UNDERGROUND STORAGE TANK
CLOSURE AND SITE INVESTIGATION REPORT
BUILDING 750
NJDEPE UST REGISTRATION NO. 81533-198

October 28, 1993

W.O. No.: 03886-088-001

Prepared For:

UNITED STATES ARMY, FORT MONMOUTH NEW JERSEY
DIRECTORATE OF PUBLIC WORKS
BUILDING 167
FORT MONMOUTH, NJ 07703

Prepared by:

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WESTON
MANAGERS DESIGNERS CONSULTANTS

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EXECUTIVE SUMMARY

On 11 March 1993, one underground storage tank (UST) was closed at U.S. Army Fort Monmouth, Fort Monmouth, New Jersey. The UST, New Jersey Department of Environmental Protection and Energy (NJDEPE) Registration Number 81533-198, was located immediately adjacent to Building 750 in the Main Post area of Fort Monmouth. UST No. 81533-198 was a single wall fiberglass, 1,000-gallon waste oil UST which was installed in 1986. Mr. Douglas Greenfield of the NJDEPE Division of Hazardous Waste Management (NJDEPE-DHWM) was onsite for the duration of the closure activities. The UST closure was performed by All Service Environmental, Inc. and Casie Protank Environmental Services.

Soils surrounding UST No. 81533-198 were screened visually and with air monitoring instruments for evidence of contamination. The UST was inspected following removal for cracks and puncture holes for indications of historical leakage. No cracks or puncture holes were noted and no potentially contaminated soils were identified surrounding the tank.

Following removal of UST No. 81533-198 and associated piping, six (6) post-excavation samples were collected. Three (3) were collected from the sidewalls of the UST excavation and three (3) were collected from the base of the excavation. These samples were analyzed for total petroleum hydrocarbons (TPHC) and priority pollutants plus forty tentatively identified compounds (PP+40). All samples contained either non-detectable concentrations of contaminants or concentrations below proposed NJDEPE subsurface cleanup criteria.

No further action is proposed at this site in reference to UST No. 81533-198 since no soils were identified during closure with concentrations of contaminants exceeding proposed NJDEPE subsurface cleanup criteria.

SECTION 1.0

UNDERGROUND STORAGE TANK DECOMMISSIONING ACTIVITIES

1.1 Overview:

One underground storage tank (UST), New Jersey Department of Environmental Protection and Energy (NJDEPE) Registration No. 81533-198, was closed at Building 750 at U.S. Army Fort Monmouth, New Jersey on 11 March 1993. This Underground Storage Tank Closure and Site Investigation Report was prepared by Roy F. Weston Inc. (WESTON®), to assist the United States Army Directorate of Public Works (DPW) in complying with the NJDEPE Bureau of Underground Storage Tanks (NJDEPE-BUST) regulations. The applicable NJDEPE-BUST regulations at the date of closure were the "Technical Requirements for Site Remediation-Proposed New Rules" (NJAC 7:26E-1 et seq., May 1992). This report presents the results of the DPW's implementation of the UST Decommissioning/Closure Plan submitted to the NJDEPE on 12 July 1991. UST No. 81533-198 was a 1,000-gallon capacity, single wall fiberglass, waste oil UST.

All activities associated with the decommissioning of UST No. 81533-198 complied with all applicable Federal, State and Local laws and ordinances in effect at the date of decommissioning. These laws included but were not limited to: NJAC 7:14B-1 et seq., NJAC 5:23-1 et seq., NJAC 7:26E-1 et seq., and Occupational Safety and Health Administration (OSHA) 1910.146 &1910.120. All permits including but not limited to the NJDEPE-approved Closure/Decommissioning Plan were posted on site for inspection. All Service Environmental Inc. and Casie Protank Environmental Services, the contractors that conducted the decommissioning activities, are registered and certified by the NJDEPE for performing UST closure activities. Closure of UST No. 81533-198 was conducted under approval and onsite oversight of the NJDEPE Division of Hazardous Waste Management (NJDEPE-DHWM). The NJDEPE-DHWM conditional closure approval letter and the UST Site Assessment Summary Form for UST No. 81533-198 have been included in Appendices A and B, respectively.

Section 1 of this UST Closure and Site Investigation Report provides a summary of the UST decommissioning activities. Section 2 of this report describes the site investigation activities. Conclusions and recommendations are presented in the final section of this report, including the results of the soil sampling investigation.

1.2 Site Description

Building 750 is located on Alexander Avenue within the northeastern portion of the Main Post area of U.S. Army Fort Monmouth, New Jersey. A site location map is provided in Figure 1-1. Building 750 is an active military vehicle repair and maintenance facility which was constructed in 1986. No groundwater monitoring wells were installed as part of the closure of this tank and no soils were identified with concentrations of contaminants exceeding proposed NJDEPE subsurface soil cleanup criteria.

Two additional USTs, New Jersey Registration Nos. 81533-191 and 81533-192, (TMS # S-91-2881) are present approximately 100 yards north of UST No. 81533-198. UST No. 81533- 191 is a 15,000-gallon capacity diesel UST and UST No. 81533-192 is a 8,000-gallon gasoline UST. Four monitoring wells have been installed as part of closure of the product distribution system associated with these USTs. The monitoring wells were installed to assess impacts, if any, to groundwater from historical discharges from the product distribution system (Case #92-5-7-1600-23). Closure of UST No. 81533-198 is being conducted separately from the closure of the product distribution system associated with UST Nos. 81533-191 and 81533-192.

1.2.1 Geological/Hydrogeological Setting

The following is a description of the geological/hydrogeological setting of the area surrounding Building 750. Included is a description of the regional geology of the area as well as descriptions of the local geology and hydrogeology of the Main Post area.

Regional Geology

Monmouth County lies within the New Jersey Section of the Atlantic Coastal Plain physiographic province. The Main Post, Charles Wood, and the Evans areas are located in what may be referred to as the Outer Coastal Plain subprovince, or the Outer Lowlands.

In general, New Jersey Coastal Plain formations consist of a seaward-dipping wedge of unconsolidated deposits of clay, silt, sand, and gravel. These formations typically strike northeast-southwest with a dip ranging from 10 to 60 feet per mile and were deposited on Precambrian and lower Paleozoic rocks (Zapecza, 1989). These sediments, predominantly derived from deltaic, shallow marine, and continental shelf environments, date from Cretaceous through the Quaternary Periods. The mineralogy ranges from quartz to glauconite.

The formations record several major transgressive/regressive cycles and contain units which are generally thicker to the southeast and reflect a deeper water environment. Over 20 regional geologic units are present within the sediments of the Coastal Plain. Regressive, upward-coarsening deposits are usually aquifers (e.g., Englishtown and Kirkwood Formations, and the Cohansey Sand) while the transgressive deposits act as confining units (e.g., the Merchantville,

Marshalltown, and Navesink Formations). The individual thicknesses for these units vary greatly (i.e., from several feet to several hundred feet). The Coastal Plain deposits thicken to the southeast from the Fall Line to greater than 6,500 feet in Cape May County (Brown and Zapecza, 1990).

Local Geology

Based on the regional geologic map (Jablonski, 1968), the Cretaceous age Red Bank and Tinton Sands outcrop at the Main Post area. The Red Bank sand conformably overlies the Navesink Formation and dips to the southeast at 35 feet per mile. The upper member (Shrewsbury) of the Red Bank sand is a yellowish-gray to reddish brown clayey, medium-to-coarse-grained sand that contains abundant rock fragments, minor mica and glauconite (Jablonski). The lower member (Sandy Hook) is a dark grey to black, medium-to-fine grained sand with abundant clay, mica, and glauconite.

The Tinton sand conformably overlies the Red Bank Sand and ranges from a clayey medium to very coarse grained feldspathic quartz and glauconite sand to a glauconitic coarse sand. The color varies from dark yellowish orange or light brown to moderate brown and from light olive to grayish olive. Glauconite may constitute 60 to 80 percent of the sand fraction in the upper part of the unit (Minard, 1969). The upper part of the Tinton is often highly oxidized and iron-oxide encrusted (Minard).

Over the last 80 years, the natural topography of Fort Monmouth has been altered by excavation and filling activities by the military. Topographic elevations for the Main Post area range from five feet above mean sea level (MSL) to 31 feet above MSL.

Hydrogeology

The water table aquifer at the Main Post area is identified as part of the "composite confining units", or minor aquifers. The minor aquifers include the Navesink formation, Red Bank Sand, Tinton Sand, Hornerstown Sand, Vincentown Formation, Manasquan Formation, Shark River Formation, Piney Point Formation, and the basal clay of the Kirkwood Formation.

Based on records from wells drilled at the Main Post area, groundwater is typically encountered at depths of two to nine feet below ground surface (BGS). According to Jablonski, wells drilled in the Red Bank and Tinton Sands may produce from 2 to 25 gallons per minute (gpm). Some well owners have reported acidic water that requires treatment to remove iron.

Shallow groundwater is locally influenced within the Main Post area by the following factors:

- tidal-influence (based on proximity to the Atlantic Ocean),
- topography,
- nature of fill material within the Main Post,
- presence of clay and silt lenses in the natural overburden deposits, and
- local groundwater recharge areas (i.e. stream, lakes).

Due to the fluvial nature of the overburden deposits (i.e. sand and clay lenses), shallow groundwater flow direction is best determined on a case-by-case basis. This is consistent with lithologies observed in borings installed within the Main Post area, which primarily consisted of fine-to-medium grained sands, with occasional lenses or laminations of silt and/or clay.

1.3 Health and Safety

Before, during, and after all activities, hazards at the work site which may have posed a threat to the health and safety of all personnel who were involved with, or were affected by, the decommissioning of the UST system were minimized. All areas which posed, or may have been suspected to pose a vapor hazard were monitored by a qualified individual utilizing approved equipment. The individual ascertained if the area was properly vented to render the area safe, as defined by OSHA.

1.4 Removal of Underground Storage Tanks

1.4.1 General Procedures

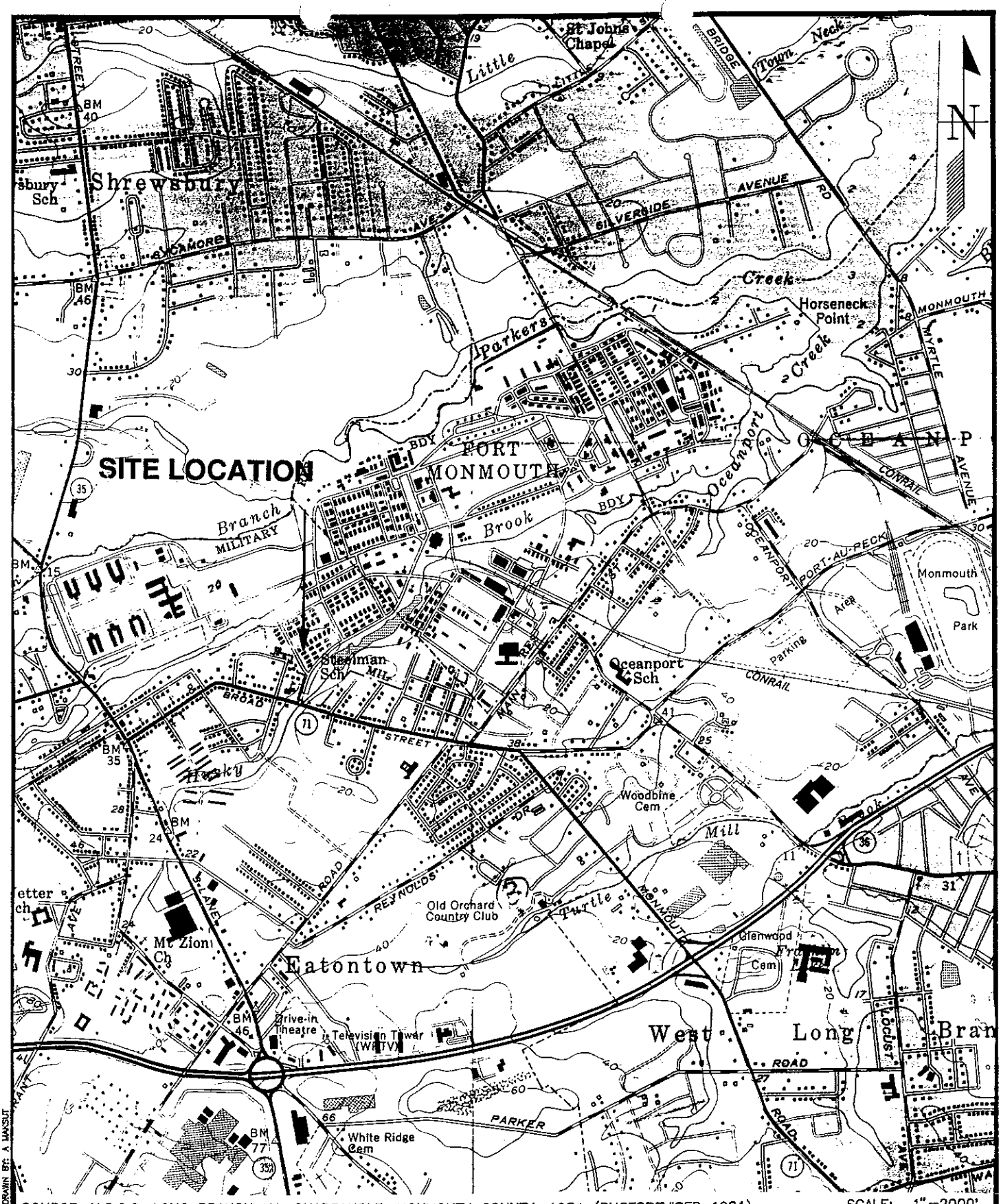
- All underground obstructions (utilities,. etc.) were marked out by the contractor performing the closure prior to excavation activities.

- All activities were carried out with the greatest regard to safety and health and the safeguarding of the environment.

- All excavated soils were screened visually and with a flame ionization detector (FID) for evidence of contamination. No potentially contaminated soils were identified during closure activities.

- Surface materials (i.e, asphalt, concrete, etc..) were excavated and staged separate from all soils and were recycled in accordance with all applicable regulations and laws.

- A Sub-Surface Evaluator from the DPW was present during all closure activities.



SOURCE: U.S.G.S. LONG BRANCH NJ, QUADRANGLE, MONMOUTH COUNTY, 1954 (PHOTOREVISED 1981) SCALE: 1"=2000'

WESTON MANAGERS DESIGNERS/CONSULTANTS

PROJECT NAME: UNDERGROUND STORAGE TANK CLOSURE AND SITE INVESTIGATION REPORT BUILDING 750 – TANK NO. 198 FORT MONMOUTH, NEW JERSEY

CLIENT NAME: U.S. ARMY–DEH FORT MONMOUTH

SITE LOCATION MAP

DATE: 10–22–93

FIGURE #: 1–1

REVISION #: 0000 DATE: 10–19–93 PLOT NAME:
FILE NAME: BLDG-750.DWG DRAWN BY: A MANSUT

1.4.2 Underground Storage Tank Excavation and Cleaning

Soil was excavated to expose the UST and associated piping. The piping was not removed/disturbed until all free product was drained into the UST. The UST was rendered vapor free by purging prior to any cutting or access. After the removal of the associated piping, a manway was made in the UST to allow for proper cleaning. The UST was completely emptied of all product prior to removal from the ground. Approximately 110 gallons of waste oil was removed from UST No. 81533-198. This waste oil was transported and disposed of by L and L Oil Service, Incorporated. A hazardous waste manifest was completed and can be found in Appendix C. All of the openings in the tanks were plugged except for one hole (manway).

After the UST was removed from the excavation, it was staged on polyethylene sheeting and examined for cracks and puncture holes. The presence or absence of cracks and puncture holes was documented by the Sub-Surface Evaluator. No holes were observed upon the inspection of the UST. Soils surrounding the UST were screened visually and with a FID for evidence of contamination. No evidence of contamination was noted.

The UST was cleaned in accordance with all applicable regulations. Following cleaning of the UST, two rinsate samples were collected and analyzed for total petroleum hydrocarbons (TPHC). Rinsate samples were analyzed by the U.S. Army, Fort Monmouth Environmental Laboratory, a NJDEPE certified testing laboratory. The rinsate samples indicated concentrations of 334 milligrams per liter (mg/L) and 107 mg/L. The analytical data package is presented in Appendix D.

1.5 Underground Storage Tank Transportation and Disposal:

The tank was transported to the Monmouth County Reclamation Center located in Tinton Falls, New Jersey for disposal in compliance with all applicable regulations and laws. The tank reclamation certificate for UST No. 81533-198 is presented in Appendix E.

The Subsurface Evaluator labelled each tank prior to transport with the following information:

- site of origin,
- contact person,
- NJDEPE UST Facility ID number,
- name of transporter/contact person, and
- destination site/contact person.

1.6 Management of Excavated Soils:

No potentially contaminated soils were excavated as part of the removal of UST No. 81533-198. All soils were free of evidence of contamination and were backfilled into the excavation following removal of the UST.

