	ND	mg/Kg	3.20	14.38	10/23/98	TD 6010B
Selenium	0.905	mg/Kg	0.200	10.50	10/26/98	JF 7740
Thallium	0.184	mg/Kg	0.100	16.12	10/26/98	JF 7841
Vanadium	13.8	mg/Kg	0.800	14.38	10/23/98	TD 6010B
Zinc	146	mg/Kg	1.00	14.38	10/23/98	TD 6010B


LABORATORY MANAGER

000017

377 407

ENVIRONMENTAL TESTING & CONSULTING, INC.
2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
INORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092
Site ID **DDMT**
Memphis, TN

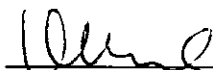
Project # 20560

Date Arrived 10/22/98
ETC Order Number 9810751

ETC Lab ID 9810751-03
Sample ID: B3-C1

Matrix :SOIL
Sample Date :10/22/98

TEST	RESULT	UNITS	DETECTION LIMIT	TIME ANALYZED	DATE ANALYZED BY	METHOD
Metals Digestion Batch	V8-SO-63				10/23/98 NR	3051
Mercury Digestion Batch	V4-SO-42				10/26/98 RM	7471A
Silver	ND	mg/Kg	0.700	14:44	10/23/98 TD	6010B
Aluminum	9,970	mg/Kg	4.00	14:44	10/23/98 TD	6010B
Arsenic	23.7	mg/Kg	0.200	11:01	10/26/98 JF	7060A
Barium	106	mg/Kg	0.200	14:44	10/23/98 TD	6010B
Beryllium	0.472	mg/Kg	0.100	14:44	10/23/98 TD	6010B
Calcium	36,700	mg/Kg	1.00	17:38	10/23/98 TD	6010B
Cadmium	0.850	mg/Kg	0.400	14:44	10/23/98 TD	6010B
Cobalt	5.89	mg/Kg	0.700	14:44	10/23/98 TD	6010B
Chromium	14.6	mg/Kg	0.700	14:44	10/23/98 TD	6010B
Copper	39.2	mg/Kg	0.600	14:44	10/23/98 TD	6010B
Iron	15,300	mg/Kg	0.700	17:38	10/23/98 TD	6010B
Mercury	0.038	mg/Kg	0.020	15:34	10/26/98 RM	7471A
Potassium	1,450	mg/Kg	20.0	14:44	10/23/98 TD	6010B
Magnesium	3,450	mg/Kg	3.00	14:44	10/23/98 TD	6010B
Manganese	460	mg/Kg	0.200	14:44	10/23/98 TD	6010B
Sodium	120	mg/Kg	20.0	14:44	10/23/98 TD	6010B
Nickel	14.7	mg/Kg	1.50	14:44	10/23/98 TD	6010B
Lead	34.8	mg/Kg	0.100	16:01	10/23/98 TD	7421
Antimony	ND	mg/Kg	3.20	14:44	10/23/98 TD	6010B
Selenium	0.484	mg/Kg	0.200	10:55	10/26/98 JF	7740
Thallium	0.216	mg/Kg	0.100	16:23	10/26/98 JF	7841
Vanadium	21.0	mg/Kg	0.800	14:44	10/23/98 TD	6010B
Zinc	252	mg/Kg	1.00	14:44	10/23/98 TD	6010B


LABORATORY MANAGER

J000018

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

INORGANIC ANALYSIS DATA SHEET

377 408

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560

Site ID **DDMT**
Memphis, TN

Date Arrived 10/22/98

ETC Order Number 9810751

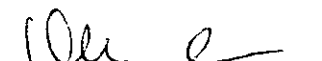
ETC Lab ID 9810751-04

Sample ID: B4-C1

Matrix :SOIL

Sample Date :10/22/98

TEST	RESULT	UNITS	DETECTION LIMIT	TIME ANALYZED	DATE ANALYZED BY	METHOD
Metals Digestion Batch	V8-SO-63				10/23/98 NR	3051
Mercury Digestion Batch	V4-SO-42				10/26/98 RM	7471A
Silver	ND	mg/Kg	0.700	13:28	10/23/98 TD	6010B
Aluminum	8,890	mg/Kg	4.00	13:28	10/23/98 TD	6010B
Arsenic	20.9	mg/Kg	0.200	16:14	10/23/98 JF	7060A
Barium	90.6	mg/Kg	0.200	13:28	10/23/98 TD	6010B
Beryllium	0.425	mg/Kg	0.100	13:28	10/23/98 TD	6010B
Calcium	67,600	mg/Kg	1.00	14:59	10/23/98 TD	6010B
Cadmium	ND	mg/Kg	0.400	13:28	10/23/98 TD	6010B
Cobalt	5.09	mg/Kg	0.700	13:28	10/23/98 TD	6010B
Chromium	15.2	mg/Kg	0.700	13:28	10/23/98 TD	6010B
Copper	41.1	mg/Kg	0.600	13:28	10/23/98 TD	6010B
Iron	17,100	mg/Kg	0.700	14:53	10/23/98 TD	6010B
Mercury	0.033	mg/Kg	0.020	15:36	10/26/98 RM	7471A
Potassium	1,210	mg/Kg	20.0	13:28	10/23/98 TD	6010B
Magnesium	10,600	mg/Kg	3.00	13:28	10/23/98 TD	6010B
Manganese	451	mg/Kg	0.200	13:28	10/23/98 TD	6010B
Sodium	129	mg/Kg	20.0	13:28	10/23/98 TD	6010B
Nickel	13.3	mg/Kg	1.50	13:28	10/23/98 TD	6010B
Lead	76.3	mg/Kg	0.100	15:49	10/23/98 TD	7421
Antimony	ND	mg/Kg	3.20	13:28	10/23/98 TD	6010B
Selenium	0.551	mg/Kg	0.200	16:11	10/23/98 JF	7740
Thallium	0.227	mg/Kg	0.100	16:34	10/26/98 JF	7841
Vanadium	18.6	mg/Kg	0.800	13:28	10/23/98 TD	6010B
Zinc	112	mg/Kg	1.00	13:28	10/23/98 TD	6010B


LABORATORY MANAGER

000019

377 409

ENVIRONMENTAL TESTING & CONSULTING, INC.
 2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
INORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400

Project # 20560

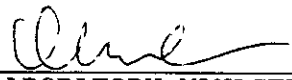
Site ID **Norcross, GA 30092**
DDMT
Memphis, TN

Date Arrived 10/22/98
 ETC Order Number 9810751

ETC Lab ID 9810751-05
Sample ID: C-EQ-CS-003

Matrix :AQUEOUS
 Sample Date :10/22/98

TEST	RESULT	UNITS	DETECTION LIMIT	TIME ANALYZED	DATE ANALYZED BY	METHOD
Metals Digestion Batch	V12-AQ-40					
Mercury Digestion Batch	V4-AQ-53				10/23/98 NR	3015
Silver	ND	mg/L	0.009	13:10	10/24/98 RM	7470A
Aluminum	ND	mg/L	0.060	13:10	10/23/98 TD	6010B
Arsenic	ND	mg/L	0.003	14:33	10/23/98 JF	7060A
Barium	ND	mg/L	0.003	13:10	10/23/98 TD	6010B
Beryllium	ND	mg/L	0.002	13:10	10/23/98 TD	6010B
Calcium	ND	mg/L	0.015	13:10	10/23/98 TD	6010B
Cadmium	ND	mg/L	0.005	13:10	10/23/98 TD	6010B
Cobalt	ND	mg/L	0.009	13:10	10/23/98 TD	6010B
Chromium	ND	mg/L	0.009	13:10	10/23/98 TD	6010B
Copper	ND	mg/L	0.008	13:10	10/23/98 TD	6010B
Iron	ND	mg/L	0.009	13:10	10/23/98 TD	6010B
Mercury	ND	mg/L	0.0002	11:41	10/24/98 RM	7470A
Potassium	ND	mg/L	0.250	13:10	10/23/98 TD	6010B
Magnesium	ND	mg/L	0.040	13:10	10/23/98 TD	6010B
Manganese	ND	mg/L	0.003	13:10	10/23/98 TD	6010B
Sodium	0.109	mg/L	0.050	13:10	10/23/98 TD	6010B
Nickel	ND	mg/L	0.020	13:10	10/23/98 TD	6010B
Lead	ND	mg/L	0.002	14:13	10/23/98 TD	7421
Antimony	ND	mg/L	0.040	13:10	10/23/98 TD	6010B
Selenium	ND	mg/L	0.003	14:33	10/23/98 JF	7740
Thallium	ND	mg/L	0.002	14:57	10/26/98 JF	7841
Vanadium	ND	mg/L	0.010	13:10	10/23/98 TD	6010B
Zinc	ND	mg/L	0.010	13:10	10/23/98 TD	6010B


 LABORATORY MANAGER

000020

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

377 410

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560
FID # DACA45-96-D-0014

Site ID DDMT
Memphis, TN

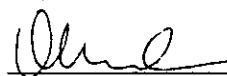
Date Arrived 10/22/98
ETC Order Number 9810751

ETC Lab ID 9810751-01
Sample ID: B1-C2

Matrix :SOIL
Sample Date :10/22/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Volatile Organics				10/23/98	10/23/98	LS	8260B
QC Batch	V2102301S	ug/Kg					
Acetone	ND	ug/Kg	150				
Benzene	ND	ug/Kg	6.00				
Bromodichloromethane	ND	ug/Kg	6.00				
Bromoform	ND	ug/Kg	6.00				
Bromomethane	ND	ug/Kg	6.00				
Carbon Disulfide	ND	ug/Kg	75.0				
Carbon Tetrachloride	ND	ug/Kg	6.00				
Chlorobenzene	ND	ug/Kg	6.00				
Chlorodibromomethane	ND	ug/Kg	6.00				
Chloroethane	ND	ug/Kg	6.00				
Chloroform	ND	ug/Kg	6.00				
Chloromethane	ND	ug/Kg	6.00				
1,1-Dichloroethane	ND	ug/Kg	6.00				
1,2-Dichloroethane	ND	ug/Kg	6.00				
1,1-Dichloroethene	ND	ug/Kg	6.00				
trans-1,2-Dichloroethene	ND	ug/Kg	6.00				
1,2-Dichloropropane	ND	ug/Kg	6.00				
cis-1,3-Dichloropropene	ND	ug/Kg	6.00				
trans-1,3-Dichloropropene	ND	ug/Kg	6.00				
Ethylbenzene	ND	ug/Kg	6.00				
2-Hexanone (MBK)	ND	ug/Kg	150				
4-Methyl-2-pentanone (MIBK)	ND	ug/Kg	150				
2-Butanone (MEK)	ND	ug/Kg	150				
Methylene Chloride	ND	ug/Kg	150				
Styrene	ND	ug/Kg	6.00				
1,1,2,2-Tetrachloroethane	ND	ug/Kg	6.00				
Tetrachloroethene	ND	ug/Kg	6.00				
Toluene	ND	ug/Kg	6.00				
1,1,1-Trichloroethane	ND	ug/Kg	6.00				
1,1,2-Trichloroethane	ND	ug/Kg	6.00				
Trichloroethene	ND	ug/Kg	6.00				
Vinyl Acetate	ND	ug/Kg	75.0				
Vinyl Chloride	ND	ug/Kg	6.00				
o-Xylenes	ND	ug/Kg	6.00				
m-Xylenes	ND	ug/Kg	6.00				
p-Xylenes	ND	ug/Kg	6.00				
cis-1,2-Dichloroethene	ND	ug/Kg	6.00				

Surrogate Standard	% Recovery	QC Limits	
S1 - Dibromofluoromethane	103	70	134
S2 - Toluene-d8	96	85	111
S3 - 4-Bromofluorobenzene	100	81	117


LABORATORY MANAGER

ND - Not Detected

J00021

377 411

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

9810-751-1

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-751

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 3.3 (g/mL) G

Lab File ID: 0501006

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 10/23/98

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

J000022

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

377 412

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

Project # 20560
FID # DACA45-96-D-0014

Date Arrived 10/22/98
ETC Order Number 9810751

ETC Lab ID **9810751-02**
Sample ID: B2-C1

Matrix :SOIL
Sample Date :10/22/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Volatile Organics				10/23/98	10/23/98	LS	8260B
QC Batch	V2102301S	ug/Kg					
Acetone	ND	ug/Kg	200 J				
Benzene	ND	ug/Kg	8.00				
Bromodichloromethane	ND	ug/Kg	8.00				
Bromoform	ND	ug/Kg	8.00 J				
Bromomethane	ND	ug/Kg	8.00				
Carbon Disulfide	ND	ug/Kg	100				
Carbon Tetrachloride	ND	ug/Kg	8.00				
Chlorobenzene	ND	ug/Kg	8.00				
Chlorodibromomethane	ND	ug/Kg	8.00				
Chloroethane	ND	ug/Kg	8.00				
Chloroform	ND	ug/Kg	8.00				
Chloromethane	ND	ug/Kg	8.00				
1,1-Dichloroethane	ND	ug/Kg	8.00				
1,2-Dichloroethane	ND	ug/Kg	8.00				
1,1-Dichloroethene	ND	ug/Kg	8.00				
trans-1,2-Dichloroethene	ND	ug/Kg	8.00				
1,2-Dichloropropane	ND	ug/Kg	8.00				
cis-1,3-Dichloropropene	ND	ug/Kg	8.00				
trans-1,3-Dichloropropene	ND	ug/Kg	8.00				
Ethylbenzene	ND	ug/Kg	8.00				
2-Hexanone (MBK)	ND	ug/Kg	200 J				
4-Methyl-2-pentanone (MIBK)	ND	ug/Kg	200 J				
2-Butanone (MEK)	ND	ug/Kg	200 J				
Methylene Chloride	ND	ug/Kg	200 J				
Styrene	ND	ug/Kg	8.00				
1,1,2,2-Tetrachloroethane	ND	ug/Kg	8.00				
Tetrachloroethene	ND	ug/Kg	8.00				
Toluene	ND	ug/Kg	8.00				
1,1,1-Trichloroethane	ND	ug/Kg	8.00				
1,1,2-Trichloroethane	ND	ug/Kg	8.00				
Trichloroethene	ND	ug/Kg	8.00				
Vinyl Acetate	ND	ug/Kg	100				
Vinyl Chloride	ND	ug/Kg	8.00				
o-Xylenes	ND	ug/Kg	8.00				
m-Xylenes	ND	ug/Kg	8.00				
p-Xylenes	ND	ug/Kg	8.00				
cis-1,2-Dichloroethene	ND	ug/Kg	8.00				

Surrogate Standard	% Recovery	QC Limits	
S1 - Dibromofluoromethane	106	70	134
S2 - Toluene-d8	94	85	111
S3 - 4-Bromofluorobenzene	96	81	117


LABORATORY MANAGER

ND - Not Detected

000023

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

9810-751-2

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-751

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 2.5 (g/mL) G

Lab File ID: 0601007

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 10/23/98

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000024

ENVIRONMENTAL TESTING & CONSULTING, INC.
2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ORGANIC ANALYSIS DATA SHEET

377 414

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092
Site ID **DDMT**
Memphis, TN

Project # 20560
FID # DACA45-96-D-0014

Date Arrived 10/22/98
ETC Order Number 9810751

ETC Lab ID **9810751-03**
Sample ID: B3-C1

Matrix :SOIL
Sample Date :10/22/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Volatile Organics				10/23/98	10/23/98	LS	8260B
QC Batch	V2102301S	ug/Kg					
Acetone	ND	ug/Kg	130 J				
Benzene	ND	ug/Kg	5.20				
Bromodichloromethane	ND	ug/Kg	5.20				
Bromoform	ND	ug/Kg	5.20 J				
Bromomethane	ND	ug/Kg	5.20				
Carbon Disulfide	ND	ug/Kg	65.0				
Carbon Tetrachloride	ND	ug/Kg	5.20				
Chlorobenzene	ND	ug/Kg	5.20				
Chlorodibromomethane	ND	ug/Kg	5.20				
Chloroethane	ND	ug/Kg	5.20				
Chloroform	ND	ug/Kg	5.20				
Chloromethane	ND	ug/Kg	5.20				
1,1-Dichloroethane	ND	ug/Kg	5.20				
1,2-Dichloroethane	ND	ug/Kg	5.20				
1,1-Dichloroethene	ND	ug/Kg	5.20				
trans-1,2-Dichloroethene	ND	ug/Kg	5.20				
1,2-Dichloropropane	ND	ug/Kg	5.20				
cis-1,3-Dichloropropene	ND	ug/Kg	5.20				
trans-1,3-Dichloropropene	ND	ug/Kg	5.20				
Ethylbenzene	ND	ug/Kg	5.20				
2-Hexanone (MBK)	ND	ug/Kg	130 J				
4-Methyl-2-pentanone (MIBK)	ND	ug/Kg	130 J				
2-Butanone (MEK)	ND	ug/Kg	130 J				
Methylene Chloride	ND	ug/Kg	130 J				
Styrene	ND	ug/Kg	5.20				
1,1,2,2-Tetrachloroethane	ND	ug/Kg	5.20				
Tetrachloroethene	ND	ug/Kg	5.20				
Toluene	ND	ug/Kg	5.20				
1,1,1-Trichloroethane	ND	ug/Kg	5.20				
1,1,2-Trichloroethane	ND	ug/Kg	5.20				
Trichloroethene	ND	ug/Kg	5.20				
Vinyl Acetate	ND	ug/Kg	65.0				
Vinyl Chloride	ND	ug/Kg	5.20				
o-Xylenes	ND	ug/Kg	5.20				
m-Xylenes	ND	ug/Kg	5.20				
p-Xylenes	ND	ug/Kg	5.20				
cis-1,2-Dichloroethene	ND	ug/Kg	5.20				

Surrogate Standard	% Recovery	QC Limits	
S1 - Dibromofluoromethane	102	70	134
S2 - Toluene-d8	96	85	111
S3 - 4-Bromofluorobenzene	103	81	117


LABORATORY MANAGER

ND - Not Detected

000025

377 415

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

9810-751-3

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-751

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 3.8 (g/mL) G

Lab File ID: 0701008

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 10/23/98

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
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FORM I VOA-GCMS-TIC

000026

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

377 416

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

Project # 20560
FID # DACA45-96-D-0014

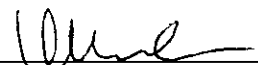
Date Arrived 10/22/98
ETC Order Number 9810751

ETC Lab ID **9810751-04**
Sample ID: B4-C1

Matrix :SOIL
Sample Date :10/22/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Volatile Organics							8260B
QC Batch	V2102301S	ug/Kg		10/23/98	10/23/98	LS	
Acetone	ND	ug/Kg	125 ✓				
Benzene	ND	ug/Kg	5.00				
Bromodichloromethane	ND	ug/Kg	5.00				
Bromoform	ND	ug/Kg	5.00 ✓				
Bromomethane	ND	ug/Kg	5.00				
Carbon Disulfide	ND	ug/Kg	62.5				
Carbon Tetrachloride	ND	ug/Kg	5.00				
Chlorobenzene	ND	ug/Kg	5.00				
Chlorodibromomethane	ND	ug/Kg	5.00				
Chloroethane	ND	ug/Kg	5.00				
Chloroform	ND	ug/Kg	5.00				
Chloromethane	ND	ug/Kg	5.00				
1,1-Dichloroethane	ND	ug/Kg	5.00				
1,2-Dichloroethane	ND	ug/Kg	5.00				
1,1-Dichloroethene	ND	ug/Kg	5.00				
trans-1,2-Dichloroethene	ND	ug/Kg	5.00				
1,2-Dichloropropane	ND	ug/Kg	5.00				
cis-1,3-Dichloropropene	ND	ug/Kg	5.00				
trans-1,3-Dichloropropene	ND	ug/Kg	5.00				
Ethylbenzene	ND	ug/Kg	5.00				
2-Hexanone (MBK)	ND	ug/Kg	125 ✓				
4-Methyl-2-pentanone (MIBK)	ND	ug/Kg	125 ✓				
2-Butanone (MEK)	ND	ug/Kg	125 ✓				
Methylene Chloride	ND	ug/Kg	125 ✓				
Styrene	ND	ug/Kg	5.00				
1,1,2,2-Tetrachloroethane	ND	ug/Kg	5.00				
Tetrachloroethene	ND	ug/Kg	5.00				
Toluene	ND	ug/Kg	5.00				
1,1,1-Trichloroethane	ND	ug/Kg	5.00				
1,1,2-Trichloroethane	ND	ug/Kg	5.00				
Trichloroethene	ND	ug/Kg	5.00				
Vinyl Acetate	ND	ug/Kg	62.5				
Vinyl Chloride	ND	ug/Kg	5.00				
o-Xylenes	ND	ug/Kg	5.00				
m-Xylenes	ND	ug/Kg	5.00				
p-Xylenes	ND	ug/Kg	5.00				
cis-1,2-Dichloroethene	ND	ug/Kg	5.00				

Surrogate Standard	% Recovery	QC Limits	
S1 - Dibromofluoromethane	103	70	134
S2 - Toluene-d8	96	85	111
S3 - 4-Bromofluorobenzene	100	81	117


LABORATORY MANAGER

ND - Not Detected

J00027

377 417

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

9810-751-4

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-751

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 4.0 (g/mL) G

Lab File ID: 0801009

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 10/23/98

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-GCMS-TIC

000028

ENVIRONMENTAL TESTING & CONSULTING, INC.
 2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ORGANIC ANALYSIS DATA SHEET

377 418

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092
 Site ID **DDMT**
Memphis, TN

Project # 20560
 FID # DACA45-96-D-0014

Date Arrived 10/22/98
 ETC Order Number 9810751

ETC Lab ID **9810751-05**
Sample ID: C-EQ-CS-003

Matrix :AQUEOUS
 Sample Date :10/22/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Volatile Organics							8260B
QC Batch	V2102501A	ug/L		10/25/98	10/25/98	LS	
Acetone	ND	ug/L	50.0				
Benzene	ND	ug/L	1.00				
Bromodichloromethane	ND	ug/L	1.00				
Bromoform	ND	ug/L	1.00				
Bromomethane	ND	ug/L	1.00				
Carbon Disulfide	ND	ug/L	1.00				
Carbon Tetrachloride	ND	ug/L	1.00				
Chlorobenzene	ND	ug/L	1.00				
Chlorodibromomethane	ND	ug/L	1.00				
Chloroethane	ND	ug/L	1.00				
Chloroform	ND	ug/L	1.00				
Chloromethane	ND	ug/L	1.00				
1,1-Dichloroethane	ND	ug/L	1.00				
1,2-Dichloroethane	ND	ug/L	1.00				
1,1-Dichloroethene	ND	ug/L	1.00				
trans-1,2-Dichloroethene	ND	ug/L	1.00				
1,2-Dichloropropane	ND	ug/L	1.00				
cis-1,3-Dichloropropene	ND	ug/L	1.00				
trans-1,3-Dichloropropene	ND	ug/L	1.00				
Ethylbenzene	ND	ug/L	1.00				
2-Hexanone (MBK)	ND	ug/L	5.00				
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.00				
2-Butanone (MEK)	ND	ug/L	20.0				
Methylene Chloride	ND	ug/L	20.0				
Styrene	ND	ug/L	1.00				
1,1,2,2-Tetrachloroethane	ND	ug/L	1.00				
Tetrachloroethene	ND	ug/L	1.00				
Toluene	ND	ug/L	1.00				
1,1,1-Trichloroethane	ND	ug/L	1.00				
1,1,2-Trichloroethane	ND	ug/L	1.00				
Trichloroethene	ND	ug/L	1.00				
Vinyl Acetate	ND	ug/L	20.0				
Vinyl Chloride	ND	ug/L	1.00				
o-Xylenes	ND	ug/L	1.00				
m-Xylenes	ND	ug/L	1.00				
p-Xylenes	ND	ug/L	1.00				
cis-1,2-Dichloroethene	ND	ug/L	1.00				

Surrogate Standard	% Recovery	QC Limits	
S1 - Dibromofluoromethane	98	74	123
S2 - Toluene-d8	97	86	112
S3 - 4-Bromofluorobenzene	99	81	115



LABORATORY MANAGER

ND - Not Detected

000029

377 419

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

9810-751-5

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-751

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0401006

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 10/25/98

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
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FORM I VOA-GCMS-TIC

000030

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

377 420

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

Project # 20560
FID # DACA45-96-D-0014

Date Arrived 10/22/98
ETC Order Number 9810751

ETC Lab ID 9810751-01
Sample ID: B1-C2

Matrix :SOIL
Sample Date :10/22/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Base/Neutral & Acid				10/23/98	10/24/98	RR	8270C
QC Batch	P04057	ug/Kg					
Acenaphthene	ND	ug/Kg	67.0				
Acenaphthylene	ND	ug/Kg	67.0				
Anthracene	ND	ug/Kg	67.0				
Benzo(a)anthracene	398	ug/Kg	67.0				
Benzo(b)fluoranthene	684	ug/Kg	67.0				
Benzo(k)fluoranthene	301	ug/Kg	67.0				
Benzo(g,h,i)perylene	289	ug/Kg	67.0				
Benzo(a)pyrene	402	ug/Kg	67.0				
Benzoic Acid	ND	ug/Kg	1670				
Benzyl Alcohol	ND	ug/Kg	170				
Bis(2-chloroethoxy)methane	ND	ug/Kg	170				
Bis(2-chloroethyl)ether	ND	ug/Kg	170				
Bis(2-chloroisopropyl)ether	ND	ug/Kg	170				
Bis(2-ethylhexyl)phthalate	1,008	ug/Kg	170				
4-Bromophenyl phenyl ether	ND	ug/Kg	170				
Butyl benzyl phthalate	182	ug/Kg	170				
4-Chloroaniline	ND	ug/Kg	170				
2-Chloronaphthalene	ND	ug/Kg	170				
4-Chloro-3-methylphenol	ND	ug/Kg	170				
2-Chlorophenol	ND	ug/Kg	170				
4-Chlorophenyl phenyl ether	ND	ug/Kg	170				
Chrysene	466	ug/Kg	170				
Dibenzo(a,h)anthracene	ND	ug/Kg	67.0				
Dibenzofuran	ND	ug/Kg	170				
Di-n-butyl phthalate	ND	ug/Kg	170				
1,2-Dichlorobenzene	ND	ug/Kg	170				
1,3-Dichlorobenzene	ND	ug/Kg	170				
1,4-Dichlorobenzene	ND	ug/Kg	170				
3,3'-Dichlorobenzidine	ND	ug/Kg	170				
2,4-Dichlorophenol	ND	ug/Kg	170				
2,6-Dichlorophenol	ND	ug/Kg	170				
Diethyl phthalate	ND	ug/Kg	170				
2,4-Dimethylphenol	ND	ug/Kg	170				
Dimethyl phthalate	ND	ug/Kg	170				
4,6-Dinitro-2-methylphenol	ND	ug/Kg	170				
2,4-Dinitrophenol	ND	ug/Kg	330				
2,4-Dinitrotoluene	ND	ug/Kg	170				
2,6-Dinitrotoluene	ND	ug/Kg	170				
Di-n-octyl phthalate	ND	ug/Kg	170				
Fluoranthene	581	ug/Kg	67.0				
Fluorene	ND	ug/Kg	67.0				
Hexachlorobenzene	ND	ug/Kg	170				


LABORATORY MANAGER

ND - Not Detected

000031

377 421

ENVIRONMENTAL TESTING & CONSULTING, INC.
 2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

Project # 20560
 FID # DACA45-96-D-0014

Date Arrived 10/22/98
 ETC Order Number 9810751

ETC Lab ID 9810751-01
Sample ID: B1-C2

Matrix :SOIL
 Sample Date :10/22/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Base/Neutral & Acid				10/23/98	10/24/98	RR	8270C
Hexachlorobutadiene	ND	ug/Kg	170				
Hexachlorocyclopentadiene	ND	ug/Kg	170				
Hexachloroethane	ND	ug/Kg	170				
Indeno(1,2,3-cd)pyrene	372	ug/Kg	67.0				
Isophorone	ND	ug/Kg	170				
2-Methylnaphthalene	ND	ug/Kg	170				
2-Methylphenol (o-cresol)	ND	ug/Kg	170				
3-Methylphenol (m-cresol)	ND	ug/Kg	170				
4-Methylphenol (p-cresol)	ND	ug/Kg	170				
Naphthalene	ND	ug/Kg	67.0				
Nitrobenzene	ND	ug/Kg	170				
2-Nitroaniline	ND	ug/Kg	170				
3-Nitroaniline	ND	ug/Kg	170				
4-Nitroaniline	ND	ug/Kg	170				
2-Nitrophenol	ND	ug/Kg	170				
4-Nitrophenol	ND	ug/Kg	170				
N-Nitrosodiphenylamine	ND	ug/Kg	170				
N-Nitrosodipropylamine	ND	ug/Kg	170				
Pentachlorophenol	ND	ug/Kg	170				
Phenanthrene	342	ug/Kg	67.0				
Phenol	ND	ug/Kg	170				
Pyrene	485	ug/Kg	67.0				
1,2,4-Trichlorobenzene	ND	ug/Kg	170				
2,4,5-Trichlorophenol	ND	ug/Kg	170				
2,4,6-Trichlorophenol	ND	ug/Kg	170				

Surrogate Standard	% Recovery	QC Limits
S1 - Nitrobenzene-d5	60	25 110
S2 - 2-Fluorobiphenyl	65	33 114
S3 - 4-Terphenyl-d14	40	37 115
S4 - Phenol-d6	61	11 125
S5 - 2,4,6-Tribromophenol	54	9 134
S6 - 2-Fluorophenol	58	10 119


 LABORATORY MANAGER

ND - Not Detected

000032

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

9810-751-1

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-751

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 30.6 (g/mL) G

Lab File ID: 1901019

Level: (low/med) LOW

Date Received: _____

% Moisture: _____ decanted: (Y/N) _____

Date Extracted:

Concentrated Extract Volume: 1 (mL)

Date Analyzed: 10/24/98

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 502-69-2	2-PENTADECANONE, 6,10,14-TRI	11.00	133	NJ
2. 57-10-3	HEXADECANOIC ACID	12.00	261	NJ
3. 3424-82-6	O,P'-DDE	13.71	774	NJ
4. 6971-40-0	17-PENTATRIACONTENE	15.89	521	NJ
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FORM I BNA-GCMS-TIC

J00033

377 423

ENVIRONMENTAL TESTING & CONSULTING, INC.
 2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

Project # 20560
 FID # DACA45-96-D-0014

Date Arrived 10/22/98
 ETC Order Number 9810751

ETC Lab ID **9810751-02**
Sample ID: B2-C1

Matrix :SOIL
 Sample Date :10/22/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Base/Neutral & Acid				10/23/98	10/24/98	RR	8270C
QC Batch	P04057	ug/Kg					
Acenaphthene	ND	ug/Kg	67.0				
Acenaphthylene	ND	ug/Kg	67.0				
Anthracene	ND	ug/Kg	67.0				
Benzo(a)anthracene	105	ug/Kg	67.0 J				
Benzo(b)fluoranthene	197	ug/Kg	67.0 J				
Benzo(k)fluoranthene	67.0	ug/Kg	67.0 J				
Benzo(g,h,i)perylene	ND	ug/Kg	67.0 J				
Benzo(a)pyrene	101	ug/Kg	67.0 J				
Benzoic Acid	ND	ug/Kg	1670 J				
Benzyl Alcohol	ND	ug/Kg	170				
Bis(2-chloroethoxy)methane	ND	ug/Kg	170 J				
Bis(2-chloroethyl)ether	ND	ug/Kg	170 J				
Bis(2-chloroisopropyl)ether	ND	ug/Kg	170				
Bis(2-ethylhexyl)phthalate	ND	ug/Kg	170 J				
4-Bromophenyl phenyl ether	ND	ug/Kg	170 J				
Butyl benzyl phthalate	ND	ug/Kg	170 J				
4-Chloroaniline	ND	ug/Kg	170 J				
2-Chloronaphthalene	ND	ug/Kg	170				
4-Chloro-3-methylphenol	ND	ug/Kg	170				
2-Chlorophenol	ND	ug/Kg	170				
4-Chlorophenyl phenyl ether	ND	ug/Kg	170				
Chrysene	104J	ug/Kg	170 J				
Dibenzo(a,h)anthracene	ND	ug/Kg	67.0 J				
Dibenzofuran	ND	ug/Kg	170				
Di-n-butyl phthalate	ND	ug/Kg	170				
1,2-Dichlorobenzene	ND	ug/Kg	170				
1,3-Dichlorobenzene	ND	ug/Kg	170				
1,4-Dichlorobenzene	ND	ug/Kg	170				
3,3'-Dichlorobenzidine	ND	ug/Kg	170 J				
2,4-Dichlorophenol	ND	ug/Kg	170				
2,6-Dichlorophenol	ND	ug/Kg	170				
Diethyl phthalate	ND	ug/Kg	170 J				
2,4-Dimethylphenol	ND	ug/Kg	170				
Dimethyl phthalate	ND	ug/Kg	170				
4,6-Dinitro-2-methylphenol	ND	ug/Kg	170				
2,4-Dinitrophenol	ND	ug/Kg	330				
2,4-Dinitrotoluene	ND	ug/Kg	170				
2,6-Dinitrotoluene	ND	ug/Kg	170				
Di-n-octyl phthalate	ND	ug/Kg	170 J				
Fluoranthene	173	ug/Kg	67.0				
Fluorene	ND	ug/Kg	67.0				
Hexachlorobenzene	ND	ug/Kg	170 J				


 LABORATORY MANAGER

ND - Not Detected

000034

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

377 424

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

Project # 20560
FID # DACA45-96-D-0014

Date Arrived 10/22/98
ETC Order Number 9810751

ETC Lab ID **9810751-02**
Sample ID: B2-C1

Matrix :SOIL
Sample Date :10/22/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Base/Neutral & Acid				10/23/98	10/24/98	RR	8270C
Hexachlorobutadiene	ND	ug/Kg	170				
Hexachlorocyclopentadiene	ND	ug/Kg	170				
Hexachloroethane	ND	ug/Kg	170				
Indeno(1,2,3-cd)pyrene	ND	ug/Kg	67.0 J				
Isophorone	ND	ug/Kg	170				
2-Methylnaphthalene	ND	ug/Kg	170 J				
2-Methylphenol (o-cresol)	ND	ug/Kg	170				
3-Methylphenol (m-cresol)	ND	ug/Kg	170				
4-Methylphenol (p-cresol)	ND	ug/Kg	170				
Naphthalene	ND	ug/Kg	67.0				
Nitrobenzene	ND	ug/Kg	170				
2-Nitroaniline	ND	ug/Kg	170				
3-Nitroaniline	ND	ug/Kg	170				
4-Nitroaniline	ND	ug/Kg	170 J				
2-Nitrophenol	ND	ug/Kg	170				
4-Nitrophenol	ND	ug/Kg	170				
N-Nitrosodiphenylamine	ND	ug/Kg	170				
N-Nitrosodipropylamine	ND	ug/Kg	170 J				
Pentachlorophenol	ND	ug/Kg	170				
Phenanthrene	106	ug/Kg	67.0				
Phenol	ND	ug/Kg	170				
Pyrene	147	ug/Kg	67.0 J				
1,2,4-Trichlorobenzene	ND	ug/Kg	170				
2,4,5-Trichlorophenol	ND	ug/Kg	170				
2,4,6-Trichlorophenol	ND	ug/Kg	170				

Surrogate Standard	% Recovery	QC Limits
S1 - Nitrobenzene-d5	41	25 110
S2 - 2-Fluorobiphenyl	43	33 114
S3 - 4-Terphenyl-d14	29 Q	37 115
S4 - Phenol-d6	38	11 125
S5 - 2,4,6-Tribromophenol	27	9 134
S6 - 2-Fluorophenol	37	10 119


LABORATORY MANAGER

ND - Not Detected

000035

377 425

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

9810-751-2

Lab Name: ETC, INC. Contract:
Lab Code: Case No.: SAS No.: SDG No.: 9810-751
Matrix: (soil/water) SOIL Lab Sample ID:
Sample wt/vol: 30.5 (g/mL) G Lab File ID: 2001020
Level: (low/med) LOW Date Received: _____
% Moisture: _____ decanted: (Y/N) _____ Date Extracted: _____
Concentrated Extract Volume: 1(mL) Date Analyzed: 10/24/98
Injection Volume: 1.0(uL) Dilution Factor: 1.0
GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 57-10-3	HEXADECANOIC ACID	12.00	235	NJ
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FORM I BNA-GCMS-TIC

000036

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

377 426

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560
FID # DACA45-96-D-0014

Site ID DDMT
Memphis, TN

Date Arrived 10/22/98
ETC Order Number 9810751

ETC Lab ID 9810751-03
Sample ID: B3-C1

Matrix :SOIL
Sample Date :10/22/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Base/Neutral & Acid				10/23/98	10/24/98	RR	8270C
QC Batch	P04057	ug/Kg					
Acenaphthene	ND	ug/Kg	67.0				
Acenaphthylene	ND	ug/Kg	67.0				
Anthracene	51.0J	ug/Kg	67.0				
Benzo(a)anthracene	410	ug/Kg	67.0 J				
Benzo(b)fluoranthene	741	ug/Kg	67.0 J				
Benzo(k)fluoranthene	320	ug/Kg	67.0 J				
Benzo(g,h,i)perylene	348	ug/Kg	67.0 J				
Benzo(a)pyrene	424	ug/Kg	67.0 J				
Benzoic Acid	ND	ug/Kg	1670 J				
Benzyl Alcohol	ND	ug/Kg	170				
Bis(2-chloroethoxy)methane	ND	ug/Kg	170 J				
Bis(2-chloroethyl)ether	ND	ug/Kg	170 J				
Bis(2-chloroisopropyl)ether	ND	ug/Kg	170				
Bis(2-ethylhexyl)phthalate	175	ug/Kg	170 J				
4-Bromophenyl phenyl ether	ND	ug/Kg	170 J				
Butyl benzyl phthalate	ND	ug/Kg	170 J				
4-Chloroaniline	ND	ug/Kg	170 J				
2-Chloronaphthalene	ND	ug/Kg	170				
4-Chloro-3-methylphenol	ND	ug/Kg	170				
2-Chlorophenol	ND	ug/Kg	170				
4-Chlorophenyl phenyl ether	ND	ug/Kg	170				
Chrysene	561	ug/Kg	170 J				
Dibenzo(a,h)anthracene	ND	ug/Kg	67.0 J				
Dibenzofuran	ND	ug/Kg	170				
Di-n-butyl phthalate	ND	ug/Kg	170				
1,2-Dichlorobenzene	ND	ug/Kg	170				
1,3-Dichlorobenzene	ND	ug/Kg	170				
1,4-Dichlorobenzene	ND	ug/Kg	170				
3,3'-Dichlorobenzidine	ND	ug/Kg	170 J				
2,4-Dichlorophenol	ND	ug/Kg	170				
2,6-Dichlorophenol	ND	ug/Kg	170				
Diethyl phthalate	ND	ug/Kg	170 J				
2,4-Dimethylphenol	ND	ug/Kg	170				
Dimethyl phthalate	ND	ug/Kg	170				
4,6-Dinitro-2-methylphenol	ND	ug/Kg	170				
2,4-Dinitrophenol	ND	ug/Kg	330				
2,4-Dinitrotoluene	ND	ug/Kg	170				
2,6-Dinitrotoluene	ND	ug/Kg	170				
Di-n-octyl phthalate	ND	ug/Kg	170 J				
Fluoranthene	598	ug/Kg	67.0				
Fluorene	16.0J	ug/Kg	67.0				
Hexachlorobenzene	ND	ug/Kg	170 J				



LABORATORY MANAGER

ND - Not Detected

000037

377 427

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560
 FID # DACA45-96-D-0014

Site ID DDMT
 Memphis, TN

Date Arrived 10/22/98
 ETC Order Number 9810751

ETC Lab ID 9810751-03
Sample ID: B3-C1

Matrix :SOIL
 Sample Date :10/22/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Base/Neutral & Acid				10/23/98	10/24/98	RR	8270C
Hexachlorobutadiene	ND	ug/Kg	170				
Hexachlorocyclopentadiene	ND	ug/Kg	170				
Hexachloroethane	ND	ug/Kg	170				
Indeno(1,2,3-cd)pyrene	296	ug/Kg	67.0 ✓				
Isophorone	ND	ug/Kg	170				
2-Methylnaphthalene	ND	ug/Kg	170 ✓				
2-Methylphenol (o-cresol)	ND	ug/Kg	170				
3-Methylphenol (m-cresol)	ND	ug/Kg	170				
4-Methylphenol (p-cresol)	ND	ug/Kg	170				
Naphthalene	ND	ug/Kg	67.0				
Nitrobenzene	ND	ug/Kg	170				
2-Nitroaniline	ND	ug/Kg	170				
3-Nitroaniline	ND	ug/Kg	170				
4-Nitroaniline	ND	ug/Kg	170 ✓				
2-Nitrophenol	ND	ug/Kg	170				
4-Nitrophenol	ND	ug/Kg	170				
N-Nitrosodiphenylamine	ND	ug/Kg	170				
N-Nitrosodipropylamine	ND	ug/Kg	170 ✓				
Pentachlorophenol	ND	ug/Kg	170				
Phenanthrene	321	ug/Kg	67.0				
Phenol	ND	ug/Kg	170				
Pyrene	537	ug/Kg	67.0 ✓				
1,2,4-Trichlorobenzene	ND	ug/Kg	170				
2,4,5-Trichlorophenol	ND	ug/Kg	170				
2,4,6-Trichlorophenol	ND	ug/Kg	170				

Surrogate Standard	% Recovery	QC Limits	
S1 - Nitrobenzene-d5	59	25	110
S2 - 2-Fluorobiphenyl	63	33	114
S3 - 4-Terphenyl-d14	39	37	115
S4 - Phenol-d6	54	11	125
S5 - 2,4,6-Tribromophenol	42	9	134
S6 - 2-Fluorophenol	53	10	119


 LABORATORY MANAGER

ND - Not Detected

JC00038

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

377 428
CLIENT SAMPLE NO.

9810-751-3

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-751

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 30.2 (g/mL) G

Lab File ID: 2101021

Level: (low/med) LOW

Date Received: _____

% Moisture: _____ decanted: (Y/N) _____

Date Extracted:

Concentrated Extract Volume: 1(mL)

Date Analyzed: 10/24/98

Injection Volume: 1.0(uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 629-50-5	TRIDECANE	9.80	142	NJ
2. 295-17-0	CYCLOTETRADECANE	11.35	222	NJ
3. 3424-82-6	O,P'-DDE	13.71	200	NJ
4. 53-19-0	O,P-DDD	14.38	366	NJ
5. 7098-22-8	TETRATETRACONTANE	19.49	3950	NJ
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FORM I BNA-GCMS-TIC

000039

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

377 429

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

Project # 20560
FID # DACA45-96-D-0014

Date Arrived 10/22/98
ETC Order Number 9810751

ETC Lab ID **9810751-04**
Sample ID: B4-C1

Matrix :SOIL
Sample Date :10/22/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Base/Neutral & Acid				10/23/98	10/24/98	RR	8270C
QC Batch	P04057	ug/Kg					
Acenaphthene	ND	ug/Kg	67.0				
Acenaphthylene	ND	ug/Kg	67.0				
Anthracene	ND	ug/Kg	67.0				
Benzo(a)anthracene	227	ug/Kg	67.0 J				
Benzo(b)fluoranthene	459	ug/Kg	67.0 J				
Benzo(k)fluoranthene	226	ug/Kg	67.0 J				
Benzo(g,h,i)perylene	ND	ug/Kg	67.0 J				
Benzo(a)pyrene	240	ug/Kg	67.0 J				
Benzoic Acid	ND	ug/Kg	1670 J				
Benzyl Alcohol	ND	ug/Kg	170				
Bis(2-chloroethoxy)methane	ND	ug/Kg	170 J				
Bis(2-chloroethyl)ether	ND	ug/Kg	170 J				
Bis(2-chloroisopropyl)ether	ND	ug/Kg	170				
Bis(2-ethylhexyl)phthalate	210	ug/Kg	170 J				
4-Bromophenyl phenyl ether	ND	ug/Kg	170 J				
Butyl benzyl phthalate	ND	ug/Kg	170 J				
4-Chloroaniline	ND	ug/Kg	170 J				
2-Chloronaphthalene	ND	ug/Kg	170				
4-Chloro-3-methylphenol	ND	ug/Kg	170				
2-Chlorophenol	ND	ug/Kg	170				
4-Chlorophenyl phenyl ether	ND	ug/Kg	170				
Chrysene	295	ug/Kg	170 J				
Dibenzo(a,h)anthracene	ND	ug/Kg	67.0 J				
Dibenzofuran	ND	ug/Kg	170				
Di-n-butyl phthalate	ND	ug/Kg	170				
1,2-Dichlorobenzene	ND	ug/Kg	170				
1,3-Dichlorobenzene	ND	ug/Kg	170				
1,4-Dichlorobenzene	ND	ug/Kg	170				
3,3'-Dichlorobenzidine	ND	ug/Kg	170 J				
2,4-Dichlorophenol	ND	ug/Kg	170				
2,6-Dichlorophenol	ND	ug/Kg	170				
Diethyl phthalate	ND	ug/Kg	170 J				
2,4-Dimethylphenol	ND	ug/Kg	170				
Dimethyl phthalate	ND	ug/Kg	170				
4,6-Dinitro-2-methylphenol	ND	ug/Kg	170				
2,4-Dinitrophenol	ND	ug/Kg	330				
2,4-Dinitrotoluene	ND	ug/Kg	170				
2,6-Dinitrotoluene	ND	ug/Kg	170				
Di-n-octyl phthalate	ND	ug/Kg	170 J				
Fluoranthene	314	ug/Kg	67.0				
Fluorene	ND	ug/Kg	67.0				
Hexachlorobenzene	ND	ug/Kg	170 J				


LABORATORY MANAGER

ND - Not Detected

J00040

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

377 430

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560
FID # DACA45-96-D-0014

Site ID DDMT
Memphis, TN

Date Arrived 10/22/98
ETC Order Number 9810751

ETC Lab ID 9810751-04
Sample ID: B4-C1

Matrix :SOIL
Sample Date :10/22/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Base/Neutral & Acid				10/23/98	10/24/98	RR	8270C
Hexachlorobutadiene	ND	ug/Kg	170				
Hexachlorocyclopentadiene	ND	ug/Kg	170				
Hexachloroethane	ND	ug/Kg	170				
Indeno(1,2,3-cd)pyrene	ND	ug/Kg	67.0				
Isophorone	ND	ug/Kg	170				
2-Methylnaphthalene	ND	ug/Kg	170				
2-Methylphenol (o-cresol)	ND	ug/Kg	170				
3-Methylphenol (m-cresol)	ND	ug/Kg	170				
4-Methylphenol (p-cresol)	ND	ug/Kg	170				
Naphthalene	ND	ug/Kg	67.0				
Nitrobenzene	ND	ug/Kg	170				
2-Nitroaniline	ND	ug/Kg	170				
3-Nitroaniline	ND	ug/Kg	170				
4-Nitroaniline	ND	ug/Kg	170				
2-Nitrophenol	ND	ug/Kg	170				
4-Nitrophenol	ND	ug/Kg	170				
N-Nitrosodiphenylamine	ND	ug/Kg	170				
N-Nitrosodipropylamine	ND	ug/Kg	170				
Pentachlorophenol	ND	ug/Kg	170				
Phenanthrene	202	ug/Kg	67.0				
Phenol	ND	ug/Kg	170				
Pyrene	257	ug/Kg	67.0				
1,2,4-Trichlorobenzene	ND	ug/Kg	170				
2,4,5-Trichlorophenol	ND	ug/Kg	170				
2,4,6-Trichlorophenol	ND	ug/Kg	170				

Surrogate Standard	% Recovery	QC Limits
S1 - Nitrobenzene-d5	64	25 110
S2 - 2-Fluorobiphenyl	70	33 114
S3 - 4-Terphenyl-d14	43	37 115
S4 - Phenol-d6	60	11 125
S5 - 2,4,6-Tribromophenol	46	9 134
S6 - 2-Fluorophenol	57	10 119


LABORATORY MANAGER

ND - Not Detected

J00041

377 431

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

9810-751-4

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-751

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 30.5 (g/mL) G

Lab File ID: 2201022

Level: (low/med) LOW

Date Received: _____

% Moisture: _____ decanted: (Y/N) _____

Date Extracted:

Concentrated Extract Volume: 1(mL)

Date Analyzed: 10/24/98

Injection Volume: 1.0(uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 2548-87-0	2-OCTENAL, (E)-	4.96	194	NJ
2. 629-50-5	TRIDECANE	6.48	879	NJ
3. 295-17-0	CYCLOTETRADECANE	11.35	195	NJ
4. 57-10-3	HEXADECANOIC ACID	12.00	420	NJ
5. 57-11-4	OCTADECANOIC ACID	13.57	522	NJ
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FORM I BNA-GCMS-TIC

000042

ENVIRONMENTAL TESTING & CONSULTING, INC.
2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ORGANIC ANALYSIS DATA SHEET

377 432

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

Project # 20560
FID # DACA45-96-D-0014

Date Arrived 10/22/98
ETC Order Number 9810751

ETC Lab ID **9810751-05**
Sample ID: C-EQ-CS-003

Matrix :AQUEOUS
Sample Date :10/22/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Base/Neutral & Acid							8270C
QC Batch	P05062	ug/L		10/23/98	10/24/98	RR	
Acenaphthene	ND	ug/L	2.00				
Acenaphthylene	ND	ug/L	2.00				
Anthracene	ND	ug/L	2.00				
Benzo(a)anthracene	ND	ug/L	2.00				
Benzo(b)fluoranthene	ND	ug/L	2.00				
Benzo(k)fluoranthene	ND	ug/L	2.00				
Benzo(g,h,i)perylene	ND	ug/L	2.00				
Benzo(a)pyrene	ND	ug/L	2.00				
Benzoic Acid	ND	ug/L	50.0				
Benzyl Alcohol	ND	ug/L	10.0				
Bis(2-chloroethoxy)methane	ND	ug/L	5.00				
Bis(2-chloroethyl)ether	ND	ug/L	5.00				
Bis(2-chloroisopropyl)ether	ND	ug/L	5.00				
Bis(2-ethylhexyl)phthalate	41.6	ug/L	10.0				
4-Bromophenyl phenyl ether	ND	ug/L	5.00				
Butyl benzyl phthalate	ND	ug/L	5.00				
4-Chloroaniline	ND	ug/L	5.00				
2-Chloronaphthalene	ND	ug/L	2.00				
4-Chloro-3-methylphenol	ND	ug/L	5.00				
2-Chlorophenol	ND	ug/L	5.00				
4-Chlorophenyl phenyl ether	ND	ug/L	5.00				
Chrysene	ND	ug/L	2.00				
Dibenzo(a,h)anthracene	ND	ug/L	2.00				
Dibenzofuran	ND	ug/L	5.00				
Di-n-butyl phthalate	6.10	ug/L	5.00				
1,2-Dichlorobenzene	ND	ug/L	5.00				
1,3-Dichlorobenzene	ND	ug/L	5.00				
1,4-Dichlorobenzene	ND	ug/L	5.00				
3,3'-Dichlorobenzidine	ND	ug/L	10.0				
2,4-Dichlorophenol	ND	ug/L	5.00				
2,6-Dichlorophenol	ND	ug/L	5.00				
Diethyl phthalate	ND	ug/L	5.00				
2,4-Dimethylphenol	ND	ug/L	5.00				
Dimethyl phthalate	ND	ug/L	5.00				
4,6-Dinitro-2-methylphenol	ND	ug/L	10.0				
2,4-Dinitrophenol	ND	ug/L	50.0				
2,4-Dinitrotoluene	ND	ug/L	5.00				
2,6-Dinitrotoluene	ND	ug/L	5.00				
Di-n-octyl phthalate	ND	ug/L	5.00				
Fluoranthene	ND	ug/L	2.00				
Fluorene	ND	ug/L	2.00				
Hexachlorobenzene	ND	ug/L	5.00				


LABORATORY MANAGER

ND - Not Detected

000043

377 433

ENVIRONMENTAL TESTING & CONSULTING, INC.
 2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

Project # 20560
 FID # DACA45-96-D-0014

Date Arrived 10/22/98
 ETC Order Number 9810751

ETC Lab ID 9810751-05
Sample ID: C-EQ-CS-003

Matrix :AQUEOUS
 Sample Date :10/22/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Base/Neutral & Acid							
				10/23/98	10/24/98	RR	8270C
Hexachlorobutadiene	ND	ug/L	5.00				
Hexachlorocyclopentadiene	ND	ug/L	5.00				
Hexachloroethane	ND	ug/L	5.00				
Indeno(1,2,3-cd)pyrene	ND	ug/L	2.00 J				
Isophorone	ND	ug/L	5.00				
2-Methylnaphthalene	ND	ug/L	2.00 J				
2-Methylphenol (o-cresol)	ND	ug/L	5.00				
3-Methylphenol (m-cresol)	ND	ug/L	5.00				
4-Methylphenol (p-cresol)	ND	ug/L	5.00				
Naphthalene	ND	ug/L	2.00				
Nitrobenzene	ND	ug/L	5.00				
2-Nitroaniline	ND	ug/L	5.00				
3-Nitroaniline	ND	ug/L	10.0				
4-Nitroaniline	ND	ug/L	5.00 J				
2-Nitrophenol	ND	ug/L	5.00				
4-Nitrophenol	ND	ug/L	5.00				
N-Nitrosodiphenylamine	ND	ug/L	5.00				
N-Nitrosodipropylamine	ND	ug/L	5.00 J				
Pentachlorophenol	ND	ug/L	10.0				
Phenanthrene	ND	ug/L	2.00				
Phenol	ND	ug/L	5.00				
Pyrene	ND	ug/L	2.00 J				
1,2,4-Trichlorobenzene	ND	ug/L	5.00				
2,4,5-Trichlorophenol	ND	ug/L	5.00				
2,4,6-Trichlorophenol	ND	ug/L	5.00				

Surrogate Standard	% Recovery	QC Limits
S1 - Nitrobenzene-d5	45	29 110
S2 - 2-Fluorobiphenyl	46	38 107
S3 - 4-Terphenyl-d14	79	33 122
S4 - Phenol-d6	22	7 58
S5 - 2,4,6-Tribromophenol	68	16 138
S6 - 2-Fluorophenol	29	8 88


 LABORATORY MANAGER

ND - Not Detected

000044

377 434

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

9810-751-5

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-751

Matrix: (soil/water) WATER

Lab Sample ID:

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: 0501005

Level: (low/med) LOW

Date Received: _____

% Moisture: _____ decanted: (Y/N) _____

Date Extracted:

Concentrated Extract Volume: 1(mL)

Date Analyzed: 10/24/98

Injection Volume: 1.0(uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 5466-77-3	2-PROPENOIC ACID, 3-(4-METHO	14.68	13.5	NJ
2. 629-62-9	PENTADECANE	15.23	5.5	NJ
3. 630-03-5	NONACOSANE	15.89	4.1	NJ
4. 629-78-7	HEPTADECANE	16.53	5.0	NJ
5. 106-25-2	2,6-OCTADIEN-1-OL, 3,7-DIMET	17.83	27.1	NJ
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FORM I BNA-GCMS-TIC

000045

377 435

ENVIRONMENTAL TESTING & CONSULTING, INC.
 2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092
 Site ID **DDMT**
Memphis, TN

Project # 20560
 FID # DACA45-96-D-0014

Date Arrived 10/22/98
 ETC Order Number 9810751

ETC Lab ID 9810751-01
Sample ID: B1-C2

Matrix :SOIL
 Sample Date :10/22/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
Organochlorine Pesticides							
QC Batch	P06029	ug/Kg		10/23/98	10/25/98	RG	8081A
Aldrin	ND	ug/Kg	2.00				
Alpha-BHC	ND	ug/Kg	2.00				
Beta-BHC	ND	ug/Kg	2.00				
Delta-BHC	ND	ug/Kg	2.00				
Gamma-BHC (Lindane)	ND	ug/Kg	2.00				
Alpha-Chlordane	ND	ug/Kg	2.00				
Gamma-Chlordane	8.57	ug/Kg	2.00				
Chlordane	96.0	ug/Kg	20.0				
4,4'-DDD	17.4	ug/Kg	2.00				
4,4'-DDE	509M	ug/Kg	2.00				
4,4'-DDT	346M	ug/Kg	2.00				
Dieldrin	112	ug/Kg	2.00				
Endosulfan I	ND	ug/Kg	2.00				
Endosulfan II	ND	ug/Kg	2.00				
Endosulfan Sulfate	ND	ug/Kg	2.00				
Endrin	ND	ug/Kg	2.00				
Endrin Aldehyde	ND	ug/Kg	2.00				
Endrin Ketone	ND	ug/Kg	2.00				
Heptachlor	ND	ug/Kg	2.00				
Heptachlor Epoxide	2.70	ug/Kg	2.00				
Methoxychlor	ND	ug/Kg	2.00				
Toxaphene	ND	ug/Kg	200				
Surrogate Standard							
S1 - Decachlorobiphenyl	69		64	154			
S2 - Tetrachloro-m-xylene	75		39	130			


 LABORATORY MANAGER

ND - Not Detected

J00046

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

377 436

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560
FID # DACA45-96-D-0014

Site ID DDMT
Memphis, TN

Date Arrived 10/22/98
ETC Order Number 9810751

ETC Lab ID 9810751-02

Sample ID: B2-C1

Matrix :SOIL

Sample Date :10/22/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
Organochlorine Pesticides							8081A
				10/23/98	10/25/98	RG	
QC Batch	P06029	ug/Kg					
Aldrin	ND	ug/Kg	2.00				
Alpha-BHC	ND	ug/Kg	2.00				
Beta-BHC	ND	ug/Kg	2.00 J				
Delta-BHC	ND	ug/Kg	2.00 J				
Gamma-BHC (Lindane)	ND	ug/Kg	2.00 J				
Alpha-Chlordane	6.00	ug/Kg	2.00				
Gamma-Chlordane	ND	ug/Kg	2.00				
Chlordane	40.0	ug/Kg	20.0				
4,4'-DDD	22.6E	ug/Kg	2.00 J				
4,4'-DDE	126M	ug/Kg	2.00				
4,4'-DDT	80.4M	ug/Kg	2.00 J				
Dieldrin	4.72	ug/Kg	2.00				
Endosulfan I	ND	ug/Kg	2.00				
Endosulfan II	ND	ug/Kg	2.00				
Endosulfan Sulfate	ND	ug/Kg	2.00 J				
Endrin	ND	ug/Kg	2.00				
Endrin Aldehyde	ND	ug/Kg	2.00				
Endrin Ketone	ND	ug/Kg	2.00 J				
Heptachlor	ND	ug/Kg	2.00 J				
Heptachlor Epoxide	ND	ug/Kg	2.00				
Methoxychlor	ND	ug/Kg	2.00 J				
Toxaphene	ND	ug/Kg	200				
Surrogate Standard							
		% Recovery	QC Limits				
S1 - Decachlorobiphenyl	63 Q		64	154			
S2 - Tetrachloro-m-xylene	76		39	130			


LABORATORY MANAGER

ND - Not Detected

J00047

377 437

ENVIRONMENTAL TESTING & CONSULTING, INC.
 2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

Project # 20560
 FID # DACA45-96-D-0014

Date Arrived 10/22/98
 ETC Order Number 9810751

ETC Lab ID **9810751-03**
Sample ID: B3-C1

Matrix :SOIL
 Sample Date :10/22/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
Organochlorine Pesticides							8081A
QC Batch	P06029	ug/Kg		10/23/98	10/25/98	RG	
Aldrin	ND	ug/Kg	2.00				
Alpha-BHC	ND	ug/Kg	2.00 J				
Beta-BHC	ND	ug/Kg	2.00 J				
Delta-BHC	ND	ug/Kg	2.00 J				
Gamma-BHC (Lindane)	ND	ug/Kg	2.00				
Alpha-Chlordane	70.3	ug/Kg	2.00				
Gamma-Chlordane	25.2	ug/Kg	2.00				
Chlordane	162	ug/Kg	20.0				
4,4'-DDD	21.1E	ug/Kg	2.00 J				
4,4'-DDE	272M	ug/Kg	2.00				
4,4'-DDT	486M	ug/Kg	2.00 J				
Dieldrin	40.3	ug/Kg	2.00				
Endosulfan I	ND	ug/Kg	2.00				
Endosulfan II	ND	ug/Kg	2.00				
Endosulfan Sulfate	ND	ug/Kg	2.00 J				
Endrin	ND	ug/Kg	2.00				
Endrin Aldehyde	ND	ug/Kg	2.00				
Endrin Ketone	ND	ug/Kg	2.00 J				
Heptachlor	ND	ug/Kg	2.00 J				
Heptachlor Epoxide	5.07	ug/Kg	2.00				
Methoxychlor	ND	ug/Kg	2.00 J				
Toxaphene	ND	ug/Kg	200				
Surrogate Standard							
S1 - Decachlorobiphenyl	142		64	154			
S2 - Tetrachloro-m-xylene	80		39	130			


 LABORATORY MANAGER

ND - Not Detected

300048

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET**377 438**

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560
FID # DACA45-96-D-0014

Site ID DDMT
Memphis, TN

Date Arrived 10/22/98
ETC Order Number 9810751

ETC Lab ID 9810751-04

Sample ID: B4-C1

Matrix :SOIL

Sample Date :10/22/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
Organochlorine Pesticides							8081A
				10/23/98	10/25/98	RG	
QC Batch	P06029	ug/Kg					
Aldrin	ND	ug/Kg	2 00				
Alpha-BHC	ND	ug/Kg	2 00				
Beta-BHC	ND	ug/Kg	2 00				
Delta-BHC	ND	ug/Kg	2 00				
Gamma-BHC (Lindane)	ND	ug/Kg	2 00				
Alpha-Chlordane	4.05	ug/Kg	2.00				
Gamma-Chlordane	ND	ug/Kg	2 00				
Chlordane	30 0	ug/Kg	20 0				
4,4'-DDD	23.3E	ug/Kg	2.00				
4,4'-DDE	70 6M	ug/Kg	2 00				
4,4'-DDT	14 4M	ug/Kg	2 00				
Dieldrin	3.14	ug/Kg	2.00				
Endosulfan I	ND	ug/Kg	2.00				
Endosulfan II	ND	ug/Kg	2.00				
Endosulfan Sulfate	ND	ug/Kg	2.00				
Endrin	ND	ug/Kg	2 00				
Endrin Aldehyde	ND	ug/Kg	2.00				
Endrin Ketone	ND	ug/Kg	2.00				
Heptachlor	ND	ug/Kg	2 00				
Heptachlor Epoxide	ND	ug/Kg	2 00				
Methoxychlor	ND	ug/Kg	2.00				
Toxaphene	ND	ug/Kg	200				
Surrogate Standard			% Recovery	QC Limits			
S1 - Decachlorobiphenyl	54	Q	64	154			
S2 - Tetrachloro-m-xylene	78		39	130			


LABORATORY MANAGER

ND - Not Detected

000049

377 439

ENVIRONMENTAL TESTING & CONSULTING, INC.
 2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

Project # 20560
 FID # DACA45-96-D-0014

Date Arrived 10/22/98
 ETC Order Number 9810751

ETC Lab ID 9810751-05
Sample ID: C-EQ-CS-003

Matrix :AQUEOUS
 Sample Date :10/22/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
Organochlorine Pesticides							
QC Batch	P07030	ug/L		10/23/98	10/25/98	RG	8081A
Aldrin	ND	ug/L	0.040				
Alpha-BHC	ND	ug/L	0.040				
Beta-BHC	ND	ug/L	0.040				
Delta-BHC	ND	ug/L	0.040				
Gamma-BHC (Lindane)	ND	ug/L	0.040				
Alpha-Chlordane	ND	ug/L	0.040				
Gamma-Chlordane	ND	ug/L	0.040				
Chlordane	ND	ug/L	0.250				
4,4'-DDD	ND	ug/L	0.040				
4,4'-DDE	ND	ug/L	0.040				
4,4'-DDT	ND	ug/L	0.040				
Dieldrin	ND	ug/L	0.040				
Endosulfan I	ND	ug/L	0.040				
Endosulfan II	ND	ug/L	0.040				
Endosulfan Sulfate	ND	ug/L	0.040				
Endrin	ND	ug/L	0.040				
Endrin Aldehyde	ND	ug/L	0.040				
Endrin Ketone	ND	ug/L	0.040				
Heptachlor	ND	ug/L	0.040				
Heptachlor Epoxide	ND	ug/L	0.040				
Methoxychlor	ND	ug/L	0.040				
Toxaphene	ND	ug/L	3.00				
Surrogate Standard							
S1 - Decachlorobiphenyl	84		34		115		
S2 - Tetrachloro-m-xylene	104 Q		31		96		


 LABORATORY MANAGER

ND - Not Detected

000050

Environmental Testing & Consulting, Inc.

**Quality Control Reports
Inorganics**

377 441

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
INORGANICS

Client Name : _OHM Remediation Services
Project Name : _Defense Depot - Memphis TN
ETC Order # : _9810-751

HOLDING TIMES

Sample Analysis : All samples analyzed within Method Specified
Holding Times.

CALIBRATION

Laboratory Control Sample : All criteria met.

QUALITY CONTROL

Matrix Spike

Spike Recovery : All analytes within QC limits

Method Blank

No Target Analytes detected above Detection Limit.


Laboratory Manager

000052

Environmental Testing & Consulting, Inc.
Inorganic QC Data Summary

377 442

Client Name OHM Remediation Services
Project DDMT-Memphis, TN

ETC Order Number 9810-751
File Name 9810-751 1

Method Blank

Analyte	Date Analyzed	Blank Concentration mg/L	QC Batch
Cyanide	10/23/98	<0.010	CY102398

Calibration Verification (CV)

Analyte	Date Analyzed	CV Conc mg/L	CV Conc Found	% Difference
Cyanide	10/23/98	0.200	0.212	6.0

Laboratory Control Sample (LCS)

Analyte	Date Analyzed	LCS Conc mg/L	LCS Conc Found	% Recovery
Cyanide	10/23/98	0.200	0.199	100.0

Matrix Spike/Matrix Spike Duplicate

Sample ID	Analyte	Spike mg/L	Sample mg/L	MS Conc Found	MS % Recovery	QC Limits	RPD
9810-751-05 MS	Cyanide	0.200	<0.010	0.196	98	68-114	
9810-751-05 MSD	Cyanide	0.200	<0.010	0.191	96	68-114	2.0

000053

Environmental Testing & Consulting, Inc.
Inorganic QC Data Summary

Client Name OHM Remediation Services
Project DDMT-Memphis, TN

ETC Order Number 9810-751
File Name 9810-751 2

Method Blank

Analyte	Date Analyzed	Blank Concentration mg/Kg	QC Batch
Cyanide	10/23/98	<1 00	CY102398

Calibration Verification (CV)

Analyte	Date Analyzed	CV Conc mg/L	CV Conc Found	% Difference
Cyanide	10/23/98	0 200	0 212	6 0

Laboratory Control Sample (LCS)

Analyte	Date Analyzed	LCS Conc mg/Kg	LCS Conc Found	% Recovery
Cyanide	10/23/98	20 0	19 2	96 0

Matrix Spike/Matrix Spike Duplicate

Sample ID	Analyte	Spike mg/Kg	Sample mg/Kg	MS Conc Found	MS % Recovery	QC Limits	RPD
9810-751-05 MS	Cyanide	18 5	<1 00	17 5	95	70-130	
9810-751-05 MSD	Cyanide	18 9	<1 00	18 6	98	70-130	3 0

J00054

Environmental Testing & Consulting, Inc.

Quality Control Reports

Metals (ICP/GFAA/CV)

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
METALS - SOIL

Client Name : OHM Remediation Services
Project Name : Defense Depot - Memphis TN
ETC Order # : 9810-751

HOLDING TIMES

QC Batch(s) for this order : ICP/GFAA V8-SO-63
Mercury V4-SO-42

Sample Analysis : All samples digested and analyzed within 180 days of collection.
Mercury Analysis : All samples analyzed within 28 days of collection.

CALIBRATION

Initial Calibration : All criteria met.
Continuing Calibration : All criteria met.

SAMPLE ANALYSIS

Instrumentation : Thermo Jarrell Ash Enviro-I ICP
Varian 640Z Zeeman Graphite Furnace
Perkin Elmer 5100ZL Graphite Furnace
Perkin Elmer 6000 Graphite Furnace
Thermo Jarrell Ash AA-Scan 4 Graphite Furnace
CETAC M-6000A Mercury Analyzer

Dilutions Required : No dilutions required.*

*
Dilutions were performed on several samples to bring the Target Analyte(s) within calibration range. Refer to Table 1.

Due to low recoveries and failing Post Digestion Spike, all Thallium data was reported based on the Method of Standard Additions.

QUALITY CONTROL**9810-751.MQ1BLANK**Method Blank

V8-SO-63BLK - ICP/GFAA Metals

V4-SO-42BLK - Mercury

Calcium identified in V8-SO-63 at 3.10 mg/Kg.

9810-751.MQ1LCSLaboratory Control Sample(s)

V8-SO-63LCS - ICP/GFAA Metals

V4-SO-42LCS - Mercury

All criteria met.

ENVIRONMENTAL TESTING AND CONSULTING, INC. 377 446
MEMPHIS, TN
CASE NARRATIVE
METALS - SOIL

Client Name : OHM Remediation Services
Project Name : Defense Depot - Memphis TN
ETC Order # : 9810-751

QUALITY CONTROL

9810-751.MQ1MSMSD

Matrix Spike / Matrix Spike Dup - ICP Metals

9810-751-04 RPD : All analytes within QC limits.*
B4-C1 Spike Recovery : All analytes within QC limits.*
*

Recoveries for Antimony were flagged as outside QC Limits in the Matrix Spike and Matrix Spike Duplicate. A Post Digestion Spike was performed for verification :

Analyte	mg/L Expected	mg/L Found	% Recovery	QA Evaluation
Antimony	0.500	0.491	98	Pass

Recoveries and RPDs for multiple analytes were flagged as outside QC Limits due to the level of these analytes present in the sample relative to the spike amounts. In addition, concentrations of other analytes were high relative to the spike amounts. Dilution Tests were performed for verification :

Analyte	No Dilution	1:5 Dilution	1:25 Dilution	% Difference	QA Evaluation
Aluminum	8890 mg/Kg	8780 mg/Kg	----	1	Pass
Copper	41.1	39.0	----	5	Pass
Iron	----	17100	17400	2	Pass
Manganese	451	466	----	3	Pass
Potassium	1210	1220	----	1	Pass
Magnesium	10600	10500	----	1	Pass
Zinc	112	113	----	1	Pass

Analyte	1:10 Dilution	1:50 Dilution	% Difference	QA Evaluation
Calcium	67600 mg/L	66300 mg/L	2	Pass

Refer to Laboratory Control Sample(s) for system verification.

Matrix Spike / Matrix Spike Dup - Graphite Metals

9810-751-04 RPD : All analytes within QC limits.
B4-C1 Spike Recovery : All analytes within QC limits.*
*

Recoveries for Arsenic and Lead were flagged as outside QC Limits due to the level of these analytes present relative to the spike amount. Dilution Tests were performed for verification :

Analyte	1:2 Dilution	1:10 Dilution	% Difference	QA Evaluation
Arsenic	20.9 mg/Kg	21.7 mg/Kg	4	Pass

Analyte	1:20 Dilution	1:100 Dilution	% Difference	QA Evaluation
Lead	76.3 mg/Kg	79.4 mg/Kg	4	Pass

000057

377 447

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
METALS - SOIL

Client Name : OHM Remediation Services
Project Name : Defense Depot - Memphis TN
ETC Order # : 9810-751

QUALITY CONTROL

Recoveries for Thallium were flagged as outside QC Limits in the Matrix Spike and Matrix Spike Duplicate. The Post Digestion Spike failed evaluation criteria. All data was reported based on MSA.

Refer to Laboratory Control Sample(s) for system verification.

Matrix Spike / Matrix Spike Dup - Hg

9810-751-04

RPD : All analytes within QC limits.

B4-C1

Spike Recovery : All analytes within QC limits.

Refer to Laboratory Control Sample(s) for system verification.

Dilution Test - Dilution result must agree within 10% of original result when sample is diluted by a factor of 5.

Post Digestion Spike - Recovery must be +/-15% of expected value.


Laboratory Manager

000058

Environmental Testing & Consulting, Inc.
Metals Dilution Factor Summary Table
Table 1

Sample ID	Analyte	Dilution	Code
		Factor	
9810-751-01	Arsenic	1.2	C
9810-751-01	Iron	1.5	C
9810-751-01	Lead	1.20	C
9810-751-02	Arsenic	1.2	C
9810-751-02	Calcium	1.20	C
9810-751-02	Lead	1.20	C
9810-751-03	Arsenic	1.4	C
9810-751-03	Calcium	1.5	C
9810-751-03	Iron	1.5	C
9810-751-03	Lead	1.20	C
9810-751-04	Arsenic	1.2	C
9810-751-04	Calcium	1.10	C
9810-751-04	Iron	1.5	C
9810-751-04	Lead	1.20	C

C - Dilution to bring analyte within calibration range.

I - Dilution to due to spectral interference from the metal indicated

000059

9810-751 t1

Page 1

SOLID METHOD BLANK
METALS

Lab Name

Environmental Testing and Consulting, Inc

Laboratory ID ICP/GFAA Metals

V8-SO-63 BLK

QC Batch

V8-SO-63

Laboratory ID Mercury

V4-SO-42 BLKV4-SO-42

Date Sample Prepared

10/23/98

ICP/GFAA Metals

10/26/98

Mercury

Metals	Concentration mg/Kg	Detection Limit mg/Kg	Date Analyzed	Method
Silver	<0.700	0.700	10/23/98	6010B
Aluminum	<4.00	4.00	10/23/98	6010B
Arsenic	<0.200	0.200	10/23/98	7060A
Barium	<0.200	0.200	10/23/98	6010B
Beryllium	<0.100	0.100	10/23/98	6010B
Calcium	3.10	1.00	10/23/98	6010B
Cadmium	<0.400	0.400	10/23/98	6010B
Cobalt	<0.700	0.700	10/23/98	6010B
Chromium	<0.700	0.700	10/23/98	6010B
Copper	<0.600	0.600	10/23/98	6010B
Iron	<0.700	0.700	10/23/98	6010B
Potassium	<20.0	20.0	10/23/98	6010B
Magnesium	<3.00	3.00	10/23/98	6010B
Manganese	<0.200	0.200	10/23/98	6010B
Sodium	<20.0	20.0	10/23/98	6010B
Nickel	<1.50	1.50	10/23/98	6010B
Lead	<0.100	0.100	10/23/98	7421
Antimony	<3.20	3.20	10/23/98	6010B
Selenium	<0.200	0.200	10/23/98	7740
Thallium	<0.100	0.100	10/26/98	7841
Vanadium	<0.800	0.800	10/23/98	6010B
Zinc	<1.00	1.00	10/23/98	6010B
Mercury	<0.020	0.020	10/26/98	7471A

Metals Blank

000060

9810-751 mq1BLANK

SOLID LABORATORY CONTROL SAMPLE
METALS

Lab Name Environmental Testing and Consulting, Inc

Laboratory Control ID ICP/GFAA Metals V8-SO-63 LCS QC Batch V8-SO-63
Mercury V4-SO-42 LCS V4-SO-42

Date Prepared ICP/GFAA Metals 10/23/98
Mercury 10/26/98

Metals	Spike Added mg/Kg	Found mg/Kg	% R	#	QC Limits
Silver	20 0	19 5	98	80	120
Aluminum	200	204	102	80	120
Arsenic	5 00	4 74	95	85	115
Barium	200	200	100	80	120
Beryllium	20 0	19 7	99	80	120
Calcium	400	414	104	80	120
Cadmium	20 0	20 5	103	80	120
Cobalt	100	103	103	80	120
Chromium	40 0	41 3	103	80	120
Copper	40 0	41.1	103	80	120
Iron	200	208	104	80	120
Potassium	400	414	104	80	120
Magnesium	400	402	101	80	120
Manganese	20 0	20 9	105	80	120
Sodium	400	421	105	80	120
Nickel	100	103	103	80	120
Lead	2 00	1.95	98	85	115
Antimony	200	201	101	80	120
Selenium	5 00	4 76	95	85	115
Thallium	2 00	1 94	97	85	115
Vanadium	100	103	103	80	120
Zinc	20 0	20 7	104	80	120
Mercury	0 167	0 161	96	80	120

Column to be used to flag recovery values with an asterisk
* Values outside of QC limits

Metals Laboratory Control Sample

000061

9810-751 mq1LCS

SOLID MATRIX SPIKE
METALS

Lab Name Environmental Testing and Consulting, Inc

Laboratory ID MS ICP/GFAA Metals	9810-751-04	QC Batch V8-SO-63
Laboratory ID MS Mercury	9810-751-04	V4-SO-42

Date Sample Prepared	10/23/98	ICP/GFAA Metals
	10/26/98	Mercury

Metals	SPIKE Added mg/Kg	SAMPLE Conc mg/Kg	MS Conc mg/Kg	RPD <20% #	MS % Rec #	QC Limits	
Silver	23 3	ND	22 8	6	98	75	125
Aluminum	233	8890	9480	7	253 *	75	125
Arsenic	5 38	20 9	24 9	2	74	70	130
Barium	233	90 6	323	4	100	75	125
Beryllium	23 3	0 425	23 1	4	97	75	125
Calcium	465	67600	70600	28 *	645 *	75	125
Cadmium	23 3	ND	22 7	4	97	75	125
Cobalt	116	5 09	117	4	97	75	125
Chromium	46 5	15 2	63 9	10	105	75	125
Copper	46 5	41 1	71 0	1	64 *	75	125
Iron	233	17100	18200	15	472 *	75	125
Potassium	465	1210	1790	7	125 *	75	125
Magnesium	465	10600	4730	3	-1262 *	75	125
Manganese	23 3	451	590	26 *	597 *	75	125
Sodium	465	129	601	2	102	75	125
Nickel	116	13 3	125	5	96	75	125
Lead	2 15	76 3	87 0	0	498 *	70	130
Antimony	233	ND	0	0	0 *	75	125
Selenium	5 38	0 551	4 32	6	70 *	70	130
Thallium	2 15	0 136	1 31	20	55 *	75	125
Vanadium	116	18 6	134	8	100	75	125
Zinc	23 3	112	122	5	43 *	75	125
Mercury	0 163	0 033	0 187	13	95	75	125

Column to be used to flag recovery values with an asterisk

* Values outside of QC limits

ND - Not Detected

Metals Matrix Spike

000062

9810-751 mq1MSMSD

SOIL MATRIX SPIKE DUPLICATE
METALS

Lab Name Environmental Testing and Consulting, Inc

		QC Batch
Laboratory ID MS ICP/GFAA Metals	9810-751-04	V8-SO-63
Laboratory ID MS Mercury	9810-751-04	V4-SO-42

Date Sample Prepared	10/23/98	ICP/GFAA Metals
	10/26/98	Mercury

Metals	SPIKE Added mg/Kg	SAMPLE Conc mg/Kg	MSD Conc mg/Kg		MSD % Rec	#	QC Limits	
Silver	23 3	ND	21 5		92		75	125
Aluminum	233	8890	8810		-34	*	75	125
Arsenic	5 81	20 9	25 5		79		70	130
Barium	233	90 6	311		95		75	125
Beryllium	23 3	0 425	22 3		94		75	125
Calcium	465	67600	53400		-3054	*	75	125
Cadmium	23 3	ND	21 8		94		75	125
Cobalt	116	5 09	112		92		75	125
Chromium	46 5	15 2	57 7		91		75	125
Copper	46 5	41 1	70 5		63	*	75	125
Iron	233	17100	15600		-644	*	75	125
Potassium	465	1210	1670		99		75	125
Magnesium	465	10600	4890		-1228	*	75	125
Manganese	23 3	451	452		4	*	75	125
Sodium	465	129	614		104		75	125
Nickel	116	13 3	119		91		75	125
Lead	2 33	76 3	86 9		455	*	70	130
Antimony	233	ND	0		0	*	75	125
Selenium	5 81	0 551	4 60		70	*	70	130
Thallium	2 33	0 136	1 60		63	*	75	125
Vanadium	116	18 6	124		91		75	125
Zinc	23 3	112	116		17	*	75	125
Mercury	0 188	0 033	0 214		96		75	125

Column to be used to flag recovery values with an asterisk

* Values outside of QC limits

ND - Not Detected

Metals Matrix Spike Duplicate

000063
9810-751 mq1MSMSD

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
METALS - AQUEOUS

Client Name : _OHM Remediation Services
Project Name : _Defense Depot - Memphis TN
ETC Order # : _9810-751

HOLDING TIMES

QC Batch(s) for this order : ICP/GFAA V12-AQ-40
Mercury V4-AQ-53

Sample Analysis : All samples digested and analyzed within 180
days of collection.
Mercury Analysis : All samples analyzed within 28 days of
collection.

CALIBRATION

Initial Calibration : All criteria met.
Continuing Calibration : All criteria met.

SAMPLE ANALYSIS

Instrumentation : Thermo Jarrell Ash Enviro-I ICP
Varian 640Z Zeeman Graphite Furnace
Perkin Elmer 5100ZL Graphite Furnace
Perkin Elmer 6000 Graphite Furnace
Thermo Jarrell Ash AA-Scan 4 Graphite Furnace
CETAC M-6000A Mercury Analyzer
Dilutions Required : No dilutions required.

QUALITY CONTROL**9810-751.MQCBLANK**Method Blank

V12-AQ-40BLK - ICP/GFAA Metals
V4-AQ-53BLK - Mercury

No analytes detected in the Method Blank.

9810-751.MQCLCSLaboratory Control Sample(s)

V12-AQ-40LCS - ICP/GFAA Metals
V4-AQ-53LCS - Mercury

All criteria met.

9810-751.MQCMSMSDMatrix Spike / Matrix Spike Dup - ICP Metals

9810-751-05 RPD : All analytes within QC limits.
C-EQ-CS-003 Spike Recovery : All analytes within QC limits.

Refer to Laboratory Control Sample(s) for system verification.

000064

MEMPHIS, TN
CASE NARRATIVE
METALS - AQUEOUS

Client Name : OHM Remediation Services
Project Name : Defense Depot - Memphis TN
ETC Order # : 9810-751

QUALITY CONTROLMatrix Spike / Matrix Spike Dup - Graphite Metals

9810-751-05 RPD : All analytes within QC limits.
C-EQ-CS-003 Spike Recovery : All analytes within QC limits.

Refer to Laboratory Control Sample(s) for system verification.

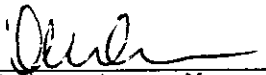
Matrix Spike / Matrix Spike Dup - Hg

9810-751-05 RPD : All analytes within QC limits.
C-EQ-CS-003 Spike Recovery : All analytes within QC limits.

Refer to Laboratory Control Sample(s) for system verification.

Dilution Test - Dilution result must agree within 10% of original
result when sample is diluted by a factor of 5.

Post Digestion Spike - Recovery must be +/-15% of expected value.