SECTION 2.0

SITE INVESTIGATION ACTIVITIES

2.1 Overview:

The Site Investigation was managed and carried out by U.S ARMY DPW personnel. All analyses were performed and reported by 21st Century Environmental and the U.S. Army Fort Monmouth Environmental Laboratory, which are NJDEPE-certified testing laboratories. All sampling was performed under the direct supervision of a NJDEPE Certified Sub-Surface Evaluator according to the methods described in the NJDEPE Field Sampling Procedures Manual (June 1992). Sampling frequency and parameters analyzed complied with the NJDEPE document "Technical Requirements for Site Remediation-Proposed New Rules" (NJAC 7:26E-1 et seq. May 1992) which was the applicable regulation at the date of the closure. All records of the Site Investigation activities are maintained by Fort Monmouth DPW: Environmental Office.

The following Parties participated in Closure and Site Investigation activities.

- Closure Contractor No 1: All Service Environmental, Inc.
  Contact Person: Mark Turoff
  Phone Number: (914) 365-0800
  NJDEPE Company Certification No.: 3100194

- Closure Contractor No. 2: Casie Protank Environmental Services
  Contact Person: Greg Call
  Phone Number: (609) 696-4401
  NJDEPE Company Certification No.: NJD045995693

- Subsurface Evaluator: Charles Appleby
  Employer: U.S. Army, Fort Monmouth
  Phone Number: (908) 532-1475
  NJDEPE Certification No.: 2056

- Analytical Laboratory No. 1: U.S. Army, Fort Monmouth Environmental Laboratory
  Contact Person: Brian McKee
  Phone Number: (908) 532-4359
  NJDEPE Company Certification No.: 13461

- Analytical Laboratory No 2: 21st Century Environmental, Inc.
  Contact Person: Richard W. Lynch
  Phone Number: (609) 467-9521
  NJDEPE Company Certification No.: 08031

- NJDEPE On-site Representative: DOUG GREENFIELD
  DIVISION OF HAZARDOUS WASTE MANAGEMENT
  Phone Number: (609) 584-4200

2.2 Field Screening/Monitoring

All soils that were excavated as part of the removal of the UST were screened using a FID for evidence of contamination. Soils were also visually screened for evidence of contamination (staining, free product, etc..). No evidence of contamination was noted during excavation of soils surrounding UST No. 81533-198.

Soils on the sidewalls and base of the excavation were screened with a FID by an individual under the direct supervision of a NJDEPE Certified Sub-Surface Evaluator. No evidence of contamination was noted within soils on the sidewalls or base of the excavation.

2.3 Soil Sampling

Following removal of UST No. 81533-198, six post-excavation soil samples (samples A-F) were collected in accordance with NJDEPE procedure. These samples were analyzed for TPHC and for priority pollutants plus 40 tentatively identified compounds (PP+40). Four samples (samples A,B,C and D) were collected from the area of UST No. 81533-198, in accordance with the approved closure plan. Samples E and F were collected from the former area of piping associated with UST No. 81533-198 to assess impacts, if any, from historical leakage from the piping if any. A summary of sampling activities including parameters analyzed is provided in Table 2-1. Figure 2-1 depicts the location of the post-excavation samples. The samples were collected along the base and sidewalls of the excavation using decontaminated stainless steel scoops. Following soil sampling activities, samples were chilled and delivered to the U.S. Army Fort Monmouth Environmental Laboratory for TPHC analysis, and to 21st Century Environmental, Inc. located in Bridgeport, New Jersey for PP+40 analysis.

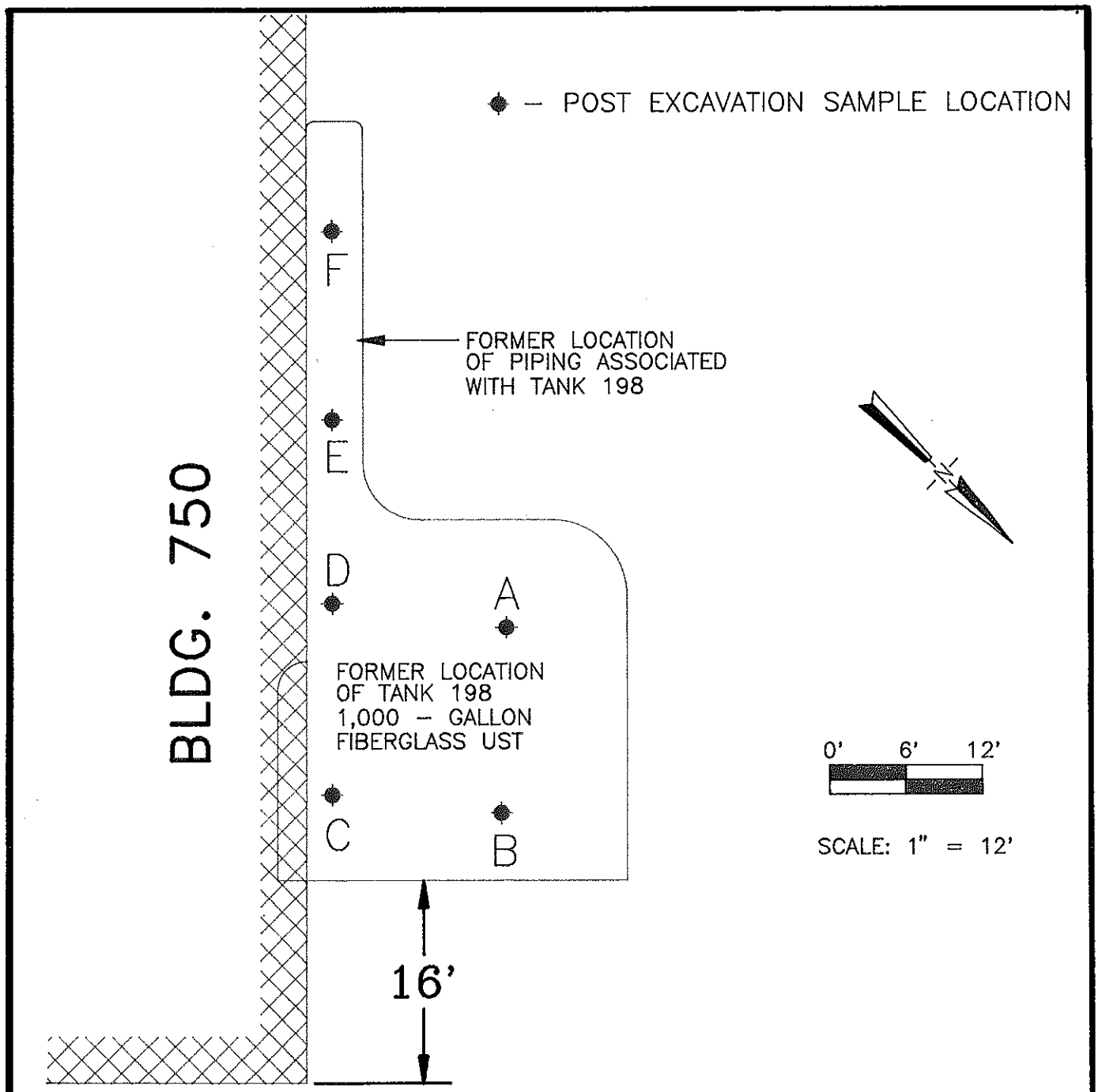
TABLE 2-1

SUMMARY OF POST-EXCAVATION SAMPLING
UST REGISTRATION NO. 81533-198
BUILDING NO. 750
FORT MONMOUTH, NEW JERSEY

Sample I.D	Date Collected	Matrix	Sample Type	Analytical Parameters	Sampling Method
A	3/11/93	Soil	Post-Excavation	TPHC, PP+40	Stainless Steel Scoop
B	3/11/93	Soil	Post-Excavation	TPHC, PP+40	Stainless Steel Scoop
C	3/11/93	Soil	Post-Excavation	TPHC, PP+40	Stainless Steel Scoop
D	3/11/93	Soil	Post-Excavation	TPHC, PP+40	Stainless Steel Scoop
E	3/11/93	Soil	Post-Excavation	TPHC, PP+40	Stainless Steel Scoop
F	3/11/93	Soil	Post-Excavation	TPHC, PP+40	Stainless Steel Scoop

TPHC - Total Petroleum Hydrocarbons.

PP+40 - Priority pollutant plus 40 - The priority pollutant list of 126 compounds and elements developed by EPA pursuant to Section 307(a)(1) of the Clean Water Act and 40 non-targeted organic compounds detected by gas chromatography/mass spectroscopy (GC/MS) analysis.



REVISION #:
FILE NAME: DEH-750.DWG DATE: 10-28-93 DRAWN BY: A. MANSUT

WESTON MANAGERS DESIGNERS/CONSULTANTS

PROJECT NAME:
UNDERGROUND STORAGE TANK CLOSURE
AND SITE INVESTIGATION REPORT
BUILDING 750 – TANK 198
FORT MONMOUTH, NEW JERSEY

CLIENT NAME:
U.S. ARMY–DEH
FORT MONMOUTH

POST–EXCAVATION SAMPLE LOCATIONS

FACILITY REGISTRATION
NO's 0081533–198

DATE: 10–07–93

FIGURE #: 2–1

SECTION 3.0

CONCLUSIONS AND RECOMMENDATIONS

3.1 Soil Sampling Results

To evaluate soil conditions following removal of the UST and associated piping, six post-excavation samples were collected and analyzed for TPHC and PP+40. Analytical results for the post-excavation samples were compared to proposed NJDEPE subsurface cleanup criteria (NJAC 7:26D and revisions dated 8 March 1993). A summary of analytical results and comparison to proposed NJDEPE subsurface cleanup criteria is provided in Table 3-1. A summary of analytical methods and quality assurance information is provided in Table 3-2. The analytical data package summary is provided in Appendix D. The full data package, including associated quality control and chromatograph data is on file at the U.S. Army Fort Monmouth DPW.

TPHC was detected in samples A through F at concentrations ranging from 5.9 milligrams per kilogram (mg/kg) to 27 mg/kg. No subsurface cleanup criterion has been proposed for TPHC by the NJDEPE; however, the proposed NJDEPE subsurface cleanup criterion for total organic compounds is 10,000 mg/kg. All samples contained concentrations of total organic compounds below the NJDEPE criterion of 10,000 mg/kg. Several volatile organic and base neutral compounds were detected in the samples; however at concentration below the proposed NJDEPE subsurface cleanup criteria. Several metals were detected in the post-excavation samples; however, no cleanup criteria has been proposed by NJDEPE for metals in subsurface soils.

3.2 Conclusions and Recommendations:

DPW removed one (1) UST at Building 750 in the Main Post area of U.S. Army Fort Monmouth. Based on visual inspection of the UST and field screening of the soils adjacent to the UST, it was determined that no discharges had historically occurred from the UST. Analytical results of the post-excavation samples confirm that no soils are present with concentrations of contaminants exceeding proposed NJDEPE subsurface cleanup criteria.

No further action is proposed at Building 750 in reference to UST No. 81533-198.

TABLE 3-1

SUMMARY OF ANALYTICAL RESULTS
UST REGISTRATION NO. 81533-198
BUILDING NO. 750
FORT MONMOUTH, NEW JERSEY

SAMPLE ID NO.		A	B	C	D	E	F	PROPOSED NJDEPE SUBSURFACE CLEANUP CRITERIA
LAB ID NO.		1161.1	1161.2	1161.3	1161.4	1161.5	1161.6	
MATRIX		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	
SAMPLE TYPE		PE	PE	PE	PE	PE	PE	
DATE OF COLLECTION		3/11/93	3/11/93	3/11/93	3/11/93	3/11/93	3/11/93	
ANALYTICAL PARAMETER	UNITS							mg/kg
TPHC	mg/kg	23.7	5.9	18.0	13.8	10.2	27.0	NC*
BN+25	mg/kg							
BIS(2-ETHYLHEXYL) PHTHALATE		ND	0.061JB	0.053JB	0.047JB	ND	ND	100
CHRYSENE		0.05J	ND	ND	ND	ND	ND	NC
BENZO(A)PYRENE		0.11J	ND	ND	ND	ND	ND	100
INDENO(1,2,3-cd)PYRENE		0.097J	ND	ND	ND	ND	ND	500
BENZO(g,h,i)PERYLENE		0.12J	ND	ND	ND	ND	ND	500

TABLE 3-1
SUMMARY OF ANALYTICAL RESULTS (CONTINUED)
UST REGISTRATION NO. 81533-198
BUILDING NO. 750
FORT MONMOUTH, NEW JERSEY

SAMPLE ID NO.		A	B	C	D	E	F	PROPOSED NJDEPE SUBSURFACE CLEANUP CRITERIA
LAB ID NO.		1161.1	1161.2	1161.3	1161.4	1161.5	1161.6	
MATRIX		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	
SAMPLE TYPE		PE	PE	PE	PE	PE	PE	
DATE OF COLLECTION		3/11/93	3/11/93	3/11/93	3/11/93	3/11/93	3/11/93	
ANALYTICAL PARAMETER	UNITS							mg/kg
VO+15	mg/kg							
ACETONE		0.012	0.014	0.012	0.014	0.010J	0.0072J	50
METHYLENE CHLORIDE		0.0062	0.0052J	0.0047J	0.0039J	0.006	0.0068J	10
TOLUENE		0.0038J	0.0028J	0.0036J	0.0016J	0.004J	ND	500
ETHYLBENZENE		0.012J	ND	ND	ND	0.0018J	ND	100
M & P XYLENES		0.0056J	0.005J	0.0049J	ND	0.0089J	ND	NC
O-XYLENE		0.0018J	0.0018J	0.0016J	ND	0.0029J	ND	NC
CYANIDE	mg/kg	0.26	0.27	0.17	0.14	0.16	0.20	NC
PHENOLS	mg/kg	ND	ND	ND	ND	ND	ND	NC

TABLE 3-1
SUMMARY OF ANALYTICAL RESULTS (CONTINUED)
UST REGISTRATION NO. 81533-198
BUILDING NO. 750
FORT MONMOUTH, NEW JERSEY

SAMPLE ID NO.		A	B	C	D	E	F	PROPOSED NJDEPE SUBSURFACE CLEANUP CRITERIA
LAB ID NO.		1161.1	1161.2	1161.3	1161.4	1161.5	1161.6	
MATRIX		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	
SAMPLE TYPE		PE	PE	PE	PE	PE	PE	
DATE OF COLLECTION		3/11/93	3/11/93	3/11/93	3/11/93	3/11/93	3/11/93	
ANALYTICAL PARAMETER	UNITS							mg/kg
PRIORITY POLLUTANT METALS	mg/kg							
ANTIMONY		ND	ND	5.64	ND	ND	ND	NC
ARSENIC		1.00	1.86	1.60	1.40	1.41	1.49	NC
CHROMIUM		14.6	24.3	20.0	35.7	20.8	22.5	NC
COPPER		2.02	1.79	6.82	2.16	1.40	4.27	NC
LEAD		10.9	7.13	22.3	18.1	8.27	18.0	NC
NICKEL		ND	ND	ND	ND	3.11	ND	NC
SELENIUM		ND	ND	ND	ND	ND	0.52	NC
ZINC		16.2	16.5	22.9	20.8	18.4	20.2	NC

Notes:

NC": - No cleanup criterion has been proposed for TPHC by NJDEPE; however, the proposed NJDEPE subsurface cleanup criterion for total organic compounds is 10,000 mg/kg.
NC: - No subsurface cleanup criterion has been proposed for this analyte by NJDEPE.
J: - Indicates an estimated value.
ND: - Indicates compound not detected.
TPHC: - Total Petroleum Hydrocarbons.
PE: - Post-Excavation.
B: - Indicates also present in blank.
mg/kg: - Milligrams per Kilogram.

TABLE 3-2

ANALYTICAL METHODS/QUALITY ASSURANCE SUMMARY TABLE
UST REGISTRATION NO. 81533-198
BUILDING NO. 750
FORT MONMOUTH, NEW JERSEY

Analytical Parameter	No. of Samples Collected	Matrix	Date Collected	Date Analysis Completed	Preservation Method	USEPA SW-486 Analytical Method
TPHC	6	S	3/11/93	3/12/93	Cool to 4°C	418.1
VOCs	6	S	3/11/93	3/16/93	Cool to 4°C	8240
BNAs	6	S	3/11/93	3/16/93	Cool to 4°C	8270
PCBs	6	S	3/11/93	3/17/93	Cool to 4°C	8080
PP Metals	6	S	3/11/93	3/16/93	Cool to 4°C	6010, 7060, 7470, 7740, 7841

Notes:
TPHC: - Total Petroleum Hydrocarbons.
VOCs: - Volatile Organic Compounds.
BNA: - Base Neutral Acid Extractable Compounds.
PCBs: - Polychlorinated Biphenyls.
PP Metals: - Priority Pollutant Metals.
S: - Soil.
W: - Water.

APPENDIX A

NJDEPE CONDITIONAL APPROVAL LETTER

750

State of New Jersey
Department of Environmental Protection and Energy
Office of Enforcement Policy
CENTRAL BUREAU OF WATER AND HAZARDOUS WASTE ENFORCEMENT
FIELD OPERATIONS

Scott A. Weiner
Commissioner

Edward M. Neafsey
Director

September 20,1991

James Ott, Deputy Director
Directorate of Engineering and Housing
U.S. Army Commmunications-Electronic Command
Building 167 SELHI-FE
Fort Monmouth, NJ 07003

Dear Mr. Ott

The Department of Environmental Protection & Energy has completed its review of your submitted closure plans for six underground waste oil tanks. It has been determined that the plan is acceptable conditioned on the following revision/modifications:

1.In addition to the total petroleum hydrocarbon (TPHC) analysis for each sample taken, the total priority pollutant analysis (PP+40 or TCL) should be utilized for an initial screening. These analyses would be helpful for the remediation of tank number 68 which is known to contain 1000 ppm of hydrogenated chlorides.

2.A detailed description of the steps needed to decontaminate the tanks should be included.

3.An indication of whether the tanks will be disposed off-site as hazardous waste. If not the tanks must be decontaminated and a final rinse water sample and a washwater blank sample must be analyzed for total petroleum hydrocarbons (TPHC) concentration to determine the adequacy of decontamination. The decontamination procedure may have to be repeated to achieve a concentration acceptable to the Department or until the TPHC results of two consecutive samples do not show an appreciable change.

Please Respond To:
CN 407
TRENTON, NJ 08625

Tel. # (609) 584-4200

Please submit these changes in an addendum to your submitted closure plans prior to beginning any closure activities. This writer should be notified 2 weeks in advance of initiation of closure activities.

If you have any questions regarding these requirements, please contact me at (609) 584-4200.

Yours truly,

Douglas Greenfield
Sr. Environmental Engineer
Hazardous Waste Enforcement
CBW&HWEFO

APPENDIX B

NJDEPE UST ASSESSMENT SUMMARY FORM

UST-014
2/91

UST #
Date Rec'd
TMS #
Staff

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF WATER RESOURCES
BUREAU OF UNDERGROUND STORAGE TANKS
TANK MANAGEMENT SECTION

CN 029, 401 EAST STATE STREET
TRENTON, N.J. 08625-0029

UNDERGROUND STORAGE TANK SITE ASSESSMENT SUMMARY

Under the provisions of the Underground Storage of Hazardous Substances Act in accordance with N.J.A.C. 7:14B

This Summary form shall be used by all owners and operators of Underground Storage Tank Systems (USTS) who have either reported a release and are subject to the site assessment requirements of N.J.A.C. 7:14B-8.2 or who have closed USTS pursuant to N.J.A.C. 7:14B-9.1 et seq. and are subject to the site assessment requirements of N.J.A.C. 7:14B-9.2 and 9.3.

INSTRUCTIONS:

- *Please print legibly or type.*
- *Fill in all applicable blanks. This form will require various attachments in order to complete the Summary. The technical guidance document, Interim Closure Requirements for UST's, explains the regulatory (and technical) requirements for closure and the Scope of Work, Investigation and Corrective Action Requirements for Discharges from Underground Storage Tanks and Piping Systems explains the regulatory (and technical) requirements for corrective action.*
- *Return one original of the form and all required attachments to the above address.*
- *Attach a scaled site diagram of the subject facility which shows the information specified in Item IV B of this form.*
- *Explain any "No" or "N/A" response on a separate sheet.*

Date of Submission_____

0081533-198
FACILITY REGISTRATION #

I. FACILITY NAME AND ADDRESS

U.S. Army Fort Monmouth
D.E.H. Building 167 Attn: Charles Appleby
Fort Monmouth New Jersey County Monmouth
Telephone No. 908-532-6224

OWNER'S NAME AND ADDRESS, if different from above

Telephone No. _____

II. DISCHARGE REPORTING REQUIREMENTS

A. Was contamination found? ___ Yes _X_ No If Yes, Case No._____
(Note: All discharges must be reported to the Environmental Action Hotline (609) 292-7172)

B. The substance(s) discharged was(were) N/A

C. Have any vapor hazards been mitigated? ___ Yes ___ No _X_ N/A

III. DECOMMISSIONING OF TANK SYSTEMS Closure Approval No. N/A

The site assessment requirements associated with tank decommissioning are explained in the Technical Guidance Document, **Interim Closure Requirements for UST's,** Section V. A-D. Attach complete documentation of the methods used and the results obtained for each of the steps of tank decommissioning used. Please include a site map which shows the locations of all samples and borings, the location of all tanks and piping runs at the facility at the beginning of the tank closure operation and annotated to differentiate the status of all tanks and piping (e.g., removed, abandoned, temporarily closed, etc.). The same site map can be used to document other parts of the site assessment requirements, if it is properly and legibly annotated.

IV. SITE ASSESSMENT REQUIREMENTS

A. Excavated Soil

Any evidence of contamination in excavated soil will require that the soil be classified as either Hazardous Waste or Non-Hazardous Waste. Please include all required **documentation** of compliance with the requirements for handling contaminated **excavated** soil (if any was present) as explained in the technical guidance documents for closure and corrective action. Describe amount of soil removed, its classification, and disposal location.

B. Scaled Site Diagrams

1. Scaled site diagrams must be attached which include the following information:

   a. North arrow and scale
   b. The locations of the ground water monitoring wells
   c. Location and depth of each soil sample and boring
   d. All major surface and sub-surface structures and utilities
   e. Approximate property boundaries
   f. All existing or closed underground storage tank systems, including appurtenant piping
   g. A cross-sectional view indicating depth of tank, stratigraphy and location of water table
   h. Locations of surface water bodies

C. Soil samples and borings (check appropriate answer)

1. Were soil samples taken from the excavation as prescribed? _X_ Yes ___ No ___ N/A

2. Were soil borings taken at the tank system closure site as prescribed? ___ Yes ___ No _X_ N/A

3. Attach the analytical results in tabular form and include the following information about each sample:
   a. Customer sample number (keyed to the site map)
   b. The depth of the soil sample
   c. Soil boring logs
   d. Method detection limit of the method used
   e. QA/QC Information as required

D. Ground Water Monitoring

1. Number of ground water monitoring wells installed 0

2. Attach the analytical results of the ground water samples in tabular form. Include the following information for each sample from each well:

   a. Site diagram number for each well installed
   b. Depth of ground water surface
   c. Depth of screened interval
   d. Method detection limit of the method used
   e. Well logs
   f. Well permit numbers
   g. QA/QC information as required

V. SOIL CONTAMINATION

A. Was soil contamination found? ___ Yes X No
If "Yes", please answer Question B-E
If "No", please answer Question B

B. The highest soil contamination still remaining in the ground has been determined to be:
1. 23.6 ppb total BTEX, N/A ppb total non-targeted VOC
2. 674.0 ppb total B/N, N/A ppb total non-targeted B/N
3. 27.0 ppm TPHC
4. N/A ppb N/A (for non-petroleum substance)

C. Remediation of free product contaminated soils

1. All free product contaminated soil on the property boundaries and above the water table are believed to have been removed from the subsurface X Yes ___ No
2. Free product contaminated soils are suspected to exist below the water table ___ Yes X No
3. Free product contaminated soils are suspected to exist off the property boundaries. ___ Yes X No

D. Was the vertical and horizontal extent of contamination determined? ___ Yes ___ No X N/A

E. Does soil contamination intersect ground water? ___ Yes ___ No X N/A

VI. GROUND WATER CONTAMINATION

A. Was ground water contamination found? ___ Yes X No
If "Yes", please answer Questions B-G.
If "No", please answer only Question B.

B. The highest ground water contamination at any 1 sampling location and at any 1 sampling event to date has been determined to be:

1. N/A ppb total BTEX, N/A ppb total non-targeted VOC
2. N/A ppb total B/N, N/A ppb total non-targeted B/N
3. N/A ppb total MTBE, N/A ppb total TBA
4. N/A ppb N/A (for non-petroleum substance)
5. greatest thickness of separate phase product found N/A
6. separate phase product has been delineated ___ Yes ___ No X N/A

C. Result(s) of well search

1. A well search (including a review of manual well records) indicates that private, municipal or commercial wells do exist within the distances specified in the Scope of Work. ___ Yes ___ No X N/A

2. The number of these wells identified is N/A.

D. Proximity of wells and contaminant plume.

1. The shallowest depth of any well noted in the well search which may be in the horizontal or vertical potential path(s) of the contaminant plume(s) is N/A feet below grade (consideration has been given for the effects of pumping, subsurface structures, etc. on the direction(s) of contaminant migration). This well is N/A feet from the source and its screening begins at a depth of N/A feet.

2. The shallowest depth to the top of the well screen for any well in the potential path of the plume(s) (as described in D1 above) is N/A feet below grade. This well is located N/A feet from the source.

3. The closest horizontal distance of a private, commercial or municipal well in the potential path of the plume (as determined in D1) is N/A feet from the source. This well is N/A feet deep and screening begins at a depth of N/A feet.

E. A plan for separate phase product recovery has been included. ___Yes ___No N/AN/A

F. A ground water contour map has been submitted which includes the ground water elevations for each well.
___Yes ___No X N/A

G. Delineation of contamination

1. The ground water contaminants have been delineated to MCLs or lower values at the property boundaries. ___Yes ___No
N/A

2. The plume is suspected to continue off the property at concentrations greater than MCLs.
___Yes ___No
N/A

3. Off property access (circle one): is being sought has been approved has been denied
N/A

VII. SITE ASSESSMENT CERTIFICATION [preparer of site assessment plan - N.J.A.C. 7:14B-8.3(b) &9.5(a)3]

The person signing this certification as the "Qualified Ground Water Consultant" (as defined in N.J.A.C.7:14B-1.6) responsible for the design and implementation of the site assessment plan as specified in N.J.A.C. 7:14B-8.3(a) & 9.2(b)2, must supply the name of the certifying organization and certification number.

"I certify under penalty of law that the information provided in this document is true, accurate, and complete and was obtained by procedures in compliance with N.J.A.C. 7:14B-8 and 9. I am aware that there are significant penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment."

NAME (Print or Type) Charles Appleby SIGNATURE _____

COMPANY NAME U.S. Army Fort Monmouth DATE 10/29/93
(Preparer of Site Assessment Plan)

CERTIFYING ORGANIZATION NJDEPE CERTIFICATION NUMBER 2056

UST-014
2/91

VIII. TANK DECOMMISSIONING CERTIFICATION [person performing tank decommissioning portion of closure plan - N.J.A.C. 7:14B-9.5(a)4]

"I certify under penalty of law that tank decommissioning activities were performed in compliance with N.J.A.C. 7:14B-9.2(b)3. I am aware that there are significant penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment."

NAME (Print or Type) ALL SERVICE ENVIRONMENTAL, INC. SIGNATURE _____

COMPANY NAME 523 Route 303 Pomona, NY 10962 DATE 9-30-93
(Performer of Tank Decommissioning)

IX. CERTIFICATIONS BY THE RESPONSIBLE PARTY(IES) OF THE FACILITY

A. The following certification shall be signed by the highest ranking individual with overall responsibility for that facility [N.J.A.C. 7:14B-2.3(c)1i].

"I certify under penalty of law that the information provided in this document is true, accurate, and complete . I am aware that there are significant penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment."

NAME (Print or Type) James Ott, P.E. SIGNATURE _____

COMPANY NAME U.S. Army Fort Monmouth DATE 10/29/93

B. The following certification shall be signed as follows [according to the requirements of N.J.A.C. 7:14B-2.3(C)2i]:

1. For a corporation, by a principal executive officer of at least the level of vice president.
2. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
3. For a municipality, State, Federal or other public agency by either the principal executive officer or ranking elected official.
4. In cases where the highest ranking corporate partnership, governmental officer or official at the facility as required in A above is the same person as the official required to certify in B, only the certification in A need to be made. In all other cases, the certifications of A and B shall be made.

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false, inaccurate, or incomplete information, including fines and/or imprisonment."

NAME (Print or Type) _____ SIGNATURE _____

COMPANY NAME _____ DATE _____

ATTACHMENT I

NO/NA RESPONSE EXPLANATION

SAS QUESTION #	RESPONSE	EXPLANATION
IIA.	No	No contaminants were identified in soil samples at concentrations exceeding proposed NJDEPE cleanup criteria.
IIB.	N/A	Same as above.
IIC.	N/A	Same as above.
III.	N/A	Closure of Facility Registration No. 0081533-198 was conducted under approval and from onsite supervision the NJDEPE Division of Hazardous Waste Management.
IV.C.2	N/A	No soil borings were proposed in the closure plan.
V.A	No	No contaminants were identified in soil samples at concentrations exceeding proposed NJDEPE cleanup criteria.
V.B.1-4	N/A	Same as above.
V.C.1-3	N/A	Same as above.
V.D	N/A	Same as above.
V.E	N/A	Same as above.
VI.A	No	No groundwater monitoring wells were installed as part of closure of Facility Registration No. 0081533-198; therefore, no groundwater samples were collected.

ATTACHMENT I

NO/NA RESPONSE EXPLANATION

SAS QUESTION #	RESPONSE	EXPLANATION
VI.B.1-6	N/A	Same as above.
VI.C.1-3	N/A	No release to groundwater has occurred from Facility Registration No. 0081533-198; therefore, no well search was performed as part of the site assessment.
VI.E	N/A	Same as above.
VI.F	N/A	Same as above.
VI.G.1-3	N/A	No groundwater contamination resulting from a release from Facility Registration No. 0081533-198 has been identified.

APPENDIX C

HAZARDOUS WASTE MANIFEST

CASIE / PROTANK

April 15, 1993

U.S. Army Communications Electronics Command
c/o James Shirghio, Bldg #2504
Attn: SELFM-DL-EM-MS
Fort Monmouth, N.J. 07703

RE: Manifest #NJA1307870

Gentlemen:

Please be advised that in reference to the above mentioned manifest, we were advised that the words "Waste" and "Petroleum distillates" were to be X'd out of any manifests that the truckers used from their briefcases.

Our state inspector told us that in view of the cost of said manifests the X'ing out of these words was preferable to destroying them.

If you have any further questions please do not hesitate to call me.

Sincerely,

Anne J. Giacomoni

Anne J. Giacomoni
Environmental Co-ordinator

cc: All Service Environmental, Inc.
Attn: Susan O'Brien

Encl.

VRW-001 (REV. 9/86)

State of New Jersey
Department of Environmental Protection
Division of Hazardous Waste Management
Manifest Section
CN 028, Trenton, NJ 08625

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

Form Approved. OMB No. 2050-0039. Expires 9-30-

In case of an emergency or spill immediately call the state the emergency occurred in and the N.J. Dept. of Environmental Protection. (609) 292-5560 (Day) (609) 292-7172 (Night)

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. NJ3211000597 | Manifest Document No. | 2. Page 1 of | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: U.S. ARMY COMMUNICATIONS ELECTRONICS COMMAND, MAIN POST AREA, C/O JAMES SHIRGHIO, BLDG [illegible], ATTN: [illegible] AMSEL-EM-MS, FORT MONMOUTH, NJ 07703

A. State Manifest Document Number [illegible]

B. State Generator's ID [illegible]

4. Generator's Phone (908) 532-9911

5. Transporter 1 Company Name: Casie/Protank | 6. US EPA ID Number: NJD045955663 | C. State Trans. ID [illegible] | D. Transporter's Phone [illegible]

7. Transporter 2 Company Name | 8. US EPA ID Number | E. State Trans. ID | F. Transporter's Phone

9. Designated Facility Name and Site Address: Casie Ecology Oil Salvage, 3209 N. Mill Rd, Vineland, NJ 08360 | 10. US EPA ID Number: NJD045955663 | G. State Facility's ID [illegible] | H. Facility's Phone [illegible]

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Waste Combustible Liquid, N.O.S. (Petroleum) Combustible Liquid, NA1993 (distillates)	X	001	TT	XX5[illegible]	G	X72[illegible]
b. ~~Waste Combustible Liquid, N.O.S. (Petroleum) Combustible Liquid, NA1993 (distillates)~~ JV	X	~~001~~ JV	~~TT~~ JV		~~G~~ JV	~~X72~~
c.						
d.						

J. Additional Descriptions for Materials Listed Above [illegible] | K. Handling Codes for Wastes Listed Above [illegible]

15. Special Handling Instructions and Additional Information

24 hour emergency response phone# 908-532-9911 JAMES SHIRGHIO Bldg 750
CTI# 00921-2 E.R.G. #27 (Combined w/ [illegible] Waste)

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Joseph M. Fallon | Signature: [signature] | Month Day Year: 03 25 9[illegible]

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: [illegible] | Signature: [signature] | Month Day Year: 03 25 9[illegible]

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.

Printed/Typed Name | Signature | Month Day Year

CASIE/PROTANK
ENVIRONMENTAL SERVICES

P.O. Box 92
Franklinville, NJ 08322
696-4401

No 24816

Deliver From US ARMY
Address MAIN POST

Tank Truck 46520
Salesman Time am pm

Approval CFI#

☐ Sale ☒ Disposal ☐ Purchase

OILS LAB	MANIFEST #
CHLORINATED CONTENT_____ PPM BS&W_____ % FLASH_____ °F PHC_____ PPM	NJA1307870 PLANT DATA ☐ TANK_____

Product	Gals.	Price	Amount
X722	850		

Generator Certification

I hereby certify that the above and attached description is complete and accurate to the best of my knowledge and ability to determine, that no deliberate or willful omissions of compositions or properties exists, and that all known or suspected hazards have been disclosed.