Laboratory Manager

000065

377 455

WATER METHOD BLANK
METALS

Lab Name Environmental Testing and Consulting, Inc

Laboratory ID ICP/GFAA Metals V12-AQ-40 BLK QC Batch V12-AQ-40

Laboratory ID Mercury V4-AQ-53 BLK V4-AQ-53

Date Sample Prepared 10/23/98 ICP/GFAA Metals

10/24/98 Mercury

Metals	Concentration mg/L	Detection Limit mg/L	Date Analyzed	Method
Silver	<0 009	0 009	10/23/98	6010B
Aluminum	<0 060	0 060	10/23/98	6010B
Arsenic	<0 003	0 003	10/23/98	7060A
Barium	<0 003	0 003	10/23/98	6010B
Beryllium	<0 002	0 002	10/23/98	6010B
Calcium	<0 015	0 015	10/23/98	6010B
Cadmium	<0 005	0 005	10/23/98	6010B
Cobalt	<0 009	0 009	10/23/98	6010B
Chromium	<0 009	0 009	10/23/98	6010B
Copper	<0 008	0 008	10/23/98	6010B
Iron	<0 009	0 009	10/23/98	6010B
Potassium	<0 250	0 250	10/23/98	6010B
Magnesium	<0 040	0 040	10/23/98	6010B
Manganese	<0 003	0 003	10/23/98	6010B
Sodium	<0 050	0 050	10/23/98	6010B
Nickel	<0 020	0 020	10/23/98	6010B
Lead	<0 002	0 002	10/23/98	7421
Antimony	<0 040	0 040	10/23/98	6010B
Selenium	<0 003	0 003	10/23/98	7740
Thallium	<0 002	0 002	10/26/98	7841
Vanadium	<0 010	0 010	10/23/98	6010B
Zinc	<0 010	0 010	10/23/98	6010B
Mercury	<0 0002	0 0002	10/24/98	7470A

Metals Blank

000066

9810-751 mqcBLANK

WATER LABORATORY CONTROL SAMPLE
METALS

Lab Name

Environmental Testing and Consulting, Inc

Laboratory Control ID

ICP/GFAA Metals V12-AQ-40 LCS
Mercury V4-AQ-53 LCS

QC Batch

V12-AQ-40

V4-AQ-53

Date Prepared

ICP/GFAA Metals 10/23/98
Mercury 10/24/98

Metals	Spike Added mg/L	Found mg/L	% R	#	QC Limits
Silver	0.250	0.252	101		80 120
Aluminum	2.50	2.60	104		80 120
Arsenic	0.063	0.062	98		85 115
Barium	2.50	2.53	101		80 120
Beryllium	0.250	0.250	100		80 120
Calcium	5.00	5.30	106		80 120
Cadmium	0.250	0.262	105		80 120
Cobalt	1.25	1.31	105		80 120
Chromium	0.500	0.535	107		80 120
Copper	0.500	0.525	105		80 120
Iron	2.50	2.65	106		80 120
Potassium	5.00	5.22	104		80 120
Magnesium	5.00	5.16	103		80 120
Manganese	0.250	0.266	106		80 120
Sodium	5.00	5.25	105		80 120
Nickel	1.25	1.32	106		80 120
Lead	0.025	0.026	104		85 115
Antimony	2.50	2.56	102		80 120
Selenium	0.063	0.061	97		85 115
Thallium	0.025	0.026	104		85 115
Vanadium	1.25	1.31	105		80 120
Zinc	0.250	0.265	106		80 120
Mercury	0.0050	0.0049	98		80 120

Column to be used to flag recovery values with an asterisk

* Values outside of QC limits

Metals Laboratory Control Sample

000067

9810-751 mqcLCS

377 457

WATER MATRIX SPIKE
METALS

Lab Name Environmental Testing and Consulting, Inc

Laboratory ID MS ICP/GFAA Metals	9810-751-05	QC Batch	V12-AQ-40
Laboratory ID MS Mercury	9810-751-05		V4-AQ-53

Date Sample Prepared	10/23/98	ICP/GFAA Metals
	10/24/98	Mercury

Metals	SPIKE Added mg/L	SAMPLE Conc mg/L	MS Conc mg/L	RPD <20% #	MS % Rec #	QC Limits	
Silver	0.250	ND	0.259	1	104	75	125
Aluminum	2.50	ND	2.70	0	108	75	125
Arsenic	0.063	ND	0.060	0	95	85	115
Barium	2.50	ND	2.63	0	105	75	125
Beryllium	0.250	ND	0.257	1	103	75	125
Calcium	5.00	ND	5.45	1	109	75	125
Cadmium	0.250	ND	0.267	1	107	75	125
Cobalt	1.25	ND	1.35	0	108	75	125
Chromium	0.500	ND	0.546	0	109	75	125
Copper	0.500	ND	0.542	0	108	75	125
Iron	2.50	ND	2.74	0	110	75	125
Potassium	5.00	ND	5.54	3	111	75	125
Magnesium	5.00	ND	5.31	0	106	75	125
Manganese	0.250	ND	0.271	1	108	75	125
Sodium	5.00	0.109	5.46	3	107	75	125
Nickel	1.25	ND	1.35	0	108	75	125
Lead	0.025	ND	0.025	4	100	85	115
Antimony	2.50	ND	2.59	3	104	75	125
Selenium	0.063	ND	0.060	2	95	85	115
Thallium	0.025	ND	0.026	0	104	85	115
Vanadium	1.25	ND	1.36	0	109	75	125
Zinc	0.250	ND	0.271	0	108	75	125
Mercury	0.0050	ND	0.0049	2	98	75	125

Column to be used to flag recovery values with an asterisk

* Values outside of QC limits

ND - Not Detected

Metals Matrix Spike

000068

9810-751 mqcMSMSD

WATER MATRIX SPIKE DUPLICATE
METALS

Lab Name Environmental Testing and Consulting, Inc

	QC Batch
Laboratory ID MS ICP/GFAA Metals	9810-751-05 V12-AQ-40
Laboratory ID MS Mercury	9810-751-05 V4-AQ-53

Date Sample Prepared	10/23/98	ICP/GFAA Metals
	10/24/98	Mercury

Metals	SPIKE Added mg/L	SAMPLE Conc mg/L	MSD Conc mg/L		MSD % Rec	#	QC Limits
Silver	0.250	ND	0.261		104		75 125
Aluminum	2.50	ND	2.69		108		75 125
Arsenic	0.063	ND	0.060		95		85 115
Barium	2.50	ND	2.64		106		75 125
Beryllium	0.250	ND	0.260		104		75 125
Calcium	5.00	ND	5.48		110		75 125
Cadmium	0.250	ND	0.269		108		75 125
Cobalt	1.25	ND	1.35		108		75 125
Chromium	0.500	ND	0.547		109		75 125
Copper	0.500	ND	0.544		109		75 125
Iron	2.50	ND	2.75		110		75 125
Potassium	5.00	ND	5.35		107		75 125
Magnesium	5.00	ND	5.29		106		75 125
Manganese	0.250	ND	0.275		110		75 125
Sodium	5.00	0.109	5.60		110		75 125
Nickel	1.25	ND	1.35		108		75 125
Lead	0.025	ND	0.024		96		85 115
Antimony	2.50	ND	2.68		107		75 125
Selenium	0.063	ND	0.059		94		85 115
Thallium	0.025	ND	0.026		104		85 115
Vanadium	1.25	ND	1.36		109		75 125
Zinc	0.250	ND	0.272		109		75 125
Mercury	0.0050	ND	0.0048		96		75 125

Column to be used to flag recovery values with an asterisk

* Values outside of QC limits ND - Not Detected

Metals Matrix Spike Duplicate

000069

9810-751 mqcMSMSD

377 459

Environmental Testing & Consulting, Inc.

Quality Control Reports

GC/MS Volatiles

000070

ENVIRONMENTAL TESTING AND CONSULTING, INC. 377 460
MEMPHIS, TN
CASE NARRATIVE
GC/MS VOLATILE COMPOUNDS - SOIL

Client Name : OHM Remediation Services
Project Name : Defense Depot - Memphis TN

ETC Order # : 9810-751
Method (SW-846) : 8260B/5030B

HOLDING TIMES

Sample Analysis : All samples analyzed within 14 days of collection.

QUALITY CONTROL

QC Batch Form 4 Summary
V2102301S V210231LB

System Monitoring Compounds FORM 2
Surrogate recoveries within QC limits.

Laboratory Control Sample FORM 3
V210231LCS/LCSD

All criteria met.*

*
Ethylbenzene and 1,1,1,2-Tetrachloroethane were flagged for high recovery in V210231LCS. High recovery indicates that detection levels were not affected. 1,1,1,2-Tetrachloroethane was not a Target Analyte associated with this project. Ethylbenzene was not identified in samples associated with this project. The data was not affected.

Matrix Spike / Matrix Spike Dup FORM 3
9810-751-03 RPD : All analytes within QC limits.*
B3-C1 Spike Recovery : All analytes within QC limits.*
*

Recoveries and RPDs for multiple analytes were flagged outside QC Limits in the Matrix Spike and Matrix Spike Duplicate.

Refer to Laboratory Control Sample(s) for system verification.

Method Blank FORM 4
V210231LB

No Target Analytes detected above the reporting limit.

CALIBRATION

BFB Daily 12 Hour Tune : All criteria met. FORM 5
Initial Calibration : All criteria met. FORM 6
Calibration Verification : All criteria met. FORM 7*

*
Calibration Verification(CV) : Date 10/23/98 Time: 13:27

Analyte	%Diff(30% Max)	Response
Hexachlorobutadiene	44.0	High
1,2,4-Trichlorobenzene	35.0	High

These analytes were not Target Analytes associated with this project. The data was not affected.

000071

377 461

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC/MS VOLATILE COMPOUNDS - SOIL

Client Name : OHM Remediation Services
Project Name : Defense Depot - Memphis TN
ETC Order # : 9810-751
Method (SW-846) : 8260B/5030B

CALIBRATION

Volatile Internal Standard Area and RT FORM 8
Daily Check Standard(s) Internal Standard Areas and Retention Times
within QC limits.

SAMPLE ANALYSIS

Instrumentation : HP 5890 Series II GC, 5971MSD
Dilutions Required : No dilutions required.*

*
Due to Encore Samplers, Detection Limits have been adjusted with the
following concentration factors to account for the lower sample size.

<u>Sample ID</u>	<u>Concentration Factor</u>
9810-751-01	1:3
9810-751-02	1:4
9810-751-03	1:2.6
9810-751-04	1:2.5


Laboratory Manager

000072

FORM 2
SOIL VOA-GCMS SYSTEM MONITORING COMPOUND RECOVERY

377 462

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-751

Level: (low/med) LOW

	CLIENT SAMPLE NO.	SMC1 (DBF) #	SMC2 (TOL) #	SMC3 (BFB) #	OTHER	TOT OUT
01	V210231LCS	97	99	92		0
02	V210231LB	102	97	100		0
03	9810-751-1	103	96	100		0
04	9810-751-2	106	94	96		0
05	9810-751-3	102	96	103		0
06	9810-751-4	103	96	100		0
07	V210231LCSD	97	96	91		0
08	9810-751-3MS	99	99	95		0
09	9810-751-3MS	100	98	98		0
10						
11						
12						
13						
14						
15						
16						
17						
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22						
23						
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25						
26						
27						
28						
29						
30						

QC LIMITS

SMC1 (DBF) = Dibromofluoromethane (70-134)
 SMC2 (TOL) = Toluene-d8 (85-111)
 SMC3 (BFB) = Bromofluorobenzene (81-117)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

377 463

FORM 4
VOA-GCMS METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

Lab Name: ETC, INC.

V210231LB

Lab Prep Batch: V2102301

SDG No.: 9810-751

Lab File ID: 0302004

Lab Prep Batch: V2102301S

Date Analyzed: 10/23/98

Time Analyzed: 1523

GC Column: ID: 2 (mm)

Heated Purge: (Y/N) Y

Instrument ID: VOC2

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	V210231LCS		0201002LCS	1327
02	9810-751-1		0501006	1651
03	9810-751-2		0601007	1734
04	9810-751-3		0701008	1817
05	9810-751-4		0801009	1901
06	V210231LCSD		1501016	0005
07	9810-751-3MS		1601017	0048
08	9810-751-3MS		1701018	0131
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

COMMENTS:

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

377 464
CLIENT SAMPLE NO.

V210231LB

Lab Name: ETC, INC.

SDG No.: 9810-751

Matrix: (soil/water) SOIL

Lab Prep Batch: V2102301S

Sample wt/vol: 10.0 (g/mL) G

Lab File ID: 0302004

Level: (low/med) LOW

Date Analyzed: 10/23/98

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
67-64-1	Acetone	50.0	U
71-43-2	Benzene	2.00	U
75-27-4	Bromodichloromethane	2.00	U
75-25-2	Bromoform	2.00	U
74-83-9	Bromomethane	2.00	U
75-15-0	Carbon Disulfide	25.0	U
56-23-5	Carbon Tetrachloride	2.00	U
108-90-7	Chlorobenzene	2.00	U
124-48-1	Chlorodibromomethane	2.00	U
75-00-3	Chloroethane	2.00	U
67-66-3	Chloroform	2.00	U
74-87-3	Chloromethane	2.00	U
75-34-3	1,1-Dichloroethane	2.00	U
107-06-2	1,2-Dichloroethane	2.00	U
75-35-4	1,1-Dichloroethene	2.00	U
156-59-4	cis-1,2-Dichloroethene	2.00	U
156-60-5	trans-1,2-Dichloroethene	2.00	U
78-87-5	1,2-Dichloropropane	2.00	U
10061-01-5	cis-1,3-Dichloropropene	2.00	U
10061-02-6	trans-1,3-Dichloropropene	2.00	U
100-41-4	Ethylbenzene	2.00	U
591-78-6	2-Hexanone	50.0	U
75-09-2	Methylene Chloride	50.0	U
78-93-3	Methyl-Ethyl Ketone	50.0	U
108-10-1	4-Methyl-2-Pentanone	50.0	U
100-42-5	Styrene	2.00	U
79-34-5	1,1,2,2-Tetrachloroethane	2.00	U
127-18-4	Tetrachloroethene	2.00	U
108-88-3	Toluene	2.00	U
71-55-6	1,1,1-Trichloroethane	2.00	U
79-00-5	1,1,2-Trichloroethane	2.00	U
79-01-6	Trichloroethene	2.00	U
108-05-4	Vinyl Acetate	25.0	U

FORM I VOA-GCMS

000075

377 465

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V210231LB

Lab Name: ETC, INC.,

SDG No.: 9810-751

Matrix: (soil/water) SOIL

Lab Prep Batch: V2102301S

Sample wt/vol: 10.0 (g/mL) G

Lab File ID: 0302004

Level: (low/med) LOW

Date Analyzed: 10/23/98

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg)	UG/KG Q
75-01-4-----	Vinyl Chloride	2.00	U
1330-20-7-----	Xylene-mp	2.00	U
95-47-6-----	Xylene-o	2.00	U

FORM I VOA-GCMS

000076

FORM 3
SOIL VOA-GCMS LABORATORY CONTROL SAMPLE

377 466

Lab Name: ETC, INC.

Lab Prep Batch: V2102301S

SDG No.: 9810-751

Matrix Spike - Sample No.: V210231LCS

Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Acetone	100		79.2	79	59-151
Benzene	100		90.9	91	72-124
Bromodichloromethane	100		93.0	93	68-119
Bromoform	100		124	124	66-136
Bromomethane	100		100	100	40-134
Carbon Disulfide	100		92.4	92	60-133
Carbon Tetrachloride	100		101	101	64-123
Chlorobenzene	100		110	110	77-112
Chlorodibromomethane	100		91.9	92	72-118
Chloroethane	100		109	109	64-142
Chloroform	100		88.8	89	70-115
Chloromethane	100		109	109	58-139
1,1-Dichloroethane	100		89.2	89	76-118
1,2-Dichloroethane	100		86.2	86	62-124
1,1-Dichloroethene	100		91.3	91	69-121
cis-1,2-Dichloroethene	100		91.3	91	76-114
trans-1,2-Dichloroethen	100		92.4	92	72-121
1,2-Dichloropropane	100		94.6	95	64-133
cis-1,3-Dichloropropene	100		95.2	95	77-120
trans-1,3-Dichloroprope	100		96.1	96	73-124
Ethylbenzene	100		115	115*	77-111
2-Hexanone	100		82.5	82	53-144
Methylene Chloride	100		71.1	71	67-115
Methyl-Ethyl Ketone	100		78.1	78	55-151
4-Methyl-2-Pentanone	100		83.0	83	42-144
Styrene	100		109	109	77-117
1,1,1,2-Tetrachloroetha	100		118	118*	79-113
Tetrachloroethene	100		105	105	77-115

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS:

377 467

FORM 3
SOIL VOA-GCMS LABORATORY CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: V2102301S

SDG No.: 9810-751

Matrix Spike - Sample No.: V210231LCS

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Toluene	100		99.6	100	77-115
1,1,1-Trichloroethane	100		96.4	96	63-122
1,1,2-Trichloroethane	100		88.2	88	69-117
Trichloroethene	100		101	101	75-113
Vinyl Acetate	100		89.5	90	28-146
Vinyl Chloride	100		107	107	65-134
Xylene-mp	200		226	113	77-115
Xylene-o	100		111	111	77-115

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS:

FORM 3
SOIL VOA-GCMS LABORATORY CONTROL SAMPLE

377 468

Lab Name: ETC, INC.

Lab Prep Batch: V2102301S

SDG No.: 9810-751

Matrix Spike - Sample No.: V210231LCS

Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	% RPD #	QC LIMITS	
					RPD	REC.
Acetone	100	74.8	75	5	20	59-151
Benzene	100	83.1	83	9	20	72-124
Bromodichloromethane	100	86.6	87	7	20	68-119
Bromoform	100	123	123	1	20	66-136
Bromomethane	100	97.1	97	3	20	40-134
Carbon Disulfide	100	80.2	80	14	20	60-133
Carbon Tetrachloride	100	83.2	83	20	20	64-123
Chlorobenzene	100	102	102	8	20	77-112
Chlorodibromomethane	100	88.1	88	4	20	72-118
Chloroethane	100	93.1	93	16	20	64-142
Chloroform	100	83.7	84	6	20	70-115
Chloromethane	100	93.4	93	16	20	58-139
1,1-Dichloroethane	100	81.9	82	8	20	76-118
1,2-Dichloroethane	100	83.1	83	4	20	62-124
1,1-Dichloroethene	100	82.1	82	10	20	69-121
cis-1,2-Dichloroethene	100	85.0	85	7	20	76-114
trans-1,2-Dichloroethen	100	83.1	83	10	20	72-121
1,2-Dichloropropane	100	89.0	89	6	20	64-133
cis-1,3-Dichloropropene	100	88.2	88	8	20	77-120
trans-1,3-Dichloroprope	100	88.0	88	9	20	73-124
Ethylbenzene	100	110	110	4	20	77-111
2-Hexanone	100	81.4	81	1	20	53-144
Methylene Chloride	100	72.7	73	3	20	67-115
Methyl-Ethyl Ketone	100	78.7	79	1	20	55-151
4-Methyl-2-Pentanone	100	83.7	84	1	20	42-144
Styrene	100	102	102	7	20	77-117
1,1,1,2-Tetrachloroetha	100	111	111	6	20	79-113
Tetrachloroethene	100	93.0	93	12	20	77-115

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS:

377 469

FORM 3
SOIL VOA-GCMS LABORATORY CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: V2102301S

SDG No.: 9810-751

Matrix Spike - Sample No.: V210231LCS

Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	% RPD #	QC LIMITS	
					RPD	REC.
Toluene	100	97.4	97	3	20	77-115
1,1,1-Trichloroethane	100	82.9	83	14	20	63-122
1,1,2-Trichloroethane	100	84.6	85	3	20	69-117
Trichloroethene	100	88.2	88	14	20	75-113
Vinyl Acetate	100	90.2	90	0	20	28-146
Vinyl Chloride	100	88.9	89	18	20	65-134
Xylene-mp	200	225	112	1	20	77-115
Xylene-o	100	112	112	1	20	77-115

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 36 outside limits

Spike Recovery: 2 out of 72 outside limits

COMMENTS: _____

FORM 3
SOIL VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

377 470

Lab Name: ETC, INC.

Lab Prep Batch: V2102301S

SDG No.: 9810-751

Matrix Spike - Sample No.: 9810-751-3

Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Benzene	333	0.000	205	62*	72-124
Chlorobenzene	333	0.000	170	51*	77-112
1,1-Dichloroethene	333	0.000	239	72	69-121
Toluene	333	0.000	210	63*	77-115
Trichloroethene	333	0.000	211	63*	75-113

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
Benzene	333	166	50*	21*	20	72-124
Chlorobenzene	333	100	30*	52*	20	77-112
1,1-Dichloroethene	333	223	67*	7	20	69-121
Toluene	333	155	46*	31*	20	77-115
Trichloroethene	333	180	54*	15	20	75-113

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 3 out of 5 outside limits

Spike Recovery: 9 out of 10 outside limits

COMMENTS:

FORM III VOA-GCMS

000081

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC/MS VOLATILE COMPOUNDS - AQUEOUS

Client Name : OHM Remediation Services
Project Name : Defense Depot - Memphis TN
ETC Order # : 9810-751
Method (SW-846) : 8260B/5030B

HOLDING TIMES

Sample Analysis : All samples analyzed within 14 days of collection.

QUALITY CONTROL

QC Batch Form 4 Summary
V2102501A V210251LB

System Monitoring Compounds FORM 2
Surrogate recoveries within QC limits.

Laboratory Control Sample FORM 3
V210251LCS\LCSD

All criteria met.*

*

Ethylbenzene and 1,1,1,2-Tetrachloroethane were flagged for high recovery in V210251LCS. High recovery indicates that detection levels were not affected. 1,1,1,2-Tetrachloroethane was not a Target Analyte associated with this project. Ethylbenzene was not identified in samples associated with this project. Recovery for Ethylbenzene was within QC Limits in V210251LCSD. The data was not affected.

Methylene Chloride was flagged outside QC Limits in V210251LCSD. This compound was not identified in samples associated with this project. Recovery was within QC Limits in V210251LCS. The data was not affected.

RPDs for multiple analytes were flagged as outside QC Limits. V210251LCS/LCSD recoveries were within QC Limits.

Matrix Spike / Matrix Spike Dup FORM 3
9810-761-01

RPD : All analytes within QC limits.
Spike Recovery : All analytes within QC limits.

Refer to Laboratory Control Sample(s) for system verification.

Method Blank FORM 4
V210251LB

No Target Analytes detected above the reporting limit.

CALIBRATION

BFB Daily 12 Hour Tune : All criteria met. FORM 5
Initial Calibration : All criteria met. FORM 6
Calibration Verification : All criteria met. FORM 7*

000082

ENVIRONMENTAL TESTING AND CONSULTING, INC. 377 472
MEMPHIS, TN
CASE NARRATIVE
GC/MS VOLATILE COMPOUNDS - AQUEOUS

Client Name : OHM Remediation Services
Project Name : Defense Depot - Memphis TN

ETC Order # : 9810-751
Method (SW-846) : 8260B/5030B

CALIBRATION

*
Calibration Verification(CV) : Date 10/25/98 Time: 13:41

Analyte	%Diff(30% Max)	Response
Hexachlorobutadiene	44.0	High

Hexachlorobutadiene was not a Target Analyte associated with this project. The data was not affected.

Volatile Internal Standard Area and RT FORM 8
Daily Check Standard(s) Internal Standard Areas and Retention Times within QC limits.

SAMPLE ANALYSIS

Instrumentation : HP 5890 Series II GC, 5971MSD
Dilutions Required : No dilutions required.


Laboratory Manager

300083

FORM 2
WATER VOA-GCMS SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-751

	CLIENT SAMPLE NO.	SMC1 (DBF) #	SMC2 (TOL) #	SMC3 (BFB) #	OTHER	TOT OUT
01	V210251LCS	98	99	90		0
02	V210251LB	98	96	100		0
03	9810-751-5	98	97	99		0
04	9810-761-1	100	97	100		0
05	V210251LCSD	99	96	97		0
06	9810-761-1MS	98	98	95		0
07	9810-761-1MS	100	97	93		0
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QC LIMITS

SMC1 (DBF) = Dibromofluoromethane (74-123)
 SMC2 (TOL) = Toluene-d8 (86-112)
 SMC3 (BFB) = Bromofluorobenzene (81-115)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

FORM 4
VOA-GCMS METHOD BLANK SUMMARY

377 474
CLIENT SAMPLE NO.

V210251LB

Lab Name: ETC, INC.

Lab Prep Batch: V2102501

SDG No.: 9810-751

Lab File ID: 0303005

Lab Prep Batch: V2102501A

Date Analyzed: 10/25/98

Time Analyzed: 1649

GC Column: ID: 2 (mm)

Heated Purge: (Y/N) Y

Instrument ID: VOC2

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	V210251LCS		0201001LCS	1341
02	9810-751-5		0401006	1732
03	9810-761-1		0501007	1816
04	V210251LCSD		1201014	2318
05	9810-761-1MS		1301015	0001
06	9810-761-1MS		1401016	0045
07				
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COMMENTS:

377 475

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

V210251LB

Lab Name: ETC, INC.

SDG No.: 9810-751

Matrix: (soil/water) WATER

Lab Prep Batch: V2102501A

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0303005

Level: (low/med) LOW

Date Analyzed: 10/25/98

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
67-64-1-----	Acetone	50.0	U
71-43-2-----	Benzene	1.00	U
75-27-4-----	Bromodichloromethane	1.00	U
75-25-2-----	Bromoform	1.00	U
74-83-9-----	Bromomethane	1.00	U
75-15-0-----	Carbon Disulfide	1.00	U
56-23-5-----	Carbon Tetrachloride	1.00	U
108-90-7-----	Chlorobenzene	1.00	U
124-48-1-----	Chlorodibromomethane	1.00	U
75-00-3-----	Chloroethane	1.00	U
67-66-3-----	Chloroform	1.00	U
74-87-3-----	Chloromethane	1.00	U
75-34-3-----	1,1-Dichloroethane	1.00	U
107-06-2-----	1,2-Dichloroethane	1.00	U
75-35-4-----	1,1-Dichloroethene	1.00	U
156-59-4-----	cis-1,2-Dichloroethene	1.00	U
156-60-5-----	trans-1,2-Dichloroethene	1.00	U
78-87-5-----	1,2-Dichloropropane	1.00	U
10061-01-5-----	cis-1,3-Dichloropropene	1.00	U
10061-02-6-----	trans-1,3-Dichloropropene	1.00	U
100-41-4-----	Ethylbenzene	1.00	U
591-78-6-----	2-Hexanone	5.00	U
75-09-2-----	Methylene Chloride	20.0	U
78-93-3-----	Methyl-Ethyl Ketone	20.0	U
108-10-1-----	4-Methyl-2-Pentanone	5.00	U
100-42-5-----	Styrene	1.00	U
79-34-5-----	1,1,2,2-Tetrachloroethane	1.00	U
127-18-4-----	Tetrachloroethene	1.00	U
108-88-3-----	Toluene	1.00	U
71-55-6-----	1,1,1-Trichloroethane	1.00	U
79-00-5-----	1,1,2-Trichloroethane	1.00	U
79-01-6-----	Trichloroethene	1.00	U
108-05-4-----	Vinyl Acetate	20.0	U

FORM I VOA-GCMS

J00086

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

377 476
CLIENT SAMPLE NO.

V210251LB

Lab Name: ETC, INC.

SDG No.: 9810-751

Matrix: (soil/water) WATER

Lab Prep Batch: V2102501A

Sample wt/vol: 10.00 (g/mL) ML

Lab File ID: 0303005

Level: (low/med) LOW

Date Analyzed: 10/25/98

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	UG/L	
75-01-4-----	Vinyl Chloride	1.00	U	
1330-20-7-----	Xylene-mp	1.00	U	
95-47-6-----	Xylene-o	1.00	U	

FORM I VOA-GCMS

000087

377 477

FORM 3
WATER VOA-GCMS LABORATORY CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: V2102501A

SDG No.: 9810-751

Matrix Spike - Sample No.: V210251LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Acetone	100		88.7	89	59-151
Benzene	100		90.5	90	72-124
Bromodichloromethane	100		93.7	94	68-119
Bromoform	100		130	130	66-136
Bromomethane	100		105	105	40-134
Carbon Disulfide	100		94.6	95	60-133
Carbon Tetrachloride	100		100	100	64-123
Chlorobenzene	100		108	108	77-112
Chlorodibromomethane	100		94.2	94	72-118
Chloroethane	100		114	114	64-142
Chloroform	100		89.8	90	70-115
Chloromethane	100		121	121	58-139
1,1-Dichloroethane	100		88.9	89	76-118
1,2-Dichloroethane	100		89.0	89	62-124
1,1-Dichloroethene	100		94.3	94	69-121
cis-1,2-Dichloroethene	100		90.8	91	76-114
trans-1,2-Dichloroethene	100		92.9	93	72-121
1,2-Dichloropropane	100		94.8	95	64-133
cis-1,3-Dichloropropene	100		98.3	98	77-120
trans-1,3-Dichloropropene	100		99.1	99	73-124
Ethylbenzene	100		112	112*	77-114
2-Hexanone	100		97.2	97	53-111
Methylene Chloride	100		71.0	71	67-111
Methyl-Ethyl Ketone	100		91.6	92	55-151
4-Methyl-2-Pentanone	100		97.3	97	42-144
Styrene	100		106	106	77-117
1,1,1,2-Tetrachloroethane	100		114	114*	79-113
Tetrachloroethene	100		105	105	77-115

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS:

FORM 3
WATER VOA-GCMS LABORATORY CONTROL SAMPLE

377 478

Lab Name: ETC, INC.

Lab Prep Batch: V2102501A

SDG No.: 9810-751

Matrix Spike - Sample No.: V210251LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Toluene	100		101	101	77-115
1,1,1-Trichloroethane	100		97.0	97	63-122
1,1,2-Trichloroethane	100		92.6	93	69-117
Trichloroethene	100		100	100	75-113
Vinyl Acetate	100		100	100	28-146
Vinyl Chloride	100		80.5	80	65-134
Xylene-mp	200		220	110	77-115
Xylene-o	100		108	108	77-115

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS:

FORM 3
WATER VOA-GCMS LABORATORY CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: V2102501A

SDG No.: 9810-751

Matrix Spike - Sample No.: V210251LCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS	
					RPD	REC.
Acetone	100	71.3	71	22*	20	59-151
Benzene	100	77.5	78	14	20	72-124
Bromodichloromethane	100	87.4	87	8	20	68-119
Bromoform	100	115	115	12	20	66-136
Bromomethane	100	80.4	80	27*	20	40-134
Carbon Disulfide	100	70.4	70	30*	20	60-133
Carbon Tetrachloride	100	82.0	82	20	20	64-123
Chlorobenzene	100	98.5	98	10	20	77-112
Chlorodibromomethane	100	87.5	88	6	20	72-118
Chloroethane	100	87.7	88	26*	20	64-142
Chloroform	100	81.9	82	9	20	70-115
Chloromethane	100	82.1	82	38*	20	58-139
1,1-Dichloroethane	100	79.6	80	11	20	76-118
1,2-Dichloroethane	100	83.6	84	6	20	62-124
1,1-Dichloroethene	100	71.9	72	26*	20	69-121
cis-1,2-Dichloroethene	100	80.8	81	12	20	76-114
trans-1,2-Dichloroethene	100	75.1	75	21*	20	72-121
1,2-Dichloropropane	100	86.9	87	9	20	64-133
cis-1,3-Dichloropropene	100	87.8	88	11	20	77-120
trans-1,3-Dichloroprope	100	87.5	88	12	20	73-124
Ethylbenzene	100	99.1	99	12	20	77-111
2-Hexanone	100	81.5	82	17	20	53-114
Methylene Chloride	100	64.3	64*	10	20	67-114
Methyl-Ethyl Ketone	100	74.5	74	22*	20	55-151
4-Methyl-2-Pentanone	100	83.4	83	16	20	42-144
Styrene	100	97.4	97	9	20	77-117
1,1,1,2-Tetrachloroetha	100	110	110	4	20	79-113
Tetrachloroethene	100	89.4	89	16	20	77-115

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS:

FORM 3
WATER VOA-GCMS LABORATORY CONTROL SAMPLE

377 480

Lab Name: ETC, INC.

Lab Prep Batch: V2102501A

SDG No.: 9810-751

Matrix Spike - Sample No.: V210251LCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS	
					RPD	REC.
Toluene	100	85.5	86	16	20	77-115
1,1,1-Trichloroethane	100	80.2	80	19	20	63-122
1,1,2-Trichloroethane	100	84.9	85	9	20	69-117
Trichloroethene	100	85.3	85	16	20	75-113
Vinyl Acetate	100	84.2	84	17	20	28-146
Vinyl Chloride	100	79.2	79	1	20	65-134
Xylene-mp	200	196	98	12	20	77-115
Xylene-o	100	100	100	8	20	77-115

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 8 out of 36 outside limits

Spike Recovery: 3 out of 72 outside limits

COMMENTS:

377 481

FORM 3

WATER VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC, INC.

Lab Prep Batch: V2102501A

SDG No.: 9810-751

Matrix Spike - Sample No.: 9810-761-1

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Benzene	100	0.000	85.3	85	72-124
Chlorobenzene	100	0.000	105	105	77-112
1,1-Dichloroethene	100	0.000	82.5	82	69-121
Toluene	100	0.000	92.0	92	77-115
Trichloroethene	100	0.000	91.8	92	75-113

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
Benzene	100	90.7	91	7	20	72-124
Chlorobenzene	100	106	106	1	20	77-112
1,1-Dichloroethene	100	89.3	89	8	20	69-121
Toluene	100	96.7	97	5	20	77-115
Trichloroethene	100	96.3	96	4	20	75-113

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

COMMENTS:

FORM III VOA-GCMS

000092

Environmental Testing & Consulting, Inc.

Quality Control Reports

GC/MS Semi-Volatiles

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC/MS SEMI-VOLATILE COMPOUNDS - SOIL

Client Name : OHM Remediation Services
Project Name : Defense Depot - Memphis TN
ETC Order # : 9810-751
Method (SW-846) : 8270C/3550B

HOLDING TIMES

Sample Extraction : All soil samples extracted within 14 days.
Sample Analysis : All samples analyzed within 40 days of
extraction.

QUALITY CONTROL

QC Batch Form 4 Summary
P04057 P04057LB

System Monitoring Compounds FORM 2
Surrogate recoveries within QC limits.*

*
Surrogate recovery for Terphenyl-d14 was flagged as outside QC Limits in sample 9810-751-02(B2-C1). Review of extraction information and the raw data showed no obvious matrix interference. This sample was re-analyzed for verification with recoveries within QC Limits.

Laboratory Control Sample FORM 3
P04057LCS

All criteria met.*

*
4-Chloroaniline and 4-Nitrophenol were flagged as outside QC Limits in P04057LCS. These compounds were not identified in samples associated with this project. The data was not affected.

Matrix Spike / Matrix Spike Dup FORM 3
9810-751-03 RPD : All analytes within QC limits.*
B3-C1 Spike Recovery : All analytes within QC limits.

*
RPD for Pyrene was flagged as outside QC Limits due to higher recovery in the Matrix Spike Duplicate. MS/MSD recoveries were within QC Limits.

Refer to Laboratory Control Sample(s) for system verification.

Method Blank FORM 4
P04057LB

No Target Analytes detected above Practical Quantitation Limit.

CALIBRATION

DFTPP Daily 12 Hour Tune : All criteria met. FORM 5
Initial Calibration : All criteria met. FORM 6
Calibration Verification : All criteria met. FORM 7*

J00094

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC/MS SEMI-VOLATILE COMPOUNDS - SOIL

Client Name : OHM Remediation Services
Project Name : Defense Depot - Memphis TN

ETC Order # : 9810-751
Method (SW-846) : 8270C/3550B

CALIBRATION

*

Calibration Verification(CV) : Date 10/23/98 Time: 12:55

Analyte	%Diff(30% Max)	Response
Benzoic Acid	69.6	Low
4-Nitroaniline	45.6	High

Low response for Benzoic Acid indicates that reported level for this analyte may be biased low. High response for 4-Nitroaniline indicates that reported level for this analyte may be biased high. These analytes were not identified in samples associated with this project. The data was not affected.

Calibration Verification(CV) : Date 10/24/98 Time: 08:19

Analyte	%Diff(30% Max)	Response
Benzoic Acid	83.6	Low
3,3-Dichlorobenzidine	30.5	Low
4-Nitroaniline	37.0	High

Low response for Benzoic Acid indicates that reported level for this analyte may be biased low. High responses indicates that reported level for these analytes may be biased high. These analytes were not identified in samples associated with this project. The data was not affected.

Calibration Verification(CV) : Date 10/26/98 Time: 10:20

Analyte	%Diff(30% Max)	Response
Benzidine	41.6	High
Benzoic Acid	53.0	Low
2,4-Dinitrophenol	58.0	High
2-Methylphenol	31.0	Low
4-Nitroaniline	51.2	High

Low responses indicates that reported levels for this analyte may be biased low. High responses indicates that reported level for these analytes may be biased high. These analytes were not identified in samples associated with this project. The data was not affected.

Semi-Volatile Internal Standard Area and RT FORM 8

Daily Check Standard(s) Internal Standard Areas and Retention Times within QC limits.

SAMPLE ANALYSIS

Instrumentation : HP 5890 Series II GC, 5971MSD
Dilutions Required : No dilutions required.


Laboratory Manager

377 485

FORM 2
SOIL BNA-GCMS SURROGATE RECOVERY

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-751

Level: (low/med) LOW

	CLIENT SAMPLE NO.	S1 (2FP) #	S2 (PHL) #	S3 (NBZ) #	S4 (FBP) #	S5 (TBP) #	S6 (TPH) #	S7 #	S8 #	TOT OUT
01	P04051LB	70	75	73	70	85	89			0
02	P04051LCS	80	81	78	76	98	102			0
03	9810-751-2	35	37	41	43	32	57			0
04	9810-751-1	58	61	60	65	54	40			0
05	9810-751-2	37	38	40	43	27	29*			1
06	9810-751-3	53	54	59	63	42	39			0
07	9810-751-4	57	60	64	70	46	43			0
08	9810-751-3MS	59	60	60	66	42	39			0
09	9810-751-3MS	64	66	65	76	49	46			0
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QC LIMITS

S1 (2FP) = 2-Fluorophenol (10-119)
 S2 (PHL) = Phenol-d6 (11-125)
 S3 (NBZ) = Nitrobenzene-d5 (25-110)
 S4 (FBP) = 2-Fluorobiphenyl (33-114)
 S5 (TBP) = 2,4,6-Tribromophenol (9-134)
 S6 (TPH) = Terphenyl-d14 (37-115)

Column to be used to flag recovery values
 * Values outside of contract required QC limits
 D Surrogate diluted out

377 486

FORM 4
BNA-GCMS METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

P04057LB

Lab Name: ETC, INC.

Lab Prep Batch: P04057

SDG No.: 9810-751

Lab File ID: 0301003

Instrument ID: BNA2

Matrix: (soil/water) SOIL

Date Analyzed: 10/23/98

Level:(low/med) LOW

Time Analyzed: 1326

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	P04057LCS		0401004	10/23/98
02	9810-751-2		0701007	10/23/98
03	9810-751-1		1901019	10/24/98
04	9810-751-2		2001020	10/24/98
05	9810-751-3		2101021	10/24/98
06	9810-751-4		2201022	10/24/98
07	9810-751-3MS		2301023	10/24/98
08	9810-751-3MS		2401024	10/24/98
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COMMENTS:

300037

377 487

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

P04057LB

Lab Name: ETC, INC.

SDG No.: 9810-751

Matrix: (soil/water) SOIL

Lab Prep Batch: P04057

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: 0301003

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 1 (mL)

Date Analyzed: 10/23/98

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg)	UG/KG
83-32-9	Acenaphthene	66.7	U
208-96-8	Acenaphthylene	66.7	U
120-12-7	Anthracene	66.7	U
56-55-3	Benzo(a)Anthracene	66.7	U
205-99-2	Benzo(b)fluoranthene	66.7	U
207-08-9	Benzo(k)fluoranthene	66.7	U
191-24-2	Benzo(g,h,i)perylene	66.7	U
50-32-8	Benzo(a)pyrene	66.7	U
65-85-0	Benzoic Acid	1670	U
100-51-6	Benzyl Alcohol	167	U
111-44-4	bis(2-Chloroethyl)ether	167	U
111-91-1	Bis(2-chloroethoxy)methane	167	U
39638-32-9	bis(2-Chloroisopropyl)ether	167	U
117-81-7	bis(2-ethylhexyl)Phthalate	167	U
101-55-3	4-Bromophenyl-phenylether	167	U
85-68-7	Butylbenzylphthalate	167	U
106-47-8	4-Chloroaniline	167	U
59-50-7	4-Chloro-3-Methylphenol	167	U
91-58-7	2-Chloronaphthalene	167	U
95-57-8	2-Chlorophenol	167	U
7005-72-3	4-Chlorophenyl-phenylether	167	U
218-01-9	Chrysene	66.7	U
53-70-3	Dibenzo(a,h)anthracene	66.7	U
132-64-9	Dibenzofuran	167	U
84-74-2	Di-n-Butylphthalate	167	U
95-50-1	1,2-Dichlorobenzene	167	U
541-73-1	1,3-Dichlorobenzene	167	U
106-46-7	1,4-Dichlorobenzene	167	U
91-94-1	3,3'-Dichlorobenzidine	167	U

FORM I BNA-GCMS

000098

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET

377 488
CLIENT SAMPLE NO.

P04057LB

Lab Name: ETC, INC.

SDG No.: 9810-751

Matrix: (soil/water) SOIL

Lab Prep Batch: P04057

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: 0301003

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 1 (mL)

Date Analyzed: 10/23/98

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
120-83-2-----	2,4-Dichlorophenol	167	U
87-65-0-----	2,6-Dichlorophenol	167	U
84-66-2-----	Diethylphthalate	167	U
105-67-9-----	2,4-Dimethyphenol	167	U
131-11-3-----	Dimethylphthalate	167	U
534-52-1-----	4,6-Dinitro-2-methylphenol	167	U
51-28-5-----	2,4-Dinitrophenol	333	U
121-14-2-----	2,4-Dinitrotoluene	167	U
606-20-2-----	2,6-Dinitrotoluene	167	U
117-84-0-----	Di-n-octylphthalate	167	U
86-30-6-----	Diphenylamine/n-NDPA	167	U
206-44-0-----	Fluoranthene	66.7	U
86-73-7-----	Fluorene	66.7	U
118-74-1-----	Hexachlorobenzene	167	U
87-68-3-----	Hexachlorobutadiene	167	U
77-47-4-----	Hexachlorocyclopentadiene	167	U
67-72-1-----	Hexachloroethane	167	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	66.7	U
78-59-1-----	Isophorone	167	U
91-57-6-----	2-Methylnaphthalene	167	U
95-48-7-----	2-Methylphenol	167	U
106-44-5-----	3&4-Methylphenol	167	U
91-20-3-----	Naphthalene	66.7	U
88-74-4-----	2-Nitroaniline	167	U
99-09-2-----	3-Nitroaniline	167	U
100-01-6-----	4-Nitroaniline	167	U
98-95-3-----	Nitrobenzene	167	U
88-75-5-----	2-Nitrophenol	167	U
100-02-7-----	4-Nitrophenol	167	U
62-75-9-----	N-Nitrosodimethylamine	167	U
621-64-7-----	N-Nitrosodinpropylamine	167	U
87-86-5-----	Pentachlorophenol	167	U
85-01-8-----	Phenanthrene	66.7	U

FORM I BNA-GCMS

J00099

377 489

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

P04057LB

Lab Name: ETC, INC.

SDG No.: 9810-751

Matrix: (soil/water) SOIL

Lab Prep Batch: P04057

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: 0301003

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 1 (mL)

Date Analyzed: 10/23/98

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg) UG/KG	Q
108-95-2-----	Phenol	167	U
129-00-0-----	Pyrene	66.7	U
120-82-1-----	1,2,4-Trichlorobenzene	167	U
95-95-4-----	2,4,5-Trichlorophenol	167	U
88-06-2-----	2,4,6-Trichlorophenol	167	U

FORM I BNA-GCMS

J00100

FORM 3
SOIL BNA-GCMS LABORATORY CONTROL SAMPLE

377 490

Lab Name: ETC, INC.