Generator's Authorized Signatory:

X Joe Fallon

TITLE Environmental DATE 5-25-93

Submitted By:

APPENDIX D

ANALYTICAL DATA PACKAGE

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEPE Certification # 13461

Client: U.S. Army
DEH, SELFM-EH-EV
Bldg. 167
Ft. Monmouth, NJ 07703

Lab. ID #: 1161.1-.6
Sample Rec'd: 03/11/93
Analysis Start: 03/12/93
Analysis Comp: 03/12/93

Analysis: 418.1 (TPH)
Matrix: Soil
Analyst: S. Hubbard

NJDEPE UST Reg.#: XXXXXXX-XX,XX,XX,XX
Closure Approval #: X-XX-XXXX/XX
NJDEPE Case #: XX-XX-XX-XXXX
Building #: 750

Lab ID.	Description	%Solid	Result (mg/Kg)	MDL
1161.1	S #A	90	23.7	3.3
1161.2	S #B	91	5.9	3.3
1161.3	S #C	89	18.0	3.3
1161.4	S #D	83	13.8	3.3
1161.5	S #E	88	10.2	3.3
1161.6	S #F	88	27.0	3.3
M Bl.	Method Blank	--	ND	3.3

Notes: ND = Not Detected, MDL = Method Detection Limit
% Duplication (Batch) = 99%
% Spike Recovery (Batch) = 64%

Brian K. McKee
Laboratory Director

SERV-AIR, INC.
An E-SYSTEMS Company

CHAIN OF CUSTODY RECORD

CLIENT: U.S. Army
PROJECT ID: B150
ADDRESS:
SAMPLER: Radkovsky
CITY/STATE:
PHONE #:

LAB ID #	SAMPLE ID	SAMPLE DATE	SAMPLE TIME	SAMPLE TYPE GRAB	SOIL	COMP	NO. OF BOTTLES	ANALYSIS REQUESTED	
~~1162~~ 1161 1	SA HNU-N/D	3/11	1350		X		1	16.965 TPHC	15,365
.2	SB HNU/N/D	3/11	1400		X		1	16.980	15.491
.3	SC HNU-N/D		1407		X		1	16.098	14.440
.4	SD HNU N/D		1412		X		1	~~15.045~~ 16.260	13.493
.5	SE HNU N/D		1423		X		1	16.780	
.6	SF HNU N/D		1419		X		1	20.853	14.564 18.531
	~~Field Blank~~								

SAMPLE COLLECTED BY: Radkovsky	DATE	TIME	PRESERVED WITH: NaOH H2SO4 HNO3 NONE OTHER
RELINQUISHED BY: Radkovsky	3/11	1441	RECEIVED BY: S. Hubbard

9 %
91%
89%
83%
88%
88%

Report of Analysis
U.S. Army, Fort Monmouth Environmental Laboratory
NJDEPE Certification # 13461

Client: U.S. Army
DEH, SELFM-EH-EV
Bldg. 167
Ft. Monmouth, NJ 07703

Lab. ID #: 1159.1+.2
Sample Rec'd: 03/11/93
Analysis Start: 03/12/93
Analysis Comp: 03/12/93

Analysis: 418.1 (TPH)
Matrix: Aqueous
Analyst: S. Hubbard

NJDEPE UST Reg.#: XXXXXXX-XX,XX,XX,XX
Closure Approval #: X-XX-XXXX/XX
NJDEPE Case #: XX-XX-XX-XXXX
Building #: 750

Lab ID.	Description		Result (mg/L)	MDL
1159.1	Rinse #1		334.	1.0
1159.2	Rinse #2		107.	1.0
M Bl.	Method Blank		ND	1.0

Notes: ND = Not Detected, MDL = Method Detection Limit

Brian K. McKee
Laboratory Director

SERV-AIR, INC.
An E-SYSTEMS Company

CHAIN OF CUSTODY RECORD

CLIENT: U.S. Army DEH

ADDRESS:

CITY/STATE:

PROJECT ID: Bldg 750 Waste oil UST Rinse Water

SAMPLER: Charles Appleby

PHONE #: 205 532-6224

LAB ID #	SAMPLE ID	SAMPLE DATE	SAMPLE TIME	SAMPLE TYPE GRAB	SOIL	COMP	NO. OF BOTTLES	ANALYSIS REQUESTED
1159.1	Rinse #1	3/11/93	1335	X			1-G	TPHC
1159.2	Rinse #2	3/11/93	1345	X			1 G	TPHC

SAMPLE COLLECTED BY: C. Appleby — DATE — TIME — PRESERVED WITH: NaOH H2SO4 HNO3 (NONE) OTHER

RELINQUISHED BY: C. Appleby DEH — 3/11/93 — 1600

RECEIVED BY: Sarah J. Hubbard

618 HERON DRIVE, P.O. BOX 489 • BRIDGEPORT, NJ 08014-0489 • 609-467-9521

E-SYSTEMS

PROJECT: UST-BLG 750

US ARMY FORT MONMOUTH, NJ

ANALYSIS NO:	CLIENT ID:
A 1254	Site A
A 1255	Site B
A 1256	Site C
A 1257	Site D
A 1258	Site E
A 1259	Site F
A 1260	Trip Blank
A 1265	Field Blank

DATE RECEIVED: MARCH 15, 1993

TWENTY FIRST CENTURY
ENVIRONMENTAL, INC.

Richard W Lynch

RICHARD W. LYNCH
LABORATORY MANAGER

TABLE OF CONTENTS

NARRATIVE

All extractions and analysis were completed within proper hold times for this batch of samples (A1254 to A1260 and A1265). Please note that 1,1,2,2-Tetrachloroethane and 1,1,2-Trichloroethane were found in several semi-volatile searches. We believe this is a breakdown byproduct of methylene chloride caused during sonication.

CHAIN OF CUSTODY

A1254 to A1260

CLIENT: E-Systems

ADDRESS:

CITY:

STATE: ZIP:

ATTN:

PROJECT DESCRIPTION:
UST - Bldg 750

P.O.#

00000 20

ANALYSES REQUESTED

SAMPLE IDENTIFICATION	MATRIX	SAMPLE DATE	SAMPLE TIME	TYPE GR	TYPE C	PRESERV.	# OF CONT.	Purgy & Pollutants (EPA 624)	VOAs (415)	REMARKS
Site A	soil	3/11/93	1350	✓		4°C	5	✓		
Site B	↓	↓	1400	✓		↓	↓	✓		
Site C			1407	✓				✓		
Site D			1412	✓				✓		
Site E			1423	✓				✓		
Site F	↓	↓	1419	✓		↓	↓	✓		
Trip Blank	water	N/A	N/A	✓		↓	2		✓	
(Same TB as Bldg 161)										

	SAMPLED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME	RELINQUISHED BY:	DATE/TIME	RECEIVED BY:
SIG:		3/12/93		3/15/93		3/15/93	
PRINT:	Charles M. Reilly	(Local)	Mark D. Fetterolf	1600	Mark D. Fetterolf	1730	
COMPANY:	U.S. Army	(Navy)	21st Cont Env		21st Cont Env		

	RELINQUISHED BY:	DATE/TIME	RECEIVED FOR LAB:
SIG:		3-15-93	R. Lynch
PRINT:		1730	R. LYNCH
COMPANY:			21st Cont Env

DATA DELIVERABLES

[X] Tier II

[ ] Results only

[ ] Other

TURNAROUND TIME

[X] STANDARD (2-3 wks.)

The following need prior lab authorization:

[ ] 1 wk. [ ] 72 hrs.

[X] 48 hrs. [ ] 24 hrs.

AUTHORIZED BY:

PRELIM RESULTS

DELIVERY METHOD:

[ ] In Person: [ ] UPS: [ ] Fed Ex: [X] Lab Courier

Acid Extractables Base Neutrals	U.S.E.P.S. Method 625 - This method covers the determination of a number of organic compounds that are partitioned in an organic solvent and amenable to gas chromatography. This is a gas chromatography/mass spectrometer (GC/MS) method applicable to the determination of the compounds listed in the U.S.E.P.A. Manual entitled "Test Procedures for the Analysis of Organic Pollutants". A HP5970 was used with a DB-5 FSCC. Method detection limits are as stated. Soil samples were prepared for analysis as prescribed in Method 3550 and analyzed as prescribed in Method 8270 from SW846.
Cyanide	Analysis performed according to U.S.E.P.A. 335.2 (Spectrophotometric with distillation). Sample is reacted with Chloramine-T to produce Cyanogen, Chloride, CNCl. Red color develops when combined with Pyridine/Barbituric Acid Reagent; which is read at 578nm. Soil samples are prepared for analysis as prescribed in Method 9010 from SW846.
Phenols	Analysis performed according to U.S.E.P.A. 420.1 (Spectrophotometric, Manual 4AAP with distillation). Phenolic materials react with four (4) Aminoantipyrine and Potassium Ferricyanide at pH 10. Red color is read at 510 nm. Soil samples are prepared for analysis as prescribed in Method 9067 from SW846.

Metals

Soil samples for metal analysis were run in accordance with the methods prescribed in SW846. This includes a nitric acid digestion followed by either Furnace, Flame Atomic Absorption, or Inductively Coupled Plasma analysis.

Aqueous samples for metals analysis were run in accordance with the methods prescribed in Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020 March 1983.

Pesticides/PCB's

U.S.E.P.A. Method 608 - This method covers the determination of pesticides and PCB's in samples by extraction/concentration with organic solvents and subsequent qualification/quantification by Gas Chromatography. The gas chromatograph utalized an electron capture detector (ECD) which is applicable for the determination of the compounds listed for the method in the U.S.E.P.A. Manual entitled "Test Procedures for the Analysis of Organic Pollutants".

Soil samples were prepared as prescribed in Method 3550 and analyzed as prescribed in Method 8080 from SW846.

Purgeables

U.S.E.P.A. Method 624 - This is a purge and trap Gas Chromatograph/ Mass Spectrometer (GC/MS) method applicable to the determination of the compounds listed in the U.S.E.P.A. Manual entitled "Test Procedures for the Analysis of Organic Pollutants".

An HP5996 GC/MS was used with a capillary column.

Method detection limits are as stated.

Soil samples are prepared for analysis as prescribed in Method 8240 from SW846.

LABORATORY CHRONICLE

RECEIPT/REFRIGERATION 3/15/93

ORGANICS
EXTRACTION

1. Acids 3/15/93 - 3/19/93
2. Base/Neutrals 3/15/93 - 3/19/93
3. Pesticides/PCB's/Herbicides 3/15/93
4. Petroleum Hydrocarbons/Oil & Grease NA

ANALYSIS

1. Volatiles 3/16/93 - 3/24/93
2. Acids 3/16/93 - 3/25/93
3. Base/Neutrals 3/16/93 - 3/25/93
4. Pesticides/PCB's/Herbicides 3/17/93
5. Petroleum Hydrocarbons/Oil & Grease NA
6. Total Organic Carbon NA

Section Supervisor
Review & Approval Jeffrey L Martin

INORGANICS

1. Metals 3/16/93 - 3/23/93
2. Cyanides 3/17/93
3. Phenols 3/17/93

OTHER ANALYTES

Section Supervisor
Review & Approval Mark Lewis

Quality Control Supervisor
Review & Approval

Laboratory Director
Review & Approval Richard W Lynch

If fractions are re-extracted and re-analyzed because initial endeavors did not meet quality control acceptance criteria, include dates for both.

RESULT SUMMARY

618 HERON DRIVE, P.O. BOX 489 • BRIDGEPORT, NJ 08014-0489 • 609-467-9521

US ARMY FORT MONMOUTH, NJ UST-BLDG 750

CERTIFICATE OF ANALYSIS

ANALYSIS NO: A 1254

CLIENT ID: Site A

PARAMETER	MDL (mg/kg)	RESULT (mg/kg)
CYANIDE	0.10	0.26
PHENOL	0.50	N.D.

00007

US ARMY FORT MONMOUTH, NJ UST-BLDG 750

CERTIFICATE OF ANALYSIS

PRIORITY POLLUTANT LIST

ANALYSIS NO: A 1254

CLIENT ID: Site A

METALS	MDL (mg/Kg)	RESULT (mg/Kg)
ANTIMONY	5.00	N.D.
ARSENIC	0.25	1.00
BERYLLIUM	1.00	N.D.
CADMIUM	1.00	N.D.
CHROMIUM	1.00	14.6
COPPER	1.00	2.02
LEAD	5.00	10.9
MERCURY	0.10	N.D.
NICKEL	5.00	N.D.
SELENIUM	0.25	N.D.
SILVER	1.00	N.D.
THALLIUM	1.00	N.D.
ZINC	1.00	16.2

00008

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER	US ARMY FT. MONMOUTH NJ	MATRIX	Soil
SAMPLE NUMBER	A1254	DILUTION FACTOR	1.00
CLIENT ID	SITE A BLDG 750	QA BATCH	
DATA FILE	>A1061	DATE ANALYZED	03/16/93

COMPOUND	UG/KG	MDL	COMPOUND	UG/KG	MDL
Acrolein	ND	55	Bromodichloromethane	ND	5
Acrylonitrile	ND	55	2-Chloroethylvinylether	ND	11
Chloromethane	ND	11	2-Hexanone	ND	11
Bromomethane	ND	11	trans-1,3-Dichloropropene	ND	5
Vinyl Chloride	ND	11	Toluene	3.8 J	5
Chloroethane	ND	11	cis-1,3-Dichloropropene	ND	5
Acetone	12 B	11	1,1,2,2-Tetrachloroethane	ND	5
1,1-Dichloroethene	ND	5	1,1,2-Trichloroethane	ND	5
Carbon Disulfide	ND	11	4-Methyl-2-pentanone	ND	11
Methylene Chloride	6.2	5	Tetrachloroethene	ND	5
1,2-Dichloroethene(trans)	ND	5	Dibromochloromethane	ND	5
1,1-Dichloroethane	ND	5	Chlorobenzene	ND	5
Vinyl Acetate	ND	5	Ethylbenzene	1.2 J	5
2-Butanone	ND	11	m&p-Xylenes	5.6	5
Chloroform	ND	5	o-Xylene	1.8 J	5
1,1,1-Trichloroethane	ND	5	Styrene	ND	5
Carbon Tetrachloride	ND	5	Bromoform	ND	5
1,2-Dichloroethane	ND	5	m-Dichlorobenzene	ND	5
Benzene	ND	5	p-Dichlorobenzene	ND	5
Trichloroethene	ND	5	o-Dichlorobenzene	ND	5
1,2-Dichloropropane	ND	5			

SURROGATE COMPOUNDS	% RECOVERY	LIMITS	STATUS
1,2-Dichloroethane-d4	109	70 - 121	OK
Toluene-d8	102	81 - 117	OK
Bromofluorobenzene	97.4	74 - 121	OK

Percent Solid of 91.0 is used for all Target compounds.

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

21ST CENTURY Environmental
SEMIVOLATILE ANALYSIS DATA

JOB NUMBER	US ARMY, FT.MONMOUTH,NJ	MATRIX	Soil
SAMPLE NUMBER	A1254	DILUTION FACTOR	1.00
CLIENT ID	BLDG 750, SITE A	QA BATCH	
DATA FILE	>C0822	DATE ANALYZED	03/25/93

COMPOUND	UG/KG		MDL
N-Nitrosodimethylamine	ND		360
Phenol	ND		360
bis(-2-Chloroethyl)Ether	ND		360
2-Cholorophenol	ND		360
1,3-Dichlorobenzene	ND		360
1,4-Dichlorobenzene	ND		360
Benzyl Alcohol	ND		360
1,2-Dichlorobenzene	ND		360
2-Methylphenol	ND		360
bis(2-chloroisopropyl)Ether	ND		360
4-Methylphenol	ND		360
N-Nitroso-Di-n-Propylamine	ND		360
Hexachloroethane	ND		360
Nitrobenzene	ND		360
Isophorone	ND		360
2-Nitrophenol	ND		360
2,4-Dimethylphenol	ND		360
Benzoic Acid	ND		1800
bis(-2-Chloroethoxy)Methane	ND		360
2,4-Dichlorophenol	ND		360
1,2,4-Trichlorobenzene	ND		360
Naphthalene	ND		360
4-Chloroaniline	ND		360
Hexachlorobutadiene	ND		360
4-Chloro-3-Methylphenol	ND		360
2-Methylnaphthalene	ND		360
Hexachlorocyclopentadiene	ND		360
2,4,6-Trichlorophenol	ND		360
2,4.5-Trichlorophenol	ND		1800
2-Chloronaphthalene	ND		360
2-Nitroaniline	ND		1800
Dimethyl Phthalate	ND		360
Acenaphthylene	ND		360
3-Nitroaniline	ND		1800

COMPOUND	UG/KG		MDL
Acenaphthene	ND		360
2,4-Dinitrophenol	ND		1800
4-Nitrophenol	ND		1800
Dibenzofuran	ND		360
2,4-Dinitrotoluene	ND		360
2,6-Dinitrotoluene	ND		360
Diethylphthalate	ND		360
4-Chlorophenyl-phenlyether	ND		360
Fluorene	ND		360
4-Nitroaniline	ND		1800
4,6-Dinitro-2-Methylphenol	ND		1800
N-Nitrosodiphenylamine	ND		360
4-Bromophenyl-phenylether	ND		360
Hexachlorobenzene	ND		360
Pentachlorophenol	ND		1800
Phenanthrene	ND		360
Anthracene	ND		360
Di-n-Butylphthalate	ND		360
Fluoranthene	36	J	360
Pyrene	40	J	360
Butylbenzylphthalate	ND		360
3,3'-Dichlorobenzidine	ND		720
Benzo(a)Anthracene	36	J	360
Bis(2-Ethylhexyl)Phthalate	55	JB	360
Chrysene	67	J	360
Di-n-Octyl Phthalate	ND		360
Benzo(b)Fluoranthene	ND		360
Benzo(k)Fluoranthene	ND		360
Benzo(a)Pyrene	130	J	360
Indeno(1,2,3-cd)Pyrene	160	J	360
Dibenzo(a,h)Anthracene	ND		360
Benzo(g,h,i)Perylene	150	J	360
Benzidine	ND		720

Percent Solid of 91.0 is used for all Target compounds.

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

Lab Name : 21ST CENTURY ENVIRONMENTAL
Client ID: US ARMY FORT MONMOUTH, NJ UST-BLG 750
SITE A

Lab Sample ID:
A1254

PESTICIDE ORGANICS ANALYSIS DATA SHEET

Pesticides/PCBs

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 03/15/93
Date Analyzed: 03/16/93 18:34
Conc/Dil Factor: 10.00g/10ml
Percent Moisture: 9

GPC Cleanup __ Yes __ No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction __ Yes

C.A.S. Number		ug/L or ug/Kg	
319-84-6	Alpha-BHC	5.5	U
319-85-7	Beta-BHC	5.5	U
319-86-8	Delta-BHC	5.5	U
58-89-9	Gamma-BHC (Lindane)	5.5	U
76-44-8	Heptachlor	5.5	U
309-00-2	Aldrin	5.5	U
1024-57-3	Heptachlor Epoxide	5.5	U
959-98-8	Endosulfan I	5.5	U
60-57-1	Dieldrin	5.5	U
72-55-9	4,4'-DDE	5.5	U
72-20-8	Endrin	5.5	U
33213-65-9	Endosulfan II	11	U
72-54-8	4,4'-DDD	11	U
1031-07-8	Endosulfan Sulfate	11	U
50-29-3	4,4'-DDT	11	U
72-43-5	Methoxychlor	270	U
7421-93-4	Endrin Aldehyde	11	U
57-74-9	Chlordane	270	U
8001-35-2	Toxaphene	550	U
12674-11-2	Aroclor-1016	270	U
11104-28-2	Aroclor-1221	270	U
11141-16-5	Aroclor-1232	270	U
53469-21-9	Aroclor-1242	270	U
12672-29-6	Aroclor-1248	270	U
11097-69-1	Aroclor-1254	270	U
11096-82-5	Aroclor-1260	270	U

U Undetected J Estimated value below detection level

1 1E

EPA SAMPLE NO.

SITE A

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name:21st Century Environmental

Client Name: US ARMY FT. MONMOUTH, NJ

Client ID: BLDG 750

Matrix: (soil/water) SOIL

Lab Sample ID: A1254

Sample wt/vol: 5 (g/mL) g

Lab File ID: >A1061

Level: (low/med) LOW

Date Received: 03/15/93

% Moisture: 9

Date Analyzed: 03/16/93

Column: DB-624

Dilution Factor: 1

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
	No Unknowns			

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E1

EPA SAMPLE NUMBER

semi-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SITE A

Matrix: (soil/water) SOIL

Lab Sample ID: A1254

Client Name: US Army, Ft.Monmouth, NJ

Client ID: Bldg 750

Sample wt/vol: 30 (g/mL) GM

Lab File ID: >C0822

Level: LOW

Date Received: NA

% Moisture: 9

Date Analyzed 03/25/93

Extraction: (Sepf/Cont/Sonc) SONC

Date Extracted 03/15/93

GPC (Y or N): N

Column: DB-5

Dilution Factor: 1

Number TICs Found 5

CONCENTRATION UNITS
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST CONC
1		UNKNOWN	4.27	150
2	79345	Ethane, 1,1,2,2-tetrachloro- (8CI9CI)	8.21	440
3		UNKNOWN	30.44	260
4		UNKNOWN	30.79	370
5		UNKNOWN	31.16	180

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US ARMY FORT MONMOUTH, NJ UST-BLDG 750

CERTIFICATE OF ANALYSIS

ANALYSIS NO: A 1255

CLIENT ID: Site B

PARAMETER	MDL (mg/kg)	RESULT (mg/kg)
CYANIDE	0.10	0.27
PHENOL	0.50	N.D.

00014

US ARMY FORT MONMOUTH, NJ UST-BLDG 750

CERTIFICATE OF ANALYSIS

PRIORITY POLLUTANT LIST

ANALYSIS NO: A 1255

CLIENT ID: Site B

METALS	MDL (mg/Kg)	RESULT (mg/Kg)
ANTIMONY	5.00	N.D.
ARSENIC	0.25	3.05
BERYLLIUM	1.00	N.D.
CADMIUM	1.00	N.D.
CHROMIUM	1.00	24.3
COPPER	1.00	1.79
LEAD	5.00	7.13
MERCURY	0.10	N.D.
NICKEL	5.00	N.D.
SELENIUM	0.25	N.D.
SILVER	1.00	N.D.
THALLIUM	1.00	N.D.
ZINC	1.00	16.5

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER	US ARMY FT. MONMOUTH NJ	MATRIX	Soil
SAMPLE NUMBER	A1255	DILUTION FACTOR	1.00
CLIENT ID	SITE B BLDG 750	QA BATCH	
DATA FILE	>A1062	DATE ANALYZED	03/16/93

COMPOUND	UG/KG	MDL	COMPOUND	UG/KG	MDL
Acrolein	ND	55	Bromodichloromethane	ND	5
Acrylonitrile	ND	55	2-Chloroethylvinylether	ND	11
Chloromethane	ND	11	2-Hexanone	ND	11
Bromomethane	ND	11	trans-1,3-Dichloropropene	ND	5
Vinyl Chloride	ND	11	Toluene	2.8 J	5
Chloroethane	ND	11	cis-1,3-Dichloropropene	ND	5
Acetone	14 B	11	1,1,2,2-Tetrachloroethane	ND	5
1,1-Dichloroethene	ND	5	1,1,2-Trichloroethane	ND	5
Carbon Disulfide	ND	11	4-Methyl-2-pentanone	ND	11
Methylene Chloride	5.2 J	5	Tetrachloroethene	ND	5
1,2-Dichloroethene(trans)	ND	5	Dibromochloromethane	ND	5
1,1-Dichloroethane	ND	5	Chlorobenzene	ND	5
Vinyl Acetate	ND	5	Ethylbenzene	ND	5
2-Butanone	ND	11	m&p-Xylenes	5.0 J	5
Chloroform	ND	5	o-Xylene	1.8 J	5
1,1,1-Trichloroethane	ND	5	Styrene	ND	5
Carbon Tetrachloride	ND	5	Bromoform	ND	5
1,2-Dichloroethane	ND	5	m-Dichlorobenzene	ND	5
Benzene	ND	5	p-Dichlorobenzene	ND	5
Trichloroethene	ND	5	o-Dichlorobenzene	ND	5
1,2-Dichloropropane	ND	5			

SURROGATE COMPOUNDS	% RECOVERY	LIMITS	STATUS
1,2-Dichloroethane-d4	110	70 - 121	OK
Toluene-d8	102	81 - 117	OK
Bromofluorobenzene	101	74 - 121	OK

Percent Solid of 91.0 is used for all Target compounds.

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

21ST CENTURY Environmental
SEMIVOLATILE ANALYSIS DATA

JOB NUMBER	US ARMY, FT.MONMOUTH, NJ	MATRIX	Soil
SAMPLE NUMBER	A1255	DILUTION FACTOR	1.00
CLIENT ID	BLDG 750, SITE B	QA BATCH	
DATA FILE	>C0734	DATE ANALYZED	03/16/93

COMPOUND	UG/KG	MDL	COMPOUND	UG/KG	MDL
N-Nitrosodimethylamine	ND	360	Acenaphthene	ND	360
Phenol	ND	360	2,4-Dinitrophenol	ND	1800
bis(-2-Chloroethyl)Ether	ND	360	4-Nitrophenol	ND	1800
2-Cholorophenol	ND	360	Dibenzofuran	ND	360
1,3-Dichlorobenzene	ND	360	2,4-Dinitrotoluene	ND	360
1,4-Dichlorobenzene	ND	360	2,6-Dinitrotoluene	ND	360
Benzyl Alcohol	ND	360	Diethylphthalate	ND	360
1,2-Dichlorobenzene	ND	360	4-Chlorophenyl-phenlyether	ND	360
2-Methylphenol	ND	360	Fluorene	ND	360
bis(2-chloroisopropyl)Ether	ND	360	4-Nitroaniline	ND	1800
4-Methylphenol	ND	360	4,6-Dinitro-2-Methylphenol	ND	1800
N-Nitroso-Di-n-Propylamine	ND	360	N-Nitrosodiphenylamine	ND	360
Hexachloroethane	ND	360	4-Bromophenyl-phenylether	ND	360
Nitrobenzene	ND	360	Hexachlorobenzene	ND	360
Isophorone	ND	360	Pentachlorophenol	ND	1800
2-Nitrophenol	ND	360	Phenanthrene	ND	360
2,4-Dimethylphenol	ND	360	Anthracene	ND	360
Benzoic Acid	ND	1800	Di-n-Butylphthalate	ND	360
bis(-2-Chloroethoxy)Methane	ND	360	Fluoranthene	ND	360
2,4-Dichlorophenol	ND	360	Pyrene	ND	360
1,2,4-Trichlorobenzene	ND	360	Butylbenzylphthalate	ND	360
Naphthalene	ND	360	3,3'-Dichlorobenzidine	ND	720
4-Chloroaniline	ND	360	Benzo(a)Anthracene	ND	360
Hexachlorobutadiene	ND	360	Bis(2-Ethylhexyl)Phthalate	61 JB	360
4-Chloro-3-Methylphenol	ND	360	Chrysene	ND	360
2-Methylnaphthalene	ND	360	Di-n-Octyl Phthalate	ND	360
Hexachlorocyclopentadiene	ND	360	Benzo(b)Fluoranthene	ND	360
2,4,6-Trichlorophenol	ND	360	Benzo(k)Fluoranthene	ND	360
2,4,5-Trichlorophenol	ND	1800	Benzo(a)Pyrene	ND	360
2-Chloronaphthalene	ND	360	Indeno(1,2,3-cd)Pyrene	ND	360
2-Nitroaniline	ND	1800	Dibenzo(a,h)Anthracene	ND	360
Dimethyl Phthalate	ND	360	Benzo(g,h,i)Perylene	ND	360
Acenaphthylene	ND	360	Benzidine	ND	720
3-Nitroaniline	ND	1800			

Percent Solid of 91.0 is used for all Target compounds.

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

Lab Name : 21ST CENTURY ENVIRONMENTAL
Client ID: US ARMY FORT MONMOUTH, NJ UST-BLG 750
SITE B

Lab Sample ID:
A1255

PESTICIDE ORGANICS ANALYSIS DATA SHEET

Pesticides/PCBs

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 03/15/93
Date Analyzed: 03/16/93 19:17
Conc/Dil Factor: 10.02g/10ml
Percent Moisture: 9

GPC Cleanup __ Yes __ No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction __ Yes

C.A.S. Number		ug/L or ug/Kg	
319-84-6	Alpha-BHC.	5.5	U
319-87-7	Beta-BHC	5.5	U
319-86-8	Delta-BHC.	5.5	U
58-89-9	Gamma-BHC (Lindane). . .	5.5	U
76-44-8	Heptachlor	5.5	U
309-00-2	Aldrin	5.5	U
1024-57-7	Heptachlor Epoxide . . .	5.5	U
959-98-8	Endosulfan I	5.5	U
60-57-1	Dieldrin	5.5	U
72-55-9	4,4'-DDE	5.5	U
72-20-8	Endrin	5.5	U
33213-65-9	Endosulfan II.	11	U
72-54-8	4,4'-DDD	11	U
1031-07-8	Endosulfan Sulfate . . .	11	U
50-29-3	4,4'-DDT	11	U
72-43-5	Methoxychlor	270	U
7421-93-4	Endrin Aldehyde.	11	U
57-74-9	Chlordane.	270	U
8001-35-2	Toxaphene.	550	U
12674-11-2	Aroclor-1016.	270	U
11104-28-2	Aroclor-1221.	270	U
11141-16-5	Aroclor-1232.	270	U
53469-21-9	Aroclor-1242.	270	U
12672-29-6	Aroclor-1248.	270	U
11097-69-1	Aroclor-1254.	270	U
11096-82-5	Aroclor-1260.	270	U

U Undetected J Estimated value below detection level

1

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SITE B

Lab Name:21st Century Environmental

Client Name: US ARMY FT. MONMOUTH, NJ

Client ID: BLDG 750

Matrix: (soil/water) SOIL

Lab Sample ID: A1255

Sample wt/vol: 5 (g/mL) g

Lab File ID: >A1062

Level: (low/med) LOW

Date Received: 03/15/93

% Moisture: 9

Date Analyzed: 03/16/93

Column: DB-624

Dilution Factor: 1

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
	No Unknowns			

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E1

EPA SAMPLE NUMBER

semi-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SITE B

Matrix: (soil/water) SOIL

Lab Sample ID: A1255

Client: US Army, Ft.Monmouth,NJ

Client ID: Bldg 750

Sample wt/vol: 30 (g/mL) GM

Lab File ID: >C0734

Level: LOW

Date Received: NA

% Moisture: 9

Date Analyzed 03/16/93

Extraction: (Sepf/Cont/Sonc) SONC

Date Extracted 03/15/93

GPC (Y or N): N

Column: DB-5

Dilution Factor: 1

Number TICs Found 1

CONCENTRATION UNITS
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST CONC
1	79005	Ethane, 1,1,2-trichloro- (8CI9CI)	5.35	180

00020

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US ARMY FORT MONMOUTH, NJ UST-BLDG 750

CERTIFICATE OF ANALYSIS

ANALYSIS NO: A 1256

CLIENT ID: Site C

PARAMETER	MDL (mg/kg)	RESULT (mg/kg)
CYANIDE	0.10	0.17
PHENOL	0.50	N.D.

00021

US ARMY FORT MONMOUTH, NJ UST-BLDG 750

CERTIFICATE OF ANALYSIS

PRIORITY POLLUTANT LIST

ANALYSIS NO: A 1256

CLIENT ID: Site C

METALS	MDL (mg/Kg)	RESULT (mg/Kg)
ANTIMONY	5.00	5.64
ARSENIC	0.25	1.60
BERYLLIUM	1.00	N.D.
CADMIUM	1.00	N.D.
CHROMIUM	1.00	20.0
COPPER	1.00	6.82
LEAD	5.00	22.3
MERCURY	0.10	N.D.
NICKEL	5.00	N.D.
SELENIUM	0.25	0.47
SILVER	1.00	N.D.
THALLIUM	1.00	N.D.
ZINC	1.00	22.9

00032

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER	US ARMY FT. MONMOUTH NJ	MATRIX	Soil
SAMPLE NUMBER	A1256	DILUTION FACTOR	1.00
CLIENT ID	SITE C BLDG 750	QA BATCH	
DATA FILE	>A1063	DATE ANALYZED	03/16/93

COMPOUND	UG/KG	MDL	COMPOUND	UG/KG	MDL
Acrolein	ND	56	Bromodichloromethane	ND	6
Acrylonitrile	ND	56	2-Chloroethylvinylether	ND	11
Chloromethane	ND	11	2-Hexanone	ND	11
Vinyl Chloride	ND	11	Toluene	3.6 J	6
Chloroethane	ND	11	cis-1,3-Dichloropropene	ND	6
Acetone	12 B	11	1,1,2,2-Tetrachloroethane	ND	6
1,1-Dichloroethene	ND	6	1,1,2-Trichloroethane	ND	6
Carbon Disulfide	ND	11	4-Methyl-2-pentanone	ND	11
Methylene Chloride	4.7 J	6	Tetrachloroethene	ND	6
1,2-Dichloroethene(trans)	ND	6	Dibromochloromethane	ND	6
1,1-Dichloroethane	ND	6	Chlorobenzene	ND	6
Vinyl Acetate	ND	6	Ethylbenzene	ND	6
2-Butanone	ND	11	m&p-Xylenes	4.9 J	6
Chloroform	ND	6	o-Xylene	1.6 J	6
1,1,1-Trichloroethane	ND	6	Styrene	ND	6
Carbon Tetrachloride	ND	6	Bromoform	ND	6
1,2-Dichloroethane	ND	6	m-Dichlorobenzene	ND	6
Benzene	ND	6	p-Dichlorobenzene	ND	6
Trichloroethene	ND	6	o-Dichlorobenzene	ND	6
1,2-Dichloropropane	ND	6			

SURROGATE COMPOUNDS	% RECOVERY	LIMITS	STATUS
1,2-Dichloroethane-d4	111	70 - 121	OK
Toluene-d8	102	81 - 117	OK
Bromofluorobenzene	99.9	74 - 121	OK

Percent Solid of 90.0 is used for all Target compounds.