Lab Prep Batch: P04057

SDG No.: 9810-751

Matrix Spike - Sample No.: P04057LCS

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Acenaphthene	1670		1420	85	34-126
Acenaphthylene	1670		1540	92	62-123
Anthracene	1670		1410	84	68-124
Benzidine	3330		1380	41	4-117
Benzo(a)Anthracene	1670		1420	85	60-133
Benzo(b)fluoranthene	1670		1500	90	67-126
Benzo(k)fluoranthene	1670		1420	85	75-131
Benzo(g,h,i)perylene	1670		1390	83	53-137
Benzo(a)pyrene	1670		1430	86	68-129
Benzoic Acid	1670		3280	196	37-251
Benzyl Alcohol	1670		1340	80	20-159
bis(2-Chloroethyl)ether	1670		1500	90	25-147
Bis(2-chloroethoxy)meth	1670		1310	78	37-153
bis(2-Chloroisopropyl)e	1670		1280	77	35-138
bis(2-ethylhexyl)Phthal	1670		1430	86	60-150
4-Bromophenyl-phenyleth	1670		1320	79	59-130
Butylbenzylphthalate	1670		1370	82	71-137
Carbazole	1670		2010	120	64-149
4-Chloroaniline	1670		292	17*	27-106
4-Chloro-3-Methylphenol	3330		2430	73	33-147
2-Chloronaphthalene	1670		1500	90	62-126
2-Chlorophenol	3330		2670	80	34-126
4-Chlorophenyl-phenylet	1670		1360	81	60-128
Chrysene	1670		1370	82	67-131
Dibenzo(a,h)anthracene	1670		1400	84	51-138
Dibenzofuran	1670		1340	80	57-131
Di-n-Butylphthalate	1670		1310	78	39-179
1,2-Dichlorobenzene	1670		1280	77	58-110

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL BNA-GCMS LABORATORY CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: P04057

SDG No.: 9810-751

Matrix Spike - Sample No.: P04057LCS

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
1,3-Dichlorobenzene	1670		1270	76	55-109
1,4-Dichlorobenzene	1670		1290	77	26-121
3,3'-Dichlorobenzidine	3330		3140	94	18-191
2,4-Dichlorophenol	3330		2660	80	68-123
2,6-Dichlorophenol	3330		2690	81	45-157
Diethylphthalate	1670		1320	79	72-133
2,4-Dimethylphenol	3330		2300	69	53-121
Dimethylphthalate	1670		1320	79	64-132
4,6-Dinitro-2-methylphe	3330		3510	105	70-158
2,4-Dinitrophenol	3330		4950	149	31-186
2,4-Dinitrotoluene	1670		1530	92	22-139
2,6-Dinitrotoluene	1670		1350	81	64-142
Di-n-octylphthalate	1670		1510	90	42-172
Diphenylamine/n-NDPA	1670		1420	85	55-140
Fluoranthene	1670		1670	100	71-132
Fluorene	1670		1410	84	65-126
Hexachlorobenzene	1670		1340	80	64-130
Hexachlorobutadiene	1670		1310	78	62-116
Hexachlorocyclopentadie	1670		1450	87	16-160
Hexachloroethane	1670		1280	77	58-110
Indeno(1,2,3-cd)pyrene	1670		1480	89	34-170
Isophorone	1670		1290	77	35-125
2-Methylnaphthalene	1670		1230	74	57-103
2-Methylphenol	3330		2670	80	56-132
3&4-Methylphenol	3330		2590	78	68-111
Naphthalene	1670		1340	80	62-113
2-Nitroaniline	1670		1430	86	63-138
3-Nitroaniline	1670		1460	87	53-128

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS:

FORM 3
SOIL BNA-GCMS LABORATORY CONTROL SAMPLE

377 492

Lab Name: ETC, INC.

Lab Prep Batch: P04057

SDG No.: 9810-751

Matrix Spike - Sample No.: P04057LCS

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
4-Nitroaniline	1670		2190	131	60-140
Nitrobenzene	1670		1240	74	59-123
2-Nitrophenol	3330		2690	81	52-145
4-Nitrophenol	3330		3780	114*	12-105
N-Nitrosodipropylamine	1670		1220	73	24-141
Pentachlorophenol	3330		3500	105	6-164
Phenanthrene	1670		1460	87	66-128
Phenol	3330		2620	79	22-127
Pyrene	1670		1850	111	33-155
Pyridine	1670		1200	72	41- 94
1,2,4-Trichlorobenzene	1670		1300	78	30-127
2,4,5-Trichlorophenol	3330		2949	88	50-173
2,4,6-Trichlorophenol	3330		2950	88	46-161

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 2 out of 69 outside limits

COMMENTS:

377 493

FORM 3
SOIL BNA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC, INC.

Lab Prep Batch: P04057

SDG No.: 9810-751

Matrix Spike - Sample No.: 9810-751-3

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Acenaphthene	3320	0.00	2100	63	34-126
4-Chloro-3-Methylphenol	5320	0.00	3240	61	33-147
2-Chlorophenol	5320	0.00	3380	64	35-138
1,4-Dichlorobenzene	3320	0.00	2040	61	26-121
2,4-Dinitrotoluene	3320	0.00	1680	51	22-139
4-Nitrophenol	5320	0.00	1770	33	12-105
N-Nitrosodipropylamine	3320	0.00	1820	55	24-141
Pentachlorophenol	5320	0.00	1510	28	6-164
Phenol	5320	0.00	2950	55	22-127
Pyrene	3320	489	1760	38	33-155
1,2,4-Trichlorobenzene	3320	0.00	2230	67	30-127

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD REC.
Acenaphthene	3270	2440	75	17	20 34-126
4-Chloro-3-Methylphenol	5230	3380	65	6	20 33-147
2-Chlorophenol	5230	3580	68	6	20 35-1
1,4-Dichlorobenzene	3270	2170	66	8	20 26-1
2,4-Dinitrotoluene	3270	1900	58	13	20 22-139
4-Nitrophenol	5230	1970	38	14	20 12-105
N-Nitrosodipropylamine	3270	2090	64	15	20 24-141
Pentachlorophenol	5230	1760	34	19	20 6-164
Phenol	5230	3180	61	10	20 22-127
Pyrene	3270	2440	60	45*	20 33-155
1,2,4-Trichlorobenzene	3270	2340	72	7	20 30-127

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 1 out of 11 outside limits

Spike Recovery: 0 out of 22 outside limits

COMMENTS:

FORM III BNA-GCMS

000104

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC/MS SEMI-VOLATILE COMPOUNDS - AQUEOUS

Client Name : OHM Remediation Services
Project Name : Defense Depot - Memphis TN
ETC Order # : 9810-751
Method (SW-846) : 8270C/3510C

HOLDING TIMES

Sample Extraction : All aqueous samples extracted within 7 days.
Sample Analysis : All samples analyzed within 40 days of extraction.

QUALITY CONTROL

QC Batch Form 4 Summary
P05062 P05062LB

System Monitoring Compounds FORM 2
Surrogate recoveries within QC limits.*
*

Surrogate recoveries for multiple analytes were flagged as outside QC Limits in samples 9810-761-01 and MS/MSD associated with this project. Review of the raw data showed interference from Non-Target Analytes present in the samples. Surrogate recoveries for samples within this project were within QC limits.

Laboratory Control Sample FORM 3
P05062LCS

All criteria met.

Matrix Spike / Matrix Spike Dup FORM 3
9810-761-01 RPD : All analytes within QC limits.*
Spike Recovery : All analytes within QC limits.*
*

Recoveries and RPDs for multiple analytes were flagged outside QC Limits in the Matrix Spike and Matrix Spike Duplicate due to Non-Target Analytes present in the samples. This sample was not a DDMT sample.

Refer to Laboratory Control Sample(s) for system verification.

Method Blank FORM 4
P05062LB

No Target Analytes detected above Practical Quantitation Limit.

CALIBRATION

DFTPP Daily 12 Hour Tune : All criteria met. FORM 5
Initial Calibration : All criteria met. FORM 6
Calibration Verification : All criteria met. FORM 7*

377 495

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC/MS SEMI-VOLATILE COMPOUNDS - AQUEOUS

Client Name : OHM Remediation Services
Project Name : Defense Depot - Memphis TN

ETC Order # : 9810-751
Method (SW-846) : 8270C/3510C

CALIBRATION

*
Calibration Verification(CV) : Date 10/23/98 Time: 12:55

Analyte	%Diff(30% Max)	Response
Benzoic Acid	69.6	Low
4-Nitroaniline	45.6	High

Low response for Benzoic Acid indicates that reported level for this analyte may be biased low. High response for 4-Nitroaniline indicates that reported level for this analyte may be biased high. These analytes were not identified in samples associated with this project. The data was not affected.

Calibration Verification(CV) : Date 10/24/98 Time: 08:19

Analyte	%Diff(30% Max)	Response
Benzoic Acid	83.6	Low
3,3-Dichlorobenzidine	30.5	Low
4-Nitroaniline	37.0	High

Low response for Benzoic Acid indicates that reported level for this analyte may be biased low. High responses indicates that reported level for these analytes may be biased high. These analytes were not identified in samples associated with this project. The data was not affected.

Calibration Verification(CV) : Date 10/26/98 Time: 10:20

Analyte	%Diff(30% Max)	Response
Benzidine	41.6	High
Benzoic Acid	53.0	Low
2,4-Dinitrophenol	58.0	High
2-Methylphenol	31.0	Low
4-Nitroaniline	51.2	High

Low responses indicates that reported levels for this analyte may be biased low. High responses indicates that reported level for these analytes may be biased high. These analytes were not identified in samples associated with this project. The data was not affected.

Semi-Volatile Internal Standard Area and RT FORM 8
Daily Check Standard(s) Internal Standard Areas and Retention Times within QC limits.

SAMPLE ANALYSIS

Instrumentation : HP 5890 Series II GC, 5971MSD
Dilutions Required : No dilutions required.


Laboratory Manager

000106

FORM 2
WATER BNA-GCMS SURROGATE RECOVERY

377 496

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-751

	CLIENT SAMPLE NO.	S1 (2FP) #	S2 (PHL) #	S3 (NBZ) #	S4 (FBP) #	S5 (TBP) #	S6 (TPH) #	S7 #	S8 #	TOT OUT
01	P05062LB	46	33	71	68	82	98			0
02	P05062LCS	37	28	50	51	69	76			0
03	9810-751-5	29	22	45	46	68	79			0
04	9810-761-1	34	25	18*	16*	20	28*			3
05	9810-761-1MS	33	24	16*	15*	20	29*			3
06	9810-761-1MS	35	26	27*	25*	32	28*			3
07	P05062LCS	41	32	60	58	91	93			0
08										
09										
10										
11										
12										
13										
14										
15										
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30										

QC LIMITS

S1 (2FP) = 2-Fluorophenol (8- 88)
 S2 (PHL) = Phenol-d6 (7- 58)
 S3 (NBZ) = Nitrobenzene-d5 (29-110)
 S4 (FBP) = 2-Fluorobiphenyl (38-107)
 S5 (TBP) = 2,4,6-Tribromophenol (16-138)
 S6 (TPH) = Terphenyl-d14 (33-122)

Column to be used to flag recovery values
 * Values outside of contract required QC limits
 D Surrogate diluted out

377 497

FORM 4
BNA-GCMS METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

P05062LB

Lab Name: ETC, INC.

Lab Prep Batch: P05062

Lab File ID: 0301003

Matrix: (soil/water) WATER

Level:(low/med) LOW

SDG No.: 9810-751

Instrument ID: BNA2

Date Analyzed: 10/24/98

Time Analyzed: 0850

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	P05062LCS		0401004	10/24/98
02	9810-751-5		0501005	10/24/98
03	9810-761-1		0601006	10/24/98
04	9810-761-1MS		0701007	10/24/98
05	9810-761-1MS		0801008	10/24/98
06	P05062LCS		0301005	10/26/98
07				
08				
09				
10				
11				
12				
13				
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27				
28				
29				
30				

COMMENTS:

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

P05062LB

Lab Name: ETC, INC.

SDG No.: 9810-751

Matrix: (soil/water) WATER

Lab Prep Batch: P05062

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: 0301003

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 1 (mL)

Date Analyzed: 10/24/98

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
83-32-9-----	Acenaphthene	2.0 U	
208-96-8-----	Acenaphthylene	2.0 U	
120-12-7-----	Anthracene	2.0 U	
56-55-3-----	Benzo(a) Anthracene	2.0 U	
205-99-2-----	Benzo(b) fluoranthene	2.0 U	
207-08-9-----	Benzo(k) fluoranthene	2.0 U	
191-24-2-----	Benzo(g,h,i) perylene	2.0 U	
50-32-8-----	Benzo(a) pyrene	2.0 U	
65-85-0-----	Benzoic Acid	50.0 U	
100-51-6-----	Benzyl Alcohol	10.0 U	
111-44-4-----	bis(2-Chloroethyl) ether	5.0 U	
111-91-1-----	Bis(2-chloroethoxy) methane	5.0 U	
39638-32-9-----	bis(2-Chloroisopropyl) ether	5.0 U	
117-81-7-----	bis(2-ethylhexyl) Phthalate	10.0 U	
101-55-3-----	4-Bromophenyl-phenylether	5.0 U	
85-68-7-----	Butylbenzylphthalate	5.0 U	
106-47-8-----	4-Chloroaniline	5.0 U	
59-50-7-----	4-Chloro-3-Methylphenol	5.0 U	
91-58-7-----	2-Chloronaphthalene	2.0 U	
95-57-8-----	2-Chlorophenol	5.0 U	
7005-72-3-----	4-Chlorophenyl-phenylether	5.0 U	
218-01-9-----	Chrysene	2.0 U	
53-70-3-----	Dibenzo(a,h) anthracene	2.0 U	
132-64-9-----	Dibenzofuran	5.0 U	
84-74-2-----	Di-n-Butylphthalate	5.0 U	
95-50-1-----	1,2-Dichlorobenzene	5.0 U	
541-73-1-----	1,3-Dichlorobenzene	5.0 U	
106-46-7-----	1,4-Dichlorobenzene	5.0 U	
91-94-1-----	3,3'-Dichlorobenzidine	10.0 U	

FORM I BNA-GCMS

000109

377 498A

 FORM 1
 BNA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

P05062LB

Lab Name: ETC, INC.

SDG No.: 9810-751

Matrix: (soil/water) WATER

Lab Prep Batch: P05062

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: 0301003

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 1 (mL)

Date Analyzed: 10/24/98

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q

120-83-2	2,4-Dichlorophenol	5.0	U
87-65-0	2,6-Dichlorophenol	5.0	U
84-66-2	Diethylphthalate	5.0	U
105-67-9	2,4-Dimethyphenol	5.0	U
131-11-3	Dimethylphthalate	5.0	U
534-52-1	4,6-Dinitro-2-methylphenol	10.0	U
51-28-5	2,4-Dinitrophenol	50.0	U
121-14-2	2,4-Dinitrotoluene	5.0	U
606-20-2	2,6-Dinitrotoluene	5.0	U
117-84-0	Di-n-octylphthalate	5.0	U
86-30-6	Diphenylamine/n-NDPA	5.0	U
206-44-0	Fluoranthene	2.0	U
86-73-7	Fluorene	2.0	U
118-74-1	Hexachlorobenzene	5.0	U
87-68-3	Hexachlorobutadiene	5.0	U
77-47-4	Hexachlorocyclopentadiene	5.0	U
67-72-1	Hexachloroethane	5.0	U
193-39-5	Indeno(1,2,3-cd)pyrene	2.0	U
78-59-1	Isophorone	5.0	U
91-57-6	2-Methylnaphthalene	2.0	U
95-48-7	2-Methylphenol	5.0	U
106-44-5	3&4-Methylphenol	5.0	U
91-20-3	Naphthalene	2.0	U
88-74-4	2-Nitroaniline	5.0	U
99-09-2	3-Nitroaniline	10.0	U
100-01-6	4-Nitroaniline	5.0	U
98-95-3	Nitrobenzene	5.0	U
88-75-5	2-Nitrophenol	5.0	U
100-02-7	4-Nitrophenol	5.0	U
621-64-7	N-Nitrosodipropylamine	5.0	U
87-86-5	Pentachlorophenol	10.0	U
85-01-8	Phenanthrene	2.0	U

FORM I BNA-GCMS

000110

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET

377 499
CLIENT SAMPLE NO.

P05062LB

Lab Name: ETC, INC.

SDG No.: 9810-751

Matrix: (soil/water) WATER

Lab Prep Batch: P05062

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: 0301003

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 1(mL)

Date Analyzed: 10/24/98

Injection Volume: 1.0(uL)

Dilution Factor: 1.0

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L Q

108-95-2-----	Phenol	5.0	U
129-00-0-----	Pyrene	2.0	U
120-82-1-----	1,2,4-Trichlorobenzene	5.0	U
95-95-4-----	2,4,5-Trichlorophenol	5.0	U
88-06-2-----	2,4,6-Trichlorophenol	5.0	U

FORM I BNA-GCMS

000111

FORM 3
WATER BNA-GCMS LABORATORY CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: P05062

SDG No.: 9810-751

Matrix Spike - Sample No.: P05062LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Acenaphthene	50.0		35.5	71	37-123
Acenaphthylene	50.0		37.0	74	67-118
Anthracene	50.0		36.7	73	68-124
Benztidine	100		100	100	22-127
Benzo(a)Anthracene	50.0		40.4	81	69-125
Benzo(b)fluoranthene	50.0		43.2	86	68-127
Benzo(k)fluoranthene	50.0		40.2	80	73-128
Benzo(g,h,i)perylene	50.0		33.8	68	53-138
Benzo(a)pyrene	50.0		40.1	80	73-125
Benzoic Acid	100		39.3	39	2-144
Benzyl Alcohol	50.0		30.4	61	23-142
bis(2-Chloroethyl)ether	50.0		28.6	57	51-120
Bis(2-chloroethoxy)meth	50.0		32.4	65	45-135
bis(2-Chloroisopropyl)e	50.0		26.4	53	34-137
bis(2-ethylhexyl)Phthal	50.0		39.4	79	61-151
4-Bromophenyl-phenyleth	50.0		32.7	65	61-131
Butylbenzylphthalate	50.0		40.4	81	65-138
Carbazole	50.0		57.6	115	37-156
4-Chloroaniline	50.0		26.7	53	20-120
4-Chloro-3-Methylphenol	100		64.3	64	33-134
2-Chloronaphthalene	50.0		34.6	69	63-121
2-Chlorophenol	100		56.8	57	17-114
4-Chlorophenyl-phenylet	50.0		36.1	72	58-124
Chrysene	50.0		37.7	75	70-124
Dibenzo(a,h)anthracene	50.0		34.1	68	57-136
Dibenzofuran	50.0		34.3	69	64-122
Di-n-Butylphthalate	50.0		37.7	75	63-140
1,2-Dichlorobenzene	50.0		24.0	48	39-101

Column to be used to flag recovery and RPD values with an asterisk
 * Values outside of QC limits

COMMENTS:

FORM 3
WATER BNA-GCMS LABORATORY CONTROL SAMPLE

377 501

Lab Name: ETC, INC.

Lab Prep Batch: P05062

SDG No.: 9810-751

Matrix Spike - Sample No.: P05062LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
1,3-Dichlorobenzene	50.0		23.2	46	38- 98
1,4-Dichlorobenzene	50.0		23.8	48	31- 97
3,3'-Dichlorobenzidine	100		89.5	90	35-165
2,4-Dichlorophenol	100		62.8	63	13-146
Diethylphthalate	50.0		37.2	74	52-135
2,4-Dimethyphenol	100		52.7	53	51-118
Dimethylphthalate	50.0		35.3	71	8-166
4,6-Dinitro-2-methylphe	100		100	100	26-205
2,4-Dinitrophenol	100		136	136	12-182
2,4-Dinitrotoluene	50.0		42.9	86	34-130
2,6-Dinitrotoluene	50.0		36.5	73	62-135
Di-n-octylphthalate	50.0		36.8	74	46-148
Diphenylamine/n-NDPA	50.0		38.5	77	73-132
Fluoranthene	50.0		45.8	92	55-135
Fluorene	50.0		36.1	72	66-121
Hexachlorobenzene	50.0		34.1	68	65-133
Hexachlorobutadiene	50.0		26.2	52	50-112
Hexachlorocyclopentadie	50.0		31.8	64	21-141
Hexachloroethane	50.0		23.1	46	37-100
Indeno(1,2,3-cd)pyrene	50.0		35.7	71	57-140
Isophorone	50.0		32.6	65	13-146
2-Methylnaphthalene	50.0		28.0	56	50-124
2-Methylphenol	100		55.3	55	48-117
3&4-Methylphenol	100		52.4	52	46- 99
Naphthalene	50.0		28.6	57	55-113
2-Nitroaniline	50.0		38.0	76	63-129
3-Nitroaniline	50.0		39.5	79	61-120
4-Nitroaniline	50.0		59.6	119	60-126

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS:

377 502

FORM 3
WATER BNA-GCMS LABORATORY CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: P05062

SDG No.: 9810-751

Matrix Spike - Sample No.: P05062LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Nitrobenzene	50.0		28.7	57	57-120
2-Nitrophenol	100		61.2	61	27-137
4-Nitrophenol	100		59.5	60	20- 75
N-Nitrosodipropylamine	50.0		28.1	56	30-131
Pentachlorophenol	100		92.3	92	22-171
Phenanthrene	50.0		38.4	77	65-126
Phenol	100		29.0	29	12- 57
Pyrene	50.0		50.5	101	40-149
Pyridine	50.0		22.4	45	10- 82
1,2,4-Trichlorobenzene	50.0		27.7	55	29-116
2,4,5-Trichlorophenol	100		69.9	70	31-147
2,4,6-Trichlorophenol	100		69.9	70	4-163

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 68 outside limits

COMMENTS:

FORM 3
WATER BNA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

377 503

Lab Name: ETC, INC.

Lab Prep Batch: P05062

SDG No.: 9810-751

Matrix Spike - Sample No.: 9810-761-1

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Acenaphthene	100	0.00	15.2	15*	37-123
4-Chloro-3-Methylphenol	160	0.00	44.6	28*	33-134
2-Chlorophenol	160	0.00	46.1	29	17-134
1,4-Dichlorobenzene	100	0.00	12.9	13*	31- 97
2,4-Dinitrotoluene	100	0.00	16.3	16*	34-130
4-Nitrophenol	160	0.00	47.6	30	20- 75
N-Nitrosodipropylamine	100	0.00	15.9	16*	30-131
Pentachlorophenol	160	0.00	29.8	19*	22-171
Phenol	160	0.00	33.9	21	12- 57
Pyrene	100	0.00	25.4	25*	40-149
1,2,4-Trichlorobenzene	100	0.00	13.5	14*	29-116

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
Acenaphthene	100	26.2	26*	54*	20	37-123
4-Chloro-3-Methylphenol	160	56.7	35	22*	20	33-134
2-Chlorophenol	160	53.9	34	16	20	17-134
1,4-Dichlorobenzene	100	21.8	22*	51*	20	31- 97
2,4-Dinitrotoluene	100	28.8	29*	58*	20	34-130
4-Nitrophenol	160	57.2	36	18	20	20- 75
N-Nitrosodipropylamine	100	24.5	24*	40*	20	30-131
Pentachlorophenol	160	53.2	33	54*	20	22-171
Phenol	160	37.7	24	13	20	12- 57
Pyrene	100	27.8	28*	11	20	40-149
1,2,4-Trichlorobenzene	100	22.3	22*	44*	20	29-116

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 7 out of 11 outside limits

Spike Recovery: 14 out of 22 outside limits

COMMENTS:

FORM III BNA-GCMS

000115

. 377 504

Environmental Testing & Consulting, Inc.

Quality Control Reports

GC Pesticides

000116

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC PESTICIDES - SOIL

377 505

Client Name : OHM Remediation Services
Project Name : Defense Depot - Memphis TN

ETC Order # : 9810-751
Method (SW-846) : 8081A/3550B

HOLDING TIMES

Sample Extraction : All soil samples extracted within 14 days.
Sample Analysis : All samples analyzed within 40 days of
extraction.

QUALITY CONTROL

QC Batch Form 4 Summary
P06029 P06029LB

System Monitoring Compounds FORM 2
Surrogate recoveries within QC limits.*
*

Surrogate recoveries were flagged as outside QC Limits in the initial analysis for several samples associated with this project. Review of the raw data showed interference from Target Analytes present in the samples. Samples 9810-751-01(B1-C2), 9810-751-02(B2-C1), 9810-751-03(B3-C1), and 9810-751-04(B4-C1) were analyzed with dilutions with surrogate recoveries within QC Limits.

Laboratory Control Sample FORM 3
P06029LCS

All criteria met.

Matrix Spike / Matrix Spike Dup FORM 3
9810-751-03 RPD : All analytes within QC limits.*
B3-C1 Spike Recovery : All analytes within QC limits.*
*

Recoveries and RPDs for multiple analytes were flagged outside QC Limits in the Matrix Spike and Matrix Spike Duplicate.

Refer to Laboratory Control Sample(s) for system verification.

Method Blank FORM 4
P06029LB

No Target Analytes detected above Practical Quantitation Limit.

CALIBRATION

Initial Calibration : All criteria met. FORM 6
Calibration Verification : All criteria met. FORM 7*
Endrin/Breakdown : All criteria met. FORM 7A

000117

ENVIRONMENTAL TESTING AND CONSULTING, INC.
 MEMPHIS, TN
 CASE NARRATIVE
 GC PESTICIDES - SOIL

Client Name : OHM Remediation Services
 Project Name : Defense Depot - Memphis TN
 ETC Order # : 9810-751
 Method (SW-846) : 8081A/3550B

CALIBRATION

*

Calibration Verification(CV) : P310251A.30R (Primary)

Analyte	%Diff(15% Max)	Response
alpha-BHC	26.4	High
beta-BHC	15.4	High
delta-BHC	32.0	High
4,4'-DDD	48.1	High
4,4'-DDT	94.5	Low
Endosulfan sulfate	21.8	High
Endrin Ketone	42.1	Low
Heptachlor	29.5	Low
Methoxychlor	98.2	Low
Tetrachloro-m-xylene	28.6	High
Decachlorobiphenyl	23.2	Low

Low responses indicate that reported levels for these analytes may be biased low. High responses indicate that reported levels for these analytes may be biased high. Recoveries for these analytes were within QC Limits in P06029LCS associated with this project. Reported surrogate recoveries for Tetrachloro-m-xylene were within QC Limits for all soil samples associated with this project. The data was not affected.

Calibration Verification(CV) : P310251A.33R (Primary)

Analyte	%Diff(15% Max)	Response
Decachlorobiphenyl	23.6	High

High response indicates that reported levels for this analyte may be biased high. Reported surrogate recoveries for Tetrachloro-m-xylene were within QC Limits for all soil samples associated with this project. The data was not affected.

Calibration Verification(CV) : P110241B.30R (Primary)

Analyte	%Diff(15% Max)	Response
delta-BHC	30.0	High
4,4'-DDT	25.5	Low
Endosulfan I	27.5	High
Endosulfan II	37.5	High
Endrin aldehyde	35.5	High

Low response for 4,4'-DDT indicate that reported levels for this analyte may be biased low. High responses indicate that reported levels for these analytes may be biased high. Recoveries for these analytes were within QC Limits in P06029LCS associated with this project. The data was not affected.

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC PESTICIDES - SOIL

377 507

Client Name : OHM Remediation Services
Project Name : Defense Depot - Memphis TN
ETC Order # : 9810-751
Method (SW-846) : 8081A/3550B

SAMPLE ANALYSIS

Instrumentation : HP 5890 Series II GC
Dilutions Required : No dilutions required.*

*
Dilutions were performed on several samples associated with this project to bring the Target Analyte(s) within calibration range.

<u>Sample ID</u>	<u>Dilutions Performed</u>
9810-751-01	1:10,100
9810-751-02	1:10
9810-751-03	1:10,100
9810-751-04	1:10

Final results for 4,4'-DDD and 4,4'-DDT were flagged with M-value due to breakdown in the Ending Check Standard. These results represent minimum values found in samples 9810-751-01, 9810-751-02, 9810-751-03, and 9810-751-04 for these analytes.


Laboratory Manager

000119

377 508

FORM 2
SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-751

Level: (low/med) LOW

	EPA GC SAMPLE NO.	S1 (TMX) #	S2 (DBC) #	S3 #	S4 #	S5 #	S6 #	S7 #	S8 #	TOT OUT
01	9810-751-1	83	58D							1
02	9810-751-3	93	47D							1
03	P06029LB	93	77							0
04	P06029LCS	86	106							0
05	9810-751-1	22D	124							1
06	9810-751-3	27D	339D							1
07	9810-751-2	68	100							0
08	9810-751-4	74	108							0
09	9810-751-1	75	69							0
10	9810-751-2	76	63*							1
11	9810-751-3	80	142							0
12	9810-751-4	78	54*							1
13	9810-751-3MS	83	242D							1
14	9810-751-3MS	91	286D							1
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										

QC LIMITS

S1 (TMX) = Tetrachloro-m-xylene (39-130)

S2 (DBC) = Decachlorobiphenyl (64-154)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

000120

377 509

FORM 4
PESTICIDE METHOD BLANK SUMMARY

EPA GC SAMPLE NO.

P06029LB

Lab Name: ETC, INC.

Lab Prep Batch: P06029

SDG No.: 9810-751

Lab File ID: P310251A-11R

Instrument ID: PEST3A

Matrix: (soil/water) SOIL

Date Analyzed: 10/25/98

Level: (low/med) LOW

Time Analyzed: 1812

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA GC SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	P06029LCS		P310251A-14R	10/25/98
02	9810-751-1		P310251A-23R	10/26/98
03	9810-751-2		P310251A-24R	10/26/98
04	9810-751-3		P310251A-25R	10/26/98
05	9810-751-4		P310251A-26R	10/26/98
06	9810-751-3MS		P310251A-27R	10/26/98
07	9810-751-3MS		P310251A-28R	10/26/98
08				
09				
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27				
28				
29				
30				

COMMENTS:

FORM 1
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA GC SAMPLE NO.

P06029LB

Lab Name: ETC, INC.

SDG No.: 9810-751

Matrix: (soil/water) SOIL

Lab Prep Batch: P06029

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: P310251A-11R

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 10 (mL)

Date Analyzed: 10/25/98

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

309-00-2-----	Aldrin	1.33333	U
319-84-6-----	alpha-BHC	1.33333	U
319-85-7-----	beta-BHC	1.33333	U
319-86-8-----	delta-BHC	1.33333	U
58-89-9-----	gamma-BHC (Lindane)	1.33333	U
5103-71-9-----	alpha-chlordane	1.33333	U
5103-74-2-----	gamma-chlordane	1.33333	U
72-54-8-----	4,4'-DDD	1.33333	U
72-55-9-----	4,4'-DDE	1.33333	U
50-29-3-----	4,4'-DDT	1.33333	U
60-57-1-----	Dieldrin	1.33333	U
959-98-8-----	Endosulfan I	1.33333	U
33213-65-9-----	Endosulfan II	1.33333	U
1031-07-8-----	Endosulfan sulfate	1.33333	U
72-20-8-----	Endrin	1.33333	U
7421-93-4-----	Endrin aldehyde	1.33333	U
53494-70-5-----	Endrin Ketone	1.33333	U
76-44-8-----	Heptachlor	1.33333	U
1024-57-3-----	Heptachlor epoxide	1.33333	U
72-43-5-----	Methoxychlor	1.33333	U

FORM I PESTICIDE

000122

FORM 3
SOIL PESTICIDE LABORATORY CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: P06029

SDG No.: 9810-751

Matrix Spike - Sample No.: P06029LCS

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Aldrin	33.33333		28.31456	85	31-111
alpha-BHC	33.33333		29.07042	87	22-112
beta-BHC	33.33333		29.27941	88	54-120
delta-BHC	33.33333		28.90749	87	10- 96
gamma-BHC (Lindane)	33.33333		28.42733	85	26-113
alpha-chlordane	33.33333		29.17090	88	49-103
gamma-chlordane	33.33333		28.63512	86	50-106
4,4'-DDD	33.33333		28.47895	85	47-112
4,4'-DDE	33.33333		27.75526	83	36-117
4,4'-DDT	33.33333		31.98979	96	49-124
Dieldrin	33.33333		27.90901	84	44-108
Endosulfan I	33.33333		29.45869	88	49-103
Endosulfan II	33.33333		31.57345	95	53-115
Endosulfan sulfate	33.33333		32.01760	96	51-110
Endrin	33.33333		31.52579	94	44-118
Endrin aldehyde	33.33333		36.01907	108	48-128
Endrin Ketone	33.33333		31.34123	94	38-130
Heptachlor	33.33333		30.35884	91	47-113
Heptachlor epoxide	33.33333		29.66144	89	47-112
Methoxychlor	33.33333		33.60315	101	39-147

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits

Spike Recovery: 0 out of 20 outside limits

COMMENTS:

FORM 3
SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC, INC.

Lab Prep Batch: P06029

SDG No.: 9810-751

Matrix Spike - Sample No.: 9810-751-3

Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Aldrin	33.22259	2.97379	26.63640	71	31-111
alpha-BHC	33.22259	0.52452	29.10446	86	22-112
beta-BHC	33.22259	0.00000	26.41116	79	54-120
delta-BHC	33.22259	0.89684	31.60364	92	10- 96
gamma-BHC (Lindane)	33.22259	3.46821	28.23021	74	26-113
alpha-chlordane	33.22259	14.47805	50.71373	109*	49-103
gamma-chlordane	33.22259	14.59757	40.98220	79	50-106
4,4'-DDD	33.22259	19.19815	203.85766	556*	47-112
4,4'-DDE	33.22259	14.74155	151.40928	411*	36-117
4,4'-DDT	33.22259	22.20919	16.89711	-16*	49-124
Dieldrin	33.22259	15.02548	49.76197	104	44-108
Endosulfan I	33.22259	0.00000	28.47860	86	49-103
Endosulfan II	33.22259	3.18820	25.78555	68	53-115
Endosulfan sulfate	33.22259	0.00000	28.39564	85	51-110
Endrin	33.22259	0.84019	24.98412	73	44-118
Endrin aldehyde	33.22259	4.03768	30.39384	79	48-128
Endrin Ketone	33.22259	4.96560	20.11094	46	38-130
Heptachlor	33.22259	0.99770	18.99689	54	47-1
Heptachlor epoxide	33.22259	4.61495	32.06920	83	47-1
Methoxychlor	33.22259	14.84212	13.67794	-4*	39-147

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS:

FORM 3
SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC, INC.

Lab Prep Batch: P06029

SDG No.: 9810-751

Matrix Spike - Sample No.: 9810-751-3

Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS	
					RPD	REC.
Aldrin	32.57329	28.10581	77	8	20	31-111
alpha-BHC	32.57329	30.41982	92	7	20	22-112
beta-BHC	32.57329	28.87827	89	12	20	54-120
delta-BHC	32.57329	33.22111	99*	7	20	10- 96
gamma-BHC (Lindane)	32.57329	29.58276	80	8	20	26-113
alpha-chlordane	32.57329	54.39917	122*	11	20	49-103
gamma-chlordane	32.57329	46.21337	97	20	20	50-106
4,4'-DDD	32.57329	198.40908	550*	1	20	47-112
4,4'-DDE	32.57329	148.67002	411*	0	20	36-117
4,4'-DDT	32.57329	26.00147	12*	-1400	20	49-124
Dieldrin	32.57329	58.78951	134*	25*	20	44-108
Endosulfan I	32.57329	29.68693	91	6	20	49-103
Endosulfan II	32.57329	28.74657	78	14	20	53-115
Endosulfan sulfate	32.57329	30.74987	94	10	20	51-110
Endrin	32.57329	26.07811	77	5	20	44-118
Endrin aldehyde	32.57329	33.02815	89	12	20	48-128
Endrin Ketone	32.57329	22.77014	55	18	20	38-130
Heptachlor	32.57329	20.27211	59	9	20	47-113
Heptachlor epoxide	32.57329	34.04527	90	8	20	47-112
Methoxychlor	32.57329	14.55723	-1*	-120	20	39-147

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 20 outside limits

Spike Recovery: 12 out of 40 outside limits

COMMENTS:

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC PESTICIDES - AQUEOUS

Client Name : OHM Remediation Services
Project Name : Defense Depot - Memphis TN
ETC Order # : 9810-751
Method (SW-846) : 8081A/3510C

HOLDING TIMES

Sample Extraction : All aqueous samples extracted within 7 days.
Sample Analysis : All samples analyzed within 40 days of
extraction.

QUALITY CONTROL

QC Batch Form 4 Summary
P07030 P07030LB

System Monitoring Compounds FORM 2
Surrogate recoveries within QC limits.*
*

Surrogate recoveries for Tetrachloro-m-xylene were flagged for high recovery in P07030LCSD and sample 9810-751-05(C-EQ-CS-003). Surrogate recoveries for Decachlorobiphenyl were within QC Limits for all samples associated with this project.

Laboratory Control Sample FORM 3
P07030LCS/LCSD

All criteria met.*

*
Recovery for delta-BHC was flagged for high recovery in P07030LCSD. High recovery indicates that detection levels were not affected. This analyte was not identified in the aqueous sample associated with this project. The data was not affected.

Matrix Spike / Matrix Spike Dup FORM 3

RPD : NA*

Spike Recovery : NA*

*

Due to the limited amount of sample available, no MS/MSD were extracted.

Refer to Laboratory Control Sample(s) for system verification.

Method Blank FORM 4
P07030LB

No Target Analytes detected above Practical Quantitation Limit.

CALIBRATION

Initial Calibration : All criteria met. FORM 6
Calibration Verification : All criteria met. FORM 7*
Endrin/Breakdown : All criteria met. FORM 7A

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC PESTICIDES - AQUEOUS

377 515

Client Name : OHM Remediation Services
Project Name : Defense Depot - Memphis TN
ETC Order # : 9810-751
Method (SW-846) : 8081A/3510C

CALIBRATION

*

Calibration Verification(CV) : P310251A.30R (Primary)

Analyte	%Diff(15% Max)	Response
alpha-BHC	26.4	High
beta-BHC	15.4	High
delta-BHC	32.0	High
4,4'-DDD	48.1	High
4,4'-DDT	94.5	Low
Endosulfan sulfate	21.8	High
Endrin Ketone	42.1	Low
Heptachlor	29.5	Low
Methoxychlor	98.2	Low
Tetrachloro-m-xylene	28.6	High
Decachlorobiphenyl	23.2	Low

Low responses indicate that reported levels for these analytes may be biased low. High responses indicate that reported levels for these analytes may be biased high. Recoveries for these analytes were within QC Limits in P07030LCS associated with this project. Surrogate recoveries for Decachlorobiphenyl were within QC Limits for samples associated with this project. The data was not affected.

Calibration Verification(CV) : P310251A.33R (Primary)

Analyte	%Diff(15% Max)	Response
Decachlorobiphenyl	23.6	High

High response indicates that reported levels for this analyte may be biased high. Surrogate recoveries for Decachlorobiphenyl were within QC Limits for samples associated with this project. The data was not affected.

SAMPLE ANALYSIS

Instrumentation : HP 5890 Series II GC
Dilutions Required : No dilutions required.


Laboratory Manager

000127

FORM 2
WATER PESTICIDE SURROGATE RECOVERY

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9810-751

	EPA GC SAMPLE NO.	S1 (TMX) #	S2 (DBC) #	S3 #	S4 #	S5 #	S6 #	S7 #	S8 #	TOT OUT
01	P07030LB	93	84							0
02	P07030LCS	87	100							0
03	P07030LCSD	102*	97							1
04	9810-751-5	104*	84							1
05										
06										
07										
08										
09										
10										
11										
12										
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26										
27										
28										
29										
30										

QC LIMITS

S1 (TMX) = Tetrachloro-m-xylene (31- 96)

S2 (DBC) = Decachlorobiphenyl (34-115)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

FORM 4
PESTICIDE METHOD BLANK SUMMARY

377 517
EPA GC SAMPLE NO.

P07030LB

Lab Name: ETC, INC.

Lab Prep Batch: P07030

SDG No.: 9810-751

Lab File ID: P310251A-12R

Instrument ID: PEST3A

Matrix: (soil/water) WATER

Date Analyzed: 10/25/98

Level:(low/med) LOW

Time Analyzed: 1845

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA GC SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	P07030LCS		P310251A-15R	10/25/98
02	P07030LCSD		P310251A-16R	10/25/98
03	9810-751-5		P310251A-22R	10/26/98
04				
05				
06				
07				
08				
09				
10				
11				
12				
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22				
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24				
25				
26				
27				
28				
29				
30				

COMMENTS:

377 518

FORM 1
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA GC SAMPLE NO.

P07030LB

Lab Name: ETC, INC.

SDG No.: 9810-751

Matrix: (soil/water) WATER

Sample wt/vol: 1000 (g/mL) ML

Level: (low/med) LOW

Concentrated Extract Volume: 10 (mL)

Injection Volume: 1.0 (uL)

Lab Prep Batch: P07030

Lab File ID: P310251A-12R

Date Received: _____

Date Analyzed: 10/25/98

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
309-00-2-----	Aldrin	0.04000	U
319-84-6-----	alpha-BHC	0.04000	U
319-85-7-----	beta-BHC	0.04000	U
319-86-8-----	delta-BHC	0.04000	U
58-89-9-----	gamma-BHC (Lindane)	0.04000	U
5103-71-9-----	alpha-chlordane	0.04000	U
5103-74-2-----	gamma-chlordane	0.04000	U
72-54-8-----	4,4'-DDD	0.04000	U
72-55-9-----	4,4'-DDE	0.04000	U
50-29-3-----	4,4'-DDT	0.04000	U
60-57-1-----	Dieldrin	0.04000	U
959-98-8-----	Endosulfan I	0.04000	U
33213-65-9-----	Endosulfan II	0.04000	U
1031-07-8-----	Endosulfan sulfate	0.04000	U
72-20-8-----	Endrin	0.04000	U
7421-93-4-----	Endrin aldehyde	0.04000	U
53494-70-5-----	Endrin Ketone	0.04000	U
76-44-8-----	Heptachlor	0.04000	U
1024-57-3-----	Heptachlor epoxide	0.04000	U
72-43-5-----	Methoxychlor	0.04000	U

FORM I PESTICIDE

000130

FORM 3
WATER PESTICIDE LABORATORY CONTROL SAMPLE

377 519

Lab Name: ETC, INC.

Lab Prep Batch: P07030

SDG No.: 9810-751

Matrix Spike - Sample No.: P07030LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Aldrin	1.00000		0.85799	86	34-105
alpha-BHC	1.00000		0.90500	90	41-102
beta-BHC	1.00000		0.95013	95	26-151
delta-BHC	1.00000		0.89207	89	21- 92
gamma-BHC (Lindane)	1.00000		0.91768	92	41-102
alpha-chlordane	1.00000		0.88293	88	48-117
gamma-chlordane	1.00000		0.86546	86	51-108
4,4'-DDD	1.00000		0.81463	81	39-124
4,4'-DDE	1.00000		0.82382	82	41-111
4,4'-DDT	1.00000		0.88043	88	39-123
Dieldrin	1.00000		0.89088	89	42-111
Endosulfan I	1.00000		0.90982	91	48-117
Endosulfan II	1.00000		0.96500	96	52-114
Endosulfan sulfate	1.00000		0.92485	92	46-111
Endrin	1.00000		0.88489	88	45-117
Endrin aldehyde	1.00000		1.03458	103	48-125
Endrin Ketone	1.00000		0.88212	88	51-112
Heptachlor	1.00000		0.92144	92	43-114
Heptachlor epoxide	1.00000		0.90924	91	42-115
Methoxychlor	1.00000		0.91215	91	39-140

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS:

**COMPOSITE CONFIRMATION SAMPLE COLLECTED
FROM THE EXCAVATED PORTION OF AREA B (12" bls)**

Date Collected 11/02/98

B1-C1 (Composite of Grids B1-1-1 & B1-1-2)



ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road • Memphis TN 38111 • (901) 327-2750 • FAX (901) 327-6334

Founded 1972

377 521

November 4, 1998

Ms. Elena Rodriguez
OHM Remediation Services
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Ref: Analytical Testing
ETC Order # 9811024
Project Description DDMT

Project # 20560 Defense Depot - Memphis, TN

The above referenced project has been analyzed per your instructions. The analyses were performed in our laboratory in accordance with Standard Methods 17th/18th Edition; The Solid Waste Manual SW-846; EPA Methods for the Analysis of Water and Wastes and/or 40 CFR part 136.

The results are shown on the attached analysis sheet(s).

Please do not hesitate to contact our office if you have any questions.