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

21ST CENTURY Environmental
SEMIVOLATILE ANALYSIS DATA

JOB NUMBER	US ARMY, FT.MONMOUTH, NJ	MATRIX	Soil
SAMPLE NUMBER	A1256	DILUTION FACTOR	1.00
CLIENT ID	BLDG 750, SITE C	QA BATCH	
DATA FILE	>C0735	DATE ANALYZED	03/16/93

COMPOUND	UG/KG		MDL	COMPOUND	UG/KG		MDL
N-Nitrosodimethylamine	ND		370	Acenaphthene	ND		370
Phenol	ND		370	2,4-Dinitrophenol	ND		1800
bis(-2-Chloroethyl)Ether	ND		370	4-Nitrophenol	ND		1800
2-Cholorophenol	ND		370	Dibenzofuran	ND		370
1,3-Dichlorobenzene	ND		370	2,4-Dinitrotoluene	ND		370
1,4-Dichlorobenzene	ND		370	2,6-Dinitrotoluene	ND		370
Benzyl Alcohol	ND		370	Diethylphthalate	ND		370
1,2-Dichlorobenzene	ND		370	4-Chlorophenyl-phenlyether	ND		370
2-Methylphenol	ND		370	Fluorene	ND		370
bis(2-chloroisopropyl)Ether	ND		370	4-Nitroaniline	ND		1800
4-Methylphenol	ND		370	4,6-Dinitro-2-Methylphenol	ND		1800
N-Nitroso-Di-n-Propylamine	ND		370	N-Nitrosodiphenylamine	ND		370
Hexachloroethane	ND		370	4-Bromophenyl-phenylether	ND		370
Nitrobenzene	ND		370	Hexachlorobenzene	ND		370
Isophorone	ND		370	Pentachlorophenol	ND		1800
2-Nitrophenol	ND		370	Phenanthrene	ND		370
2,4-Dimethylphenol	ND		370	Anthracene	ND		370
Benzoic Acid	ND		1800	Di-n-Butylphthalate	ND		370
bis(-2-Chloroethoxy)Methane	ND		370	Fluoranthene	ND		370
2,4-Dichlorophenol	ND		370	Pyrene	ND		370
1,2,4-Trichlorobenzene	ND		370	Butylbenzylphthalate	ND		370
Naphthalene	ND		370	3,3'-Dichlorobenzidine	ND		730
4-Chloroaniline	ND		370	Benzo(a)Anthracene	ND		370
Hexachlorobutadiene	ND		370	Bis(2-Ethylhexyl)Phthalate	52	JB	370
4-Chloro-3-Methylphenol	ND		370	Chrysene	ND		370
2-Methylnaphthalene	ND		370	Di-n-Octyl Phthalate	ND		370
Hexachlorocyclopentadiene	ND		370	Benzo(b)Fluoranthene	ND		370
2,4,6-Trichlorophenol	ND		370	Benzo(k)Fluoranthene	ND		370
2,4,5-Trichlorophenol	ND		1800	Benzo(a)Pyrene	ND		370
2-Chloronaphthalene	ND		370	Indeno(1,2,3-cd)Pyrene	ND		370
2-Nitroaniline	ND		1800	Dibenzo(a,h)Anthracene	ND		370
Dimethyl Phthalate	ND		370	Benzo(g,h,i)Perylene	ND		370
Acenaphthylene	ND		370	Benzidine	ND		730
3-Nitroaniline	ND		1800				

Percent Solid of 90.0 is used for all Target compounds.

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

Lab Name : 21ST CENTURY ENVIRONMENTAL
Client ID: US ARMY FORT MONMOUTH, NJ UST-BLG 750
SITE C

Lab Sample ID: A1256

PESTICIDE ORGANICS ANALYSIS DATA SHEET

Pesticides/PCBs

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 03/15/93
Date Analyzed: 03/16/93 19:59
Conc/Dil Factor: 10.06g/10ml
Percent Moisture: 10

GPC Cleanup __ Yes __ No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction __ Yes

C.A.S. Number		ug/L or ug/Kg	
319-84-6	Alpha-BHC	5.6	U
319-87-7	Beta-BHC	5.6	U
319-86-8	Delta-BHC	5.6	U
58-89-9	Gamma-BHC (Lindane)	5.6	U
76-44-8	Heptachlor	5.6	U
309-00-2	Aldrin	5.6	U
1024-57-3	Heptachlor Epoxide	5.6	U
959-98-8	Endosulfan I	5.6	U
60-57-1	Dieldrin	5.6	U
72-55-9	4,4'-DDE	5.6	U
72-20-8	Endrin	5.6	U
33213-65-9	Endosulfan II	11	U
72-54-8	4,4'-DDD	11	U
1031-07-8	Endosulfan Sulfate	11	U
50-29-3	4,4'-DDT	11	U
72-43-5	Methoxychlor	280	U
7421-93-4	Endrin Aldehyde	11	U
57-74-9	Chlordane	280	U
8001-35-2	Toxaphene	560	U
12674-11-2	Aroclor-1016	280	U
11104-28-2	Aroclor-1221	280	U
11141-16-5	Aroclor-1232	280	U
53469-21-9	Aroclor-1242	280	U
12672-29-6	Aroclor-1248	280	U
11097-69-1	Aroclor-1254	280	U
11096-82-5	Aroclor-1260	280	U

U Undetected J Estimated value below detection level

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SITE C

Lab Name:21st Century Environmental

Client Name: US ARMY FT. MONMOUTH, NJ

Client ID: BLDG 750

Matrix: (soil/water) SOIL

Lab Sample ID: A1256

Sample wt/vol: 5 (g/mL) g

Lab File ID: >A1063

Level: (low/med) LOW

Date Received: 03/15/93

% Moisture: 10

Date Analyzed: 03/16/93

Column: DB-624

Dilution Factor: 1

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
	No Unknowns			

FORM I VOA-TIC 1/87 Rev.

E1

EPA SAMPLE NUMBER

semi-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SITE C

Matrix: (soil/water) SOIL

Lab Sample ID: A1256

Client: US Army, Ft.Monmouth, NJ

Client ID: Bldg 750

Sample wt/vol: 30 (g/mL) GM

Lab File ID: >C0735

Level: LOW

Date Received: NA

% Moisture: 10

Date Analyzed 03/16/93

Extraction: (Sepf/Cont/Sonc) SONC

Date Extracted 03/15/93

GPC (Y or N): N

Column: DB-5

Dilution Factor: 1

Number TICs Found 3

CONCENTRATION UNITS
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST CONC
1	79005	Ethane, 1,1,2-trichloro- (8CI9CI)	5.34	410
2	79345	Ethane, 1,1,2,2-tetrachloro- (8CI9CI)	8.81	1100
3		UNKNOWN	27.83	300

21ST CENTURY ENVIRONMENTAL

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US ARMY FORT MONMOUTH, NJ UST-BLDG 750

CERTIFICATE OF ANALYSIS

ANALYSIS NO: A 1257

CLIENT ID: Site D

PARAMETER	MDL (mg/kg)	RESULT (mg/kg)
CYANIDE	0.10	0.14
PHENOL	0.50	N.D.

00038

US ARMY FORT MONMOUTH, NJ UST-BLDG 750

CERTIFICATE OF ANALYSIS

PRIORITY POLLUTANT LIST

ANALYSIS NO: A 1257

CLIENT ID: Site D

METALS	MDL (mg/Kg)	RESULT (mg/Kg)
ANTIMONY	5.00	N.D.
ARSENIC	0.25	1.40
BERYLLIUM	1.00	N.D.
CADMIUM	1.00	N.D.
CHROMIUM	1.00	35.7
COPPER	1.00	2.16
LEAD	5.00	18.1
MERCURY	0.10	N.D.
NICKEL	5.00	N.D.
SELENIUM	0.25	N.D.
SILVER	1.00	N.D.
THALLIUM	1.00	N.D.
ZINC	1.00	20.8

00029

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER	US ARMY FT. MONMOUTH NJ	MATRIX	Soil
SAMPLE NUMBER	A1257	DILUTION FACTOR	1.00
CLIENT ID	SITE D BLDG 750	QA BATCH	
DATA FILE	>A1064	DATE ANALYZED	03/16/93

COMPOUND	UG/KG	MDL	COMPOUND	UG/KG	MDL
Acrolein	ND	56	Bromodichloromethane	ND	6
Acrylonitrile	ND	56	2-Chloroethylvinylether	ND	11
Chloromethane	ND	11	2-Hexanone	ND	11
Bromomethane	ND	11	trans-1,3-Dichloropropene	ND	6
Vinyl Chloride	ND	11	Toluene	1.6 J	6
Chloroethane	ND	11	cis-1,3-Dichloropropene	ND	6
Acetone	14 B	11	1,1,2,2-Tetrachloroethane	ND	6
1,1-Dichloroethene	ND	6	1,1,2-Trichloroethane	ND	6
Carbon Disulfide	ND	11	4-Methyl-2-pentanone	ND	11
Methylene Chloride	3.9 J	6	Tetrachloroethene	ND	6
1,2-Dichloroethene(trans)	ND	6	Dibromochloromethane	ND	6
1,1-Dichloroethane	ND	6	Chlorobenzene	ND	6
Vinyl Acetate	ND	6	Ethylbenzene	ND	6
2-Butanone	ND	11	m&p-Xylenes	ND	6
Chloroform	ND	6	o-Xylene	ND	6
1,1,1-Trichloroethane	ND	6	Styrene	ND	6
Carbon Tetrachloride	ND	6	Bromoform	ND	6
1,2-Dichloroethane	ND	6	m-Dichlorobenzene	ND	6
Benzene	ND	6	p-Dichlorobenzene	ND	6
Trichloroethene	ND	6	o-Dichlorobenzene	ND	6
1,2-Dichloropropane	ND	6			

SURROGATE COMPOUNDS	% RECOVERY	LIMITS	STATUS
1,2-Dichloroethane-d4	109	70 - 121	OK
Toluene-d8	102	81 - 117	OK
Bromofluorobenzene	99.3	74 - 121	OK

Percent Solid of 90.0 is used for all Target compounds.

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

21ST CENTURY Environmental
SEMIVOLATILE ANALYSIS DATA

JOB NUMBER	US ARMY, FT.MONMOUTH,NJ	MATRIX	Soil
SAMPLE NUMBER	A1257	DILUTION FACTOR	1.00
CLIENT ID	BLDG 750, SITE D	QA BATCH	
DATA FILE	>C0736	DATE ANALYZED	03/16/93

COMPOUND	UG/KG		MDL	COMPOUND	UG/KG		MDL
N-Nitrosodimethylamine	ND		370	Acenaphthene	ND		370
Phenol	ND		370	2,4-Dinitrophenol	ND		1800
bis(-2-Chloroethyl)Ether	ND		370	4-Nitrophenol	ND		1800
2-Cholorophenol	ND		370	Dibenzofuran	ND		370
1,3-Dichlorobenzene	ND		370	2,4-Dinitrotoluene	ND		370
1,4-Dichlorobenzene	ND		370	2,6-Dinitrotoluene	ND		370
Benzyl Alcohol	ND		370	Diethylphthalate	ND		370
1,2-Dichlorobenzene	ND		370	4-Chlorophenyl-phenlyether	ND		370
2-Methylphenol	ND		370	Fluorene	ND		370
bis(2-chloroisopropyl)Ether	ND		370	4-Nitroaniline	ND		1800
4-Methylphenol	ND		370	4,6-Dinitro-2-Methylphenol	ND		1800
N-Nitroso-Di-n-Propylamine	ND		370	N-Nitrosodiphenylamine	ND		370
Hexachloroethane	ND		370	4-Bromophenyl-phenylether	ND		370
Nitrobenzene	ND		370	Hexachlorobenzene	ND		370
Isophorone	ND		370	Pentachlorophenol	ND		1800
2-Nitrophenol	ND		370	Phenanthrene	ND		370
2,4-Dimethylphenol	ND		370	Anthracene	ND		370
Benzoic Acid	ND		1800	Di-n-Butylphthalate	ND		370
bis(-2-Chloroethoxy)Methane	ND		370	Fluoranthene	ND		370
2,4-Dichlorophenol	ND		370	Pyrene	ND		370
1,2,4-Trichlorobenzene	ND		370	Butylbenzylphthalate	ND		370
Naphthalene	ND		370	3,3'-Dichlorobenzidine	ND		730
4-Chloroaniline	ND		370	Benzo(a)Anthracene	ND		370
Hexachlorobutadiene	ND		370	Bis(2-Ethylhexyl)Phthalate	49	JB	370
4-Chloro-3-Methylphenol	ND		370	Chrysene	ND		370
2-Methylnaphthalene	ND		370	Di-n-Octyl Phthalate	ND		370
Hexachlorocyclopentadiene	ND		370	Benzo(b)Fluoranthene	ND		370
2,4,6-Trichlorophenol	ND		370	Benzo(k)Fluoranthene	ND		370
2,4,5-Trichlorophenol	ND		1800	Benzo(a)Pyrene	ND		370
2-Chloronaphthalene	ND		370	Indeno(1,2,3-cd)Pyrene	ND		370
2-Nitroaniline	ND		1800	Dibenzo(a,h)Anthracene	ND		370
Dimethyl Phthalate	ND		370	Benzo(g,h,i)Perylene	ND		370
Acenaphthylene	ND		370	Benzidine	ND		730
3-Nitroaniline	ND		1800				

Percent Solid of 90.0 is used for all Target compounds.

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

Lab Name : 21ST CENTURY ENVIRONMENTAL
Client ID: US ARMY FORT MONMOUTH, NJ UST-BLG 750
SITE D

Lab Sample ID:
A1257

PESTICIDE ORGANICS ANALYSIS DATA SHEET

Pesticides/PCBs

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 03/15/93
Date Analyzed: 03/16/93 20:41
Conc/Dil Factor: 10.00g/10ml
Percent Moisture: 10

GPC Cleanup __ Yes __ No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction __ Yes

C.A.S. Number		ug/L or ug/Kg	
319-84-6	Alpha-BHC	5.6	U
319-85-7	Beta-BHC	5.6	U
319-86-8	Delta-BHC	5.6	U
58-89-9	Gamma-BHC (Lindane)	5.6	U
76-44-8	Heptachlor	5.6	U
309-00-2	Aldrin	5.6	U
1024-57-3	Heptachlor Epoxide	5.6	U
959-98-8	Endosulfan I	5.6	U
60-57-1	Dieldrin	5.6	U
72-55-9	4,4'-DDE	5.6	U
72-20-8	Endrin	5.6	U
33213-65-9	Endosulfan II	11	U
72-54-8	4,4'-DDD	11	U
1031-07-8	Endosulfan Sulfate	11	U
50-29-3	4,4'-DDT	11	U
72-43-5	Methoxychlor	280	U
7421-93-4	Endrin Aldehyde	11	U
57-74-9	Chlordane	280	U
8001-35-2	Toxaphene	560	U
12674-11-2	Arochlor-1016	280	U
11104-28-2	Arochlor-1221	280	U
11141-16-5	Arochlor-1232	280	U
53469-21-9	Arochlor-1242	280	U
12672-29-6	Arochlor-1248	280	U
11097-69-1	Arochlor-1254	280	U
11096-82-5	Arochlor-1260	280	U

U Undetected J Estimated value below detection level

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SITE D

Lab Name: 21st Century Environmental

Client Name: US ARMY FT. MONMOUTH, NJ

Client ID: BLDG 750

Matrix: (soil/water) SOIL

Lab Sample ID: A1257

Sample wt/vol: 5 (g/mL) g

Lab File ID: >A1064

Level: (low/med) LOW

Date Received: 03/15/93

% Moisture: 10

Date Analyzed: 03/16/93

Column: DB-624

Dilution Factor: 1

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
	No Unknowns			

FORM I VOA-TIC 1/87 Rev.

E1 EPA SAMPLE NUMBER

semi-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SITE D

Matrix: (soil/water) SOIL

Lab Sample ID: A1257

Client: US Army, Ft.Monmouth, NJ

Client ID: Bldg 750

Sample wt/vol: 30 (g/mL) GM

Lab File ID: >C0736

Level: LOW

Date Received: NA

% Moisture: 10

Date Analyzed 03/16/93

Extraction: (Sepf/Cont/Sonc) SONC

Date Extracted 03/15/93

GPC (Y or N): N

Column: DB-5

Dilution Factor: 1

Number TICs Found 3

CONCENTRATION UNITS
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST CONC
1	79005	Ethane, 1,1,2-trichloro- (8CI9CI)	5.34	300
2	79345	Ethane, 1,1,2,2-tetrachloro- (8CI9CI)	8.81	810
3		UNKNOWN	31.26	330

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US ARMY FORT MONMOUTH, NJ UST-BLDG 750

CERTIFICATE OF ANALYSIS

ANALYSIS NO: A 1258

CLIENT ID: Site E

PARAMETER	MDL (mg/kg)	RESULT (mg/kg)
CYANIDE	0.10	0.16
PHENOL	0.50	N.D.