Sincerely,


Nathan A. Pera, IV
Chief Executive Officer

rt
Attachment

OHM_DDMT

377 522

Chemical Analytical Data
Review/Evaluation/Validation

SOUTHERN REGION

Report Type ☐ Preliminary ☒ Final Date Received: _____ Project Number: 20560
 Project Name DDMT Analysis/Method: TCL VOCs, SVOC, Pest, PCB
 Laboratory ETC Lab Project/Case Number: 9811024
 Sample Number(s): B1-C1

Evaluated By: 2/5/99 S. Ruzanyne Date Evaluated: 2/5/99

Data Package Deliverables Requirement: ☐ OHM Minimum ☒ OHM Standard ☐ OHM Maximum

☐ Other, please describe _____

Quality Control Deliverables	Required	Received	Passed	Failed
PQL, MDL, RL, etc meets DQOs	☒		☒	
Comment:				
Holding Times			☒	
Comment:				
Sample Condition (preservatives, containers, temperature, etc) / Case Narrative	☒		☒	
Comment:				
Surrogate Recoveries	☒		☒	
Comment: Out for BNA, OK in a soil sample, data accepted. One out on pest, matrix interference control not data accepted - also for PCBs				
Lab Control Sample Recoveries	☒		☒	
Comment:				
Lab Control Sample Duplicate or Other Spike Recoveries	☒		☒	
Comment: Out for VOA, BNA. Associated results transferred and accepted. Out for Pest. Results ~~not~~ ND. Data not affected.				
Lab Control Sample Duplicate or Other Laboratory Duplicate RPD	☒		☒	
Comment:				
Matrix Spike Recoveries	☒		☒	
Comment: Out for VOA, Pest. LCS OK. Data accepted. Out for PCBs sample result ND for AR 1224. Data accepted. Out on metals, LCS				
Matrix Spike Duplicate Recoveries	☒		☒	
Comment: Out for metals, Pest, PCB. LCS OK. Data accepted				
Matrix Spike / Matrix Spike Duplicate RPD	☒		☒	
Comment: Out for metals, BNA, Pest, PCB. LCS OK. Data accepted				
Laboratory Blanks (daily, method, instrument)	☒		☒	
Comment:				
Field Blanks (trip, eqpt rinsate, ambient, matrix)	☒			
Comment:				

N/A

xmatrix interference continued

Quality Control Deliverables		Required	Received	Passed	Failed
Field Duplicates RPD		X			
Comment:	<i>N/A</i>				
Second Source Check					
Comment:					
Second Column Confirmation		X		✓	
Comment:					
Percent Moisture/Solids		X		✓	
Comment:					
Initial / Continuing Calibrations		X		✓	
Comment:	cent calibration out for VOA, BNA. Results flagged J and accepted some cont cal. out for sample run ~~from~~ sample *				
Internal Standard Areas and Retention Times (Organics Only)				✓	
Comment:	out for BNA results plotted with J flag.				
Chromatograms		X		✓	
Comment:					
Sample Prep Worksheets		X		✓	
Comment:					
Raw Data Calculations					
Comment:	<i>N/A</i>				
Laboratory Duplicates					
Comment:					
Instrument Performance Checks (Organics Only)		X		✓	
Comment:					
Tentatively Identified Compounds (TICs)		X		✓	
Comment:					
Completeness	# Samples	# Analyses	Tot # Analyses	Tot # Accept Analyses	% Complete
Completeness = (Tot # Analyses / Tot # Accepted Analyses) x 100	1	6	6	6	100

General Comments:

* I cal/c - cal - results not affected

Summary: [] See attached pages

Results flagged J for LCS recoveries, cont calibrations and int standards. All data accepted.

Check Applicable:

- ☐ Lab contacted--Corrective actions in process Date Contacted: _____
☐ Corrective actions received and accepted Date Received/Accepted: _____
☐ The data, as reported by the laboratory, are acceptable.
☒ The data, with qualifiers as described in the "Summary" portion of this report, are acceptable.
☐ The data are unacceptable.
☐ Other _____

S. Pasanoyape
 Evaluator's Signature

2/5/99
 Date

Environmental Testing & Consulting, Inc.
Data Qualifiers for Organic Reporting

Within the attached report, some analytical data may be reported as "Qualified Data" as indicated by a "Data Qualifier" next to the result. This table summarizes the possible "Data Qualifiers" that may be associated with this report.

Q	Surrogate Recovery Outside QC Limits
J	Estimated Value. Presence of the compound was confirmed but less than the reported detection limit.
E	Concentration exceeds the established method calibration range but is within the working range of the instrument.
B	Analyte detected in the associated Method Blank.
U	Reported result was unconfirmed. Refer to Case Narrative.
N	Non-Compliance Report associated with this sample or project.
C	Result reported from GC/MS confirmation analysis.
M	Result reported represents a minimum value. Refer to Case Narrative.
NC	Result reported from Primary Column. Result did not confirm.
*	QC Data (percent recovery/RPD for a particular analyte was outside QC Limits)

377 525

ENVIRONMENTAL TESTING & CONSULTING, INC.
 2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ANALYTICAL SUMMARY TABLE

Client Name **OHM Remediation Services**
 Site ID **DDMT**
Memphis, TN

ETC					
<u>Sample ID</u>	<u>Field ID</u>	<u>Matrix</u>	<u>Method</u>	<u>Method Description</u>	
981102401	B1-C1	SOIL	6010B	Silver	
981102401	B1-C1	SOIL	6010B	Aluminum	
981102401	B1-C1	SOIL	7060A	Arsenic	
981102401	B1-C1	SOIL	8270C	GC/MS Base/Neutral & Acid	
981102401	B1-C1	SOIL	6010B	Barium	
981102401	B1-C1	SOIL	6010B	Beryllium	
981102401	B1-C1	SOIL	6010B	Calcium	
981102401	B1-C1	SOIL	6010B	Cadmium	
981102401	B1-C1	SOIL	9010A	Cyanide	
981102401	B1-C1	SOIL	6010B	Cobalt	
981102401	B1-C1	SOIL	6010B	Chromium	
981102401	B1-C1	SOIL	6010B	Copper	
981102401	B1-C1	SOIL	6010B	Iron	
981102401	B1-C1	SOIL	7471A	Mercury	
981102401	B1-C1	SOIL	6010B	Potassium	
981102401	B1-C1	SOIL	6010B	Magnesium	
981102401	B1-C1	SOIL	6010B	Manganese	
981102401	B1-C1	SOIL	6010B	Sodium	
981102401	B1-C1	SOIL	6010B	Nickel	
981102401	B1-C1	SOIL	8081A	Organochlorine Pesticides	
981102401	B1-C1	SOIL	7421	Lead	
981102401	B1-C1	SOIL	8082	PCBs	
981102401	B1-C1	SOIL	6010B	Antimony	
981102401	B1-C1	SOIL	7740	Selenium	
981102401	B1-C1	SOIL		EnCore Sampler (5 gram)	
981102401	B1-C1	SOIL	7841	Thallium	
981102401	B1-C1	SOIL	8260B	GC/MS Volatile Organics	
981102401	B1-C1	SOIL	6010B	Vanadium	
981102401	B1-C1	SOIL	6010B	Zinc	

377 526

Environmental Testing & Consulting, Inc.

Login
Chain-of-Custody

000003

**OHM Remediation
Services Corp**
Subsidiary of OHM Corporation
U.S. Route 324 East • Findlay, Ohio

CHAIN-OF-CUSTODY RECORD

LABORATORY COPY 4
2178990

2811-027

Subsidiary of OHM Corporation
U S Route 224 East • Findlay, Ohio 45840 • (419) 423-3526

FORM 1019 REV 2-97

OHM LAB COORDINATOR		LAB COORDINATOR'S PHONE		LAB COORDINATOR'S FAX		LABORATORY SERVICE ID		LABORATORY CONTACT		MAIL REPORT (COMPANY NAME)		
Elena Rodriguez		770-734-8060		770-453-7716		ETC		Nathan Pera		OHM Remediation Services Corp		
PROJECT NAME		PROJECT LOCATION		PROJECT NUMBER		LABORATORY PHONE		LABORATORY FAX		RECIPIENT NAME		
DDMT		Memphis, TN		20560		901-327-2750		901-327-6334		Elena Rodriguez		
PROJECT CONTACT		PROJECT PHONE NUMBER		PROJECT FAX		LABORATORY ADDRESS		CITY, STATE AND ZIP CODE		ADDRESS		
Steve Offner		901-743-1117		901-743-1048		9924 Walnut Grove Road		Memphis, TN 38111		5445 Triangle Pkwy. #400		
PROJECT ADDRESS		CITY, STATE AND ZIP CODE		CLIENT		LABORATORY PHONE		LABORATORY FAX		CITY, STATE AND ZIP CODE		
1708 Dunn Ave.		Memphis, TN 38114		USACE		901-327-2750		901-327-6334		Norcross, GA 30092		
PROJECT MANAGER'S PHONE		PROJECT MANAGER'S FAX		PROJECT MANAGER'S FAX		CITY, STATE AND ZIP CODE		LABORATORY ADDRESS		CITY, STATE AND ZIP CODE		
Steve Offner		770-326-2571		770-453-7716		Memphis, TN 38111		Norcross, GA 30092		Norcross, GA 30092		
Item	Sample Identifier	Matrix	Date	Time	Preserved	# of Cont	QC Level	TAT	Analyses		Comments	
1	BA-C1		3/11/18	08:30 AM	5/4/18	0/10/18	3/4/18	3/4/18	✓	✓	✓	✓
2												
3												
4												
5												
6												
7												
8												
9												
10												
SAMPLES COLLECTED BY: Steve Offner												
RECEIVED BY: [Signature]												
DATE: 11/15/18												
TIME: 1315												
COOLER TEMPERATURE UPON RECEIPT: [Blank]												
SAMPLE'S CONDITION UPON RECEIPT: [Blank]												
Please fax results on DUE DATE to [Blank]												
SITE and to Lab Coordinator [Blank]												
Distribution: White - Laboratory (To be returned with Analytical Report), Goldendrod - Project File, Yellow - Project Data Manager												

COOLER RECEIPT FORM

Cooler Receipt Form
9811024 CRF p 1

LIMS # 9811-024 Number of Coolers 1
 Date Received 11/02/98
 VDTSR 11/02/98 13 15
 PROJECT OHM/DDMT Memphis, TN

USE OTHER SIDE OF THIS FORM TO NOTE DETAILS CONCERNING CHECK-IN PROBLEMS

A PRELIMINARY EXAMINATION PHASE Date cooler was opened 11/02/98
 by (print) Lynette Bugg (sign) Lynette Bugg

1 Did cooler come with a shipping slip (airbill, etc)? YES
 If YES, enter carrier name & airbill number _____

2a Were custody seals on outside of cooler? NO
 2b Were custody seals on sample containers? NO

3 Were custody seals unbroken and intact at the date and time of arrival? NO

4 Did you screen samples for radioactivity using a Geiger Counter? NO

5 Were custody papers sealed in a plastic bag & taped inside to the lid? NO

6 Were custody papers filled out properly (ink, signed, etc)? YES

7 Did you sign custody papers in the appropriate place? YES

8 Was project identifiable from custody papers? If YES, enter project name at top of this form YES

9 If required, was enough ice used? cooler temp <4°C c, Type of ice Crushed YES

10 Have designated person initial here to acknowledge receipt of cooler LB date 11/02/98

B LOG-IN PHASE Date samples were logged-in 11/02/98
 by (print) Lynette Bugg (sign) Lynette Bugg

11 Describe type of packing in cooler Baggies, Bubble Wrap & Ice

12 Were all bottles sealed in separate plastic bags? YES

13 Did all bottles arrive unbroken and were labels in good condition? YES

14 Were all bottle labels complete (ID, date, time, signature, preserved, etc)? YES

15 Did all bottle labels agree with custody papers? YES

16 Were correct containers used for the tests indicated? YES

17 Were correct preservatives added to samples? YES

18 Was a sufficient amount of sample sent for tests indicated? YES

19 Were bubbles absent in VOA samples? If NO, list by sample# _____ NA

20 Was the project manager called and status discussed? If YES, give details on the back of this form NO

21 Who was called? _____ By whom ? _____ (date) _____

VDTSR - Validated Date/Time of Sample Receipt (Date sample is logged into LIMS system)

000005

Environmental Testing & Consulting, Inc.

Sample Reports

377 530

ENVIRONMENTAL TESTING & CONSULTING, INC.
Memphis, TN
INORGANIC ANALYSIS DATA SHEET
PERCENT SOLIDS

Client Name :OHM Remediation Services
Project Name :DDMT

Date Sample Received :11/02/98
Contract Laboratory Order Number :9811-024

<u>Contract Lab</u> <u>Sample No</u>	<u>Field</u> <u>ID</u>	<u>Date</u> <u>Sampled</u>	<u>Result</u> <u>Units : (%)</u>	<u>Date</u> <u>Analyzed</u>	<u>Method</u>	<u>By</u>
9811-024-01	B1-C1	11/02/98	92	11/03/98	160.3	MC


LABORATORY MANAGER

000007

377 531

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

INORGANIC ANALYSIS DATA SHEET

Client Name OHM Remediation Services
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400

Project # 20560

Site ID Norcross, GA 30092

DDMT
Memphis, TN

Date Arrived 11/02/98

ETC Order Number 9811024

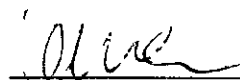
ETC Lab ID 9811024-01

Sample ID: B1-C1

Matrix :SOIL

Sample Date :11/02/98

TEST	RESULT	UNITS	DETECTION LIMIT	TIME ANALYZED	DATE ANALYZED BY	METHOD
Cyanide	ND	mg/Kg	1.00	08 35	11/03/98 GD	9010A


LABORATORY MANAGER

000008

377 532

ENVIRONMENTAL TESTING & CONSULTING, INC.
2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
INORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT -**
Memphis, TN

Project # 20560

Date Arrived 11/02/98
ETC Order Number 9811024

ETC Lab ID **9811024-01**
Sample ID: B1-C1

Matrix :SOIL
Sample Date :11/02/98

TEST	RESULT	UNITS	DETECTION LIMIT	TIME ANALYZED	DATE ANALYZED BY	METHOD
Metals Digestion Batch	V8-SO-75				NR	3051
Mercury Digestion Batch	V4-SO-44				RM	7471A
Silver	ND	mg/Kg	0.700	12 53	11/04/98	TD 6010B
Aluminum	10,800	mg/Kg	4.00	13.16	11/04/98	TD 6010B
Arsenic	17.9	mg/Kg	0.200	10:51	11/03/98	JF 7060A
Barium	120	mg/Kg	0.200	12:53	11/04/98	TD 6010B
Beryllium	0.636	mg/Kg	0.100	12:53	11/04/98	TD 6010B
Calcium	4,520	mg/Kg	1.00	12 53	11/04/98	TD 6010B
Cadmium	1.82	mg/Kg	0.400	12 53	11/04/98	TD 6010B
Cobalt	8.02	mg/Kg	0.700	12:53	11/04/98	TD 6010B
Chromium	24.1	mg/Kg	0.700	12:53	11/04/98	TD 6010B
Copper	49.2	mg/Kg	0.600	12:53	11/04/98	TD 6010B
Iron	21,400	mg/Kg	0.700	13.16	11/04/98	TD 6010B
Mercury	0.126	mg/Kg	0.020	13 41	11/03/98	RM 7471A
Potassium	943	mg/Kg	20.0	12:53	11/04/98	TD 6010B
Magnesium	1,930	mg/Kg	3.00	12:53	11/04/98	TD 6010B
Manganese	682	mg/Kg	0.200	12 53	11/04/98	TD 6010B
Sodium	86.6	mg/Kg	20.0	12:53	11/04/98	TD 6010B
Nickel	20.6	mg/Kg	1.50	12:53	11/04/98	TD 6010B
Lead	142	mg/Kg	4.50	12:53	11/04/98	TD 6010B
Antimony	ND	mg/Kg	3.20	12:53	11/04/98	TD 6010B
Selenium	0.434	mg/Kg	0.200	10:48	11/03/98	JF 7740
Thallium	0.209	mg/Kg	0.100	14:17	11/03/98	TD 7841
Vanadium	26.6	mg/Kg	0.800	12 53	11/04/98	TD 6010B
Zinc	210	mg/Kg	1.00	12:53	11/04/98	TD 6010B


LABORATORY MANAGER

000009

377 533

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

Project # 20560
 FID # DACA45-96-D-0014

Date Arrived 11/02/98
 ETC Order Number 9811024

ETC Lab ID 9811024-01

Sample ID: B1-C1

Matrix :SOIL
 Sample Date :11/02/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Volatile Organics							8260B
QC Batch	V2110301	ug/Kg		11/03/98	11/03/98	LS	
Acetone	ND	ug/Kg	100				
Benzene	ND	ug/Kg	4.00				
Bromodichloromethane	ND	ug/Kg	4.00				
Bromoform	ND	ug/Kg	4.00				
Bromomethane	ND	ug/Kg	4.00				
Carbon Disulfide	ND	ug/Kg	50.0				
Carbon Tetrachloride	ND	ug/Kg	4.00				
Chlorobenzene	ND	ug/Kg	4.00				
Chlorodibromomethane	ND	ug/Kg	4.00				
Chloroethane	ND	ug/Kg	4.00				
Chloroform	ND	ug/Kg	4.00				
Chloromethane	ND	ug/Kg	4.00				
1,1-Dichloroethane	ND	ug/Kg	4.00				
1,2-Dichloroethane	ND	ug/Kg	4.00				
1,1-Dichloroethene	ND	ug/Kg	4.00				
trans-1,2-Dichloroethene	ND	ug/Kg	4.00				
1,2-Dichloropropane	ND	ug/Kg	4.00				
cis-1,3-Dichloropropene	ND	ug/Kg	4.00				
trans-1,3-Dichloropropene	ND	ug/Kg	4.00				
Ethylbenzene	ND	ug/Kg	4.00				
2-Hexanone (MBK)	ND	ug/Kg	100				
4-Methyl-2-pentanone (MIBK)	ND	ug/Kg	100				
2-Butanone (MEK)	ND	ug/Kg	100				
Methylene Chloride	ND	ug/Kg	100				
Styrene	ND	ug/Kg	4.00				
1,1,2,2-Tetrachloroethane	ND	ug/Kg	4.00				
Tetrachloroethene	ND	ug/Kg	4.00				
Toluene	ND	ug/Kg	4.00				
1,1,1-Trichloroethane	ND	ug/Kg	4.00				
1,1,2-Trichloroethane	ND	ug/Kg	4.00				
Trichloroethene	ND	ug/Kg	4.00				
Vinyl Acetate	ND	ug/Kg	50.0				
Vinyl Chloride	ND	ug/Kg	4.00				
o-Xylenes	ND	ug/Kg	4.00				
m-Xylenes	ND	ug/Kg	4.00				
p-Xylenes	ND	ug/Kg	4.00				
cis-1,2-Dichloroethene	ND	ug/Kg	4.00				

Surrogate Standard	% Recovery	QC Limits
S1 - Dibromofluoromethane	105	70 134
S2 - Toluene-d8	97	85 111
S3 - 4-Bromofluorobenzene	103	81 117


 LABORATORY MANAGER

ND - Not Detected

000010

377 534

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

9811-024-1

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9811-024

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 4.0 (g/mL) G

Lab File ID: 0401005

Level: (low/med) LOW

Date Received: _____

% Moisture: not dec. _____

Date Analyzed: 11/03/98

GC Column: ID: 2.00 (mm)

Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 96-37-7	CYCLOPENTANE, METHYL-	11.75	3.13	NJ
2.				
3.				
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FORM I VOA-GCMS-TIC

000011

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

377 535

Client Name OHM Remediation Services
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560
FID # DACA45-96-D-0014

Site ID DDMT
Memphis, TN

Date Arrived 11/02/98
ETC Order Number 9811024

ETC Lab ID 9811024-01

Sample ID: B1-C1

Matrix :SOIL
Sample Date :11/02/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Base/Neutral & Acid				11/03/98	11/03/98	CB	8270C
QC Batch	P04059	ug/Kg					
Acenaphthene	138	ug/Kg	67.0				
Acenaphthylene	ND	ug/Kg	67.0				
Anthracene	289	ug/Kg	67.0				
Benzo(a)anthracene	1,740	ug/Kg	67.0				
Benzo(b)fluoranthene	3,010	ug/Kg	67.0				
Benzo(k)fluoranthene	996	ug/Kg	67.0				
Benzo(g,h,i)perylene	1,650	ug/Kg	67.0				
Benzo(a)pyrene	1,980	ug/Kg	67.0				
Benzoic Acid	ND	ug/Kg	1670				
Benzyl Alcohol	ND	ug/Kg	170				
Bis(2-chloroethoxy)methane	ND	ug/Kg	170				
Bis(2-chloroethyl)ether	ND	ug/Kg	170				
Bis(2-chloroisopropyl)ether	ND	ug/Kg	170				
Bis(2-ethylhexyl)phthalate	296	ug/Kg	170				
4-Bromophenyl phenyl ether	ND	ug/Kg	170				
Butyl benzyl phthalate	ND	ug/Kg	170				
4-Chloroaniline	ND	ug/Kg	170				
2-Chloronaphthalene	ND	ug/Kg	170				
4-Chloro-3-methylphenol	ND	ug/Kg	170				
2-Chlorophenol	ND	ug/Kg	170				
4-Chlorophenyl phenyl ether	ND	ug/Kg	170				
Chrysene	2,230	ug/Kg	170				
Dibenzo(a,h)anthracene	ND	ug/Kg	67.0				
Dibenzofuran	ND	ug/Kg	170				
Di-n-butyl phthalate	ND	ug/Kg	170				
1,2-Dichlorobenzene	ND	ug/Kg	170				
1,3-Dichlorobenzene	ND	ug/Kg	170				
1,4-Dichlorobenzene	ND	ug/Kg	170				
3,3'-Dichlorobenzidine	ND	ug/Kg	170				
2,4-Dichlorophenol	ND	ug/Kg	170				
2,6-Dichlorophenol	ND	ug/Kg	170				
Diethyl phthalate	ND	ug/Kg	170				
2,4-Dimethylphenol	ND	ug/Kg	170				
Dimethyl phthalate	ND	ug/Kg	170				
4,6-Dinitro-2-methylphenol	ND	ug/Kg	170				
2,4-Dinitrophenol	ND	ug/Kg	330				
2,4-Dinitrotoluene	ND	ug/Kg	170				
2,6-Dinitrotoluene	ND	ug/Kg	170				
Di-n-octyl phthalate	ND	ug/Kg	170				
Fluoranthene	1,780	ug/Kg	67.0				
Fluorene	104	ug/Kg	67.0				
Hexachlorobenzene	ND	ug/Kg	170				

LABORATORY MANAGER

ND - Not Detected

000012

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET**377 536**

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560
FID # DACA45-96-D-0014

Site ID DDMT
Memphis, TN

Date Arrived 11/02/98
ETC Order Number 9811024

ETC Lab ID 9811024-01

Sample ID: B1-C1

Matrix :SOIL

Sample Date :11/02/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Base/Neutral & Acid							8270C
				11/03/98	11/03/98	CB	
Hexachlorobutadiene	ND	ug/Kg	170				
Hexachlorocyclopentadiene	ND	ug/Kg	170				
Hexachloroethane	ND	ug/Kg	170				
Indeno (1,2,3-cd) pyrene	2,760	ug/Kg	67.0				
Isophorone	ND	ug/Kg	170				
2-Methylnaphthalene	ND	ug/Kg	170				
2-Methylphenol (o-cresol)	ND	ug/Kg	170				
3-Methylphenol (m-cresol)	ND	ug/Kg	170				
4-Methylphenol (p-cresol)	ND	ug/Kg	170				
Naphthalene	ND	ug/Kg	67.0				
Nitrobenzene	ND	ug/Kg	170				
2-Nitroaniline	ND	ug/Kg	170				
3-Nitroaniline	ND	ug/Kg	170				
4-Nitroaniline	ND	ug/Kg	170				
2-Nitrophenol	ND	ug/Kg	170				
4-Nitrophenol	ND	ug/Kg	170				
N-Nitrosodiphenylamine	ND	ug/Kg	170				
N-Nitrosodipropylamine	ND	ug/Kg	170				
Pentachlorophenol	ND	ug/Kg	170				
Phenanthrene	1,540	ug/Kg	67.0				
Phenol	ND	ug/Kg	170				
Pyrene	1,300	ug/Kg	67.0				
1,2,4-Trichlorobenzene	ND	ug/Kg	170				
2,4,5-Trichlorophenol	ND	ug/Kg	170				
2,4,6-Trichlorophenol	ND	ug/Kg	170				

Surrogate Standard	% Recovery	QC Limit
S1 - Nitrobenzene-d5	34	25 110
S2 - 2-Fluorobiphenyl	49	33 114
S3 - 4-Terphenyl-d14	27 Q	37 115
S4 - Phenol-d6	35	11 125
S5 - 2,4,6-Tribromophenol	40	9 134
S6 - 2-Fluorophenol	26	10 119



LABORATORY MANAGER

ND - Not Detected

000013

377 537

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560
 FID # DACA45-96-D-0014

Site ID DDMT
 Memphis, TN

Date Arrived 11/02/98
 ETC Order Number 9811024

ETC Lab ID 9811024-01
Sample ID: B1-C1-DL

Matrix :SOIL
 Sample Date :11/02/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Base/Neutral & Acid				11/03/98	11/03/98	CB	8270C
QC Batch	P04059	ug/Kg					
Acenaphthene	ND	ug/Kg	670				
Acenaphthylene	ND	ug/Kg	670				
Anthracene	1,570	ug/Kg	670				
Benzo(a)anthracene	ND	ug/Kg	670				
Benzo(b)fluoranthene	3,120	ug/Kg	670				
Benzo(k)fluoranthene	ND	ug/Kg	670				
Benzo(g,h,i)perylene	3,680	ug/Kg	670				
Benzo(a)pyrene	ND	ug/Kg	670				
Benzoic Acid	ND	ug/Kg	16700				
Benzyl Alcohol	ND	ug/Kg	1700				
Bis(2-chloroethoxy)methane	ND	ug/Kg	1700				
Bis(2-chloroethyl)ether	ND	ug/Kg	1700				
Bis(2-chloroisopropyl)ether	ND	ug/Kg	1700				
Bis(2-ethylhexyl)phthalate	ND	ug/Kg	1700				
4-Bromophenyl phenyl ether	ND	ug/Kg	1700				
Butyl benzyl phthalate	ND	ug/Kg	1700				
4-Chloroaniline	ND	ug/Kg	1700				
2-Chloronaphthalene	ND	ug/Kg	1700				
4-Chloro-3-methylphenol	ND	ug/Kg	1700				
2-Chlorophenol	ND	ug/Kg	1700				
4-Chlorophenyl phenyl ether	ND	ug/Kg	1700				
Chrysene	2,150	ug/Kg	1700				
Dibenzo(a,h)anthracene	ND	ug/Kg	670				
Dibenzofuran	ND	ug/Kg	1700				
Di-n-butyl phthalate	ND	ug/Kg	1700				
1,2-Dichlorobenzene	ND	ug/Kg	1700				
1,3-Dichlorobenzene	ND	ug/Kg	1700				
1,4-Dichlorobenzene	ND	ug/Kg	1700				
3,3'-Dichlorobenzidine	ND	ug/Kg	1700				
2,4-Dichlorophenol	ND	ug/Kg	1700				
2,6-Dichlorophenol	ND	ug/Kg	1700				
Diethyl phthalate	ND	ug/Kg	1700				
2,4-Dimethylphenol	ND	ug/Kg	1700				
Dimethyl phthalate	ND	ug/Kg	1700				
4,6-Dinitro-2-methylphenol	ND	ug/Kg	1700				
2,4-Dinitrophenol	ND	ug/Kg	3300				
2,4-Dinitrotoluene	ND	ug/Kg	1700				
2,6-Dinitrotoluene	ND	ug/Kg	1700				
Di-n-octyl phthalate	ND	ug/Kg	1700				
Fluoranthene	3,570	ug/Kg	670				
Fluorene	ND	ug/Kg	670				
Hexachlorobenzene	ND	ug/Kg	1700				


 LABORATORY MANAGER

ND - Not Detected

J00014

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET**377 538**

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

Project # 20560
FID # DACA45-96-D-0014

Date Arrived 11/02/98
ETC Order Number 9811024

ETC Lab ID 9811024-01
Sample ID: B1-C1-DL

Matrix :SOIL
Sample Date :11/02/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Base/Neutral & Acid				11/03/98	11/03/98	CB	8270C
Hexachlorobutadiene	ND	ug/Kg	1700				
Hexachlorocyclopentadiene	ND	ug/Kg	1700				
Hexachloroethane	ND	ug/Kg	1700				
Indeno (1,2,3-cd)pyrene	ND	ug/Kg	670				
Isophorone	ND	ug/Kg	1700				
2-Methylnaphthalene	ND	ug/Kg	1700				
2-Methylphenol (o-cresol)	ND	ug/Kg	1700				
3-Methylphenol (m-cresol)	ND	ug/Kg	1700				
4-Methylphenol (p-cresol)	ND	ug/Kg	1700				
Naphthalene	ND	ug/Kg	670				
Nitrobenzene	ND	ug/Kg	1700				
2-Nitroaniline	ND	ug/Kg	1700				
3-Nitroaniline	ND	ug/Kg	1700				
4-Nitroaniline	ND	ug/Kg	1700				
2-Nitrophenol	ND	ug/Kg	1700				
4-Nitrophenol	ND	ug/Kg	1700				
N-Nitrosodiphenylamine	ND	ug/Kg	1700				
N-Nitrosodipropylamine	ND	ug/Kg	1700				
Pentachlorophenol	ND	ug/Kg	1700				
Phenanthrene	1,590	ug/Kg	670				
Phenol	ND	ug/Kg	1700				
Pyrene	2,960	ug/Kg	670				
1,2,4-Trichlorobenzene	ND	ug/Kg	1700				
2,4,5-Trichlorophenol	ND	ug/Kg	1700				
2,4,6-Trichlorophenol	ND	ug/Kg	1700				

Surrogate Standard	% Recovery	QC Limits
S1 - Nitrobenzene-d5	33	25 110
S2 - 2-Fluorobiphenyl	50	33 114
S3 - 4-Terphenyl-d14	63	37 115
S4 - Phenol-d6	33	11 125
S5 - 2,4,6-Tribromophenol	35	9 134
S6 - 2-Fluorophenol	22	10 119


LABORATORY MANAGER

ND - Not Detected

000015

377 539

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

9811-024-1

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9811-024

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: 1001010

Level: (low/med) LOW

Date Received: _____

% Moisture: _____ decanted: (Y/N) _____

Date Extracted:

Concentrated Extract Volume: 1 (mL)

Date Analyzed: 11/03/98

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 6

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 75163-97-2	OCTADECANE, 2,6-DIMETHYL-	9.73	0.22	NJ
2. 2565-82-4	2,6-OCTADIENE, 1-METHOXY-3,7	10.83	0.23	NJ
3. 2531-84-2	PHENANTHRENE, 2-METHYL-	11.55	0.17	NJ
4. 84-65-1	9,10-ANTHRACENEDIONE	12.11	0.17	NJ
5. 629-92-5	NONADECANE	12.20	0.22	NJ
6. 3424-82-6	O,P'-DDE	13.61	0.33	NJ
7.				
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FORM I BNA-GCMS-TIC

000016

ENVIRONMENTAL TESTING & CONSULTING, INC.
2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ORGANIC ANALYSIS DATA SHEET

377 540

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

Project # 20560
FID # DACA45-96-D-0014

Date Arrived 11/02/98
ETC Order Number 9811024

ETC Lab ID **9811024-01**
Sample ID: B1-C1-RX

Matrix :SOIL
Sample Date :11/02/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Base/Neutral & Acid				11/16/98	11/19/98	CB	8270C
QC Batch	P04068	ug/Kg					
Acenaphthene	524	ug/Kg	67.0				
Acenaphthylene	ND	ug/Kg	67.0				
Anthracene	795	ug/Kg	67.0				
Benzo(a)anthracene	3,200	ug/Kg	67.0 J				
Benzo(b)fluoranthene	4,020	ug/Kg	67.0 J				
Benzo(k)fluoranthene	1,470	ug/Kg	67.0 J				
Benzo(g,h,i)perylene	2,960	ug/Kg	67.0 J				
Benzo(a)pyrene	3,300	ug/Kg	67.0 J				
Benzoic Acid	ND	ug/Kg	1670 J				
Benzyl Alcohol	ND	ug/Kg	170				
Bis(2-chloroethoxy)methane	ND	ug/Kg	170				
Bis(2-chloroethyl)ether	ND	ug/Kg	170				
Bis(2-chloroisopropyl)ether	ND	ug/Kg	170				
Bis(2-ethylhexyl)phthalate	264	ug/Kg	170 J				
4-Bromophenyl phenyl ether	ND	ug/Kg	170				
Butyl benzyl phthalate	ND	ug/Kg	170 J				
4-Chloroaniline	ND	ug/Kg	170				
2-Chloronaphthalene	ND	ug/Kg	170				
4-Chloro-3-methylphenol	ND	ug/Kg	170				
2-Chlorophenol	ND	ug/Kg	170				
4-Chlorophenyl phenyl ether	ND	ug/Kg	170				
Chrysene	3,740	ug/Kg	170 J				
Dibenzo(a,h)anthracene	733	ug/Kg	67.0 J				
Dibenzofuran	146J	ug/Kg	170				
Di-n-butyl phthalate	ND	ug/Kg	170				
1,2-Dichlorobenzene	ND	ug/Kg	170				
1,3-Dichlorobenzene	ND	ug/Kg	170				
1,4-Dichlorobenzene	ND	ug/Kg	170				
3,3'-Dichlorobenzidine	ND	ug/Kg	170 J				
2,4-Dichlorophenol	ND	ug/Kg	170				
2,6-Dichlorophenol	ND	ug/Kg	170				
Diethyl phthalate	ND	ug/Kg	170				
2,4-Dimethylphenol	ND	ug/Kg	170				
Dimethyl phthalate	ND	ug/Kg	170				
4,6-Dinitro-2-methylphenol	ND	ug/Kg	170				
2,4-Dinitrophenol	ND	ug/Kg	330 J				
2,4-Dinitrotoluene	ND	ug/Kg	170				
2,6-Dinitrotoluene	ND	ug/Kg	170				
Di-n-octyl phthalate	ND	ug/Kg	170 J				
Fluoranthene	4,550	ug/Kg	67.0				
Fluorene	264	ug/Kg	67.0				
Hexachlorobenzene	ND	ug/Kg	170				


LABORATORY MANAGER

ND - Not Detected

000017

377 541

ENVIRONMENTAL TESTING & CONSULTING, INC.
 2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750
ORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

Project # 20560
 FID # DACA45-96-D-0014

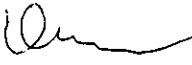
Date Arrived 11/02/98
 ETC Order Number 9811024

ETC Lab ID 9811024-01
Sample ID: B1-C1-RX

Matrix :SOIL
 Sample Date :11/02/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
GC/MS Base/Neutral & Acid				11/16/98	11/19/98	CB	8270C
Hexachlorobutadiene	ND	ug/Kg	170				
Hexachlorocyclopentadiene	ND	ug/Kg	170				
Hexachloroethane	ND	ug/Kg	170				
Indeno(1,2,3-cd)pyrene	2,620	ug/Kg	67 0 J				
Isophorone	ND	ug/Kg	170				
2-Methylnaphthalene	ND	ug/Kg	170				
2-Methylphenol (o-cresol)	ND	ug/Kg	170				
3-Methylphenol (m-cresol)	ND	ug/Kg	170				
4-Methylphenol (p-cresol)	ND	ug/Kg	170				
Naphthalene	ND	ug/Kg	67.0				
Nitrobenzene	ND	ug/Kg	170				
2-Nitroaniline	ND	ug/Kg	170				
3-Nitroaniline	ND	ug/Kg	170				
4-Nitroaniline	ND	ug/Kg	170 J				
2-Nitrophenol	ND	ug/Kg	170				
4-Nitrophenol	ND	ug/Kg	170				
N-Nitrosodiphenylamine	ND	ug/Kg	170				
N-Nitrosodipropylamine	ND	ug/Kg	170				
Pentachlorophenol	146J	ug/Kg	170				
Phenanthrene	4,460	ug/Kg	67 0				
Phenol	ND	ug/Kg	170				
Pyrene	3,720	ug/Kg	67 0 J				
1,2,4-Trichlorobenzene	ND	ug/Kg	170				
2,4,5-Trichlorophenol	ND	ug/Kg	170 J				
2,4,6-Trichlorophenol	ND	ug/Kg	170				

Surrogate Standard	% Recovery	QC Limits
S1 - Nitrobenzene-d5	73	25 110
S2 - 2-Fluorobiphenyl	90	33 114
S3 - 4-Terphenyl-d14	51	37 115
S4 - Phenol-d6	59	11 125
S5 - 2,4,6-Tribromophenol	68	9 134
S6 - 2-Fluorophenol	61	10 119


 LABORATORY MANAGER

ND - Not Detected

000018

377 542

CLIENT SAMPLE NO.

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

9811-024-1

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9811-024

Matrix: (soil/water) SOIL

Lab Sample ID:

Sample wt/vol: 30.3 (g/mL) G

Lab File ID: 1901021

Level: (low/med) LOW

Date Received: _____

% Moisture: _____ decanted: (Y/N) _____

Date Extracted:

Concentrated Extract Volume: 1(mL)

Date Analyzed: 11/19/98

Injection Volume: 1.0(uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

Number TICs found: 7

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 571-58-4	NAPHTHALENE, 1,4-DIMETHYL-	7.76	152	NJ
2. 1921-70-6	PENTADECANE, 2,6,10,14-TETRA	10.05	391	NJ
3. 4128-17-0	2,6,10-DODECATRIEN-1-OL, 3,7	11.16	233	NJ
4. 610-48-0	ANTHRACENE, 1-METHYL-	11.85	157	NJ
5. 613-12-7	ANTHRACENE, 2-METHYL-	11.90	190	NJ
6. 203-64-5	4H-CYCLOPENTA[DEF]PHENANTHRE	12.04	336	NJ
7. 3424-82-6	O,P'-DDE	13.97	1350	NJ
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
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22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I BNA-GCMS-TIC

000019

377 543

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

Project # 20560
 FID # DACA45-96-D-0014

Date Arrived 11/02/98
 ETC Order Number 9811024

ETC Lab ID 9811024-01

Sample ID: B1-C1

Matrix :SOIL
 Sample Date :11/02/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
Organochlorine Pesticides							8081A
QC Batch	P06030	ug/Kg		11/03/98	11/03/98	RG	
Aldrin	ND	ug/Kg	2.00				
Alpha-BHC	ND	ug/Kg	2.00				
Beta-BHC	ND	ug/Kg	2.00				
Delta-BHC	ND	ug/Kg	2.00				
Gamma-BHC (Lindane)	ND	ug/Kg	2.00				
Alpha-Chlordane	136	ug/Kg	2.00				
Gamma-Chlordane	38.9	ug/Kg	2.00				
Chlordane	ND	ug/Kg	20.0				
4,4'-DDD	201	ug/Kg	2.00				
4,4'-DDE	1,610	ug/Kg	2.00				
4,4'-DDT	1,970M	ug/Kg	2.00				
Dieldrin	1,630	ug/Kg	2.00				
Endosulfan I	ND	ug/Kg	2.00				
Endosulfan II	ND	ug/Kg	2.00				
Endosulfan Sulfate	ND	ug/Kg	2.00				
Endrin	ND	ug/Kg	2.00				
Endrin Aldehyde	ND	ug/Kg	2.00				
Endrin Ketone	ND	ug/Kg	2.00				
Heptachlor	ND	ug/Kg	2.00				
Heptachlor Epoxide	ND	ug/Kg	2.00				
Methoxychlor	ND	ug/Kg	2.00				
Toxaphene	ND	ug/Kg	200				

Surrogate Standard	% Recovery	QC Limits	
S1 - Decachlorobiphenyl	16 Q	64	154
S2 - Tetrachloro-m-xylene	93	39	130


 LABORATORY MANAGER

ND - Not Detected

000020

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

377 544

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Project # 20560
FID # DACA45-96-D-0014

Site ID DDMT
Memphis, TN

Date Arrived 11/02/98
ETC Order Number 9811024

ETC Lab ID **9811024-01**
Sample ID: B1-C1-RE

Matrix :SOIL
Sample Date :11/02/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
Organochlorine Pesticides							8081A
QC Batch	PO6033	ug/Kg		11/16/98	11/21/98	RG	
Aldrin	ND	ug/Kg	2.00				
Alpha-BHC	ND	ug/Kg	2.00				
Beta-BHC	ND	ug/Kg	2.00				
Delta-BHC	ND	ug/Kg	2.00				
Gamma-BHC (Lindane)	3.11	ug/Kg	2.00				
Alpha-Chlordane	88.0	ug/Kg	2.00				
Gamma-Chlordane	46.5	ug/Kg	2.00				
Chlordane	ND	ug/Kg	20.0				
4,4'-DDD	33.5	ug/Kg	2.00				
4,4'-DDE	1,430	ug/Kg	2.00				
4,4'-DDT	1,840	ug/Kg	2.00				
Dieldrin	1,250	ug/Kg	2.00				
Endosulfan I	ND	ug/Kg	2.00				
Endosulfan II	ND	ug/Kg	2.00				
Endosulfan Sulfate	ND	ug/Kg	2.00				
Endrin	ND	ug/Kg	2.00				
Endrin Aldehyde	ND	ug/Kg	2.00				
Endrin Ketone	ND	ug/Kg	2.00				
Heptachlor	ND	ug/Kg	2.00				
Heptachlor Epoxide	ND	ug/Kg	2.00				
Methoxychlor	ND	ug/Kg	2.00				
Toxaphene	ND	ug/Kg	200				
Surrogate Standard							QC Limits
S1 - Decachlorobiphenyl	37	Q		64			154
S2 - Tetrachloro-m-xylene	80			39			130

LABORATORY MANAGER

ND - Not Detected

000021

377 545

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

Project # 20560
FID # DACA45-96-D-0014

Date Arrived 11/02/98
ETC Order Number 9811024

ETC Lab ID **9811024-01**
Sample ID: B1-C1

Matrix :SOIL
Sample Date :11/02/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
PCBs				11/03/98	11/03/98	RG	8082
QC Batch	P06030	ug/Kg					
PCB-1016	ND	ug/Kg	350				
PCB-1221	ND	ug/Kg	350				
PCB-1232	ND	ug/Kg	350				
PCB-1242	ND	ug/Kg	350				
PCB-1248	ND	ug/Kg	350				
PCB-1254	ND	ug/Kg	350				
PCB-1260	1,840	ug/Kg	350				

Surrogate Standard	% Recovery	QC Limits
S1 - Tetrachloro-m-xylene	101	20 122
S2 - Decachlorobiphenyl	133	17 141


LABORATORY MANAGER

ND - Not Detected

000022

ENVIRONMENTAL TESTING & CONSULTING, INC.