US ARMY FORT MONMOUTH, NJ UST-BLDG 750

CERTIFICATE OF ANALYSIS

PRIORITY POLLUTANT LIST

ANALYSIS NO: A 1258

CLIENT ID: Site E

METALS	MDL (mg/Kg)	RESULT (mg/Kg)
ANTIMONY	5.00	N.D.
ARSENIC	0.25	1.43
BERYLLIUM	1.00	N.D.
CADMIUM	1.00	N.D.
CHROMIUM	1.00	20.8
COPPER	1.00	1.40
LEAD	5.00	8.27
MERCURY	0.10	N.D.
NICKEL	5.00	3.11
SELENIUM	0.25	N.D.
SILVER	1.00	N.D.
THALLIUM	1.00	N.D.
ZINC	1.00	18.4

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER	US ARMY FT. MONMOUTH NJ	MATRIX	Soil
SAMPLE NUMBER	A1258	DILUTION FACTOR	1.00
CLIENT ID	SITE E BLDG 750	QA BATCH	
DATA FILE	>A1065	DATE ANALYZED	03/16/93

COMPOUND	UG/KG	MDL	COMPOUND	UG/KG	MDL
Acrolein	ND	57	Bromodichloromethane	ND	6
Acrylonitrile	ND	57	2-Chloroethylvinylether	ND	11
Chloromethane	ND	11	2-Hexanone	ND	11
Bromomethane	ND	11	trans-1,3-Dichloropropene	ND	6
Vinyl Chloride	ND	11	Toluene	4.0 J	6
Chloroethane	ND	11	cis-1,3-Dichloropropene	ND	6
Acetone	10 JB	11	1,1,2,2-Tetrachloroethane	ND	6
1,1-Dichloroethene	ND	6	1,1,2-Trichloroethane	ND	6
Carbon Disulfide	ND	11	4-Methyl-2-pentanone	ND	11
Methylene Chloride	6.0	6	Tetrachloroethene	ND	6
1,2-Dichloroethene(trans)	ND	6	Dibromochloromethane	ND	6
1,1-Dichloroethane	ND	6	Chlorobenzene	ND	6
Vinyl Acetate	ND	6	Ethylbenzene	1.8 J	6
2-Butanone	ND	11	m&p-Xylenes	8.9	6
Chloroform	ND	6	o-Xylene	2.9 J	6
1,1,1-Trichloroethane	ND	6	Styrene	ND	6
Carbon Tetrachloride	ND	6	Bromoform	ND	6
1,2-Dichloroethane	ND	6	m-Dichlorobenzene	ND	6
Benzene	ND	6	p-Dichlorobenzene	ND	6
Trichloroethene	ND	6	o-Dichlorobenzene	ND	6
1,2-Dichloropropane	ND	6			

SURROGATE COMPOUNDS	% RECOVERY	LIMITS	STATUS
1,2-Dichloroethane-d4	111	70 - 121	OK
Toluene-d8	101	81 - 117	OK
Bromofluorobenzene	99.7	74 - 121	OK

Percent Solid of 87.0 is used for all Target compounds.

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

21ST CENTURY Environmental
SEMIVOLATILE ANALYSIS DATA

JOB NUMBER	US ARMY, FT.MONMOUTH, NJ	MATRIX	Soil
SAMPLE NUMBER	A1258	DILUTION FACTOR	1.00
CLIENT ID	BLDG 750, SITE E	QA BATCH	
DATA FILE	>C0737	DATE ANALYZED	03/16/93

COMPOUND	UG/KG		MDL	COMPOUND	UG/KG		MDL
N-Nitrosodimethylamine	ND		380	Acenaphthene	ND		380
Phenol	ND		380	2,4-Dinitrophenol	ND		1900
bis(-2-Chloroethyl)Ether	ND		380	4-Nitrophenol	ND		1900
2-Cholorophenol	ND		380	Dibenzofuran	ND		380
1,3-Dichlorobenzene	ND		380	2,4-Dinitrotoluene	ND		380
1,4-Dichlorobenzene	ND		380	2,6-Dinitrotoluene	ND		380
Benzyl Alcohol	ND		380	Diethylphthalate	ND		380
1,2-Dichlorobenzene	ND		380	4-Chlorophenyl-phenlyether	ND		380
2-Methylphenol	ND		380	Fluorene	ND		380
bis(2-chloroisopropyl)Ether	ND		380	4-Nitroaniline	ND		1900
4-Methylphenol	ND		380	4,6-Dinitro-2-Methylphenol	ND		1900
N-Nitroso-Di-n-Propylamine	ND		380	N-Nitrosodiphenylamine	ND		380
Hexachloroethane	ND		380	4-Bromophenyl-phenylether	ND		380
Nitrobenzene	ND		380	Hexachlorobenzene	ND		380
Isophorone	ND		380	Pentachlorophenol	ND		1900
2-Nitrophenol	ND		380	Phenanthrene	ND		380
2,4-Dimethylphenol	ND		380	Anthracene	ND		380
Benzoic Acid	ND		1900	Di-n-Butylphthalate	ND		380
bis(-2-Chloroethoxy)Methane	ND		380	Fluoranthene	ND		380
2,4-Dichlorophenol	ND		380	Pyrene	ND		380
1,2,4-Trichlorobenzene	ND		380	Butylbenzylphthalate	ND		380
Naphthalene	ND		380	3,3'-Dichlorobenzidine	ND		760
4-Chloroaniline	ND		380	Benzo(a)Anthracene	ND		380
Hexachlorobutadiene	ND		380	Bis(2-Ethylhexyl)Phthalate	ND	B	380
4-Chloro-3-Methylphenol	ND		380	Chrysene	ND		380
2-Methylnaphthalene	ND		380	Di-n-Octyl Phthalate	ND		380
Hexachlorocyclopentadiene	ND		380	Benzo(b)Fluoranthene	ND		380
2,4,6-Trichlorophenol	ND		380	Benzo(k)Fluoranthene	ND		380
2,4,5-Trichlorophenol	ND		1900	Benzo(a)Pyrene	ND		380
2-Chloronaphthalene	ND		380	Indeno(1,2,3-cd)Pyrene	ND		380
2-Nitroaniline	ND		1900	Dibenzo(a,h)Anthracene	ND		380
Dimethyl Phthalate	ND		380	Benzo(g,h,i)Perylene	ND		380
Acenaphthylene	ND		380	Benzidine	ND		760
3-Nitroaniline	ND		1900				

Percent Solid of 87.0 is used for all Target compounds.

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

Lab Name : 21ST CENTURY ENVIRONMENTAL
Client ID: US ARMY FORT MONMOUTH, NJ UST-BLG 750 SITE E

Lab Sample ID:
A1258

PESTICIDE ORGANICS ANALYSIS DATA SHEET

Pesticides/PCBs

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 03/15/93
Date Analyzed: 03/16/93 21:23
Conc/Dil Factor: 10.05g/10ml
Percent Moisture: 13

GPC Cleanup __ Yes _ No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction __ Yes

C.A.S. Number		ug/L or ug/Kg	
319-84-6	Alpha-BHC.	5.8	U
319-87-7	Beta-BHC	5.8	U
319-86-8	Delta-BHC.	5.8	U
58-89-9	Gamma-BHC (Lindane). . .	5.8	U
76-44-8	Heptachlor	5.8	U
309-00-2	Aldrin	5.8	U
1024-57-3	Heptachlor Epoxide . . .	5.8	U
959-98-8	Endosulfan I	5.8	U
60-57-1	Dieldrin	5.8	U
72-55-9	4,4'-DDE	5.8	U
72-20-8	Endrin	5.8	U
33213-65-9	Endosulfan II.	12	U
72-54-8	4,4'-DDD	12	U
1031-07-8	Endosulfan Sulfate . . .	12	U
50-29-3	4,4'-DDT	12	U
72-43-5	Methoxychlor	290	U
7421-93-4	Endrin Aldehyde.	12	U
57-74-9	Chlordane.	290	U
8001-35-2	Toxaphene.	570	U
12674-11-2	Arochlor-1016.	290	U
11104-28-2	Arochlor-1221.	290	U
11141-16-5	Arochlor-1232.	290	U
53469-21-9	Arochlor-1242.	290	U
12672-29-6	Arochlor-1248.	290	U
11097-69-1	Arochlor-1254.	290	U
11096-82-5	Arochlor-1260.	290	U

U Undetected J Estimated value below detection level

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SITE E

Lab Name:21st Century Environmental

Client Name: US ARMY FT. MONMOUTH, NJ

Client ID: BLDG 750

Matrix: (soil/water) SOIL

Lab Sample ID: A1258

Sample wt/vol: 5 (g/mL) g

Lab File ID: >A1065

Level: (low/med) LOW

Date Received: 03/15/93

% Moisture: 13

Date Analyzed: 03/16/93

Column: DB-624

Dilution Factor: 1

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
	No Unknowns			

FORM I VOA-TIC 1/87 Rev.

00040

E1 EPA SAMPLE NUMBER

semi-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SITE E

Matrix: (soil/water) SOIL

Lab Sample ID: A1258

Client: US Army, Ft. Monmouth, NJ

Client ID: Bldg 750

Sample wt/vol: 30 (g/mL) GM

Lab File ID: >C0737

Level: LOW

Date Received: NA

% Moisture: 13

Date Analyzed 03/16/93

Extraction: (Sepf/Cont/Sonc) SONC

Date Extracted 03/15/93

GPC (Y or N): N

Column: DB-5

Dilution Factor: 1

Number TICs Found 3

CONCENTRATION UNITS
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST CONC
1	79005	Ethane, 1,1,2-trichloro- (8CI9CI)	5.35	190
2	79345	Ethane, 1,1,2,2-tetrachloro- (8CI9CI)	8.81	540
3		UNKNOWN	31.26	230

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US ARMY FORT MONMOUTH, NJ UST-BLDG 750

CERTIFICATE OF ANALYSIS

ANALYSIS NO: A 1259

CLIENT ID: Site F

PARAMETER	MDL (mg/kg)	RESULT (mg/kg)
CYANIDE	0.10	0.20
PHENOL	0.50	N.D.

00042

US ARMY FORT MONMOUTH, NJ UST-BLDG 750

CERTIFICATE OF ANALYSIS

PRIORITY POLLUTANT LIST

ANALYSIS NO: A 1259

CLIENT ID: Site F

METALS	MDL (mg/Kg)	RESULT (mg/Kg)
ANTIMONY	5.00	N.D.
ARSENIC	0.25	2.00
BERYLLIUM	1.00	N.D.
CADMIUM	1.00	N.D.
CHROMIUM	1.00	22.5
COPPER	1.00	4.27
LEAD	5.00	18.0
MERCURY	0.10	N.D.
NICKEL	5.00	N.D.
SELENIUM	0.25	0.52
SILVER	1.00	N.D.
THALLIUM	1.00	N.D.
ZINC	1.00	20.2

00043

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER	US ARMY FT. MONMOUTH NJ	MATRIX	Soil
SAMPLE NUMBER	A1259	DILUTION FACTOR	1.00
CLIENT ID	SITE F BLDG 750	QA BATCH	
DATA FILE	>A1107	DATE ANALYZED	03/24/93

COMPOUND	UG/KG		MDL	COMPOUND	UG/KG	MDL
Acrolein	ND		56	Bromodichloromethane	ND	6
Acrylonitrile	ND		56	2-Chloroethylvinylether	ND	11
Chloromethane	ND		11	2-Hexanone	ND	11
Bromomethane	ND		11	trans-1,3-Dichloropropene	ND	6
Vinyl Chloride	ND		11	Toluene	ND	6
Chloroethane	ND		11	cis-1,3-Dichloropropene	ND	6
Acetone	9.8	JB	11	1,1,2,2-Tetrachloroethane	ND	6
1,1-Dichloroethene	ND		6	1,1,2-Trichloroethane	ND	6
Carbon Disulfide	ND		11	4-Methyl-2-pentanone	ND	11
Methylene Chloride	ND	B	6	Tetrachloroethene	ND	6
1,2-Dichloroethene(trans)	ND		6	Dibromochloromethane	ND	6
1,1-Dichloroethane	ND		6	Chlorobenzene	ND	6
Vinyl Acetate	ND		6	Ethylbenzene	ND	6
2-Butanone	ND		11	m&p-Xylenes	ND	6
Chloroform	ND		6	o-Xylene	ND	6
1,1,1-Trichloroethane	ND		6	Styrene	ND	6
Carbon Tetrachloride	ND		6	Bromoform	ND	6
1,2-Dichloroethane	ND		6	m-Dichlorobenzene	ND	6
Benzene	ND		6	p-Dichlorobenzene	ND	6
Trichloroethene	ND		6	o-Dichlorobenzene	ND	6
1,2-Dichloropropane	ND		6			

SURROGATE COMPOUNDS	% RECOVERY	LIMITS	STATUS
1,2-Dichloroethane-d4	107	70 - 121	OK
Toluene-d8	98.3	81 - 117	OK
Bromofluorobenzene	97.9	74 - 121	OK

Percent Solid of 89.0 is used for all Target compounds.

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

21ST CENTURY Environmental
SEMIVOLATILE ANALYSIS DATA

JOB NUMBER	US ARMY, FT.MONMOUTH,NJ	MATRIX	Soil
SAMPLE NUMBER	A1259	DILUTION FACTOR	1.00
CLIENT ID	BLDG 750, SITE F	QA BATCH	
DATA FILE	>C0769	DATE ANALYZED	03/22/93

COMPOUND	UG/KG		MDL	COMPOUND	UG/KG		MDL
N-Nitrosodimethylamine	ND		370	Acenaphthene	ND		370
Phenol	ND		370	2,4-Dinitrophenol	ND		1800
bis(-2-Chloroethyl)Ether	ND		370	4-Nitrophenol	ND		1800
2-Cholorophenol	ND		370	Dibenzofuran	ND		370
1,3-Dichlorobenzene	ND		370	2,4-Dinitrotoluene	ND		370
1,4-Dichlorobenzene	ND		370	2,6-Dinitrotoluene	ND		370
Benzyl Alcohol	ND		370	Diethylphthalate	ND		370
1,2-Dichlorobenzene	ND		370	4-Chlorophenyl-phenlyether	ND		370
2-Methylphenol	ND		370	Fluorene	ND		370
bis(2-chloroisopropyl)Ether	ND		370	4-Nitroaniline	ND		1800
4-Methylphenol	ND		370	4,6-Dinitro-2-Methylphenol	ND		1800
N-Nitroso-Di-n-Propylamine	ND		370	N-Nitrosodiphenylamine	ND		370
Hexachloroethane	ND		370	4-Bromophenyl-phenylether	ND		370
Nitrobenzene	ND		370	Hexachlorobenzene	ND		370
Isophorone	ND		370	Pentachlorophenol	ND		1800
2-Nitrophenol	ND		370	Phenanthrene	ND		370
2,4-Dimethylphenol	ND		370	Anthracene	ND		370
Benzoic Acid	ND		1800	Di-n-Butylphthalate	ND		370
bis(-2-Chloroethoxy)Methane	ND		370	Fluoranthene	ND		370
2,4-Dichlorophenol	ND		370	Pyrene	39	J	370
1,2,4-Trichlorobenzene	ND		370	Butylbenzylphthalate	ND		370
Naphthalene	ND		370	3,3'-Dichlorobenzidine	ND		740
4-Chloroaniline	ND		370	Benzo(a)Anthracene	ND		370
Hexachlorobutadiene	ND		370	Bis(2-Ethylhexyl)Phthalate	49	J	370
4-Chloro-3-Methylphenol	ND		370	Chrysene	ND		370
2-Methylnaphthalene	ND		370	Di-n-Octyl Phthalate	ND		370
Hexachlorocyclopentadiene	ND		370	Benzo(b)Fluoranthene	ND		370
2,4,6-Trichlorophenol	ND		370	Benzo(k)Fluoranthene	ND		370
2,4,5-Trichlorophenol	ND		1800	Benzo(a)Pyrene	ND		370
2-Chloronaphthalene	ND		370	Indeno(1,2,3-cd)Pyrene	ND		370
2-Nitroaniline	ND		1800	Dibenzo(a,h)Anthracene	ND		370
Dimethyl Phthalate	ND		370	Benzo(g,h,i)Perylene	ND		370
Acenaphthylene	ND		370	Benzidine	ND		740
3-Nitroaniline	ND		1800				

Percent Solid of 89.0 is used for all Target compounds.

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

Lab Name : 21ST CENTURY ENVIRONMENTAL
Client ID: US ARMY FORT MONMOUTH, NJ UST-BLG 750
SITE F

Lab Sample ID:
A1259

PESTICIDE ORGANICS ANALYSIS DATA SHEET

Pesticides/PCBs

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 03/15/93
Date Analyzed: 03/16/93 22:05
Conc/Dil Factor: 10.01g/10ml
Percent Moisture: 11

GPC Cleanup __ Yes _X_ No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction __ Yes

C.A.S. Number		ug/L or ug/Kg	
319-84-6	Alpha-BHC	5.6	U
319-87-7	Beta-BHC	5.6	U
319-86-8	Delta-BHC	5.6	U
58-89-9	Gamma-BHC (Lindane)	5.6	U
76-44-8	Heptachlor	5.6	U
309-00-2	Aldrin	5.6	U
1024-57-3	Heptachlor Epoxide	5.6	U
959-98-8	Endosulfan I	5.6	U
60-57-1	Dieldrin	5.6	U
72-55-9	4,4'-DDE	5.6	U
72-20-8	Endrin	5.6	U
33213-65-9	Endosulfan II	11	U
72-54-8	4,4'-DDD	11	U
1031-07-8	Endosulfan Sulfate	11	U
50-29-3	4,4'-DDT	11	U
72-43-5	Methoxychlor	280	U
7421-93-4	Endrin Aldehyde	11	U
57-74-9	Chlordane	280	U
8001-35-2	Toxaphene	560	U
12674-11-2	Arochlor-1016	280	U
11104-28-2	Arochlor-1221	280	U
11141-16-5	Arochlor-1232	280	U
53469-21-9	Arochlor-1242	280	U
12672-29-6	Arochlor-1248	280	U
11097-69-1	Arochlor-1254	280	U
11096-82-5	Arochlor-1260	280	U

U Undetected J Estimated value below detection level

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SITE F

Lab Name:21st Century Environmental

Client Name: US ARMY FT. MONMOUTH, NJ

Client ID: BLDG 750

Matrix: (soil/water) Soil

Lab Sample ID: A1259

Sample wt/vol: 5 (g/mL) g

Lab File ID: >A1107

Level: (low/med) LOW

Date Received: 03/15/93

% Moisture: 11

Date Analyzed: 03/24/93

Column: DB-624

Dilution Factor: 1

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
	No Unknowns			

FORM I VOA-TIC 1/87 Rev.

E1 EPA SAMPLE NUMBER

semi-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SITE F

Matrix: (soil/water) SOIL

Lab Sample ID: A1259

Client: US Army, Ft. Monmouth, NJ

Client ID: Bldg 750

Sample wt/vol: 30 (g/mL) GM

Lab File ID: >C0769

Level: LOW

Date Received: NA

% Moisture: 11

Date Analyzed 03/22/93

Extraction: (Sepf/Cont/Sonc) SONC

Date Extracted 03/19/93

GPC (Y or N): N

Column: DB-5

Dilution Factor: 1

Number TICs Found 7

CONCENTRATION UNITS
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST CONC
1	79005	Ethane, 1,1,2-trichloro- (8CI9CI)	4.58	150
2		UNKNOWN	5.17	490
3		UNKNOWN	6.01	490
4	79345	Ethane, 1,1,2,2-tetrachloro- (8CI9CI)	8.13	450
5		UNKNOWN	27.09	220
6		UNKNOWN	29.28	410
7		UNKNOWN	30.60	190

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER	US ARMY FT. MONMOUTH NJ	MATRIX	Water
SAMPLE NUMBER	A1260	DILUTION FACTOR	1.00
CLIENT ID	TRIP BLANK BLDG 750	QA BATCH	
DATA FILE	>A1058	DATE ANALYZED	03/16/93

COMPOUND	UG/L	MDL	COMPOUND	UG/L	MDL
Acrolein	ND	50	Bromodichloromethane	ND	5
Acrylonitrile	ND	50	2-Chloroethylvinylether	ND	10
Chloromethane	ND	10	2-Hexanone	ND	10
Bromomethane	ND	10	trans-1,3-Dichloropropene	ND	5
Vinyl Chloride	ND	10	Toluene	ND	5
Chloroethane	ND	10	cis-1,3-Dichloropropene	ND	5
Acetone	6.3 JB	10	1,1,2,2-Tetrachloroethane	ND	5
1,1-Dichloroethene	ND	5	1,1,2-Trichloroethane	ND	5
Carbon Disulfide	ND	10	4-Methyl-2-pentanone	ND	10
Methylene Chloride	3.4 J	5	Tetrachloroethene	ND	5
1,2-Dichloroethene(trans)	ND	5	Dibromochloromethane	ND	5
1,1-Dichloroethane	ND	5	Chlorobenzene	ND	5
Vinyl Acetate	ND	5	Ethylbenzene	ND	5
2-Butanone	ND	10	m&p-Xylenes	ND	5
Chloroform	ND	5	o-Xylene	ND	5
1,1,1-Trichloroethane	ND	5	Styrene	ND	5
Carbon Tetrachloride	ND	5	Bromoform	ND	5
1,2-Dichloroethane	ND	5	m-Dichlorobenzene	ND	5
Benzene	ND	5	p-Dichlorobenzene	ND	5
Trichloroethene	ND	5	o-Dichlorobenzene	ND	5
1,2-Dichloropropane	ND	5			

SURROGATE COMPOUNDS	% RECOVERY	LIMITS	STATUS
1,2-Dichloroethane-d4	103	76 - 114	OK
Toluene-d8	100	88 - 110	OK
Bromofluorobenzene	99.1	86 - 115	OK

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

1

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TRIP BLANK

Lab Name:21st Century Environmental

Client Name: US ARMY FT. MONMOUTH, NJ

Client ID: BLDG 750

Matrix: (soil/water) Water

Lab Sample ID: A1260

Sample wt/vol: 5 (g/mL) mL

Lab File ID: >A1058

Level: (low/med) LOW

Date Received: 03/15/93

% Moisture: NA

Date Analyzed: 03/16/93

Column: DB-624

Dilution Factor: 1

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
	No Unknowns			

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US ARMY FORT MONMOUTH, NJ UST-BLDG 161

CERTIFICATE OF ANALYSIS

ANALYSIS NO: A 1265

CLIENT ID: Field Blank

PARAMETER	MDL (mg/L)	RESULT (mg/L)
CYANIDE	0.01	N.D.
PHENOL	0.05	N.D.

00051

US ARMY FORT MONMOUTH, NJ UST-BLDG 161

CERTIFICATE OF ANALYSIS

PRIORITY POLLUTANT LIST

ANALYSIS NO: A 1265

CLIENT ID: Field Blank

METALS	MDL (mg/L)	RESULT (mg/L)
ANTIMONY	0.005	N.D.
ARSENIC	0.005	N.D.
BERYLLIUM	0.01	N.D.
CADMIUM	0.01	N.D.
CHROMIUM	0.01	N.D.
COPPER	0.01	N.D.
LEAD	0.05	N.D.
MERCURY	0.0005	N.D.
NICKEL	0.05	N.D.
SELENIUM	0.005	N.D.
SILVER	0.01	N.D.
THALLIUM	0.010	N.D.
ZINC	0.01	N.D.

00052

21st Century Environmental Inc.
VOLATILE ORGANIC ANALYSIS DATA

JOB NUMBER	US ARMY FT. MONMOUTH NJ	MATRIX	Water
SAMPLE NUMBER	A1265	DILUTION FACTOR	1.00
CLIENT ID	FIELD BLANK BLDG 161	QA BATCH	
DATA FILE	>A1059	DATE ANALYZED	03/16/93

COMPOUND	UG/L	MDL	COMPOUND	UG/L	MDL
Acrolein	ND	50	Bromodichloromethane	ND	5
Acrylonitrile	ND	50	2-Chloroethylvinylether	ND	10
Chloromethane	ND	10	2-Hexanone	ND	10
Bromomethane	ND	10	trans-1,3-Dichloropropene	ND	5
Vinyl Chloride	ND	10	Toluene	ND	5
Chloroethane	ND	10	cis-1,3-Dichloropropene	ND	5
Acetone	6.2 JB	10	1,1,2,2-Tetrachloroethane	ND	5
1,1-Dichloroethene	ND	5	1,1,2-Trichloroethane	ND	5
Carbon Disulfide	ND	10	4-Methyl-2-pentanone	ND	10
Methylene Chloride	3.5 J	5	Tetrachloroethene	ND	5
1,2-Dichloroethene(trans)	ND	5	Dibromochloromethane	ND	5
1,1-Dichloroethane	ND	5	Chlorobenzene	ND	5
Vinyl Acetate	ND	5	Ethylbenzene	ND	5
2-Butanone	ND	10	m&p-Xylenes	ND	5
Chloroform	ND	5	o-Xylene	ND	5
1,1,1-Trichloroethane	ND	5	Styrene	ND	5
Carbon Tetrachloride	ND	5	Bromoform	ND	5
1,2-Dichloroethane	ND	5	m-Dichlorobenzene	ND	5
Benzene	ND	5	p-Dichlorobenzene	ND	5
Trichloroethene	ND	5	o-Dichlorobenzene	ND	5
1,2-Dichloropropane	ND	5			

SURROGATE COMPOUNDS	% RECOVERY	LIMITS	STATUS
1,2-Dichloroethane-d4	110	76 - 114	OK
Toluene-d8	101	88 - 110	OK
Bromofluorobenzene	100	86 - 115	OK

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

21ST CENTURY Environmental
SEMIVOLATILE ANALYSIS DATA

JOB NUMBER	US ARMY; FT.MONMOUTH, NJ	MATRIX	Water
SAMPLE NUMBER	A1265	DILUTION FACTOR	1.00
CLIENT ID	BLDG 750 FIELD BLANK	QA BATCH	
DATA FILE	>C0733	DATE ANALYZED	03/16/93

COMPOUND	UG/L	MDL	COMPOUND	UG/L	MDL
N-Nitrosodimethylamine	ND	10	Acenaphthene	ND	10
Phenol	ND	10	2,4-Dinitrophenol	ND	50
bis(-2-Chloroethyl)Ether	ND	10	4-Nitrophenol	ND	50
2-Cholorophenol	ND	10	Dibenzofuran	ND	10
1,3-Dichlorobenzene	ND	10	2,4-Dinitrotoluene	ND	10
1,4-Dichlorobenzene	ND	10	2,6-Dinitrotoluene	ND	10
Benzyl Alcohol	ND	10	Diethylphthalate	ND	10
1,2-Dichlorobenzene	ND	10	4-Chlorophenyl-phenlyether	ND	10
2-Methylphenol	ND	10	Fluorene	ND	10
bis(2-chloroisopropyl)Ether	ND	10	4-Nitroaniline	ND	50
4-Methylphenol	ND	10	4,6-Dinitro-2-Methylphenol	ND	50
N-Nitroso-Di-n-Propylamine	ND	10	N-Nitrosodiphenylamine	ND	10
Hexachloroethane	ND	10	4-Bromophenyl-phenylether	ND	10
Nitrobenzene	ND	10	Hexachlorobenzene	ND	10
Isophorone	ND	10	Pentachlorophenol	ND	50
2-Nitrophenol	ND	10	Phenanthrene	ND	10
2,4-Dimethylphenol	ND	10	Anthracene	ND	10
Benzoic Acid	ND	50	Di-n-Butylphthalate	ND	10
bis(-2-Chloroethoxy)Methane	ND	10	Fluoranthene	ND	10
2,4-Dichlorophenol	ND	10	Pyrene	ND	10
1,2,4-Trichlorobenzene	ND	10	Butylbenzylphthalate	ND	10
Naphthalene	ND	10	3,3'-Dichlorobenzidine	ND	20
4-Chloroaniline	ND	10	Benzo(a)Anthracene	ND	10
Hexachlorobutadiene	ND	10	Bis(2-Ethylhexyl)Phthalate	ND	10
4-Chloro-3-Methylphenol	ND	10	Chrysene	ND	10
2-Methylnaphthalene	ND	10	Di-n-Octyl Phthalate	ND	10
Hexachlorocyclopentadiene	ND	10	Benzo(b)Fluoranthene	ND	10
2,4,6-Trichlorophenol	ND	10	Benzo(k)Fluoranthene	ND	10
2,4.5-Trichlorophenol	ND	50	Benzo(a)Pyrene	ND	10
2-Chloronaphthalene	ND	10	Indeno(1,2,3-cd)Pyrene	ND	10
2-Nitroaniline	ND	50	Dibenzo(a,h)Anthracene	ND	10
Dimethyl Phthalate	ND	10	Benzo(g,h,i)Perylene	ND	10
Acenaphthylene	ND	10	Benzidine	ND	20
3-Nitroaniline	ND	50			

(J) Indicates detected below MDL
(B) Indicates also present in blank
(ND) Indicates compound not detected

Lab Sample ID:
A1265

Lab Name: 21ST Century Environmental
Client ID: US ARMY FORT MONMOUTH, NJ UST-BLG 1
FIELD BLANK

PESTICIDE ORGANICS ANALYSIS DATA SHEET

Pesticides/PCBs

Concentration: (Low) Medium (Circle One)
Date Extracted/Prepared: 03/16/93
Date Analyzed: 03/17/93 03:42
Conc/Dil Factor: 100mL/5mL
Percent Moisture: N/A

GPC Cleanup __Yes /No
Sep. Funnel Extraction /Yes
Continuous Liq-Liq Ext. __Yes

C.A.S. Number		(ug/L or ug/Kg)	
319-84-6	Alpha-BHC	0.25	U
319-87-7	Beta-BHC	0.25	U
319-86-8	Delta-BHC	0.25	U
58-89-9	Gamma-BHC (Lindane)	0.25	U
76-44-8	Heptachlor	0.25	U
309-00-2	Aldrin	0.25	U
1024-57-3	Heptachlor Epoxide	0.25	U
959-98-8	Endosulfan I	0.25	U
60-57-1	Dieldrin	0.25	U
72-55-9	4,4'-DDE	0.25	U
72-20-8	Endrin	0.25	U
33213-65-9	Endosulfan II	0.5	U
72-54-8	4,4'-DDD	0.5	U
1031-07-8	Endosulfan Sulfate	0.5	U
50-29-3	4,4'-DDT	0.5	U
72-43-5	Methoxychlor	13	U
7421-93-4	Endrin Aldehyde	0.5	U
57-74-9	Chlordane	15	U
8001-35-2	Toxaphene	25	U
12674-11-2	Aroclor-1016	13	U
11104-28-2	Aroclor-1221	13	U
11141-16-5	Aroclor-1232	13	U
53469-21-9	Aroclor-1242	13	U
12672-29-6	Aroclor-1248	13	U
11097-69-1	Aroclor-1254	13	U
11096-82-5	Aroclor-1260	13	U

U Undetected J Estimated value below detection level

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FIELD BLANK

Lab Name:21st Century Environmental

Client Name: US ARMY FT. MONMOUTH, NJ

Client ID: BLDG 161

Matrix: (soil/water) Water

Lab Sample ID: A1265

Sample wt/vol: 5 (g/mL) mL

Lab File ID: >A1059

Level: (low/med) LOW

Date Received: 03/15/93

% Moisture: NA

Date Analyzed: 03/16/93

Column: DB-624

Dilution Factor: 1

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
	No Unknowns			

FORM I VOA-TIC 1/87 Rev.

E1

EPA SAMPLE NUMBER

semi-VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIELD BLANK

Matrix: (soil/water) SOIL

Lab Sample ID: A1265

Client: US Army, Ft.Monmouth, NJ

Client ID: Bldg 750

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

Lab File ID: >C0733

Level: LOW

Date Received: NA

% Moisture: 100

Date Analyzed 03/16/93

Extraction: (Sepf/Cont/Sonc) SEPF

Date Extracted 03/15/93

GPC (Y or N): N

Column: DB-5

Dilution Factor: 1

Number TICs Found 0

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

CAS NUMBER	COMPOUND NAME	RT	EST CONC
	NO UNKNOWN COMPOUNDS IDENTIFIED		

APPENDIX E

TANK RECLAMATION CERTIFICATE

Pkg. 750

MONMOUTH COUNTY
RECLAMATION CENTER
TINTON FALLS, NJ
MAILING ADDRESS: 6000 ASBURY AVE.
NEPTUNE, NJ 07753

FACILITY ID NO. 1336F1SP01

RECEIPT DOCUMENT NUMBER

01293656

HAULER

NONCHARGE
NONCHARGE / JOHN Q. PUBLIC
CASH AND CHECK CUSTOMERS
WEIGHING IN AND OUT
NJ

VEHICLE

TARE WEIGHT 3.8000 (7600)
GROSS WEIGHT 4.2400 (8480)

DATE	OPER	ENTRY TIME	DEP. NO.	PLATE NO.			
04/28/93	MED	12:12	GR7771	GR7771	12:33 Check	1485	JEK Normal

QUANTITY	CLASS	DESCRIPTION/ORIGIN	UNITS	UNIT PRICE	AMOUNT
0.4400	13	Bulky Waste MONMOUTH COUNTY FREEHOLD BOROUGH Fiberglass Tanks Disposed of from Bldgs 750 & 761	Tons	95.65	42.09

*** Current Account Balance: 0.00 ***

TRANSPORTER'S SIGNATURE

DOCUMENT TOTAL 42.09

CUSTOMER COPY