2924 Walnut Grove Road - Memphis, TN 38111 - (901)327-2750

ORGANIC ANALYSIS DATA SHEET

377 546

Client Name **OHM Remediation Services**
Defense Depot - Memphis, TN
5445 Triangle Parkway
Suite 400
Norcross, GA 30092

Site ID **DDMT**
Memphis, TN

Project # 20560
FID # DACA45-96-D-0014

Date Arrived 11/02/98
ETC Order Number 9811024

ETC Lab ID 9811024-01
Sample ID: B1-C1-RE

Matrix :SOIL
Sample Date :11/02/98

TEST	RESULT	UNITS	DETECTION LIMIT	DATE EXTRACTED	DATE ANALYZED	BY	METHOD
PCBs				11/16/98	11/20/98	RG	8082
QC Batch	PO6033	ug/Kg					
PCB-1016	ND	ug/Kg	350				
PCB-1221	ND	ug/Kg	350				
PCB-1232	ND	ug/Kg	350				
PCB-1242	ND	ug/Kg	350				
PCB-1248	ND	ug/Kg	350				
PCB-1254	ND	ug/Kg	350				
PCB-1260	1,803	ug/Kg	350				
Surrogate Standard		% Recovery	QC Limits				
S1 - Tetrachloro-m-xylene	73		20	122			
S2 - Decachlorobiphenyl	172 Q		17	141			


LABORATORY MANAGER

ND - Not Detected

000023

377 547

Environmental Testing & Consulting, Inc.

**Quality Control Reports
Inorganics**

000024

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
INORGANICS

377 548

Client Name : OHM Remediation Services
Project Name : Defense Depot Memphis TN
ETC Order # : 9811-024

HOLDING TIMES

Sample Analysis : All samples analyzed within Method Specified
Holding Times.

CALIBRATION

Laboratory Control Sample : All criteria met.

QUALITY CONTROL

Matrix Spike

Spike Recovery : All analytes within QC limits

Method Blank

No Target Analytes detected above Detection Limit.


Laboratory Manager

000025

377 549

Environmental Testing & Consulting, Inc.
Inorganic QC Data Summary

Client Name OHM Remediation Services
Project DDMT - Memphis, TN

ETC Order Number 9811-024
File Name 9811-024 1

Method Blank

Analyte	Date Analyzed	Blank Concentration mg/Kg	QC Batch
Cyanide	11/3/98	<1.00	CY110398

Calibration Verification (CV)

Analyte	Date Analyzed	CV Conc mg/L	CV Conc Found	% Difference
Cyanide	11/3/98	0.200	0.211	5.5

Laboratory Control Sample (LCS)

Analyte	Date Analyzed	LCS Conc mg/Kg	LCS Conc Found	% Recovery
Cyanide	11/3/98	20.0	19.6	98.0

Matrix Spike/Matrix Spike Duplicate

Sample ID	Analyte	Spike mg/Kg	Sample mg/Kg	MS Conc Found	MS % Recovery	QC Limits	RPD
9811-024-01 MS	Cyanide	20.0	<1.00	17.5	88	70-130	
9811-024-01 MSD	Cyanide	20.0	<1.00	16.9	85	70-130	3

000026

Environmental Testing & Consulting, Inc.

Quality Control Reports

Metals (ICP/GFAA/CV)

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
METALS - SOIL

Client Name : OHM Remediation Services
Project Name : Defense Depot Memphis TN
ETC Order # : 9811-024

HOLDING TIMES

QC Batch(s) for this order : ICP/GFAA V8-SO-75
Mercury V4-SO-44

Sample Analysis : All samples digested and analyzed within 180
days of collection.

Mercury Analysis : All samples analyzed within 28 days of collection.

CALIBRATION

Initial Calibration : All criteria met.
Continuing Calibration : All criteria met.

SAMPLE ANALYSIS

Instrumentation : Thermo Jarrell Ash Enviro-I ICP
Varian 640Z Zeeman Graphite Furnace
Perkin Elmer 5100ZL Graphite Furnace
Perkin Elmer 6000 Graphite Furnace
Thermo Jarrell Ash AA-Scan 4 Graphite Furnace
CETAC M-6000A Mercury Analyzer

Dilutions Required : No dilutions required.*

*
Dilutions were performed on several samples to bring the Target
Analyte(s) within calibration range (C) or to remove spectral
interference (I) as indicated.

Sample ID	Metal	Dilution Factor	Sample ID	Metal	Dilution Factor
9811-024-01	Arsenic	1:2(C)	9811-024-01	Iron	1:5(C)
9811-024-01	Aluminum	1:5(C)			

QUALITY CONTROL**9811-024.MQCBLANK**Method Blank

V8-SO-75BLK - ICP/GFAA Metals
V4-SO-44BLK - Mercury

Calcium identified in V8-SO-75 at 6.30 mg/Kg.
Iron identified in V8-SO-75 at 2.50 mg/Kg.

9811-024.MQCLCSLaboratory Control Sample(s)

V8-SO-75LCS - ICP/GFAA Metals
V4-SO-44LCS - Mercury

All criteria met.

000028

MEMPHIS, TN
CASE NARRATIVE
METALS - SOIL

Client Name : OHM Remediation Services
 Project Name : Defense Depot Memphis TN
 ETC Order # : 9811-024

QUALITY CONTROL

9811-024.MQCMSMSD

Matrix Spike / Matrix Spike Dup - ICP Metals

9811-024-01 RPD : All analytes within QC limits.
 B1-C1 Spike Recovery : All analytes within QC limits.*
 *

Recoveries for Antimony were flagged as outside QC Limits in the Matrix Spike and Matrix Spike Duplicate. A Post Digestion Spike was performed for verification :

Analyte	mg/L Expected	mg/L Found	% Recovery	QA Evaluation
Antimony	0.500	0.515	103	Pass

Recoveries for multiple analytes were flagged as outside QC Limits due to the level of these analytes present in the sample relative to the spike amounts. In addition, concentrations of other analytes were high relative to the spike amounts. Dilution Tests were performed for verification :

Analyte	No Dilution	1:5 Dilution	1:25 Dilution	% Difference	QA Evaluation
Aluminum	----	10800 mg/Kg	10700 mg/Kg	1	Pass
Calcium	4520	4390	----	3	Pass
Iron	----	21400	21000	2	Pass
Manganese	682	656	----	4	Pass
Potassium	943	864	----	8	Pass
Magnesium	1930	1840	----	5	Pass
Zinc	210	200	----	5	Pass

Refer to Laboratory Control Sample(s) for system verification.

Matrix Spike / Matrix Spike Dup - Graphite Metals

9811-024-01 RPD : All analytes within QC limits.*
 B1-C1 Spike Recovery : All analytes within QC limits.*
 *

Recoveries and RPD for Arsenic were flagged as outside QC Limits due to the level of this analyte present relative to the spike amount. A Dilution Test was performed for verification :

Analyte	1:2 Dilution	1:10 Dilution	% Difference	QA Evaluation
Arsenic	17.9 mg/Kg	16.4 mg/Kg	8	Pass

Recoveries for Selenium and Thallium were flagged as outside QC Limits in the Matrix Spike Duplicate. MS recoveries were within QC Limits.

Refer to Laboratory Control Sample(s) for system verification.

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
METALS - SOIL

Client Name : OHM Remediation Services
Project Name : Defense Depot Memphis TN
ETC Order # : 9811-024

QUALITY CONTROL

Matrix Spike / Matrix Spike Dup - Hg

9811-024-01

B1-C1

RPD : All analytes within QC limits.
Spike Recovery : All analytes within QC limits.

Refer to Laboratory Control Sample(s) for system verification.

Dilution Test - Dilution result must agree within 10% of original
result when sample is diluted by a factor of 5.

Post Digestion Spike - Recovery must be +/-15% of expected value.



Laboratory Manager

000030

SOLID METHOD BLANK
METALS

Lab Name Environmental Testing and Consulting, Inc

Laboratory ID ICP/GFAA Metals Laboratory ID Mercury	<u>V8-SO-75</u> BLK <u>V4-SO-44</u> BLK	QC Batch <u>V8-SO-75</u> <u>V4-SO-44</u>
Date Sample Prepared	<u>11/02/98</u> <u>11/03/98</u>	ICP/GFAA Metals Mercury

Metals	Concentration mg/Kg	Detection Limit mg/Kg	Date Analyzed	Method
Silver	<0 700	0 700	11/04/98	6010B
Aluminum	<4 00	4 00	11/04/98	6010B
Arsenic	<0 200	0 200	11/03/98	7060A
Barium	<0 200	0 200	11/04/98	6010B
Beryllium	<0 100	0 100	11/04/98	6010B
Calcium	6 30	1 00	11/04/98	6010B
Cadmium	<0 400	0 400	11/04/98	6010B
Cobalt	<0 700	0 700	11/04/98	6010B
Chromium	<0 700	0 700	11/04/98	6010B
Copper	<0 600	0 600	11/04/98	6010B
Iron	2 50	0 700	11/04/98	6010B
Potassium	<20 0	20 0	11/04/98	6010B
Magnesium	<3 00	3 00	11/04/98	6010B
Manganese	<0 200	0 200	11/04/98	6010B
Sodium	<20 0	20 0	11/04/98	6010B
Nickel	<1 50	1 50	11/04/98	6010B
Lead	<4 50	4 50	11/04/98	6010B
Antimony	<3 20	3 20	11/04/98	6010B
Selenium	<0 200	0 200	11/03/98	7740
Thallium	<0 100	0 100	11/03/98	7841
Vanadium	<0 800	0 800	11/04/98	6010B
Zinc	<1 00	1 00	11/04/98	6010B
Mercury	<0 020	0 020	11/03/98	7471A

Metals Blank

9811-024 mqcBLANK

000031

SOLID LABORATORY CONTROL SAMPLE
METALS

Lab Name

Environmental Testing and Consulting, Inc

Laboratory Control ID

ICP/GFAA Metals V8-SO-75 LCS
Mercury V4-SO-44 LCS

QC Batch

V8-SO-75
V4-SO-44

Date Prepared

ICP/GFAA Metals 11/02/98
Mercury 11/03/98

Metals	Spike Added mg/Kg	Found mg/Kg	% R	#	QC Limits
Silver	20 0	20 5	103	80	120
Aluminum	200	210	105	80	120
Arsenic	5 00	5 05	101	85	115
Barium	200	201	101	80	120
Beryllium	20 0	20 4	102	80	120
Calcium	400	427	107	80	120
Cadmium	20 0	20 9	105	80	120
Cobalt	100	106	106	80	120
Chromium	40 0	42 9	107	80	120
Copper	40 0	41 5	104	80	120
Iron	200	212	106	80	120
Potassium	400	414	104	80	120
Magnesium	400	416	104	80	120
Manganese	20 0	21 3	107	80	120
Sodium	400	431	108	80	120
Nickel	100	106	106	80	120
Lead	100	105	105	80	120
Antimony	200	209	105	80	120
Selenium	5 00	4 99	100	85	115
Thallium	2 00	1 84	92	85	115
Vanadium	100	106	106	80	120
Zinc	20 0	21 1	106	80	120
Mercury	0 167	0 153	92	80	120

Column to be used to flag recovery values with an asterisk
* Values outside of QC limits

Metals Laboratory Control Sample

9811-024 mqcLCS

000032

377 556

SOLID MATRIX SPIKE
METALS

Lab Name Environmental Testing and Consulting, Inc

	QC Batch
Laboratory ID MS ICP/GFAA Metals	9811-024-01 V8-SO-75
Laboratory ID MS Mercury	9811-024-01 V4-SO-44

Date Sample Prepared	11/02/98	ICP/GFAA Metals
	11/03/98	Mercury

Metals	SPIKE Added mg/Kg	SAMPLE Conc mg/Kg	MS Conc mg/Kg	RPD <20% #	MS % Rec #	QC Limits	
Silver	20.9	ND	21.6	2	103	75	125
Aluminum	209	10800	8640	16	-1034 *	75	125
Arsenic	5.13	17.9	18.8	27 *	18 *	70	130
Barium	209	120	314	2	93	75	125
Beryllium	20.9	0.636	22.5	2	105	75	125
Calcium	418	4520	4320	13	-48 *	75	125
Cadmium	20.9	1.82	24.5	5	109	75	125
Cobalt	105	8.02	119	3	106	75	125
Chromium	41.8	24.1	65.4	1	99	75	125
Copper	41.8	49.2	91.8	4	102	75	125
Iron	209	21400	17700	10	-1770 *	75	125
Potassium	418	943	1170	8	54 *	75	125
Magnesium	418	1930	1990	8	14 *	75	125
Manganese	20.9	682	524	14	-756 *	75	125
Sodium	418	86.6	533	2	107	75	125
Nickel	105	20.6	129	1	103	75	125
Lead	105	142	226	15	80	75	125
Antimony	209	ND	0	0	0 *	75	125
Selenium	5.13	0.434	4.09	7	71	70	130
Thallium	2.05	0.209	1.65	2	70	70	130
Vanadium	105	26.6	126	0	95	75	125
Zinc	20.9	210	219	6	43 *	75	125
Mercury	0.167	0.126	0.275	3	89	75	125

Column to be used to flag recovery values with an asterisk

* Values outside of QC limits ND - Not Detected

Metals Matrix Spike

9811-024 mqcMSMSD

000033

SOLID MATRIX SPIKE DUPLICATE
METALS

Lab Name Environmental Testing and Consulting, Inc

Laboratory ID MS ICP/GFAA Metals	9811-024-01	QC Batch
Laboratory ID MS Mercury	9811-024-01	V8-SO-75
		V4-SO-44

Date Sample Prepared	11/02/98	ICP/GFAA Metals
	11/03/98	Mercury

Metals	SPIKE Added mg/Kg	SAMPLE Conc mg/Kg	MSD Conc mg/Kg		MSD % Rec	#	QC Limits	
Silver	20 9	ND	21 2		101		75	125
Aluminum	209	10800	10100		-335	*	75	125
Arsenic	5 13	17 9	24 7		133	*	70	130
Barium	209	120	321		96		75	125
Beryllium	20 9	0 636	22 0		102		75	125
Calcium	418	4520	4910		93		75	125
Cadmium	20 9	1 82	23 3		103		75	125
Cobalt	105	8 02	115		102		75	125
Chromium	41 8	24 1	66 2		101		75	125
Copper	41 8	49 2	95 8		112		75	125
Iron	209	21400	19500		-909	*	75	125
Potassium	418	943	1270		78		75	125
Magnesium	418	1930	2160		55	*	75	125
Manganese	20 9	682	602		-383	*	75	125
Sodium	418	86 6	546		110		75	125
Nickel	105	20 6	128		102		75	125
Lead	105	142	263		115		75	125
Antimony	209	ND	5 58		3	*	75	125
Selenium	5 13	0 434	3 82		66	*	70	130
Thallium	2 05	0 209	1 62		69	*	70	130
Vanadium	105	26 6	126		95		75	125
Zinc	20 9	210	232		105		75	125
Mercury	0 176	0 126	0 284		90		75	125

Column to be used to flag recovery values with an asterisk

* Values outside of QC limits ND - Not Detected

Metals Matrix Spike Duplicate

9811-024 mqcMSMSD

000034

Environmental Testing & Consulting, Inc.

Quality Control Reports

GC/MS Volatiles

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC/MS VOLATILE COMPOUNDS - SOIL

Client Name : OHM Remediation Services
Project Name : Defense Depot Memphis TN
ETC Order # : 9811-024
Method (SW-846) : 8260B/5030B

HOLDING TIMES

Sample Analysis : All samples analyzed within 14 days of collection.

QUALITY CONTROL

QC Batch Form 4 Summary
V2110301 V211031LB

System Monitoring Compounds FORM 2
Surrogate recoveries within QC limits.

Laboratory Control Sample FORM 3
V211031LCS

All criteria met.*

*

Methylene Chloride was flagged outside QC Limits in V211031LCS.
This compound was not identified in sample associated with this
project. The data was not affected.

Matrix Spike / Matrix Spike Dup FORM 3
9811-024-01 RPD : All analytes within QC limits.
B1-C1 Spike Recovery : All analytes within QC limits.*

*

Recovery for Toluene was flagged outside QC Limits in the Matrix
Spike. MSD recovery was within QC Limits.

Refer to Laboratory Control Sample(s) for system verification.

Method Blank FORM 4
V211031LB

No Target Analytes detected above the reporting limit.

CALIBRATION

BFB Daily 12 Hour Tune : All criteria met. FORM 5
Initial Calibration : All criteria met. FORM 6
Calibration Verification : All criteria met. FORM 7*

*

Calibration Verification(CV) : Date 11/03/98 Time: 12:17

Analyte	%Diff(30% Max)	Response
N-Butylbenzene	35.0	High
1,2-Dibromo-3-chloropropane	34.0	High
Hexachlorobutadiene	44.0	High
1,2,4-Trichlorobenzene	33.0	High

High responses indicate that reported levels for these analytes may be
biased high. These analytes were not Target Analytes associated with
this project. The data was not affected.

000036

ENVIRONMENTAL TESTING AND CONSULTING, INC. 377 560
MEMPHIS, TN
CASE NARRATIVE
GC/MS VOLATILE COMPOUNDS - SOIL

Client Name : OHM Remediation Services
Project Name : Defense Depot Memphis TN

ETC Order # : 9811-024
Method (SW-846) : 8260B/5030B

CALIBRATION

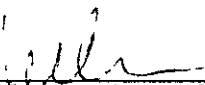
Volatile Internal Standard Area and RT FORM 8
Daily Check Standard(s) Internal Standard Areas and Retention Times
within QC limits.

SAMPLE ANALYSIS

Instrumentation : HP 5890 Series II GC, 5971MSD
Dilutions Required : No dilutions required.*

*

Sample size for 9811-024-01(B1-C1) was 4.0 grams due to
Encore Sampler. Detection Limits were adjusted by a factor of
1:2 to account for lower sample size.



Laboratory Manager

000037

FORM 2
SOIL VOA-GCMS SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9811-024

Level:(low/med) LOW

	CLIENT SAMPLE NO.	SMC1 (DBF) #	SMC2 (TOL) #	SMC3 (BFB) #	OTHER	TOT OUT
01	V211031LCS	100	101	94		0
02	V211031LB	97	96	102		0
03	9811-024-1	105	97	103		0
04	9811-024-1MS	106	99	104		0
05	9811-024-1MS	108	100	98		0
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QC LIMITS

SMC1 (DBF) = Dibromofluoromethane (70-134)
 SMC2 (TOL) = Toluene-d8 (85-111)
 SMC3 (BFB) = Bromofluorobenzene (81-117)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

377 562

FORM 4
VOA-GCMS METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

V211031LB

Lab Name: ETC, INC.

Lab Prep Batch: V2110301

Lab File ID: 0302004

Date Analyzed: 11/03/98

GC Column: ID: 2 (mm)

Instrument ID: VOC2

SDG No.: 9811-024

Lab Prep Batch: V2110301

Time Analyzed: 1518

Heated Purge: (Y/N) Y

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	V211031LCS		0202002	1310
02	9811-024-1		0401005	1601
03	9811-024-1MS		1501016	0001
04	9811-024-1MS		1601017	0045
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COMMENTS:

377 563

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

Lab Name: ETC, INC.

V211031LB

SDG No.: 9811-024

Matrix: (soil/water) SOIL

Lab Prep Batch: V2110301

Sample wt/vol: 10.0 (g/mL) G

Lab File ID: 0302004

Level: (low/med) LOW

Date Analyzed: 11/03/98

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
67-64-1-----	Acetone	50.0	U
71-43-2-----	Benzene	2.00	U
75-27-4-----	Bromodichloromethane	2.00	U
75-25-2-----	Bromoform	2.00	U
74-83-9-----	Bromomethane	2.00	U
75-15-0-----	Carbon Disulfide	25.0	U
56-23-5-----	Carbon Tetrachloride	2.00	U
108-90-7-----	Chlorobenzene	2.00	U
124-48-1-----	Chlorodibromomethane	2.00	U
75-00-3-----	Chloroethane	2.00	U
67-66-3-----	Chloroform	2.00	U
74-87-3-----	Chloromethane	2.00	U
75-34-3-----	1,1-Dichloroethane	2.00	U
107-06-2-----	1,2-Dichloroethane	2.00	U
75-35-4-----	1,1-Dichloroethene	2.00	U
156-59-4-----	cis-1,2-Dichloroethene	2.00	U
156-60-5-----	trans-1,2-Dichloroethene	2.00	U
78-87-5-----	1,2-Dichloropropane	2.00	U
10061-01-5-----	cis-1,3-Dichloropropene	2.00	U
10061-02-6-----	trans-1,3-Dichloropropene	2.00	U
100-41-4-----	Ethylbenzene	2.00	U
591-78-6-----	2-Hexanone	50.0	U
75-09-2-----	Methylene Chloride	50.0	U
78-93-3-----	Methyl-Ethyl Ketone	50.0	U
108-10-1-----	4-Methyl-2-Pentanone	50.0	U
100-42-5-----	Styrene	2.00	U
79-34-5-----	1,1,2,2-Tetrachloroethane	2.00	U
127-18-4-----	Tetrachloroethene	2.00	U
108-88-3-----	Toluene	2.00	U
71-55-6-----	1,1,1-Trichloroethane	2.00	U
79-00-5-----	1,1,2-Trichloroethane	2.00	U
79-01-6-----	Trichloroethene	2.00	U
108-05-4-----	Vinyl Acetate	25.0	U

FORM I VOA-GCMS

000040

FORM 1
VOA-GCMS ORGANICS ANALYSIS DATA SHEET

377 564
CLIENT SAMPLE NO.

V211031LB

Lab Name: ETC, INC.

SDG No.: 9811-024

Matrix: (soil/water) SOIL

Lab Prep Batch: V2110301

Sample wt/vol: 10.0 (g/mL) G

Lab File ID: 0302004

Level: (low/med) LOW

Date Analyzed: 11/03/98

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg) UG/KG	Q
75-01-4-----	Vinyl Chloride	2.00	U
1330-20-7-----	Xylene-mp	2.00	U
95-47-6-----	Xylene-o	2.00	U

FORM I VOA-GCMS

000041

377 565

FORM 3
SOIL VOA-GCMS LABORATORY CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: V2110301

SDG No.: 9811-024

Matrix Spike - Sample No.: V211031LCS

Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Acetone	100		82.4	82	59-151
Benzene	100		81.9	82	72-124
Bromodichloromethane	100		86.7	87	68-119
Bromoform	100		111	111	66-136
Bromomethane	100		74.4	74	40-134
Carbon Disulfide	100		77.0	77	60-133
Carbon Tetrachloride	100		87.8	88	64-123
Chlorobenzene	100		94.4	94	77-112
Chlorodibromomethane	100		88.4	88	72-118
Chloroethane	100		86.0	86	64-142
Chloroform	100		83.1	83	70-115
Chloromethane	100		84.6	85	58-139
1,1-Dichloroethane	100		83.6	84	76-118
1,2-Dichloroethane	100		83.2	83	62-124
1,1-Dichloroethene	100		77.5	78	69-121
cis-1,2-Dichloroethene	100		81.3	81	76-114
trans-1,2-Dichloroethen	100		79.0	79	72-121
1,2-Dichloropropane	100		88.6	89	64-133
cis-1,3-Dichloropropene	100		91.0	91	77-120
trans-1,3-Dichloroprope	100		90.1	90	73-124
Ethylbenzene	100		97.0	97	77-111
2-Hexanone	100		94.4	94	53-144
Methylene Chloride	100		61.4	61*	76-115
Methyl-Ethyl Ketone	100		86.1	86	55-151
4-Methyl-2-Pentanone	100		93.6	94	42-144
Styrene	100		94.2	94	77-117
1,1,1,2-Tetrachloroetha	100		102	102	79-113
Tetrachloroethene	100		88.1	88	77-115

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS:

FORM 3
SOIL VOA-GCMS LABORATORY CONTROL SAMPLE

377 566

Lab Name: ETC, INC.

Lab Prep Batch: V2110301

SDG No.: 9811-024

Matrix Spike - Sample No.: V211031LCS

Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Toluene	100		87.7	88	77-115
1,1,1-Trichloroethane	100		83.6	84	63-122
1,1,2-Trichloroethane	100		87.1	87	69-117
Trichloroethene	100		89.0	89	75-113
Vinyl Acetate	100		114	114	28-146
Vinyl Chloride	100		66.5	66	65-134
Xylene-mp	200		191	96	77-115
Xylene-o	100		96.0	96	77-115

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits

Spike Recovery: 1 out of 36 outside limits

COMMENTS:

377 567

FORM 3

SOIL VOA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC, INC.

Lab Prep Batch: V2110301

SDG No.: 9811-024

Matrix Spike - Sample No.: 9811-024-1

Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Benzene	294	0.000	221	75	72-124
Chlorobenzene	294	0.000	244	83	77-112
1,1-Dichloroethene	294	0.000	223	76	69-121
Toluene	294	0.000	224	76*	77-115
Trichloroethene	294	0.000	244	83	75-113

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
Benzene	263	207	79	5	20	72-124
Chlorobenzene	263	216	82	1	20	77-112
1,1-Dichloroethene	263	214	81	6	20	69-121
Toluene	263	211	80	5	20	77-115
Trichloroethene	263	221	84	1	20	75-113

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits

Spike Recovery: 1 out of 10 outside limits

COMMENTS:

FORM III VOA-GCMS

000044

Environmental Testing & Consulting, Inc.

Quality Control Reports

GC/MS Semi-Volatiles

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC/MS SEMI-VOLATILE COMPOUNDS - SOIL

Client Name : OHM Remediation Services
Project Name : Defense Depot Memphis TN
ETC Order # : 9811-024
Method (SW-846) : 8270C/3550B

HOLDING TIMES

Sample Extraction : All soil samples extracted within 14 days.
Sample Analysis : All samples analyzed within 40 days of
extraction.

QUALITY CONTROL

<u>QC Batch</u>	<u>Form 4 Summary</u>
P04059	P04059LB
P04068	P04068LB

System Monitoring Compounds FORM 2

Surrogate recoveries within QC limits.*

*

Surrogate recovery for Terphenyl-d14 was flagged as outside QC Limits in sample 9811-024-01(B1-C1). Review of extraction information and the raw data showed no obvious matrix interference. Sample was re-analyzed with dilution of 1:10 in which recoveries were within QC Limits.

Laboratory Control Sample FORM 3

P04059LCS
P04068LCS

All criteria met.*

*

3&4-Methylphenol was flagged as outside QC Limits in P04059LCS. These compounds were not identified in samples associated with this project. The data was not affected.

Matrix Spike / Matrix Spike Dup FORM 3

9811-024-01 RPD : All analytes within QC limits.*
B1-C1 Spike Recovery : All analytes within QC limits.

*

RPD for Pyrene was flagged as outside QC Limits due to higher recovery in the Matrix Spike Duplicate.

Refer to Laboratory Control Sample(s) for system verification.

Matrix Spike / Matrix Spike Dup FORM 3

9811-449-01 RPD : All analytes within QC limits.*
B1-C1 Spike Recovery : All analytes within QC limits.

*

RPDs for multiple analytes were flagged as outside QC Limits due to higher recovery in the Matrix Spike.

Refer to Laboratory Control Sample(s) for system verification.

Method Blank FORM 4

P04059LB
P04068LB

No Target Analytes detected above Practical Quantitation Limit.

000046

ENVIRONMENTAL TESTING AND CONSULTING, INC. 377 570
MEMPHIS, TN
CASE NARRATIVE
GC/MS SEMI-VOLATILE COMPOUNDS - SOIL

Client Name : OHM Remediation Services
Project Name : Defense Depot Memphis TN

ETC Order # : 9811-024
Method (SW-846) : 8270C/3550B

CALIBRATION

DFTPP Daily 12 Hour Tune : All criteria met. FORM 5
Initial Calibration : All criteria met. FORM 6
Calibration Verification : All criteria met. FORM 7*

* Calibration Verification(CV) : Date 11/03/98 Time: 12:08

Analyte	%Diff(30% Max)	Response
Benzidine	32.0	Low
Indeno(1,2,3-cd)pyrene	42.4	High
4-Nitrophenol	35.8	Low

Low response indicates that reported levels for this analyte may be biased low. High response indicates that reported levels for this analyte may be biased high. Benzidine was not a Target Analyte associated with this project. Recovery for Indeno(1,2,3-cd)pyrene and 4-Nitrophenol were within QC Limits in P04059LCS. The data was not affected.

Calibration Verification(CV) : Date 11/19/98 Time: 12:15

Analyte	%Diff(30% Max)	Response
Benzoic Acid	32.4	Low
Nitrobenzene-d5(Surrogate)	24.2	Low
2-Fluorobiphenyl(Surrogate)	25.8	Low

Low response indicates that reported levels for this analyte may be biased low. Benzoic Acid was not identified in samples associated with this project. Recoveries for Nitrobenzene-d5 and 2-Fluorobiphenyl were within QC Limits for all samples associated with this project. The data was not affected.

Calibration Verification(CV) : Date 11/22/98 Time: 10:23

Analyte	%Diff(30% Max)	Response
Benzoic Acid	37.2	Low
4-Nitrophenol	30.6	High
N-Nitrosodimethylamine	41.2	Low
Pyridine	45.8	Low
2-Fluorobiphenyl(Surrogate)	24.2	Low

Low response indicates that reported levels for this analyte may be biased low. High response indicates that reported levels for this analyte may be biased high. Benzoic Acid and 4-Nitrophenol were not identified in samples associated with this project. Pyridine was not a Target Analyte associated with this project. Recoveries for 2-Fluorobiphenyl were within QC Limits for all samples associated with this project. The data was not affected.

Semi-Volatile Internal Standard Area and RT FORM 8

Daily Check Standard(s) Internal Standard Areas and Retention Times within QC limits.

000047

377 571

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC/MS SEMI-VOLATILE COMPOUNDS - SOIL

Client Name : OHM Remediation Services
Project Name : Defense Depot Memphis TN
ETC Order # : 9811-024
Method (SW-846) : 8270C/3550B

SAMPLE ANALYSIS

Instrumentation : HP 5890 Series II GC, 5971MSD
Dilutions Required : No dilutions required.*

*
Dilution of 1:10 was performed on sample 9811-024-01(B1-C1) to bring
Target Analytes within calibration range.


Laboratory Manager

000048

FORM 2
SOIL BNA-GCMS SURROGATE RECOVERY

377 572

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9811-024

Level: (low/med) IOW

	CLIENT SAMPLE NO.	S1 (2FP) #	S2 (PHL) #	S3 (NBZ) #	S4 (FBP) #	S5 (TBP) #	S6 (TPH) #	S7 #	S8 #	TOT OUT
01	P04059LB	42	53	78	84	70	94			0
02	P04059LCS	73	71	82	86	84	88			0
03	9811-024-1MS	63	79	80	86	64	42			0
04	9811-024-1MS	67	14	85	95	61	41			0
05	9811-024-1	22	33	33	50	35	63			0
06	P04068LB	79	73	80	88	77	103			0
07	P04068LCS	71	75	74	84	89	99			0
08	9811-024-1	61	59	73	90	68	51			0
09	9811-449-1	47	52	57	60	70	79			0
10	9811-449-1MS	70	72	78	76	82	84			0
11	9811-449-1MS	61	63	64	63	70	78			0
12	9811-024-1	26	35	34	49	40	27*			1
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QC LIMITS

S1 (2FP) = 2-Fluorophenol (10-119)
 S2 (PHL) = Phenol-d6 (11-125)
 S3 (NBZ) = Nitrobenzene-d5 (25-110)
 S4 (FBP) = 2-Fluorobiphenyl (33-114)
 S5 (TBP) = 2,4,6-Tribromophenol (9-134)
 S6 (TPH) = Terphenyl-d14 (37-115)

Column to be used to flag recovery values
 * Values outside of contract required QC limits
 D Surrogate diluted out

000049

377 573

FORM 4
BNA-GCMS METHOD BLANK SUMMARY

CLIENT SAMPLE NO

Lab Name: ETC, INC.

P04059LB

Lab Prep Batch: P04059

SDG No.: 9811-024

Lab File ID: 0301003

Instrument ID: BNA2

Matrix: (soil/water) SOIL

Date Analyzed: 11/03/98

Level: (low/med) LOW

Time Analyzed: 1244

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	P04059LCS		0401004	11/03/98
02	9811-024-1		0701007	11/03/98
03	9811-024-1MS		0801008	11/03/98
04	9811-024-1MS		0901009	11/03/98
05	9811-024-1		1001010	11/03/98
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COMMENTS:

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET

377 574
CLIENT SAMPLE NO.

P04059LB

Lab Name: ETC, INC.

SDG No.: 9811-024

Matrix: (soil/water) SOIL

Lab Prep Batch: P04059

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: 0301003

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 1 (mL)

Date Analyzed: 11/03/98

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
83-32-9-----	Acenaphthene	66.7	U
208-96-8-----	Acenaphthylene	66.7	U
120-12-7-----	Anthracene	66.7	U
56-55-3-----	Benzo(a)Anthracene	66.7	U
205-99-2-----	Benzo(b)fluoranthene	66.7	U
207-08-9-----	Benzo(k)fluoranthene	66.7	U
191-24-2-----	Benzo(g,h,i)perylene	66.7	U
50-32-8-----	Benzo(a)pyrene	66.7	U
65-85-0-----	Benzoic Acid	1670	U
100-51-6-----	Benzyl Alcohol	167	U
111-44-4-----	bis(2-Chloroethyl)ether	167	U
111-91-1-----	Bis(2-chloroethoxy)methane	167	U
39638-32-9-----	bis(2-Chloroisopropyl)ether	167	U
117-81-7-----	bis(2-ethylhexyl)Phthalate	167	U
101-55-3-----	4-Bromophenyl-phenylether	167	U
85-68-7-----	Butylbenzylphthalate	167	U
106-47-8-----	4-Chloroaniline	167	U
59-50-7-----	4-Chloro-3-Methylphenol	167	U
91-58-7-----	2-Chloronaphthalene	167	U
95-57-8-----	2-Chlorophenol	167	U
7005-72-3-----	4-Chlorophenyl-phenylether	167	U
218-01-9-----	Chrysene	167	U
53-70-3-----	Dibenzo(a,h)anthracene	66.7	U
132-64-9-----	Dibenzofuran	167	U
84-74-2-----	Di-n-Butylphthalate	167	U
95-50-1-----	1,2-Dichlorobenzene	167	U
541-73-1-----	1,3-Dichlorobenzene	167	U
106-46-7-----	1,4-Dichlorobenzene	167	U
91-94-1-----	3,3'-Dichlorobenzidine	167	U
120-83-2-----	2,4-Dichlorophenol	167	U
87-85-0-----	2,6-Dichlorophenol	167	U
84-66-2-----	Diethylphthalate	167	U

FORM I BNA-GCMS

000051

377 575

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

Lab Name: ETC, INC.

P04059LB

SDG No.: 9811-024

Matrix: (soil/water) SOIL

Lab Prep Batch: P04059

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: 0301003

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 1(mL)

Date Analyzed: 11/03/98

Injection Volume: 1.0(uL)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
105-67-9-----	2,4-Dimethyphenol	167	U
131-11-3-----	Dimethylphthalate	167	U
534-52-1-----	4,6-Dinitro-2-methylphenol	167	U
51-28-5-----	2,4-Dinitrophenol	330	U
121-14-2-----	2,4-Dinitrotoluene	167	U
606-20-2-----	2,6-Dinitrotoluene	167	U
117-84-0-----	Di-n-octylphthalate	167	U
86-30-6-----	Diphenylamine/n-NDPA	167	U
206-44-0-----	Fluoranthene	66.7	U
86-73-7-----	Fluorene	66.7	U
118-74-1-----	Hexachlorobenzene	167	U
87-68-3-----	Hexachlorobutadiene	167	U
77-47-4-----	Hexachlorocyclopentadiene	167	U
67-72-1-----	Hexachloroethane	167	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	66.7	U
78-59-1-----	Isophorone	167	U
91-57-6-----	2-Methylnaphthalene	167	U
95-48-7-----	2-Methylphenol	167	U
106-44-5-----	3&4-Methylphenol	167	U
91-20-3-----	Naphthalene	66.7	U
88-74-4-----	2-Nitroaniline	167	U
99-09-2-----	3-Nitroaniline	167	U
100-01-6-----	4-Nitroaniline	167	U
98-95-3-----	Nitrobenzene	167	U
88-75-5-----	2-Nitrophenol	167	U
100-02-7-----	4-Nitrophenol	167	U
621-64-7-----	N-Nitrosodipropylamine	167	U
87-86-5-----	Pentachlorophenol	167	U
85-01-8-----	Phenanthrene	66.7	U
108-95-2-----	Phenol	167	U
129-00-0-----	Pyrene	66.7	U
120-82-1-----	1,2,4-Trichlorobenzene	167	U

FORM I BNA-GCMS

000052

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET

377 576
CLIENT SAMPLE NO.

P04059LB

Lab Name: ETC, INC.

SDG No.: 9811-024

Matrix: (soil/water) SOIL

Lab Prep Batch: P04059

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: 0301003

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 1(mL)

Date Analyzed: 11/03/98

Injection Volume: 1.0(uL)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q
		(ug/L or ug/Kg)	UG/KG	
95-95-4-----	2,4,5-Trichlorophenol	167	U	
88-06-2-----	2,4,6-Trichlorophenol	167	U	

FORM I BNA-GCMS

000053

377 577

FORM 3
SOIL BNA-GCMS LABORATORY CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: B2110301

SDG No.: 9811-024

Matrix Spike - Sample No.: P04059LCS

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Acenaphthene	1670		1420	85	34-126
Acenaphthylene	1670		1390	83	62-123
Anthracene	1670		1680	100	68-124
Benzo(a)Anthracene	1670		1470	88	60-133
Benzo(b)fluoranthene	1670		1860	111	67-126
Benzo(k)fluoranthene	1670		1550	93	75-131
Benzo(g,h,i)perylene	1670		1600	96	53-137
Benzo(a)pyrene	1670		1700	102	68-129
Benzoic Acid	3330		3390	101	37-251
Benzyl Alcohol	1670		1350	81	20-159
bis(2-Chloroethyl)ether	1670		1430	86	25-147
Bis(2-chloroethoxy)meth	1670		1210	72	37-153
bis(2-Chloroisopropyl)e	1670		1240	74	35-138
bis(2-ethylhexyl)Phthal	1670		1890	113	60-150
4-Bromophenyl-phenyleth	1670		1620	97	59-130
Butylbenzylphthalate	1670		1770	106	71-137
4-Chloroaniline	1670		604	36	27-106
4-Chloro-3-Methylphenol	3330		2910	87	33-147
2-Chloronaphthalene	1670		1280	77	62-126
2-Chlorophenol	3330		2570	77	34-126
4-Chlorophenyl-phenylet	1670		1470	88	60-128
Chrysene	1670		1720	103	67-131
Dibenzo(a,h)anthracene	1670		1550	93	51-138
Dibenzofuran	1670		1460	87	57-131
Di-n-Butylphthalate	1670		1610	96	39-179
1,2-Dichlorobenzene	1670		1220	73	58-110

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS:

FORM 3
SOIL BNA-GCMS LABORATORY CONTROL SAMPLE

377 578

Lab Name: ETC, INC.

Lab Prep Batch: B2110301

SDG No.: 9811-024

Matrix Spike - Sample No.: P04059LCS

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
1,3-Dichlorobenzene	1670		1140	68	55-109
1,4-Dichlorobenzene	1670		1160	69	26-121
3,3'-Dichlorobenzidine	3330		4250	128	18-191
2,4-Dichlorophenol	3330		2770	83	68-123
2,6-Dichlorophenol	3330		2907	87	45-157
Diethylphthalate	1670		1570	94	72-133
2,4-Dimethyphenol	3330		2430	73	53-121
Dimethylphthalate	1670		1620	97	64-132
4,6-Dinitro-2-methylphe	3330		3290	99	70-158
2,4-Dinitrophenol	3330		3010	90	31-186
2,4-Dinitrotoluene	1670		1700	102	22-139
2,6-Dinitrotoluene	1670		1500	90	64-142
Di-n-octylphthalate	1670		1700	102	42-172
Diphenylamine/n-NDPA	1670		1630	98	55-140
Fluoranthene	1670		1500	90	71-132
Fluorene	1670		1540	92	65-126
Hexachlorobenzene	1670		1600	96	64-130
Hexachlorobutadiene	1670		1230	74	62-116
Hexachlorocyclopentadie	1670		905	54	16-160
Hexachloroethane	1670		1160	69	58-110
Indeno(1,2,3-cd)pyrene	1670		598	36	34-170
Isophorone	1670		1400	84	35-135
2-Methylnaphthalene	1670		1210	72	57-123
2-Methylphenol	3330		2440	73	56-132
3&4-Methylphenol	3330		2230	67*	68-111
Naphthalene	1670		1360	81	62-113
2-Nitroaniline	1670		1500	90	63-138
3-Nitroaniline	1670		1680	100	53-128

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS:

377 579

FORM 3
SOIL BNA-GCMS LABORATORY CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: B2110301

SDG No.: 9811-024

Matrix Spike - Sample No.: P04059LCS

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
4-Nitroaniline	1670		1600	96	60-140
Nitrobenzene	1670		1370	82	59-123
2-Nitrophenol	3330		2700	81	52-145
4-Nitrophenol	3330		3710	111	12-105
N-Nitrosodipropylamine	1670		1320	79	24-141
Pentachlorophenol	3330		3190	96	6-164
Phenanthrene	1670		1700	102	66-128
Phenol	3330		2420	73	22-127
Pyrene	1670		1450	87	33-155
1,2,4-Trichlorobenzene	1670		1280	77	30-127
2,4,5-Trichlorophenol	3330		2700	81	50-173
2,4,6-Trichlorophenol	3330		2840	85	46-161

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits

Spike Recovery: 1 out of 66 outside limits

COMMENTS:

Lab Name: ETC, INC.

Lab Prep Batch: P04059

SDG No.: 9811-024

Matrix Spike - Sample No.: 9811-024-1

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Acenaphthene	3260	0.13	2940	90	34-126
4-Chloro-3-Methylphenol	5210	0.00	4560	88	33-147
2-Chlorophenol	5210	0.00	4060	78	35-138
1,4-Dichlorobenzene	3260	0.00	2200	67	26-121
2,4-Dinitrotoluene	3260	0.0095	2740	84	22-139
4-Nitrophenol	5210	0.0089	2730	52	12-105
N-Nitrosodipropylamine	3260	0.00	2530	78	24-141
Pentachlorophenol	5210	0.025	4340	83	6-164
Phenol	5210	0.00	3530	68	22-127
Pyrene	3260	1.2	2850	87	33-155
1,2,4-Trichlorobenzene	3260	0.00	2580	79	30-127

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
Acenaphthene	3260	3230	99	10	20	34-126
4-Chloro-3-Methylphenol	5210	4260	82	7	20	33-147
2-Chlorophenol	5210	3770	72	8	20	35-138
1,4-Dichlorobenzene	3260	1980	61	9	20	26-121
2,4-Dinitrotoluene	3260	2550	78	7	20	22-139
4-Nitrophenol	5210	2660	51	2	20	12-105
N-Nitrosodipropylamine	3260	2410	74	5	20	24-141
Pentachlorophenol	5210	3940	76	9	20	6-164
Phenol	5210	3280	63	8	20	22-127
Pyrene	3260	4140	127	37*	20	33-155
1,2,4-Trichlorobenzene	3260	2430	74	6	20	30-127

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 1 out of 11 outside limits

Spike Recovery: 0 out of 22 outside limits

COMMENTS:

377 581

FORM 4
BNA-GCMS METHOD BLANK SUMMARY

CLIENT SAMPLE NO

Lab Name: ETC, INC.

P04068LB

Lab Prep Batch: P04068

SDG No.: 9811-024

Lab File ID: 0701009

Instrument ID: BNA2

Matrix: (soil/water) SOIL

Date Analyzed: 11/19/98

Level:(low/med) LOW

Time Analyzed: 1448

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	P04068LCS		0801010	11/19/98
02	9811-024-1		1901021	11/19/98
03	9811-449-1		1201013	11/22/98
04	9811-449-1MS		1301014	11/22/98
05	9811-449-1MS		1401015	11/22/98
06				
07				
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29				
30				

COMMENTS:

377 582

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

P04068LB

Lab Name: ETC, INC.

SDG No.: 9811-024

Matrix: (soil/water) SOIL

Lab Prep Batch: P04068

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: 0701009

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 1(mL)

Date Analyzed: 11/19/98

Injection Volume: 1.0(uL)

Dilution Factor: 1.0

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

83-32-9-----	Acenaphthene	66.7	U
208-96-8-----	Acenaphthylene	66.7	U
120-12-7-----	Anthracene	66.7	U
56-55-3-----	Benzo(a)Anthracene	66.7	U
205-99-2-----	Benzo(b)fluoranthene	66.7	U
207-08-9-----	Benzo(k)fluoranthene	66.7	U
191-24-2-----	Benzo(g,h,i)perylene	66.7	U
50-32-8-----	Benzo(a)pyrene	66.7	U
65-85-0-----	Benzoic Acid	1670	U
100-51-6-----	Benzyl Alcohol	167	U
111-44-4-----	bis(2-Chloroethyl)ether	167	U
111-91-1-----	Bis(2-chloroethoxy)methane	167	U
39638-32-9-----	bis(2-Chloroisopropyl)ether	167	U
117-81-7-----	bis(2-ethylhexyl)Phthalate	167	U
101-55-3-----	4-Bromophenyl-phenylether	167	U
85-68-7-----	Butylbenzylphthalate	167	U
106-47-8-----	4-Chloroaniline	167	U
59-50-7-----	4-Chloro-3-Methylphenol	167	U
91-58-7-----	2-Chloronaphthalene	167	U
95-57-8-----	2-Chlorophenol	167	U
7005-72-3-----	4-Chlorophenyl-phenylether	167	U
218-01-9-----	Chrysene	167	U
53-70-3-----	Dibenzo(a,h)anthracene	66.7	U
132-64-9-----	Dibenzofuran	167	U
84-74-2-----	Di-n-Butylphthalate	167	U
95-50-1-----	1,2-Dichlorobenzene	167	U
541-73-1-----	1,3-Dichlorobenzene	167	U
106-46-7-----	1,4-Dichlorobenzene	167	U
91-94-1-----	3,3'-Dichlorobenzidine	333	U
120-83-2-----	2,4-Dichlorophenol	167	U
87-65-0-----	2,6-Dichlorophenol	167	U
84-66-2-----	Diethylphthalate	167	U

FORM I BNA-GCMS

000059

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

377 583

Lab Name: ETC, INC.

P04068LB

SDG No.: 9811-024

Matrix: (soil/water) SOIL

Lab Prep Batch: P04068

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: 0701009

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 1 (mL)

Date Analyzed: 11/19/98

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
105-67-9	2,4-Dimethyphenol	167	U
131-11-3	Dimethylphthalate	167	U
534-52-1	4,6-Dinitro-2-methylphenol	167	U
51-28-5	2,4-Dinitrophenol	330	U
121-14-2	2,4-Dinitrotoluene	167	U
606-20-2	2,6-Dinitrotoluene	167	U
117-84-0	Di-n-octylphthalate	167	U
86-30-6	Diphenylamine/n-NDPA	167	U
206-44-0	Fluoranthene	66.7	U
86-73-7	Fluorene	66.7	U
118-74-1	Hexachlorobenzene	167	U
87-68-3	Hexachlorobutadiene	167	U
77-47-4	Hexachlorocyclopentadiene	167	U
67-72-1	Hexachloroethane	167	U
193-39-5	Indeno(1,2,3-cd)pyrene	66.7	U
78-59-1	Isophorone	167	U
91-57-6	2-Methylnaphthalene	167	U
95-48-7	2-Methylphenol	167	U
106-44-5	3&4-Methylphenol	167	U
91-20-3	Naphthalene	66.7	U
88-74-4	2-Nitroaniline	167	U
99-09-2	3-Nitroaniline	167	U
100-01-6	4-Nitroaniline	167	U
98-95-3	Nitrobenzene	167	U
88-75-5	2-Nitrophenol	167	U
100-02-7	4-Nitrophenol	167	U
621-64-7	N-Nitrosodinpropylamine	167	U
87-86-5	Pentachlorophenol	167	U
85-01-8	Phenanthrene	66.7	U
108-95-2	Phenol	167	U
129-00-0	Pyrene	66.7	U
120-82-1	1,2,4-Trichlorobenzene	167	U

FORM I BNA-GCMS

000060

FORM 1
BNA-GCMS ORGANICS ANALYSIS DATA SHEET

377 584
CLIENT SAMPLE NO.

P04068LB

Lab Name: ETC, INC.

SDG No.: 9811-024

Matrix: (soil/water) SOIL

Lab Prep Batch: P04068

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: 0701009

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 1(mL)

Date Analyzed: 11/19/98

Injection Volume: 1.0(uL)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
95-95-4-----	2,4,5-Trichlorophenol	167	U
88-06-2-----	2,4,6-Trichlorophenol	167	U

FORM I BNA-GCMS

000061

FORM 3
SOIL BNA-GCMS LABORATORY CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: P04068

SDG No.: 9811-024

Matrix Spike - Sample No.: P04068LCS

Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Acenaphthene	1670		1320	79	34-126
Acenaphthylene	1670		1280	77	62-123
Anthracene	1670		1480	89	68-124
Benzo(a)Anthracene	1670		1640	98	60-133
Benzo(b)fluoranthene	1670		1550	93	67-126
Benzo(k)fluoranthene	1670		1530	92	75-131
Benzo(g,h,i)perylene	1670		1460	87	53-137
Benzo(a)pyrene	1670		1620	97	68-129
Benzoic Acid	3330		2360	71	37-251
Benzyl Alcohol	1670		1200	72	20-159
bis(2-Chloroethyl)ether	1670		1280	77	25-147
Bis(2-chloroethoxy)meth	1670		1130	68	37-153
bis(2-Chloroisopropyl)e	1670		1150	69	35-138
bis(2-ethylhexyl)Phthal	1670		1530	92	60-150
4-Bromophenyl-phenyleth	1670		1500	90	59-130
Butylbenzylphthalate	1670		1530	92	71-137
4-Chloroaniline	1670		796	48	27-106
4-Chloro-3-Methylphenol	3330		2610	78	33-147
2-Chloronaphthalene	1670		1230	74	62-126
2-Chlorophenol	3330		2330	70	35-138
4-Chlorophenyl-phenylet	1670		1390	83	60-128
Chrysene	1670		1610	96	67-131
Dibenzo(a,h)anthracene	1670		1410	84	51-138
Dibenzofuran	1670		1340	80	57-131
Di-n-Butylphthalate	1670		1420	85	39-179
1,2-Dichlorobenzene	1670		1050	63	58-110
1,3-Dichlorobenzene	1670		993	59	55-109
1,4-Dichlorobenzene	1670		1080	65	26-121

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS:

FORM 3
SOIL BNA-GCMS LABORATORY CONTROL SAMPLE

377 586

Lab Name: ETC, INC.

Lab Prep Batch: P04068

SDG No.: 9811-024

Matrix Spike - Sample No.: P04068LCS

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
3,3'-Dichlorobenzidine	3330		3710	111	18-191
2,4-Dichlorophenol	3330		2380	71	68-123
Diethylphthalate	1670		1610	96	72-133
2,4-Dimethyphenol	3330		2710	81	53-121
Dimethylphthalate	1670		1400	84	64-132
4,6-Dinitro-2-methylphe	3330		3200	96	70-158
2,4-Dinitrophenol	3330		2330	70	31-186
2,4-Dinitrotoluene	1670		1450	87	22-139
2,6-Dinitrotoluene	1670		1350	81	64-142
Di-n-octylphthalate	1670		1540	92	42-172
Diphenylamine/n-NDPA	1670		1510	90	72-118
Fluoranthene	1670		1480	89	71-132
Fluorene	1670		1350	81	65-126
Hexachlorobenzene	1670		1530	92	64-130
Hexachlorobutadiene	1670		1200	72	62-116
Hexachlorocyclopentadie	1670		962	58	16-160
Hexachloroethane	1670		1030	62	58-110
Indeno(1,2,3-cd)pyrene	1670		1300	78	34-170
Isophorone	1670		1370	82	35-135
2-Methylnaphthalene	1670		1170	70	57-123
2-Methylphenol	3330		2400	72	56-132
3&4-Methylphenol	3330		2550	76	68-111
Naphthalene	1670		1220	73	62-113
2-Nitroaniline	1670		1390	83	63-138
3-Nitroaniline	1670		1320	79	53-128
4-Nitroaniline	1670		1290	77	60-140
Nitrobenzene	1670		1140	68	59-123
2-Nitrophenol	3330		2260	68	52-145

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS:

377 587

FORM 3
SOIL BNA-GCMS LABORATORY CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: P04068

SDG No.: 9811-024

Matrix Spike - Sample No.: P04068LCS

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
4-Nitrophenol	3330		2890	87	12-105
N-Nitrosodipropylamine	1670		1350	81	24-141
Pentachlorophenol	3330		2900	87	6-164
Phenanthrene	1670		1490	89	66-128
Phenol	3330		2370	71	22-127
Pyrene	1670		1520	91	33-155
1,2,4-Trichlorobenzene	1670		1170	70	30-127
2,4,5-Trichlorophenol	3330		2560	77	50-173
2,4,6-Trichlorophenol	3330		2650	80	46-161

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits

Spike Recovery: 0 out of 66 outside limits

COMMENTS:

FORM 3
SOIL BNA-GCMS MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

377 588

Lab Name: ETC, INC.

Lab Prep Batch: P04068

SDG No.: 9811-024

Matrix Spike - Sample No.: 9811-449-1

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Acenaphthene	3310	0.00	2520	76	34-126
4-Chloro-3-Methylphenol	5300	0.00	4980	94	33-147
2-Chlorophenol	5300	0.00	4490	85	35-138
1,4-Dichlorobenzene	3310	0.00	2560	77	26-121
2,4-Dinitrotoluene	3310	0.00	2590	78	22-139
4-Nitrophenol	5300	0.00	4790	90	12-105
N-Nitrosodipropylamine	3310	0.00	2970	90	24-141
Pentachlorophenol	5300	0.00	4800	90	6-164
Phenol	5300	0.00	3590	68	22-127
Pyrene	3310	0.00	2850	86	33-155
1,2,4-Trichlorobenzene	3310	0.00	2880	87	30-127

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
Acenaphthene	3290	1980	60	24*	20	34-126
4-Chloro-3-Methylphenol	5260	4290	82	14	20	33-147
2-Chlorophenol	5260	3650	69	21*	20	35-138
1,4-Dichlorobenzene	3290	2040	62	22*	20	26-121
2,4-Dinitrotoluene	3290	2190	66	17	20	22-139
4-Nitrophenol	5260	4450	85	6	20	12-105
N-Nitrosodipropylamine	3290	2280	69	26*	20	24-141
Pentachlorophenol	5260	4260	81	10	20	6-164
Phenol	5260	3120	59	14	20	22-127
Pyrene	3290	2610	79	8	20	33-155
1,2,4-Trichlorobenzene	3290	2340	71	20	20	30-127

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 4 out of 11 outside limits

Spike Recovery: 0 out of 22 outside limits

COMMENTS:

FORM III BNA-GCMS

000065

377 589

Environmental Testing & Consulting, Inc.

Quality Control Reports

GC Pesticides

000066

ENVIRONMENTAL TESTING AND CONSULTING, INC. 377 590
MEMPHIS, TN
CASE NARRATIVE
GC PESTICIDES - SOIL

Client Name : OHM Remediation Services
Project Name : Defense Depot Memphis TN

ETC Order # : 9811-024
Method (SW-846) : 8081A/3550B

HOLDING TIMES

Sample Extraction : All soil samples extracted within 14 days.
Sample Analysis : All samples analyzed within 40 days of
extraction.

QUALITY CONTROL

QC Batch Form 4 Summary
P06030 P06030LB
P06033 P06033LB

System Monitoring Compounds FORM 2
Surrogate recoveries within QC limits.*
*

Surrogate recovery for Tetrachloro-m-xylene was flagged as outside QC Limits in sample 9811-024-01(B1-C1) due to dilution of 1:100. Review of the raw data showed interference from Target Analytes present in the samples. Surrogate recovery for Decachlorobiphenyl was within QC Limits.

Surrogate recoveries for Decachlorobiphenyl were flagged as outside QC Limits in sample 9811-024-01(B1-C1) and MS/MSD associated with this project due to dilution of 1:10. Review of the raw data showed interference from Target Analytes present in the samples. This sample was re-analyzed with no dilution with similar recoveries for Decachlorobiphenyl. Recoveries for Tetrachloro-m-xylene were within QC Limits.

Surrogate recovery for Decachlorobiphenyl was flagged as outside QC Limits in the re-analysis of sample 9811-024-01(B1-C1). Review of the raw data showed interference from Target Analytes present in the samples. Recovery for Tetrachloro-m-xylene was within QC Limits.

Laboratory Control Sample FORM 3
P06030LCS
P06033LCS/LCSD

All criteria met.*
*

Several compounds were flagged for high recovery in P06030LCS. High recovery indicates that detection levels were not affected. These analytes were not identified in the samples associated with this project. The data was not affected.

Matrix Spike / Matrix Spike Dup FORM 3
9811-024-01 RPD : All analytes within QC limits.*
B1-C1 Spike Recovery : All analytes within QC limits.*
*

Recoveries and RPDs for multiple analytes were flagged outside QC Limits in the Matrix Spike and Matrix Spike Duplicate due to interference from Target Analytes present in the samples.

Refer to Laboratory Control Sample(s) for system verification.

000067

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC PESTICIDES - SOIL

Client Name : OHM Remediation Services
Project Name : Defense Depot Memphis TN
ETC Order # : 9811-024
Method (SW-846) : 8081A/3550B

QUALITY CONTROL

Method Blank FORM 4
P06030LB
P06033LB

No Target Analytes detected above Practical Quantitation Limit.

CALIBRATION

Initial Calibration : All criteria met. FORM 6
Calibration Verification : All criteria met. FORM 7*
Endrin/Breakdown : All criteria met. FORM 7A
*

Calibration Verification(CV) : P111031B.17R (Primary)

Analyte	%Diff(15% Max)	Response
4,4'-DDT	25.0	Low
Endrin	18.0	High
Endrin aldehyde	30.5	High
Endrin ketone	24.0	Low
Heptachlor	15.5	High
Decachlorobiphenyl	50.0	Low

Low response indicates that reported levels for these analytes may be biased low. High responses indicate that reported levels for these analytes may be biased high. Recoveries for DDT were 91% and 88% respectively indicating that the data was not affected.

Calibration Verification(CV) : P111201B.24R (Primary)

Analyte	%Diff(15% Max)	Response
Endrin	27.0	High
Heptachlor	15.5	High
Methoxychlor	16.5	High

High responses indicate that reported levels for these analytes may be biased high. Recoveries for these analytes were within QC Limits in P06033LCS/LCSD. These analytes were not identified in samples associated with this project. The data was not affected.

SAMPLE ANALYSIS

Instrumentation : HP 5890 Series II GC
Dilutions Required : No dilutions required.*
*

Dilutions were performed on sample 9811-024-01 associated with this project to bring the Target Analyte(s) within calibration range. Final results for gamma-Chlordane were reported from undiluted analysis. Alpha-Chlordane and 4,4'-DDD were reported for 1:10 Dilution. 4,4'-DDE, 4,4'-DDT, and Dieldrin were reported from the 1:100 Dilution.

Final result for 4,4'-DDT were flagged with M-value due to breakdown in the Ending Check Standard. This result represent a minimum value found in sample 9811-024-01 for this analyte.

000068

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC PESTICIDES - SOIL

377 592

Client Name : _OHM Remediation Services
Project Name : _Defense Depot Memphis TN
ETC Order # : _9811-024
Method (SW-846) : _8081A/3550B

Laboratory Manager

000069

377 593

FORM 2
SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9811-024

Level: (low/med) LOW

	EPA GC SAMPLE NO.	S1 (TMX) #	S2 (DBC) #	S3 #	S4 #	S5 #	S6 #	S7 #	S8 #	TOT OUT
01	P06030LB	101	93							0
02	P06030LCS	109	120							0
03	9811-024-1	254D	73							0
04	9811-024-1	106	57D							0
05	9811-024-1	93	16*							1
06	9811-024-1MS	114	42D							0
07	9811-024-1MS	123	27D							0
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QC LIMITS

S1 (TMX) = Tetrachloro-m-xylene (39-130)

S2 (DBC) = Decachlorobiphenyl (64-154)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

000070

FORM 4
PESTICIDE METHOD BLANK SUMMARY

377 594
EPA GC SAMPLE NO.

P06030LB

Lab Name: ETC, INC.

Lab Prep Batch: P06030

Lab File ID: P111031B-10R

Matrix: (soil/water) SOIL

Level:(low/med) LOW

SDG No.: 9811-024

Instrument ID: PEST1B

Date Analyzed: 11/03/98

Time Analyzed: 1949

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA GC SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	P06030LCS		P111031B-11R	11/03/98
02	9811-024-1		P111031B-12R	11/03/98
03	9811-024-1		P111031B-13R	11/03/98
04	9811-024-1		P111031B-14R	11/03/98
05	9811-024-1MS		P111031B-15R	11/03/98
06	9811-024-1MS		P111031B-16R	11/03/98
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COMMENTS:

377 595

FORM 1
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA GC SAMPLE NO.

Lab Name: ETC, INC.

P06030LB

SDG No.: 9811-024

Matrix: (soil/water) SOIL

Lab Prep Batch: P06030

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: P111031B-10R

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 10(mL)

Date Analyzed: 11/03/98

Injection Volume: 1.0(uL)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q
309-00-2-----	Aldrin	1.33	U	
319-84-6-----	alpha-BHC	1.33	U	
319-85-7-----	beta-BHC	1.33	U	
319-86-8-----	delta-BHC	1.33	U	
58-89-9-----	gamma-BHC	1.33	U	
5103-71-9-----	alpha-chlordane	1.33	U	
5103-74-2-----	gamma-chlordane	1.33	U	
72-54-8-----	4,4'-DDD	1.33	U	
72-55-9-----	4,4'-DDE	1.33	U	
50-29-3-----	4,4'-DDT	1.33	U	
60-57-1-----	Dieldrin	1.33	U	
959-98-8-----	Endosulfan I	1.33	U	
33213-65-9-----	Endosulfan II	1.33	U	
1031-07-8-----	Endosulfan sulfate	1.33	U	
72-20-8-----	Endrin	1.33	U	
7421-93-4-----	Endrin aldehyde	1.33	U	
53494-70-5-----	Endrin ketone	1.33	U	
76-44-8-----	Heptachlor	1.33	U	
1024-57-3-----	Heptachlor epoxide	1.33	U	
72-43-5-----	Methoxychlor	1.33	U	

FORM I PESTICIDE

000072

FORM 3
SOIL PESTICIDE LABORATORY CONTROL SAMPLE

377 596

Lab Name: ETC, INC.

Lab Prep Batch: P06030

SDG No.: 9811-024

Matrix Spike - Sample No.: P06030LCS

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Aldrin	33.33		31.43	94	31-111
alpha-BHC	33.33		30.31	91	22-112
beta-BHC	33.33		33.97	102	54-120
delta-BHC	33.33		32.31	97*	10- 96
gamma-BHC	33.33		31.20	94	26-113
alpha-chlordane	33.33		33.84	102	49-103
gamma-chlordane	33.33		33.96	102	50-106
4,4'-DDD	33.33		34.34	103	47-112
4,4'-DDE	33.33		32.24	97	36-117
4,4'-DDT	33.33		37.37	112	49-124
Dieldrin	33.33		35.66	107	44-108
Endosulfan I	33.33		35.87	108*	49-103
Endosulfan II	33.33		41.26	124*	53-115
Endosulfan sulfate	33.33		40.14	120*	51-110
Endrin	33.33		43.27	130*	44-118
Endrin aldehyde	33.33		34.40	103	48-128
Endrin ketone	33.33		39.78	119	38-130
Heptachlor	33.33		38.04	114*	47-113
Heptachlor epoxide	33.33		33.87	102	47-112
Methoxychlor	33.33		44.04	132	39-147

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits

Spike Recovery: 6 out of 20 outside limits

COMMENTS:

FORM 3

SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC, INC.

Lab Prep Batch: P06030

SDG No.: 9811-024

Matrix Spike - Sample No.: 9811-024-1

Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Aldrin	32.68	0.000	26.47	81	31-111
alpha-BHC	32.68	0.000	30.45	93	22-112
beta-BHC	32.68	39.70	47.55	24*	54-120
delta-BHC	32.68	114.5	34.13	-246*	10- 96
gamma-BHC	32.68	87.36	31.74	-170*	26-113
alpha-chlordane	32.68	0.000	148.2	453*	49-103
gamma-chlordane	32.68	86.33	89.63	10*	50-106
4,4'-DDD	32.68	125.7	97.35	-87*	47-112
4,4'-DDE	32.68	1481	1424	-174*	36-117
4,4'-DDT	32.68	1808	1949	431*	49-124
Dieldrin	32.68	1502	1538	110*	44-108
Endosulfan I	32.68	0.000	63.90	196*	49-103
Endosulfan II	32.68	0.000	34.29	105	53-115
Endosulfan sulfate	32.68	0.000	20.60	63	51-110
Endrin	32.68	0.000	54.11	166*	44-118
Endrin aldehyde	32.68	0.000	39.66	121	48-128
Endrin ketone	32.68	0.000	35.30	108	38-130
Heptachlor	32.68	49.70	34.36	-47*	47-113
Heptachlor epoxide	32.68	0.000	41.81	128*	47-112
Methoxychlor	32.68	0.000	37.38	114	39-147

Column to be used to flag recovery and RPD values with an asterisk
 * Values outside of QC limits

COMMENTS:

FORM 3
SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

377 598

Lab Name: ETC, INC.

Lab Prep Batch: P06030

SDG No.: 9811-024

Matrix Spike - Sample No.: 9811-024-1

Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS	
					RPD	REC.
Aldrin	33.11	28.66	86	6	20	31-111
alpha-BHC	33.11	32.94	99	6	20	22-112
beta-BHC	33.11	51.03	34*	34*	20	54-120
delta-BHC	33.11	36.04	-237*	-4	20	10- 96
gamma-BHC	33.11	77.54	-30*	-140	20	26-113
alpha-chlordane	33.11	158.2	478*	5	20	49-103
gamma-chlordane	33.11	97.40	33*	107*	20	50-106
4,4'-DDD	33.11	95.07	-92*	-6	20	47-112
4,4'-DDE	33.11	1440	-124*	-34	20	36-117
4,4'-DDT	33.11	1701	-323*	1396*	20	49-124
Dieldrin	33.11	1557	166*	40*	20	44-108
Endosulfan I	33.11	67.13	203*	4	20	49-103
Endosulfan II	33.11	35.28	106	1	20	53-115
Endosulfan sulfate	33.11	21.37	64	2	20	51-110
Endrin	33.11	58.04	175*	5	20	44-118
Endrin aldehyde	33.11	42.31	128	6	20	48-128
Endrin ketone	33.11	37.19	112	4	20	38-130
Heptachlor	33.11	37.55	-37*	-24	20	47-113
Heptachlor epoxide	33.11	46.67	141*	10	20	47-112
Methoxychlor	33.11	39.85	120	5	20	39-147

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 4 out of 20 outside limits

Spike Recovery: 26 out of 40 outside limits

COMMENTS:

FORM 2
SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9811-024

Level:(low/med) LOW

	EPA GC SAMPLE NO.	S1 (TMX) #	S2 (DBC) #	S3 #	S4 #	S5 #	S6 #	S7 #	S8 #	TOT OUT
01	P06033LB	67	92							0
02	P06033LCS	78	93							0
03	P06033LCSD	88	87							0
04	9811-024-1	80	37*							1
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QC LIMITS

S1 (TMX) = Tetrachloro-m-xylene (39-130)

S2 (DBC) = Decachlorobiphenyl (64-154)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

FORM 4
PESTICIDE METHOD BLANK SUMMARY

377 600
EPA GC SAMPLE NO.

P06033LB

Lab Name: ETC, INC.

Lab Prep Batch: P06033

SDG No.: 9811-024

Lab File ID: P111201B-10R

Instrument ID: PEST1B

Matrix: (soil/water) SOIL

Date Analyzed: 11/20/98

Level:(low/med) LOW

Time Analyzed: 2011

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA GC SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	P06033LCS		P111201B-13R	11/20/98
02	P06033LCSD		P111201B-14R	11/20/98
03	9811-024-1		P111201B-23R	11/21/98
04				
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COMMENTS:

377 601

FORM 1
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA GC SAMPLE NO.

P06033LB

Lab Name: ETC, INC.

SDG No.: 9811-024

Matrix: (soil/water) SOIL

Lab Prep Batch: P06033

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: P111201B-10R

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 10(mL)

Date Analyzed: 11/20/98

Injection Volume: 1.0(uL)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
309-00-2-----	Aldrin	1.33	U
319-84-6-----	alpha-BHC	1.33	U
319-85-7-----	beta-BHC	1.33	U
319-86-8-----	delta-BHC	1.33	U
58-89-9-----	gamma-BHC	1.33	U
5103-71-9-----	alpha-chlordane	1.33	U
5103-74-2-----	gamma-chlordane	1.33	U
72-54-8-----	4,4'-DDD	1.33	U
72-55-9-----	4,4'-DDE	1.33	U
50-29-3-----	4,4'-DDT	1.33	U
60-57-1-----	Dieldrin	1.33	U
959-98-8-----	Endosulfan I	1.33	U
33213-65-9-----	Endosulfan II	1.33	U
1031-07-8-----	Endosulfan sulfate	1.33	U
72-20-8-----	Endrin	1.33	U
7421-93-4-----	Endrin aldehyde	1.33	U
53494-70-5-----	Endrin ketone	1.33	U
76-44-8-----	Heptachlor	1.33	U
1024-57-3-----	Heptachlor epoxide	1.33	U
72-43-5-----	Methoxychlor	1.33	U

FORM I PESTICIDE

000078

FORM 3
SOIL PESTICIDE LABORATORY CONTROL SAMPLE

377 602

Lab Name: ETC, INC.

Lab Prep Batch: P06033

SDG No.: 9811-024

Matrix Spike - Sample No.: P06033LCS

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Aldrin	33.33		23.43	70	31-111
alpha-BHC	33.33		24.08	72	22-112
beta-BHC	33.33		22.27	67	54-120
delta-BHC	33.33		24.53	74	10- 96
gamma-BHC	33.33		21.78	65	26-113
alpha-chlordane	33.33		23.57	71	49-103
gamma-chlordane	33.33		24.61	74	50-106
4,4'-DDD	33.33		24.22	73	47-112
4,4'-DDE	33.33		24.45	73	36-117
4,4'-DDT	33.33		25.82	77	49-124
Dieldrin	33.33		24.32	73	44-108
Endosulfan I	33.33		23.52	70	49-103
Endosulfan II	33.33		23.74	71	53-115
Endosulfan sulfate	33.33		22.07	66	51-110
Endrin	33.33		27.51	82	44-118
Endrin aldehyde	33.33		27.56	83	48-128
Endrin ketone	33.33		23.01	69	38-130
Heptachlor	33.33		24.75	74	47-113
Heptachlor epoxide	33.33		23.68	71	47-112
Methoxychlor	33.33		27.55	83	39-147

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS:

377 603

FORM 3
SOIL PESTICIDE LABORATORY CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: P06033

SDG No.: 9811-024

Matrix Spike - Sample No.: P06033LCS

Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	% RPD #	QC LIMITS	
					RPD	REC.
Aldrin	33.33	25.30	76	8	20	31-111
alpha-BHC	33.33	25.78	77	7	20	22-112
beta-BHC	33.33	24.06	72	7	20	54-120
delta-BHC	33.33	26.02	78	5	20	10- 96
gamma-BHC	33.33	23.74	71	9	20	26-113
alpha-chlordane	33.33	25.22	76	7	20	49-103
gamma-chlordane	33.33	26.52	80	8	20	50-106
4,4'-DDD	33.33	25.12	75	3	20	47-112
4,4'-DDE	33.33	25.59	77	5	20	36-117
4,4'-DDT	33.33	26.18	78	1	20	49-124
Dieldrin	33.33	26.24	79	8	20	44-108
Endosulfan I	33.33	25.51	76	8	20	49-103
Endosulfan II	33.33	24.72	74	4	20	53-115
Endosulfan sulfate	33.33	23.00	69	4	20	51-110
Endrin	33.33	29.08	87	6	20	44-118
Endrin aldehyde	33.33	28.73	86	4	20	48-128
Endrin ketone	33.33	23.96	72	4	20	38-130
Heptachlor	33.33	27.66	83	11	20	47-113
Heptachlor epoxide	33.33	25.98	78	9	20	47-112
Methoxychlor	33.33	27.51	82	1	20	39-147

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 20 outside limits
Spike Recovery: 0 out of 40 outside limits

COMMENTS:

Environmental Testing & Consulting, Inc.

Quality Control Reports

GC PCBs

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC PCBS - SOIL

Client Name : OHM Remediation Services
Project Name : Defense Depot Memphis TN
ETC Order # : 9811-024
Method (SW-846) : 8082/3550B

HOLDING TIMES

Sample Extraction : All soil samples extracted within 14 days.
Sample Analysis : All samples analyzed within 40 days of
extraction.

QUALITY CONTROL

QC Batch Form 4 Summary
P06030 P06030LB
P06033 P06033LB

System Monitoring Compounds FORM 2
Surrogate recoveries within QC limits.*
*

Surrogate recoveries for Decachlorobiphenyl were flagged as outside QC Limits in samples 9811-024-01(B1-C1) and MS/MSD associated with this project due to interference from Target Analytes present in the samples. Surrogate recovery for Decachlorobiphenyl was reported from the undiluted analysis in which recovery was within QC Limits. Surrogate recoveries for Tetrachloro-m-xylene were within QC Limits for all samples associated with this project.

Surrogate recovery for Decachlorobiphenyl was flagged as outside QC Limits in the re-analysis of sample 9811-024-01(B1-C1). Review of the raw data showed interference from Target Analytes present in the samples. Recovery for Tetrachloro-m-xylene was within QC Limits.

Laboratory Control Sample FORM 3
P06030LCS
P06033LCS/LCSD

All criteria met.

Matrix Spike / Matrix Spike Dup FORM 3
9811-024-01 RPD : All analytes within QC limits.*
B1-C1 Spike Recovery : All analytes within QC limits.*
*

Recoveries and RPD for Aroclor 1242 were flagged outside QC Limits in the Matrix Spike and Matrix Spike Duplicate.

RPD for Aroclor 1260 was flagged as outside QC Limits due to low recovery in the Matrix Spike Duplicate. MS recovery was within QC Limits.

Refer to Laboratory Control Sample(s) for system verification.

Method Blank FORM 4
P06030LB
P06033LB

No Target Analytes detected above Practical Quantitation Limit.

000082

ENVIRONMENTAL TESTING AND CONSULTING, INC.
MEMPHIS, TN
CASE NARRATIVE
GC PCBS - SOIL

377 606

Client Name : OHM Remediation Services
Project Name : Defense Depot Memphis TN
ETC Order # : 9811-024
Method (SW-846) : 8082/3550B

CALIBRATION

Initial Calibration : All criteria met. FORM 6
Calibration Verification : All criteria met. FORM 7*

*

Calibration Verification(CV) : C311031A.22R (Primary)

Analyte	%Diff(15% Max)	Response
Aroclor 1242	18.0	High
Decachlorobiphenyl	18.4	High

High responses indicate that reported levels for these analytes may be biased high. Recovery for Aroclor 1242 was within QC Limits in P06030LCS. This analyte was not identified in samples associated with this project. Surrogate recoveries for Tetrachloro-m-xylene were within QC Limits for all samples associated with this project. The data was not affected.

SAMPLE ANALYSIS

Instrumentation : HP 5890 Series II GC
Dilutions Required : No dilutions required.*

*

Dilution of 1:10 was performed on sample 9811-024-01(B1-C1) to bring Target Analyte(s) within calibration range.


Laboratory Manager

000083

377 607

FORM 2
SOIL PCB SURROGATE RECOVERY

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9811-024

Level: (low/med) LOW

	EPA GC SAMPLE NO.	S1 (TMX) #	S2 (DBC) #	S3 #	S4 #	S5 #	S6 #	S7 #	S8 #	TOT OUT
01	P06030LB	99	104							0
02	P06030LCS	99	124							0
03	9811-024-1	126	224D							1
04	9811-024-1	101	133							0
05	9811-024-1MS	95	351D							1
06	9811-024-1MS	113	299D							1
07										
08										
09										
10										
11										
12										
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28										
29										
30										

QC LIMITS

S1 (TMX) = Tetrachloro-m-xylene (20-122)

S2 (DBC) = Decachlorobiphenyl (17-141)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

000034

FORM 4
PCB METHOD BLANK SUMMARY

377 608
EPA GC SAMPLE NO.

P06030LB

Lab Name: ETC, INC.

Lab Prep Batch: P06030

Lab File ID: C311031A-10R

Matrix: (soil/water) SOIL

Level:(low/med) LOW

SDG No.: 9811-024

Instrument ID: PEST3A

Date Analyzed: 11/03/98

Time Analyzed: 2049

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA GC SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	P06030LCS		C311031A-12R	11/03/98
02	9811-024-1		C311031A-15R	11/03/98
03	9811-024-1		C311031A-16R	11/04/98
04	9811-024-1MS		C311031A-19R	11/04/98
05	9811-024-1MS		C311031A-20R	11/04/98
06				
07				
08				
09				
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11				
12				
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28				
29				
30				

COMMENTS:

377 609

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

EPA GC SAMPLE NO.

Lab Name: ETC, INC.

P06030LB

SDG No.: 9811-024

Matrix: (soil/water) SOIL

Lab Prep Batch: P06030

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C311031A-10R

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 10 (mL)

Date Analyzed: 11/03/98

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:	
		(ug/L or ug/Kg)	UG/KG
			Q
12674-11-2-----	Aroclor 1016	16.67	U
11104-28-2-----	Aroclor 1221	16.67	U
11141-16-5-----	Aroclor 1232	16.67	U
53469-21-9-----	Aroclor 1242	16.67	U
11097-69-1-----	Aroclor 1254	16.67	U
11096-82-5-----	Aroclor 1260	16.67	U
12672-29-6-----	Aroclor 1248	16.67	U

FORM I PCB

000086

FORM 3
SOIL PCB LABORATORY CONTROL SAMPLE

377 610

Lab Name: ETC, INC.

Lab Prep Batch: P06030

SDG No.: 9811-024

Matrix Spike - Sample No.: P06030LCS

Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Aroclor 1242	333.3		321.6	96	25-125
Aroclor 1260	333.3		258.6	78	25-125

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits

Spike Recovery: 0 out of 2 outside limits

COMMENTS:

FORM III PCB

000087

377 611

FORM 3

SOIL PCB MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ETC, INC.

Lab Prep Batch: P06030

SDG No.: 9811-024

Matrix Spike - Sample No.: 9811-024-1

Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Aroclor 1242	326.8	0.000	830.9	254*	25-125
Aroclor 1260	326.8	1690	1987	91	25-125

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD REC.
Aroclor 1242	331.1	1568	474*	60*	20 25-125
Aroclor 1260	331.1	1701	3*	187*	20 25-125

Column to be used to flag recovery and RPD values with an asterisk
 * Values outside of QC limits

RPD: 2 out of 2 outside limits
 Spike Recovery: 3 out of 4 outside limits

COMMENTS:

FORM III PCB

000088

FORM 2
SOIL PCB SURROGATE RECOVERY

377 612

Lab Name: ETC, INC.

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: 9811-024

Level:(low/med) LOW

	EPA GC SAMPLE NO.	S1 (TMX) #	S2 (DBC) #	S3 #	S4 #	S5 #	S6 #	S7 #	S8 #	TOT OUT
01	P06033LB	67	102							0
02	P06033LCS	61	95							0
03	P06033LCSD	61	84							0
04	9811-024-1	73	172*							1
05										
06										
07										
08										
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29										
30										

QC LIMITS
S1 (TMX) = Tetrachloro-m-xylene (20-122)
S2 (DBC) = Decachlorobiphenyl (17-141)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

377 613

FORM 4
PCB METHOD BLANK SUMMARY

EPA GC SAMPLE NO.

P06033LB

Lab Name: ETC, INC.

Lab Prep Batch: P06033

SDG No.: 9811-024

Lab File ID: C211201B-03R

Instrument ID: PEST2B

Matrix: (soil/water) SOIL

Date Analyzed: 11/20/98

Level: (low/med) LOW

Time Analyzed: 1709

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA GC SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	P06033LCS		C211201B-04R	11/20/98
02	P06033LCSD		C211201B-05R	11/20/98
03	9811-024-1		C211201B-08R	11/20/98
04				
05				
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COMMENTS:

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

377 614
EPA GC SAMPLE NO.

P06033LB

Lab Name: ETC, INC.

SDG No.: 9811-024

Matrix: (soil/water) SOIL

Lab Prep Batch: P06033

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: C211201B-03R

Level: (low/med) LOW

Date Received: _____

Concentrated Extract Volume: 10 (mL)

Date Analyzed: 11/20/98

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2-----	Aroclor 1016	16.67	U
11104-28-2-----	Aroclor 1221	16.67	U
11141-16-5-----	Aroclor 1232	16.67	U
53469-21-9-----	Aroclor 1242	16.67	U
11097-69-1-----	Aroclor 1254	16.67	U
11096-82-5-----	Aroclor 1260	16.67	U
12672-29-6-----	Aroclor 1248	16.67	U

FORM I PCB

000091

377 615

FORM 3
SOIL PCB LABORATORY CONTROL SAMPLE

Lab Name: ETC, INC.

Lab Prep Batch: P06033

SDG No.: 9811-024

Matrix Spike - Sample No.: P06033LCS

Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Aroclor 1242	333.3		224.6	67	25-125
Aroclor 1260	333.3		242.8	73	25-125

COMPOUND	SPIKE ADDED (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	% RPD #	QC LIMITS RPD	REC.
Aroclor 1242	333.3	214.8	64	4	20	25-125
Aroclor 1260	333.3	211.4	63	15	20	25-125

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 2 outside limits

Spike Recovery: 0 out of 4 outside limits

COMMENTS:

FORM III PCB

000092

TAB

Appendix D

APPENDIX D

**Transportation & Disposal Log, and Non-Hazardous Waste Disposal
Manifests**

T & D LOG FOR DEFENSE DEPOT MEMPHIS, TN.

PROJECT # 920560 - CAFETERIA CLIENT: USACE

CONTRACT #DACA45-96-D-0014

DO# 0010

DATE	MANIFEST#	AREA	TONS	TONS TO DATE	TRUCK CO.	TRUCK #	FACILITY
10/22/98	1020	A	32.08	32.08	MATHEWS	RM-7	TUNICA
10/22/98	1019	A	29.86	61.94	MATHEWS	HLB-22	TUNICA
10/22/98	1018	A	29.38	91.32	MATHEWS	RM-7	TUNICA
10/22/98	1017	A	27.01	118.33	MATHEWS	HLB-22	TUNICA
10/22/98	1015	A	31.18	149.51	MATHEWS	RM-7	TUNICA
10/22/98	1016	A	28.62	178.13	MATHEWS	RM-3	TUNICA
10/22/98	1014	A	27.97	206.10	MATHEWS	RM-7	TUNICA
10/22/98	1013	A	27.27	233.37	MATHEWS	HLB-22	TUNICA
10/22/98	1009	A	25.33	258.70	MATHEWS	HLB-22	TUNICA
10/22/98	1012	A	30.18	288.88	MATHEWS	RM-4	TUNICA
10/22/98	1011	A	30.43	319.31	MATHEWS	RM-3	TUNICA
10/23/99	1010	A	21.50	340.81	MATHEWS	RM-7	TUNICA
11/3/98	1001	B	20.97	361.78	MATHEWS	RM-4	TUNICA
11/3/98	1002	B	19.99	381.77	MATHEWS	RM-7	TUNICA
11/3/98	1003	B	15.77	397.54	MATHEWS	HLB-22	TUNICA
11/3/98	1004	B	21.71	419.25	MATHEWS	RM-4	TUNICA
11/3/98	1005	B	25.72	444.97	MATHEWS	RM-4	TUNICA
11/3/98	1006	B	24.44	469.41	MATHEWS	HLB-22	TUNICA
11/4/98	1023	B	21.65	491.06	MATHEWS	HLB-22	TUNICA
11/4/98	1022	B	21.47	512.53	MATHEWS	RM-4	TUNICA
11/4/98	1021	B	21.15	533.68	MATHEWS	RM-7	TUNICA



Waste Management, Inc.

377 619

NON-HAZARDOUS WASTE MANIFEST

GENERATOR

Name of Generator: Defense Depot-Memphis

Waste Generation Location: SAME

Address: 2163 Airways Blvd.
Memphis, TN 38114

Address: _____

Phone No. (901) 775-6883

Phone No. (_____) _____

Waste ID Code No. TUN 9810005

Special Handling Instructions and Additional Information. _____

THE TUNICA LANDFILL PERMIT NUMBER SW-0720010459

Ticket Number. 53164

Customer Number: 9

RESPONSIBLE AGENCY: Mississippi Dept. of Environmental Quality (601) 961-5171

Waste Description

Actual Quantity

Units

Container Type

Non-TSCA Regulated
Soil

32.08

☐ Pounds
☒ Tons
☐ Cu. Yd.
☐ Cu. Ft.

☐ Drum ☒ Truck
☐ Carton ☐ Box
☐ Bag ☐ Other: _____
Volume: _____

With my signature, I certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law or regulation, is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

JACK Kalla
Generator Authorized Agent

[Signature]
Signature

10.22.98
Shipment Date

TRANSPORTER

Truck No. Rm-7

Transporter Phone No.: (601) 429-2200

Transporter Name: Matthews Trucking

Driver Name (print): JACKIE YOUNT

Address: 1340 Gwynn Road

Vehicle License No./State: A07881MS

Nesbit, MS 38651

Vehicle Certification: _____

With my signature, I certify that the above material was picked up at the Generator site listed above.

With my signature, I certify that the above named material was delivered without incident to the destination listed below.

[Signature]
Signature

10.22.98
Pickup Date

[Signature]
Signature

10.22.98
Delivery Date

DESTINATION

Site Name: The Tunica Landfill

Phone No.: (601) 363-2282

Site Address: 6035 Bowdre Rd. Robinsonville, MS 38664

Time: _____

Discrepancies: _____

I hereby certify that the above named material has been accepted and to the best of my knowledge, the foregoing is true and accurate.

[Signature]
Name (print)

[Signature]
Signature

10.22.98
Receipt Date

No 001020

White - LANDFILL Yellow - GENERATOR Pink - TRANSPORTER

TOTAL TO DATE: 32.08



Waste Management, Inc.

377 620

NON-HAZARDOUS WASTE MANIFEST

GENERATOR

Name of Generator: Defense Depot-Memphis Waste Generation Location: SAME

Address: 2163 Airways Blvd. Address: _____
Memphis, TN 38114

Phone No. (901) 775-6883 Phone No. () _____

Waste ID. Code No. TUN 981005

Special Handling Instructions and Additional Information _____

TUNICA LANDFILL PERMIT NUMBER SW-0720010459 Ticket Number: 53165 Customer Number: 9

SPONSIBLE AGENCY: Mississippi Dept. of Environmental Quality (601) 961-5171

Waste Description	Actual Quantity	Units	Container Type
Non-TSCA Regulated Soil	<u>29.86</u>	☐ Pounds ☒ Tons ☐ Cu. Yd. ☐ Cu. Ft.	☐ Drum ☒ Truck ☐ Carton ☐ Box ☐ Bag ☐ Other _____ Volume: _____

With my signature, I certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law or regulation, is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Generator Authorized Agent: [Signature] Signature: [Signature] Shipment Date: 10.22.98

TRANSPORTER

Truck No.: 54177 10:45 Transporter Phone No.: (601) 429-2200

Transporter Name: Matthews Trucking Driver Name (print): Matthews Trucking

Address: 1340 Gwynn Road Vehicle License No./State: 47307 MS
Nesbit, MS 38651 Vehicle Certification: 68-3677

With my signature, I certify that the above material was picked up at the Generator site listed above.

With my signature, I certify that the above named material was delivered without incident to the destination listed below.

Signature: [Signature] Pickup Date: 10.22.98 Signature: [Signature] Delivery Date: 10.22.98

DESTINATION

Site Name: The Tunica Landfill Phone No.: (601) 363-2282

Site Address: 6035 Bowdre Rd. Robinsonville, MS 38664 Time: _____

Discrepancies: _____

I hereby certify that the above named material has been accepted and to the best of my knowledge, the foregoing is true and accurate.

Name (print): [Signature] Signature: [Signature] Receipt Date: 10.22.98

001019

White - LANDFILL Yellow - GENERATOR Pink - TRANSPORTER

TOTAL TO DATE: 601.94

NON-HAZARDOUS WASTE MANIFEST

GENERATOR

Name of Generator: Defense Depot-Memphis Waste Generation Location: SAME
Address: 2163 Airways Blvd. Address: _____
Memphis, TN 38114
Phone No. (901) 775-6883 Phone No. () _____
Waste ID Code No. T.N. 981005
Special Handling Instructions and Additional Information. _____

THE TUNICA LANDFILL PERMIT NUMBER SW-0720010459

Ticket Number 53178

Customer Number 9

RESPONSIBLE AGENCY Mississippi Dept. of Environmental Quality (601) 961-5171

Waste Description	Actual Quantity	Units	Container Type
Non-TSCA Regulated Soil	29.38	☐ Pounds ☒ Tons ☐ Cu. Yd ☐ Cu. Ft.	☐ Drum ☒ Truck ☐ Carton ☐ Box ☐ Bag ☐ Other: _____ Volume: _____

With my signature, I certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law or regulation, is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Jack Kellar Jack Kellar 10.22.98
Generator Authorized Agent Signature Shipment Date

TRANSPORTER

Truck No.: Rm-7 Transporter Phone No.: (601) 429-2200
Transporter Name: Matthews Trucking Driver Name (print): JACKIE YOUNT
Address: 1340 Gwynn Road Vehicle License No./State: MS
Nesbit, MS 38651 Vehicle Certification: _____

With my signature, I certify that the above material was picked up at the Generator site listed above.

With my signature, I certify that the above named material was delivered without incident to the destination listed below.

Jackie Yount 10.22.98 Jackie Yount 10.22.98
Signature Pickup Date Signature Delivery Date

DESTINATION

Site Name: The Tunica Landfill Phone No.: (601) 363-2282
Site Address: 6035 Bowdre Rd. Robinsonville, MS 38664 Time: _____

Discrepancies: _____

I hereby certify that the above named material has been accepted and to the best of my knowledge, the foregoing is true and accurate.

BSB BSB 10.22.98
Name (print) Signature Receipt Date

№ 001018

White - LANDFILL Yellow - GENERATOR Pink - TRANSPORTER

TOTAL TO DATE: 91.32



Waste Management, Inc.

377 622

NON-HAZARDOUS WASTE MANIFEST

GENERATOR

Name of Generator: Defense Depot-Memphis Waste Generation Location: SAME

Address: 2163 Airways Blvd. Address:

Memphis, TN 38114

Phone No.: (901) 775-6883 Phone No.: ()

Waste ID Code No.: T.U.N. 9810005

Special Handling Instructions and Additional Information:

TUNICA LANDFILL PERMIT NUMBER SW-0720010459

Ticket Number: 53179

Customer Number: 9

SPONSIBLE AGENCY: Mississippi Dept. of Environmental Quality (601) 961-5171

Waste Description	Actual Quantity	Units	Container Type
Non-TSCA Regulated Soil	27.01	☐ Pounds ☒ Tons ☐ Cu. Yd. ☐ Cu Ft	☐ Drum ☒ Truck ☐ Carton ☐ Box ☐ Bag ☐ Other: <u></u> Volume: <u></u>

With my signature, I certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law or regulation, is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

JACK KALLAL
Generator Authorized Agent

[Signature]
Signature

10, 22, 98
Shipment Date

TRANSPORTER

Truck No.: HX22-107

Transporter Name: Matthews Trucking

Address: 1340 Gwynn Road
Nesbit, MS 38651

Transporter Phone No.: (601) 429-2200

Driver Name (print): HL BARNES

Vehicle License No./State: H-2307MS

Vehicle Certification: 683677

With my signature, I certify that the above material was picked up at the Generator site listed above.

[Signature] 10, 22, 98
Signature Pickup Date

With my signature, I certify that the above named material was delivered without incident to the destination listed below.

[Signature] 10, 22, 98
Signature Delivery Date

DESTINATION

Site Name: The Tunica Landfill

Site Address: 6035 Bowdre Rd. Robinsonville, MS 38664

Phone No.: (601) 363-2282

Time:

Discrepancies:

I hereby certify that the above named material has been accepted and to the best of my knowledge, the foregoing is true and accurate.

[Signature]
Name (print)

[Signature]
Signature

10, 22, 98
Receipt Date

001017

White - LANDFILL Yellow - GENERATOR Pink - TRANSPORTER

TOTAL TO DATE: 118.33



Waste Management, Inc.

377 623

NON-HAZARDOUS WASTE MANIFEST

GENERATOR

Name of Generator: Defense Depot-Memphis
Address: 2163 Airways Blvd.
Memphis, TN 38114
Phone No. (901) 775-6883
Waste ID Code No. T.U.N. 9810005
Special Handling Instructions and Additional Information: _____

Waste Generation Location: SAME
Address: _____
Phone No. (_____) _____

THE TUNICA LANDFILL PERMIT NUMBER SW-0720010459

Ticket Number: _____

Customer Number: 9

RESPONSIBLE AGENCY: Mississippi Dept. of Environmental Quality (601) 961-5171

Waste Description	Actual Quantity	Units	Container Type
Non-TSCA Regulated Soil	31.18	☐ Pounds ☒ Tons ☐ Cu. Yd ☐ Cu. Ft.	☐ Drum ☒ Truck ☐ Carton ☐ Box ☐ Bag ☐ Other: _____ Volume _____

With my signature, I certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law or regulation, is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

JACK Kallal
Generator Authorized Agent

[Signature]
Signature

10.22.98
Shipment Date

TRANSPORTER

Truck No.: RM4
Transporter Name: Matthews Trucking
Address: 1340 Gwynn Road
Nesbit, MS 38651

Transporter Phone No.: (601) 429-2200
Driver Name (print): RAY YOUNG
Vehicle License No./State: AD 7879MS
Vehicle Certification: 490277

With my signature, I certify that the above material was picked up at the Generator site listed above.

With my signature, I certify that the above named material was delivered without incident to the destination listed below.

[Signature]
Signature

10.22.98
Pickup Date

[Signature]
Signature

[Signature]
Delivery Date

DESTINATION

Site Name: The Tunica Landfill
Site Address: 6035 Bowdre Rd. Robinsonville, MS 38664

Phone No.: (601) 363-2282
Time: _____

Discrepancies: _____
I hereby certify that the above named material has been accepted and to the best of my knowledge, the foregoing is true and accurate.
[Signature]
Name (print) [Signature]
Signature

10.22.98
Receipt Date

No 001015

White - LANDFILL Yellow - GENERATOR Pink - TRANSPORTER

TOTAL TO DATE: 149.51



Waste Management, Inc.

377 624

NON-HAZARDOUS WASTE MANIFEST

GENERATOR

Name of Generator Defense Depot-Memphis

Waste Generation Location: SAME

Address 2163 Airways Blvd.

Address: _____

Memphis, TN 38114

Phone No. (901) 775-6883

Phone No. () _____

Site ID. Code No. T.D.N. 9810005

Special Handling Instructions and Additional Information: _____

TUNICA LANDFILL PERMIT NUMBER SW-0720010459

Ticket Number: 53185

Customer Number 9

RESPONSIBLE AGENCY. Mississippi Dept. of Environmental Quality (601) 961-5171

Waste Description	Actual Quantity	Units	Container Type
Non-TSCA Regulated Soil	<u>28.62</u>	☐ Pounds ☒ Tons ☐ Cu. Yd. ☐ Cu. Ft.	☐ Drum ☒ Truck ☐ Carton ☐ Box ☐ Bag ☐ Other. _____ Volume: _____

In my signature, I certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable law or regulation, is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

TACK Kallal
Generator Authorized Agent

TACK Kallal
Signature

10/22/98
Shipment Date

TRANSPORTER

Truck No. RM-3

Transporter Phone No.: (601) 429-2200

Transporter Name: Matthews Trucking

Driver Name (print): WILLIAM D'NEAL

Address: 1340 Gwynn Road

Vehicle License No./State: AD737MS

Nesbit, MS 38651

Vehicle Certification: 490217

In my signature, I certify that the above material was picked up at the Generator site listed above.

With my signature, I certify that the above named material was delivered without incident to the destination listed below.

William D'Neal
Signature
10/22/98
Pickup Date

William D'Neal
Signature
10/22/98
Delivery Date

DESTINATION

Name The Tunica Landfill

Phone No.: (601) 363-2282

Address: 6035 Bowdre Rd. Robinsonville, MS 38664

Time: _____

Discrepancies: _____

I hereby certify that the above named material has been accepted and to the best of my knowledge, the foregoing is true and accurate.

[Signature]
Name (print)

[Signature]
Signature

10/22/98
Receipt Date

001016

White - LANDFILL Yellow - GENERATOR Pink - TRANSPORTER

TOTAL TO DATE: 178.13



Waste Management, Inc.

377 625

NON-HAZARDOUS WASTE MANIFEST

GENERATOR

Name of Generator: Defense Depot-Memphis

Waste Generation Location: SAME

Address 2163 Airways Blvd.
Memphis, TN 38114

Address: _____

Phone No. (901) 775-6883

Phone No.: (_____) _____

Waste ID Code No. T.V.N. 9810025

Special Handling Instructions and Additional Information. _____

THE TUNICA LANDFILL PERMIT NUMBER SW-0720010459

Ticket Number: 53187

Customer Number 9

RESPONSIBLE AGENCY: Mississippi Dept. of Environmental Quality (601) 961-5171

Waste Description

Actual Quantity

Units

Container Type

Non-TSCA Regulated
Soil

27.97

☐ Pounds
☒ Tons
☐ Cu. Yd.
☐ Cu. Ft.

☐ Drum ☒ Truck
☐ Carton ☐ Box
☐ Bag ☐ Other: _____
Volume: _____

With my signature, I certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law or regulation, is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

JACK Kallal
Generator Authorized Agent

JACK Kallal
Signature

10.22.98
Shipment Date

TRANSPORTER

Truck No.: Rm-7

Transporter Phone No.: (601) 429-2200

Transporter Name: Matthews Trucking

Driver Name (print): JACKIE YOUNT

Address: 1340 Gwynn Road

Vehicle License No./State: A07881 MS

Nesbit, MS 38651

Vehicle Certification: _____

With my signature, I certify that the above material was picked up at the Generator site listed above.

With my signature, I certify that the above named material was delivered without incident to the destination listed below.

Jackie Yount 10.22.98
Signature Pickup Date

Jackie Yount 10.22.98
Signature Delivery Date

DESTINATION

Site Name: The Tunica Landfill

Phone No.: (601) 363-2282

Site Address: 6035 Bowdre Rd. Robinsonville, MS 38664

Time: _____

Discrepancies: _____

I hereby certify that the above named material has been accepted and to the best of my knowledge, the foregoing is true and accurate.

[Signature]
Name (print)

[Signature]
Signature

10.22.98
Receipt Date

№ 001014

White - LANDFILL Yellow - GENERATOR Pink - TRANSPORTER

TOTAL TO DATE: 206.10

WM Waste Management, Inc.

377 626

NON-HAZARDOUS WASTE MANIFEST

GENERATOR

Name of Generator: Defense Depot-Memphis
Address: 2163 Airways Blvd.
Memphis, TN 38114
Phone No.: (901) 775-6883
Waste Generation Location: SAME
Address: _____
EPA ID. Code No.: T.U.N. 9810005
Special Handling Instructions and Additional Information: _____

TUNICA LANDFILL PERMIT NUMBER SW-0720010459

Ticket Number 53188Customer Number 9

RESPONSIBLE AGENCY: Mississippi Dept. of Environmental Quality (601) 961-5171

Waste Description**Actual Quantity****Units****Container Type**

Non-TSCA Regulated
Soil

24.27

☐ Pounds
☒ Tons
☐ Cu. Yd.
☐ Cu. Ft.

☐ Drum ☒ Truck
☐ Carton ☐ Box
☐ Bag ☐ Other. _____
Volume _____

With my signature, I certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law or regulation, is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Jack Kallal
Generator Authorized Agent

Jack Kallal
Signature

10/24/98
Shipment Date

TRANSPORTER

Truck No.: 22 345
Transporter Name: Matthews Trucking
Address: 1340 Gwynn Road
Nesbit, MS 38651

Transporter Phone No.: (601) 429-2200Driver Name (print): HAL BRYNDENVehicle License No./State: AL-307MSVehicle Certification: 6836 27

With my signature, I certify that the above material was picked up at the Generator site listed above.

With my signature, I certify that the above named material was delivered without incident to the destination listed below.

HAL BRYNDEN 10/23/98
Signature Pickup Date

HAL BRYNDEN 10/24/98
Signature Delivery Date

DESTINATION

Site Name: The Tunica Landfill
Site Address: 6035 Bowdre Rd. Robinsonville, MS 38664

Phone No.: (601) 363-2282

Time: _____

Discrepancies: _____

I hereby certify that the above named material has been accepted and to the best of my knowledge, the foregoing is true and accurate.

HAL BRYNDEN
Name (print)

HAL BRYNDEN
Signature

10/22/98
Receipt Date

2 001013

White - LANDFILL Yellow - GENERATOR Pink - TRANSPORTER

TOTAL TO DATE: 238.37



Waste Management, Inc.

377 627

NON-HAZARDOUS WASTE MANIFEST

GENERATOR

Name of Generator: Defense Depot-MemphisWaste Generation Location: SAMEAddress: 2163 Airways Blvd.
Memphis, TN 38114

Address: _____

Phone No (901) 775-6883

Phone No.: (_____) _____

Waste ID Code No.: _____

Special Handling Instructions and Additional Information: _____

THE TUNICA LANDFILL PERMIT NUMBER SW-0720010459

Ticket Number: 53199Customer Number: 9

RESPONSIBLE AGENCY Mississippi Dept. of Environmental Quality (601) 961-5171

Waste Description**Actual Quantity****Units****Container Type**Non-TSCA Regulated
Soil25.33

- ☐
- Pounds
-
- ☒
- Tons
-
- ☐
- Cu. Yd.
-
- ☐
- Cu. Ft.

- ☐
- Drum
- ☒
- Truck
-
- ☐
- Carton
- ☐
- Box
-
- ☐
- Bag
- ☐
- Other: _____
-
- Volume _____

With my signature, I certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law or regulation, is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

JACK Kallal
Generator Authorized Agent[Signature]
Signature10.22.98
Shipment Date

TRANSPORTER

Truck No.: HAB 22 545Transporter Phone No.: (601) 429-2200Transporter Name: Matthews TruckingDriver Name (print): HLB. N. D. P. L. N. I.Address: 1340 Gwynn Road
Nesbit, MS 38651Vehicle License No./State: A-238 MSVehicle Certification: 68.36 '77

With my signature, I certify that the above material was picked up at the Generator site listed above.

With my signature, I certify that the above named material was delivered without incident to the destination listed below.

[Signature] 10.22.98
Signature Pickup Date[Signature] 10.22.98
Signature Delivery Date

DESTINATION

Site Name: The Tunica LandfillPhone No.: (601) 363-2282Site Address: 6035 Bowdre Rd. Robinsonville, MS 38664

Time: _____

Discrepancies: _____

I hereby certify that the above named material has been accepted and to the best of my knowledge, the foregoing is true and accurate.

[Signature]
Name (print)[Signature]
Signature10.23.98
Receipt Date

No 001009

White - LANDFILL Yellow - GENERATOR Pink - TRANSPORTER

TOTAL TO DATE: 256.70



Waste Management, Inc.

377 628

NON-HAZARDOUS WASTE MANIFEST

GENERATOR

Name of Generator: Defense Depot-Memphis
 Address: 2163 Airways Blvd.
Memphis, TN 38114
 Phone No. (901) 775-6883
 Waste ID Code No.: T.W.N. 981005
 Special Handling Instructions and Additional Information: _____

Waste Generation Location: SAME
 Address: _____
 Phone No.: (____) _____

TUNICA LANDFILL PERMIT NUMBER SW-0720010459

Ticket Number: _____

Customer Number 9

RESPONSIBLE AGENCY: Mississippi Dept. of Environmental Quality (601) 961-5171

Waste Description	Actual Quantity	Units	Container Type
Non-TSCA Regulated Soil	30.18	☐ Pounds ☒ Tons ☐ Cu. Yd. ☐ Cu. Ft.	☐ Drum ☒ Truck ☐ Carton ☐ Box ☐ Bag ☐ Other _____ Volume: _____

With my signature, I certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law or regulation, is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Jack Kallal
 Generator Authorized Agent

Jack Kallal
 Signature

10.22.98
 Shipment Date

TRANSPORTER

Truck No.: Rm4
 Transporter Name: Matthews Trucking
 Address: 1340 Gwynn Road
Nesbit, MS 38651

Transporter Phone No.: (601) 429-2200

Driver Name (print): Ray Young

Vehicle License No./State: A07879 MS

Vehicle Certification: _____

With my signature, I certify that the above material was picked up at the Generator site listed above.

With my signature, I certify that the above named material was delivered without incident to the destination listed below.

Ray Young
 Signature
10.22.98
 Pickup Date

Signature _____
 Delivery Date

DESTINATION

Name: The Tunica Landfill
 Address: 6035 Bowdre Rd. Robinsonville, MS 38664
 Discrepancies: _____

Phone No.: (601) 363-2282

Time: _____

I hereby certify that the above named material has been accepted and to the best of my knowledge, the foregoing is true and accurate.

Ray Young
 Name (print)

Ray Young
 Signature

10.23.98
 Receipt Date

001012

White - LANDFILL Yellow - GENERATOR Pink - TRANSPORTER

TOTAL TO DATE: 2485.86

WM Waste Management, Inc.

NON-HAZARDOUS WASTE MANIFEST

377 629

GENERATOR

Name of Generator: Defense Depot-Memphis
Address: 2163 Airways Blvd.
Memphis, TN 38114
Phone No (901) 775-6883
Waste ID Code No. T.U.N 9810005
Special Handling Instructions and Additional Information. _____

Waste Generation Location: SAME
Address: _____
Phone No.: (____) _____

THE TUNICA LANDFILL PERMIT NUMBER SW-0720010459

Ticket Number: 53203

Customer Number: 9

RESPONSIBLE AGENCY: Mississippi Dept of Environmental Quality (601) 961-5171

Waste Description	Actual Quantity	Units	Container Type
Non-TSCA Regulated Soil	30.43	☐ Pounds ☒ Tons ☐ Cu. Yd. ☐ Cu. Ft.	☐ Drum ☒ Truck ☐ Carton ☐ Box ☐ Bag ☐ Other. _____ Volume: _____

With my signature, I certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law or regulation, is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

DAK Kallal
Generator Authorized Agent

DAK Kallal
Signature

10.22.98
Shipment Date

TRANSPORTER

Truck No.: RN-3
Transporter Name: Matthews Trucking
Address: 1340 Gwynn Road
Nesbit, MS 38651

Transporter Phone No.: (601) 429-2200
Driver Name (print): WILLIAM DINEEL
Vehicle License No./State: 407877MS
Vehicle Certification: 470877

With my signature, I certify that the above material was picked up at the Generator site listed above.

William Dineel 10.22.98
Signature Pickup Date

With my signature, I certify that the above named material was delivered without incident to the destination listed below.

William Dineel 10.23.98
Signature Delivery Date

DESTINATION

Site Name: The Tunica Landfill
Site Address: 6035 Bowdre Rd. Robinsonville, MS 38664

Phone No.: (601) 363-2282
Time: _____

Discrepancies: _____

I hereby certify that the above named material has been accepted and to the best of my knowledge, the foregoing is true and accurate.

A. Griffin
Name (print)

A. Griffin
Signature

10.23.98
Receipt Date

No 001011

White - LANDFILL Yellow - GENERATOR Pink - TRANSPORTER

TOTAL TO DATE: 340.81



Waste Management, Inc.

377 630

NON-HAZARDOUS WASTE MANIFEST

GENERATOR

Name of Generator: Defense Depot-Memphis
 Address: 2163 Airways Blvd.
Memphis, TN 38114
 Phone No. (901) 775-6883
 State ID. Code No.: T.N. 9810005
 Special Handling Instructions and Additional Information: _____

Waste Generation Location: SAME
 Address: _____
 Phone No.: (_____) _____

TUNICA LANDFILL PERMIT NUMBER SW-0720010459

Ticket Number: 53201

Customer Number: 9

RESPONSIBLE AGENCY Mississippi Dept. of Environmental Quality (601) 961-5171

Waste Description	Actual Quantity	Units	Container Type
Non-TSCA Regulated Soil	21.50	☐ Pounds ☒ Tons ☐ Cu. Yd. ☐ Cu. Ft.	☐ Drum ☒ Truck ☐ Carton ☐ Box ☐ Bag ☐ Other. Volume: _____

In my signature, I certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable law or regulation, is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified, packaged, and is in proper condition for transportation according to applicable regulations.

Jack Kalla
 Generator Authorized Agent

Jack Kalla
 Signature

10.23.98
 Shipment Date

TRANSPORTER

Truck No.: 7
 Transporter Name: Matthews Trucking
 Address: 1340 Gwynn Road
Nesbit, MS 38651

Transporter Phone No.: (601) 429-2200
 Driver Name (print): JACKIE YOUNT
 Vehicle License No./State: AO7881 MS
 Vehicle Certification: _____

In my signature, I certify that the above material was picked up at the Generator site listed above.

With my signature, I certify that the above named material was delivered without incident to the destination listed below.

Jackie Yount 10.23.98
 Signature Pickup Date

Jackie Yount 10.23.98
 Signature Delivery Date

DESTINATION

Name: The Tunica Landfill
 Address: 6035 Bowdre Rd. Robinsonville, MS 38664

Phone No.: (601) 363-2282
 Time: _____

Discrepancies: _____
 I hereby certify that the above named material has been accepted and to the best of my knowledge, the foregoing is true and accurate.

CSO
 Name (print)

[Signature]
 Signature

10.23.98
 Receipt Date

001010

White - LANDFILL Yellow - GENERATOR Pink - TRANSPORTER

TOTAL TO DATE: 310.38



Wast Management, Inc.

377 631

NON-HAZARDOUS WASTE MANIFEST

GENERATOR

Name of Generator: Defense Depot-Memphis Waste Generation Location: SAME

Address: 2163 Airways Blvd. Address: _____

Memphis, TN 38114

Phone No.: (901) 775-6883 Phone No.: (_____) _____

Waste ID. Code No. _____

Special Handling Instructions and Additional Information. _____

THE TUNICA LANDFILL PERMIT NUMBER SW-0720010459

Ticket Number: _____ Customer Number: 9

RESPONSIBLE AGENCY: Mississippi Dept. of Environmental Quality (601) 961-5171

Waste Description	Actual Quantity	Units	Container Type
Non-TSCA Regulated Soil	20.97	☐ Pounds ☒ Tons ☐ Cu. Yd. ☐ Cu. Ft.	☐ Drum ☒ Truck ☐ Carton ☐ Box ☐ Bag ☐ Other: _____ Volume: _____

With my signature, I certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law or regulation, is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

JACK Kallal
Generator Authorized Agent

Jack Kallal
Signature

11-23
10-22-98
Shipment Date

TRANSPORTER

Truck No.: BMY

Transporter Name: Matthews Trucking

Address: 1340 Gwynn Road
Nesbit, MS 38651

Transporter Phone No.: (601) 429-2200

Driver Name (print): RAY Young

Vehicle License No./State: A0787MS

Vehicle Certification: MDOT

With my signature, I certify that the above material was picked up at the Generator site listed above.

With my signature, I certify that the above named material was delivered without incident to the destination listed below.

R. Young
Signature

11, 3, 98
Pickup Date

Signature _____ Delivery Date _____

DESTINATION

Site Name: The Tunica Landfill Phone No.: (601) 363-2282

Site Address: 6035 Bowdre Rd. Robinsonville, MS 38664 Time: _____

Discrepancies: _____

I hereby certify that the above named material has been accepted and to the best of my knowledge, the foregoing is true and accurate.

G. G. Giff
Name (print)

G. G. Giff
Signature

11, 3, 98
Receipt Date

No 001001

White - LANDFILL Yellow - GENERATOR Pink - TRANSPORTER

TOTAL TO DATE: 20.97
361.78



Waste Management, Inc.

377 632

NON-HAZARDOUS WASTE MANIFEST

GENERATOR

Name of Generator: Defense Depot-MemphisWaste Generation Location: SAMEAddress: 2163 Airways Blvd.
Memphis, TN 38114

Address: _____

Phone No. (901) 775-6883

Phone No. () _____

Waste ID Code No. _____

Special Handling Instructions and Additional Information. _____

TUNICA LANDFILL PERMIT NUMBER SW-0720010459

Ticket Number: _____

Customer Number 9

RESPONSIBLE AGENCY: Mississippi Dept. of Environmental Quality (601) 961-5171

Waste Description

Non-TSCA Regulated
Soil

Actual Quantity

19.99

Units

- ☐ Pounds
☒ Tons
☐ Cu. Yd.
☐ Cu. Ft.

Container Type

- ☐ Drum ☒ Truck
☐ Carton ☐ Box
☐ Bag ☐ Other. _____
Volume: _____

With my signature, I certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law or regulation, is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

JACK KELLER
Generator Authorized AgentJACK KELLER
Signature11-23
10-23-98
Shipment Date

TRANSPORTER

Truck No.: Rm-7Transporter Phone No.: (601) 429-2200Transporter Name: Matthews TruckingDriver Name (print): JACKIE YOUNTAddress: 1340 Gwynn RoadVehicle License No./State: A-7881 MSNesbit, MS 38651

Vehicle Certification: _____

With my signature, I certify that the above material was picked up at the Generator site listed above.

With my signature, I certify that the above named material was delivered without incident to the destination listed below.

JACKIE YOUNT 11.3.98
Signature Pickup DateJACKIE YOUNT 11.3.98
Signature Delivery Date

DESTINATION

Site Name: The Tunica LandfillPhone No.: (601) 363-2282Site Address: 6035 Bowdre Rd. Robinsonville, MS 38664

Time: _____

Discrepancies: _____

I hereby certify that the above named material has been accepted and to the best of my knowledge, the foregoing is true and accurate.

040
Name (print)O. Gaff
Signature11.3.98
Receipt Date

001002

White - LANDFILL Yellow - GENERATOR Pink - TRANSPORTER

TOTAL TO DATE: 381.77

WM Waste Management, Inc.

NON-HAZARDOUS WASTE MANIFEST

377 633

GENERATOR

Name of Generator: Defense Depot-Memphis

Waste Generation Location: SAME

Address: 2163 Airways Blvd.
Memphis, TN 38114

Address: _____

Phone No. (901) 775-6883

Phone No.: (_____) _____

Waste ID. Code No.: _____

Special Handling Instructions and Additional Information: _____

THE TUNICA LANDFILL PERMIT NUMBER SW-0720010459

Ticket Number: _____ Customer Number: 9

RESPONSIBLE AGENCY: Mississippi Dept. of Environmental Quality (601) 961-5171

Waste Description

Actual Quantity

Units

Container Type

Non-TSCA Regulated
Soil

15.77

☐ Pounds
☒ Tons
☐ Cu Yd.
☐ Cu Ft.

☐ Drum ☒ Truck
☐ Carton ☐ Box
☐ Bag ☐ Other: _____
Volume: _____

With my signature, I certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law or regulation, is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

JACK Kallal
Generator Authorized Agent

JACK Kallal
Signature

11-03
68-36-77
Shipment Date

TRANSPORTER

Truck No. 22 9108

Transporter Phone No.: (601) 429-2200

Transporter Name: Matthews Trucking

Driver Name (print): HL BAYDREUM

Address: 1340 Gwynn Road

Vehicle License No./State: AG 2307MS

Nesbit, MS 38651

Vehicle Certification: 68 36 77

With my signature, I certify that the above material was picked up at the Generator site listed above.

With my signature, I certify that the above named material was delivered without incident to the destination listed below.

HL Baydrem 11.3.98
Signature Pickup Date

HL Baydrem 11.3.98
Signature Delivery Date

DESTINATION

Site Name: The Tunica Landfill

Phone No.: (601) 363-2282

Site Address: 6035 Bowdre Rd. Robinsonville, MS 38664

Time: _____

Discrepancies: _____

I hereby certify that the above named material has been accepted and to the best of my knowledge, the foregoing is true and accurate.

Name (print) HL Baydrem

Signature HL Baydrem 11.3.98
Receipt Date

№ 001003

White - LANDFILL Yellow - GENERATOR Pink - TRANSPORTER

TOTAL TO DATE: 397.54



Waste Management, Inc.

377 634

NON-HAZARDOUS WASTE MANIFEST

GENERATOR

Name of Generator: Defense Depot-Memphis

Waste Generation Location: SAME

Address: 2163 Airways Blvd.
Memphis, TN 38114

Address: _____

Phone No.: (901) 775-6883

Phone No.: (_____) _____

State ID. Code No. _____

Special Handling Instructions and Additional Information: _____

TUNICA LANDFILL PERMIT NUMBER SW-0720010459

Ticket Number: _____

Customer Number: 9

RESPONSIBLE AGENCY: Mississippi Dept. of Environmental Quality (601) 961-5171

Waste Description

Non-TSCA Regulated
Soil

Actual Quantity

21.71

Units

☐ Pounds
☒ Tons
☐ Cu. Yd.
☐ Cu. Ft.

Container Type

☐ Drum ☒ Truck
☐ Carton ☐ Box
☐ Bag ☐ Other. _____
Volume: _____

In my signature, I certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable law or regulation, is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

TACK Kallal
Generator Authorized Agent

TACK Kallal
Signature

11-03
10, 24, 98
Shipment Date

TRANSPORTER

Check No.: Rmy

Transporter Phone No.: (601) 429-2200

Transporter Name: Matthews Trucking

Driver Name (print): R Young

Address: 1340 Gwynn Road

Vehicle License No./State: A07879MS

Nesbit, MS 38651

Vehicle Certification: MDOT

In my signature, I certify that the above material was picked up at the Generator site listed above.

With my signature, I certify that the above named material was delivered without incident to the destination listed below.

R Young
Signature

11, 3, 98
Pickup Date

Signature _____ Delivery Date _____

DESTINATION

Name: The Tunica Landfill

Phone No.: (601) 363-2282

Address: 6035 Bowdre Rd. Robinsonville, MS 38664

Time: _____

Discrepancies: _____

I hereby certify that the above named material has been accepted and to the best of my knowledge, the foregoing is true and accurate.

Name (print) _____

Signature _____

11, 3, 98
Receipt Date

001004

White - LANDFILL Yellow - GENERATOR Pink - TRANSPORTER

TOTAL TO DATE: 419.25

NON-HAZARDOUS WASTE MANIFEST

GENERATOR

Name of Generator: Defense Depot-Memphis

Waste Generation Location: SAME

Address: 2163 Airways Blvd.
Memphis, TN 38114

Address: _____

Phone No (901) 775-6883

Phone No. () _____

Waste ID Code No. _____

Special Handling Instructions and Additional Information. _____

THE TUNICA LANDFILL PERMIT NUMBER SW-0720010459

Ticket Number: _____

Customer Number: 9

RESPONSIBLE AGENCY: Mississippi Dept. of Environmental Quality (601) 961-5171

Waste Description

Actual Quantity

Units

Container Type

Non-TSCA Regulated
Soil

25.72

- ☐ Pounds
☒ Tons
☐ Cu. Yd.
☐ Cu. Ft.

- ☐ Drum ☒ Truck
☐ Carton ☐ Box
☐ Bag ☐ Other: _____
Volume: _____

With my signature, I certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law or regulation, is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Tack Kalla
Generator Authorized Agent

Tack Kalla
Signature

11-03
10-22-98
Shipment Date

TRANSPORTER

Truck No. RM4

Transporter Phone No.: (601) 429-2200

Transporter Name: Matthews Trucking

Driver Name (print): RAY VANN

Address: 1340 Gwynn Road

Vehicle License No./State: A0789MS

Nesbit, MS 38651

Vehicle Certification: MDOT

With my signature, I certify that the above material was picked up at the Generator site listed above.

With my signature, I certify that the above named material was delivered without incident to the destination listed below.

RY
Signature

11-3-98
Pickup Date

Signature

11-1
Delivery Date

DESTINATION

Site Name: The Tunica Landfill

Phone No.: (601) 363-2282

Site Address: 6035 Bowdre Rd. Robinsonville, MS 38664

Time: _____

Discrepancies: _____

I hereby certify that the above named material has been accepted and to the best of my knowledge, the foregoing is true and accurate.

RY
Name (print)

RY
Signature

11-3-98
Receipt Date

№ 001005

TOTAL TO DATE: 444.97

WM Waste Management, Inc.

377 636

NON-HAZARDOUS WASTE MANIFEST

GENERATOR

Name of Generator: Defense Depot-Memphis
Address: 2163 Airways Blvd.
Memphis, TN 38114
Phone No. (901) 775-6883
Waste ID Code No. _____

Waste Generation Location: SAME
Address: _____
Phone No.: (_____) _____

Special Handling Instructions and Additional Information. _____

TUNICA LANDFILL PERMIT NUMBER SW-0720010459

Ticket Number. _____

Customer Number: 9

RESPONSIBLE AGENCY. Mississippi Dept. of Environmental Quality (601) 961-5171

Waste Description

Non-TSCA Regulated
Soil

Actual Quantity24.44**Units**

- ☐ Pounds
☒ Tons
☐ Cu. Yd.
☐ Cu. Ft.

Container Type

- ☐ Drum ☒ Truck
☐ Carton ☐ Box
☐ Bag ☐ Other: _____
Volume _____

In my signature, I certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable law or regulation, is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

JACK Kallal
Generator Authorized Agent

Signature

Shipment Date

11 0311/13/98

TRANSPORTER

Trk No. 225
Transporter Name: Matthews Trucking
Address: 1340 Gwynn Road
Nesbit, MS 38651

Transporter Phone No.: (601) 429-2200Driver Name (print): HE BERNARDVehicle License No./State: 50230 MSVehicle Certification: 683677

In my signature, I certify that the above material was picked up at the Generator site listed above.

HE BERNARD
Signature

Pickup Date

With my signature, I certify that the above named material was delivered without incident to the destination listed below.

HE BERNARD
Signature

Delivery Date

11/13/98

DESTINATION

Name: The Tunica Landfill
Address: 6035 Bowdre Rd. Robinsonville, MS 38664

Phone No.: (601) 363-2282

Time: _____

Discrepancies: _____
I hereby certify that the above named material has been accepted and to the best of my knowledge, the foregoing is true and accurate.

Name (print) HE BERNARD

Signature

Receipt Date

11/13/98

001006

White - LANDFILL Yellow - GENERATOR Pink - TRANSPORTER

TOTAL TO DATE: 46941

WM Waste Management, Inc.

NON-HAZARDOUS WASTE MANIFEST

377 637

GENERATOR

Name of Generator: Defense Depot-Memphis Waste Generation Location: SAME
Address: 2163 Airways Blvd. Address: _____
Memphis, TN 38114
Phone No. (901) 775-6883 Phone No. (_____) _____
Waste ID. Code No. _____
Special Handling Instructions and Additional Information. _____

THE TUNICA LANDFILL PERMIT NUMBER SW-0720010459

Ticket Number: _____

Customer Number: 9

RESPONSIBLE AGENCY: Mississippi Dept. of Environmental Quality (601) 961-5171

Waste Description	Actual Quantity	Units	Container Type
Non-TSCA Regulated Soil	21.65	☐ Pounds ☒ Tons ☐ Cu. Yd. ☐ Cu. Ft	☐ Drum ☒ Truck ☐ Carton ☐ Box ☐ Bag ☐ Other: _____ Volume: _____

With my signature, I certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law or regulation, is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

JACK Kallal
Generator Authorized Agent

[Signature]
Signature

11/4/98
Shipment Date

TRANSPORTER

Truck No.: 218B22 Transporter Phone No.: (601) 429-2200
Transporter Name: Matthews Trucking Driver Name (print): HL BUNDREUM
Address: 1340 Gwynn Road Vehicle License No./State: A02307 MS
Nesbit, MS 38651 Vehicle Certification: 683677

With my signature, I certify that the above material was picked up at the Generator site listed above.

[Signature] 11/14/98
Signature Pickup Date

With my signature, I certify that the above named material was delivered without incident to the destination listed below.

[Signature] 11/14/98
Signature Delivery Date

DESTINATION

Site Name: The Tunica Landfill Phone No.: (601) 363-2282
Site Address: 6035 Bowdre Rd. Robinsonville, MS 38664 Time: _____

Discrepancies: _____
I hereby certify that the above named material has been accepted and to the best of my knowledge, the foregoing is true and accurate.

[Signature] 11/14/98
Name (print) Signature Receipt Date

NO 001023

White - LANDFILL Yellow - GENERATOR Pink - TRANSPORTER

TOTAL TO DATE: 491.06



Waste Management, Inc.

377 638

NON-HAZARDOUS WASTE MANIFEST

GENERATOR

Name of Generator: Defense Depot-Memphis Waste Generation Location: SAME

Address: 2163 Airways Blvd.
Memphis, TN 38114

Phone No.: (901) 775-6883 Phone No.: ()

State ID Code No.:

Special Handling Instructions and Additional Information

TUNICA LANDFILL PERMIT NUMBER SW-0720010459

Ticket Number:

Customer Number 9

RESPONSIBLE AGENCY: Mississippi Dept. of Environmental Quality (501) 961-5171

Waste Description	Actual Quantity	Units	Container Type
Non-TSCA Regulated Soil	2147	☐ Pounds ☒ Tons ☐ Cu. Yd. ☐ Cu. Ft	☐ Drum ☒ Truck ☐ Carton ☐ Box ☐ Bag ☐ Other: <u></u> Volume: <u></u>

In my signature, I certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable law or regulation, is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

ACIC Kallal
Generator Authorized Agent

ACIC Kallal
Signature

11-4-98
Shipment Date

TRANSPORTER

Truck No.: Rm4

Transporter Name: Matthews Trucking

Address: 1340 Gwynn Road
Nesbit, MS 38651

Transporter Phone No.: (601) 429-2200

Driver Name (print): R Young

Vehicle License No./State: A07879MS

Vehicle Certification: MDOT

In my signature, I certify that the above material was picked up at the Generator site listed above.

With my signature, I certify that the above named material was delivered without incident to the destination listed below.

R Young
Signature

11-4-98
Pickup Date

Signature

Delivery Date

DESTINATION

Name: The Tunica Landfill

Address: 6035 Bowdre Rd. Robinsonville, MS 38664

Phone No.: (601) 363-2282

Time:

Discrepancies:

I hereby certify that the above named material has been accepted and to the best of my knowledge, the foregoing is true and accurate.

Name (print):

Signature

11-4-98
Receipt Date

001022

White - LANDFILL Yellow - GENERATOR Pink - TRANSPORTER

TOTAL TO DATE: 512.53

WM Waste Management, Inc.

NON-HAZARDOUS WASTE MANIFEST

377 639

GENERATOR

Name of Generator: Defense Depot-Memphis

Waste Generation Location: SAME

Address: 2163 Airways Blvd.
Memphis, TN 38114

Address: _____

Phone No.: (901) 775-6883

Phone No.: (_____) _____

Waste ID. Code No. _____

Special Handling Instructions and Additional Information: _____

THE TUNICA LANDFILL PERMIT NUMBER SW-0720010459

Ticket Number: _____ Customer Number: 9

RESPONSIBLE AGENCY: Mississippi Dept of Environmental Quality (601) 961-5171

Waste Description

Actual Quantity

Units

Container Type

Non-TSCA Regulated
Soil

21.15

- ☐ Pounds
☒ Tons
☐ Cu. Yd.
☐ Cu. Ft.

- ☐ Drum ☒ Truck
☐ Carton ☐ Box
☐ Bag ☐ Other. _____
Volume: _____

With my signature, I certify that the above named material does not contain free liquid as defined by 40 CFR Part 260.10 or any applicable state law or regulation, is not a hazardous waste as defined by 40 CFR 261 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

JACK Kallal
Generator Authorized Agent

Jack Kallal
Signature

11, 3, 98
Shipment Date

TRANSPORTER

Truck No.: Rm-7

Transporter Phone No.: (601) 429-2200

Transporter Name: Matthews Trucking

Driver Name (print): JACKIE YOUNT

Address: 1340 Gwynn Road
Nesbit, MS 38651

Vehicle License No./State: A07881 MS

Vehicle Certification: _____

With my signature, I certify that the above material was picked up at the Generator site listed above.

With my signature, I certify that the above named material was delivered without incident to the destination listed below.

Jackie Yount 11, 4, 98
Signature Pickup Date

Jackie Yount 11, 4, 98
Signature Delivery Date

DESTINATION

Site Name: The Tunica Landfill

Phone No.: (601) 363-2282

Site Address: 6035 Bowdre Rd. Robinsonville, MS 38664

Time: _____

Discrepancies: _____

I hereby certify that the above named material has been accepted and to the best of my knowledge, the foregoing is true and accurate.

Name (print)

Signature

11, 4, 98
Receipt Date

Nº 001021

White - LANDFILL Yellow - GENERATOR Pink - TRANSPORTER

TOTAL TO DATE: 533.68

FINAL PAGE

ADMINISTRATIVE RECORD

FINAL PAGE